



**LTE;
5G;
5GS;
User Equipment (UE) conformance specification;
Part 1: Common test environment
(3GPP TS 38.508-1 version 19.3.0 Release 19)**



Reference

RTS/TSGR-0538508-1v30

Keywords

5G,LTE

ETSI

650 Route des Lucioles
F-06921 Sophia Antipolis Cedex - FRANCE

Tel.: +33 4 92 94 42 00 Fax: +33 4 93 65 47 16

Siret N° 348 623 562 00017 - APE 7112B
Association à but non lucratif enregistrée à la
Sous-Préfecture de Grasse (06) N° w061004871

Important notice

The present document can be downloaded from the
[ETSI Search & Browse Standards](#) application.

The present document may be made available in electronic versions and/or in print. The content of any electronic and/or print versions of the present document shall not be modified without the prior written authorization of ETSI. In case of any existing or perceived difference in contents between such versions and/or in print, the prevailing version of an ETSI deliverable is the one made publicly available in PDF format on [ETSI deliver](#) repository.

Users should be aware that the present document may be revised or have its status changed,
this information is available in the [Milestones listing](#).

If you find errors in the present document, please send your comments to
the relevant service listed under [Committee Support Staff](#).

If you find a security vulnerability in the present document, please report it through our
[Coordinated Vulnerability Disclosure \(CVD\)](#) program.

Notice of disclaimer & limitation of liability

The information provided in the present deliverable is directed solely to professionals who have the appropriate degree of experience to understand and interpret its content in accordance with generally accepted engineering or other professional standard and applicable regulations.

No recommendation as to products and services or vendors is made or should be implied.

No representation or warranty is made that this deliverable is technically accurate or sufficient or conforms to any law and/or governmental rule and/or regulation and further, no representation or warranty is made of merchantability or fitness for any particular purpose or against infringement of intellectual property rights.

In no event shall ETSI be held liable for loss of profits or any other incidental or consequential damages.

Any software contained in this deliverable is provided "AS IS" with no warranties, express or implied, including but not limited to, the warranties of merchantability, fitness for a particular purpose and non-infringement of intellectual property rights and ETSI shall not be held liable in any event for any damages whatsoever (including, without limitation, damages for loss of profits, business interruption, loss of information, or any other pecuniary loss) arising out of or related to the use of or inability to use the software.

Copyright Notification

No part may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying and microfilm except as authorized by written permission of ETSI.

The content of the PDF version shall not be modified without the written authorization of ETSI.

The copyright and the foregoing restriction extend to reproduction in all media.

© ETSI 2026.
All rights reserved.

Intellectual Property Rights

Essential patents

IPRs essential or potentially essential to normative deliverables may have been declared to ETSI. The declarations pertaining to these essential IPRs, if any, are publicly available for **ETSI members and non-members**, and can be found in ETSI SR 000 314: *"Intellectual Property Rights (IPRs); Essential, or potentially Essential, IPRs notified to ETSI in respect of ETSI standards"*, which is available from the ETSI Secretariat. Latest updates are available on the [ETSI IPR online database](#).

Pursuant to the ETSI Directives including the ETSI IPR Policy, no investigation regarding the essentiality of IPRs, including IPR searches, has been carried out by ETSI. No guarantee can be given as to the existence of other IPRs not referenced in ETSI SR 000 314 (or the updates on the ETSI Web server) which are, or may be, or may become, essential to the present document.

Trademarks

The present document may include trademarks and/or tradenames which are asserted and/or registered by their owners. ETSI claims no ownership of these except for any which are indicated as being the property of ETSI, and conveys no right to use or reproduce any trademark and/or tradename. Mention of those trademarks in the present document does not constitute an endorsement by ETSI of products, services or organizations associated with those trademarks.

DECT™, **PLUGTESTS™**, **UMTS™** and the ETSI logo are trademarks of ETSI registered for the benefit of its Members. **3GPP™**, **LTE™** and **5G™** logo are trademarks of ETSI registered for the benefit of its Members and of the 3GPP Organizational Partners. **oneM2M™** logo is a trademark of ETSI registered for the benefit of its Members and of the oneM2M Partners. **GSM®** and the GSM logo are trademarks registered and owned by the GSM Association.

Legal Notice

This Technical Specification (TS) has been produced by the ETSI 3rd Generation Partnership Project (3GPP).

The present document may refer to technical specifications or reports using their 3GPP identities. These shall be interpreted as being references to the corresponding ETSI deliverables.

The cross reference between 3GPP and ETSI identities can be found at [3GPP to ETSI numbering cross-referencing](#).

Modal verbs terminology

In the present document "**shall**", "**shall not**", "**should**", "**should not**", "**may**", "**need not**", "**will**", "**will not**", "**can**" and "**cannot**" are to be interpreted as described in clause 3.2 of the [ETSI Drafting Rules](#) (Verbal forms for the expression of provisions).

"**must**" and "**must not**" are **NOT** allowed in ETSI deliverables except when used in direct citation.

Contents

Intellectual Property Rights	2
Legal Notice	2
Modal verbs terminology.....	2
Foreword.....	38
1 Scope	39
2 References	39
3 Definitions, symbols and abbreviations	42
3.1 Definitions	42
3.2 Symbols.....	42
3.3 Abbreviations	42
4 Common test environments.....	42
4.1 Environmental conditions.....	42
4.1.1 Temperature.....	43
4.1.2 Voltage.....	43
4.2 Common requirements of test equipment.....	44
4.2.1 General functional requirements.....	44
4.2.2 Minimum functional requirements	45
4.2.2.1 Supported Cell Configuration	45
4.2.2.1.1 Supported Channels for an E-UTRA cell (NSA mode only).....	45
4.2.2.1.2 Supported Channels for a NR cell	45
4.2.2.1.2.1 Logical channels	45
4.2.2.1.2.2 Transport channels	45
4.2.2.1.2.3 Physical channels.....	45
4.2.2.1.2.4 Physical signals.....	46
4.3 Reference test conditions.....	46
4.3.1 Test frequencies	46
4.3.1.0 General.....	46
4.3.1.0A Mid test channel bandwidth	46
4.3.1.0B Low test channel bandwidth.....	49
4.3.1.0C High test channel bandwidth.....	52
4.3.1.0D Bandwidth part.....	55
4.3.1.0E Void.....	56
4.3.1.1 Test frequencies for NR operating bands in FR1	57
4.3.1.1.1 NR operating bands in FR1	57
4.3.1.1.1.1 Reference test frequencies for NR operating band n1.....	57
4.3.1.1.1.2 Reference test frequencies for NR operating band n2.....	64
4.3.1.1.1.3 Reference test frequencies for NR operating band n3.....	71
4.3.1.1.1.4 FFS.....	79
4.3.1.1.1.5 Reference test frequencies for NR operating band n5.....	79
4.3.1.1.1.6 FFS.....	83
4.3.1.1.1.7 Reference test frequencies for NR operating band n7.....	83
4.3.1.1.1.8 Reference test frequencies for NR operating band n8.....	90
4.3.1.1.1.9 to 4.3.1.1.1.11	FFS
4.3.1.1.1.12 Reference test frequencies for NR operating band n12.....	98
4.3.1.1.1.13 Reference test frequencies for NR operating band n13.....	101
4.3.1.1.1.14 Reference test frequencies for NR operating band n14.....	103
4.3.1.1.1.15 to 4.3.1.1.1.17	FFS
4.3.1.1.1.18 Reference test frequencies for NR operating band n18.....	104
4.3.1.1.1.19 FFS.....	107
4.3.1.1.1.20 Reference test frequencies for NR operating band n20.....	107

4.3.1.1.1.21 to	4.3.1.1.1.23	FFS
	.....	110
4.3.1.1.1.24	Reference test frequencies for NR operating band n24.....	110
4.3.1.1.1.25	Reference test frequencies for NR operating band n25.....	112
4.3.1.1.1.26	Reference test frequencies for NR operating band n26.....	119
4.3.1.1.1.27	FFS.....	123
4.3.1.1.1.28	Reference test frequencies for NR operating band n28.....	123
4.3.1.1.1.29	Reference test frequencies for NR operating band n29 (SDL)	129
4.3.1.1.1.30	Reference test frequencies for NR operating band n30.....	130
4.3.1.1.1.31	Reference test frequencies for NR operating band n31.....	132
4.3.1.1.1.32 to	4.3.1.1.1.33	FFS
	.....	133
4.3.1.1.1.34	Reference test frequencies for NR operating band n34.....	133
4.3.1.1.1.35 to	4.3.1.1.1.37	FFS
	.....	135
4.3.1.1.1.38	Reference test frequencies for NR operating band n38.....	135
4.3.1.1.1.39	Reference test frequencies for NR operating band n39.....	138
4.3.1.1.1.40	Reference test frequencies for NR operating band n40.....	143
4.3.1.1.1.41	Reference test frequencies for NR operating band n41.....	149
4.3.1.1.1.42 to	4.3.1.1.1.45	FFS
	.....	154
4.3.1.1.1.46	Reference test frequencies for NR operating band n46.....	154
4.3.1.1.1.47	FFS.....	157
4.3.1.1.1.48	Reference test frequencies for NR operating band n48.....	157
4.3.1.1.1.49	FFS.....	162
4.3.1.1.1.50	Reference test frequencies for NR operating band n50.....	162
4.3.1.1.1.51	Reference test frequencies for NR operating band n51.....	165
4.3.1.1.1.52	FFS.....	166
4.3.1.1.1.53	Reference test frequencies for NR operating band n53.....	166
4.3.1.1.1.54	Reference test frequencies for NR operating band n54.....	167
4.3.1.1.1.55 to	4.3.1.1.1.64	FFS
	.....	168
4.3.1.1.1.65	Reference test frequencies for NR operating band n65.....	168
4.3.1.1.1.66	Reference test frequencies for NR operating band n66.....	172
4.3.1.1.1.67 –	4.3.1.1.1.69	FFS
	.....	185
4.3.1.1.1.70	Reference test frequencies for NR operating band n70.....	185
4.3.1.1.1.71	Reference test frequencies for NR operating band n71.....	192
4.3.1.1.1.72	Reference test frequencies for NR operating band n72.....	201
4.3.1.1.1.73	FFS.....	202
4.3.1.1.1.74	Reference test frequencies for NR operating band n74.....	202
4.3.1.1.1.75	Reference test frequencies for NR operating band n75 (SDL)	206
4.3.1.1.1.76	Reference test frequencies for NR operating band n76 (SDL)	207
4.3.1.1.1.77	Reference test frequencies for NR operating band n77.....	208
4.3.1.1.1.78	Reference test frequencies for NR operating band n78.....	212
4.3.1.1.1.79	Reference test frequencies for NR operating band n79.....	217
4.3.1.1.1.80	Reference test frequencies for NR operating band n80 (SUL)	222
4.3.1.1.1.81	Reference test frequencies for NR operating band n81 (SUL)	223
4.3.1.1.1.82	Reference test frequencies for NR operating band n82 (SUL)	224
4.3.1.1.1.83	Reference test frequencies for NR operating band n83 (SUL)	224
4.3.1.1.1.84	Reference test frequencies for NR operating band n84 (SUL)	225
4.3.1.1.1.85	Reference test frequencies for NR operating band n85.....	227
4.3.1.1.1.86	Reference test frequencies for NR operating band n86 (SUL)	230
4.3.1.1.1.87	Reference test frequencies for NR operating band n87.....	231
4.3.1.1.1.88	Reference test frequencies for NR operating band n88.....	233

4.3.1.1.1.89 to	4.3.1.1.1.90	FFS
	.....	234
4.3.1.1.1.91	Reference test frequencies for NR operating band n91.....	234
4.3.1.1.1.92	Reference test frequencies for NR operating band n92.....	235
4.3.1.1.1.93	Reference test frequencies for NR operating band n93.....	241
4.3.1.1.1.94	Reference test frequencies for NR operating band n94.....	242
4.3.1.1.1.95	Reference test frequencies for NR operating band n95 (SUL)	249
4.3.1.1.1.96	Reference test frequencies for NR operating band n96.....	250
4.3.1.1.1.97	Reference test frequencies for NR operating band n97 (SUL)	252
4.3.1.1.1.98	Reference test frequencies for NR operating band n98 (SUL)	254
4.3.1.1.1.99	Reference test frequencies for NR operating band n99 (SUL)	256
4.3.1.1.1.100	Reference test frequencies for NR operating band n100.....	257
4.3.1.1.1.101	Reference test frequencies for NR operating band n101.....	258
4.3.1.1.1.102 to	4.3.1.1.1.103	FFS
	.....	259
4.3.1.1.1.104	Reference test frequencies for NR operating band n104.....	259
4.3.1.1.1.105	Reference test frequencies for NR operating band n105.....	263
4.3.1.1.1.106	Reference test frequencies for NR operating band n106.....	270
4.3.1.1.1.107 to	4.3.1.1.1.108	FFS
	.....	271
4.3.1.1.1.109	Reference test frequencies for NR operating band n109.....	271
4.3.1.1.1.110	Reference test frequencies for NR operating band n110.....	288
4.3.1.1.2	NR inter-band CA configurations in FR1.....	289
4.3.1.1.2.0	General.....	289
4.3.1.1.2.1	NR inter-band CA configurations in FR1 (two bands)	289
4.3.1.1.2.2	NR inter-band CA configurations in FR1 (three bands)	295
4.3.1.1.2.3	NR inter-band CA configurations in FR1 (four bands).....	299
4.3.1.1.3	NR intra-band contiguous CA in FR1	303
4.3.1.1.3.1 – 4.3.1.1.3.4	FFS.....	303
4.3.1.1.3.5	NR Intra-band contiguous configurations CA_n5B.....	303
4.3.1.1.3.40	NR Intra-band contiguous configurations CA_n40	308
4.3.1.1.3.40.1	CA_n40B	308
4.3.1.1.3.41	NR Intra-band contiguous configurations CA_n41	309
4.3.1.1.3.41.1	CA_n41C	310
4.3.1.1.3.42 –	4.3.1.1.3.47	FFS
	.....	318
4.3.1.1.3.48	NR Intra-band contiguous configurations CA_n48	318
4.3.1.1.3.48.1	CA_n48B	318
4.3.1.1.3.48.2	CA_n48C	330
4.3.1.1.3.49 –	4.3.1.1.3.65	FFS
	.....	337
4.3.1.1.3.66	NR Intra-band contiguous configurations CA_n66	337
4.3.1.1.3.66.1	CA_n66B	337
4.3.1.1.3.67 –	4.3.1.1.3.70	FFS
	.....	349
4.3.1.1.3.71	NR Intra-band contiguous configurations CA_n71	349
4.3.1.1.3.71.1	FFS.....	349
4.3.1.1.3.71.2	CA_n71B	349
4.3.1.1.3.72 –	4.3.1.1.3.76	FFS
	.....	353
4.3.1.1.3.77	NR Intra-band contiguous configurations CA_n77	353
4.3.1.1.3.77.1	CA_n77C	353
4.3.1.1.3.78	NR Intra-band contiguous configurations CA_n78	359
4.3.1.1.3.78.1	CA_n78C	359
4.3.1.1.3.78.2	CA_n78B	377

4.3.1.1.3.78.3	CA_n78D	380
4.3.1.1.3.79	NR Intra-band contiguous configurations CA_n79	382
4.3.1.1.3.79.1	CA_n79C	382
4.3.1.1.4	Void	391
4.3.1.1.5	NR intra-band non-contiguous CA configurations in FR1	391
4.3.1.1.5.1	FFS	391
4.3.1.1.5.2	CA_n2(xA)	391
4.3.1.1.5.3 –		
	4.3.1.1.5.24	FFS
	.....	391
4.3.1.1.5.26 –		
	4.3.1.1.5.40	FFS
	.....	392
4.3.1.1.5.42 –		
	4.3.1.1.5.47	FFS
	.....	393
4.3.1.1.5.66	CA_n66(xA)	394
4.3.1.1.5.66.1	CA_n66(2A)	394
4.3.1.1.5.66.2	CA_n66(3A)	395
4.3.1.1.5.67 –		
	4.3.1.1.5.70	FFS
	.....	396
4.3.1.1.5.71	CA_n71(xA)	396
4.3.1.1.5.72 –		
	4.3.1.1.5.76	FFS
	.....	397
4.3.1.1.5.77	CA_n77(xA)	397
4.3.1.1.5.78	CA_n78(xA)	415
4.3.1.1.6	NR Operating SUL band combinations in FR1	431
4.3.1.1.7	NR inter-band NR-DC configurations in FR1	431
4.3.1.1.7.1	NR inter-band NR-DC configurations in FR1 (two bands)	431
4.3.1.2	Test frequencies for NR operating bands in FR2	432
4.3.1.2.1	NR operating bands in FR2	432
4.3.1.2.1.1	Reference test frequencies for NR operating band n257	432
4.3.1.2.1.2	Reference test frequencies for NR operating band n258	433
4.3.1.2.1.3	Reference test frequencies for NR operating band n259	434
4.3.1.2.1.4	Reference test frequencies for NR operating band n260	435
4.3.1.2.1.5	Reference test frequencies for NR operating band n261	437
4.3.1.2.2	NR inter-band CA configurations in FR2	438
4.3.1.2.3	NR intra-band contiguous CA configurations in FR2	438
4.3.1.2.3.1	NR Intra-band contiguous CA configurations for CA_n257	438
4.3.1.2.3.1.1	CA_n257B	438
4.3.1.2.3.1.2	CA_n257C	439
4.3.1.2.3.1.3	CA_n257D	439
4.3.1.2.3.1.4	CA_n257E	441
4.3.1.2.3.1.5	CA_n257F	441
4.3.1.2.3.1.6	CA_n257G	441
4.3.1.2.3.1.7	CA_n257H	443
4.3.1.2.3.1.8	CA_n257I	445
4.3.1.2.3.1.9	CA_n257J	448
4.3.1.2.3.1.10	CA_n257K	449
4.3.1.2.3.1.11	CA_n257L	450
4.3.1.2.3.1.12	CA_n257M	451
4.3.1.2.3.2	NR Intra-band contiguous CA configurations for CA_n258	452
4.3.1.2.3.2.1	CA_n258B	452
4.3.1.2.3.2.2	CA_n258C	453
4.3.1.2.3.2.3	CA_n258D	453
4.3.1.2.3.2.4	CA_n258E	455
4.3.1.2.3.2.5	CA_n258F	458
4.3.1.2.3.2.6	CA_n258G	462
4.3.1.2.3.2.7	CA_n258H	464
4.3.1.2.3.2.8	CA_n258I	466

4.3.1.2.3.2.9	CA_n258J.....	469
4.3.1.2.3.2.10	CA_n258K.....	473
4.3.1.2.3.2.11	CA_n258L.....	476
4.3.1.2.3.2.12	CA_n258M.....	481
4.3.1.2.3.3	FFS.....	487
4.3.1.2.3.4	NR Intra-band contiguous CA configurations for CA_n260	487
4.3.1.2.3.4.1	CA_n260B.....	487
4.3.1.2.3.4.2	CA_n260C.....	487
4.3.1.2.3.4.3	CA_n260D	487
4.3.1.2.3.4.4	CA_n260E.....	488
4.3.1.2.3.4.5	CA_n260F.....	488
4.3.1.2.3.4.6	CA_n260G	489
4.3.1.2.3.4.7	CA_n260H	490
4.3.1.2.3.4.8	CA_n260I.....	492
4.3.1.2.3.4.9	CA_n260J.....	494
4.3.1.2.3.4.10	CA_n260K	497
4.3.1.2.3.4.11	CA_n260L.....	501
4.3.1.2.3.4.12	CA_n260M.....	506
4.3.1.2.3.4.13	CA_n260O	511
4.3.1.2.3.4.14	CA_n260P	512
4.3.1.2.3.4.15	CA_n260Q	513
4.3.1.2.3.5	NR Intra-band contiguous CA configurations for CA_n261	513
4.3.1.2.3.5.1	CA_n261B.....	513
4.3.1.2.3.5.2	CA_n261C.....	513
4.3.1.2.3.5.3	CA_n261D	514
4.3.1.2.3.5.4	CA_n261E.....	514
4.3.1.2.3.5.5	CA_n261F.....	515
4.3.1.2.3.5.6	CA_n261G	515
4.3.1.2.3.5.7	CA_n261H	516
4.3.1.2.3.5.8	CA_n261I.....	518
4.3.1.2.3.5.9	CA_n261J.....	520
4.3.1.2.3.5.10	CA_n261K	523
4.3.1.2.3.5.11	CA_n261L.....	523
4.3.1.2.3.5.12	CA_n261M.....	523
4.3.1.2.3.5.13	CA_n261O	527
4.3.1.2.3.5.14	CA_n261P	527
4.3.1.2.3.5.15	CA_n261Q	528
4.3.1.2.4	NR intra-band non-contiguous CA configurations in FR2	528
4.3.1.2.4.1	NR Intra-band non-contiguous CA configurations for CA_n257	528
4.3.1.2.4.2	NR Intra-band non-contiguous CA configurations for CA_n258	528
4.3.1.2.4.3	FFS.....	528
4.3.1.2.4.4	NR Intra-band non-contiguous CA configurations for CA_n260	528
4.3.1.2.4.4.1	CA_n260(XA).....	528
4.3.1.2.4.4.2	CA_n260(A-I).....	529
4.3.1.2.4.5	NR Intra-band non-contiguous CA configurations for CA_n261	529
4.3.1.2.4.5.1	CA_n261(XA).....	529
4.3.1.3	Test frequencies for NR band combinations between FR1 and FR2.....	530
4.3.1.3.1	NR inter-band CA configurations between FR1 and FR2	530
4.3.1.3.2	Inter-band NR-DC configurations between FR1 and FR2	531
4.3.1.3.2.1	NR-DC configurations between FR1 and FR2 (two bands).....	531
4.3.1.4	Test frequencies for EN-DC band combinations within FR1.....	533
4.3.1.4.1	Inter-band EN-DC configurations within FR1	533
4.3.1.4.1.1	General.....	533
4.3.1.4.1.2	Inter-band EN-DC configurations within FR1 (two bands).....	533
4.3.1.4.1.3	Inter-band EN-DC configurations within FR1 (three bands).....	538
4.3.1.4.1.4	Inter-band EN-DC configurations within FR1 (four bands).....	550
4.3.1.4.1.6	Inter-band EN-DC configurations within FR1 (six bands).....	552
4.3.1.4.2	Intra-band contiguous EN-DC configurations within FR1	554
4.3.1.4.2.1 –		
4.3.1.4.2.40	FFS	
4.3.1.4.2.41	Intra-band contiguous EN-DC configurations DC_(n)41	554

4.3.1.4.2.41.1	DC_(n)41AA	554
4.3.1.4.2.41.2	DC_(n)41CA	563
4.3.1.4.2.42.to 4.3.1.4.2.70	FFS	570
4.3.1.4.2.71.1	DC_(n)71AA	570
4.3.1.4.3	Intra-band non-contiguous EN-DC configurations within FR1	578
4.3.1.4.3.1	FFS	578
4.3.1.4.3.41	Intra-band non-contiguous EN-DC configurations DC_41_n41	579
4.3.1.4.3.41.1	DC_41A_n41A	579
4.3.1.4.3.41.2	DC_41C_n41A	579
4.3.1.4a	Test frequencies for NE-DC band combinations within FR1	581
4.3.1.4a.1	Inter-band NE-DC configurations within FR1	581
4.3.1.5	Test frequencies for EN-DC band combinations including FR2	582
4.3.1.5.1	Inter-band EN-DC configurations including FR2	582
4.3.1.6	Test frequencies for EN-DC band combinations including FR1 and FR2	608
4.3.1.6.1	Inter-band EN-DC configurations including FR1 and FR2	608
4.3.1.7	Test frequencies for Non-3GPP Access	612
4.3.1.7.1	WLAN Test frequencies	612
4.3.1.7.2	Bluetooth Test frequencies	612
4.3.1.8	Test frequencies for NR Sidelink operating bands	612
4.3.1.8.1	Test frequencies for NR Sidelink operating bands in FR1	612
4.3.1.8.2	Test frequencies for concurrent NR sidelink operation	614
4.3.1.9	Test frequencies for NR NTN operating bands	616
4.3.1.9.1	NR NTN operating bands	616
4.3.2	Radio conditions	638
4.3.2.1	FR1, normal propagation condition for connected	638
4.3.2.2	FR2, condition for OTA	638
4.3.3	Physical channel allocations	638
4.3.3.1	E-UTRA	638
4.3.3.2	NR	638
4.3.3.2.1	Antennas	638
4.3.3.2.2	Downlink physical channels and physical signals	638
4.3.3.2.3	Mapping of downlink physical channels and signals to physical resources	638
4.3.4	Signal levels	639
4.3.4.1	Signal levels for conducted testing	639
4.3.4.1.1	Downlink signal levels	639
4.3.4.2	Signal levels for OTA testing	639
4.3.5	Standard test signals	639
4.3.6	Physical layer parameters	639
4.3.6.1	Downlink physical layer parameters	639
4.3.6.1.1	Physical layer parameters for scheduling of PUSCH	639
4.3.6.1.1.1	Physical layer parameters for DCI format 0_0	639
4.3.6.1.1.2	Physical layer parameters for DCI format 0_1	640
4.3.6.1.1.3	Physical layer parameters for DCI format 0_2	642
4.3.6.1.1.4	Physical layer parameters for DCI format 0_3	644
4.3.6.1.2	Physical layer parameters for scheduling of PDSCH	645
4.3.6.1.2.1	Physical layer parameters for DCI format 1_0	645
4.3.6.1.2.2	Physical layer parameters for DCI format 1_1	647
4.3.6.1.2.3	Physical layer parameters for DCI format 1_2	650
4.3.6.1.2.4	Physical layer parameters for DCI format 1_3	651
4.3.6.1.3	Void	653
4.3.6.1.4	Physical layer parameters for scheduling of PSCCH/PSSCH	653
4.3.6.1.4.1	Physical layer parameters for DCI format 3_0	653
4.3.6.1.4.2	Physical layer parameters for DCI format 3_1	653
4.3.6.1.5	Physical layer parameters for scheduling of MBS	653
4.3.6.1.5.1	Physical layer parameters for DCI format 4_0	653
4.3.6.1.5.2	Physical layer parameters for DCI format 4_1	654
4.3.6.1.5.3	Physical layer parameters for DCI format 4_2	655
4.3.6.2	Sidelink physical layer parameters	656
4.3.6.2.1	Physical layer parameters for scheduling of PSSCH on PSCCH	656
4.3.6.2.1.1	Physical layer parameters for SCI format 1-A	656
4.3.6.2.1.2	Physical layer parameters for SCI format 1-B	656
4.3.6.2.2	Physical layer parameters for scheduling on PSSCH	657

4.3.6.2.2.1	Physical layer parameters for SCI format 2-A	657
4.3.6.2.2.2	Physical layer parameters for SCI format 2-B	657
4.3.6.2.2.3	Physical layer parameters for SCI format 2-D	658
4.4	Reference system configurations.....	658
4.4.1	Simulated network scenarios	658
4.4.1.1	Standalone cell network scenarios	659
4.4.1.1.1	Standalone E-UTRA single cell and multi cell network scenarios.....	659
4.4.1.1.2	Standalone NR single cell network scenarios.....	659
4.4.1.1.3	Standalone NR single mode multi cell network scenarios.....	659
4.4.1.1.4	Standalone NR dual mode multi cell network scenarios	659
4.4.1.1.5	Standalone NR 3GPP Inter-RAT network scenarios.....	659
4.4.1.2	Non-standalone cell network scenarios.....	659
4.4.1.2.1	Non-standalone E-UTRA single cell and NR single cell network scenarios.....	659
4.4.1.2.2	Non-standalone E-UTRA single cell and NR single mode multi cell network scenarios.....	660
4.4.1.2.3	Non-standalone E-UTRA single mode multi cell and NR single mode multi cell network scenarios	660
4.4.1.2.4	Non-standalone E-UTRA single cell and NR dual mode multi cell network scenarios	660
4.4.1.3	Non-3GPP Access network scenarios.....	661
4.4.1.3.1	WLAN network scenario.....	661
4.4.1.3.2	Bluetooth network scenario	661
4.4.2	Simulated cells.....	661
4.4.3	Common parameters for simulated NR cells	664
4.4.3.1	Common configurations of system information blocks	664
4.4.3.1.1	Combinations of system information blocks for E-UTRA standalone, EN-DC and NGEN-DC ..	664
4.4.3.1.2	Combinations of system information blocks for NR standalone and NE-DC	664
4.4.3.1.3	Scheduling of system information blocks.....	671
4.4A	Test states	676
4.4A.1	General.....	676
4.4A.2	Test states and associated 5GC and RRC protocol states	676
4.4A.3	Test state parameters.....	678
4.4A.4	Test state ID syntax.....	678
4.4A.5	Mapping of test state IDs and test parameters to generic procedures, generic procedure parameters and specific message conditions	679
4.5	Generic procedures.....	680
4.5.1	General.....	680
4.5.2	RRC_IDLE	681
4.5.2.1	Initiation.....	681
4.5.2.2	Procedures.....	682
4.5.2.3	Specific message contents.....	688
4.5.3	RRC_INACTIVE	689
4.5.3.1	Initiation.....	689
4.5.3.2	Procedures.....	689
4.5.4	RRC_CONNECTED	690
4.5.4.1	Initiation.....	690
4.5.4.2	Procedures	691
4.5.4.3	Specific message contents.....	694
4.5.5	SWITCHED_OFF	696
4.5.6	Void	697
4.5.7	Out of Coverage.....	697
4.5.7.1	Initiation.....	697
4.5.7.2	Procedures.....	697
4.5.7.3	Specific message contents.....	698
4.5.8	Void.....	699
4.5A	Auxiliary procedures	699
4.5A.1	General.....	699
4.5A.2	UE-requested PDU session establishment procedure	699
4.5A.2A	UE-requested PDU session establishment procedure over Non 3GPP Access.....	702
4.5A.2B	Procedure to establish multiple additional PDN connections in S1	702
4.5A.2B.3	Specific message contents.....	704
4.5A.2C	Procedure for UE-requested PDU session modification after the first S1 to N1 mode change / Single-registration mode with N26.....	705
4.5A.3	Procedure for IP address allocation in the user plane	708

4.5A.4	Procedure for IMS signalling.....	709
4.5A.5	IPsec Tunnel Disconnection in 5GC / WLAN.....	709
4.5A.6	IPsec Tunnel Establishment in 5GC / WLAN	710
4.5B	Common test environment for Vertical UEs	710
4.5B.1	SNPN-only UEs.....	710
4.5B.2	RedCap UEs.....	711
4.5B.3	NR NTN UEs.....	711
4.5B.4	eRedCap UEs.....	711
4.5B.5	ATG UEs	712
4.5C	UE Position Requirements for NTN testing	712
4.5C.1	General.....	712
4.5D	UE position requirements for ATG testing.....	712
4.5D.1	General.....	712
4.6	Default NG-RAN RRC message and information elements contents	713
4.6.0	General.....	713
4.6.0.1	Global conditions	713
4.6.0.2	ASN.1 extension groups.....	714
4.6.0.3	Interpretation of IE presence and values	714
4.6.1	Contents of RRC messages.....	715
–	<i>CounterCheck</i>	715
–	<i>CounterCheckResponse</i>	715
–	<i>DedicatedSIBRequest</i>	715
–	<i>DLDedicatedMessageSegment</i>	716
–	<i>DLInformationTransfer</i>	716
–	<i>DLInformationTransferMRDC</i>	717
–	<i>FailureInformation</i>	717
–	<i>IABOtherInformation</i>	717
–	<i>IndirectPathFailureInformation</i>	718
–	<i>LocationMeasurementIndication</i>	718
–	<i>LoggedMeasurementConfiguration</i>	718
–	<i>MBSBroadcastConfiguration</i>	719
–	<i>MBSInterestIndication</i>	720
–	<i>MBSMulticastConfiguration</i>	720
–	<i>MCGFailureInformation</i>	721
–	<i>MeasurementReport</i>	721
–	<i>MeasurementReportAppLayer</i>	721
–	<i>MIB</i>	722
–	<i>MobilityFromNRCommand</i>	722
–	<i>Paging</i>	723
–	<i>RRCReestablishment</i>	724
–	<i>RRCReestablishmentComplete</i>	724
–	<i>RRCReestablishmentRequest</i>	725
–	<i>RRCReconfiguration</i>	725
–	<i>RRCReconfigurationComplete</i>	731
–	<i>RRCReject</i>	731
–	<i>RRCRelease</i>	732
–	<i>RRCResume</i>	733
–	<i>RRCResumeComplete</i>	734
–	<i>RRCResumeRequest</i>	735
–	<i>RRCResumeRequest1</i>	735
–	<i>RRCSetup</i>	735
–	<i>RRCSetupComplete</i>	736
–	<i>RRCSetupRequest</i>	736
–	<i>RRCSystemInfoRequest</i>	737
–	<i>SCGFailureInformation</i>	737
–	<i>SCGFailureInformationEUTRA</i>	737
–	<i>SecurityModeCommand</i>	737
–	<i>SecurityModeComplete</i>	738
–	<i>SecurityModeFailure</i>	738
–	<i>SIB1</i>	738
–	<i>SidelinkUEInformationNR</i>	741
–	<i>SystemInformation</i>	743

–	<i>UEAssistanceInformation</i>	743
–	<i>UECapabilityEnquiry</i>	744
–	<i>UECapabilityInformation</i>	745
–	<i>UEInformationRequest</i>	745
–	<i>UEInformationResponse</i>	746
–	<i>UEPositioningAssistanceInfo</i>	746
–	<i>ULDedicatedMessageSegment</i>	746
–	<i>ULInformationTransfer</i>	747
–	<i>ULInformationTransferIRAT</i>	747
–	<i>ULInformationTransferMRDC</i>	747
4.6.1A	Contents of PC5 RRC messages	748
–	<i>MasterInformationBlockSidelink</i>	748
–	<i>MeasurementReportSidelink</i>	748
–	<i>RemoteUEInformationSidelink</i>	749
–	<i>NotificationMessageSidelink</i>	750
–	<i>RRCReconfigurationSidelink</i>	750
–	<i>SL-RLC-ChannelConfigPC5</i>	753
–	<i>RRCReconfigurationCompleteSidelink</i>	753
–	<i>RRCReconfigurationFailureSidelink</i>	754
–	<i>UECapabilityEnquirySidelink</i>	754
–	<i>UECapabilityInformationSidelink</i>	755
–	<i>uuMessageTransferSidelink</i>	757
–	<i>UEAssistanceInformationSidelink</i>	757
4.6.2	System information blocks	758
–	<i>SIB2</i>	758
–	<i>SIB3</i>	759
–	<i>SIB4</i>	760
–	<i>SIB5</i>	762
–	<i>SIB6</i>	763
–	<i>SIB7</i>	764
–	<i>SIB8</i>	765
–	<i>SIB9</i>	766
–	<i>SIB10</i>	767
–	<i>SIB11</i>	767
–	<i>SIB12</i>	767
–	<i>SIB13</i>	769
–	<i>SIB14</i>	769
–	<i>SIB15</i>	769
–	<i>SIB16</i>	769
–	<i>SIB17</i>	770
–	<i>SIB17bis</i>	770
–	<i>SIB18</i>	771
–	<i>SIB19</i>	771
–	<i>SIB20</i>	772
–	<i>SIB21</i>	772
–	<i>SIB22</i>	772
–	<i>SIB23</i>	773
–	<i>SIB24</i>	773
–	<i>SIB25</i>	774
–	<i>SIB26</i>	774
–	<i>SIB27</i>	774
–	<i>SIB28</i>	774
4.6.2A	Positioning System information blocks	774
–	<i>PosSystemInformation-r16-IEs</i>	774
–	<i>PosSI-SchedulingInfo</i>	775
–	<i>SIBpos</i>	775
4.6.3	Radio resource control information elements	776
–	<i>AdditionalPCIIndex</i>	776
–	<i>AdditionalSpectrumEmission</i>	776
–	<i>AdvancedReceiver-MU-MIMO</i>	776
–	<i>Aerial-Config</i>	776
–	<i>Alpha</i>	776

Altitude	777
AMF-Identifier	777
ApplicabilitySetConfigId	777
ApplicabilityReportList	777
ARFCN-ValueEUTRA	777
ARFCN-ValueNR	777
ARFCN-ValueUTRA-FDD	778
AssociatedId	778
ATG-Config	779
AvailabilityCombinationsPerCell	779
AvailabilityIndicator	779
BAP-Routing-ID	779
BeamFailureRecoveryConfig	779
BeamFailureRecoveryRSConfig	780
BetaOffsets	780
BetaOffsetsCrossPri	781
BH-RLC-ChannelConfig	781
BH-LogicalChannelIdentity	781
BH-LogicalChannelIdentity-Ext	781
BH-RLC-ChannelID	781
BSR-Config	782
BWP	782
BWP-Downlink	782
BWP-DownlinkCommon	782
BWP-DownlinkDedicated	783
BWP-Id	784
BWP-Uplink	784
BWP-UplinkCommon	784
BWP-UplinkDedicated	785
CandidateBeamRS	786
CandidateTCI-State	786
CandidateTCI-UL-State	787
CellAccessRelatedInfo	787
CellAccessRelatedInfo-EUTRA-5GC	787
CellAccessRelatedInfo-EUTRA-EPC	788
CellDTXDRX-Config	788
CellGroupConfig	788
CellGroupId	794
CellIdentity	794
CellReselectionPriority	794
CellReselectionSubPriority	794
CFR-ConfigMulticast	794
CGI-InfoEUTRA	795
CGI-InfoEUTRALogging	795
CGI-InfoNR	795
ChannelAccessConfig	795
CGI-Info-Logging	796
Cho-WithCandidateSCGInfo	796
CLI-RSSI-MeasResource	796
CLI-RSSI-MeasResourceId	796
CLI-RSSI-MeasResourceSet	796
CLI-RSSI-MeasResourceSetId	796
CLI-RSSI-Range	797
ClockQualityMetrics	797
CodebookConfig	797
CommonLocationInfo	798
CondReconfigId	798
CondReconfigToAddModList	798
ConditionalReconfiguration	799
ConfiguredGrantConfig	799
ConfiguredGrantConfigIndex	802
ConfiguredGrantConfigIndexMAC	802

–	ConnEstFailureControl.....	802
–	ControlResourceSet.....	802
–	ControlResourceSetId	803
–	ControlResourceSetZero	803
–	CQI-Table	803
–	CrossCarrierSchedulingConfig.....	803
–	CSI-AperiodicTriggerStateList.....	804
–	CSI-FrequencyOccupation.....	804
–	CSI-IM-Resource	805
–	CSI-IM-ResourceId	806
–	CSI-IM-ResourceSet.....	806
–	CSI-IM-ResourceSetId	806
–	CSI-LoggedMeasurementConfig	806
–	CSI-LoggedMeasurementConfigId.....	806
–	CSI-MeasConfig	806
–	CSI-ReportConfig.....	808
–	CSI-ReportConfigId	808
–	CSI-ReportPeriodicityAndOffset	809
–	CSI-ReportSubConfigId	809
–	CSI-ReportSubConfigTriggerList.....	809
–	CSI-ResourceConfig.....	809
–	CSI-ResourceConfigId	810
–	CSI-ResourcePeriodicityAndOffset	810
–	CSI-RS-ResourceConfigMobility	810
–	CSI-RS-ResourceMapping	810
–	CSI-SemiPersistentOnPUSCH-TriggerStateList.....	811
–	CSI-SSB-ResourceSet.....	811
–	CSI-SSB-ResourceSetId.....	811
–	DataCollectionCandidateConfigId	812
–	DedicatedNAS-Message	812
–	DL-PPW-PreConfig	812
–	DMRS-BundlingPUCCH-Config	812
–	DMRS-BundlingPUSCH-Config	812
–	DMRS-DownlinkConfig	812
–	DMRS-UplinkConfig	813
–	DownlinkConfigCommon.....	813
–	DownlinkConfigCommonSIB	814
–	DownlinkPreemption.....	814
–	DRB-Identity	815
–	DRX-Config.....	815
–	DRX-ConfigSecondaryGroup.....	815
–	DRX-ConfigSL	815
–	EarlyUL-SyncConfig	816
–	EphemerisInfo	816
–	EpochTime	817
–	EUTRA-C-RNTI	817
–	FeatureCombination	817
–	FeatureCombinationPreambles	818
–	FilterCoefficient	818
–	FreqBandIndicatorNR.....	818
–	FreqPriorityListDedicatedSlicing	819
–	FreqPriorityListSlicing	819
–	FrequencyInfoDL	819
–	FrequencyInfoDL-SIB.....	820
–	FrequencyInfoUL	820
–	FrequencyInfoUL-SIB.....	820
–	GapOccasionRatio	821
–	GapPriority	821
–	HighSpeedConfig	821
–	Hysteresis	822
–	HysteresisAltitude	822
–	HysteresisLocation.....	822

–	<i>InvalidSymbolPattern</i>	822
–	<i>I-RNTI-Value</i>	822
–	<i>LBT-FailureRecoveryConfig</i>	823
–	<i>LocationInfo</i>	823
–	<i>LocationMeasurementInfo</i>	823
–	<i>LogicalChannelConfig</i>	823
–	<i>LogicalChannelIdentity</i>	824
–	<i>LTE-NeighCellsCRS-AssistInfoList</i>	825
–	<i>LTM-CandidateId</i>	825
–	<i>LTM-Candidate</i>	825
–	<i>LTM-Config</i>	826
–	<i>LTM-ConfigNRDC</i>	826
–	<i>LTM-CSI-ReportConfig</i>	826
–	<i>LTM-CSI-ReportConfigId</i>	827
–	<i>LTM-CSI-ResourceConfig</i>	828
–	<i>LTM-CSI-ResourceConfigId</i>	828
–	<i>LTM-ExecutionConditionList</i>	828
–	<i>LTM-CSI-SSB-ResourceSet</i>	828
–	<i>LTM-QCL-Info</i>	828
–	<i>LTM-ReportContent</i>	829
–	<i>LTM-SSB-Config</i>	829
–	<i>LTM-TCI-Info</i>	830
–	<i>MAC-CellGroupConfig</i>	831
–	<i>MeasConfig</i>	832
–	<i>MeasGapConfig</i>	833
–	<i>MeasGapId</i>	834
–	<i>MeasGapSharingConfig</i>	834
–	<i>MeasId</i>	835
–	<i>MeasIdleConfig</i>	835
–	<i>MeasIdToAddModList</i>	836
–	<i>MeasObjectCLI</i>	836
–	<i>MeasObjectEUTRA</i>	836
–	<i>MeasObjectId</i>	837
–	<i>MeasObjectNR</i>	837
–	<i>MeasObjectNR-SL</i>	838
–	<i>MeasObjectRxTxDiff</i>	838
–	<i>MeasObjectToAddModList</i>	839
–	<i>MeasObjectUTRA-FDD</i>	839
–	<i>MeasResultCellListSFTD-NR</i>	839
–	<i>MeasResultCellListSFTD-EUTRA</i>	840
–	<i>MeasResultForRSSI</i>	840
–	<i>MeasResults</i>	840
–	<i>MeasResult2EUTRA</i>	842
–	<i>MeasResult2NR</i>	842
–	<i>MeasResultIdleEUTRA</i>	842
–	<i>MeasResultIdleNR</i>	842
–	<i>MeasResultRxTxTimeDiff</i>	842
–	<i>MeasResultSCG-Failure</i>	843
–	<i>MeasResultsSL</i>	845
–	<i>MeasRSSI-ReportConfig</i>	846
–	<i>MeasSequence</i>	846
–	<i>MeasTriggerQuantity</i>	846
–	<i>MeasTriggerQuantityEUTRA</i>	846
–	<i>MeasTriggerQuantityOffset</i>	846
–	<i>MeasurementValidityDuration</i>	847
–	<i>MeasWindowConfig</i>	847
–	<i>MobilityStateParameters</i>	847
–	<i>MRB-Identity</i>	847
–	<i>MsgA-ConfigCommon</i>	847
–	<i>MsgA-PUSCH-Config</i>	848
–	<i>MultiFrequencyBandListNR</i>	848
–	<i>MultiFrequencyBandListNR-SIB</i>	849

–	MUSIM-GapConfig	849
–	MUSIM-GapId	849
–	MUSIM-GapInfo	849
–	N3C-IndirectPathConfigRelay	850
–	N3C-IndirectPathAddChange	850
–	N3C-RelayUE-Info	850
–	NCR-AperiodicFwdConfig	850
–	NCR-FwdConfig	850
–	NCR-PeriodicityAndOffset	850
–	NCR-PeriodicFwdResourceSet	851
–	NCR-PeriodicFwdResourceSetId	851
–	NCR-SemiPersistentFwdResourceSet	851
–	NCR-SemiPersistentFwdResourceSetId	851
–	NeedForGapsConfigNR	851
–	NeedForGapsInfoNR	851
–	NeedForGapNCSG-ConfigEUTRA	852
–	NeedForGapNCSG-ConfigNR	852
–	NeedForGapNCSG-InfoEUTRA	852
–	NeedForGapNCSG-InfoNR	852
–	NeedForInterruptionInfoNR	852
–	NextHopChainingCount	853
–	NG-5G-S-TMSI	853
–	NonCellDefiningSSB	853
–	NPN-Identity	853
–	NPN-IdentityInfoList	854
–	NR-DL-PRS-PDC-Info	854
–	NR-NS-PmaxList	855
–	NSAG-ID	856
–	NSAG-IdentityInfo	856
–	NTN-Config	856
–	NZP-CSI-RS-Resource	857
–	NZP-CSI-RS-ResourceId	857
–	NZP-CSI-RS-ResourceSet	857
–	NZP-CSI-RS-ResourceSetId	858
–	OD-SSB-Config	858
–	P-Max	858
–	PathlossReferenceRS	858
–	PathlossReferenceRS-Id	859
–	PCI-ARFCN-EUTRA	859
–	PCI-ARFCN-NR	859
–	PCI-List	859
–	PCI-Range	859
–	PCI-RangeElement	860
–	PCI-RangeIndex	860
–	PCI-RangeIndexList	860
–	PDCCCH-Config	860
–	PDCCCH-ConfigCommon	862
–	PDCCCH-ConfigSIB1	864
–	PDCCCH-ServingCellConfig	865
–	PDCCP-Config	865
–	PDSCH-Config	866
–	PDSCH-ConfigCommon	868
–	PDSCH-ServingCellConfig	868
–	PDSCH-TimeDomainResourceAllocationList	868
–	PDU-SessionID	869
–	PHR-Config	869
–	PhysCellId	869
–	PhysicalCellGroupConfig	870
–	PLMN-Identity	870
–	PLMN-IdentityInfoList	871
–	PLMN-IdentityList2	871
–	PRB-Id	871

–	PTRS-DownlinkConfig	872
–	PTRS-UplinkConfig	872
–	PUCCH-Config	872
–	PUCCH-ConfigCommon	878
–	PUCCH-ConfigurationList	878
–	PUCCH-CSI-Resource	879
–	PUCCH-PathlossReferenceRS-Id	879
–	PUCCH-PowerControl	879
–	PUCCH-ResourceId	879
–	PUCCH-SpatialRelationInfo	880
–	PUCCH-SpatialRelationInfo-Id	880
–	PUCCH-TPC-CommandConfig	880
–	PUSCH-Config	880
–	PUSCH-ConfigCommon	882
–	PUSCH-MutingResources	882
–	PUSCH-PowerControl	882
–	PUSCH-ServingCellConfig	883
–	PUSCH-TimeDomainResourceAllocationList	883
–	PUSCH-TPC-CommandConfig	885
–	QFI	885
–	Q-OffsetRange	885
–	Q-QualMin	886
–	Q-RxLevMin	886
–	QuantityConfig	886
–	RACH-ConfigCommon	887
–	RACH-ConfigCommonTwoStepRA	888
–	RACH-ConfigDedicated	889
–	RACH-ConfigGeneric	890
–	RACH-ConfigGenericTwoStepRA	890
–	RACH-ConfigTwoTA	891
–	RA-AdaptConfig	891
–	RA-Prioritization	891
–	RA-PrioritizationForSlicing	891
–	RadioBearerConfig	892
–	RadioLinkMonitoringConfig	896
–	RadioLinkMonitoringRS-Id	896
–	RAN-AreaCode	896
–	RandomAccessAdaptConfig	897
–	RateMatchPattern	897
–	RateMatchPatternId	897
–	RateMatchPatternLTE-CRS	897
–	ReferenceConfiguration	897
–	ReferenceLocation	898
–	ReferenceTimeInfo	898
–	RejectWaitTime	898
–	RepetitionSchemeConfig	899
–	ReportConfigId	899
–	ReportConfigInterRAT	899
–	ReportConfigNR	901
–	ReportConfigNR-SL	908
–	ReportConfigToAddModList	908
–	ReportInterval	909
–	ReselectionThreshold	909
–	ReselectionThresholdQ	909
–	ResumeCause	909
–	RLC-BearerConfig	909
–	RLC-Config	911
–	RLF-TimersAndConstants	912
–	RMTC-Config	913
–	RNTI-Value	913
–	RSRP-Range	913
–	RSRQ-Range	913

–	RSSI-Range	914
–	RxTxTimeDiff	914
–	SCellActivationRS-Config	914
–	SCellActivationRS-ConfigId	914
–	SCellIndex	914
–	SchedulingRequestConfig	914
–	SchedulingRequestId	915
–	SchedulingRequestResourceConfig	915
–	SchedulingRequestResourceId	916
–	ScramblingId	916
–	SCS-SpecificCarrier	916
–	SDAP-Config	917
–	SearchSpace	917
–	SearchSpaceId	919
–	SearchSpaceZero	919
–	SecurityAlgorithmConfig	919
–	SelectedPSCellForCHO-WithSCG	920
–	SemiStaticChannelAccessConfig	920
–	SemiStaticChannelAccessConfigUE	920
–	Sensor-LocationInfo	920
–	ServingCellAndBWP-Id	920
–	ServCellIndex	921
–	ServingCellConfig	921
–	ServingCellConfigCommon	926
–	ServingCellConfigCommonSIB	928
–	ShortI-RNTI-Value	929
–	ShortMAC-I	929
–	SINR-Range	929
–	SI-RequestConfig	930
–	SI-RequestConfigRepetition	930
–	SI-SchedulingInfo	931
–	SK-Counter	932
–	SK-CounterConfigLTM	932
–	SlotFormatCombinationsPerCell	932
–	SlotFormatIndicator	932
–	S-NSSAI	932
–	SpeedStateScaleFactors	933
–	SPS-Config	933
–	SPS-ConfigIndex	933
–	SPS-PUCCH-AN	933
–	SPS-PUCCH-AN-List	933
–	SRB-Identity	933
–	SRS-CarrierSwitching	934
–	SRS-Config	934
–	SRS-PosTx-Hopping	935
–	SRS-PosResourceSetLinkedForAggBW	936
–	SRS-RSRP-MeasResource	936
–	SRS-RSRP-MeasResourceId	936
–	SRS-RSRP-MeasResourceSet	936
–	SRS-RSRP-MeasResourceSetId	936
–	SRS-RSRP-Range	937
–	SRS-TPC-CommandConfig	937
–	SSB-Index	937
–	SSB-MTC	937
–	SSB-PositionQCL-Relation	938
–	SSB-ToMeasure	938
–	SS-RSSI-Measurement	938
–	SubcarrierSpacing	938
–	T-Reselection	939
–	SubsequentCondReconfig	939
–	TAG-Config	939
–	TAR-Config	940

–	<i>TCI-ActivatedConfig</i>	940
–	<i>TCI-State</i>	940
–	<i>TCI-StateId</i>	941
–	<i>TCI-UL-State</i>	941
–	<i>TCI-UL-StateId</i>	941
–	<i>TDD-UL-DL-ConfigCommon</i>	941
–	<i>TDD-UL-DL-ConfigDedicated</i>	942
–	<i>ThresholdP-LR</i>	943
–	<i>ThresholdQ-LR</i>	943
–	<i>TimeAlignmentTimer</i>	943
–	<i>TimeToTrigger</i>	943
–	<i>TN-AreaId</i>	943
–	<i>TrackingAreaCode</i>	944
–	<i>UAC-BarringInfoSetIndex</i>	944
–	<i>UAC-BarringInfoSetList</i>	944
–	<i>UAC-BarringPerCatList</i>	944
–	<i>UAC-BarringPerPLMN-List</i>	944
–	<i>UE-TimersAndConstants</i>	944
–	<i>UE-TimersAndConstantsRemoteUE</i>	945
–	<i>UL-DelayValueConfig</i>	945
–	<i>UL-ExcessDelayConfig</i>	945
–	<i>UL-GapFR2-Config</i>	945
–	<i>UplinkCancellation</i>	946
–	<i>UplinkConfigCommon</i>	946
–	<i>UplinkConfigCommonSIB</i>	946
–	<i>Uplink-PowerControl</i>	946
–	<i>Uu-RelayRLC-ChannelConfig</i>	947
–	<i>Uu-RelayRLC-ChannelID</i>	947
–	<i>UplinkTxDirectCurrentList</i>	948
–	<i>UplinkTxDirectCurrentMoreCarrierList</i>	948
–	<i>UplinkTxDirectCurrentTwoCarrierList</i>	948
–	<i>ZP-CSI-RS-Resource</i>	948
–	<i>ZP-CSI-RS-ResourceId</i>	948
–	<i>ZP-CSI-RS-ResourceSet</i>	949
–	<i>ZP-CSI-RS-ResourceSetId</i>	949
4.6.4	UE capability information elements	949
–	<i>AccessStratumRelease</i>	949
–	<i>AerialParameters</i>	949
–	<i>AIML-Parameters</i>	949
–	<i>AppLayerMeasParameters</i>	950
–	<i>BandCombinationList</i>	950
–	<i>BandCombinationListSidelinkEUTRA-NR</i>	950
–	<i>CA-BandwidthClassEUTRA</i>	951
–	<i>CA-BandwidthClassNR</i>	951
–	<i>CA-ParametersEUTRA</i>	951
–	<i>CA-ParametersNR</i>	951
–	<i>CA-ParametersNRDC</i>	952
–	<i>CarrierAggregationVariant</i>	952
–	<i>CodebookParameters</i>	952
–	<i>DL-PRS-MeasurementWithRxFH-RRC-Connected</i>	953
–	<i>ERedCapParameters</i>	953
–	<i>FeatureSetCombination</i>	953
–	<i>FeatureSetCombinationId</i>	954
–	<i>FeatureSetDownlink</i>	954
–	<i>FeatureSetDownlinkId</i>	955
–	<i>FeatureSetDownlinkPerCC</i>	955
–	<i>FeatureSetDownlinkPerCC-Id</i>	955
–	<i>FeatureSetEUTRA-DownlinkId</i>	955
–	<i>FeatureSetEUTRA-UplinkId</i>	955
–	<i>FeatureSets</i>	955
–	<i>FeatureSetUplink</i>	956
–	<i>FeatureSetUplinkId</i>	956

–	<i>FeatureSetUplinkPerCC</i>	957
–	<i>FeatureSetUplinkPerCC-Id</i>	957
–	<i>FreqBandIndicatorEUTRA</i>	957
–	<i>FreqBandList</i>	957
–	<i>FreqSeparationClass</i>	959
–	<i>FreqSeparationClassDL-Only</i>	959
–	<i>FR2-2-AccessParamsPerBand</i>	959
–	<i>HighSpeedParameters</i>	959
–	<i>IMS-Parameters</i>	959
–	<i>InterRAT-Parameters</i>	959
–	<i>MAC-Parameters</i>	960
–	<i>MeasAndMobParameters</i>	960
–	<i>MeasAndMobParametersMRDC</i>	961
–	<i>MIMO-Layers</i>	961
–	<i>MIMO-ParametersPerBand</i>	961
–	<i>ModulationOrder</i>	963
–	<i>MRDC-Parameters</i>	963
–	<i>NCR-Parameters</i>	964
–	<i>NRDC-Parameters</i>	964
–	<i>NTN-Parameters</i>	965
–	<i>OLPC-SRS-Pos</i>	966
–	<i>PDCCH-RACH-DL-Info</i>	966
–	<i>PDCCP-Parameters</i>	967
–	<i>PDCCP-ParametersMRDC</i>	967
–	<i>Phy-Parameters</i>	967
–	<i>Phy-ParametersMRDC</i>	969
–	<i>Phy-ParametersSharedSpectrumChAccess</i>	969
–	<i>PosSRS-BWA-RRC-Inactive</i>	970
–	<i>PosSRS-RRC-Inactive-OutsideInitialUL-BWP</i>	970
–	<i>PosSRS-TxFrequencyHoppingRRC-Connected</i>	970
–	<i>PosSRS-TxFrequencyHoppingRRC-ConnectedNonRedCap</i>	970
–	<i>PosSRS-TxFrequencyHoppingRRC-Inactive</i>	970
–	<i>PosSRS-TxFrequencyHoppingRRC-InactiveNonRedCap</i>	971
–	<i>PowSav-Parameters</i>	971
–	<i>ProcessingParameters</i>	971
–	<i>PRS-ProcessingCapabilityOutsideMGinPPWperType</i>	971
–	<i>RAT-Type</i>	971
–	<i>RedCapParameters</i>	972
–	<i>RF-Parameters</i>	972
–	<i>RF-ParametersMRDC</i>	974
–	<i>RLC-Parameters</i>	975
–	<i>SDAP-Parameters</i>	975
–	<i>SharedSpectrumChAccessParamsPerBand</i>	975
–	<i>SharedSpectrumChAccessParamsSidelinkPerBand</i>	975
–	<i>SidelinkParameters</i>	975
–	<i>SimultaneousRxTxPerBandPair</i>	976
–	<i>SON-Parameters</i>	976
–	<i>SpatialRelationsSRS-Pos</i>	976
–	<i>SRS-AllPosResourcesRRC-Inactive</i>	976
–	<i>SRS-SwitchingTimeNR</i>	976
–	<i>SRS-SwitchingTimeEUTRA</i>	977
–	<i>SupportedAggBandwidth</i>	977
–	<i>SupportedBandwidth</i>	977
–	<i>UE-BasedPerfMeas-Parameters</i>	977
–	<i>UE-CapabilityRAT-ContainerList</i>	977
–	<i>UE-CapabilityRAT-RequestList</i>	978
–	<i>UE-CapabilityRequestFilterCommon</i>	979
–	<i>UE-CapabilityRequestFilterNR</i>	980
–	<i>UE-MRDC-Capability</i>	980
–	<i>UE-NR-Capability</i>	982
–	<i>UE-RadioPagingInfo</i>	986
4.6.5	Other information elements	986

–	<i>AbsoluteTimeInfo</i>	986
–	<i>AppLayerIdleInactiveConfig</i>	986
–	<i>AppLayerMeasConfig</i>	986
–	<i>AreaConfiguration</i>	987
–	<i>BT-NameList</i>	987
–	<i>DedicatedInfoF1c</i>	987
–	<i>EUTRA-AllowedMeasBandwidth</i>	987
–	<i>EUTRA-MBSFN-SubframeConfigList</i>	987
–	<i>EUTRA-MultiBandInfoList</i>	988
–	<i>EUTRA-MultiBandInfoListAerial</i>	988
–	<i>EUTRA-NS-PmaxList</i>	988
–	<i>EUTRA-PhysCellId</i>	989
–	<i>EUTRA-PhysCellIdRange</i>	989
–	<i>EUTRA-PresenceAntennaPort1</i>	989
–	<i>EUTRA-Q-OffsetRange</i>	989
–	<i>IAB-IP-Address</i>	989
–	<i>IAB-IP-AddressIndex</i>	989
–	<i>IAB-IP-Usage</i>	990
–	<i>LoggingDuration</i>	990
–	<i>LoggingInterval</i>	990
–	<i>LogMeasResultListBT</i>	990
–	<i>LogMeasResultListWLAN</i>	990
–	<i>MeasConfigAppLayerId</i>	991
–	<i>OtherConfig</i>	991
–	<i>PhysCellIdUTRA-FDD</i>	991
–	<i>RRC-TransactionIdentifier</i>	991
–	<i>Sensor-NameList</i>	991
–	<i>TraceReference</i>	992
–	<i>UE-MeasurementsAvailable</i>	992
–	<i>UTRA-FDD-Q-OffsetRange</i>	992
–	<i>VisitedCellInfoList</i>	993
–	<i>WLAN-NameList</i>	993
4.6.6	Sidelink information elements	993
–	<i>SL-BWP-Config</i>	993
–	<i>SL-BWP-ConfigCommon</i>	994
–	<i>SL-BWP-DiscPoolConfig</i>	994
–	<i>SL-BWP-DiscPoolConfigCommon</i>	995
–	<i>SL-BWP-DiscPoolConfig</i>	995
–	<i>SL-BWP-DiscPoolConfigCommon</i>	995
–	<i>SL-BWP-PoolConfig</i>	996
–	<i>SL-BWP-PoolConfigCommon</i>	997
–	<i>SL-BWP-PRS-PoolConfig</i>	997
–	<i>SL-BWP-PRS-PoolConfigCommon</i>	998
–	<i>SL-CBR-PriorityTxConfigList</i>	998
–	<i>SL-CBR-CommonTxConfigList</i>	999
–	<i>SL-CBR-CommonTxDedicated-SL-PRS-RP-List</i>	999
–	<i>SL-ConfigDedicatedNR</i>	999
–	<i>SL-ConfiguredGrantConfig</i>	1002
–	<i>SL-ConfiguredGrantConfigDedicated-SL-PRS-RP</i>	1002
–	<i>SL-DestinationIdentity</i>	1003
–	<i>SL-DRX-Config</i>	1003
–	<i>SL-DRX-ConfigGC-BC</i>	1004
–	<i>SL-DRX-GC-BC-QoS</i>	1004
–	<i>SL-DRX-ConfigUC</i>	1004
–	<i>SL-DRX-ConfigUC-SemiStatic</i>	1005
–	<i>SL-FreqConfig</i>	1005
–	<i>SL-FreqConfigCommon</i>	1006
–	<i>SL-FreqSelectionConfig</i>	1007
–	<i>SL-IndirectPathAddChange</i>	1007
–	<i>SL-InterUE-CoordinationConfig</i>	1007
–	<i>SL-LBT-FailureRecoveryConfig</i>	1007
–	<i>SL-LogicalChannelConfig</i>	1008

–	SL-L2RelayUE-Config	1008
–	SL-L2RemoteUE-Config	1009
–	SL-MeasConfigCommon	1009
–	SL-MeasConfigInfo	1009
–	SL-MeasIdList	1010
–	SL-MeasObjectList	1010
–	SL-PagingIdentityRemoteUE	1010
–	SL-PBPS-CPS-Config	1010
–	SL-PDCP-Config	1011
–	SL-PosBWP-ConfigCommon	1011
–	SL-PRS-ResourcePool	1012
–	SL-PSBCH-Config	1014
–	SL-PSSCH-TxConfigList	1014
–	SL-QoS-FlowIdentity	1014
–	SL-QoS-Profile	1014
–	SL-QuantityConfig	1015
–	SL-RadioBearerConfig	1015
–	SL-RBSetConfig	1015
–	SL-RelayIndicationMP	1015
–	SL-RelayUE-Config	1015
–	SL-RelayUE-ConfigU2U	1016
–	SL-RemoteUE-Config	1016
–	SL-RemoteUE-ConfigU2U	1016
–	SL-ReportConfigList	1016
–	SL-ResourcePool	1017
–	SL-RLC-BearerConfig	1020
–	SL-RLC-BearerConfigIndex	1020
–	SL-RLC-ChannelConfig	1020
–	SL-RLC-ChannelID	1021
–	SL-RLC-Config	1021
–	SL-ScheduledConfig	1021
–	SL-SDAP-Config	1022
–	SL-ServingCellInfo	1022
–	SL-SourceIdentity	1023
–	SL-SRAP-Config	1023
–	SL-SRAP-ConfigU2U	1024
–	SL-SyncConfig	1024
–	SL-Thres-RSRP-List	1025
–	SL-TxPower	1025
–	SL-TypeTxSync	1025
–	SL-UE-SelectedConfig	1026
–	SL-ZoneConfig	1026
–	SLRB-Uu-ConfigIndex	1026
4.6.7	MBS information elements	1026
–	CarrierFreqListMBS	1026
–	CFR-ConfigMCCH-MTCH	1027
–	DRX-ConfigPTM	1027
–	MBS-NeighbourCellList	1027
–	MBS-NonServingInfoList	1028
–	MBS-ServiceList	1028
–	MBS-SessionInfoList	1028
–	MBS-SessionInfoListMulticast	1029
–	MTCH-SSB-MappingWindowList	1029
–	PDSCH-ConfigBroadcast	1030
–	TMGI	1031
4.7	Default 5GC NAS message and information elements contents	1031
4.7.0	General	1031
4.7.0.1	Interpretation of IE presence and values	1031
4.7.0.2	Security protected 5GS NAS messages	1031
4.7.1	Contents of 5GMM messages	1032
–	Authentication request	1032
–	Authentication response	1032

–	Authentication result	1033
–	Authentication failure.....	1033
–	Authentication reject	1034
–	Registration request	1034
–	Registration accept.....	1036
–	Registration complete.....	1039
–	Registration reject.....	1039
–	UL NAS transport.....	1040
–	DL NAS transport.....	1041
–	De-registration request (UE originating de-registration).....	1043
–	De-registration accept (UE originating de-registration).....	1044
–	De-registration request (UE terminated de-registration)	1044
–	De-registration accept (UE terminated de-registration).....	1045
–	Service request	1045
–	Service accept	1046
–	Service reject.....	1046
–	Configuration update command.....	1047
–	Configuration update complete.....	1048
–	Identity request.....	1048
–	Identity response	1048
–	Notification.....	1049
–	Notification response	1049
–	Security mode command	1049
–	Security mode complete.....	1051
–	Security mode reject.....	1051
–	Security protected 5GS NAS message	1051
–	5GMM status.....	1052
–	Control plane service request	1053
–	Network slice-specific authentication command.....	1054
–	Network slice-specific authentication complete	1054
–	Network slice-specific authentication result	1054
–	Relay key request	1055
–	Relay key accept.....	1055
–	Relay key reject	1055
–	Relay authentication request.....	1056
–	Relay authentication response	1056
4.7.2	Contents of 5GSM messages	1056
–	PDU session establishment request	1056
–	PDU session establishment accept.....	1058
–	PDU session establishment reject	1062
–	PDU session authentication command.....	1062
–	PDU session authentication complete.....	1062
–	PDU session authentication result.....	1063
–	PDU session modification request	1063
–	PDU session modification reject.....	1064
–	PDU session modification command	1064
–	PDU session modification complete	1065
–	PDU session modification command reject	1066
–	PDU session release request.....	1066
–	PDU session release reject	1066
–	PDU session release command.....	1067
–	PDU session release complete	1067
–	5GSM status	1067
–	Service-level authentication command.....	1068
–	Service-level authentication complete.....	1068
–	Remote UE report	1068
–	Remote UE report response	1068
4.7.3	Contents of EAP-AKA' messages.....	1069
4.7.3.1	EAP-AKA' message attributes	1069
4.7.3.2	EAP-AKA' messages	1071
4.7.4	Void	1074
4.7.5	Void	1074

4.7.6	Contents of UE Policy Delivery messages	1074
-	<i>MANAGE UE POLICY COMMAND</i>	1074
-	<i>MANAGE UE POLICY COMPLETE</i>	1075
-	<i>MANAGE UE POLICY COMMAND REJECT</i>	1075
-	<i>UE STATE INDICATION</i>	1075
-	<i>UE POLICY PROVISIONING REQUEST</i>	1076
-	<i>UE POLICY PROVISIONING REJECT</i>	1077
4.7.7	Void	1077
4.7A	Default TC message and information element contents	1077
4.7A.1	Test mode messages	1077
-	<i>ACTIVATE TEST MODE COMPLETE</i>	1077
-	<i>DEACTIVATE TEST MODE</i>	1077
-	<i>DEACTIVATE TEST MODE COMPLETE</i>	1077
4.7A.2	Test loop messages	1077
-	<i>CLOSE UE TEST LOOP</i>	1077
-	<i>CLOSE UE TEST LOOP COMPLETE</i>	1078
-	<i>OPEN UE TEST LOOP</i>	1078
-	<i>OPEN UE TEST LOOP COMPLETE</i>	1078
4.7A.3	Beamlock messages	1078
-	<i>ACTIVATE BEAMLOCK</i>	1078
-	<i>ACTIVATE BEAMLOCK COMPLETE</i>	1079
-	<i>DEACTIVATE BEAMLOCK</i>	1079
-	<i>DEACTIVATE BEAMLOCK COMPLETE</i>	1079
4.7A.4	UE SS-RSRP per receiver branch reporting messages	1080
-	<i>SS-RSRPB REPORT REQUEST</i>	1080
-	<i>SS-RSRPB REPORT RESPONSE</i>	1080
4.7A.5	UE Positioning messages	1080
-	<i>RESET UE POSITIONING STORED INFORMATION</i>	1080
-	<i>UPDATE UE LOCATION INFORMATION</i>	1080
4.7A.6	NSSAI delete messages	1080
-	<i>NSSAI DELETE REQUEST</i>	1080
-	<i>NSSAI DELETE RESPONSE</i>	1080
4.7A.7	UE Power Limit Messages	1081
-	<i>ACTIVATE POWER LIMIT REQUEST</i>	1081
-	<i>ACTIVATE POWER LIMIT RESPONSE</i>	1083
-	<i>DEACTIVATE POWER LIMIT REQUEST</i>	1083
-	<i>DEACTIVATE POWER LIMIT RESPONSE</i>	1083
4.7B	Default AT Command message and information element	1084
-	<i>AT Command +CATM</i>	1084
-	<i>AT Command +CCUTLE</i>	1084
-	<i>AT Command +CUTCR</i>	1084
-	<i>AT Command +CUSPCREQ</i>	1084
4.7C	Default 5G ProSe message and information elements contents	1084
4.7C.1	5G ProSe information elements	1084
4.7C.1.1	5G ProSe information elements for UE policy part	1084
-	<i>UE policy part when UE policy part type = {ProSeP}</i>	1084
-	<i>ProSeP contents</i>	1085
-	<i>ProSeP info</i>	1085
4.7C.1.2	5G ProSe information elements of UE policies for 5G ProSe direct discovery	1086
-	<i>ProSeP info = { UE policies for 5G ProSe direct discovery }</i>	1086
-	<i>Served by NG-RAN</i>	1087
-	<i>Authorization for direct discovery info</i>	1087
-	<i>Authorized PLMN info</i>	1088
-	<i>PLMN ID</i>	1088
-	<i>Not served by NG-RAN</i>	1089
-	<i>NR radio parameters per geographical area list</i>	1089
-	<i>Radio parameters per geographical area info</i>	1089
-	<i>Geographical area</i>	1090
-	<i>Coordinate area</i>	1090
-	<i>Radio parameters</i>	1090
-	<i>Default PC5 DRX configuration</i>	1090
-	<i>Groupcast parameters</i>	1090

–	Application layer group info	1091
–	ProSe identifiers.....	1091
–	ProSe identifier to default destination layer-2 ID for initial discovery signalling mapping rules	1091
–	ProSe identifier to default destination layer-2 ID for initial discovery signalling mapping rule	1091
4.7C.1.3	5G ProSe information elements of UE policies for 5G ProSe direct communications	1092
–	ProSeP info = {UE policies for 5G ProSe direct communications}.....	1092
–	Served by NG-RAN.....	1092
–	Authorized PLMN	1092
–	PLMN ID.....	1093
–	Not served by NG-RAN	1093
–	Radio parameters per geographical area list	1093
–	Radio parameters per geographical area info	1094
–	Geographical area	1094
–	Coordinate area	1094
–	Radio parameters.....	1095
–	Privacy config	1095
–	ProSe applications requiring privacy	1095
–	ProSe applications requiring privacy	1095
–	ProSe identifiers.....	1096
–	Geographical areas.....	1096
–	5G ProSe direct communication in NR-PC5.....	1096
–	ProSe identifier to ProSe NR frequency mapping rules.....	1097
–	ProSe identifier to ProSe NR frequency mapping rule	1097
–	ProSe NR frequencies with geographical areas list.....	1097
–	ProSe NR frequencies with geographical areas info	1097
–	ProSe NR frequencies	1097
–	ProSe identifier to destination layer-2 ID for broadcast mapping rules.....	1098
–	ProSe identifier to destination layer-2 ID for broadcast mapping rule	1098
–	Groupcast parameters.....	1098
–	Application layer group info	1098
–	ProSe identifier to destination layer-2 ID for unicast initial signalling mapping rules.....	1099
–	ProSe identifier to destination layer-2 ID for unicast initial signalling mapping rule	1099
–	ProSe identifier to PC5 QoS parameters mapping rules	1099
–	ProSe identifier to PC5 QoS parameters mapping rule	1100
–	AS configuration	1100
–	SLRB mapping rules.....	1100
–	SLRB mapping rule	1100
–	PC5 QoS profile	1101
–	NR-PC5 unicast security policies.....	1101
–	NR-PC5 unicast security policy	1102
–	Security policy.....	1102
–	ProSe identifier to default mode of communication mapping rules	1102
–	ProSe identifier to default mode of communication mapping rule.....	1102
–	ProSe identifier to destination layer-2 ID for groupcast mapping rules.....	1103
–	ProSe identifier to destination layer-2 ID for groupcast mapping rule	1103
–	ProSe application to path preference mapping rules.....	1103
–	ProSe application to path preference mapping rule	1103
–	ProSe identifiers to NR Tx profile for broadcast and groupcast mapping rules.....	1104
–	ProSe identifiers to NR Tx profile for broadcast and groupcast mapping rule	1104
4.7C.1.4	5G ProSe information elements of UE policies for 5G ProSe UE-to-network relay UE	1104
–	ProSeP Info = {UE policies for 5G ProSe UE-to-network relay UE}	1104
–	Served by NG-RAN.....	1105
–	Authorized PLMN list.....	1105
–	PLMN ID.....	1105
–	Not served by NG-RAN	1105
–	NR radio parameters per geographical area list for UE-to-network relay discovery	1106
–	NR radio parameters per geographical area list for UE-to-network relay communication	1106
–	Radio parameters per geographical area info	1106
–	Geographical area	1107
–	Coordinate area	1107
–	Radio parameters.....	1107
–	Default PC5 DRX configuration for UE-to-network relay discovery	1107

–	Default destination layer-2 IDs for sending the discovery signalling for announcement and additional information and for receiving the discovery signalling for solicitation.....	1108
–	RSC info list	1108
–	RSC info	1108
–	RSC list.....	1108
–	Security related parameters for discovery	1109
–	Code-sending security parameters.....	1109
–	Code-receiving security parameters	1109
–	NR-PC5 UE-to-network relay security policies	1110
–	PDU session parameters for layer-3 relay UE	1110
–	5QI to PC5 QoS parameters mapping rules	1110
–	5QI to PC5 QoS parameters mapping rule	1110
–	ProSe identifier to ProSe application server address mapping rules	1111
–	ProSe identifier to ProSe application server address mapping rule	1111
–	ProSe identifiers.....	1111
–	ProSe identifier	1111
–	5G PKMF address information.....	1112
–	IPv4 address list.....	1112
–	IPv6 address list.....	1112
4.7C.1.5	5G ProSe information elements of UE policies for 5G ProSe remote UE	1112
–	ProSeP Info = {UE policies for 5G ProSe remote UE}	1112
–	Served by NG-RAN.....	1113
–	Authorized PLMN list.....	1113
–	PLMN ID	1113
–	Not served by NG-RAN	1114
–	NR radio parameters per geographical area list for UE-to-network relay discovery	1114
–	NR radio parameters per geographical area list for UE-to-network relay communication	1114
–	Radio parameters per geographical area info	1115
–	Geographical area	1115
–	Coordinate area	1115
–	Radio parameters.....	1115
–	Default PC5 DRX configuration for UE-to-network relay discovery	1116
–	Default destination layer-2 IDs for sending the discovery signalling for solicitation and for receiving the discovery signalling for announcement and additional information	1116
–	RSC info list	1116
–	RSC info	1116
–	RSC list.....	1117
–	Security related parameters for discovery	1117
–	Code-sending security parameters.....	1117
–	Code-receiving security parameters	1118
–	NR-PC5 UE-to-network relay security policies	1118
–	PDU session parameters for layer-3 relay UE	1118
–	Traffic descriptor	1119
4.7C.1.6	5G ProSe information elements of UE policies for 5G ProSe usage information reporting	1119
–	ProSeP Info = {UE policies for 5G ProSe usage information reporting }	1119
4.7C.1.7	5G ProSe information elements of UE policies for 5G ProSe UE-to-UE relay UE	1120
–	ProSeP Info = {UE policies for 5G ProSe UE-to-UE relay UE}.....	1120
–	Served by NG-RAN.....	1120
–	Authorized PLMN list.....	1120
–	PLMN ID.....	1121
–	Not served by NG-RAN	1121
–	NR radio parameters per geographical area list for UE-to-UE relay discovery	1121
–	NR radio parameters per geographical area list for UE-to-UE relay communication.....	1122
–	Radio parameters per geographical area info	1122
–	Geographical area	1122
–	Coordinate area	1122
–	Radio parameters.....	1123
–	Default PC5 DRX configuration for UE-to-UE relay discovery.....	1123
–	Default destination layer-2 IDs for sending the discovery signalling for announcement and for sending and receiving the discovery signalling for solicitation	1123
–	RSC info list	1123
–	RSC info	1124

–	RSC list.....	1124
–	Default destination layer-2 ID(s) for sending or receiving the direct communication signalling for 5G ProSe UE-to-UE relay communication with integrated discovery	1124
4.7C.1.8	5G ProSe information elements of UE policies for 5G ProSe end UE	1125
4.7C.2	Contents of 5G ProSe direct discovery messages	1125
–	PROSE PC5 DISCOVERY	1125
–	PROSE PC5 DISCOVERY	1130
4.7C.3	Contents of ProSe PC5 signalling messages.....	1132
–	PROSE DIRECT LINK ESTABLISHMENT REQUEST	1132
–	PROSE DIRECT LINK ESTABLISHMENT ACCEPT.....	1133
–	PROSE DIRECT LINK ESTABLISHMENT REJECT.....	1134
–	PROSE DIRECT LINK RELEASE REQUEST	1135
–	PROSE DIRECT LINK RELEASE ACCEPT.....	1135
–	PROSE DIRECT LINK MODIFICATION REQUEST	1135
–	PROSE DIRECT LINK MODIFICATION ACCEPT	1137
–	PROSE DIRECT LINK KEEPALIVE REQUEST	1138
–	PROSE DIRECT LINK KEEPALIVE RESPONSE.....	1138
–	PROSE DIRECT LINK AUTHENTICATION REQUEST	1139
–	PROSE DIRECT LINK AUTHENTICATION RESPONSE	1139
–	PROSE DIRECT LINK AUTHENTICATION REJECT	1140
–	PROSE DIRECT LINK SECURITY MODE COMMAND	1140
–	PROSE DIRECT LINK SECURITY MODE COMPLETE	1141
–	PROSE DIRECT LINK SECURITY MODE REJECT	1142
–	PROSE DIRECT LINK REKEYING REQUEST	1143
–	PROSE DIRECT LINK REKEYING RESPONSE	1143
–	PROSE DIRECT LINK IDENTIFIER UPDATE REQUEST	1144
–	PROSE DIRECT LINK IDENTIFIER UPDATE ACCEPT.....	1144
–	PROSE DIRECT LINK IDENTIFIER UPDATE ACK	1145
–	PROSE DIRECT LINK IDENTIFIER UPDATE REJECT.....	1146
–	PROSE DIRECT LINK MODIFICATION REJECT	1146
–	PROSE DIRECT LINK AUTHENTICATION FAILURE.....	1147
4.7C.4	Contents of 5G ProSe discovery and security messages over PC3a	1147
–	DISCOVERY_REQUEST	1147
–	DISCOVERY_RESPONSE	1148
–	MATCH_REPORT	1153
–	MATCH_REPORT_ACK.....	1154
–	DISCOVERY_UPDATE_REQUEST	1154
–	DISCOVERY_UPDATE_RESPONSE	1155
–	ANNOUNCING_ALERT_REQUEST	1155
–	ANNOUNCING_ALERT_RESPONSE	1156
4.7D	Default V2X message and information elements contents	1156
4.7D.1	Contents of V2X messages	1156
–	DIRECT LINK ESTABLISHMENT REQUEST	1156
–	DIRECT LINK ESTABLISHMENT ACCEPT.....	1157
–	DIRECT LINK MODIFICATION REQUEST	1158
–	DIRECT LINK MODIFICATION ACCEPT.....	1159
–	DIRECT LINK RELEASE REQUEST	1160
–	DIRECT LINK RELEASE ACCEPT.....	1161
–	DIRECT LINK KEEPALIVE REQUEST	1161
–	DIRECT LINK KEEPALIVE RESPONSE	1162
–	DIRECT LINK AUTHENTICATION REQUEST.....	1162
–	DIRECT LINK AUTHENTICATION RESPONSE.....	1162
–	DIRECT LINK AUTHENTICATION REJECT	1163
–	DIRECT LINK SECURITY MODE COMMAND	1163
–	DIRECT LINK SECURITY MODE COMPLETE	1164
–	DIRECT LINK SECURITY MODE REJECT	1165
–	DIRECT LINK REKEYING REQUEST.....	1166
–	DIRECT LINK REKEYING RESPONSE.....	1166
–	DIRECT LINK IDENTIFIER UPDATE REQUEST	1167
–	DIRECT LINK IDENTIFIER UPDATE ACCEPT	1167
–	DIRECT LINK IDENTIFIER UPDATE ACK.....	1168
–	DIRECT LINK IDENTIFIER UPDATE REJECT	1169

–	<i>DIRECT LINK MODIFICATION REJECT</i>	1170
–	<i>DIRECT LINK ESTABLISHMENT REJECT</i>	1170
4.7D.2	V2X information elements	1171
4.7D.2.1	V2X information elements for UE policy part	1171
–	<i>UE policy part when UE policy part type = {V2XP}</i>	1171
–	<i>V2XP contents</i>	1171
–	<i>V2XP info</i>	1171
4.7D.2.2	V2X information elements of UE policies for V2X communication over PC5	1171
–	<i>V2XP info = {UE policies for V2X communication over PC5}</i>	1171
–	<i>Served by E-UTRA or served by NR</i>	1172
–	<i>Authorized PLMN and RATs combinations</i>	1172
–	<i>Authorized PLMN and RATs combination</i>	1172
–	<i>PLMN ID</i>	1173
–	<i>Not served by E-UTRA and not served by NR</i>	1173
–	<i>Radio parameters per geographical area list</i>	1174
–	<i>Radio parameters per geographical area info</i>	1174
–	<i>Geographical area</i>	1174
–	<i>Coordinate area</i>	1174
–	<i>Radio parameters</i>	1175
–	<i>V2X service identifier to PC5 RAT and Tx profiles mapping rules</i>	1175
–	<i>V2X service identifier to PC5 RAT and Tx profiles mapping rule</i>	1175
–	<i>V2X service identifiers</i>	1176
–	<i>Privacy config</i>	1176
–	<i>V2X services requiring privacy</i>	1176
–	<i>V2X service requiring privacy</i>	1177
–	<i>Geographical areas</i>	1177
–	<i>V2X communication over PC5 in E-UTRA-PC5</i>	1177
–	<i>V2X service identifier to destination layer-2 ID mapping rules</i>	1178
–	<i>V2X service identifier to destination layer-2 ID mapping rule</i>	1178
–	<i>PPPP to PDB mapping rules</i>	1178
–	<i>PPPP to PDB mapping rule</i>	1178
–	<i>V2X service identifier to V2X E-UTRA frequency mapping rules</i>	1178
–	<i>V2X service identifier to V2X E-UTRA frequency mapping rule</i>	1179
–	<i>V2X E-UTRA frequencies with geographical areas list</i>	1179
–	<i>V2X E-UTRA frequencies with geographical areas info</i>	1179
–	<i>V2X E-UTRA frequencies</i>	1179
–	<i>V2X services authorized for PPPR</i>	1180
–	<i>V2X service authorized for PPPR</i>	1180
–	<i>V2X communication over PC5 in NR-PC5</i>	1180
–	<i>V2X service identifier to V2X NR frequency mapping rules</i>	1181
–	<i>V2X service identifier to V2X NR frequency mapping rule</i>	1181
–	<i>V2X NR frequencies with geographical areas list</i>	1181
–	<i>V2X NR frequencies with geographical areas info</i>	1182
–	<i>V2X NR frequencies</i>	1182
–	<i>V2X service identifier to destination layer-2 ID for broadcast mapping rules</i>	1182
–	<i>V2X service identifier to destination layer-2 ID for broadcast mapping rule</i>	1182
–	<i>V2X service identifier to destination layer-2 ID for groupcast mapping rules</i>	1183
–	<i>V2X service identifier to destination layer-2 ID for groupcast mapping rule</i>	1183
–	<i>V2X service identifier to destination layer-2 ID for unicast initial signalling mapping rules</i>	1183
–	<i>V2X service identifier to destination layer-2 ID for unicast initial signalling mapping rule</i>	1183
–	<i>V2X service identifier to PC5 QoS parameters mapping rules</i>	1184
–	<i>V2X service identifier to PC5 QoS parameters mapping rule</i>	1184
–	<i>AS configuration</i>	1184
–	<i>SLRB mapping rules</i>	1185
–	<i>SLRB mapping rule</i>	1185
–	<i>PC5 QoS profile</i>	1185
–	<i>NR-PC5 unicast security policies</i>	1186
–	<i>NR-PC5 unicast security policy</i>	1186
–	<i>Security policy</i>	1186
–	<i>V2X service identifier to default mode of communication mapping rules</i>	1186
–	<i>V2X service identifier to default mode of communication mapping rule</i>	1187
4.7E	Default HTTP messages for communication with 5G ProSe	1187

-	<i>HTTP Request</i>	1187
-	<i>HTTP Response</i>	1187
4.7F	Default TLS message and information element contents for communication with 5G ProSe	1188
-	<i>ClientHello</i>	1188
-	<i>ServerHello</i>	1188
-	<i>ServerKeyExchange</i>	1188
-	<i>ServerHelloDone</i>	1189
-	<i>ClientKeyExchange</i>	1189
-	<i>ChangeCipherSpec</i>	1189
-	<i>Finished</i>	1189
4.8	Reference configurations	1190
4.8.1	Radio configurations	1190
4.8.2	5GC configurations	1200
4.8.2.1	Reference QoS rules	1200
4.8.2.2	Reference packet filters	1206
4.8.2.3	Reference QoS flow descriptions	1211
4.8.3	Common test UICC and USIM parameters	1215
4.8.3.1	General	1215
4.8.3.2	Default parameters for the test USIM and ISIM	1216
4.8.3.3	Default settings for the Elementary Files (EFs)	1216
4.8.3.3.1	Modified contents of the USIM Elementary Files	1216
4.8.3.3.2	Contents of Elementary Files at the DF _{5GS} level	1216
4.8.3.3.3	Default settings of UICC and USIM for V2X	1217
4.8.3.3.4	Default settings of UICC and USIM for 5G ProSe	1218
4.8.4	DNN/APN configurations	1222
4.8.5	URSP configurations	1224
4.8.5.1	General	1224
4.8.5.2	UE Route Selection Policy Rules	1224
4.8.5.3	Route Selection Descriptors	1224
4.9	Test procedures	1225
4.9.1	Test procedure to check user plane connectivity on DRB#n	1225
4.9.2	Test procedure to activate UE Beamlock Test Function (UBF)	1226
4.9.3	Test procedure to deactivate UE Beamlock Test Function (UBF)	1227
4.9.4	Test procedure to check that UE is in state 5GC RRC_IDLE on a certain NR/NGC cell	1228
4.9.5	Test procedure to check that UE is camped on a new NR/NGC cell belonging to a new TA	1228
4.9.6	Test procedures for Switch off / Power off UE	1229
4.9.6.1	Switch off / Power off procedure in RRC_IDLE	1229
4.9.6.2	Switch off / Power off procedure in RRC_INACTIVE	1230
4.9.6.3	Switch off / Power off procedure in RRC_CONNECTED	1231
4.9.6.3A	Switch off / Power off procedure in RRC_CONNECTED with T3540 started	1232
4.9.6.4	Switch off / Power off procedure in State DEREGISTERED	1232
4.9.6.5	Switch off / Power off procedure in WLAN Ipsec_SA_Established	1233
4.9.6.6	Switch off / Power off procedure in MA PDU session Established on NR and WLAN	1233
4.9.7	Test procedure for UE for Tracking area updating / Inter-system change from N1 mode to S1 mode in 5GMM/EMM-IDLE mode	1234
4.9.8	Test procedure for Registration Reject	1237
4.9.9	Test procedure for UE for Tracking area updating / Inter-system change from S1 mode to N1 mode in 5GMM/EMM-IDLE mode	1238
4.9.10	Test procedure to check that the UE is in RRC_CONNECTED state	1244
4.9.11	Test procedure for IMS Emergency call or eCall over IMS establishment in 5GC with IMS emergency registration	1244
4.9.12	Test procedure for IMS Emergency call establishment in 5GC without IMS emergency registration	1248
4.9.12A	Test procedure for IMS MO Emergency call release	1252
4.9.12B	Test procedure for IMS MT Emergency call release	1255
4.9.13	Test procedure for no response to paging	1257
4.9.14	Void	1258
4.9.15	Test procedure for IMS MO speech call establishment in 5GC	1258
4.9.16	Test procedure for IMS MT speech call establishment in 5GC	1260
4.9.17	Test procedure for IMS MO call release in 5GC	1262
4.9.18	Test procedure for IMS MT call release in 5GC	1265
4.9.19	Test procedure for IMS MO SMS in 5GC	1268
4.9.20	Test procedure for IMS MT SMS in 5GC	1269

4.9.21	Test procedure for PDU Session Release	1270
4.9.22	Test procedure for establishing unicast mode NR sidelink communication / Initiating UE side	1271
4.9.23	Test procedure for establishing unicast mode NR sidelink communication / Peer UE side	1274
4.9.24	Test procedure for IMS MO Video call establishment in 5GC.....	1275
4.9.25	Test procedure for UE Configuration Update for transparent UE Policy delivery	1277
4.9.26	Test procedure for IMS MT video call establishment in 5GC.....	1278
4.9.27	Test procedure for adding video to a speech call in 5GC	1281
4.9.28	Test procedure for removing video from an ongoing call in 5GC	1283
4.9.29	Test Procedure for eCall over IMS establishment in 5GS: eCall Only Support	1284
4.9.30	Test procedure for releasing unicast mode NR sidelink communication.....	1285
4.9.31	Test procedure to check user plane connectivity on established sidelink DRB	1286
4.9.32	Test procedure to activate UE Power Limit Function (UPLF)	1290
4.9.33	Test procedure to deactivate UE Power Limit Function (UPLF).....	1292
4.9.34	Test procedure for MBS Multicast session join and session establishment	1293
4.9.35	Test procedure for deleting configured S-NSSAI, default configured S-NSSAI and allowed S-NSSAI.....	1298
4.9.36	Test procedure for registration of a MUSIM UE	1299
4.9.37	Test procedure for MBS Multicast session release	1301
4.9.38	Test procedure to check TMGI and associated MRB reception in a multicast MBS session	1302
4.9.39	Test procedure for establishing unicast mode ProSe Direct communication / Initiating UE side	1304
4.9.40	Test procedure for establishing unicast mode ProSe Direct communication / Peer UE side	1306
4.9.41	Test procedure for 5G ProSe Layer-2 U2N Relay initial access / Relay UE side.....	1307
4.9.42	Test procedure for 5G ProSe Layer-2 U2N Relay initial access / Remote UE side.....	1310
4.9.43	Test procedure for 5G ProSe U2N Relay Discovery	1312
4.9.44	Test procedure for UUAA-MM.....	1314
4.9.45	Test procedure to check 5G ProSe L2 U2N Remote UE in RRC_CONNECTED performs an RRC Reestablishment procedure on a certain L2 U2N Relay UE.....	1316
4.9.46	Test procedure for adding RTT to a speech call in 5GC.....	1317
4.9.47	Test procedure for IMS Emergency call and RTT.....	1319
4.9.48	Test procedure for removing RTT from an ongoing call in 5GC	1323
4.9.49	Test procedure for IMS bootstrap data channel establishment in 5GC.....	1324
4.10	Reference configuration for Sidelink	1327
4.10.1	Pre-configuration for Sidelink	1327
4.11	GNSS Requirements for NR sidelink.....	1329
4.11.1	General.....	1329
4.11.2	GNSS Scenarios.....	1329
4.12	Radio Information Related to Discovery Message	1331
4.12.1	Access Information for sidelink relay	1331
–	<i>SL-AccessInfo-L2U2N</i>	1331
4.13	Reference Configuration for IDC.....	1331
4.14	Configuration for application layer measurements.....	1333
5	Test environments for RF test	1334
5.0	General	1334
5.0.1	Single PDU configuration for RF testing.....	1334
5.1	Requirements of test equipment	1334
5.1.1	Requirements for transmission and reception tests.....	1334
5.1.1.1	Requirements common for conducted and OTA tests.....	1334
5.1.1.2	Requirements for conducted tests	1334
5.1.1.3	Requirements for OTA tests.....	1334
5.1.1.3.1	DFF and DFF with simplification for centre of beam measurements.....	1334
5.1.1.3.2	IFF	1335
5.1.1.3.3	NFTF	1335
5.1.2	Requirements for performance tests	1336
5.1.2.1	Void.....	1336
5.1.2.2	Void.....	1336
5.1.2.3	Requirements for OTA test method	1336
5.2	Reference test conditions.....	1336
5.2.1	Signal levels.....	1336
5.2.1.1	Signal Levels for conducted testing	1336
5.2.1.2	Signal Levels for OTA testing	1336
5.2.1.2.1	Downlink Signal Levels.....	1336

5.2.2	Test Frequencies	1336
5.2.2.1	NR operating bands in FR1	1336
5.2.2.1.1	Reference test frequencies for NR operating band n1	1336
5.2.2.1.2	Reference test frequencies for NR operating band n2	1337
5.2.2.1.3	Reference test frequencies for NR operating band n3	1338
5.2.2.1.4	FFS	1339
5.2.2.1.5	Reference test frequencies for NR operating band n5	1339
5.2.2.1.6	FFS	1339
5.2.2.1.7	Reference test frequencies for NR operating band n7	1339
5.2.2.1.8	Reference test frequencies for NR operating band n8	1340
5.2.2.1.9 - 5.2.2.1.11	FFS	1340
5.2.2.1.12	Reference test frequencies for NR operating band n12	1340
5.2.2.1.13	Reference test frequencies for NR operating band n13	1341
5.2.2.1.14	Reference test frequencies for NR operating band n14	1341
5.2.2.1.15 –		
	5.2.2.1.19	FFS
	.....	1342
5.2.2.1.20	Reference test frequencies for NR operating band n20	1342
5.2.2.1.21 –		
	5.2.2.1.23	FFS
	.....	1342
5.2.2.1.24	Reference test frequencies for NR operating band n24	1342
5.2.2.1.25	Reference test frequencies for NR operating band n25	1343
5.2.2.1.26	Reference test frequencies for NR operating band n26	1343
5.2.2.1.27	FFS	1344
5.2.2.1.28	Reference test frequencies for NR operating band n28	1344
5.2.2.1.29	FFS	1344
5.2.2.1.30	Reference test frequencies for NR operating band n30	1344
5.2.2.1.31	Reference test frequencies for NR operating band n31	1345
5.2.2.1.32 –		
	5.2.2.1.37	FFS
	.....	1345
5.2.2.1.38	Reference test frequencies for NR operating band n38	1345
5.2.2.1.39	Reference test frequencies for NR operating band n39	1346
5.2.2.1.40	Reference test frequencies for NR operating band n40	1347
5.2.2.1.41	Reference test frequencies for NR operating band n41	1347
5.2.2.1.42 –		
	5.2.2.1.47	FFS
	.....	1348
5.2.2.1.48	Reference test frequencies for NR operating band n48	1348
5.2.2.1.49	FFS	1349
5.2.2.1.50	Reference test frequencies for NR operating band n50	1349
5.2.2.1.51 –		
	5.2.2.1.64	FFS
	.....	1350
5.2.2.1.65	Reference test frequencies for NR operating band n65	1350
5.2.2.1.66	Reference test frequencies for NR operating band n66	1350
5.2.2.1.67 –		
	5.2.2.1.69	FFS
	.....	1352
5.2.2.1.70	Reference test frequencies for NR operating band n70	1352
5.2.2.1.71	Reference test frequencies for NR operating band n71	1353
5.2.2.1.72	Reference test frequencies for NR operating band n72	1353
5.2.2.1.73	FFS	1354
5.2.2.1.74	Reference test frequencies for NR operating band n74	1354
5.2.2.1.75 –		
	5.2.2.1.76	FFS
	.....	1355
5.2.2.1.77	Reference test frequencies for NR operating band n77	1355
5.2.2.1.78	Reference test frequencies for NR operating band n78	1355
5.2.2.1.79	Reference test frequencies for NR operating band n79	1356

5.2.2.1.80 –	5.2.2.1.84.....	FFS
	.....	1356
5.2.2.1.85	Reference test frequencies for NR operating band n85	1356
5.2.2.1.86	FFS	1357
5.2.2.1.87	Reference test frequencies for NR operating band n87	1357
5.2.2.1.88	Reference test frequencies for NR operating band n88	1358
5.2.2.1.89 –	5.2.2.1.103.....	FFS
	.....	1358
5.2.2.1.104	Reference test frequencies for NR operating band n104	1358
5.2.2.1.105	Reference test frequencies for NR operating band n105	1359
5.2.2.1.106 –	5.2.2.1.108.....	FFS
	.....	1359
5.2.2.1.109	Reference test frequencies for NR operating band n109	1359
5.2.2.1.110	Reference test frequencies for NR operating band n110	1360
5.2.2.2	NR operating bands in FR2.....	1360
5.2.2.2.1	Reference test frequencies for NR operating band n257	1360
5.2.2.2.2	Reference test frequencies for NR operating band n258	1361
5.2.2.2.3	Reference test frequencies for NR operating band n259	1361
5.2.2.2.4	Reference test frequencies for NR operating band n260	1362
5.2.2.2.5	Reference test frequencies for NR operating band n261	1363
5.2.2.3	NR NTN operating bands.....	1363
5.2.2.3.1	Reference test frequencies for NR operating band n256	1363
5.2.2.3.2	Reference test frequencies for NR operating band n255	1364
5.2.2.3.3	Reference test frequencies for NR operating band n254	1364
5.2.2.3.4	FFS	1365
5.2.2.3.5	Reference test frequencies for NR operating band n252	1365
5.2.2.4	Test frequencies for EN-DC band combinations within FR1.....	1365
5.2.2.4.1	FFS	1365
5.2.2.4.2	FFS	1365
5.2.2.4.3	Intra-band non-contiguous EN-DC configurations within FR1.....	1365
5.3	Void.....	1369
5.4	Default NG-RAN RRC message and information elements contents	1369
5.4.1	Radio resource control information elements	1369
5.4.2	Radio resource control information elements for Demodulation Performance and CSI reporting tests	1375
5.4.2.0	Parameters common to all Demod and CSI tests	1375
5.4.2.1	Message contents for PDSCH Demodulation requirements.....	1395
5.4.2.2	Message contents for PDCCH Demodulation requirements	1396
5.4.2.3	Message contents for Sustained downlink data rate requirements	1398
5.4.2.4	Message contents for CQI reporting requirements.....	1407
5.4.2.5	Message contents for PMI reporting requirements	1414
5.4.2.6	Message contents for RI reporting requirements.....	1425
5.4.3	Sidelink information elements for Demodulation Performance tests	1433
5.5	Common procedures for RF testing.....	1434
5.5.1	Procedure to configure SCC for NR RF CA testing	1434
5.5.2	Procedure to configure SCC for EN-DC RF CA testing.....	1435
5.6	Test environment for NTN testing	1436
5.6.1	UE location	1436
5.6.2	Ephemeris Information	1436
5.6.2.0	Assumptions for Ephemeris generation	1436
5.6.2.1	Ephemeris for zero Doppler conditions.....	1437
5.6.2.2	Ephemeris for non-zero Doppler conditions	1438
5.6.3	NR NTN message contents for RF Tx/Rx, Demodulation tests	1438
5.6.3.1	SIB19 IE values	1438
5.6.4	FFS.....	1439
5.7	Test environment for ATG testing	1439
5.7.1	NR ATG message contents for RF Tx/Rx, Demodulation tests	1439
5.7.1.1	<i>atg-Config-r18</i> values in SIB22	1439
5.7.2	UE location	1439

6	Test environments for Signalling test.....	1439
6.1	Requirements of test equipment	1439
6.1.1	Requirements common for conducted and OTA tests	1439
6.1.2	Requirements for conducted test method.....	1440
6.1.3	Requirements for OTA test method.....	1441
6.1.3.1	General.....	1441
6.1.3.2	Sample OTA Measurement Test Setup.....	1441
6.1.3.3	Procedure for selecting UE Orientation and for calibration	1441
6.1.3.4	Handling of Thresholds.....	1442
6.1.4	Requirements for timer tolerances	1442
6.2	Reference test conditions.....	1443
6.2.1	Physical Channel Allocations	1443
6.2.1.1	Antennas	1443
6.2.1.2	Downlink physical channels and physical signals.....	1443
6.2.1.3	Sidelink physical channels and physical signals	1444
6.2.2	Signal levels.....	1445
6.2.2.1	Signal Levels for conducted testing	1445
6.2.2.1.1	Measurement accuracy and side conditions.....	1447
6.2.2.2	Signal Levels for OTA testing	1447
6.2.2.2.1	General	1447
6.2.2.2.2	Signal Levels for FR2 OTA NR cells.....	1447
6.2.2.2.3	Signal Levels for FR1 OTA NR cell(s) with FR2 OTA NR cell(s).....	1448
6.2.2.2.4	Signal Levels for OTA E-UTRA cell(s) with FR2 OTA NR cell(s)	1449
6.2.2.2.5	Signal Levels for OTA UTRA cell(s) with FR2 OTA NR cell(s)	1450
6.2.2.2.6	Signal Levels for OTA GERAN cell(s) with FR2 OTA NR cell(s)	1450
6.2.3	Default test frequencies	1451
6.2.3.1	Test frequencies for NR standalone signalling testing	1451
6.2.3.2	Test frequencies for EN-DC band combinations for signalling testing.....	1468
6.2.3.2.1	General	1468
6.2.3.2.2	E-UTRA 1CC and NR 1CC.....	1468
6.2.3.2.3	E-UTRA 1CC and NR CA 2CC.....	1471
6.2.3.2a	Test frequencies for NE-DC band combinations for signalling testing.....	1472
6.2.3.2a.1	General	1472
6.2.3.2a.2	NR 1CC and E-UTRA 1CC.....	1472
6.2.3.3	Test frequencies for NR and E-UTRA Inter-RAT signalling testing.....	1473
6.2.3.4	Test frequencies for NR CA configurations for signalling testing	1473
6.2.3.5	Test frequencies for MFBI signalling testing.....	1481
6.2.3.6	Test frequencies for NR DC configurations for signalling testing	1484
6.2.3.7	Test frequencies for NR sidelink configurations for signalling testing	1484
6.2.3.8	Test frequencies for NR NTN configurations for signalling testing	1485
6.3	Reference system configurations.....	1489
6.3.1	Default System Information configurations.....	1489
6.3.1.1	Intra-frequency neighbouring cell list in SIB3 for NR cells	1489
6.3.1.2	Inter-frequency carrier frequency list in SIB4 for NR cells	1489
6.3.1.3	E-UTRA carrier frequency list in SIB5 for NR cells	1489
6.3.2	Default configurations for NAS test cases.....	1490
6.3.2.1	Simulated network scenarios for NAS test cases	1490
6.3.2.2	Simulated NAS cells	1490
6.3.3	Cell configuration types.....	1492
6.3.3.1	Introduction.....	1492
6.3.3.2	SCell types	1492
6.3.4	Satellite assistance information for NTN.....	1492
6.3.4.1	GSO scenario	1492
6.3.4.2	NGSO scenario	1493
6.4	Signalling Test Case specific USIM Configurations.....	1494
6.4.1	General.....	1494
6.4.2	USIM Configurations for 5G ProSe	1500
7	Test environments for RRM tests.....	1502
7.0	General	1502
7.0.1	Single PDU configuration for RRM testing.....	1502
7.1	Test equipment requirements	1502

7.1.1	Void	1502
7.1.2	Void	1502
7.1.3	Requirements for OTA test method	1502
7.1.3.1	General	1502
7.1.3.2	RRM baseline setup	1502
7.1.3.2.1	General description	1502
7.1.3.2.2	Applicability criteria	1503
7.1.3.2.3	Measurement distance and quiet zone	1504
7.1.3.2.4	Quality of the quiet zone	1504
7.2	Reference test conditions	1505
7.2.1	Signal levels	1505
7.2.1.1	Void	1505
7.2.1.2	Void	1505
7.2.2	Physical layer parameters	1505
7.2.2.1	Downlink physical layer parameters	1505
7.2.3	Default test frequencies	1506
7.2.3.1	Default test frequencies FR1 NR operating bands	1506
7.2.3.2	Default test frequencies FR2 operating bands	1506
7.2.3.3	NR inter-band CA configurations in FR2	1514
7.2.3.4	NR intra-band contiguous CA configurations in FR2	1514
7.2.3.4.1	NR Intra-band contiguous CA configurations for CA_n257	1514
7.2.3.4.1.1	CA_n257B	1514
7.2.3.4.1.2	CA_n257C	1514
7.2.3.4.1.3	CA_n257D	1514
7.2.3.4.1.4	CA_n257E	1514
7.2.3.4.1.5	CA_n257F	1514
7.2.3.4.1.6	CA_n257G	1514
7.2.3.4.1.7	CA_n257H	1515
7.2.3.4.1.8	CA_n257I	1515
7.2.3.4.1.9	CA_n257J	1515
7.2.3.4.1.10	CA_n257K	1515
7.2.3.4.1.11	CA_n257L	1516
7.2.3.4.1.12	CA_n257M	1516
7.2.3.4.2	NR Intra-band contiguous CA configurations for CA_n258	1516
7.2.3.4.2.1	CA_n258B	1516
7.2.3.4.2.2	CA_n258C	1516
7.2.3.4.2.3	CA_n258D	1516
7.2.3.4.2.4	CA_n258E	1516
7.2.3.4.2.5	CA_n258F	1516
7.2.3.4.2.6	CA_n258G	1516
7.2.3.4.2.7	CA_n258H	1517
7.2.3.4.2.8	CA_n258I	1517
7.2.3.4.2.9	CA_n258J	1517
7.2.3.4.2.10	CA_n258K	1517
7.2.3.4.2.11	CA_n258L	1517
7.2.3.4.2.12	CA_n258M	1517
7.2.3.4.3	NR Intra-band contiguous CA configurations for CA_n259	1517
7.2.3.4.4	NR Intra-band contiguous CA configurations for CA_n260	1518
7.2.3.4.5	NR Intra-band contiguous CA configurations for CA_n261	1518
7.2.3.4.5.1	CA_n261B	1518
7.2.3.4.5.2	CA_n261C	1518
7.2.3.4.5.3	CA_n261D	1518
7.2.3.4.5.4	CA_n261E	1518
7.2.3.4.5.5	CA_n261F	1518
7.2.3.4.5.6	CA_n261G	1518
7.2.3.4.5.7	CA_n261H	1519
7.2.3.4.5.8	CA_n261I	1519
7.2.3.4.5.9	CA_n261J	1519
7.2.3.4.5.10	CA_n261K	1519
7.2.3.4.5.11	CA_n261L	1519
7.2.3.4.5.12	CA_n261M	1519
7.2.3.4.5.12	CA_n261O	1519

7.2.3.4.5.12	CA_n261P	1519
7.2.3.4.5.12	CA_n261Q	1520
7.2.3.5	NR intra-band non-contiguous CA configurations in FR2	1520
7.3	Default NG-RAN RRC message and information elements contents for RRM	1520
7.3.0	General definitions	1520
7.3.1	Radio resource control information elements for RRM	1520
-	CSI-MeasConfig	1524
-	SCellActivationRS-Config	1526
-	SCellActivationRS-Id-r17	1527
-	NZP-CSI-RS-Resource for TRS	1527
-	NZP-CSI-RS-Resource for Aperiodic TRS	1527
-	NZP-CSI-RS-Resource for CSI	1528
-	NZP-CSI-RS-Resource for BM	1528
-	NZP-CSI-RS-ResourceId for TRS	1529
-	NZP-CSI-RS-ResourceId for Aperiodic TRS	1529
-	CSI-RS-ResourceMapping for ZP-CSI-RS	1532
-	NZP-CSI-RS-ResourceSet for TRS	1534
-	NZP-CSI-RS-ResourceSet for Aperiodic TRS	1534
-	NZP-CSI-RS-ResourceSet for CSI	1535
-	NZP-CSI-RS-ResourceSet for BM	1535
-	NZP-CSI-RS-ResourceSetId for TRS	1536
-	NZP-CSI-RS-ResourceSetId for Aperiodic TRS	1536
-	NZP-CSI-RS-ResourceSetId for CSI	1537
-	NZP-CSI-RS-ResourceSetId for BM	1537
-	CSI-ResourceConfig for TRS	1537
-	CSI-ResourceConfig for CSI	1538
-	CSI-ResourceConfig for BM	1538
-	CSI-ResourceConfig for CSI-IM	1539
-	CSI-ResourceConfigId for TRS	1539
-	PRB-Id	1556
-	ZP-CSI-RS-Resource-RRM	1556
-	ZP-CSI-RS-ResourceSet-RRM	1557
-	ZP-CSI-RS-ResourceSetId-RRM	1557
7.3.2	Sidelink information elements for RRM	1558
-	SL-BWP-ConfigCommon	1558
-	SL-BWP-PoolConfigCommon	1558
-	SL-ResourcePool	1558
-	SL-PSSCH-TxConfigList	1559
-	SL-UE-SelectedConfig	1559
7.4	FFS	1559
7.5	Common procedures for RRM testing	1559
7.5.1	Procedure to configure SCC(s) for NR RRM CA testing	1559
7.5.2	Procedure to configure SCC(s) for EN-DC RRM CA testing	1559
7.6	Test environment for NTN testing	1560
7.6.1	UE location	1560
7.6.2	Ephemeris Information	1560
7.6.2.0	Assumptions for Ephemeris generation	1560
7.6.2.1	Ephemeris for elevation angle 30°	1560
7.6.2.2	Ephemeris for NR NTN RRM UL timing accuracy test cases	1565
7.6.3	NR NTN message contents for RRM tests	1568
7.6.3.1	SIB19 IE values	1568
7.7	Test environment for ATG testing	1569
7.7.1	NR ATG message contents for RRM tests	1569
7.7.1.1	atg-Config-r18 values in SIB22	1569
7.7.2	UE location	1569
Annex A (informative):	Connection Diagrams	1570
A.1	Definition of Terms	1570
A.2	General Considerations on Connections Diagram	1571
A.3	Setup Diagrams	1572

A.3.1	Test Equipment Parts for Conducted Measurements.....	1572
A.3.1.1	Basic Transmitter/Receiver tests.....	1572
A.3.1.2	Transmitter tests using Spectrum Analyser	1581
A.3.1.3	Transmitter tests using Spectrum Analyser and Signal Generator.....	1586
A.3.1.4	Receiver tests using Signal Generator	1591
A.3.1.5	Receiver tests using Spectrum Analyser	1603
A.3.1.6	Receiver Performance tests.....	1605
A.3.1.7	Demodulation Performance and CSI reporting tests.....	1606
A.3.1.8	RRM tests with more than one NR cell	1623
A.3.1.9	Test Equipment supporting NR Sidelink	1630
A.3.2	User Equipment Parts for Conducted Measurements	1635
A.3.2.1	General.....	1635
A.3.2.2	One Antenna Connector.....	1636
A.3.2.3	Two Antenna Connectors	1637
A.3.2.4	Three Antenna Connectors	1646
A.3.2.5	Four Antenna Connectors	1648
A.3.2.6	Over Four Antenna Connectors	1653
A.3.2.7	User Equipment supporting NR Sidelink.....	1657
A.3.3	Test Equipment Parts for Radiated Measurements.....	1660
A.3.3.1	Transmitter/Receiver tests	1660
A.3.3.2	Demodulation and CSI tests.....	1664
A.3.3.3	RRM tests	1665
A.3.4	User Equipment Parts for Radiated Measurements	1666
A.3.4.1	Basic Transmitter/Receiver tests.....	1666
A.3.4.2	Demodulation and CSI tests.....	1667
A.3.4.3	RRM tests	1667

Annex B (normative): Permitted test methods For OTA Testing 1668

B.1	General	1668
B.2	Permitted Test Methods.....	1668
B.2.1	General	1668
B.2.2	Direct far field (DFF)	1668
B.2.2.1	Description.....	1668
B.2.2.2	Quiet zone dimension	1670
B.2.2.3	Quality of the quiet zone.....	1672
B.2.2.4	Measurement Distance.....	1672
B.2.3	Direct far field (DFF) setup simplification for centre of beam measurements.....	1674
B.2.3.1	Description.....	1674
B.2.3.2	Quiet zone dimension	1674
B.2.3.3	Quality of the quiet zone.....	1674
B.2.3.4	Measurement Distance.....	1674
B.2.4	Indirect far field (IFF): Compact Antenna Test Range (CATR)	1674
B.2.4.1	Description.....	1674
B.2.4.2	Quiet zone dimension	1675
B.2.4.3	Quality of the quiet zone.....	1676
B.2.4.4	Measurement Distance.....	1676
B.2.5	Near field to far field transform (NFTF)	1676
B.2.5.1	Description.....	1676
B.2.5.2	Quiet zone dimension	1678
B.2.5.3	Quality of the quiet zone.....	1678
B.2.5.4	Measurement Distance.....	1678
B.2.6	Enhanced IFF	1678
B.2.6.1	Description.....	1678
B.2.6.2	Quiet zone dimension	1679
B.2.6.3	Quality of the quiet zone.....	1679
B.2.6.4	Measurement Distance.....	1679
B.2.7	IFF+DFF	1679
B.2.7.1	Description.....	1679
B.2.7.2	Quiet zone dimension	1679
B.2.7.3	Quality of the quiet zone.....	1680
B.2.7.4	Measurement Distance.....	1680

Annex C (informative):	Calculation of test frequencies	1681
C.0	General	1681
C.1	Definitions and Parameters	1681
C.2	Determination of test frequencies	1684
C.2.0	General	1684
C.2.1	Determination of test frequencies for symmetric NR bands and symmetric uplink and downlink channel bandwidth combinations	1684
C.2.1.1	Determination of test frequencies for Low-, Mid- and High-Range	1684
C.2.1.2	Determination test frequencies for of Mid-Low and Mid-High-Range for signalling tests	1685
C.2.2	Determination of test frequencies for asymmetric NR bands and symmetric uplink and downlink channel bandwidth combinations	1685
C.2.3	Determination of test frequencies for asymmetric uplink and downlink channel bandwidth combinations	1685
C.2.3.1	General	1685
C.2.3.2	Determination of Low-, Mid- and High-Range for asymmetric uplink and downlink bandwidth combinations	1686
C.2.3.3	Determination of test frequencies for a Mid range adjacent inter-frequency cell for FR2 RRM multicell testing	1687
C.2.4	Frequency determination for NR CA and NR DC configurations	1687
C.2.4.1	Determination of test frequencies for NR Inter-band CA and NR DC	1687
C.2.4.2	Determination of test frequencies for NR Intra-band Contiguous CA	1687
C.2.4.2.1	General	1687
C.2.4.2.2	Determination of test frequencies for Low-, Mid- and High-Range	1688
C.2.4.2A	Determination of test frequencies for FR1 NR Intra-band Contiguous CA without UL CA for bands with uplink bandwidth less than downlink bandwidth	1688
C.2.4.2A.1	General	1688
C.2.4.2A.2	Determination of test frequencies for Low-, Mid- and High-Range	1688
C.2.4.3	Determination of test frequencies for NR Intra-band Non-Contiguous CA	1689
C.2.4.3.1	General	1689
C.2.4.3.1A	Selection of maximum frequency separation for FR1	1690
C.2.4.3.1B	Selection of maximum frequency separation for FR2	1690
C.2.4.3.2	Determination of test frequencies for a sub-block combination	1690
C.2.4.3.3	Void	1691
C.2.4.3.4	Determination of CBW combinations to add in initial test frequency tables	1691
C.2.4.4	Determination of CBW combinations to add in initial test frequency tables for Intra band CA	1691
C.2.5	Frequency determination for supplemental uplink	1692
C.2.5.1	General	1692
C.2.5.2	Determination of Low-, Mid- and High-Range for supplemental uplink bands	1692
C.2.6	Frequency determination for EN-DC configurations	1692
C.2.6.1	Determination of test frequencies for EN-DC Inter-band	1692
C.2.6.2	Determination of test frequencies for EN_DC Intra-band Contiguous CA	1692
C.2.6.2.1	General	1692
C.2.6.2.2	Determination of test frequencies for Low-, Mid- and High-Range with NR at band edges	1693
C.2.6.2.3	Determination of test frequencies for Low-, Mid- and High-Range with E-UTRA at band edges	1694
C.2.6.3	Determination of test frequencies for EN-DC Intra-band non-contiguous	1694
C.2.7	Determination of test frequencies for enhanced channel raster	1695
C.2.7.1	General	1695
C.2.7.2	Determination of test frequencies for Low- and High-Range for enhanced channel raster	1695
C.3	Determination of SSB and CORESET#0	1695
C.3.1	General	1695
C.3.2	Determination of SSB, CORESET#0 and signalling parameters for a PCell	1696
C.3.3	Determination of SSB and signalling parameters for a carrier without CORESET#0	1698
C.4	Determination of SSB and CORESET#0 for RRM testing with SSB SCS 120 kHz and 240 kHz	1699
C.4.1	General	1699
C.4.2	Determination of SSB, CORESET#0 and signalling parameters	1699
C.4.3	Determination of SSB, CORESET#0 and signalling parameters for NR Intra-band Contiguous CA for PCell	1700
C.4.4	Determination of SSB, CORESET#0 and signalling parameters for NR Intra-band Contiguous CA for SCell	1701

C.5	Determination of test frequencies and S-SSB for V2X bands.....	1703
C.5.1	General	1703
C.5.2	Determination of test frequencies and S-SSB for V2X bands.....	1705
Annex D (informative): Change history		1707
History		1769

Foreword

This Technical Specification has been produced by the 3rd Generation Partnership Project (3GPP).

The contents of the present document are subject to continuing work within the TSG and may change following formal TSG approval. Should the TSG modify the contents of the present document, it will be re-released by the TSG with an identifying change of release date and an increase in version number as follows:

Version x.y.z

where:

- x the first digit:
 - 1 presented to TSG for information;
 - 2 presented to TSG for approval;
 - 3 or greater indicates TSG approved document under change control.
- y the second digit is incremented for all changes of substance, i.e. technical enhancements, corrections, updates, etc.
- z the third digit is incremented when editorial only changes have been incorporated in the document.

The present document is part 1 of a multi-part deliverable covering the 5G System (5GS) User Equipment (UE) conformance specification, as identified below:

- 3GPP TS 38.508-1: "5GS; User Equipment (UE) conformance specification; Part 1: Common test environment" (the present document).
- 3GPP TS 38.508-2 [10]: "5GS; User Equipment (UE) conformance specification; Part 2: Common Implementation Conformance Statement (ICS) proforma".

1 Scope

The present document defines the test environment for the 5G System.

This specification covers all aspects, including NG-RAN, 5GC and interworking between 5GS and EPS used for conformance tests of User Equipment (UE).

2 References

The following documents contain provisions which, through reference in this text, constitute provisions of the present document.

- References are either specific (identified by date of publication, edition number, version number, etc.) or non-specific.
- For a specific reference, subsequent revisions do not apply.
- For a non-specific reference, the latest version applies. In the case of a reference to a 3GPP document (including a GSM document), a non-specific reference implicitly refers to the latest version of that document *in the same Release as the present document*.

- [1] 3GPP TR 21.905: "Vocabulary for 3GPP Specifications".
- [2] 3GPP TS 36.508: "Evolved Universal Terrestrial Radio Access (E-UTRA) and Evolved Packet Core (EPC); Common test environments for User Equipment (UE) conformance testing".
- [3] 3GPP TS 36.300: "Evolved Universal Terrestrial Radio Access (E-UTRA) and Evolved Universal Terrestrial Radio Access (E-UTRAN); Overall description; Stage 2".
- [4] 3GPP TS 36.331: "Evolved Universal Terrestrial Radio Access (E-UTRA); Radio Resource Control (RRC); Protocol specification".
- [5] 3GPP TS 38.300: "NR; Overall description; Stage 2".
- [6] 3GPP TS 38.331: "NR; Radio Resource Control (RRC); Protocol specification".
- [7] 3GPP TS 38.101-1: "NR; User Equipment (UE) radio transmission and reception; Part 1: Range 1 Standalone".
- [8] 3GPP TS 38.101-2: "NR; User Equipment (UE) radio transmission and reception; Part 2: Range 2 Standalone".
- [9] 3GPP TS 38.101-3: "NR; User Equipment (UE) radio transmission and reception; Part 3: Range 1 and Range 2 Interworking operation with other radios".
- [10] 3GPP TS 38.508-2: "5GS; User Equipment (UE) conformance specification; Part 2: Common Implementation Conformance Statement (ICS) proforma".
- [11] 3GPP TS 38.509: "5GS; Special conformance testing functions for User Equipment (UE)".
- [12] 3GPP TS 38.523-1: "5GS; User Equipment (UE) conformance specification; Part 1: Protocol".
- [13] 3GPP TS 38.133: "NR; Requirements for support of radio resource management".
- [14] 3GPP TS 38.521-1: "NR; User Equipment (UE) conformance specification; Radio transmission and reception; Part 1: Range 1 Standalone".
- [15] 3GPP TS 38.521-2: "NR; User Equipment (UE) conformance specification; Radio transmission and reception; Part 2: Range 2 Standalone".
- [16] 3GPP TS 38.521-3: "NR; User Equipment (UE) conformance specification; Radio transmission and reception; Part 3: Range 1 and Range 2 Interworking operation with other radios".

- [17] 3GPP TS 38.521-4: "NR; User Equipment (UE) conformance specification; Radio transmission and reception; Part 4: Performance".
- [18] 3GPP TS 38.533: "NR; User Equipment (UE) conformance specification; Radio resource management".
- [19] 3GPP TS 38.523-2: "5GS; User Equipment (UE) conformance specification; Part 2: Applicability of protocol test cases".
- [20] 3GPP TS 38.321: "NR; Medium Access Control (MAC) protocol specification".
- [21] 3GPP TS 38.214: "NR; Physical layer procedures for data".
- [22] 3GPP TS 38.213: "NR; Physical layer procedures for control".
- [23] 3GPP TS 38.523-3: "5GS; UE conformance specification; Part 3: Protocol Test Suites".
- [24] 3GPP TR 38.810: "NR; Study on test methods".
- [25] 3GPP TS 23.041: "Technical realization of Cell Broadcast Service (CBS)".
- [26] 3GPP TS 23.003: "Numbering, addressing and identification".
- [27] 3GPP TS 38.212: "NR; Multiplexing and channel coding".
- [28] 3GPP TS 24.501: "Non-Access-Stratum (NAS) protocol for 5G System (5GS); Stage 3".
- [29] 3GPP TS 38.211: "NR; Physical channels and modulation".
- [30] IETF RFC 4187: "Extensible Authentication Protocol Method for 3rd Generation Authentication and Key Agreement (EAP-AKA)".
- [31] IETF RFC 5448: "Improved Extensible Authentication Protocol Method for 3rd Generation Authentication and Key Agreement (EAP-AKA)".
- [32] IETF RFC 3748: "Extensible Authentication Protocol (EAP)".
- [33] 3GPP TS 23.502: "Procedures for the 5G System (5GS); Stage 2".
- [34] IETF RFC 7296: "Internet Key Exchange Protocol Version 2 (IKEv2)".
- [35] 3GPP TS 24.502: "Access to the 3GPP 5G Core Network (5GCN) via Non-3GPP Access Networks (N3AN); Stage 3".
- [36] 3GPP TS 34.123-2: "User Equipment (UE) conformance specification; Part 2: Implementation Conformance Statement (ICS) proforma specification".
- [37] 3GPP TS 36.523-2: "Evolved Universal Terrestrial Radio Access (E-UTRA) and Evolved Packet Core (EPC); User Equipment (UE) conformance specification; Part 2: Implementation Conformance Statement (ICS) proforma specification".
- [38] 3GPP TR 38.903: "NR; Derivation of test tolerances and measurement uncertainty for User Equipment (UE) conformance test cases".
- [39] 3GPP TS 37.571-1: "Universal Terrestrial Radio Access (UTRA) and Evolved UTRA (E-UTRA) and Evolved Packet Core (EPC); User Equipment (UE) conformance specification for UE positioning; Part 1: Conformance test specification".
- [40] 3GPP TS 37.571-2: "Universal Terrestrial Radio Access (UTRA) and Evolved UTRA (E-UTRA) and Evolved Packet Core (EPC); User Equipment (UE) conformance specification for UE positioning; Part 2: Protocol conformance".
- [41] 3GPP TS 36.523-3: "Evolved Universal Terrestrial Radio Access (E-UTRA) and Evolved Packet Core (EPC); User Equipment (UE) conformance specification; Part 3: Test Suites".

- [42] 3GPP TS 36.523-1: "Evolved Universal Terrestrial Radio Access (E-UTRA) and Evolved Packet Core (EPC); User Equipment (UE) conformance specification; Part 1: Protocol conformance specification".
- [43] 3GPP TS 33.501: "Security architecture and procedures for 5G system".
- [44] 3GPP TS 34.229-1: "Internet Protocol (IP) multimedia call control protocol based on Session Initiation Protocol (SIP) and Session Description Protocol (SDP); User Equipment (UE) conformance specification; Part 1: Protocol conformance specification".
- [45] 3GPP TS 26.114: "IP Multimedia Subsystem (IMS);Multimedia Telephony; Media handling and interaction".
- [46] IETF RFC 4566: "SDP: Session Description Protocol".
- [47] 3GPP TS 34.229-5: "Internet Protocol (IP) multimedia call control protocol based on Session Initiation Protocol (SIP) and Session Description Protocol (SDP); User Equipment (UE) conformance specification; Part 5: Protocol conformance specification using 5G System (5GS)".
- [48] 3GPP TS 36.101: "Evolved Universal Terrestrial Radio Access (E-UTRA); User Equipment (UE) radio transmission and reception".
- [49] 3GPP TS 37.571-5: "User Equipment (UE) conformance specification for UE positioning; Part 5: Test scenarios and assistance data".
- [50] STANAG 4294: "NATO STANAG 4294. Navstar Global Positioning System (GPS) System Characteristics".
- [51] 3GPP TS 34.229-2: "Internet Protocol (IP) multimedia call control protocol based on Session Initiation Protocol (SIP) and Session Description Protocol (SDP);User Equipment (UE) conformance specification; Part 2: Implementation Conformance Statement (ICS) specification".
- [52] 3GPP TS 34.108: "Common Test Environments for User Equipment (UE); Conformance testing".
- [53] 3GPP TS 23.287: "Architecture enhancements for 5G System (5GS) to support Vehicle-to-Everything (V2X) services".
- [54] 3GPP TS 24.587: "Vehicle-to-Everything (V2X) services in 5G System (5GS)".
- [55] 3GPP TS 38.306: "User equipment (UE) radio access capabilities".
- [56] 3GPP TS 38.101-5: "NR; User Equipment (UE) radio transmission and reception; Part 5: Satellite access Radio Frequency (RF) and performance requirements".
- [57] 3GPP TS 38.521-5: "NR; User Equipment (UE) conformance specification; Radio transmission and reception; Part 5: Satellite access Radio Frequency (RF) and performance requirements".
- [58] 3GPP TS 24.554: "Proximity-services (ProSe) in 5G System (5GS) protocol aspects; Stage 3".
- [59] 3GPP TS 24.555: "Proximity-services (ProSe) in 5G System (5GS); User Equipment (UE) policies; Stage 3".
- [60] 3GPP TS 23.304: "Proximity-services (ProSe) in the 5G System (5GS)".
- [61] IETF RFC 5246: "The Transport Layer Security (TLS) Protocol Version 1.2".
- [62] IETF RFC 7230: "Hypertext Transfer Protocol (HTTP/1.1): Message Syntax and Routing".
- [63] 3GPP TS 33.503: "Security aspects of Proximity based Services (ProSe) in the 5G System (5GS)".
- [64] 3GPP TS 33.310: "Network Domain Security (NDS); Authentication Framework (AF)".
- [65] GSMA TS 48: "Generic eUICC Test Profile for Device Testing".
- [66] IEC 60068-2-1: "Environmental testing - Part 2-1: Tests - Test A: Cold".
- [67] IEC 60068-2-2: "Environmental testing - Part 2-2: Tests - Test B: Dry heat".

- [68] 3GPP TS 23.501: "System architecture for the 5G System (5GS); Stage 2".
- [69] 3GPP TR 38.905: "NR; Derivation of test points for radio transmission and reception User Equipment (UE) conformance test cases".
- [70] GSMA PRD NG.113: "5GS Roaming Guidelines".

3 Definitions, symbols and abbreviations

3.1 Definitions

For the purposes of the present document, the terms and definitions given in TR 21.905 [1] and the following apply. A term defined in the present document takes precedence over the definition of the same term, if any, in TR 21.905 [1].

B: a value followed by "B" is a binary value.

H: a value followed by "H" is a hexadecimal value.

3.2 Symbols

For the purposes of the present document, the following symbols apply:

Round(x)	Rounding to integer; Round(x) gives the rounded value of x with 0 decimals.
Round(x,y)	Rounding to y decimals; Round(x,2) gives the rounded value of x with 2 decimals.

3.3 Abbreviations

For the purposes of the present document, the abbreviations given in TR 21.905 [1] and the following apply. An abbreviation defined in the present document takes precedence over the definition of the same abbreviation, if any, in TR 21.905 [1].

5GC	5G Core Network
5GMM	5GS Mobility Management
5GS	5G System
5GSM	5GS Session Management
ATG	Air-To-Ground
EN-DC	E-UTRA-NR Dual Connectivity
MCG	Master Cell Group
MR-DC	Multi-RAT Dual Connectivity
NE-DC	NR-E-UTRA Dual Connectivity
NGC	NG Core Network. Synonym of 5GC.
NGEN-DC	NG-RAN E-UTRA-NR Dual Connectivity
NG-RAN	NG Radio Access Network
NR	NR Radio Access
RedCap	Reduced Capability
RRC	Radio Resource Control
SCG	Secondary Cell Group
SS	System Simulator

4 Common test environments

4.1 Environmental conditions

The requirements in this clause apply to all types of UE(s).

4.1.1 Temperature

Regarding FR1 the UE shall fulfil all the requirements in the full temperature range of:

Table 4.1.1-1: Temperature conditions for FR1

+15 °C to +35 °C	For normal conditions (with relative humidity up to 75 %)
-10 °C to +55 °C	For extreme conditions (see IEC 60068-2-1 [66] and IEC 60068-2-2 [67])

Outside this temperature range the UE, if powered on, shall not make ineffective use of the radio frequency spectrum. In no case shall the UE exceed the transmitted levels as defined in TS 38.101-1 [7] clause 6.2 for extreme operation.

The normative reference for this requirement is TS 38.101-1 [7] Annex E.2.

All RF requirements for UEs operating in FR2 are defined over the air and can only be tested in an OTA chamber.

Regarding FR2 the UE shall fulfil all requirements in the temperature range defined in Table 4.1.1-2.

Table 4.1.1-2: Temperature conditions for FR2

+15 °C to +35 °C	For normal (room temperature) conditions with relative humidity up to 75%
-10 °C to +55 °C	For extreme conditions

Outside this temperature range the UE, if powered on, shall not make ineffective use of the radio frequency spectrum. In no case shall the UE exceed the transmitted levels as defined in TS 38.101-2[8] clause 6.2 for extreme operation.

The normative reference for this requirement is TS 38.101-2 [8] Annex E.2.

Some tests are performed also in extreme temperature conditions. These test conditions are denoted as TL (temperature low, -10 °C) and TH (temperature high, +55 °C).

4.1.2 Voltage

Editor's Note: This clause is incomplete. The following items are missing or are incomplete:

- Methodology to control the voltage in a case which a power cable is not connected to DUT is FFS since it is not agreed whether we can connect the power cable to DUT at the OTA measurement situation yet.

Regarding both FR1 and FR2 the UE shall fulfil all the requirements in the full voltage range, i.e. the voltage range between the extreme voltages.

The manufacturer shall declare the lower and higher extreme voltages and the approximate shutdown voltage. For the equipment that can be operated from one or more of the power sources listed below, the lower extreme voltage shall not be higher, and the higher extreme voltage shall not be lower than that specified below.

Table 4.1.2-1: Voltage conditions

Power source	Lower extreme voltage	Higher extreme voltage	Normal conditions voltage
AC mains	0.9 * nominal	1.1 * nominal	nominal
Regulated lead acid battery	0.9 * nominal	1.3 * nominal	1.1 * nominal
Non regulated batteries:			
Leclanché	0.85 * nominal	nominal	nominal
Lithium	0.95 * nominal	1.1 * nominal	1.1 * nominal
Mercury/nickel & cadmium	0.90 * nominal		nominal

Outside this voltage range the UE if powered on, shall not make ineffective use of the radio frequency spectrum. In no case shall the UE exceed the transmitted levels as defined in TS 38.101-1[7] and TS 38.101-2[8] clause 6.2 for extreme operation. In particular, the UE shall inhibit all RF transmissions when the power supply voltage is below the manufacturer declared shutdown voltage.

The normative reference for this requirement is TS 38.101-1 [7] Annex E.2 and TS 38.101-2 [8] Annex E.2.

Some tests are performed also in extreme voltage conditions. These test conditions are denoted as VL (lower extreme voltage) and VH (higher extreme voltage).

4.2 Common requirements of test equipment

Mobile conformance testing can be categorized into 3 distinct areas:

- RF Conformance Testing consisting of:
 - Transmission and Reception Conformance Testing.
 - Performance Conformance Testing.
- RRM Conformance Testing.
- Signalling Conformance Testing.

The test equipment required for each category of testing may or not be different, depending on the supplier of the test equipment. However, there will be some generic requirements of the test equipment that are essential for all three categories of test, and these are specified in this clause.

In addition, there will be requirements to test operation in multi-system configurations other than E-UTRA and NR dual connectivity (EN-DC). However, these would not form a common test equipment requirement for the three test areas and are not considered in the present document.

4.2.1 General functional requirements

NOTE: This clause has been written such that it does not constrain the implementation of different architectures and designs of test equipment.

All test equipment used to perform conformance testing for frequency range 1 on a UE shall provide the following minimum functionality:

- Conducted test method

All test equipment used to perform conformance testing for frequency range 2 on a UE shall provide the following minimum functionality:

- OTA test method

All test equipment used to perform conformance testing on a UE shall provide a platform suitable for testing UE's in at least one of the following connectivity values:

- NR; or
- EN-DC; or
- NE-DC; or
- NR-DC; or
- WLAN; or
- E-UTRA/EPC

All test equipment used to perform conformance testing on a UE shall provide a platform suitable for testing UE's that are either of following duplex mode for NR and E-UTRA (EN-DC or NE-DC connectivity values only) respectively.

- a) FDD Mode; or
- b) TDD Mode; or
- c) both FDD/TDD Modes; or
- d) HD-FDD Mode (NR RedCap only).

All test equipment shall provide the following minimum functionality.

- The capability of emulating a single NR cell and a single E-UTRA (for EN-DC or NE-DC connectivity values only) cell with the appropriate channels to allow the UE to register on the cell.
- The capability to allow the UE to set up an RRC connection with the system simulator, and to maintain the connection for the duration of the test.
- The capability (for the specific test):
 - to select and support an appropriate radio bearer for the downlink;
 - to set up and support the appropriate radio bearer for the uplink;

4.2.2 Minimum functional requirements

4.2.2.1 Supported Cell Configuration

The System Simulator shall provide the capability to simulate a minimum number of cells whose number and capabilities are governed by the test cases that need to be performed (test cases are defined in TS 38.523-1 [12] (Signalling), TS 38.521-1 [14], TS 38.521-2 [15], TS 38.521-3 [16] (TRx), TS 38.521-4 [17] (Performance), TS 38.533 [18] (RRM), TS 37.571-1 [39] and TS 37.571-2 [40] (Positioning)).

To perform test cases requiring multiple cell(s), the system simulator shall provide multiple cells offering the capabilities as required by the test case.

The type and number of channels (especially physical channels) constitute an important set of capabilities for a cell. The following clauses list possible channels that may be supported by the SS. Each channel type, however, and the minimum number of channels needed are only mandatory if specific test cases require them.

The mapping between Logical and Transport channels is as described in TS 38.321 [20]. Similarly, the mapping between Transport channels and Physical channels is as described in TS 38.211, TS 38.302 and TS 38.212. The reference measurement channels (mapping between Transport channels and Physical channels for PDSCH/PDCCH) are defined in TS 38.521-1 [14] annex A

4.2.2.1.1 Supported Channels for an E-UTRA cell (NSA mode only)

Requirement for supported channels for E-UTRA cell is described in TS 36.508[2].

4.2.2.1.2 Supported Channels for a NR cell

4.2.2.1.2.1 Logical channels

Logical channel	Minimum number	Comments
BCCH	0 for EN-DC, 1 for SA	
CCCH	0 for EN-DC, 1 for SA	
DCCH	0 for EN-DC, 2 for SA	Split SRB or SRB3 is optional in EN-DC
PCCH	0 for EN-DC, 1 for SA	
DTCH	n	Depending on SS's support for RB service testing

4.2.2.1.2.2 Transport channels

Transport channel	Minimum number	Comments
BCH	1	
PCH	N/A for EN-DC, 1 for SA	
RACH	1	
DL-SCH	1	
UL-SCH	1	

4.2.2.1.2.3 Physical channels

Physical channel	Minimum number	Comments
PBCH	1	Physical Broadcast Channel

Physical channel	Minimum number	Comments
PDCCH	1	The physical downlink control channel carries scheduling assignments and other control information.
PDSCH	1	Physical Downlink Shared Channel
PUCCH	1	The physical uplink control channel carries uplink control information
PUSCH	1	Physical Uplink Shared Channel
PRACH	1	Physical Random Access Channel

4.2.2.1.2.4 Physical signals

Physical signal	Minimum number	Comments
Demodulation reference signal	NA	UL
Sounding Reference signal	NA	UL, if applicable
Phase Tracking Reference Signal	NA	UL, if applicable
Demodulation reference signal(PDSCH)	NA	DL
Demodulation reference signal(PDCCH)	NA	DL
Demodulation reference signal(PBCH)	NA	DL
Phase Tracking Reference Signal	NA	DL, if applicable
CSI reference signal	NA	DL
Primary synchronisation signal	NA	DL
Secondary synchronisation signal	NA	DL

4.3 Reference test conditions

4.3.1 Test frequencies

Editor's Note: n65 (High: 50MHz), n66 (High: 45MHz), n75(High: 50MHz), and n80 (High: 40MHz) are currently not yet included in the test channel bandwidth tables due to test frequency have not been defined yet. Further analysis is needed for the test coverage of these test channel bandwidths and bands.

4.3.1.0 General

The test frequencies are based on operating bands defined in TS 38.101-1 [7], TS 38.101-2 [8], TS 38.101-3 [9] and TS 38.101-5 [56].

4.3.1.0A Mid test channel bandwidth

The Mid test channel bandwidth definition for RF is given in Table 4.3.1.0A-1, Table 4.3.1.0A-2 and Table 4.3.1.0A-3 for FR1, FR2 and FR1-NTN respectively.

Table 4.3.1.0A-1: Mid Test Channel bandwidths for each NR band, FR1

NR Band	UE Mid Test Channel bandwidth [MHz] ^{1, 1a, 1b}	RedCap and eRedCap UE Mid Test Channel bandwidth [MHz] ^{1, 1a, 1b}
n1	25	15
n2	20	15
n3	25	15

n5	15	15
n7	25	15
n8	$15^{3,12}, 20^2$	15
n12	10	10
n13	10	10
n14	10	10
n20	15	15
n24	10	10
n25	25^{11}	15
n26	15	15
n28	$15, 20^{13}$	15
n29	10^2	N/A
n30	10	10
n31	5	5
n34	10	10
n38	20	15
n39	25	15
n40	50	15
n41	50	15
n46	$60^4, 40^5$	N/A
n48	20^{11}	15
n50	$40^4, 20^{5,11}$	15
n51	5	5
n53	10	10
n54	5	5
n65	15	15
n66	20	15
n70	$10^{3,12}, 15^2$	$15^2, 10^3$
n71	$15^{3,12}, 20^2$	15
n72	5	5
n74	15	15
n75	15^2	N/A
n76	5^2	N/A
n77	50	15
n78	50	15
n79	50	20
n80	20^3	[15]
n81	15^3	[15]
n82	15^3	[15]
n83	15^3	[15]
n84	25^3	[15]
n85	10	10
n86	20^3	[15]
n87	5	5
n88	5	5
n91	$5^{2,12}, 10^3$	$[5^2, 10^3]$
n92	15	[15]
n93	$5^{2,12}, 10^3$	$[5^2, 10^3]$
n94	15	[15]
n95	10^3	[10]
n96	60	N/A
n97	50^3	[15]
n98	25^3	$[15^3]$
n99	10^3	[10]
n100	5	5
n101	10	10
n104	60	20
n105	$15^3, 20^2$	15
n106	3	N/A
n109	25	15

n110	3	N/A
Note 1:	Mid channel BW is the closest channel BW to the arithmetic average channel BW of all the possible channel BWs per band in Table 5.3.5-1 of TS 38.521-1 [14] among all SCSs. If there are two channel bandwidths that have same distance to the average value, the higher one is selected. In case such bandwidth is not applicable for a given subcarrier spacing, the closest bandwidth to the value in this table applicable for such subcarrier spacing shall be tested. In case such bandwidth is not defined in the UE release specification according to 38.101-1 [7] Table 5.3.5-1: - If the bandwidth listed above is equal or higher than maximum bandwidth supported in the UE release according to 38.101-1 [7] Table 5.3.5-1, the closest channel BW to the arithmetic average among the values supported in the UE release specification shall be tested. - Otherwise, the closest bandwidth to the value in this table defined for that band in the UE release specification shall be tested. If there are two channel bandwidths that have same distance to the arithmetic average, the higher one is selected	
Note 1a:	Values listed in this table assume that the non-optional channel bandwidths specified in Table 5.3.5-1 of TS 38.101-1 (most updated version of latest release available) [7] lower than the maximum are supported. However, these channel bandwidths are mandatory with capability parameter as defined in [55] TS 38.306 clause 4.2.7.2 for <i>channelBWs-DL/channelBWs-UL</i> parameters. Hence the UE might indicate them as not supported. In such case, select the closest channel bandwidth in both DL and UL.	
Note 1b:	For CA, DC, SDL and SUL, the mid-test channel bandwidth per component carrier is chosen to test the closest aggregated bandwidth to the mathematical centre between minimum and maximum aggregated bandwidth defined for and within a given bandwidth combination set. In case no set of channel bandwidths per component carrier supported by the UE can achieve such aggregated bandwidth, select one combination of bandwidths per component carrier within the bandwidth combination set that minimizes the difference to the target aggregated bandwidth.	
Note 2:	This UE channel bandwidth is applicable only to downlink.	
Note 3:	This UE channel bandwidth is applicable only to uplink.	
Note 4:	Applicable when for use as single carrier, PCell in CA or PCell in DC configuration.	
Note 5:	Applicable for use as SCell in CA or SCell in DC configuration.	
Note 6:	Void	
Note 7:	Void	
Note 8:	Void	
Note 9:	Void	
Note 10:	This Mid test channel bandwidth is chosen since it is more commonly used.	
Note 11:	This is an exception to Note 1 in this table to avoid not allowed asymmetric channel bandwidths.	
Note 12:	This UE channel bandwidth is applicable to both uplink and downlink when both uplink and downlink are allocated and testing asymmetric BW is not explicitly intended.	
Note 13:	This Mid test channel bandwidth is applicable to UEs supporting maximum channel bandwidth 40MHz.	

Table 4.3.1.0A-2: Mid Test Channel bandwidths for each NR band, FR2

NR Band	UE Mid Test Channel bandwidth [MHz] ^{1, 2, 3}	RedCap UE Mid Test Channel bandwidth [MHz] ^{1, 2}
n257	200	100
n258	200	100
n259	200	N/A
n260	200	N/A
n261	200	100
Note 1:	Mid channel BW is the closest channel BW to the arithmetic average channel BW of all the possible channel BWs per band in Table 5.3.5-1 of TS 38.521-2 [15] among all SCSs. If there are two channel bandwidths that have same distance to the average value, the higher one is selected. In case such bandwidth is not applicable for a given subcarrier spacing, the closest bandwidth to the value in this table applicable for such subcarrier spacing shall be tested. In case such bandwidth is not defined in the UE release specification according to 38.101-2 [8] Table 5.3.5-1, the closest bandwidth to the value in this table defined for that band in the UE release specification shall be tested.	

	If there are two channel bandwidths that have same distance to the arithmetic average, the higher one is selected.
Note 2:	Values listed in this table assume that the non-optional channel bandwidths specified in Table 5.3.5-1 of TS 38.101-2 [8] lower than the maximum are supported. However, these channel bandwidths are mandatory with capability parameter as defined in [55] TS 38.306 clause 4.2.7.2 for <i>channelBWs-DL/channelBWs-UL</i> parameters. Hence the UE might indicate them as not supported. In such case, select the closest channel bandwidth in both DL and UL.
Note 3:	For CA and DC, the mid-test channel bandwidth per component carrier is chosen to test the closest aggregated bandwidth to the mathematical centre between minimum and maximum aggregated bandwidth defined for and within a given bandwidth combination set. In case no set of channel bandwidths per component carrier supported by the UE can achieve such aggregated bandwidth, select one combination of bandwidths per component carrier within the bandwidth combination set that minimizes the difference to the target aggregated bandwidth.

Table 4.3.1.0A-3: Mid Test Channel bandwidths for each NTN satellite band, FR1-NTN

NTN satellite Band	UE Mid Test Channel bandwidth [MHz] ^{1, 2}
n256	15
n255	15
n254	10
n253	5
n251	15
n250	15 ³ , 5 ⁴
Note 1:	Mid channel BW is the closest channel BW to the arithmetic average channel BW of all the possible channel BWs per band in Table 5.3.5-1 of TS 38.521-5 [57] among all SCSSs. If there are two channel bandwidths that have same distance to the average value, the higher one is selected.
Note 2:	In case such bandwidth is not applicable for a given subcarrier spacing, the closest bandwidth to the value in this table applicable for such subcarrier spacing shall be tested. Values listed in this table assume that the non-optional channel bandwidths specified in Table 5.3.5-1 of TS 38.101-5 [56] lower than the maximum are supported. However, these channel bandwidths are mandatory with capability parameter as defined in TS 38.306 clause 4.2.7.2 [55] for <i>channelBWs-DL/channelBWs-UL</i> parameters. Hence the UE might indicate them as not supported. In such case, select the closest channel bandwidth in both DL and UL.
Note 3:	This UE channel bandwidth is applicable only to downlink.
Note 4:	This UE channel bandwidth is applicable only to uplink.

4.3.1.0B Low test channel bandwidth

The low test channel bandwidth definition for RF is given in Table 4.3.1.0B-1, Table 4.3.1.0B-2 and Table 4.3.1.0B-3 for FR1, FR2 and FR1-NTN respectively.

Table 4.3.1.0B-1: Low Test Channel bandwidths for each NR band, FR1

NR Band	UE Low Test Channel bandwidth [MHz] ^{1, 1a, 1b}	RedCap and eRedCap UE Low Test Channel bandwidth [MHz] ^{1, 1a, 1b}
n1	5	5
n2	5	5
n3	5	5
n5	5	5
n7	5	5
n8	5	5
n12	5	5
n13	5	5
n14	5	5

n20	5	5
n24	5	5
n25	5	5
n26	3 ⁶ ,5	5
n28	3 ⁶ ,5	5
n29	5 ²	N/A
n30	5	5
n31	3	5
n34	5	5
n38	5	5
n39	5	5
n40	5 ⁴ ,10 ⁵	10
n41	5 ^{7,8} ,10	10
n46	10 ⁴ ,20 ⁵	N/A
n48	5 ⁴ , 10 ⁵	10
n50	5 ⁴ ,10 ⁵	10
n51	5	5
n53	5	5
n54	5	5
n65	5	5
n66	5	5
n70	5	5
n71	5	5
n72	3	5
n74	5	5
n75	5 ²	N/A
n76	5 ²	N/A
n77	10	10
n78	10	10
n79	10	10
n80	5 ³	[5]
n81	5 ³	[5]
n82	5 ³	[5]
n83	5 ³	[5]
n84	5 ³	[5]
n85	3 ⁶ ,5	5
n86	5 ³	[5]
n87	3	5
n88	3	5
n91	5	[5]
n92	5	[5]
n93	5	[5]
n94	5	[5]
n95	5 ³	[5]
n96	20	N/A
n97	5 ³	[5]
n98	5 ³	[5 ³]
n99	5 ³	[5]
n100	3 ⁶ ,5	5
n101	5	5
n104	20	20
n105	5	5
n106	3	N/A
n109	5	5
n110	3	N/A
Note 1:	Minimum channel BW value among all the possible channel BW-SCS combinations per band in Table 5.3.5-1 of TS 38.521-1 [14] are listed. In case such bandwidth is not applicable for a given subcarrier spacing, the minimum bandwidth applicable for such subcarrier spacing shall be tested.	

	In case such bandwidth is not defined in the UE release specification according to 38.101-1 [7] Table 5.3.5-1, the minimum bandwidth defined for that band in the UE release specification shall be tested.
Note 1a:	Values listed in this table assume that the non-optional channel bandwidths specified in Table 5.3.5-1 of TS 38.101-1 [7] lower than the maximum are supported. However, these channel bandwidths are mandatory with capability parameter as defined in [55] TS 38.306 clause 4.2.7.2 for <i>channelBWs-DL/channelBWs-UL</i> parameters. Hence the UE might indicate them as not supported. In such case, select the closest channel bandwidth in both DL and UL.
Note 1b:	For CA, DC, SDL and SUL, the low-test channel bandwidth per component carrier is chosen to allow minimum aggregated bandwidth defined for a given bandwidth combination set. In case no set of channel bandwidths per component carrier supported by the UE can achieve minimum aggregated bandwidth, select one combination of bandwidths per component carrier within the bandwidth combination set that minimizes the aggregated bandwidth.
Note 2:	This UE channel bandwidth is applicable only to downlink.
Note 3:	This UE channel bandwidth is applicable only to uplink.
Note 4:	Applicable for use as SCell in CA or SCell in DC configuration.
Note 5:	Applicable for use as single carrier, PCell in CA or PCell in DC configuration.
Note 6:	This UE channel bandwidth is optional in Release 18.
Note 7:	This UE channel bandwidth is optional in Release 17.
Note 8:	Not all frequency positions of 5 MHz carriers are possible due limitations of the SSB position relative to the 5 MHz channels. 5 MHz channels with F_c such that $2499+N*1.2 \leq F_c < 2499.3+N*1.2$ MHz for $0 \leq N < 157$ are not compatible with SSB positions and cannot be used for 5 MHz n41.

Table 4.3.1.0B-2: Low Test Channel bandwidths for each NR band, FR2

NR Band	UE Low Test Channel bandwidth [MHz] ^{1, 2, 3}	RedCap UE Low Test Channel bandwidth [MHz] ^{1, 2}
n257	50	50
n258	50	50
n259	50	N/A
n260	50	N/A
n261	50	50
Note 1:	Minimum channel BW value among all the possible channel BW-SCS combinations per band in Table 5.3.5-1 of TS 38.521-2 [15] are listed. In case such bandwidth is not applicable for a given subcarrier spacing, the minimum bandwidth applicable for such subcarrier spacing shall be tested. In case such bandwidth is not defined in the UE release specification according to 38.101-2 [8] Table 5.3.5-1, the minimum bandwidth defined for that band in the UE release specification shall be tested.	
Note 2:	Values listed in this table assume that the non-optional channel bandwidths specified in Table 5.3.5-1 of TS 38.101-2 [8] lower than the maximum are supported. However, these channel bandwidths are mandatory with capability parameter as defined in [55] TS 38.306 clause 4.2.7.2 for <i>channelBWs-DL/channelBWs-UL</i> parameters. Hence the UE might indicate them as not supported. In such case, select the closest channel bandwidth in both DL and UL.	
Note 3:	For CA and DC, the low-test channel bandwidth per component carrier is chosen to allow minimum aggregated bandwidth defined for a given bandwidth combination set. In case no set of channel bandwidths per component carrier supported by the UE can achieve minimum aggregated bandwidth, select one combination of bandwidths per component carrier within the bandwidth combination set that minimizes the aggregated bandwidth.	

Table 4.3.1.0B-3: Low Test Channel bandwidths for each NTN satellite band, FR1-NTN

NTN satellite Band	UE Low Test Channel bandwidth [MHz] ^{1, 2}
n256	5
n255	5
n254	5
n253	5
n251	5
n250	5
Note 1:	Minimum channel BW value among all the possible channel BW-SCS combinations per band in Table 5.3.5-1 of TS 38.521-5 [57] are listed. In case such bandwidth is not applicable for a given subcarrier spacing, the minimum bandwidth applicable for such subcarrier spacing shall be tested.
Note 2:	Values listed in this table assume that the non-optional channel bandwidths specified in Table 5.3.5-1 of TS 38.101-5 [56] lower than the maximum are supported. However, these channel bandwidths are mandatory with capability parameter as defined in [55] TS 38.306 clause 4.2.7.2 for <i>channelBWs-DL/channelBWs-UL</i> parameters. Hence the UE might indicate them as not supported. In such case, select the closest channel bandwidth in both DL and UL.

4.3.1.0C High test channel bandwidth

The high test channel bandwidth definition for RF is given in Table 4.3.1.0C-1, Table 4.3.1.0C-2 and Table 4.3.1.0C-3 for FR1, FR2 and FR1-NTN respectively.

Table 4.3.1.0C-1: High Test Channel bandwidths for each NR band, FR1

NR Band	UE High Test Channel bandwidth [MHz] ^{10, 11, 12}	RedCap and eRedCap UE High Test Channel bandwidth [MHz] ^{10, 11, 12}
n1	50	20
n2	40	20
n3	50	20
n5	20 ^{1,14} , 25 ²	20
n7	50	20
n8	20 ^{1,14} , 35 ²	20
n12	15	15
n13	10	10
n14	10	10
n20	20	20
n24	10	10
n25	40 ^{1,14} , 45 ²	20
n26	20	20
n28	30, 40 ¹⁵	20
n29	10 ²	N/A
n30	10	10
n31	5	5
n34	15	15
n38	25, 40 ¹³	20
n39	40	20
n40	100	20
n41	100	20
n46	80	N/A
n48	40 ³ , 100 ⁴	20
n50	60 ^{1,14} , 80 ²	20
n51	5	5
n53	10	10

n54	5	5
n65	20	20
n66	40	20
n70	15 ^{1,14} , 25 ²	15 ¹ , 20 ²
n71	20 ^{1,14} , 35 ²	20
n72	5	5
n74	20	20
n75	20 ²	N/A
n76	5 ²	N/A
n77	100	20
n78	100	20
n79	100	20
n80	30 ¹	[20]
n81	20 ¹	[20]
n82	20 ¹	[20]
n83	30 ¹	[20]
n84	50 ¹	[20]
n85	15	15
n86	40 ¹	[20]
n87	5	5
n88	5	5
n91	10 ¹ , 5 ^{2,14}	[10]
n92	20	[20]
n93	10 ¹ , 5 ^{2,14}	[10]
n94	20	[20]
n95	15 ¹	[15]
n96	80	N/A
n97	100 ¹	[20]
n98	40 ¹	[20 ¹]
n99	10 ¹	[10]
n100	5	5
n101	10	10
n104	100	20
n105	20 ^{1,14} , 35 ²	20
n106	3	N/A
n109	30, 50 ²	20
n110	3	N/A

Note 1: This UE channel bandwidth is applicable only to uplink.

Note 2: This UE channel bandwidth is applicable only to downlink.

Note 3: Applicable for use as single carrier, PCell in CA or PCell in DC configuration.

Note 4: Applicable for use as DL SCell in CA or DL SCell in DC configuration.

Note 5: Void

Note 6: Void

Note 7: Void

Note 8: Void

Note 9: Void

Note 10: Maximum channel BW value among all the possible channel BW-SCS combinations per band in Table 5.3.5-1 of TS 38.521-1 [14] are listed.

In case such bandwidth is not applicable for a given subcarrier spacing, the maximum bandwidth applicable for such subcarrier spacing shall be tested.

In case such bandwidth is not defined in the UE release specification according to 38.101-1 [7] Table 5.3.5-1, the maximum bandwidth defined for that band in the UE release specification shall be tested.

In case such bandwidth is optional in the UE release specification according to 38.101-1 [7] Table 5.3.5-1 and not supported by the UE, the maximum non-optional bandwidth for the UE release specification shall be tested.

Note 11: Values listed in this table assume that the maximum (non-optional) channel bandwidth specified in Table 5.3.5-1 of TS 38.101-1 [7] is supported. However, these channel bandwidths (except for 100MHz of bands n41, n48, n77, n78, n79) are mandatory with capability signalling as defined in [55] TS 38.306 clause 4.2.7.2 for *channelBWs-DL/channelBWs-UL* and *channelBWs-DL-v1590/channelBWs-UL-v1590* parameters. Hence the UE might indicate them as not supported. In such case, select the closest channel bandwidth in both DL and UL. Channel bandwidth 100MHz of bands n41, n48, n77, n78, and n79 is mandatory without capability

	signalling (i.e., purely mandatory) as defined in [55] TS 38.306 clause 4.2.7.2 for <i>channelBWs-DL/channelBWs-UL</i> parameters.
Note 12:	For CA, DC, SDL and SUL, the High-test channel bandwidth per component carrier is chosen to allow maximum aggregated bandwidth defined for a given bandwidth combination set. In case no set of channel bandwidths per component carrier supported by the UE can achieve maximum aggregated bandwidths in CA, DC, SDL or SUL, testing could be performed with one combination of bandwidth per component carrier within the bandwidth combination set that maximizes the aggregated bandwidth instead of the values described in the Table.
Note 13:	These UE channel bandwidths are applicable to sidelink operation.
Note 14:	This UE channel bandwidth is applicable to both uplink and downlink when both uplink and downlink are allocated and testing asymmetric BW is not explicitly intended.
Note 15:	This High test channel bandwidth is applicable to UEs supporting maximum channel bandwidth 40MHz.

NOTE 1: Void.

Table 4.3.1.0C-2: High Test Channel bandwidths for each NR band, FR2

NR Band	UE High Test Channel bandwidth [MHz] ^{1, 2, 3}	RedCap UE High Test Channel bandwidth [MHz] ^{1, 2}
n257	400	100
n258	400	100
n259	400	N/A
n260	400	N/A
n261	400	100
Note 1:	Maximum channel BW value among all the possible channel BW-SCS combinations per band in Table 5.3.5-1 of TS 38.521-2 [15] are listed. In case such bandwidth is not applicable for a given subcarrier spacing, the maximum bandwidth applicable for such subcarrier spacing shall be tested. In case such bandwidth is not defined in the UE release specification according to 38.101-2 [8] Table 5.3.5-1, the maximum bandwidth defined for that band in the UE release specification shall be tested. In case such bandwidth is optional in the UE release specification according to 38.101-2 [8] Table 5.3.5-1 and not supported by the UE, the maximum non-optional bandwidth for the UE release specification shall be tested.	
Note 2:	Values listed in this table assume that the maximum (non-optional) channel bandwidth specified in Table 5.3.5-1 of TS 38.101-2 [8] is mandatory with capability bit mandated to be set to 1 (i.e., purely mandatory) as defined in [55] TS 38.306 clause 4.2.7.2 for <i>channelBWs-DL/channelBWs-UL</i> parameters.	
Note 3:	For CA and DC, the High-test channel bandwidth per component carrier is chosen to allow maximum aggregated bandwidth defined for a given bandwidth combination set. In case no set of channel bandwidths per component carrier supported by the UE can achieve maximum aggregated bandwidths in CA and DC, testing could be performed with one combination of bandwidth per component carrier within the bandwidth combination set that maximizes the aggregated bandwidth instead of the values described in the Table.	

NOTE 1 (Informative): In case values listed in table above are higher than those signalled by the UE in *supportedBandwidthDL/supportedBandwidthUL* parameters in a band combination with a single band entry and a single CC entry (i.e., non-CA band combination), testing for Rel-15 and Rel-16 could be performed using the value signalled by the UE in single carrier operation instead of the values described in Table 4.3.1.0C-2.

Table 4.3.1.0C-3: High Test Channel bandwidths for each NTN satellite band, FR1-NTN

NTN satellite Band	UE High Test Channel bandwidth [MHz] ^{1, 2}
n256	20
n255	20
n254	5
n253	5
n251	20
n250	20 ³ , 5 ⁴

Note 1:	Maximum channel BW value among all the possible channel BW-SCS combinations per band in Table 5.3.5-1 of TS 38.521-5 [57] are listed.
Note 2:	Values listed in this table assume that the maximum (non-optional) channel bandwidth specified in Table 5.3.5-1 of TS 38.101-5 [56] is mandatory without capability parameter (i.e., purely mandatory) as defined in TS 38.306 clauses 4.2.7.6/4.2.7.8 [55] for supportedBandwidthDL/ supportedBandwidthUL parameters in a band combination with a single band entry and a single CC entry (i.e., non-CA band combination).
Note 3:	This UE channel bandwidth is applicable only to downlink.
Note 4:	This UE channel bandwidth is applicable only to uplink.

4.3.1.0D Bandwidth part

The value of *locationAndBandwidth* in BWP for FR1 is given in Table 4.3.1.0D-1. The value of *locationAndBandwidth* in BWP for FR2 is given in Table 4.3.1.0D-2.

Table 4.3.1.0D-1: *locationAndBandwidth* in BWP for FR1

BW (MHz)	SCS (kHz)	L _{RBs} (Note 2)	locationAndBandwidth (Note 1)
3	15	15	3850
3	30	N/A	N/A
3	60	N/A	N/A
5	15	25	6600
5	30	11	2750
5	60	N/A	N/A
10	15	52	14025
10	30	24	6325
10	60	11	2750
15	15	79	21450
15	30	38	10175
15	60	18	4675
20	15	106	28875
20	30	51	13750
20	60	24	6325
25	15	133	36300
25	30	65	17600
25	60	31	8250
30	15	160	32174
30	30	78	21175
30	60	38	10175
35	15	188	24474
35	30	92	25025
35	60	44	11825
40	15	216	16774
40	30	106	28875
40	60	51	13750
45	15	242	9624
45	30	119	32450
45	60	58	15675
50	15	270	1924
50	30	133	36300
50	60	65	17600
60	15	N/A	N/A
60	30	162	31624
60	60	79	21450
70	15	N/A	N/A
70	30	189	24199
70	60	93	25300
80	15	N/A	N/A
80	30	217	16499
80	60	107	29150

90	15	N/A	N/A
90	30	245	8799
90	60	121	33000
100	15	N/A	N/A
100	30	273	1099
100	60	135	36850
Note 1: The value for <i>locationAndBandwidth</i> parameter is calculated as the RIV value in accordance to TS 38.214 [21] with $N_{\text{size BWP}} = 275$, $RB_{\text{start}} = 0$ and L_{RBs} for each bandwidth and subcarrier spacing. Note 2: $L_{\text{RBs}} = \text{Max } N_{\text{RB}}$ is the default configuration, unless explicitly specified.			

Table 4.3.1.0D-2: *locationAndBandwidth* in BWP for FR2

BW (MHz)	SCS (kHz)	L_{RBs} (Note 2)	<i>locationAndBandwidth</i> (Note 1)
50	60	66	17875
50	120	32	8525
100	60	132	36025
100	120	24 ^(Note 3)	6325
100	120	48 ^(Note 3)	12925
100	120	66	17875
200	60	264	3574
200	120	132	36025
400	60	N/A	N/A
400	120	264	3574
Note 1: The value for <i>locationAndBandwidth</i> parameter is calculated as the RIV value in accordance to TS 38.214 [21] with $N_{\text{size BWP}} = 275$ and $RB_{\text{start}} = 0$ for each bandwidth and subcarrier spacing. Note 2: $L_{\text{RBs}} = \text{Max } N_{\text{RB}}$ is the default configuration, unless explicitly specified. Note 3: For configurations where the L_{RBs} is explicitly specified to be $L_{\text{RBs}} < \text{Max } N_{\text{RB}}$.			

4.3.1.0E Void

4.3.1.1 Test frequencies for NR operating bands in FR1

4.3.1.1.1 NR operating bands in FR1

4.3.1.1.1.1 Reference test frequencies for NR operating band n1

Table 4.3.1.1.1.1-1: Test frequencies for NR operating band n1 and SCS 15 kHz

CB W [MHz]	carrierBandwidth [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequencyPointA [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS [kHz]	GS CN	absoluteFrequencySSB [ARFCN]	k_{SSB}	Offset Carrier CORESET#0 [RBs] Note 2	CORESET#0 Index (Offset [RBs]) Note 1	offsetToPointA (SIB1) [PRBs] Note 1
5	25	Downlink	Low	211.25	422500	2110.25	422050	0	15	5279	422410	0	0	0 (0)	0
			Mid	2140	428000	2119.39	423878	102		5350	427970	8	1	0 (0)	103
			High	2167.5	433500	2074.53	414906	504		5418	433470	8	1	0 (0)	505
		Uplink	Low	192.25	384500	1920.25	384050	0	-	-	-	-	-	-	-
			Mid	1950	390000	1857.03	371406	504		-	-	-	-	-	-
			High	1977.5	395500	1974.17	394834	6		-	-	-	-	-	-
10	52	Downlink	Low	2115	423000	2110.32	422064	0	15	5280	422430	2	0	0 (0)	0
			Mid	2140	428000	2116.96	423392	102		5344	427490	10	1	0 (0)	103
			High	2165	433000	2069.6	413920	504		5405	432490	10	1	0 (0)	505
		Uplink	Low	1925	385000	1920.32	384064	0	-	-	-	-	-	-	-
			Mid	1950	390000	1854.6	370920	504		-	-	-	-	-	-
			High	1975	395000	1969.24	393848	6		-	-	-	-	-	-
15	79	Downlink	Low	2117.5	423500	2110.39	422078	0	15	5281	422450	4	0	0 (0)	0

			Mi d	214 0	42800 0	2114 .53	422906	102		533 8	427010	0	0	1 (2)	104
			Hi gh	216 2.5	43250 0	2064 .67	412934	504		539 5	431570	8	1	1 (2)	507
		Uplin k	Lo w	192 7.5	38550 0	1920 .39	384078	0		-	-	-	-	-	-
			Mi d	195 0	39000 0	1852 .17	370434	504		-	-	-	-	-	-
			Hi gh	197 2.5	39450 0	1964 .31	392862	6		-	-	-	-	-	-
20	106	Down link	Lo w	212 0	42400 0	2110 .46	422092	0	15	528 2	422650	6	1	2 (4)	5
			Mi d	214 0	42800 0	2112 .1	422420	102		533 2	426530	2	0	1 (2)	104
			Hi gh	216 0	43200 0	2059 .74	411948	504		538 2	430590	10	1	1 (2)	507
		Uplin k	Lo w	193 0	38600 0	1920 .46	384092	0	-	-	-	-	-	-	-
			Mi d	195 0	39000 0	1849 .74	369948	504		-	-	-	-	-	-
			Hi gh	197 0	39400 0	1959 .38	391876	6		-	-	-	-	-	-
25	133	Down link	Lo w	212 2.5	42450 0	2110 .53	422106	0	15	528 3	422670	8	1	2 (4)	5
			Mi d	214 0	42800 0	2109 .67	421934	102		532 6	426050	4	0	1 (2)	104
			Hi gh	215 7.5	43150 0	2054 .81	410962	504		536 9	429610	0	0	2 (4)	508
		Uplin k	Lo w	193 2.5	38650 0	1920 .53	384106	0	-	-	-	-	-	-	-
			Mi d	195 0	39000 0	1847 .31	369462	504		-	-	-	-	-	-
			Hi gh	196 7.5	39350 0	1954 .45	390890	6		-	-	-	-	-	-
30	160	Down link	Lo w	212 5	42500 0	2110 .6	422120	0	15	528 4	422690	10	1	2 (4)	5
			Mi d	214 0	42800 0	2107 .24	421448	102		532 0	425570	6	0	1 (2)	104
			Hi gh	215 5	43100 0	2049 .88	409976	504		535 9	428690	10	1	2 (4)	509
		Uplin k	Lo w	193 5	38700 0	1920 .6	384120	0	-	-	-	-	-	-	-

40	216	Down link	Mi d	1950	390000	1844.88	368976	504	15	-	-	-	-	-	-
			Hi gh	1965	393000	1949.52	389904	6		-	-	-	-	-	-
			Lo w	2130	426000	2110.56	422112	0		5283	422670	6	1	2 (4)	5
		Uplink	Mi d	2140	428000	2102.2	420440	102	-	5308	424610	10	1	1 (2)	105
			Hi gh	2150	430000	2039.84	407968	504		5330	426490	6	0	0 (0)	504
			Lo w	1940	388000	1920.56	384112	0		-	-	-	-	-	-
			Mi d	1950	390000	1839.84	367968	504		-	-	-	-	-	-
			Hi gh	1960	392000	1939.48	387896	6		-	-	-	-	-	-
		Down link	Lo w	2132.5	426500	2110.72	422144	0	15	5284	422690	2	1	2(4)	5
			Mi d	2140	428000	2099.86	419972	102		5302	424130	6	1	1(2)	105
			Hi gh	2147.5	429500	2035	407000	504		5320	425570	10	1	0(0)	505
45	242	Down link	Lo w	1942.5	388500	1920.72	384144	0	-	-	-	-	-	-	-
			Mi d	1950	390000	1837.5	367500	504		-	-	-	-	-	-
			Hi gh	1957.5	391500	1934.64	386928	6		-	-	-	-	-	-
		Uplink	Lo w	2135	427000	2110.7	422140	0	15	5282	422650	2	0	2 (4)	4
			Mi d	2140	428000	2097.34	419468	102		5296	423650	2	0	2 (4)	106
			Hi gh	2145	429000	2029.98	405996	504		5307	424590	6	0	1 (2)	506
		Uplink	Lo w	1945	389000	1920.7	384140	0	-	-	-	-	-	-	-
			Mi d	1950	390000	1834.98	366996	504		-	-	-	-	-	-
			Hi gh	1955	391000	1929.62	385924	6		-	-	-	-	-	-

- Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-1 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.
- Note 2: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs.

Table 4.3.1.1.1.1-2: Test frequencies for NR operating band n1 and SCS 30 kHz

CBW [MHz]	carrierBandwidth [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequencyPointA [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS [kHz]	GS CN	absoluteFrequencySSB [ARFCN]	k_{SSB}	Offset Carrier CORESET#0 [RBs] Note 2	CORESET#0 Index (Offset [RBs]) Note 1	offsetToPointA (SIB1) [PRBs] Note 1
10	24	Downlink	Low	2115	423000	2110.68	422136	0	15	5286	422910	18	0	0 (5)	10
			Mid	2140	428000	2098.96	419792	102		5350	427970	14	0	1 (6)	216
			High	2165	433000	1979.24	395848	504		5411	432970	14	0	1 (6)	1020
		Uplink	Low	1925	385000	1920.68	384136	0	-	-	-	-	-	-	-
			Mid	1950	390000	1764.24	352848	504		-	-	-	-	-	-
			High	1975	395000	1968.52	393704	6		-	-	-	-	-	-
15	38	Downlink	Low	2117.5	423500	2110.66	422132	0	15	5287	422930	2	0	1 (6)	12
			Mid	2140	428000	2096.44	419288	102		5344	427490	22	0	1 (6)	216
			High	2162.5	432500	1974.22	394844	504		5401	432050	18	0	2 (7)	1022
		Uplink	Low	1927.5	385500	1920.66	384132	0	-	-	-	-	-	-	-
			Mid	1950	390000	1761.72	352344	504		-	-	-	-	-	-
			High	1972.5	394500	1963.5	392700	6		-	-	-	-	-	-
20	51	Downlink	Low	2120	424000	2110.82	422164	0	15	5285	422890	2	0	0 (5)	10

			Mi d	214 0	42800 0	2094 .1	418820	102		533 8	427010	18	0	1 (6)	216
			Hi gh	216 0	43200 0	1969 .38	393876	504		538 8	431070	14	0	2 (7)	1022
		Uplin k	Lo w	193 0	38600 0	1920 .82	384164	0		-	-	-	-	-	-
			Mi d	195 0	39000 0	1759 .38	351876	504		-	-	-	-	-	-
			Hi gh	197 0	39400 0	1958 .66	391732	6		-	-	-	-	-	-
25	65	Down link	Lo w	212 2.5	42450 0	2110 .8	422160	0	15	528 6	422910	10	0	0 (5)	10
			Mi d	214 0	42800 0	2091 .58	418316	102		533 2	426530	2	0	2 (7)	218
			Hi gh	215 7.5	43150 0	1964 .36	392872	504		537 5	430090	22	0	2 (7)	1022
		Uplin k	Lo w	193 2.5	38650 0	1920 .8	384160	0	-	-	-	-	-	-	-
			Mi d	195 0	39000 0	1756 .86	351372	504		-	-	-	-	-	-
			Hi gh	196 7.5	39350 0	1953 .64	390728	6		-	-	-	-	-	-
30	78	Down link	Lo w	212 5	42500 0	2110 .96	422192	0	15	528 7	422930	6	0	0 (5)	10
			Mi d	214 0	42800 0	2089 .24	417848	102		532 6	426050	22	0	1 (6)	216
			Hi gh	215 5	43100 0	1959 .52	391904	504		536 2	428930	6	0	0 (5)	1018
		Uplin k	Lo w	193 5	38700 0	1920 .96	384192	0	-	-	-	-	-	-	-
			Mi d	195 0	39000 0	1754 .52	350904	504		-	-	-	-	-	-
			Hi gh	196 5	39300 0	1948 .8	389760	6		-	-	-	-	-	-
40	106	Down link	Lo w	213 0	42600 0	2110 .92	422184	0	15	528 6	422910	2	0	0 (5)	10
			Mi d	214 0	42800 0	2084 .2	416840	102		531 4	425090	14	0	2 (7)	218
			Hi gh	215 0	43000 0	1949 .48	389896	504		533 6	426970	22	0	0 (5)	1018
		Uplin k	Lo w	194 0	38800 0	1920 .92	384184	0	-	-	-	-	-	-	-

			Mi d	195 0	39000 0	1749 .48	349896	504		-	-	-	-	-	-
			Hi gh	196 0	39200 0	1938 .76	387752	6		-	-	-	-	-	-
45	119	Down link	Lo w	213 2.5	42650 0	2111 .08	422216	0	15	529 0	423170	6	0	3(8)	16
			Mi d	214 0	42800 0	2081 .86	416372	102		530 8	424610	10	0	2(7)	218
			Hi gh	214 7.5	42950 0	1944 .64	388928	504		532 6	426050	14	0	1(6)	1020
		Uplin k	Lo w	194 2.5	38850 0	1921 .08	384216	0	-	-	-	-	-	-	-
			Mi d	195 0	39000 0	1747 .14	349428	504		-	-	-	-	-	-
			Hi gh	195 7.5	39150 0	1933 .92	386784	6		-	-	-	-	-	-
50	133	Down link	Lo w	213 5	42700 0	2111 .06	422212	0	15	528 8	423130	18	0	2 (7)	14
			Mi d	214 0	42800 0	2079 .34	415868	102		530 2	424130	18	0	2 (7)	218
			Hi gh	214 5	42900 0	1939 .62	387924	504		531 3	425070	22	0	1 (6)	1020
		Uplin k	Lo w	194 5	38900 0	1921 .06	384212	0	-	-	-	-	-	-	-
			Mi d	195 0	39000 0	1744 .62	348924	504		-	-	-	-	-	-
			Hi gh	195 5	39100 0	1928 .9	385780	6		-	-	-	-	-	-
Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-2 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2. Note 2: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs.															

Table 4.3.1.1.1-3: Test frequencies for NR operating band n1 and SCS 60 kHz without CORESET#0

CBW [MHz]	carrierBand width [PRBs]	Range	Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absolute Frequen cyPoint A [ARFCN]	offsetTo Carrier [PRBs]	SS block SCS [kHz]	GSCN	absolute Frequen cySSB [ARFCN]

10	11	Downlink	Low	2115	423000	2111.04	422208	0	15	-	422568
			Mid	2140	428000	2062.6	412520	102		-	427568
			High	2165	433000	1798.16	359632	504		-	432568
		Uplink	Low	1925	385000	1921.04	384208	0	-	-	-
			Mid	1950	390000	1583.16	316632	504		-	-
			High	1975	395000	1966.72	393344	6		-	-
15	18	Downlink	Low	2117.5	423500	2111.02	422204	0	15	-	422564
			Mid	2140	428000	2060.08	412016	102		-	427064
			High	2162.5	432500	1793.14	358628	504		-	431564
		Uplink	Low	1927.5	385500	1921.02	384204	0	-	-	-
			Mid	1950	390000	1580.64	316128	504		-	-
			High	1972.5	394500	1961.7	392340	6		-	-
20	24	Downlink	Low	2120	424000	2111.36	422272	0	15	-	422632
			Mid	2140	428000	2057.92	411584	102		-	426632
			High	2160	432000	1788.48	357696	504		-	430632
		Uplink	Low	1930	386000	1921.36	384272	0	-	-	-
			Mid	1950	390000	1578.48	315696	504		-	-
			High	1970	394000	1957.04	391408	6		-	-
25	31	Downlink	Low	2122.5	424500	2111.34	422268	0	15	-	422628
			Mid	2140	428000	2055.4	411080	102		-	426128
			High	2157.5	431500	1783.46	356692	504		-	429628
		Uplink	Low	1932.5	386500	1921.34	384268	0	-	-	-
			Mid	1950	390000	1575.96	315192	504		-	-
			High	1967.5	393500	1952.02	390404	6		-	-
30	38	Downlink	Low	2125	425000	2111.32	422264	0	15	-	422624
			Mid	2140	428000	2052.88	410576	102		-	425624
			High	2155	431000	1778.44	355688	504		-	428624
		Uplink	Low	1935	387000	1921.32	384264	0	-	-	-
			Mid	1950	390000	1573.44	314688	504		-	-
			High	1965	393000	1947	389400	6		-	-
40	51	Downlink	Low	2130	426000	2111.64	422328	0	15	-	422688
			Mid	2140	428000	2048.2	409640	102		-	424688
			High	2150	430000	1768.76	353752	504		-	426688
		Uplink	Low	1940	388000	1921.64	384328	0	-	-	-
			Mid	1950	390000	1568.76	313752	504		-	-
			High	1960	392000	1937.32	387464	6		-	-
45	58	Downlink	Low	2132.5	426500	2111.62	422324	0	15	-	422684
			Mid	2140	428000	2045.68	409136	102		-	424184
			High	2147.5	429500	1763.74	352748	504		-	425684
		Uplink	Low	1942.5	388500	1921.62	384324	0	-	-	-
			Mid	1950	390000	1566.24	313248	504		-	-

50	65	Downlink	High	1957.5	391500	1932.3	386460	6	15	-	-
			Low	2135	427000	2111.6	422320	0		-	422680
			Mid	2140	428000	2043.16	408632	102		-	423680
			High	2145	429000	1758.72	351744	504		-	424680
		Uplink	Low	1945	389000	1921.6	384320	0	-	-	-
			Mid	1950	390000	1563.72	312744	504		-	-
			High	1955	391000	1927.28	385456	6		-	-
Note: FR1 carrier without CORESET#0 is indicated in the MIB by setting k_{SSB} =31, <i>controlResourceSetZero</i> =0 and <i>searchSpaceZero</i> = 0 (TS 38.213 [22], clause 13).											

4.3.1.1.1.2

Reference test frequencies for NR operating band n2

Table 4.3.1.1.1.2-1: Test frequencies for NR operating band n2 and SCS 15 kHz

CBW [MHz]	carrierBandwidth [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequencyPointA [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS [kHz]	GS CN	absoluteFrequencySSB [ARFCN]	k_{SSB}	Offset Carrier CORESET#0 [RBs] Note 2	CORESET#0 Index (Offset [RBs]) Note 1	offsetToPointA (SIB1) [PRBs] Note 1
5	25	Downlink	Low	1932.5	386500	1930.25	386050	0	15	4829	386410	0	0	0 (0)	0
			Mid	1960	392000	1939.39	387878	102		4900	391970	8	1	0 (0)	103
			High	1987.5	397500	1894.53	378906	504		4968	397470	8	1	0 (0)	505
		Uplink	Low	1852.5	370500	1850.25	370050	0	-	-	-	-	-	-	-
			Mid	1880	376000	1787.03	357406	504		-	-	-	-	-	-
			High	1907.5	381500	1904.17	380834	6		-	-	-	-	-	-
10	52	Downlink	Low	1935	387000	1930.32	386064	0	15	4830	386430	2	0	0 (0)	0
			Mid	1960	392000	1936.96	387392	102		4894	391490	10	1	0 (0)	103
			High	1985	397000	1889.6	377920	504		4955	396490	10	1	0 (0)	505

		Uplink	Low	1855	371000	1850.32	370064	0	-	-	-	-	-	-	-
			Mid	1880	376000	1784.6	356920	504		-	-	-	-	-	-
			High	1905	381000	1899.24	379848	6		-	-	-	-	-	-
15	79	Downlink	Low	1937.5	387500	1930.39	386078	0	15	4831	386450	4	0	0 (0)	0
			Mid	1960	392000	1934.53	386906	102		4888	391010	0	0	1 (2)	104
			High	1982.5	396500	1884.67	376934	504		4945	395570	8	1	1 (2)	507
		Uplink	Low	1857.5	371500	1850.39	370078	0	-	-	-	-	-	-	-
			Mid	1880	376000	1782.17	356434	504		-	-	-	-	-	-
			High	1902.5	380500	1894.31	378862	6		-	-	-	-	-	-
20	106	Downlink	Low	1940	388000	1930.46	386092	0	15	4832	386650	6	1	2 (4)	5
			Mid	1960	392000	1932.1	386420	102		4882	390530	2	0	1 (2)	104
			High	1980	396000	1879.74	375948	504		4932	394590	10	1	1 (2)	507
		Uplink	Low	1860	372000	1850.46	370092	0	-	-	-	-	-	-	-
			Mid	1880	376000	1779.74	355948	504		-	-	-	-	-	-
			High	1900	380000	1889.38	377876	6		-	-	-	-	-	-
25	133	Downlink	Low	1942.5	388500	1930.53	386106	0	15	4833	386670	8	1	2 (4)	5
			Mid	1960	392000	1929.67	385934	102		4876	390050	4	0	1 (2)	104
			High	1977.5	395500	1874.81	374962	504		4919	393610	0	0	2 (4)	508
		Uplink	Low	1862.5	372500	1850.53	370106	0	-	-	-	-	-	-	-
			Mid	1880	376000	1777.31	355462	504		-	-	-	-	-	-
			High	1897.5	379500	1884.45	376890	6		-	-	-	-	-	-

30	160	Down link	Low	1945	389000	1930.6	386120	0	15	4834	386690	10	1	2 (4)	5
			Mid	1960	392000	1927.24	385448	102		4870	389570	6	0	1 (2)	104
			High	1975	395000	1869.88	373976	504		4909	392690	10	1	2 (4)	509
		Uplink	Low	1865	373000	1850.6	370120	0	-	-	-	-	-	-	-
			Mid	1880	376000	1774.88	354976	504		-	-	-	-	-	-
			High	1895	379000	1879.52	375904	6		-	-	-	-	-	-
35	188	Down link	Low	1947.5	389500	1930.58	386116	0	15	4832	386650	10	0	2 (4)	4
			Mid	1960	392000	1924.72	384944	102		4864	389090	2	1	1 (2)	105
			High	1972.5	394500	1864.86	372972	504		4896	391710	6	2	2 (4)	510
		Uplink	Low	1867.5	373500	1850.58	370116	0	-	-	-	-	-	-	-
			Mid	1880	376000	1772.36	354472	504		-	-	-	-	-	-
			High	1892.5	378500	1874.5	374900	6		-	-	-	-	-	-
40	216	Down link	Low	1950	390000	1930.56	386112	0	15	4833	386670	6	1	2 (4)	5
			Mid	1960	392000	1922.2	384440	102		4858	388610	10	1	1 (2)	105
			High	1970	394000	1859.84	371968	504		4880	390490	6	0	0 (0)	504
		Uplink	Low	1870	374000	1850.56	370112	0	-	-	-	-	-	-	-
			Mid	1880	376000	1769.84	353968	504		-	-	-	-	-	-
			High	1890	378000	1869.48	373896	6		-	-	-	-	-	-

Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-1 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.

Note 2: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs.

Table 4.3.1.1.1.2-2: Test frequencies for NR operating band n2 and SCS 30 kHz

CBW [MHz]	carrierBandwidth [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequencyPointA [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS [kHz]	GS CN	absoluteFrequencySSB [ARFCN]	k_{SSB}	Offset Carrier CORESET#0 [RBs] Note 2	CORESET#0 Index (Offset [RBs]) Note 1	offsetToPointA (SIB1) [PRBs] Note 1
10	24	Downlink	Low	1935	387000	1930.68	386136	0	15	4836	386910	18	0	0 (5)	10
			Mid	1960	392000	1918.96	383792	102		4900	391970	14	0	1 (6)	216
			High	1985	397000	1799.24	359848	504		4961	396970	14	0	1 (6)	1020
		Uplink	Low	1855	371000	1850.68	370136	0	-	-	-	-	-	-	-
			Mid	1880	376000	1694.24	338848	504		-	-	-	-	-	-
			High	1905	381000	1898.52	379704	6		-	-	-	-	-	-
15	38	Downlink	Low	1937.5	387500	1930.66	386132	0	15	4837	386930	2	0	1 (6)	12
			Mid	1960	392000	1916.44	383288	102		4894	391490	22	0	1 (6)	216
			High	1982.5	396500	1794.22	358844	504		4951	396050	18	0	2 (7)	1022
		Uplink	Low	1857.5	371500	1850.66	370132	0	-	-	-	-	-	-	-
			Mid	1880	376000	1691.72	338344	504		-	-	-	-	-	-
			High	1902.5	380500	1893.5	378700	6		-	-	-	-	-	-
20	51	Downlink	Low	1940	388000	1930.82	386164	0	15	4835	386890	2	0	0 (5)	10
			Mid	1960	392000	1914.1	382820	102		4888	391010	18	0	1 (6)	216
			High	1980	396000	1789.38	357876	504		4938	395070	14	0	2 (7)	1022

25	65	Uplink	Low	1860	372000	1850.82	370164	0	-	-	-	-	-	-	-
			Mid	1880	376000	1689.38	337876	504		-	-	-	-	-	-
			High	1900	380000	1888.66	377732	6		-	-	-	-	-	-
		Downlink	Low	1942.5	388500	1930.8	386160	0	15	4836	386910	10	0	0 (5)	10
			Mid	1960	392000	1911.58	382316	102		4882	390530	2	0	2 (7)	218
			High	1977.5	395500	1784.36	356872	504		4925	394090	22	0	2 (7)	1022
		Uplink	Low	1862.5	372500	1850.8	370160	0	-	-	-	-	-	-	-
			Mid	1880	376000	1686.86	337372	504		-	-	-	-	-	-
			High	1897.5	379500	1883.64	376728	6		-	-	-	-	-	-
30	78	Downlink	Low	1945	389000	1930.96	386192	0	15	4837	386930	6	0	0 (5)	10
			Mid	1960	392000	1909.24	381848	102		4876	390050	22	0	1 (6)	216
			High	1975	395000	1779.52	355904	504		4912	392930	6	0	0 (5)	1018
		Uplink	Low	1865	373000	1850.96	370192	0	-	-	-	-	-	-	-
			Mid	1880	376000	1684.52	336904	504		-	-	-	-	-	-
			High	1895	379000	1878.8	375760	6		-	-	-	-	-	-
		Downlink	Low	1947.5	389500	1930.94	386188	0	15	4838	387130	2	0	3 (8)	16
			Mid	1960	392000	1906.72	381344	102		4870	389570	6	0	2 (7)	218
			High	1972.5	394500	1774.5	354900	504		4899	391950	14	0	0 (5)	1018
35	92	Uplink	Low	1867.5	373500	1850.94	370188	0	-	-	-	-	-	-	-
			Mid	1880	376000	1682	336400	504		-	-	-	-	-	-

			Hi gh	189 2.5	37850 0	1873 .78	374756	6		-	-	-	-	-	-
40	106	Down link	Lo w	195 0	39000 0	1930 .92	386184	0	15	483 6	386910	2	0	0 (5)	10
			Mi d	196 0	39200 0	1904 .2	380840	102		486 4	389090	14	0	2 (7)	218
			Hi gh	197 0	39400 0	1769 .48	353896	504		488 6	390970	22	0	0 (5)	1018
		Uplin k	Lo w	187 0	37400 0	1850 .92	370184	0	-	-	-	-	-	-	-
			Mi d	188 0	37600 0	1679 .48	335896	504		-	-	-	-	-	-
			Hi gh	189 0	37800 0	1868 .76	373752	6		-	-	-	-	-	-
Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-2 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.															
Note 2: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs.															

Table 4.3.1.1.2-3: Test frequencies for NR operating band n2 and SCS 60 kHz without CORESET#0

CBW [MHz]	carrierBandwidth [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequencyPoint A [ARFCN]	offsetToCarrier [PRBs]	SS block SCS [kHz]	GSC N	absoluteFrequencySS B [ARFCN]
10	11	Downlink	Low	1935	387000	1931.0 4	386208	0	15	-	386568
			Mid	1960	392000	1882.6	376520	102		-	391568
			High	1985	397000	1618.1 6	323632	504		-	396568
		Uplink	Low	1855	371000	1851.0 4	370208	0	-	-	-
			Mid	1880	376000	1513.1 6	302632	504		-	-
			High	1905	381000	1896.7 2	379344	6		-	-
15	18	Downlink	Low	1937.5	387500	1931.0 2	386204	0	15	-	386564

			Mid	1960	392000	1880.0 8	376016	102		-	391064
			Hig h	1982.5	396500	1613.1 4	322628	504		-	395564
		Uplink	Low	1857.5	371500	1851.0 2	370204	0	-	-	-
			Mid	1880	376000	1510.6 4	302128	504		-	-
			Hig h	1902.5	380500	1891.7	378340	6		-	-
20	24	Downlin k	Low	1940	388000	1931.3 6	386272	0	15	-	386632
			Mid	1960	392000	1877.9 2	375584	102		-	390632
			Hig h	1980	396000	1608.4 8	321696	504		-	394632
		Uplink	Low	1860	372000	1851.3 6	370272	0	-	-	-
			Mid	1880	376000	1508.4 8	301696	504		-	-
			Hig h	1900	380000	1887.0 4	377408	6		-	-
25	31	Downlin k	Low	1942.5	388500	1931.3 4	386268	0	15	-	386628
			Mid	1960	392000	1875.4	375080	102		-	390128
			Hig h	1977.5	395500	1603.4 6	320692	504		-	393628
		Uplink	Low	1862.5	372500	1851.3 4	370268	0	-	-	-
			Mid	1880	376000	1505.9 6	301192	504		-	-
			Hig h	1897.5	379500	1882.0 2	376404	6		-	-
30	38	Downlin k	Low	1945	389000	1931.3 2	386264	0	15	-	386624
			Mid	1960	392000	1872.8 8	374576	102		-	389624
			Hig h	1975	395000	1598.4 4	319688	504		-	392624
		Uplink	Low	1865	373000	1851.3 2	370264	0	-	-	-

			Mid	1880	376000	1503.4 4	300688	504		-	-
			Hig h	1895	379000	1877	375400	6		-	-
35	44	Downlin k	Low	1947.5	389500	1931.6 6	386332	0	15	-	386692
			Mid	1960	392000	1870.7 2	374144	102		-	389192
			Hig h	1972.5	394500	1593.7 8	318756	504		-	391692
		Uplink	Low	1867.5	373500	1851.6 6	370332	0	-	-	-
			Mid	1880	376000	1501.2 8	300256	504		-	-
			Hig h	1892.5	378500	1872.3 4	374468	6		-	-
40	51	Downlin k	Low	1950	390000	1931.6 4	386328	0	15	-	386688
			Mid	1960	392000	1868.2	373640	102		-	388688
			Hig h	1970	394000	1588.7 6	317752	504		-	390688
		Uplink	Low	1870	374000	1851.6 4	370328	0	-	-	-
			Mid	1880	376000	1498.7 6	299752	504		-	-
			Hig h	1890	378000	1867.3 2	373464	6		-	-
Note: FR1 carrier without CORESET#0 is indicated in the MIB by setting k_{SSB} =31, <i>controlResourceSetZero</i> =0 and <i>searchSpaceZero</i> = 0 (TS 38.213 [22], clause 13).											

4.3.1.1.1.3

Reference test frequencies for NR operating band n3

Table 4.3.1.1.1.3-1: Test frequencies for NR operating band n3 and SCS 15 kHz

CBW [MHz]	carrierBandwidth [PRBs]	Range	Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequencyPointA [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS [kHz]	GS CN	absoluteFrequencySSB [ARFCN]	k_{SSB}	Offset Carrier CORESET#0 [RBs] Note 2	CORESET#0 Index (Offset [RBs]) Note 1	offsetToPointA (SIB1) [PRBs] Note 1

5	25	Down link	Lo w	180 7.5	36150 0	1805 .25	361050	0	15	451 8	361470	8	1	0 (0)	1
			Mi d	184 2.5	36850 0	1821 .89	364378	102		460 4	368410	0	0	0 (0)	102
			Hi gh	187 7.5	37550 0	1784 .53	356906	504		469 3	375410	0	0	0 (0)	504
		Uplink	Lo w	171 2.5	34250 0	1710 .25	342050	0	-	-	-	-	-	-	-
			Mi d	174 7.5	34950 0	1654 .53	330906	504		-	-	-	-	-	-
			Hi gh	178 2.5	35650 0	1779 .17	355834	6		-	-	-	-	-	-
10	52	Down link	Lo w	181 0	36200 0	1805 .32	361064	0	15	451 9	361490	10	1	0 (0)	1
			Mi d	184 2.5	36850 0	1819 .46	363892	102		459 8	367930	2	0	0 (0)	102
			Hi gh	187 5	37500 0	1779 .6	355920	504		468 0	374430	2	0	0 (0)	504
		Uplink	Lo w	171 5	34300 0	1710 .32	342064	0	-	-	-	-	-	-	-
			Mi d	174 7.5	34950 0	1652 .1	330420	504		-	-	-	-	-	-
			Hi gh	178 0	35600 0	1774 .24	354848	6		-	-	-	-	-	-
15	79	Down link	Lo w	181 2.5	36250 0	1805 .39	361078	0	15	451 7	361450	4	0	0 (0)	0
			Mi d	184 2.5	36850 0	1817 .03	363406	102		459 2	367450	4	0	0 (0)	102
			Hi gh	187 2.5	37450 0	1774 .67	354934	504		466 7	373450	4	0	0 (0)	504
		Uplink	Lo w	171 7.5	34350 0	1710 .39	342078	0	-	-	-	-	-	-	-
			Mi d	174 7.5	34950 0	1649 .67	329934	504		-	-	-	-	-	-
			Hi gh	177 7.5	35550 0	1769 .31	353862	6		-	-	-	-	-	-
20	106	Down link	Lo w	181 5	36300 0	1805 .46	361092	0	15	451 8	361470	6	0	0 (0)	0
			Mi d	184 2.5	36850 0	1814 .6	362920	102		458 6	366970	6	0	0 (0)	102
			Hi gh	187 0	37400 0	1769 .74	353948	504		465 7	372530	2	0	1 (2)	506

25	133	Uplink	Low	1720	344000	1710.46	342092	0	-	-	-	-	-	-	-
			Mid	1747.5	349500	1647.24	329448	504		-	-	-	-	-	-
			High	1775	355000	1764.38	352876	6		-	-	-	-	-	-
		Downlink	Low	1817.5	363500	1805.53	361106	0	15	4519	361490	8	0	0 (0)	0
			Mid	1842.5	368500	1812.17	362434	102		4580	366490	8	0	0 (0)	102
			High	1867.5	373500	1764.81	352962	504		4644	371550	4	0	1 (2)	506
		Uplink	Low	1722.5	344500	1710.53	342106	0	-	-	-	-	-	-	-
			Mid	1747.5	349500	1644.81	328962	504		-	-	-	-	-	-
			High	1772.5	354500	1759.45	351890	6		-	-	-	-	-	-
30	160	Downlink	Low	1820	364000	1805.6	361120	0	15	4520	361690	10	1	2 (4)	5
			Mid	1842.5	368500	1809.74	361948	102		4574	366010	10	0	0 (0)	102
			High	1865	373000	1759.88	351976	504		4631	370570	6	0	1 (2)	506
		Uplink	Low	1725	345000	1710.6	342120	0	-	-	-	-	-	-	-
			Mid	1747.5	349500	1642.38	328476	504		-	-	-	-	-	-
			High	1770	354000	1754.52	350904	6		-	-	-	-	-	-
		Downlink	Low	1822.5	364500	1805.58	361116	0	15	4521	361710	6	2	2 (4)	6
			Mid	1842.5	368500	1807.22	361444	102		4568	365530	6	1	0 (0)	103
			High	1862.5	372500	1754.86	350972	504		4621	369650	10	0	2(4)	508
35	188	Uplink	Low	1727.5	345500	1710.58	342116	0	-	-	-	-	-	-	-
			Mid	1747.5	349500	1639.86	327972	504		-	-	-	-	-	-
			High	1767.5	353500	1749.5	349900	6		-	-	-	-	-	-

40	216	Down link	Low	1825	365000	1805.56	361112	0	15	4519	361490	6	0	0 (0)	0
			Mid	1842.5	368500	1804.7	360940	102		4562	365050	2	0	1 (2)	104
			High	1860	372000	1749.84	349968	504		4608	368670	6	1	2 (4)	509
		Uplink	Low	1730	346000	1710.56	342112	0	-	-		-	-	-	-
			Mid	1747.5	349500	1637.34	327468	504		-		-	-	-	-
			High	1765	353000	1744.48	348896	6		-		-	-	-	-
		Down link	Low	1827.5	365500	1805.72	361144	0	15	4520	361690	2	1	2 (4)	5
			Mid	1842.5	368500	1802.36	360472	102		4556	364570	10	1	0 (0)	103
			High	1857.5	371500	1745	349000	504		4595	367690	2	1	2 (4)	509
45	242	Uplink	Low	1732.5	346500	1710.72	342144	0	-	-		-	-	-	-
			Mid	1747.5	349500	1635	327000	504		-		-	-	-	-
			High	1762.5	352500	1739.64	347928	6		-		-	-	-	-
		Down link	Low	1830	366000	1805.7	361140	0	15	4521	361710	10	1	2 (4)	5
			Mid	1842.5	368500	1799.84	359968	102		4550	364090	6	0	1 (2)	104
			High	1855	371000	1739.98	347996	504		4582	366530	10	0	0 (0)	504
		Uplink	Low	1735	347000	1710.7	342140	0	-	-		-	-	-	-
			Mid	1747.5	349500	1632.48	326496	504		-		-	-	-	-
			High	1760	352000	1734.62	346924	6		-		-	-	-	-

Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-1 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.

Note 2: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs.

Table 4.3.1.1.1.3-2: Test frequencies for NR operating band n3 and SCS 30 kHz

CB W [MHz]	carrierBandwidth [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequencyPointA [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS [kHz]	GS CN	absoluteFrequencySSB [ARFCN]	k_{SSB}	Offset Carrier CORESET#0 [RBs] Note 2	CORESET#0 Index (Offset [RBs]) Note 1	offsetToPointA (SIB1) [PRBs] Note 1
10	24	Downlink	Low	1810	362000	1805.68	361136	0	15	4525	361970	14	0	1 (6)	12
			Mid	1842.5	368500	1801.46	360292	102		4604	368410	18	0	0 (5)	214
			High	1875	375000	1689.24	337848	504		4686	374910	18	0	0 (5)	1018
		Uplink	Low	1715	343000	1710.68	342136	0	-	-	-	-	-	-	-
			Mid	1747.5	349500	1561.74	312348	504		-	-	-	-	-	-
			High	1780	356000	1773.52	354704	6		-	-	-	-	-	-
15	38	Downlink	Low	1812.5	362500	1805.66	361132	0	15	4523	361930	2	0	1 (6)	12
			Mid	1842.5	368500	1798.94	359788	102		4598	367930	2	0	1 (6)	216
			High	1872.5	374500	1684.22	336844	504		4673	373930	2	0	1 (6)	1020
		Uplink	Low	1717.5	343500	1710.66	342132	0	-	-	-	-	-	-	-
			Mid	1747.5	349500	1559.22	311844	504		-	-	-	-	-	-
			High	1777.5	355500	1768.5	353700	6		-	-	-	-	-	-
20	51	Downlink	Low	1815	363000	1805.82	361164	0	15	4524	361950	22	0	0 (5)	10
			Mid	1842.5	368500	1796.6	359320	102		4592	367450	22	0	0 (5)	214
			High	1870	374000	1679.38	335876	504		4663	373010	18	0	1 (6)	1020
		Uplink	Low	1720	344000	1710.82	342164	0	-	-	-	-	-	-	-

			Mi d	174 7.5	34950 0	1556 .88	311376	504		-	-	-	-	-	-
			Hi gh	177 5	35500 0	1763 .66	352732	6		-	-	-	-	-	-
25	65	Down link	Lo w	181 7.5	36350 0	1805 .8	361160	0	15	452 5	361970	6	0	1 (6)	12
			Mi d	184 2.5	36850 0	1794 .08	358816	102		458 6	366970	6	0	1 (6)	216
			Hi gh	186 7.5	37350 0	1674 .36	334872	504		465 0	372030	2	0	2 (7)	1022
		Uplin k	Lo w	172 2.5	34450 0	1710 .8	342160	0	-	-	-	-	-	-	-
			Mi d	174 7.5	34950 0	1554 .36	310872	504		-	-	-	-	-	-
			Hi gh	177 2.5	35450 0	1758 .64	351728	6		-	-	-	-	-	-
30	78	Down link	Lo w	182 0	36400 0	1805 .96	361192	0	15	452 3	361930	6	0	0 (5)	10
			Mi d	184 2.5	36850 0	1791 .74	358348	102		458 0	366490	2	0	1 (6)	216
			Hi gh	186 5	37300 0	1669 .52	333904	504		463 7	371050	22	0	1 (6)	1020
		Uplin k	Lo w	172 5	34500 0	1710 .96	342192	0	-	-	-	-	-	-	-
			Mi d	174 7.5	34950 0	1552 .02	310404	504		-	-	-	-	-	-
			Hi gh	177 0	35400 0	1753 .8	350760	6		-	-	-	-	-	-
35	92	Down link	Lo w	182 2.5	36450 0	1805 .94	361188	0	15	452 4	361950	14	0	0 (5)	10
			Mi d	184 2.5	36850 0	1789 .22	357844	102		457 4	366010	10	0	1 (6)	216
			Hi gh	186 2.5	37250 0	1664 .5	332900	504		462 7	370130	2	0	3 (8)	1024
		Uplin k	Lo w	172 7.5	34550 0	1710 .94	342188	0	-	-	-	-	-	-	-
			Mi d	174 7.5	34950 0	1549 .5	309900	504		-	-	-	-	-	-
			Hi gh	176 7.5	35350 0	1748 .78	349756	6		-	-	-	-	-	-
40	106	Down link	Lo w	182 5	36500 0	1805 .92	361184	0	15	452 5	361970	22	0	0 (5)	10

			Mid	184 2.5	36850 0	1786 .7	357340	102		456 8	365530	18	0	1 (6)	216	
			High	186 0	37200 0	1659 .48	331896	504		461 1	368910	2	0	0 (5)	1018	
		Uplink	Low	173 0	34600 0	1710 .92	342184	0		-	-		-	-	-	-
			Mid	174 7.5	34950 0	1546 .98	309396	504			-		-	-	-	-
			High	176 5	35300 0	1743 .76	348752	6			-		-	-	-	-
45	119	Downlink	Low	182 7.5	36550 0	1806 .08	361216	0	15	452 6	362170	6	0	3 (8)	16	
			Mid	184 2.5	36850 0	1784 .36	356872	102		456 2	365050	14	0	1 (6)	216	
			High	185 7.5	37150 0	1654 .64	330928	504		460 1	368170	6	0	3 (8)	1024	
		Uplink	Low	173 2.5	34650 0	1711 .08	342216	0	-	-		-	-	-	-	
			Mid	174 7.5	34950 0	1544 .64	308928	504		-		-	-	-	-	
			High	176 2.5	35250 0	1738 .92	347784	6		-		-	-	-	-	
50	133	Downlink	Low	183 0	36600 0	1806 .06	361212	0	15	452 4	361950	6	0	0 (5)	10	
			Mid	184 2.5	36850 0	1781 .84	356368	102		455 6	364570	22	0	1 (6)	216	
			High	185 5	37100 0	1649 .62	329924	504		458 8	367010	2	0	1(6)	1020	
		Uplink	Low	173 5	34700 0	1711 .06	342212	0	-	-		-	-	-	-	
			Mid	174 7.5	34950 0	1542 .12	308424	504		-		-	-	-	-	
			High	176 0	35200 0	1733 .9	346780	6		-		-	-	-	-	
Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-2 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.																
Note 2: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs.																

Table 4.3.1.1.3-3: Test frequencies for NR operating band n3 and SCS 60 kHz without CORESET#0

CBW [MHz]	carrierBand width [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absolute FrequencyPoint A [ARFCN]	offsetTo Carrier [PRBs]	SS block SCS [kHz]	GSCN	absolute FrequencySSB [ARFCN]
10	11	Downlink	Low	1810	362000	1806.04	361208	0	15	-	361568
			Mid	1842.5	368500	1765.1	353020	102		-	368068
			High	1875	375000	1508.16	301632	504		-	374568
		Uplink	Low	1715	343000	1711.04	342208	0	-	-	-
			Mid	1747.5	349500	1380.66	276132	504		-	-
			High	1780	356000	1771.72	354344	6		-	-
15	18	Downlink	Low	1812.5	362500	1806.02	361204	0	15	-	361564
			Mid	1842.5	368500	1762.58	352516	102		-	367564
			High	1872.5	374500	1503.14	300628	504		-	373564
		Uplink	Low	1717.5	343500	1711.02	342204	0	-	-	-
			Mid	1747.5	349500	1378.14	275628	504		-	-
			High	1777.5	355500	1766.7	353340	6		-	-
20	24	Downlink	Low	1815	363000	1806.36	361272	0	15	-	361632
			Mid	1842.5	368500	1760.42	352084	102		-	367132
			High	1870	374000	1498.48	299696	504		-	372632
		Uplink	Low	1720	344000	1711.36	342272	0	-	-	-
			Mid	1747.5	349500	1375.98	275196	504		-	-
			High	1775	355000	1762.04	352408	6		-	-
25	31	Downlink	Low	1817.5	363500	1806.34	361268	0	15	-	361628
			Mid	1842.5	368500	1757.9	351580	102		-	366628
			High	1867.5	373500	1493.46	298692	504		-	371628
		Uplink	Low	1722.5	344500	1711.34	342268	0	-	-	-
			Mid	1747.5	349500	1373.46	274692	504		-	-
			High	1772.5	354500	1757.02	351404	6		-	-
30	38	Downlink	Low	1820	364000	1806.32	361264	0	15	-	361624
			Mid	1842.5	368500	1755.38	351076	102		-	366124
			High	1865	373000	1488.44	297688	504		-	370624
		Uplink	Low	1725	345000	1711.32	342264	0	-	-	-
			Mid	1747.5	349500	1370.94	274188	504		-	-
			High	1770	354000	1752	350400	6		-	-
35	44	Downlink	Low	1822.5	364500	1806.66	361332	0	15	-	361692
			Mid	1842.5	368500	1753.22	350644	102		-	365692
			High	1862.5	372500	1483.78	296756	504		-	369692
		Uplink	Low	1727.5	345500	1711.66	342332	0	-	-	-

40	51	Downlink	Mid	1747.5	349500	1368.78	273756	504	15	-	-
			High	1767.5	353500	1747.34	349468	6		-	-
			Low	1825	365000	1806.64	361328	0		-	361688
		Uplink	Mid	1842.5	368500	1750.7	350140	102	-	365188	
			High	1860	372000	1478.76	295752	504	-	368688	
			Low	1730	346000	1711.64	342328	0	-	-	
45	58	Downlink	Mid	1747.5	349500	1366.26	273252	504	-	-	-
			High	1765	353000	1742.32	348464	6		-	-
			Low	1827.5	365500	1806.62	361324	0		-	361684
		Uplink	Mid	1842.5	368500	1748.18	349636	102	-	364684	
			High	1857.5	371500	1473.74	294748	504	-	367684	
			Low	1732.5	346500	1711.62	342324	0	-	-	
50	65	Downlink	Mid	1747.5	349500	1363.74	272748	504	15	-	-
			High	1762.5	352500	1737.3	347460	6		-	-
			Low	1830	366000	1806.6	361320	0		-	361680
		Uplink	Mid	1842.5	368500	1745.66	349132	102	-	364180	
			High	1855	371000	1468.72	293744	504	-	366680	
			Low	1735	347000	1711.6	342320	0	-	-	
Uplink	Mid	1747.5	349500	1361.22	272244	504	-	-			
	High	1760	352000	1732.28	346456	6	-	-			
Note: FR1 carrier without CORESET#0 is indicated in the MIB by setting k_{SSB} =31, <i>controlResourceSetZero</i> =0 and <i>searchSpaceZero</i> = 0 (TS 38.213 [22], clause 13).											

4.3.1.1.1.4 FFS

4.3.1.1.1.5 Reference test frequencies for NR operating band n5

Table 4.3.1.1.1.5-1: Test frequencies for NR operating band n5, SCS 15 kHz and ΔF_{Raster} 15 kHz

UL/DL Bandwidth combination [MHz]	carrierBandwidth [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequencyPointA [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS [kHz]	GS CN	absoluteFrequencySSB [ARFCN]	k_{SSB}	Offset Carrier CORESET#0 [RBs] Note 2	CORESET#0 Index (Offset [RBs]) Note 1	offsetToPointA (SIB1) [PRBs] Note 1
5/5	25	Downlink	Low	871.5	174300	869.25	173850	0	15	2178	174270	8	1	0 (0)	1
			Mid	881.5	176300	860.89	172178	102		2203	176210	0	0	0 (0)	102

		Uplink	High	891.5	178300	798.53	159706	504	-	2228	178330	4	1	1 (2)	507
			Low	826.5	165300	824.25	164850	0		-	-	-	-	-	-
			Mid	836.5	167300	743.53	148706	504		-	-	-	-	-	-
			High	846.5	169300	843.17	168634	6		-	-	-	-	-	-
10/10	52	Downlink	Low	874	174800	869.32	173864	0	15	2179	174290	10	1	0 (0)	1
			Mid	881.5	176300	858.46	171692	102		2197	175730	2	0	0 (0)	102
			High	889	177800	793.6	158720	504		2218	177410	2	1	2 (4)	509
		Uplink	Low	829	165800	824.32	164864	0	-	-	-	-	-	-	-
			Mid	836.5	167300	741.1	148220	504		-	-	-	-	-	-
			High	844	168800	838.24	167648	6		-	-	-	-	-	-
15/15	79	Downlink	Low	876.5	175300	869.39	173878	0	15	2177	174250	4	0	0 (0)	0
			Mid	881.5	176300	856.03	171206	102		2191	175250	4	0	0 (0)	102
			High	886.5	177300	788.67	157734	504		2205	176430	4	1	2 (4)	509
		Uplink	Low	831.5	166300	824.39	164878	0	-	-	-	-	-	-	-
			Mid	836.5	167300	738.67	147734	504		-	-	-	-	-	-
			High	841.5	168300	833.31	166662	6		-	-	-	-	-	-
20/20	106	Downlink	Low	879	175800	869.46	173892	0	15	2178	174270	6	0	0 (0)	0
			Mid	881.5	176300	853.6	170720	102		2185	174770	6	0	0 (0)	102
			High	884	176800	783.74	156748	504		2192	175450	6	1	2 (4)	509

		Uplink	Low	834	166800	824.46	164892	0		-	-	-	-	-	-
			Mid	836.5	167300	736.24	147248	504		-	-	-	-	-	-
			High	839	167800	828.38	165676	6		-	-	-	-	-	-
20/25	133	Downlink	Low	881.5	176300	869.53	173906	0	15	2179	174290	8	0	0 (0)	0
			Mid												
			High												
	106	Uplink	Low	836.5	167300	826.96	165392	0	-	-	-	-	-	-	-
			Mid												
			High												

Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-1 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.

Note 2: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs.

Note 3: Void.

Note 4: 20/25 MHz UL/DL Bandwidth combination is tested with Low range test frequency only. Low range test frequency shall be used instead of Mid range and High range test frequencies.

Table 4.3.1.1.1.5-2: Test frequencies for NR operating band n5, SCS 30 kHz and ΔF_{Raster} 30 kHz

UL/DL Bandwidth combination [MHz]	carrierBandwidth [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequencyPointA [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS [kHz]	GS CN	absoluteFrequencySSB [ARFCN]	k_{SSB}	Offset Carrier CORESET#0 [RBs] Note 2	CORESET#0 Index (Offset [RBs]) Note 1	offsetToPointA (SIB1) [PRBs] Note 1
10/10	24	Downlink	Low	874	174800	869.68	173936	0	30	2185	174770	14	0	1 (1)	2

		Uplink	Mid	881.5	176300	840.46	168092	102	-	2203	176210	18	0	0 (0)	204
			High	889	177800	703.24	140648	504		2224	177890	6	0	3 (3)	1014
			Low	829	165800	824.68	164936	0		-	-	-	-	-	-
			Mid	836.5	167300	650.74	130148	504		-	-	-	-	-	-
			High	844	168800	837.52	167504	6		-	-	-	-	-	-
15/15	38	Downlink	Low	876.5	175300	869.66	173932	0	30	2183	174730	2	0	1 (1)	2
			Mid	881.5	176300	837.94	167588	102		2197	175730	2	0	1 (1)	206
			High	886.5	177300	698.22	139644	504		2208	176670	6	0	0 (0)	1008
		Uplink	Low	831.5	166300	824.66	164932	0	-	-	-	-	-	-	-
			Mid	836.5	167300	648.22	129644	504		-	-	-	-	-	-
			High	841.5	168300	832.5	166500	6		-	-	-	-	-	-
20/20	51	Downlink	Low	879	175800	869.82	173964	0	30	2184	174750	22	0	0 (0)	0
			Mid	881.5	176300	835.6	167120	102		2191	175250	22	0	0 (0)	204
			High	884	176800	693.38	138676	504		2195	175690	2	0	0 (0)	1008
		Uplink	Low	834	166800	824.82	164964	0	-	-	-	-	-	-	-
			Mid	836.5	167300	645.88	129176	504		-	-	-	-	-	-
			High	839	167800	827.66	165532	6		-	-	-	-	-	-
20/25	65	Downlink	Low	881.5	176300	869.8	173960	0	30	2185	174770	6	0	1 (1)	2
			Mid												

			High												
	51	Uplink	Low	836.5	167300	827.32	165464	0	-	-	-	-	-	-	-
			Mid												
			High												
Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-4 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2. Note 2: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs. Note 3: Void. Note 4: 20/25 MHz UL/DL Bandwidth combination is tested with Low range test frequency only. Low range test frequency shall be used instead of Mid range and High range test frequencies.															

4.3.1.1.1.6 FFS

4.3.1.1.1.7 Reference test frequencies for NR operating band n7

Table 4.3.1.1.1.7-1: Test frequencies for NR operating band n7 and SCS 15 kHz

CB W [MHz]	carrierBandwidth [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequencyPointA [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS [kHz]	GS CN	absoluteFrequencySSB [ARFCN]	k_{SSB}	Offset Carrier CORESET#0 [RBs] Note 2	CORESET#0 Index (Offset [RBs]) Note 1	offsetToPointA (SIB1) [PRBs] Note 1
5	25	Downlink	Low	262.5	524500	2620.25	524050	0	15	6554	524410	0	0	0 (0)	0
			Mid	2655	531000	2634.39	526878	102		6636	530910	0	0	0 (0)	102
			High	2687.5	537500	2594.53	518906	504		6718	537410	0	0	0 (0)	504
		Uplink	Low	250.5	500500	2500.25	500050	0	-	-	-	-	-	-	-
			Mid	2535	507000	2442.03	488406	504		-	-	-	-	-	-

			High	256 7.5	51350 0	2564 .17	512834	6		-	-	-	-	-	-
10	52	Down link	Low	262 5	52500 0	2620 .32	524064	0	15	655 5	524430	2	0	0 (0)	0
			Mid	265 5	53100 0	2631 .96	526392	102		663 0	530430	2	0	0 (0)	102
			High	268 5	53700 0	2589 .6	517920	504		670 5	536430	2	0	0 (0)	504
		Uplink	Low	250 5	50100 0	2500 .32	500064	0	-	-	-	-	-	-	-
			Mid	253 5	50700 0	2439 .6	487920	504		-	-	-	-	-	-
			High	256 5	51300 0	2559 .24	511848	6		-	-	-	-	-	-
15	79	Down link	Low	262 7.5	52550 0	2620 .39	524078	0	15	655 6	524450	4	0	0 (0)	0
			Mid	265 5	53100 0	2629 .53	525906	102		662 4	529950	4	0	0 (0)	102
			High	268 2.5	53650 0	2584 .67	516934	504		669 2	535450	4	0	0 (0)	504
		Uplink	Low	250 7.5	50150 0	2500 .39	500078	0	-	-	-	-	-	-	-
			Mid	253 5	50700 0	2437 .17	487434	504		-	-	-	-	-	-
			High	256 2.5	51250 0	2554 .31	510862	6		-	-	-	-	-	-
20	106	Down link	Low	263 0	52600 0	2620 .46	524092	0	15	655 7	524650	6	1	2 (4)	5
			Mid	265 5	53100 0	2627 .1	525420	102		661 8	529470	6	0	0 (0)	102
			High	268 0	53600 0	2579 .74	515948	504		668 2	534530	2	0	1 (2)	506
		Uplink	Low	251 0	50200 0	2500 .46	500092	0	-	-	-	-	-	-	-
			Mid	253 5	50700 0	2434 .74	486948	504		-	-	-	-	-	-
			High	256 0	51200 0	2549 .38	509876	6		-	-	-	-	-	-
25	133	Down link	Low	263 2.5	52650 0	2620 .53	524106	0	15	655 8	524670	8	1	2 (4)	5
			Mid	265 5	53100 0	2624 .67	524934	102		661 2	528990	8	0	0 (0)	102

		Uplink	High	267 7.5	53550 0	2574 .81	514962	504	-	666 9	533550	4	0	1 (2)	506
			Low	251 2.5	50250 0	2500 .53	500106	0		-	-	-	-	-	-
			Mid	253 5	50700 0	2432 .31	486462	504		-	-	-	-	-	-
			High	255 7.5	51150 0	2544 .45	508890	6		-	-	-	-	-	-
30	160	Downlink	Low	263 5	52700 0	2620 .6	524120	0	15	655 9	524690	10	1	2 (4)	5
			Mid	265 5	53100 0	2622 .24	524448	102		660 6	528510	10	0	0 (0)	102
			High	267 5	53500 0	2569 .88	513976	504		665 6	532570	6	0	1 (2)	506
		Uplink	Low	251 5	50300 0	2500 .6	500120	0	-	-	-	-	-	-	-
			Mid	253 5	50700 0	2429 .88	485976	504		-	-	-	-	-	-
			High	255 5	51100 0	2539 .52	507904	6		-	-	-	-	-	-
40	216	Downlink	Low	264 0	52800 0	2620 .56	524112	0	15	655 8	524670	6	1	2 (4)	5
			Mid	265 5	53100 0	2617 .2	523440	102		659 4	527550	2	0	1 (2)	104
			High	267 0	53400 0	2559 .84	511968	504		663 3	530670	6	1	2 (4)	509
		Uplink	Low	252 0	50400 0	2500 .56	500112	0	-	-	-	-	-	-	-
			Mid	253 5	50700 0	2424 .84	484968	504		-	-	-	-	-	-
			High	255 0	51000 0	2529 .48	505896	6		-	-	-	-	-	-
50	270	Downlink	Low	264 5	52900 0	2620 .7	524140	0	15	655 7	524650	2	0	2 (4)	4
			Mid	265 5	53100 0	2612 .34	522468	102		658 2	526590	6	0	1 (2)	104
			High	266 5	53300 0	2549 .98	509996	504		660 7	528530	10	0	0 (0)	504
		Uplink	Low	252 5	50500 0	2500 .7	500140	0	-	-	-	-	-	-	-
			Mid	253 5	50700 0	2419 .98	483996	504		-	-	-	-	-	-

			Hi gh	254 5	50900 0	2519 .62	503924	6		-	-	-	-	-	-
Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-1 in TS 38.213 [22]. The value of CORESET#0 Index is controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2. Note 2: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs.															

Table 4.3.1.1.1.7-2: Test frequencies for NR operating band n7 and SCS 30 kHz

CB W [M Hz]	carrierBandwidth [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequencyPointA [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS [kHz]	GS CN	absoluteFrequencySSB [ARFCN]	k_{SSB}	Offset Carrier CORESET#0 [RBs] Note 2	CORESET#0 Index (Offset [RBs]) Note 1	offsetToPointA (SIB1) [PRBs] Note 1
10	24	Downlink	Low	2625	525000	2620.68	524136	0	15	6561	524910	18	0	0 (5)	10
			Mid	2655	531000	2613.96	522792	102		6636	530910	18	0	0 (5)	214
			High	2685	537000	2499.24	499848	504		6711	536910	18	0	0 (5)	1018
		Uplink	Low	2505	501000	2500.68	500136	0	-	-	-	-	-	-	-
			Mid	2535	507000	2349.24	469848	504		-	-	-	-	-	-
			High	2565	513000	2558.52	511704	6		-	-	-	-	-	-
15	38	Downlink	Low	2627.5	525500	2620.66	524132	0	15	6562	524930	2	0	1 (6)	12
			Mid	2655	531000	2611.44	522288	102		6630	530430	2	0	1 (6)	216
			High	2682.5	536500	2494.22	498844	504		6698	535930	2	0	1 (6)	1020
		Uplink	Low	2507.5	501500	2500.66	500132	0	-	-	-	-	-	-	-
			Mid	2535	507000	2346.72	469344	504		-	-	-	-	-	-
			High	2562.5	512500	2553.5	510700	6		-	-	-	-	-	-

20	51	Down link	Lo w	263 0	52600 0	2620 .82	524164	0	15	656 0	524890	2	0	0 (5)	10
			Mid	265 5	53100 0	2609 .1	521820	102		662 4	529950	22	0	0 (5)	214
			High	268 0	53600 0	2489 .38	497876	504		668 8	535010	18	0	1 (6)	1020
		Uplink	Lo w	251 0	50200 0	2500 .82	500164	0	-	-	-	-	-	-	-
			Mid	253 5	50700 0	2344 .38	468876	504		-	-	-	-	-	-
			High	256 0	51200 0	2548 .66	509732	6		-	-	-	-	-	-
25	65	Down link	Lo w	263 2.5	52650 0	2620 .8	524160	0	15	656 1	524910	10	0	0 (5)	10
			Mid	265 5	53100 0	2606 .58	521316	102		661 8	529470	6	0	1 (6)	216
			High	267 7.5	53550 0	2484 .36	496872	504		667 5	534030	2	0	2 (7)	1022
		Uplink	Lo w	251 2.5	50250 0	2500 .8	500160	0	-	-	-	-	-	-	-
			Mid	253 5	50700 0	2341 .86	468372	504		-	-	-	-	-	-
			High	255 7.5	51150 0	2543 .64	508728	6		-	-	-	-	-	-
30	78	Down link	Lo w	263 5	52700 0	2620 .96	524192	0	15	656 2	524930	6	0	0 (5)	10
			Mid	265 5	53100 0	2604 .24	520848	102		661 2	528990	2	0	1 (6)	216
			High	267 5	53500 0	2479 .52	495904	504		666 2	533050	22	0	1 (6)	1020
		Uplink	Lo w	251 5	50300 0	2500 .96	500192	0	-	-	-	-	-	-	-
			Mid	253 5	50700 0	2339 .52	467904	504		-	-	-	-	-	-
			High	255 5	51100 0	2538 .8	507760	6		-	-	-	-	-	-
40	106	Down link	Lo w	264 0	52800 0	2620 .92	524184	0	15	656 1	524910	2	0	0 (5)	10
			Mid	265 5	53100 0	2599 .2	519840	102		660 0	528030	18	0	1 (6)	216
			High	267 0	53400 0	2469 .48	493896	504		663 6	530910	2	0	0 (5)	1018

50	133	Uplink	Low	2520	504000	2500.92	500184	0	-	-	-	-	-	-	-	
			Mid	2535	507000	2334.48	466896	504	-	-	-	-	-	-	-	
			High	2550	510000	2528.76	505752	6	-	-	-	-	-	-	-	
		Downlink	Low	2645	529000	2621.06	524212	0	15	6563	525130	18	0	2 (7)	14	
			Mid	2655	531000	2594.34	518868	102		6588	527070	22	0	1 (6)	216	
			High	2665	533000	2459.62	491924	504		6613	529010	2	0	1 (6)	1020	
		Uplink	Low	2525	505000	2501.06	500212	0	-	-	-	-	-	-	-	-
			Mid	2535	507000	2329.62	465924	504		-	-	-	-	-	-	-
			High	2545	509000	2518.9	503780	6		-	-	-	-	-	-	-
Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-2 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.																
Note 2: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs.																

Table 4.3.1.1.1.7-3: Test frequencies for NR operating band n7 and SCS 60 kHz without CORESET#0

CBW [MHz]	carrierBand width [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absolute FrequencyPoint A [ARFCN]	offsetTo Carrier [PRBs]	SS block SCS [kHz]	GSCN	absolute FrequencySSB [ARFCN]
10	11	Downlink	Low	2625	525000	2621.04	524208	0	15	-	524568
			Mid	2655	531000	2577.6	515520	102		-	530568
			High	2685	537000	2318.16	463632	504		-	536568
		Uplink	Low	2505	501000	2501.04	500208	0	-	-	-
			Mid	2535	507000	2168.16	433632	504		-	-
			High	2565	513000	2556.72	511344	6		-	-
15	18	Downlink	Low	2627.5	525500	2621.02	524204	0	15	-	524564
			Mid	2655	531000	2575.08	515016	102		-	530064
			High	2682.5	536500	2313.14	462628	504		-	535564
		Uplink	Low	2507.5	501500	2501.02	500204	0	-	-	-

			Mid	2535	507000	2165.64	433128	504		-	-
			High	2562.5	512500	2551.7	510340	6		-	-
20	24	Downlink	Low	2630	526000	2621.36	524272	0	15	-	524632
			Mid	2655	531000	2572.92	514584	102		-	529632
			High	2680	536000	2308.48	461696	504		-	534632
			Low	2510	502000	2501.36	500272	0		-	-
		Mid	2535	507000	2163.48	432696	504	-	-		
		High	2560	512000	2547.04	509408	6	-	-		
25	31	Downlink	Low	2632.5	526500	2621.34	524268	0	15	-	524628
			Mid	2655	531000	2570.4	514080	102		-	529128
			High	2677.5	535500	2303.46	460692	504		-	533628
			Low	2512.5	502500	2501.34	500268	0		-	-
		Mid	2535	507000	2160.96	432192	504	-	-		
		High	2557.5	511500	2542.02	508404	6	-	-		
30	38	Downlink	Low	2635	527000	2621.32	524264	0	15	-	524624
			Mid	2655	531000	2567.88	513576	102		-	528624
			High	2675	535000	2298.44	459688	504		-	532624
			Low	2515	503000	2501.32	500264	0		-	-
		Mid	2535	507000	2158.44	431688	504	-	-		
		High	2555	511000	2537	507400	6	-	-		
40	51	Downlink	Low	2640	528000	2621.64	524328	0	15	-	524688
			Mid	2655	531000	2563.2	512640	102		-	527688
			High	2670	534000	2288.76	457752	504		-	530688
			Low	2520	504000	2501.64	500328	0		-	-
		Mid	2535	507000	2153.76	430752	504	-	-		
		High	2550	510000	2527.32	505464	6	-	-		
50	65	Downlink	Low	2645	529000	2621.6	524320	0	15	-	524680
			Mid	2655	531000	2558.16	511632	102		-	526680
			High	2665	533000	2278.72	455744	504		-	528680
			Low	2525	505000	2501.6	500320	0		-	-
		Mid	2535	507000	2148.72	429744	504	-	-		
		High	2545	509000	2517.28	503456	6	-	-		
Note: FR1 carrier without CORESET#0 is indicated in the MIB by setting k_{SSB} =31, <i>controlResourceSetZero</i> =0 and <i>searchSpaceZero</i> = 0 (TS 38.213 [22], clause 13).											

4.3.1.1.1.8

Reference test frequencies for NR operating band n8

Table 4.3.1.1.1.8-1: Test frequencies for NR operating band n8 and SCS 15 kHz

UL/DL Bandwidth combination [MHz]	carrierBandwidth [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequencyPointA [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS [kHz]	GS CN	absoluteFrequencySSB [ARFCN]	k_{SSB}	Offset Carrier CORESET#0 [RBs] Note 2	CORESET#0 Index (Offset [RBs]) Note 1	offsetToPointA (SIB1) [PRBs] Note 1
5/5	25	Downlink	Low	927.5	185500	925.25	185050	0	15	2318	185530	4	1	1 (2)	3
			Mid	942.5	188500	921.89	184378	102		2354	188410	0	0	0 (0)	102
			High	957.5	191500	864.53	172906	504		2393	191530	4	1	1 (2)	507
		Uplink	Low	882.5	176500	880.25	176050	0	-	-	-	-	-	-	-
			Mid	897.5	179500	804.53	160906	504		-	-	-	-	-	-
			High	912.5	182500	909.17	181834	6		-	-	-	-	-	-
10/10	52	Downlink	Low	930	186000	925.32	185064	0	15	2319	185550	6	1	1 (2)	3
			Mid	942.5	188500	919.46	183892	102		2348	187930	2	0	0 (0)	102
			High	955	191000	859.6	171920	504		2383	190610	2	1	2 (4)	509
		Uplink	Low	885	177000	880.32	176064	0	-	-	-	-	-	-	-
			Mid	897.5	179500	802.1	160420	504		-	-	-	-	-	-
			High	910	182000	904.24	180848	6		-	-	-	-	-	-
10/25	133	Downlink	Low	937.5	187500	925.53	185106	0	15	2319	185550	4	0	1 (2)	2
			Mid	942.5	188500	912.17	182434	102		2330	186490	8	0	0 (0)	102

			High	947.5	189500	844.81	168962	504		2344	187490	8	0	0 (0)	504
	52	Uplink	Low	892.5	178500	887.82	177564	0	-	-	-	-	-	-	-
			Mid	897.5	179500	802.1	160420	504		-	-	-	-	-	-
			High	902.5	180500	896.74	179348	6		-	-	-	-	-	-
10/30	160	Downlink	Low	940	188000	925.6	185120	0	15	2320	185570	6	0	1 (2)	2
			Mid	942.5	188500	909.74	181948	102		2324	186010	10	0	0 (0)	102
			High	945	189000	839.88	167976	504		2331	186510	10	0	0 (0)	504
	52	Uplink	Low	895	179000	890.32	178064	0	-	-	-	-	-	-	-
			Mid	897.5	179500	802.1	160420	504		-	-	-	-	-	-
			High	900	180000	894.24	178848	6		-	-	-	-	-	-
10/35	188	Downlink	Low	942.5	188500	925.58	185116	0	15	2318	185530	6	1	0 (0)	1
			Mid												
			High												
	52	Uplink	Low	897.5	179500	892.82	178564	0	-	-	-	-	-	-	-
			Mid												
			High												
15/15	79	Downlink	Low	932.5	186500	925.39	185078	0	15	2320	185570	8	1	1 (2)	3
			Mid	942.5	188500	917.03	183406	102		2342	187450	4	0	0 (0)	102
			High	952.5	190500	854.67	170934	504		2370	189630	4	1	2 (4)	509

		Uplink	Low	887.5	1775.00	880.39	176078	0	-	-	-	-	-	-	-
			Mid	897.5	1795.00	799.67	159934	504		-	-	-	-	-	-
			High	907.5	1815.00	899.31	179862	6		-	-	-	-	-	-
15/25	133	Downlink	Low	937.5	1875.00	925.53	185106	0	15	2319	185550	4	0	1 (2)	2
			Mid	942.5	1885.00	912.17	182434	102		2330	186490	8	0	0 (0)	102
			High	947.5	1895.00	844.81	168962	504		2344	187490	8	0	0 (0)	504
	79	Uplink	Low	892.5	1785.00	885.39	177078	0	-	-	-	-	-	-	-
			Mid	897.5	1795.00	799.67	159934	504		-	-	-	-	-	-
			High	902.5	1805.00	894.31	178862	6		-	-	-	-	-	-
15/30	160	Downlink	Low	940	1880.00	925.6	185120	0	15	2320	185570	6	0	1 (2)	2
			Mid	942.5	1885.00	909.74	181948	102		2324	186010	10	0	0 (0)	102
			High	945	1890.00	839.88	167976	504		2331	186510	10	0	0 (0)	504
	79	Uplink	Low	895	1790.00	887.89	177578	0	-	-	-	-	-	-	-
			Mid	897.5	1795.00	799.67	159934	504		-	-	-	-	-	-
			High	900	1800.00	891.81	178362	6		-	-	-	-	-	-
15/35	188	Downlink	Low	942.5	1885.00	925.58	185116	0	15	2318	185530	6	1	0 (0)	1
			Mid												
			High												
	79	Uplink	Low	897.5	1795.00	890.39	178078	0	-	-	-	-	-	-	-

			Mi d												
			Hi gh												
20/20	106	Down link	Lo w	935	1870 00	925. 46	185092	0	15	231 8	185530	2	0	1 (2)	2
			Mi d	942. 5	1885 00	914. 6	182920	102		233 6	186970	6	0	0 (0)	102
			Hi gh	950	1900 00	849. 74	169948	504		235 7	188650	6	1	2 (4)	509
		Uplin k	Lo w	890	1780 00	880. 46	176092	0	-	-	-	-	-	-	-
			Mi d	897. 5	1795 00	797. 24	159448	504		-	-	-	-	-	-
			Hi gh	905	1810 00	894. 38	178876	6		-	-	-	-	-	-
20/25	133	Down link	Lo w	937. 5	1875 00	925. 53	185106	0	15	231 9	185550	4	0	1 (2)	2
			Mi d	942. 5	1885 00	912. 17	182434	102		233 0	186490	8	0	0 (0)	102
			Hi gh	947. 5	1895 00	844. 81	168962	504		234 4	187490	8	0	0 (0)	504
	106	Uplin k	Lo w	892. 5	1785 00	882. 96	176592	0	-	-	-	-	-	-	-
			Mi d	897. 5	1795 00	797. 24	159448	504		-	-	-	-	-	-
			Hi gh	902. 5	1805 00	891. 88	178376	6		-	-	-	-	-	-
20/30	160	Down link	Lo w	940	1880 00	925. 6	185120	0	15	232 0	185570	6	0	1 (2)	2
			Mi d	942. 5	1885 00	909. 74	181948	102		232 4	186010	10	0	0 (0)	102
			Hi gh	945	1890 00	839. 88	167976	504		233 1	186510	10	0	0 (0)	504
	106	Uplin k	Lo w	895	1790 00	885. 46	177092	0	-	-	-	-	-	-	-
			Mi d	897. 5	1795 00	797. 24	159448	504		-	-	-	-	-	-

			High	900	180000	889.38	177876	6		-	-	-	-	-	-
20/35	188	Down link	Low	942.5	188500	925.58	185116	0	15	2318	185530	6	1	0 (0)	1
			Mid												
			High												
	106	Uplink	Low	897.5	179500	887.96	177592	0	-	-	-	-	-	-	-
			Mid												
			High												
Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-1 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.															
Note 2: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs.															
Note 3: 10/35 MHz, 15/35 MHz and 20/35 MHz UL/DL Bandwidth combination is tested with Low range test frequency only. Low range test frequency shall be used instead of Mid range and High range test frequencies.															

Table 4.3.1.1.1.8-2: Test frequencies for NR operating band n8 and SCS 30 kHz

UL/DL Bandwidth combination [MHz]	carrierBandwidth [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequencyPointA [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS [kHz]	GS CN	absoluteFrequencySSB [ARFCN]	k_{SSB}	Offset Carrier CORESET#0 [RBs] Note 2	CORESET#0 Index (Offset [RBs]) Note 1	offsetToPointA (SIB1) [PRBs] Note 1
10/10	24	Down link	Low	930	186000	925.68	185136	0	15	2325	186030	10	0	2 (7)	14
			Mid	942.5	188500	901.46	180292	102		2354	188410	18	0	0 (5)	214
			High	955	191000	769.24	153848	504		2389	191090	6	0	3 (8)	1024
		Uplink	Low	885	177000	880.68	176136	0	-	-	-	-	-	-	-

10/25	65	Down link	Mid	897.5	1795.00	711.74	142348	504	15	-	-	-	-	-	-
			High	910	1820.00	903.52	180704	6		-	-	-	-	-	-
			Low	937.5	1875.00	925.8	185160	0		232.5	186030	2	0	2 (7)	14
	24	Down link	Mid	942.5	1885.00	894.08	178816	102	-	233.6	186970	6	0	1 (6)	216
			High	947.5	1895.00	754.36	150872	504		235.0	187970	6	0	1 (6)	1020
			Low	892.5	1785.00	888.18	177636	0		-	-	-	-	-	-
		Uplink	Mid	897.5	1795.00	711.74	142348	504		-	-	-	-	-	-
			High	902.5	1805.00	896.02	179204	6		-	-	-	-	-	-
			Low	940	1880.00	925.96	185192	0		232.6	186050	22	0	1 (6)	12
10/30	78	Down link	Mid	942.5	1885.00	891.74	178348	102	15	233.0	186490	2	0r	1 (6)	216
			High	945	1890.00	749.52	149904	504		233.7	186990	2	0	1 (6)	1020
			Low	895	1790.00	890.68	178136	0		-	-	-	-	-	-
	24	Uplink	Mid	897.5	1795.00	711.74	142348	504	-	-	-	-	-	-	-
			High	900	1800.00	893.52	178704	6		-	-	-	-	-	-
			Low	942.5	1885.00	925.94	185188	0		232.4	186010	10	0	1 (6)	12
10/35	92	Down link	Mid	942.5	1885.00	925.94	185188	0	15	232.4	186010	10	0	1 (6)	12
			High												
			Low												
	24	Uplink	Mid	897.5	1795.00	893.18	178636	0	-	-	-	-	-	-	-
			Low												

			High												
15/15	38	Down link	Low	932.5	186500	925.66	185132	0	15	2326	186050	18	0	2 (7)	14
			Mid	942.5	188500	898.94	179788	102		2348	187930	2	0	1 (6)	216
			High	952.5	190500	764.22	152844	504		2373	189870	6	0	0 (5)	1018
		Uplink	Low	887.5	177500	880.66	176132	0	-	-	-	-	-	-	-
			Mid	897.5	179500	709.22	141844	504		-	-	-	-	-	-
			High	907.5	181500	898.5	179700	6		-	-	-	-	-	-
15/25	65	Down link	Low	937.5	187500	925.8	185160	0	15	2325	186030	2	0	2 (7)	14
			Mid	942.5	188500	894.08	178816	102		2336	186970	6	0	1 (6)	216
			High	947.5	189500	754.36	150872	504		2350	187970	6	0	1 (6)	1020
	38	Uplink	Low	892.5	178500	885.66	177132	0	-	-	-	-	-	-	-
			Mid	897.5	179500	709.22	141844	504		-	-	-	-	-	-
			High	902.5	180500	893.5	178700	6		-	-	-	-	-	-
15/30	78	Down link	Low	940	188000	925.96	185192	0	15	2326	186050	22	0	1 (6)	12
			Mid	942.5	188500	891.74	178348	102		2330	186490	2	0	1 (6)	216
			High	945	189000	749.52	149904	504		2337	186990	2	0	1 (6)	1020
	38	Uplink	Low	895	179000	888.16	177632	0	-	-	-	-	-	-	-
			Mid	897.5	179500	709.22	141844	504		-	-	-	-	-	-
			High	900	180000	891	178200	6		-	-	-	-	-	-

15/35	92	Down link	Lo w	942.5	188500	925.94	185188	0	15	2324	186010	10	0	1 (6)	12
			Mid												
			High												
	38	Uplink	Lo w	897.5	179500	890.66	178132	0	-	-	-	-	-	-	-
			Mid												
			High												
20/20	51	Down link	Lo w	935	187000	925.82	185164	0	15	2324	186010	18	0	1 (6)	12
			Mid												
			High												
		Uplink	Lo w	890	178000	880.82	176164	0	-	-	-	-	-	-	-
			Mid												
			High												
20/25	65	Down link	Lo w	937.5	187500	925.8	185160	0	15	2325	186030	2	0	2 (7)	14
			Mid												
			High												
	51	Uplink	Lo w	892.5	178500	883.32	176664	0	-	-	-	-	-	-	-
			Mid												
			High												
20/30	78	Down link	Lo w	940	188000	925.96	185192	0	15	2326	186050	22	0	1 (6)	12

			Mid	942.5	1885.00	891.74	178348	102		2330	186490	2	0	1 (6)	216
			High	945	1890.00	749.52	149904	504		2337	186990	2	0	1 (6)	1020
	51	Uplink	Low	895	1790.00	885.82	177164	0	-	-	-	-	-	-	-
			Mid	897.5	1795.00	706.88	141376	504		-	-	-	-	-	-
			High	900	1800.00	888.66	177732	6		-	-	-	-	-	-
20/35	92	Downlink	Low	942.5	1885.00	925.94	185188	0	15	2324	186010	10	0	1 (6)	12
			Mid												
			High												
	51	Uplink	Low	897.5	1795.00	888.32	177664	0	-	-	-	-	-	-	-
			Mid												
			High												
Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-2 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.															
Note 2: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs.															
Note 3: 10/35 MHz, 15/35 MHz and 20/35 MHz UL/DL Bandwidth combination is tested with Low range test frequency only. Low range test frequency shall be used instead of Mid range and High range test frequencies.															

4.3.1.1.1.9 to 4.3.1.1.1.11 FFS

4.3.1.1.1.12 Reference test frequencies for NR operating band n12

Table 4.3.1.1.1.12-1: Test frequencies for NR operating band n12 and SCS 15 kHz

CBW	carrierBandwidth [PRBs]	Range	Carrier	Carrier	point A	absoluteFrequencyPointA [ARFCN]	offsetToCarrier	SS block	GS CN	absoluteFrequencySSB [ARFCN]	k_{SSB}	Offset Carrier	CORESET#0	offsetToPointA (SIB1)

[M Hz]				cent re [MH z]	centr e [ARF CN]	[MH z]		[Carrier PRBs]	SC S [kHz]				CORES ET#0 [RBs] Note 2	Index (Offset [RBs]) Note 1	[PRBs] Note 1
5	25	Down link	Lo w	731. 5	14630 0	729. 25	145850	0	15	182 8	146210	0	0	0 (0)	0
			Mi d	737. 5	14750 0	716. 89	143378	102		184 3	147410	0	0	0 (0)	102
			Hi gh	743. 5	14870 0	650. 53	130106	504		185 8	148610	0	0	0 (0)	504
		Uplin k	Lo w	701. 5	14030 0	699. 25	139850	0	-	-	-	-	-	-	-
			Mi d	707. 5	14150 0	614. 53	122906	504		-	-	-	-	-	-
			Hi gh	713. 5	14270 0	710. 17	142034	6		-	-	-	-	-	-
10	52	Down link	Lo w	734	14680 0	729. 32	145864	0	15	182 9	146410	2	1	2 (4)	5
			Mi d	737. 5	14750 0	714. 46	142892	102		183 7	146930	2	0	0 (0)	102
			Hi gh	741	14820 0	645. 6	129120	504		184 5	147630	2	0	0 (0)	504
		Uplin k	Lo w	704	14080 0	699. 32	139864	0	-	-	-	-	-	-	-
			Mi d	707. 5	14150 0	612. 1	122420	504		-	-	-	-	-	-
			Hi gh	711	14220 0	705. 24	141048	6		-	-	-	-	-	-
15	79	Down link	Lo w	736. 5	14730 0	729. 39	145878	0	15	183 0	146430	4	1	2 (4)	5
			Mi d	737. 5	14750 0	712. 03	142406	102		183 1	146450	4	0	0 (0)	102
			Hi gh	738. 5	14770 0	640. 67	128134	504		183 2	146650	4	0	0 (0)	504
		Uplin k	Lo w	706. 5	14130 0	699. 39	139878	0	-	-	-	-	-	-	-
			Mi d	707. 5	14150 0	609. 67	121934	504		-	-	-	-	-	-
			Hi gh	708. 5	14170 0	700. 31	140062	6		-	-	-	-	-	-

- Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-1 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.
- Note 2: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs.

Table 4.3.1.1.12-2: Test frequencies for NR operating band n12 and SCS 30 kHz

CB W [MHz]	carrierBandwidth [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequencyPointA [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS [kHz]	GS CN	absoluteFrequencySSB [ARFCN]	k_{SSB}	Offset Carrier CORESET#0 [RBs] Note 2	CORESET#0 Index (Offset [RBs]) Note 1	offsetToPointA (SIB1) [PRBs] Note 1
10	24	Down link	Low	734	146800	729.68	145936	0	15	1835	146890	6	0	3 (8)	16
			Mid	737.5	147500	696.46	139292	102		1843	147410	18	0	0 (5)	214
			High	741	148200	555.24	111048	504		1851	148110	18	0	0 (5)	1018
		Uplink	Low	704	140800	699.68	139936	0	-	-	-	-	-	-	-
			Mid	707.5	141500	521.74	104348	504		-	-	-	-	-	-
			High	711	142200	704.52	140904	6		-	-	-	-	-	-
15	38	Down link	Low	736.5	147300	729.66	145932	0	15	1833	146670	6	0	0 (5)	10
			Mid	737.5	147500	693.94	138788	102		1837	146930	2	0	1 (6)	216
			High	738.5	147700	550.22	110044	504		1838	147130	2	0	1 (6)	1020
		Uplink	Low	706.5	141300	699.66	139932	0	-	-	-	-	-	-	-
			Mid	707.5	141500	519.22	103844	504		-	-	-	-	-	-
			High	708.5	141700	699.5	139900	6		-	-	-	-	-	-

- Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-2 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.
- Note 2: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs.

4.3.1.1.1.13 Reference test frequencies for NR operating band n13

Table 4.3.1.1.1.13-1: Test frequencies for NR operating band n13 and SCS 15 kHz

CB W [MHz]	carrierBandwidth [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequencyPointA [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS [kHz]	GS CN	absoluteFrequencySSB [ARFCN]	k_{SSB}	Offset Carrier CORESET#0 [RBs] Note 2	CORESET#0 Index (Offset [RBs]) Note 1	offsetToPointA (SIB1) [PRBs] Note 1
5	25	Downlink	Low	748.5	149700	746.25	149250	0	15	1872	149790	0	1	2 (4)	5
			Mid	751	150200	730.39	146078	102		1879	150290	0	1	2 (4)	107
			High	753.5	150700	660.53	132106	504		1883	150730	4	1	1 (2)	507
		Uplink	Low	779.5	155900	777.25	155450	0	-	-	-	-	-	-	-
			Mid	782	156400	689.03	137806	504		-	-	-	-	-	-
			High	784.5	156900	781.17	156234	6		-	-	-	-	-	-
10	52	Downlink	Low	751	150200	746.32	149264	0	15	1873	149810	2	1	2 (4)	5
			Mid												
			High												
		Uplink	Low	782	156400	777.32	155464	0	-	-	-	-	-	-	-
			Mid												
			High												

Note 1:	The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-1 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcchConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.
Note 2:	The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET0Carrier}}$ in Annex C expressed in number of common RBs.
Note 3:	10 MHz test channel bandwidth is tested with Low range test frequency only. Low range test frequency shall be used instead of Mid range and High range test frequencies.

Table 4.3.1.1.13-2: Test frequencies for NR operating band n13 and SCS 30 kHz

CB W [MHz]	carrierBandwidth [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequencyPointA [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS [kHz]	GS CN	absoluteFrequencySSB [ARFCN]	k_{SSB}	Offset Carrier CORESET#0 [RBs] Note 2	CORESET#0 Index (Offset [RBs]) Note 1	offsetToPointA (SIB1) [PRBs] Note 1
10	24	Downlink	Low	751	150200	746.68	149336	0	15	1879	150290	6	0	3 (8)	16
			Mid												
			High												
		Uplink	Low	782	156400	777.68	155536	0	-	-	-	-	-	-	
			Mid												
			High												
Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-2 in TS 38.213 [22]. The value of CORESET#0 Index is signalled controlResourceSetZero (pdcchConfigSIB1 in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.															
Note 2: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET0Carrier}}$ in Annex C expressed in number of common RBs.															
Note 3: 10 MHz test channel bandwidth is tested with Low range test frequency only. Low range test frequency shall be used instead of Mid range and High range test frequencies.															

4.3.1.1.1.14

Reference test frequencies for NR operating band n14

Table 4.3.1.1.1.14-1: Test frequencies for NR operating band n14 and SCS 15 kHz

CB W [MHz]	carrierBandwidth [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequencyPointA [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS [kHz]	GS CN	absoluteFrequencySSB [ARFCN]	k_{SSB}	Offset Carrier CORESET#0 [RBs] Note 2	CORESET#0 Index (Offset [RBs]) Note 1	offsetToPointA (SIB1) [PRBs] Note 1
5	25	Downlink	Low	760.5	152100	758.25	151650	0	15	1902	152190	0	1	2 (4)	5
			Mid	763	152600	742.39	148478	102		1909	152690	0	1	2 (4)	107
			High	765.5	153100	672.53	134506	504		1913	153130	4	1	1 (2)	507
		Uplink	Low	790.5	158100	788.25	157650	0	-	-	-	-	-	-	-
			Mid	793	158600	700.03	140006	504		-	-	-	-	-	-
			High	795.5	159100	792.17	158434	6		-	-	-	-	-	-
10	52	Downlink	Low	763	152600	758.32	151664	0	15	1903	152210	2	1	2 (4)	5
			Mid												
			High												
		Uplink	Low	793	158600	788.32	157664	0	-	-	-	-	-	-	
			Mid												
			High												
Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-1 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcchConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.															
Note 2: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET0Carrier}}$ in Annex C expressed in number of common RBs.															
Note 3: 10 MHz test channel bandwidth is tested with Low range test frequency only. Low range test frequency shall be used instead of Mid range and High range test frequencies.															

Table 4.3.1.1.14-2: Test frequencies for NR operating band n14 and SCS 30 kHz

CB W [MHz]	carrierBandwidth [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequencyPointA [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS [kHz]	GS CN	absoluteFrequencySSB [ARFCN]	k_{SSB}	Offset Carrier CORESET#0 [RBs] Note 2	CORESET#0 Index (Offset [RBs]) Note 1	offsetToPointA (SIB1) [PRBs] Note 1
10	24	Downlink	Low	763	152600	758.68	151736	0	15	1909	152690	6	0	3 (8)	16
			Mid												
			High												
		Uplink	Low	793	158600	788.68	157736	0	-	-	-	-	-	-	
			Mid												
			High												
Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-2 in TS 38.213 [22]. The value of CORESET#0 Index is signalled controlResourceSetZero (pdcchConfigSIB1 in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.															
Note 2: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET0Carrier}}$ in Annex C expressed in number of common RBs.															
Note 3: 10 MHz test channel bandwidth is tested with Low range test frequency only. Low range test frequency shall be used instead of Mid range and High range test frequencies.															

4.3.1.1.1.15 to 4.3.1.1.1.17 FFS

4.3.1.1.1.18 Reference test frequencies for NR operating band n18

Table 4.3.1.1.18-1: Test frequencies for NR operating band n18 and SCS 15 kHz

CB W [MHz]	carrierBandwidth [PRBs]	Range		Carrier centre	Carrier centre	point A [MHz]	absoluteFrequencyPointA [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block	GS CN	absoluteFrequencySSB [ARFCN]	k_{SSB}	Offset Carrier CORESET#0	CORESET#0 Index (Offset	offsetToPointA (SIB1) [PRBs]

				[MHz]	[ARFCN]				SCS [kHz]				[RBs] Note 2	[RBs] Note 1	Note 1
5	25	Downlink	Low	862.5	17250	860.25	172050	0	15	2157	172590	0	1	2 (4)	5
			Mid	867.5	17350	846.89	169378	102		2168	173530	4	1	1 (2)	105
			High	872.5	17450	779.53	155906	504		2182	174530	4	1	1 (2)	507
		Uplink	Low	817.5	16350	815.25	163050	0	-	-	-	-	-	-	-
			Mid	822.5	16450	729.53	145906	504		-	-	-	-	-	-
			High	827.5	16550	824.17	164834	6		-	-	-	-	-	-
10	52	Downlink	Low	865	17300	860.32	172064	0	15	2158	172610	2	1	2 (4)	5
			Mid	867.5	17350	844.46	168892	102		2162	173050	6	1	1 (2)	105
			High	870	17400	774.6	154920	504		2169	173550	6	1	1 (2)	507
		Uplink	Low	820	16400	815.32	163064	0	-	-	-	-	-	-	-
			Mid	822.5	16450	727.1	145420	504		-	-	-	-	-	-
			High	825	16500	819.24	163848	6		-	-	-	-	-	-
15	79	Downlink	Low	867.5	17350	860.39	172078	0	15	2156	172570	8	1	1 (2)	3
			Mid												
			High												
		Uplink	Low	822.5	16450	815.39	163078	0	-	-	-	-	-	-	-
			Mid							-	-	-	-	-	-

			High						-	-	-	-	-	-
Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-1 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2. Note 2: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs.														

Table 4.3.1.1.18-2: Test frequencies for NR operating band n18 and SCS 30 kHz

CBW [MHz]	carrierBandwidth [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequencyPointA [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS [kHz]	GS CN	absoluteFrequencySSB [ARFCN]	k_{SSB}	Offset Carrier CORESET#0 [RBs] Note 2	CORESET#0 Index (Offset [RBs]) Note 1	offsetToPointA (SIB1) [PRBs] Note 1
10	24	Downlink	Low	865	17300	860.68	172136	0	15	2164	173090	6	0	3 (8)	16
			Mid	867.5	17350	826.46	165292	102		2168	173530	10	0	2 (7)	218
			High	870	17400	684.24	136848	504		2175	174030	10	0	2 (7)	1022
		Uplink	Low	820	16400	815.68	163136	0	-	-	-	-	-	-	-
			Mid	822.5	16450	636.74	127348	504		-	-	-	-	-	-
			High	825	16500	818.52	163704	6		-	-	-	-	-	-
15	38	Downlink	Low	867.5	17350	860.66	172132	0	15	2162	173050	18	0	2 (7)	14
			Mid												
			High												
		Uplink	Low	822.5	16450	815.66	163132	0	-	-	-	-	-	-	-
			Mid							-	-	-	-	-	-

			High						-	-	-	-	-	-
Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-2 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2. Note 2: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs.														

4.3.1.1.1.19 FFS

4.3.1.1.1.20 Reference test frequencies for NR operating band n20

Table 4.3.1.1.20-1: Test frequencies for NR operating band n20 and SCS 15 kHz

CBW [MHz]	carrierBandwidth [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequencyPointA [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS [kHz]	GS CN	absoluteFrequencySSB [ARFCN]	k_{SSB}	Offset Carrier CORESET#0 [RBs] Note 2	CORESET#0 Index (Offset [RBs]) Note 1	offsetToPointA (SIB1) [PRBs] Note 1
5	25	Downlink	Low	793.5	158700	791.25	158250	0	15	1983	158670	8	1	0 (0)	1
			Mid	806	161200	785.39	157078	102		2015	161290	0	1	2 (4)	107
			High	818.5	163700	725.53	145106	504		2047	163730	4	1	1 (2)	507
		Uplink	Low	834.5	166900	832.25	166450	0	-	-	-	-	-	-	-
			Mid	847	169400	754.03	150806	504		-	-	-	-	-	-
			High	859.5	171900	856.17	171234	6		-	-	-	-	-	-
10	52	Downlink	Low	796	159200	791.32	158264	0	15	1984	158690	10	1	0 (0)	1
			Mid	806	161200	782.96	156592	102		2009	160810	2	1	2 (4)	107
			High	816	163200	720.6	144120	504		2034	162750	6	1	1 (2)	507
		Uplink	Low	837	167400	832.32	166464	0	-	-	-	-	-	-	-

			Mid	847	169400	751.6	150320	504		-	-	-	-	-	-
			High	857	171400	851.24	170248	6		-	-	-	-	-	-
15	79	Downlink	Low	798.5	159700	791.39	158278	0	15	1982	158650	4	0	0 (0)	0
			Mid	806	161200	780.53	156106	102		2003	160330	4	1	2 (4)	107
			High	813.5	162700	715.67	143134	504		2021	161770	8	1	1 (2)	507
		Uplink	Low	839.5	167900	832.39	166478	0	-	-	-	-	-	-	-
			Mid	847	169400	749.17	149834	504		-	-	-	-	-	-
			High	854.5	170900	846.31	169262	6		-	-	-	-	-	-
20	106	Downlink	Low	801	160200	791.46	158292	0	15	1983	158670	6	0	0 (0)	0
			Mid	806	161200	778.1	155620	102		1997	159850	6	1	2 (4)	107
			High	811	162200	710.74	142148	504		2011	160850	6	1	2 (4)	509
		Uplink	Low	842	168400	832.46	166492	0	-	-	-	-	-	-	-
			Mid	847	169400	746.74	149348	504		-	-	-	-	-	-
			High	852	170400	841.38	168276	6		-	-	-	-	-	-
Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-1 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2. Note 2: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs.															

Table 4.3.1.1.1.20-2: Test frequencies for NR operating band n20 and SCS 30 kHz

CBW [MHz]	carrierBandwidth [PRBs]	Range	Carrier centre	Carrier centre	point A [MHz]	absoluteFrequencyPointA [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS	GS CN	absoluteFrequencySSB [ARFCN]	k_{SSB}	Offset Carrier CORESET#0 [RBs]	CORESET#0 Index (Offset [RBs])	offsetToPointA (SIB1) [PRBs] Note 1

				[MH z]	[ARF CN]				[kH z]				Note 2	Note 1	
10	24	Down link	Lo w	796	15920 0	791. 68	158336	0	15	199 0	159170	14	0	1 (6)	12
			Mi d	806	16120 0	764. 96	152992	102		201 5	161290	6	0	3 (8)	220
			Hi gh	816	16320 0	630. 24	126048	504		204 0	163230	10	0	2 (7)	1022
		Uplin k	Lo w	837	16740 0	832. 68	166536	0	-	-	-	-	-	-	-
			Mi d	847	16940 0	661. 24	132248	504		-	-	-	-	-	-
			Hi gh	857	17140 0	850. 52	170104	6		-	-	-	-	-	-
15	38	Down link	Lo w	798. 5	15970 0	791. 66	158332	0	15	198 8	159130	2	0	1 (6)	12
			Mi d	806	16120 0	762. 44	152488	102		200 6	160570	6	0	0 (5)	214
			Hi gh	813. 5	16270 0	625. 22	125044	504		202 7	162250	18	0	2 (7)	1022
		Uplin k	Lo w	839. 5	16790 0	832. 66	166532	0	-	-	-	-	-	-	-
			Mi d	847	16940 0	658. 72	131744	504		-	-	-	-	-	-
			Hi gh	854. 5	17090 0	845. 5	169100	6		-	-	-	-	-	-
20	51	Down link	Lo w	801	16020 0	791. 82	158364	0	15	198 9	159150	22	0	0 (5)	10
			Mi d	806	16120 0	760. 1	152020	102		200 0	160090	2	0	0 (5)	214
			Hi gh	811	16220 0	620. 38	124076	504		201 4	161090	2	0	0 (5)	1018
		Uplin k	Lo w	842	16840 0	832. 82	166564	0	-	-	-	-	-	-	-
			Mi d	847	16940 0	656. 38	131276	504		-	-	-	-	-	-
			Hi gh	852	17040 0	840. 66	168132	6		-	-	-	-	-	-
Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-2 in TS 38.213 [22]. The value of CORESET#0 Index is signalled controlResourceSetZero (pdcch-ConfigSIB1 in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.															

Note 2: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs.

4.3.1.1.1.21 to 4.3.1.1.1.23 FFS

4.3.1.1.1.24 Reference test frequencies for NR operating band n24

Table 4.3.1.1.1.24-1a: Test frequencies for NR operating band n24, SCS 15 kHz and ΔF_{Raster} 15 kHz

UL/DL CBW [MHz]	carrier Bandw idth [PRBs]	Range		Carrier centre [MHz] Note 3	Carrier centre [ARFCN]	point A [MHz]	absolute Frequen cyPoint A [ARFCN]	offsetTo Carrier [Carrier PRBs]	SS block SCS [kHz]	GSCN	absolute Frequen cySSB [ARFCN]	k_{SSB}	Offset Carrier CORE SET#0 [RBs] Note 2	CORE SET#0 Index (Offset [RBs]) Note 1	offsetTo PointA (SIB1) [PRBs] Note 1
5/5	25	Downlink	Low	1528.5	305700	1526.25	305250	0	15	3822	305790	0	1	2 (4)	5
			Mid	1531	306200	1510.39	302078	102		3829	306290	0	1	2 (4)	107
			High	1533.5	306700	1440.53	288106	504		3833	306730	4	1	1 (2)	507
		Uplink	Low	1630.0	326000	1627.75	325550	0	-	-	-	-	-	-	-
			Mid	1632.5	326500	1539.53	307906	504		-	-	-	-	-	-
			High	1654.0	330800	1650.67	330134	6		-	-	-	-	-	-
10/5)	25	Downlink	Low	1528.5	305700	1526.25	305250	0	15	3822	305790	0	1	2 (4)	5
			Mid	1531	306200	1510.39	302078	102		3829	306290	0	1	2 (4)	107
			High	1533.5	306700	1440.53	288106	504		3833	306730	4	1	1 (2)	507
	52	Uplink	Low	1632.5	326500	1627.82	325564	0	-	-	-	-	-	-	-
			Mid							-	-	-	-	-	-
			High	1651.5	330300	1645.74	329148	6		-	-	-	-	-	-
10/10	52	Downlink	Low	1531.0	306200	1526.32	305264	0	15	3823	305810	2	1	2 (4)	5
			Mid												
			High	1531.0	306200	1435.6	287120	504		3823	305810	2	1	2 (4)	509
		Uplink	Low	1632.5	326500	1627.82	325564	0	-	-	-	-	-	-	-
			Mid							-	-	-	-	-	-
			High	1651.5	330300	1645.74	329148	6		-	-	-	-	-	-

Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-1 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.

Note 2: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs.

Note 3: Void.

Note 4: Void.

Table 4.3.1.1.1.24-2a: Test frequencies for NR operating band n24, SCS 30 kHz and ΔF_{Raster} 30 kHz

CBW [MHz]	carrier Bandw idth [PRBs]	Range		Carrier centre [MHz] Note 3	Carrier centre [ARFCN]	point A [MHz]	absolute Frequen cyPoint A [ARFCN]	offsetTo Carrier [Carrier PRBs]	SS block SCS [kHz]	GSCN	absolute Frequen cySSB [ARFCN]	k_{SSB}	Offset Carrier CORE SET#0 [RBs] Note 2	CORE SET#0 Index (Offset [RBs]) Note 1	offsetTo PointA (SIB1) [PRBs] Note 1
10	24	Downlink	Low Mid	1531.0	306200	1526.68	305336	0	30	3829	306290	6	0	3 (3)	6
			High	1531.0	306200	1345.24	269048	504		3829	306290	6	0	3 (3)	1014
		Uplink	Low Mid	1632.5	326500	1628.18	325636	0	-	-	-	-	-	-	-
			High	1651.5	330300	1645.02	329004	6	-	-	-	-	-	-	-
Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-2 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.															
Note 2: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs.															
Note 3: Void.															

Table 4.3.1.1.1.24-3a: Test frequencies for NR operating band n24, SCS 60 kHz and ΔF_{Raster} 15 kHz without CORESET#0

CBW [MHz]	carrierBand width [PRBs]	Range		Carrier centre [MHz] Note 2	Carrier centre [ARFCN]	point A [MHz]	absolute FrequencyPoint A [ARFCN]	offsetTo Carrier [PRBs]	SS block SCS [kHz]	GSCN	absolute FrequencySSB [ARFCN]
10	11	Downlink	Low Mid	1531.0	306200	1527.04	305408	0	15	-	305768
			High	1531.0	306200	1164.16	232832	504		-	305768
		Uplink	Low Mid	1632.5	326500	1628.54	325708	0	-	-	-
			High	1651.5	330300	1643.22	328644	6		-	-
			Note 1: FR1 carrier without CORESET#0 is indicated in the MIB by setting $k_{\text{SSB}} = 31$, <i>controlResourceSetZero</i> =0 and <i>searchSpaceZero</i> = 0 (TS 38.213 [22], clause 13). Note 2: Void.								

4.3.1.1.1.25

Reference test frequencies for NR operating band n25

Table 4.3.1.1.1.25-1: Test frequencies for NR operating band n25 and SCS 15 kHz

UL/DL Bandwidth combination [MHz]	carrierBandwidth [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequencyPointA [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS [kHz]	GS CN	absoluteFrequencySSB [ARFCN]	k_{SSB}	Offset Carrier CORESET#0 [RBs] Note 2	CORESET#0 Index (Offset [RBs]) Note 1	offsetToPointA (SIB1) [PRBs] Note 1
5/5	25	Downlink	Low	193.25	386500	1930.25	386050	0	15	4829	386410	0	0	0 (0)	0
			Mid	196.25	392500	1941.89	388378	102		4904	392410	0	0	0 (0)	102
			High	199.25	398500	1899.53	379906	504		4979	398410	0	0	0 (0)	504
		Uplink	Low	185.25	370500	1850.25	370050	0	-	-	-	-	-	-	-
			Mid	188.25	376500	1789.53	357906	504		-	-	-	-	-	-
			High	191.25	382500	1909.17	381834	6		-	-	-	-	-	-
10/10	52	Downlink	Low	193.5	387000	1930.32	386064	0	15	4830	386430	2	0	0 (0)	0
			Mid	196.25	392500	1939.46	387892	102		4898	391930	2	0	0 (0)	102
			High	199.0	398000	1894.6	378920	504		4969	397490	10	1	0 (0)	505
		Uplink	Low	185.5	371000	1850.32	370064	0	-	-	-	-	-	-	-
			Mid	188.25	376500	1787.1	357420	504		-	-	-	-	-	-
			High	191.0	382000	1904.24	380848	6		-	-	-	-	-	-
15/15	79	Downlink	Low	1937.5	387500	1930.39	386078	0	15	4831	386450	4	0	0 (0)	0

			Mid	196 2.5	3925 00	1937 .03	387406	102		489 2	391450	4	0	0 (0)	102
			High	198 7.5	3975 00	1889 .67	377934	504		495 6	396510	0	0	1 (2)	506
		Uplink	Low	185 7.5	3715 00	1850 .39	370078	0		-	-	-	-	-	-
			Mid	188 2.5	3765 00	1784 .67	356934	504		-	-	-	-	-	-
			High	190 7.5	3815 00	1899 .31	379862	6		-	-	-	-	-	-
20/20	106	Downlink	Low	194 0	3880 00	1930 .46	386092	0	15	483 2	386650	6	1	2 (4)	5
			Mid	196 2.5	3925 00	1934 .6	386920	102		488 6	390970	6	0	0 (0)	102
			High	198 5	3970 00	1884 .74	376948	504		494 3	395530	2	0	1 (2)	506
		Uplink	Low	186 0	3720 00	1850 .46	370092	0	-	-	-	-	-	-	-
			Mid	188 2.5	3765 00	1782 .24	356448	504		-	-	-	-	-	-
			High	190 5	3810 00	1894 .38	378876	6		-	-	-	-	-	-
25/25	133	Downlink	Low	194 2.5	3885 00	1930 .53	386106	0	15	483 3	386670	8	1	2 (4)	5
			Mid	196 2.5	3925 00	1932 .17	386434	102		488 0	390490	8	0	0 (0)	102
			High	198 2.5	3965 00	1879 .81	375962	504		493 3	394610	0	0	2 (4)	508
		Uplink	Low	186 2.5	3725 00	1850 .53	370106	0	-	-	-	-	-	-	-
			Mid	188 2.5	3765 00	1779 .81	355962	504		-	-	-	-	-	-
			High	190 2.5	3805 00	1889 .45	377890	6		-	-	-	-	-	-
30/30	160	Downlink	Low	194 5	3890 00	1930 .6	386120	0	15	483 4	386690	10	1	2 (4)	5
			Mid	196 2.5	3925 00	1929 .74	385948	102		487 4	390010	10	0	0 (0)	102

			High	1980	396000	1874.88	374976	504		4920	393630	2	0	2 (4)	508
		Uplink	Low	1865	373000	1850.6	370120	0	-	-	-	-	-	-	-
			Mid	1882.5	376500	1777.38	355476	504		-	-	-	-	-	-
			High	1900	380000	1884.52	376904	6		-	-	-	-	-	-
35/35	188	Downlink	Low	1947.5	389500	1930.58	386116	0	15	4832	386650	10	0	2 (4)	4
			Mid	1962.5	392500	1927.22	385444	102		4868	389530	6	1	0 (0)	103
			High	1977.5	395500	1869.86	373972	504		4907	392650	10	0	0 (0)	508
		Uplink	Low	1867.5	373500	1850.58	370116	0	-	-	-	-	-	-	-
			Mid	1882.5	376500	1774.86	354972	504		-	-	-	-	-	-
			High	1897.5	379500	1879.5	375900	6		-	-	-	-	-	-
40/40	216	Downlink	Low	1950	390000	1930.56	386112	0	15	4833	386670	6	1	2 (4)	5
			Mid	1962.5	392500	1924.7	384940	102		4862	389050	2	0	1 (2)	104
			High	1975	395000	1864.84	372968	504		4894	391490	6	0	0 (0)	504
		Uplink	Low	1870	374000	1850.56	370112	0	-	-	-	-	-	-	-
			Mid	1882.5	376500	1772.34	354468	504		-	-	-	-	-	-
			High	1895	379000	1874.48	374896	6		-	-	-	-	-	-
40/45	242	Downlink	Low	1952.5	390500	1930.72	386144	0	15	4834	386690	2	1	2 (4)	5
			Mid	1962.5	392500	1922.36	384472	102		4856	388570	10	1	0 (0)	103
			High	1972.5	394500	1860	372000	504		4881	390510	2	0	0 (0)	504

	216	Uplink	Low	187 2.5	3745 00	1853 .06	370612	0	-	-	-	-	-	-
			Mid	188 2.5	3765 00	1772 .34	354468	504	-	-	-	-	-	
			High	189 2,5	3785 00	1871 .98	374396	6	-	-	-	-	-	
Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-1 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.														
Note 2: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs.														

Table 4.3.1.1.1.25-2: Test frequencies for NR operating band n25 and SCS 30 kHz

UL/DL Bandwidth combination [MHz]	carrierBandwidth [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequencyPointA [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS [kHz]	GS CN	absoluteFrequencySSB [ARFCN]	k_{SSB}	Offset Carrier CORESET#0 [RBs] Note 2	CORESET#0 Index (Offset [RBs]) Note 1	offsetToPointA (SIB1) [PRBs] Note 1
10/10	24	Downlink	Low	1935	387000	1930.68	386136	0	15	4836	386910	18	0	0 (5)	10
			Mid	1962.5	392500	1921.46	384292	102		4904	392410	18	0	0 (5)	214
			High	1990	398000	1804.24	360848	504		4975	397970	14	0	1 (6)	1020
		Uplink	Low	1855	371000	1850.68	370136	0	-	-	-	-	-	-	-
			Mid	1882.5	376500	1696.74	339348	504		-	-	-	-	-	-
			High	1910	382000	1903.52	380704	6		-	-	-	-	-	-
15/15	38	Downlink	Low	1937.5	387500	1930.66	386132	0	15	4837	386930	2	0	1 (6)	12
			Mid	1962.5	392500	1918.94	383788	102		4898	391930	2	0	1 (6)	216
			High	1987.5	397500	1799.22	359844	504		4962	396990	22	0	1 (6)	1020

		Uplink	Low	185 7.5	3715 00	1850 .66	370132	0	-	-	-	-	-	-	-
			Mid	188 2.5	3765 00	1694 .22	338844	504		-	-	-	-	-	-
			High	190 7.5	3815 00	1898 .5	379700	6		-	-	-	-	-	-
20/20	51	Downlink	Low	194 0	3880 00	1930 .82	386164	0	15	483 5	386890	2	0	0 (5)	10
			Mid	196 2.5	3925 00	1916 .6	383320	102		489 2	391450	22	0	0 (5)	214
			High	198 5	3970 00	1794 .38	358876	504		494 9	396010	18	0	1 (6)	1020
		Uplink	Low	186 0	3720 00	1850 .82	370164	0	-	-	-	-	-	-	-
			Mid	188 2.5	3765 00	1691 .88	338376	504		-	-	-	-	-	-
			High	190 5	3810 00	1893 .66	378732	6		-	-	-	-	-	-
25/25	65	Downlink	Low	194 2.5	3885 00	1930 .8	386160	0	15	483 6	386910	10	0	0 (5)	10
			Mid	196 2.5	3925 00	1914 .08	382816	102		488 6	390970	6	0	1 (6)	216
			High	198 2.5	3965 00	1789 .36	357872	504		493 9	395090	22	0	2 (7)	1022
		Uplink	Low	186 2.5	3725 00	1850 .8	370160	0	-	-	-	-	-	-	-
			Mid	188 2.5	3765 00	1689 .36	337872	504		-	-	-	-	-	-
			High	190 2.5	3805 00	1888 .64	377728	6		-	-	-	-	-	-
30/30	78	Downlink	Low	194 5	3890 00	1930 .96	386192	0	15	483 7	386930	6	0	0 (5)	10
			Mid	196 2.5	3925 00	1911 .74	382348	102		488 0	390490	2	0	1 (6)	216
			High	198 0	3960 00	1784 .52	356904	504		492 6	394110	18	0	2 (7)	1022
		Uplink	Low	186 5	3730 00	1850 .96	370192	0	-	-	-	-	-	-	-

35/35	92	Down link	Mid	188 2.5	3765 00	1687 .02	337404	504	15	-	-	-	-	-	-
			High	190 0	3800 00	1883 .8	376760	6		-	-	-	-	-	-
			Low	194 7.5	3895 00	1930 .94	386188	0		483 8	387130	2	0	3 (8)	16
		Uplink	Mid	196 2.5	3925 00	1909 .22	381844	102	-	487 4	390010	10	0	1 (6)	216
			High	197 7.5	3955 00	1779 .5	355900	504		491 3	393130	2	0	3 (8)	1024
			Low	186 7.5	3735 00	1850 .94	370188	0		-	-	-	-	-	-
			Mid	188 2.5	3765 00	1684 .5	336900	504		-	-	-	-	-	-
			High	189 7.5	3795 00	1878 .78	375756	6		-	-	-	-	-	-
		Down link	Low	195 0	3900 00	1930 .92	386184	0	15	483 6	386910	2	0	0 (5)	10
			Mid	196 2.5	3925 00	1906 .7	381340	102		486 8	389530	18	0	1 (6)	216
			High	197 5	3950 00	1774 .48	354896	504		490 0	391970	22	0	0 (5)	1018
40/40	106	Down link	Low	187 0	3740 00	1850 .92	370184	0	-	-	-	-	-	-	-
			Mid	188 2.5	3765 00	1681 .98	336396	504		-	-	-	-	-	-
			High	189 5	3790 00	1873 .76	374752	6		-	-	-	-	-	-
		Uplink	Low	195 2.5	3905 00	1931 .08	386216	0	15	484 0	387170	6	0	3 (8)	16
			Mid	196 2.5	3925 00	1904 .36	380872	102		486 2	389050	14	0	1 (6)	216
			High	197 2.5	3945 00	1769 .64	353928	504		488 7	390990	18	0	0 (5)	1018
			Low	187 2.5	3745 00	1853 .42	370684	0		-	-	-	-	-	-
			Mid	188 2.5	3765 00	1681 .98	336396	504		-	-	-	-	-	-
		Down link	Low	195 2.5	3905 00	1931 .08	386216	0	15	484 0	387170	6	0	3 (8)	16
			Mid	196 2.5	3925 00	1904 .36	380872	102		486 2	389050	14	0	1 (6)	216
		High	197 2.5	3945 00	1769 .64	353928	504	504	-	488 7	390990	18	0	0 (5)	1018
40/45	119	Down link	Low	195 2.5	3905 00	1931 .08	386216	0	15	484 0	387170	6	0	3 (8)	16
			Mid	196 2.5	3925 00	1904 .36	380872	102		486 2	389050	14	0	1 (6)	216
			High	197 2.5	3945 00	1769 .64	353928	504		488 7	390990	18	0	0 (5)	1018
		Uplink	Low	187 2.5	3745 00	1853 .42	370684	0	-	-	-	-	-	-	-
			Mid	188 2.5	3765 00	1681 .98	336396	504		-	-	-	-	-	-
			Low	195 2.5	3905 00	1931 .08	386216	0		484 0	387170	6	0	3 (8)	16
			Mid	196 2.5	3925 00	1904 .36	380872	102		486 2	389050	14	0	1 (6)	216
			High	197 2.5	3945 00	1769 .64	353928	504		488 7	390990	18	0	0 (5)	1018
			Low	187 2.5	3745 00	1853 .42	370684	0		-	-	-	-	-	-
			Mid	188 2.5	3765 00	1681 .98	336396	504		-	-	-	-	-	-

			High	189 2.5	3785 00	1871 .26	374252	6	-	-	-	-	-	-
Note 1:	The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-2 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.													
Note 2:	The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs.													

Table 4.3.1.1.1.25-3: Test frequencies for NR operating band n25 and SCS 60 kHz without CORESET#0

UL/DL Bandwidth combination [MHz]	carrierBand width [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absolute Frequency Point A [ARFCN]	offsetTo Carrier [PRBs]	SS block SCS [kHz]	GSCN	absolute Frequency SSB [ARFCN]
10/10	11	Downlink	Low	1935	387000	1931.04	386208	0	15	-	386568
			Mid	1962.5	392500	1885.1	377020	102		-	392068
			High	1990	398000	1623.16	324632	504		-	397568
		Uplink	Low	1855	371000	1851.04	370208	0	-	-	-
			Mid	1882.5	376500	1515.66	303132	504		-	-
			High	1910	382000	1901.72	380344	6		-	-
15/15	18	Downlink	Low	1937.5	387500	1931.02	386204	0	15	-	386564
			Mid	1962.5	392500	1882.58	376516	102		-	391564
			High	1987.5	397500	1618.14	323628	504		-	396564
		Uplink	Low	1857.5	371500	1851.02	370204	0	-	-	-
			Mid	1882.5	376500	1513.14	302628	504		-	-
			High	1907.5	381500	1896.7	379340	6		-	-
20/20	24	Downlink	Low	1940	388000	1931.36	386272	0	15	-	386632
			Mid	1962.5	392500	1880.42	376084	102		-	391132
			High	1985	397000	1613.48	322696	504		-	395632
		Uplink	Low	1860	372000	1851.36	370272	0	-	-	-
			Mid	1882.5	376500	1510.98	302196	504		-	-
			High	1905	381000	1892.04	378408	6		-	-
25/25	31	Downlink	Low	1942.5	388500	1931.34	386268	0	15	-	386628
			Mid	1962.5	392500	1877.9	375580	102		-	390628
			High	1982.5	396500	1608.46	321692	504		-	394628
		Uplink	Low	1862.5	372500	1851.34	370268	0	-	-	-
			Mid	1882.5	376500	1508.46	301692	504		-	-

30/30	38	Downlink	High	1902.5	380500	1887.02	377404	6	15	-	-
			Low	1945	389000	1931.32	386264	0		-	386624
			Mid	1962.5	392500	1875.38	375076	102		-	390124
		Uplink	High	1980	396000	1603.44	320688	504	-	-	393624
			Low	1865	373000	1851.32	370264	0		-	-
			Mid	1882.5	376500	1505.94	301188	504		-	-
35/35	44	Downlink	High	1900	380000	1882	376400	6	15	-	-
			Low	1947.5	389500	1931.66	386332	0		-	386692
			Mid	1962.5	392500	1873.22	374644	102		-	389692
		Uplink	High	1977.5	395500	1598.78	319756	504	-	-	392692
			Low	1867.5	373500	1851.66	370332	0		-	-
			Mid	1882.5	376500	1503.78	300756	504		-	-
40/40	51	Downlink	High	1897.5	379500	1877.34	375468	6	15	-	-
			Low	1870	374000	1851.64	370328	0		-	-
			Mid	1882.5	376500	1501.26	300252	504		-	-
		Uplink	High	1975	395000	1593.76	318752	504	-	-	391688
			Low	1870	374000	1851.64	370328	0		-	-
			Mid	1882.5	376500	1501.26	300252	504		-	-
40/45	58	Downlink	High	1895	379000	1872.32	374464	6	15	-	-
			Low	1952.5	390500	1931.62	386324	0		-	386684
			Mid	1962.5	392500	1868.18	373636	102		-	388684
	51	Uplink	High	1972.5	394500	1588.74	317748	504	-	-	390684
			Low	1872.5	374500	1854.14	370828	0		-	-
			Mid	1882.5	376500	1501.26	300252	504		-	-
			High	1892.5	378500	1869.82	373964	6		-	-
Note: FR1 carrier without CORESET#0 is indicated in the MIB by setting k_{SSB} =31, <i>controlResourceSetZero</i> =0 and <i>searchSpaceZero</i> = 0 (TS 38.213 [22], clause 13).											

4.3.1.1.1.26

Reference test frequencies for NR operating band n26

Table 4.3.1.1.1.26-1: Test frequencies for NR operating band n26 and SCS 15 kHz

CB W [MHz]	carrierBandwidth [PRBs]	Range	Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequencyPointA [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS	GS CN	absoluteFrequencySSB [ARFCN]	k_{SSB}	Offset carrier CORESET#0 [RBs] Note 2	CORESET#0 Index (Offset [RBs]) Note 1	offsetToPointA (SIB1) [PRBs] Note 1

									[kHz]						
3	15	Down link	Lo w	860.5	172100	859.15	171830	0	15	30938	172070	8	0	0 (0)	0
			Mi d	876.5	175300	856.79	171358	102		31017	175270	8	0	0 (0)	102
			Hi gh	892.5	178500	800.43	160086	504		31099	178530	4	2	0 (0)	506
		Uplink	Lo w	815.5	163100	814.15	162830	0	-	-	-	-	-	-	-
			Mi d	831.5	166300	739.43	147886	504		-	-	-	-	-	-
			Hi gh	847.5	169500	845.07	169014	6		-	-	-	-	-	-
5	25	Down link	Lo w	861.5	172300	859.25	171850	0	15	2153	172330	4	1	1 (2)	3
			Mi d	876.5	175300	855.89	171178	102		2189	175210	0	0	0 (0)	102
			Hi gh	891.5	178300	798.53	159706	504		2228	178330	4	1	1 (2)	507
		Uplink	Lo w	816.5	163300	814.25	162850	0	-	-	-	-	-	-	-
			Mi d	831.5	166300	738.53	147706	504		-	-	-	-	-	-
			Hi gh	846.5	169300	843.17	168634	6		-	-	-	-	-	-
10	52	Down link	Lo w	864	172800	859.32	171864	0	15	2154	172350	6	1	1 (2)	3
			Mi d	876.5	175300	853.46	170692	102		2183	174730	2	0	0 (0)	102
			Hi gh	889	177800	793.6	158720	504		2218	177410	2	1	2 (4)	509
		Uplink	Lo w	819	163800	814.32	162864	0	-	-	-	-	-	-	-
			Mi d	831.5	166300	736.1	147220	504		-	-	-	-	-	-
			Hi gh	844	168800	838.24	167648	6		-	-	-	-	-	-
15	79	Down link	Lo w	866.5	173300	859.39	171878	0	15	2155	172370	8	1	1 (2)	3
			Mi d	876.5	175300	851.03	170206	102		2177	174250	4	0	0 (0)	102

			High	886.5	177300	788.67	157734	504		2205	176430	4	1	2 (4)	509
		Uplink	Low	821.5	164300	814.39	162878	0	-	-	-	-	-	-	-
			Mid	831.5	166300	733.67	146734	504		-	-	-	-	-	-
			High	841.5	168300	833.31	166662	6		-	-	-	-	-	-
20	106	Downlink	Low	869	173800	859.46	171892	0	15	2153	172330	2	0	1 (2)	2
			Mid	876.5	175300	848.6	169720	102		2171	173770	6	0	0 (0)	102
			High	884	176800	783.74	156748	504		2192	175450	6	1	2 (4)	509
		Uplink	Low	824	164800	814.46	162892	0	-	-	-	-	-	-	-
			Mid	831.5	166300	731.24	146248	504		-	-	-	-	-	-
			High	839	167800	828.38	165676	6		-	-	-	-	-	-
Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-0 with minimum channel bandwidth 3 MHz and channel bandwidth 3 MHz or 5 MHz in TS 38.213 [22]. The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-1 with minimum channel bandwidth 3 MHz and channel bandwidth larger than 3 MHz in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2. Note 2: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs.															

Table 4.3.1.1.1.26-2: Test frequencies for NR operating band n26 and SCS 30 kHz

CB W [M Hz]	carrierBandwidth [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequencyPointA [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS [kHz]	GS CN	absoluteFrequencySSB [ARFCN]	k_{SSB}	Offset carrier CORESET#0 [RBs] Note 2	CORESET#0 Index (Offset [RBs]) Note 1	offsetToPointA (SIB1) [PRBs] Note 1
10	24	Downlink	Low	864	172800	859.68	171936	0	15	2160	172830	10	0	2 (7)	14
			Mid	876.5	175300	835.46	167092	102		2189	175210	18	0	0 (5)	214

			High	889	177800	703.24	140648	504		2224	177890	6	0	3 (8)	1024
		Uplink	Low	819	163800	814.68	162936	0	-	-	-	-	-	-	-
			Mid	831.5	166300	645.74	129148	504		-	-	-	-	-	-
			High	844	168800	837.52	167504	6		-	-	-	-	-	-
15	38	Downlink	Low	866.5	173300	859.66	171932	0	15	2161	172850	18	0	2 (7)	14
			Mid	876.5	175300	832.94	166588	102		2183	174730	2	0	1 (6)	216
			High	886.5	177300	698.22	139644	504		2208	176670	6	0	0 (5)	1018
		Uplink	Low	821.5	164300	814.66	162932	0	-	-	-	-	-	-	-
			Mid	831.5	166300	643.22	128644	504		-	-	-	-	-	-
			High	841.5	168300	832.5	166500	6		-	-	-	-	-	-
20	51	Downlink	Low	869	173800	859.82	171964	0	15	2159	172810	18	0	1 (6)	12
			Mid	876.5	175300	830.6	166120	102		2177	174250	22	0	0 (5)	214
			High	884	176800	693.38	138676	504		2195	175690	2	0	0 (5)	1018
		Uplink	Low	824	164800	814.82	162964	0	-	-	-	-	-	-	-
			Mid	831.5	166300	640.88	128176	504		-	-	-	-	-	-
			High	839	167800	827.66	165532	6		-	-	-	-	-	-
Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-2 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2. Note 2: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs.															

4.3.1.1.1.27 FFS

4.3.1.1.1.28 Reference test frequencies for NR operating band n28

Table 4.3.1.1.1.28-1: Test frequencies for NR operating band n28 and SCS 15 kHz when not used in EN-DC configuration DC_21A_n28A or in any EN-DC configuration of a higher order EN-DC configuration including DC_21A_n28A

CB W [MHz]	carrierBandwidth [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequencyPointA [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS [kHz]	GS CN	absoluteFrequencySSB [ARFCN]	k_{SSB}	Offset Carrier CORES ET#0 [RBs] Note 3	CORES ET#0 Index (Offset [RBs]) Note 1	offsetToPointA (SIB1) [PRBs] Note 1
3	15	Downlink	Low	759.5	151900	758.15	151630	0	15	30432	151870	8	0	0 (0)	0
			Mid	780.5	156100	760.79	152158	102		30537	156070	8	0	0 (0)	102
			High	801.5	160300	709.43	141886	504		30642	160270	8	0	0 (0)	504
		Uplink	Low	704.5	140900	703.15	140630	0	-	-	-	-	-	-	-
			Mid	725.5	145100	633.43	126686	504		-	-	-	-	-	-
			High	746.5	149300	744.07	148814	6		-	-	-	-	-	-
5	25	Downlink	Low	760.5	152100	758.25	151650	0	15	1902	152190	0	1	2 (4)	5
			Mid	780.5	156100	759.89	151978	102		1949	156010	0	0	0 (0)	102
			High	800.5	160100	707.53	141506	504		2002	160130	4	1	1 (2)	507
		Uplink	Low	705.5	141100	703.25	140650	0	-	-	-	-	-	-	-
			Mid	725.5	145100	632.53	126506	504		-	-	-	-	-	-
			High	745.5	149100	742.17	148434	6		-	-	-	-	-	-
10	52	Downlink	Low	763	152600	758.32	151664	0	15	1903	152210	2	1	2 (4)	5
			Mid	780.5	156100	757.46	151492	102		1943	155530	2	0	0 (0)	102

			High	798	159600	702.6	140520	504		1989	159150	6	1	1 (2)	507
		Uplink	Low	708	141600	703.32	140664	0	-	-	-	-	-	-	-
			Mid	725.5	145100	630.1	126020	504		-	-	-	-	-	-
			High	743	148600	737.24	147448	6		-	-	-	-	-	-
15	79	Downlink	Low	765.5	153100	758.39	151678	0	15	1901	152170	8	1	1 (2)	3
			Mid	780.5	156100	755.03	151006	102		1937	155050	4	0	0 (0)	102
			High	795.5	159100	697.67	139534	504		1976	158170	8	1	1 (2)	507
		Uplink	Low	710.5	142100	703.39	140678	0	-	-	-	-	-	-	-
			Mid	725.5	145100	627.67	125534	504		-	-	-	-	-	-
			High	740.5	148100	732.31	146462	6		-	-	-	-	-	-
20 (Note 2)	106	Downlink	Low	768	153600	758.46	151692	0	15	1902	152190	10	1	1 (2)	3
			Mid	783	156600	755.1	151020	102		1938	155070	6	0	0 (0)	102
			High	793	158600	692.74	138548	504		1966	157250	6	1	2 (4)	509
		Uplink	Low	713	142600	703.46	140692	0	-	-	-	-	-	-	-
			Mid	728	145600	627.74	125548	504		-	-	-	-	-	-
			High	738	147600	727.38	145476	6		-	-	-	-	-	-
30 (Note 4)	160	Downlink	Low Mid	773	154600	758.6	151720	0	15	1901	152170	6	0	1 (2)	2
			High	788	157600	682.88	136576	504		1940	155290	10	1	2 (4)	509
		Uplink	Low	718	143600	703.6	140720	0	-	-	-	-	-	-	-

			Mid												
			High	733	146600	717.52	143504	6		-	-	-	-	-	-
40	216	Downlink	Low Mid High	778	155600	758.56	151712	0	15	1903	152210	10	1	1 (2)	3
(Note 5)		Uplink	Low Mid High	723	144600	703.56	140712	0	-	-	-	-	-	-	-
Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-0 with minimum channel bandwidth 3 MHz and channel bandwidth 3 MHz or 5 MHz in TS 38.213 [22]. The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-1 with minimum channel bandwidth 3 MHz and channel bandwidth larger than 3 MHz in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2. Note 2: Carrier centre frequency moved for Mid Range and CBW=20 MHz due to Note 7 in TS 38.101-1 [7], Table 5.3.5-1. Note 3: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs. Note 4: No carrier centre frequency specified for Mid Range and CBW=30 MHz due to Note 7 in TS 38.101-1 [7], Table 5.3.5-1. For test cases specifying Mid range and CBW=30 MHz to be tested, use Low range and CBW=30 MHz instead. Note 5: No carrier centre frequency specified for Mid Range and High Range CBW 40 MHz due to Note 7 in TS 38.101-1 [7], Table 5.3.5-1. For test cases specifying Mid Range and High Range CBW 40 MHz to be tested, use Low range and CBW=40 MHz instead.															

Table 4.3.1.1.28-1A: Test frequencies for NR operating band n28 and SCS 15 kHz when used in EN-DC configuration DC_21A_n28A or in any EN-DC configuration of a higher order EN-DC configuration including DC_21A_n28A

CBW [MHz]	carrierBandwidth [PRBs]	Range		Carrier centre [MHz] (Note 5)	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequencyPointA [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS [kHz]	GS CN	absoluteFrequencySSB [ARFCN]	k_{SSB}	Offset Carrier CORESET#0 [RBs] Note 3	CORESET#0 Index (Offset [RBs]) Note 1	offsetToPointA (SIB1) [PRBs] Note 1
5	25	Downlink	Low	785.5	157100	783.25	156650	0	15	1963	157010	0	0	0 (0)	0

			Mid												
			High	790.5	158100	697.53	139506	504		1977	158190	0	1	2 (4)	509
		Uplink	Low Mid	730.5	146100	728.25	145650	0	-	-	-	-	-	-	-
			High	735.5	147100	732.17	146434	6		-	-	-	-	-	-
10	52	Downlink	Low Mid High	788	157600	764.96	152992	102	15	1964	157210	2	1	2 (4)	107
		Uplink	Low Mid High	733	146600	637.6	127520	504	-	-	-	-	-	-	-
Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-1 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.															
Note 2: Carrier centre frequency moved for Mid Range and CBW=20 MHz due to Note 7 in TS 38.101-1 [7], Table 5.3.5-1.															
Note 3: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs.															
Note 4: No carrier centre frequency specified for Mid Range and CBW=30 MHz due to Note 7 in TS 38.101-1 [7], Table 5.3.5-1. For test cases specifying Mid range and CBW=30 MHz to be tested, use Low range and CBW=30 MHz instead.															
Note 5: The frequency range in band n28 is restricted for this band combination to 728 - 738 MHz for the UL and 783 - 793 MHz for the DL. This restriction applies also for these band combinations when applicable EN-DC configuration is part of a higher order EN-DC configuration. (Reference: TS 38.101-3 [9], Table 5.5B.4.1-1 for DC_21A_n28 and Note 17)															

Table 4.3.1.1.28-2: Test frequencies for NR operating band n28 and SCS 30 kHz when not used in EN-DC configuration DC_21A_n28A or in any EN-DC configuration of a higher order EN-DC configuration including DC_21A_n28A

CBW [MHz]	carrierBandwidth [PRBs]	Range	Carrier centre	Carrier centre	point A [MHz]	absoluteFrequencyPointA [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS	GS CN	absoluteFrequencySSB [ARFCN]	k_{SSB}	Offset Carrier CORESET#0 [RBs]	CORESET#0 Index (Offset [RBs])	offsetToPointA (SIB1) [PRBs] Note 1

				[MHz]	[ARFCN]				[kHz]				Note 3	Note 1	
10	24	Down link	Low	763	152600	758.68	151736	0	15	1909	152690	6	0	3 (8)	16
			Mid	780.5	156100	739.46	147892	102		1949	156010	18	0	0 (5)	214
			High	798	159600	612.24	122448	504		1995	159630	10	0	2 (7)	1022
		Uplink	Low	708	141600	703.68	140736	0	-	-	-	-	-	-	-
			Mid	725.5	145100	539.74	107948	504		-	-	-	-	-	-
			High	743	148600	736.52	147304	6		-	-	-	-	-	-
15	38	Down link	Low	765.5	153100	758.66	151732	0	15	1907	152650	18	0	2 (7)	14
			Mid	780.5	156100	736.94	147388	102		1943	155530	2	0	1 (6)	216
			High	795.5	159100	607.22	121444	504		1982	158650	18	0	2 (7)	1022
		Uplink	Low	710.5	142100	703.66	140732	0	-	-	-	-	-	-	-
			Mid	725.5	145100	537.22	107444	504		-	-	-	-	-	-
			High	740.5	148100	731.5	146300	6		-	-	-	-	-	-
20 (Note 2)	51	Down link	Low	768	153600	758.82	151764	0	15	1908	152670	14	0	2 (7)	14
			Mid	783	156600	737.1	147420	102		1944	155550	22	0	0 (5)	214
			High	793	158600	602.38	120476	504		1969	157490	2	0	0 (5)	1018
		Uplink	Low	713	142600	703.82	140764	0	-	-	-	-	-	-	-
			Mid	728	145600	537.38	107476	504		-	-	-	-	-	-
			High	738	147600	726.66	145332	6		-	-	-	-	-	-
30	78	Down link	Low	773	154600	758.96	151792	0	15	1907	152650	22	0	1 (6)	12

(Note 4)			Mid												
			High	788	157600	592.52	118504	504		1943	155530	6	0	0 (5)	1018
		Uplink	Low Mid	718	143600	703.96	140792	0	-	-	-	-	-	-	-
			High	733	146600	716.8	143360	6		-	-	-	-	-	-
40	106	Downlink	Low Mid High	778	155600	758.92	151784	0	15	1909	152690	14	0	2 (7)	14
(Note 5)		Uplink	Low Mid High	723	144600	703.92	140784	0	-	-	-	-	-	-	-
Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-2 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2. Note 2: Carrier centre frequency moved for Mid Range and CBW=20 MHz due to Note 7 in TS 38.101-1 [7], Table 5.3.5-1. Note 3: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs. Note 4: No carrier centre frequency specified for Mid Range and CBW=30 MHz due to Note 7 in TS 38.101-1 [7], Table 5.3.5-1. Note 5: No carrier centre frequency specified for Mid Range and High Range CBW 40 MHz due to Note 7 in TS 38.101-1 [7], Table 5.3.5-1. For test cases specifying Mid Range and High Range CBW 40 MHz to be tested, use Low range and CBW=40 MHz instead.															

Table 4.3.1.1.28-2A: Test frequencies for NR operating band n28 and SCS 30 kHz when used in EN-DC configuration DC_21A_n28A or in any EN-DC configuration of a higher order EN-DC configuration including DC_21A_n28A

CBW [MHz]	carrierBandwidth [PRBs]	Range	Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequencyPointA [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS	GS CN	absoluteFrequencySSB [ARFCN]	k_{SSB}	Offset Carrier CORESET#0 [RBs] Note 3	CORESET#0 Index (Offset [RBs]) Note 1	offsetToPointA (SIB1) [PRBs] Note 1

				Note 5					[kHz]						
10	24	Down link	Low Mid High	788	157600	746.96	149392	102	15	1970	157690	6	0	3 (8)	220
		Uplink	Low Mid High	733	146600	547.24	109448	504	-	-	-	-	-	-	-
Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-1 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.															
Note 2: Carrier centre frequency moved for Mid Range and CBW=20 MHz due to Note 7 in TS 38.101-1 [7], Table 5.3.5-1.															
Note 3: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs.															
Note 4: No carrier centre frequency specified for Mid Range and CBW=30 MHz due to Note 7 in TS 38.101-1 [7], Table 5.3.5-1. For test cases specifying Mid range and CBW=30 MHz to be tested, use Low range and CBW=30 MHz instead.															
Note 5: The frequency range in band n28 is restricted for this band combination to 728 - 738 MHz for the UL and 783 - 793 MHz for the DL. This restriction applies also for these band combinations when applicable EN-DC configuration is part of a higher order EN-DC configuration. (Reference: TS 38.101-3 [9], Table 5.5B.4.1-1 for DC_21A_n28 and Note 17)															

4.3.1.1.1.29

Reference test frequencies for NR operating band n29 (SDL)

Table 4.3.1.1.1.29-1: Test frequencies for NR operating band n29 and SCS 15 kHz without CORESET#0

CBW [MHz]	carrierBand width [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absolute FrequencyPoint A [ARFCN]	offsetTo Carrier [PRBs]	SS block SCS [kHz]	GSCN	absolute FrequencySSB [ARFCN]	offsetTo PointA [PRBs] Note 2
5	25	Downlink	Low	719.5	143900	717.25	143450	0	15	-	143810	0
			Mid	722.5	144500	701.89	140378	102		-	144410	102
			High	725.5	145100	632.53	126506	504		-	145010	504
10	52	Downlink	Low	722	144400	717.32	143464	0	15	-	143824	0
			Mid	722.5	144500	699.46	139892	102		-	143924	102
			High	723	144600	627.6	125520	504		-	144024	504

- Note 1: FR1 carrier without CORESET#0 is indicated in the MIB by setting $k_{SSB}=31$, *controlResourceSetZero*=0 and *searchSpaceZero* = 0 (TS 38.213 [22], clause 13).
- Note 2: The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.

Table 4.3.1.1.1.29-2: Test frequencies for NR operating band n29 and SCS 30 kHz without CORESET#0

CBW [MHz]	carrierBand width [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absolute Frequen cyPoint A [ARFCN]	offsetTo Carrier [PRBs]	SS block SCS [kHz]	GSCN	absolute Frequen cySSB [ARFCN]	offsetTo PointA [PRBs] Note 2
10	24	Downlink	Low	722	144400	717.68	143536	0	15	-	143896	0
			Mid	722.5	144500	681.46	136292	102		-	143996	204
			High	723	144600	537.24	107448	504		-	144096	1008
Note 1: FR1 carrier without CORESET#0 is indicated in the MIB by setting $k_{SSB}=31$, <i>controlResourceSetZero</i> =0 and <i>searchSpaceZero</i> = 0 (TS 38.213 [22], clause 13).												
Note 2: The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.												

4.3.1.1.1.30

Reference test frequencies for NR operating band n30

Table 4.3.1.1.1.30-1: Test frequencies for NR operating band n30 and SCS 15 kHz

CBW [MHz]	carrierBandwidth [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequencyPointA [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS [kHz]	GSCN	absoluteFrequencySSB [ARFCN]	k_{SSB}	Offset Carrier CORESET#0 [RBs] Note 2	CORESET#0 Index (Offset [RBs]) Note 1	offsetToPointA (SIB1) [PRBs] Note 1
5	25	Downlink	Low	235.25	470500	2350.25	470050	0	15	5879	470410	0	0	0 (0)	0
			Mid	235.5	471000	2334.39	466878	102		5886	470910	0	0	0 (0)	102
			High	235.75	471500	2264.53	452906	504		5893	471410	0	0	0 (0)	504
		Uplink	Low	230.75	461500	2305.25	461050	0	-	-	-	-	-	-	-
			Mid	231.0	462000	2217.03	443406	504		-	-	-	-	-	-

			High	231 2.5	46250 0	2309 .17	461834	6		-	-	-	-	-	-
10	52	Down link	Low	235 5	47100 0	2350 .32	470064	0	15	588 0	470430	2	0	0 (0)	0
			Mid												
			High												
		Uplink	Low	231 0	46200 0	2305 .32	461064	0	-	-	-	-	-	-	-
			Mid												
			High												

Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-1 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.

Note 2: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs.

Note 3: 10 MHz test channel bandwidth is tested with Low range test frequency only. Low range test frequency shall be used instead of Mid range and High range test frequencies.

Table 4.3.1.1.1.30-2: Test frequencies for NR operating band n30 and SCS 30 kHz

CB W [MHz]	carrierBandwidth [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequencyPointA [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS [kHz]	GS CN	absoluteFrequencySSB [ARFCN]	k_{SSB}	Offset Carrier CORESET#0 [RBs] Note 2	CORESET#0 Index (Offset [RBs]) Note 1	offsetToPointA (SIB1) [PRBs] Note 1
10	24	Down link	Low	235 5	47100 0	2350 .68	470136	0	15	588 6	470910	18	0	0 (5)	10
			Mid												
			High												
		Uplink	Low	231 0	46200 0	2305 .68	461136	0	-	-	-	-	-	-	-
			Mid												

			High												
Note 1:	The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-2 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.														
Note 2:	The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs.														
Note 3:	10 MHz test channel bandwidth is tested with Low range test frequency only. Low range test frequency shall be used instead of Mid range and High range test frequencies.														

4.3.1.1.1.31 Reference test frequencies for NR operating band n31

Table 4.3.1.1.1.31-1: Test frequencies for NR operating band n31 and SCS 15 kHz

CB W [MHz]	carrierBandwidth [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequencyPointA [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS [kHz]	GS CN	absoluteFrequencySSB [ARFCN]	k_{SSB}	Offset Carrier CORESET#0 [RBs] Note 2	CORESET#0 Index (Offset [RBs]) Note 1	offsetToPointA (SIB1) [PRBs] Note 1
3	15	Downlink	Low	464	92800	462.65	92530	0	15	28956	92830	4	2	0 (0)	2
			Mid	465	93000	445.29	89058	102		28960	92970	8	0	0 (0)	102
			High	466	93200	373.93	74786	504		28967	93230	4	2	0 (0)	506
		Uplink	Low	454	90800	452.65	90530	0	-	-	-	-	-	-	-
			Mid	455	91000	362.93	72586	504		-	-	-	-	-	-
			High	456	91200	453.57	90714	6		-	-	-	-	-	-
5	25	Downlink	Low	465	93000	462.75	92550	0	15	1161	92910	0	0	0 (0)	0
			Mid												
			High												
		Uplink	Low	455	91000	452.75	90550	0	-	-	-	-	-	-	-

			Mi d Hi gh												
Note 1: For 3 MHz CBW, the CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-0 in TS 38.213 [22]. For 5 MHz CBW, the CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-1 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2. Note 2: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs.															

4.3.1.1.1.32 to 4.3.1.1.1.33 FFS

4.3.1.1.1.34 Reference test frequencies for NR operating band n34

Table 4.3.1.1.1.34-1: Test frequencies for NR operating band n34 and SCS 15 kHz

CB W [M Hz]	carrierBan dwidth [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequen cyPointA [ARFCN]	offsetToC arrier [Carrier PRBs]	SS blo ck SC S [kHz]	GS CN	absoluteFreque ncySSB [ARFCN]	k_{SSB}	Offset Carrier CORE SET#0 [RBs] Note 2	CORES ET#0 Index (Offset [RBs]) Note 1	offsetToP ointA (SIB1) [PRBs] Note 1
5	25	Down link & Upl in k	Lo w	201 2.5	40250 0	2010 .25	402050	0	15	503 2	402530	4	1	1 (2)	3
			Mi d	201 7.5	40350 0	1996 .89	399378	102		504 3	403470	8	1	0 (0)	103
			Hi gh	202 2.5	40450 0	1929 .53	385906	504		505 4	404410	0	0	0 (0)	504
10	52	Down link & Upl in k	Lo w	201 5	40300 0	2010 .32	402064	0	30	503 6	402970	2	3	0 (2)	5
			Mi d	201 7.5	40350 0	1994 .46	398892	102		504 3	403470	2	3	0 (2)	107
			Hi gh	202 0	40400 0	1924 .6	384920	504		505 0	403970	2	3	0 (2)	509
15	79	Down link & Upl in k	Lo w Mi d	201 7.5	40350 0	2010 .39	402078	0	30	503 7	402990	4	3	0 (2)	5

		Uplink	High												
Note 1:	The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-1 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.														
Note 2:	The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs.														

Table 4.3.1.1.1.34-2: Test frequencies for NR operating band n34 and SCS 30 kHz

CB W [MHz]	carrierBandwidth [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequencyPointA [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS [kHz]	GS CN	absoluteFrequencySSB [ARFCN]	k_{SSB}	Offset Carrier CORESET#0 [RBs] Note 2	CORESET#0 Index (Offset [RBs]) Note 1	offsetToPointA (SIB1) [PRBs] Note 1
10	24	Downlink &	Low	2015	403000	2010.68	402136	0	30	5036	402970	14	0	1 (1)	2
			Mid	2017.5	403500	1976.46	395292	102		5043	403470	14	0	1 (1)	206
		Uplink	High	2020	404000	1834.24	366848	504		5050	403970	14	0	1 (1)	1010
15	38	Downlink &	Low	2017.5	403500	2010.66	402132	0	30	5037	402990	22	0	1 (1)	2
			Mid												
		Uplink	High												
Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-2 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.															
Note 2: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs.															

Table 4.3.1.1.1.34-3: Test frequencies for NR operating band n34 and SCS 60 kHz without CORESET#0

CBW [MHz]	carrierBandwidth [PRBs]	Range	Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequencyPoint	offsetToCarrier [PRBs]	SS block SCS [kHz]	GSCN	absoluteFrequencySSB [ARFCN]

							A [ARFCN]				
10	11	Downlink & Uplink	Low	2015	403000	2011.04	402208	0	15	-	402568
			Mid	2017.5	403500	1940.1	388020	102		-	403068
			High	2020	404000	1653.16	330632	504		-	403568
15	18	Downlink & Uplink	Low	2017.5	403500	2011.02	402204	0	15	-	402564
			Mid								
			High								
Note: FR1 carrier without CORESET#0 is indicated in the MIB by setting k_{SSB} =31, <i>controlResourceSetZero</i> =0 and <i>searchSpaceZero</i> = 0 (TS 38.213 [22], clause 13).											

4.3.1.1.1.35 to 4.3.1.1.1.37 FFS

4.3.1.1.1.38 Reference test frequencies for NR operating band n38

Table 4.3.1.1.1.38-1: Test frequencies for NR operating band n38 and SCS 15 kHz

CB W [M Hz]	carrierBand width [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARF CN]	point A [MHz]	absoluteFrequency PointA [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS [kHz]	GS CN	absoluteFrequency SSB [ARFCN]	k_{SSB}	Offset Carrier CORESET#0 [RBs] Note 2	CORESET#0 Index (Offset [RBs]) Note 1	offsetToPointA (SIB1) [PRBs] Note 1
5	25	Down link & Uplink	Low	257 2.5	51450 0	2570 .25	514050	0	15	643 2	514590	0	1	2 (4)	5
			Mid	259 2.5	51850 0	2571 .89	514378	102		647 9	518410	0	0	0 (0)	102
		Uplink	High	261 7.5	52350 0	2524 .53	504906	504		654 3	523470	8	1	0 (0)	505
10	52	Down link & Uplink	Low	257 5	51500 0	2570 .32	514064	0	30	643 9	515090	6	2	1 (6)	8
			Mid	259 5	51900 0	2571 .96	514392	102		648 6	518910	6	1	0 (2)	105
		Uplink	High	261 5	52300 0	2519 .6	503920	504		653 6	522970	2	3	0 (2)	509
15	79	Down link & Uplink	Low	257 7.5	51550 0	2570 .39	514078	0	30	643 7	515050	0	1	1 (6)	7
			Mid	259 5	51900 0	2569 .53	513906	102		648 0	518430	8	1	0 (2)	105

		Uplink	High	261.2.5	52250.0	2514.67	502934	504		652.6	522050	0	1	1 (6)	511
20	106	Downlink & Uplink	Low	258.0	51600.0	2570.46	514092	0	30	643.8	515070	2	1	1 (6)	7
			Mid	259.5	51900.0	2567.1	513420	102		647.4	517950	10	1	0 (2)	105
			High	261.0	52200.0	2509.74	501948	504		651.3	521070	2	1	1 (6)	511
25	133	Downlink & Uplink	Low	258.2.5	51650.0	2570.53	514106	0	30	643.9	515090	4	1	1 (6)	7
			Mid	259.5	51900.0	2564.67	512934	102		646.8	517470	0	2	0 (2)	106
			High	260.7.5	52150.0	2504.81	500962	504		650.0	520090	4	1	1 (6)	511
30	160	Downlink & Uplink	Low	258.5	51700.0	2570.6	514120	0	30	643.7	515050	10	3	0 (2)	5
			Mid	259.5	51900.0	2562.24	512448	102		646.2	516990	2	2	0 (2)	106
			High	260.5	52100.0	2499.88	499976	504		648.7	518930	6	0	0 (2)	506
40	216	Downlink & Uplink	Low	259.0	51800.0	2570.56	514112	0	30	643.9	515090	2	1	1 (6)	7
			Mid	259.5	51900.0	2557.2	511440	102		645.0	516030	6	3	0 (2)	107
			High	260.0	52000.0	2489.84	497968	504		646.1	516970	10	1	0 (2)	507

Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-1 for SSB_SCS = 15kHz and Table 13-3 for SSB_SCS=30kHz in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.

Note 2: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs.

Table 4.3.1.1.1.38-2: Test frequencies for NR operating band n38 and SCS 30 kHz

CBW [MHz]	carrierBandwidth [PRBs]	Range	Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequencyPointA [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS [kHz]	GS CN	absoluteFrequencySSB [ARFCN]	k_{SSB}	Offset Carrier CORESET#0 [RBs] Note 2	CORESET#0 Index (Offset [RBs]) Note 1	offsetToPointA (SIB1) [PRBs] Note 1

10	24	Down link & Uplink	Low	2575	515000	2570.68	514136	0	30	6439	515090	6	0	3 (3)	6
			Mid	2595	519000	2553.96	510792	102		6486	518910	18	0	0 (0)	204
			High	2615	523000	2429.24	485848	504		6536	522970	14	0	1 (1)	1010
15	38	Down link & Uplink	Low	2577.5	515500	2570.66	514132	0	30	6437	515050	18	0	2 (2)	4
			Mid	2595	519000	2551.44	510288	102		6480	518430	2	0	1 (1)	206
			High	2612.5	522500	2424.22	484844	504		6526	522050	18	0	2 (2)	1012
20	51	Down link & Uplink	Low	2580	516000	2570.82	514164	0	30	6438	515070	14	0	2 (2)	4
			Mid	2595	519000	2549.1	509820	102		6474	517950	22	0	0 (0)	204
			High	2610	522000	2419.38	483876	504		6513	521070	14	0	2 (2)	1012
25	65	Down link & Uplink	Low	2582.5	516500	2570.8	514160	0	30	6439	515090	22	0	2 (2)	4
			Mid	2595	519000	2546.58	509316	102		6468	517470	6	0	1 (1)	206
			High	2607.5	521500	2414.36	482872	504		6500	520090	22	0	2 (2)	1012
30	78	Down link & Uplink	Low	2585	517000	2570.96	514192	0	30	6437	515050	22	0	1 (1)	2
			Mid	2595	519000	2544.24	508848	102		6462	516990	2	0	1 (1)	206
			High	2605	521000	2409.52	481904	504		6487	518930	6	0	0 (0)	1008
40	106	Down link & Uplink	Low	2590	518000	2570.92	514184	0	30	6439	515090	14	0	2 (2)	4
			Mid	2595	519000	2539.2	507840	102		6450	516030	18	0	1 (1)	206
			High	2600	520000	2399.48	479896	504		6461	516970	22	0	0 (0)	1008

Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-4 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.

Note 2: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs.

Table 4.3.1.1.1.38-3: Test frequencies for NR operating band n38 and SCS 60 kHz without CORESET#0

CBW [MHz]	carrierBandwidth [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequency PointA [ARFCN]	offsetToCarrier [PRBs]	SS block SCS [kHz]	GSCN	absoluteFrequency SSB [ARFCN]
10	11	Downlink & Uplink	Low	2575	515000	2571.04	514208	0	30	-	514928
			Mid	2595	519000	2517.6	503520	102		-	518928
			High	2615	523000	2248.16	449632	504		-	522928
15	18	Downlink & Uplink	Low	2577.5	515500	2571.02	514204	0	30	-	514924
			Mid	2595	519000	2515.08	503016	102		-	518424
			High	2612.5	522500	2243.14	448628	504		-	521924
20	24	Downlink & Uplink	Low	2580	516000	2571.36	514272	0	30	-	514992
			Mid	2595	519000	2512.92	502584	102		-	517992
			High	2610	522000	2238.48	447696	504		-	520992
25	31	Downlink & Uplink	Low	2582.5	516500	2571.34	514268	0	30	-	514988
			Mid	2595	519000	2510.4	502080	102		-	517488
			High	2607.5	521500	2233.46	446692	504		-	519988
30	38	Downlink & Uplink	Low	2585	517000	2571.32	514264	0	30	-	514984
			Mid	2595	519000	2507.88	501576	102		-	516984
			High	2605	521000	2228.44	445688	504		-	518984
40	51	Downlink & Uplink	Low	2590	518000	2571.64	514328	0	15	-	514688
			Mid	2595	519000	2503.2	500640	102		-	515688
			High	2600	520000	2218.76	443752	504		-	516688
Note: FR1 carrier without CORESET#0 is indicated in the MIB by setting $k_{SSB}=31$, <i>controlResourceSetZero</i> =0 and <i>searchSpaceZero</i> = 0 (TS 38.213 [22], clause 13).											

4.3.1.1.1.39

Reference test frequencies for NR operating band n39

Table 4.3.1.1.1.39-1: Test frequencies for NR operating band n39 and SCS 15 kHz

CBW [MHz]	carrierBandwidth [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequencyPointA [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS [kHz]	GS CN	absoluteFrequencySSB [ARFCN]	k_{SSB}	Offset Carrier CORESET#0 [RBs] Note 2	CORESET#0 Index (Offset [RBs]) Note 1	offsetToPointA (SIB1) [PRBs] Note 1
5	25	Downlink	Low	1882.5	376500	1880.25	376050	0	15	4707	376590	0	1	2 (4)	5

		&	Mi	189	37982	1878	375698	102		474	379730	0	0	0 (0)	102
		Uplink	d	9.1	0	.49				7					
			Hi	191	38350	1824	364906	504		479	383530	4	1	1 (2)	507
			gh	7.5	0	.53				3					
10	52	Downlink &	Low	188	37700	1880	376064	0	30	471	377090	6	2	1 (6)	8
			Mi	190	38000	1876	375392	102		475	379970	2	3	0 (2)	107
		Uplink	d	0	0	.96				0					
			Hi	191	38300	1819	363920	504		478	383090	6	2	1 (6)	512
			gh	5	0	.6				9					
15	79	Downlink &	Low	188	37750	1880	376078	0	30	471	377050	0	1	1 (6)	7
			Mi	190	38000	1874	374906	102		2					
		Uplink	d	0	0	.53				474	379490	4	3	0 (2)	107
			Hi	191	38250	1814	362934	504		4					
			gh	2.5	0	.67				477	381870	0	0	0 (2)	506
20	106	Downlink &	Low	189	37800	1880	376092	0	30	3	377070	2	1	1 (6)	7
			Mi	190	38000	1872	374420	102		473	379010	6	3	0 (2)	107
		Uplink	d	0	0	.1				8					
			Hi	191	38200	1809	361948	504		476	380890	2	0	0 (2)	506
			gh	0	0	.74				0					
25	133	Downlink &	Low	189	37850	1880	376106	0	30	471	377090	4	1	1 (6)	7
			Mi	190	38000	1869	373934	102		4					
		Uplink	d	0	0	.67				473	378530	8	3	0 (2)	107
			Hi	190	38150	1804	360962	504		2					
			gh	7.5	0	.81				475	379970	0	2	0 (2)	508
30	160	Downlink &	Low	189	37900	1880	376120	0	30	471	377050	10	3	0 (2)	5
			Mi	190	38000	1867	373448	102		2					
		Uplink	d	0	0	.24				472	378050	10	3	0 (2)	107
			Hi	190	38100	1799	359976	504		6					
			gh	5	0	.88				473	378990	2	2	0 (2)	508
35	188	Downlink &	Low	189	37950	1880	376116	0	30	471	377070	6	4	0 (2)	6
			Mi	190	38000	1864	372944	102		3					
		Uplink	d	0	0	.72				472	377570	6	4	0 (2)	108
			Hi	190	38050	1794	358972	504		0					
			gh	2.5	0	.86				472	378010	10	2	0 (2)	508
40	216	Downlink	Low	190	38000	1880	376112	0	30	4	377090	2	1	1 (6)	7
			w	0	0	.56				4					

		&	Mi d												
		Uplin k	Hi gh												
Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-1 for SSB_SCS = 15kHz and Table 13-3 for SSB_SCS=30kHz in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2. Note 2: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs.															

Table 4.3.1.1.1.39-2: Test frequencies for NR operating band n39 and SCS 30 kHz

CB W [M Hz]	carrierBan dwidth [PRBs]	Range		Carri er cent re [MH z]	Carri er centr e [ARF CN]	point A [MHz]	absoluteFrequen cyPointA [ARFCN]	offsetToC arrier [Carrier PRBs]	SS blo ck SC S [kH z]	GS CN	absoluteFrequen cySSB [ARFCN]	k_{SSB}	Offset Carrier CORE SET#0 [RBs] Note 2	CORES ET#0 Index (Offset [RBs]) Note 1	offsetToP ointA (SIB1) [PRBs] Note 1
10	24	Down link & Uplin k	Lo w	188 5	37700 0	1880 .68	376136	0	30	471 4	377090	6	0	3 (3)	6
			Mi d	190 0	38000 0	1858 .96	371792	102		475 0	379970	14	0	1 (1)	206
			Hi gh	191 5	38300 0	1729 .24	345848	504		478 9	383090	6	0	3 (3)	1014
15	38	Down link & Uplin k	Lo w	188 7.5	37750 0	1880 .66	376132	0	30	471 2	377050	18	0	2 (2)	4
			Mi d	190 0	38000 0	1856 .44	371288	102		474 4	379490	22	0	1 (1)	206
			Hi gh	191 2.5	38250 0	1724 .22	344844	504		477 3	381870	6	0	0 (0)	1008
20	51	Down link & Uplin k	Lo w	189 0	37800 0	1880 .82	376164	0	30	471 3	377070	14	0	2 (2)	4
			Mi d	190 0	38000 0	1854 .1	370820	102		473 8	379010	18	0	1 (1)	206
			Hi gh	191 0	38200 0	1719 .38	343876	504		476 0	380890	2	0	0 (0)	1008
25	65	Down link & Uplin k	Lo w	189 2.5	37850 0	1880 .8	376160	0	30	471 4	377090	22	0	2 (2)	4
			Mi d	190 0	38000 0	1851 .58	370316	102		473 2	378530	2	0	2 (2)	208

		Uplink	High	1907.5	381500	1714.36	342872	504		4750	379970	6	0	1 (1)	1010				
30	78	Downlink &	Low	1895	379000	1880.96	376192	0	30	4712	377050	22	0	1 (1)	2				
			Mid	1900	380000	1849.24	369848	102		4726	378050	22	0	1 (1)	206				
		Uplink	High	1905	381000	1709.52	341904	504		4737	378990	2	0	1 (1)	1010				
35	92	Downlink &	Low	1897.5	379500	1880.94	376188	0	30	4713	377070	6	0	2 (2)	4				
			Mid	1900	380000	1846.72	369344	102		4720	377570	6	0	2 (2)	208				
		Uplink	High	1902.5	380500	1704.5	340900	504		4724	378010	10	0	1 (1)	1010				
40	106	Downlink &	Low	1900	380000	1880.92	376184	0	30	4714	377090	14	0	2 (2)	4				
			Mid																
		Uplink	High																
Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-2 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.																			
Note 2: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs.																			

Table 4.3.1.1.1.39-3: Test frequencies for NR operating band n39 and SCS 60 kHz without CORESET#0

CBW [MHz]	carrierBand width [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absolute FrequencyPoint A [ARFCN]	offsetTo Carrier [PRBs]	SS block SCS [kHz]	GSCN	absolute FrequencySSB [ARFCN]
10	11	Downlink & Uplink	Low	1885	377000	1881.04	376208	0	30	-	376928
			Mid	1900	380000	1822.6	364520	102		-	379928
			High	1915	383000	1548.16	309632	504		-	382928
15	18	Downlink & Uplink	Low	1887.5	377500	1881.02	376204	0	30	-	376924
			Mid	1900	380000	1820.08	364016	102		-	379424
			High	1912.5	382500	1543.14	308628	504		-	381924
20	24	Downlink &	Low	1890	378000	1881.36	376272	0	30	-	376992
			Mid	1900	380000	1817.92	363584	102		-	378992

25	31	Uplink	High	1910	382000	1538.48	307696	504	30	-	380992
		Downlink & Uplink	Low	1892.5	378500	1881.34	376268	0		-	376988
			Mid	1900	380000	1815.4	363080	102		-	378488
			High	1907.5	381500	1533.46	306692	504		-	379988
30	38	Downlink & Uplink	Low	1895	379000	1881.32	376264	0	30	-	376984
			Mid	1900	380000	1812.88	362576	102		-	377984
			High	1905	381000	1528.44	305688	504		-	378984
35	44	Downlink & Uplink	Low	1897.5	379500	1881.66	376332	0	30	-	377052
			Mid	1900	380000	1810.72	362144	102		-	377552
		Uplink	High	1902.5	380500	1523.78	304756	504		-	378052
40	51	Downlink & Uplink	Low	1900	380000	1881.64	376328	0	30	-	377048
			Mid								
			High								

Note: FR1 carrier without CORESET#0 is indicated in the MIB by setting $k_{SSB}=31$, *controlResourceSetZero*=0 and *searchSpaceZero* = 0 (TS 38.213 [22], clause 13).

Table 4.3.1.1.1.39-4: Test frequencies for NR operating band n39 and SCS 15 kHz with enhanced channel raster

CBW [MHz]	carrierBandwidth [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequencyPointA [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS [kHz]	GS CN	absoluteFrequencySSB [ARFCN]	k_{SSB}	Offset Carrier CORESET#0 [RBs] Note 2	CORESET#0 Index (Offset [RBs]) Note 1	offsetToPointA (SIB1) [PRBs] Note 1
5	25	Downlink & Uplink	Low	1882.52	376504	1880.27	376054	0	15	4706	376570	4	0	2 (4)	4
			High	1917.49	383498	1824.52	364904	504		4795	383570	6	0	2 (4)	508
10	52	Downlink & Uplink	Low	1885.01	377002	1880.33	376066	0	30	4712	377050	4	1	1 (6)	7
			High	1914.99	382998	1819.59	363918	504		4788	383070	0	2	1 (6)	512
15	79	Downlink & Uplink	Low	1887.51	377502	1880.4	376080	0	30	4713	377070	6	1	1 (6)	7
			High	1912.49	382498	1814.66	362932	504		4775	382090	2	2	1 (6)	512
20	106	Downlink & Uplink	Low	1890.01	378002	1880.47	376094	0	30	4714	377090	8	1	1 (6)	7
			High	1909.99	381998	1809.73	361946	504		4762	380930	4	1	0 (2)	507

25	133	Down link & Uplink	Low	1892.51	378502	1880.54	376108	0	30	4712	377050	2	0	1 (6)	6
			High	1907.49	381498	1804.8	360960	504		4749	379950	6	1	0 (2)	507
30	160	Down link & Uplink	Low	1895.01	379002	1880.61	376122	0	30	4713	377070	4	0	1 (6)	6
			High	1904.99	380998	1799.87	359974	504		4736	378970	8	1	0 (2)	507
35	188	Down link & Uplink	Low	1897.51	379502	1880.59	376118	0	30	4714	377090	0	1	1 (6)	7
			High	1902.49	380498	1794.85	358970	504		4726	378050	0	0	1 (6)	510
40	216		Enhanced channel raster doesn't not apply to this channel bandwidth												
Note 1:		The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-1 for SSB_SCS = 15kHz and Table 13-3 for SSB_SCS=30kHz in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.													
Note 2:		The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs.													

4.3.1.1.1.40

Reference test frequencies for NR operating band n40

Table 4.3.1.1.1.40-1: Test frequencies for NR operating band n40 and SCS 15 kHz

CBW [MHz]	carrierBandwidth [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequencyPointA [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS [kHz]	GS CN	absoluteFrequencySSB [ARFCN]	k_{SSB}	Offset Carrier CORESET#0 [RBs] Note 2	CORESET#0 Index (Offset [RBs]) Note 1	offsetToPointA (SIB1) [PRBs] Note 1
5	25	Down link & Uplink	Low	2302.5	460500	2300.25	460050	0	(Note 3)	-	460770	-	-	-	-
			Mid	2350	470000	2329.39	465878	102		-	470270	-	-	-	-
			High	2397.5	479500	2304.53	460906	504		-	479770	-	-	-	-
10	52	Down link & Uplink	Low	2305	461000	2300.32	460064	0	30	5764	461090	6	2	1 (6)	8
			Mid	2350	470000	2326.96	465392	102		5875	469970	2	3	0 (2)	107

		Uplink	High	2395	479000	2299.6	459920	504		5989	479090	6	2	1 (6)	512
15	79	Downlink &	Low	2307.5	461500	2300.39	460078	0	30	5762	461050	0	1	1 (6)	7
			Mid	2350	470000	2324.53	464906	102		5869	469490	4	3	0 (2)	107
		Uplink	High	2392.5	478500	2294.67	458934	504		5973	477870	0	0	0 (2)	506
20	106	Downlink &	Low	2310	462000	2300.46	460092	0	30	5763	461070	2	1	1 (6)	7
			Mid	2350	470000	2322.1	464420	102		5863	469010	6	3	0 (2)	107
		Uplink	High	2390	478000	2289.74	457948	504		5960	476890	2	0	0 (2)	506
25	133	Downlink &	Low	2312.5	462500	2300.53	460106	0	30	5764	461090	4	1	1 (6)	7
			Mid	2350	470000	2319.67	463934	102		5857	468530	8	3	0 (2)	107
		Uplink	High	2387.5	477500	2284.81	456962	504		5950	475970	0	2	0 (2)	508
30	160	Downlink &	Low	2315	463000	2300.6	460120	0	30	5762	461050	10	3	0 (2)	5
			Mid	2350	470000	2317.24	463448	102		5851	468050	10	3	0 (2)	107
		Uplink	High	2385	477000	2279.88	455976	504		5937	474990	2	2	0 (2)	508
40	216	Downlink &	Low	2320	464000	2300.56	460112	0	30	5764	461090	2	1	1 (6)	7
			Mid	2350	470000	2312.2	462440	102		5839	467090	2	1	1 (6)	109
		Uplink	High	2380	476000	2269.84	453968	504		5914	473090	2	1	1 (6)	511
50	270	Downlink &	Low	2325	465000	2300.7	460140	0	30	5763	461070	10	3	0 (2)	5
			Mid	2350	470000	2307.34	461468	102		5827	466130	6	1	1 (6)	109
		Uplink	High	2375	475000	2259.98	451996	504		5888	471130	6	1	1 (6)	511
Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-1 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.															

Note 2: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs.

Note 3: No SS/PBCH block fits within the channel bandwidth. The channel bandwidth can only be used as SCell

Table 4.3.1.1.1.40-2: Test frequencies for NR operating band n40 and SCS 30 kHz

CB W [MHz]	carrierBandwidth [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequencyPointA [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS [kHz]	GS CN	absoluteFrequencySSB [ARFCN]	k_{SSB}	Offset Carrier CORESET#0 [RBs] Note 2	CORESET#0 Index (Offset [RBs]) Note 1	offsetToPointA (SIB1) [PRBs] Note 1
10	24	Downlink & Uplink	Low	2305	461000	2300.68	460136	0	30	5764	461090	6	0	3 (3)	6
			Mid	2350	470000	2308.96	461792	102		5875	469970	14	0	1 (1)	206
			High	2395	479000	2209.24	441848	504		5989	479090	6	0	3 (3)	1014
15	38	Downlink & Uplink	Low	2307.5	461500	2300.66	460132	0	30	5762	461050	18	0	2 (2)	4
			Mid	2350	470000	2306.44	461288	102		5869	469490	22	0	1 (1)	206
			High	2392.5	478500	2204.22	440844	504		5973	477870	6	0	0 (0)	1008
20	51	Downlink & Uplink	Low	2310	462000	2300.82	460164	0	30	5763	461070	14	0	2 (2)	4
			Mid	2350	470000	2304.1	460820	102		5863	469010	18	0	1 (1)	206
			High	2390	478000	2199.38	439876	504		5960	476890	2	0	0 (0)	1008
25	65	Downlink & Uplink	Low	2312.5	462500	2300.8	460160	0	30	5764	461090	22	0	2 (2)	4
			Mid	2350	470000	2301.58	460316	102		5857	468530	2	0	2 (2)	208
			High	2387.5	477500	2194.36	438872	504		5950	475970	6	0	1 (1)	1010
30	78	Downlink & Uplink	Low	2315	463000	2300.96	460192	0	30	5762	461050	22	0	1 (1)	2
			Mid	2350	470000	2299.24	459848	102		5851	468050	22	0	1 (1)	206

		Uplink	High	2385	477000	2189.52	437904	504		5937	474990	2	0	1 (1)	1010
40	106	Downlink &	Low	2320	464000	2300.92	460184	0	30	5764	461090	14	0	2 (2)	4
			Mid	2350	470000	2294.2	458840	102		5839	467090	14	0	2 (2)	208
		Uplink	High	2380	476000	2179.48	435896	504		5914	473090	14	0	2 (2)	1012
50	133	Downlink &	Low	2325	465000	2301.06	460212	0	30	5763	461070	22	0	1 (1)	2
			Mid	2350	470000	2289.34	457868	102		5827	466130	18	0	2 (2)	208
		Uplink	High	2375	475000	2169.62	433924	504		5888	471130	18	0	2 (2)	1012
60	162	Downlink &	Low	2330	466000	2300.84	460168	0	30	5762	461050	6	0	2 (2)	4
			Mid	2350	470000	2284.12	456824	102		5812	464930	14	0	0 (0)	204
		Uplink	High	2370	474000	2159.4	431880	504		5862	468990	10	0	1 (1)	1010
70	189	Downlink &	Low	2335	467000	2300.98	460196	0	30	5764	461090	10	0	2 (2)	4
			Mid	2350	470000	2279.26	455852	102		5800	463970	18	0	0 (0)	204
		Uplink	High	2365	473000	2149.54	429908	504		5839	467090	10	0	2 (2)	1012
80	217	Downlink &	Low	2340	468000	2300.94	460188	0	30	5763	461070	6	0	2 (2)	4
			Mid	2350	470000	2274.22	454844	102		5788	463010	10	0	1 (1)	206
		Uplink	High	2360	472000	2139.5	427900	504		5813	465130	2	0	3 (3)	1014
90	245	Downlink &	Low	2345	469000	2300.9	460180	0	30	5762	461050	2	0	2 (2)	4
			Mid	2350	470000	2269.18	453836	102		5776	462050	2	0	2 (2)	208
		Uplink	High	2355	471000	2129.46	425892	504		5787	462990	6	0	1 (1)	1010
100	273	Downlink &	Low	2350	470000	2300.86	460172	0	30	5764	461090	18	0	2 (2)	4
			Mid	2350	470000	2264.14	452828	102		5764	461090	18	0	2 (2)	208

		Uplink	High	2350	470000	2119.42	423884	504		5764	461090	18	0	2 (2)	1012
Note 1:	The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-2 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.														
Note 2:	The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs.														

Table 4.3.1.1.1.40-3: Test frequencies for NR operating band n40 and SCS 60 kHz without CORESET#0

CBW [MHz]	carrierBand width [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absolute Frequency Point A [ARFCN]	offsetTo Carrier [PRBs]	SS block SCS [kHz]	GSCN	absolute FrequencySSB [ARFCN]
10	11	Downlink & Uplink	Low	2305	461000	2301.04	460208	0	30	-	460928
			Mid	2350	470000	2272.6	454520	102		-	469928
			High	2395	479000	2028.16	405632	504		-	478928
15	18	Downlink & Uplink	Low	2307.5	461500	2301.02	460204	0	30	-	460924
			Mid	2350	470000	2270.08	454016	102		-	469424
			High	2392.5	478500	2023.14	404628	504		-	477924
20	24	Downlink & Uplink	Low	2310	462000	2301.36	460272	0	30	-	460992
			Mid	2350	470000	2267.92	453584	102		-	468992
			High	2390	478000	2018.48	403696	504		-	476992
25	31	Downlink & Uplink	Low	2312.5	462500	2301.34	460268	0	30	-	460988
			Mid	2350	470000	2265.4	453080	102		-	468488
			High	2387.5	477500	2013.46	402692	504		-	475988
30	38	Downlink & Uplink	Low	2315	463000	2301.32	460264	0	30	-	460984
			Mid	2350	470000	2262.88	452576	102		-	467984
			High	2385	477000	2008.44	401688	504		-	474984
40	51	Downlink & Uplink	Low	2320	464000	2301.64	460328	0	30	-	461048
			Mid	2350	470000	2258.2	451640	102		-	467048
			High	2380	476000	1998.76	399752	504		-	473048
50	65	Downlink & Uplink	Low	2325	465000	2301.6	460320	0	30	-	461040
			Mid	2350	470000	2253.16	450632	102		-	466040
			High	2375	475000	1988.72	397744	504		-	471040
60	79	Downlink & Uplink	Low	2330	466000	2301.56	460312	0	30	-	461032
			Mid	2350	470000	2248.12	449624	102		-	465032
			High	2370	474000	1978.68	395736	504		-	469032
70	93	Downlink &	Low	2335	467000	2301.52	460304	0	30	-	461024
			Mid	2350	470000	2243.08	448616	102		-	464024

		Uplink	High	2365	473000	1968.64	393728	504		-	467024
80	107	Downlink & Uplink	Low	2340	468000	2301.48	460296	0	30	-	461016
			Mid	2350	470000	2238.04	447608	102		-	463016
			High	2360	472000	1958.6	391720	504		-	465016
90	121	Downlink & Uplink	Low	2345	469000	2301.44	460288	0	30	-	461008
			Mid	2350	470000	2233	446600	102		-	462008
			High	2355	471000	1948.56	389712	504		-	463008
100	135	Downlink & Uplink	Low	2350	470000	2301.4	460280	0	30	-	461000
			Mid	2350	470000	2227.96	445592	102		-	461000
			High	2350	470000	1938.52	387704	504		-	461000
Note: FR1 carrier without CORSESET#0 is indicated in the MIB by setting $k_{\text{SSB}}=31$, <i>controlResourceSetZero</i> =0 and <i>searchSpaceZero</i> = 0 (TS 38.213 [22], clause 13).											

Table 4.3.1.1.1.40-4: Test frequencies for NR operating band n40 and SCS 15 kHz for enhanced channel raster

CB W [M Hz]	carrierBandwidth [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequencyPointA [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS [kHz]	GS CN	absoluteFrequencySSB [ARFCN]	k_{SSB}	Offset Carrier CORESET#0 [RBs] Note 2	CORESET#0 Index (Offset [RBs]) Note 1	offsetToPointA (SIB1) [PRBs] Note 1
5	25	Downlink & Uplink	Low	2302.52	460504	2300.27	460054	0	15	5756	460570	4	0	2 (4)	4
			High	2397.49	479498	2304.52	460904	504		5995	479570	6	0	2 (4)	508
10	52	Downlink & Uplink	Low	2305.01	461002	2300.33	460066	0	30	5762	461050	4	1	1 (6)	7
			High	2394.99	478998	2299.59	459918	504		5988	479070	0	2	1 (6)	512
15	79	Downlink & Uplink	Low	2307.51	461502	2300.4	460080	0	30	5763	461070	6	1	1 (6)	7
			High	2392.49	478498	2294.66	458932	504		5975	478090	2	2	1 (6)	512
20	106	Downlink & Uplink	Low	2310.01	462002	2300.47	460094	0	30	5764	461090	8	1	1 (6)	7
			High	2389.99	477998	2289.73	457946	504		5962	476930	4	1	0 (2)	507
25	133	Downlink & Uplink	Low	2312.51	462502	2300.54	460108	0	30	5762	461050	2	0	1 (6)	6

		Uplink	High	2387.49	477498	2284.8	456960	504		5949	475950	6	1	0 (2)	507
30	160	Downlink & Uplink	Low	2315.01	463002	2300.61	460122	0	30	5763	461070	4	0	1 (6)	6
			High	2384.99	476998	2279.87	455974	504		5936	474970	8	1	0 (2)	507
40	216	Downlink & Uplink	Low	2320.01	464002	2300.57	460114	0	30	5762	461050	0	0	1 (6)	6
			High	2379.99	475998	2269.83	453966	504		5913	473070	8	0	1 (6)	510
50	270	Downlink & Uplink	Low	2325.01	465002	2300.71	460142	0	30	5764	461090	4	0	1 (6)	6
			High	2374.99	474998	2259.97	451994	504		5887	470930	0	0	0 (2)	506
Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-1 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.															
Note 2: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs.															

4.3.1.1.1.41

Reference test frequencies for NR operating band n41

Table 4.3.1.1.1.41-1: Test frequencies for NR operating band n41, SCS 15 kHz and ΔF_{Raster} 15 kHz

CBW [MHz]	carrierBandwidth [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequencyPointA [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS [kHz]	GS CN	absoluteFrequencySSB [ARFCN]	k_{SSB}	Offset Carrier CORESET#0 [RBs] Note 2	CORESET#0 Index (Offset [RBs]) Note 1	offsetToPointA (SIB1) [PRBs] Note 1
5	25	Downlink &	Low	2498.505	499701	2496.255	499251	0	15	6246	499710	9	0	1 (2)	2
			Mid	2593.005	518601	2572.395	514479	102		6483	518670	5	0	2 (4)	106
		Uplink	High	2687.37	537474	2594.4	518880	504		6717	537390	2	0	0 (0)	504
10	52	Downlink &	Low	2501.01	500202	2496.33	499266	0	15	6246	499710	4	0	1 (2)	2
			Mid	2593.005	518601	2569.965	513993	102		6477	518190	7	0	2 (4)	106

		Uplink	High	2685	537000	2589.6	517920	504		6705	536430	2	0	0 (0)	504
15	79	Downlink &	Low	2503.5	500700	2496.39	499278	0	15	6246	499710	0	0	1 (2)	2
			Mid	2593.005	518601	2567.535	513507	102		6471	517710	9	0	2 (4)	106
		Uplink	High	2682.495	536499	2584.665	516933	504		6693	535470	11	0	0 (0)	504
20	106	Downlink &	Low	2506.005	501201	2496.465	499293	0	15	6246	499710	7	1	0 (0)	1
			Mid	2593.005	518601	2565.105	513021	102		6465	517230	11	0	2 (4)	106
		Uplink	High	2679.99	535998	2579.73	515946	504		6681	534510	8	1	0 (0)	505
30	160	Downlink	Low	2511	502200	2496.6	499320	0	15	6246	499710	10	0	0 (0)	0
		&	Mid	2593.005	518601	2560.245	512049	102		6453	516270	3	1	2 (4)	107
		Uplink	High	2674.995	534999	2569.875	513975	504		6657	532590	1	1	1 (2)	507
40	216	Downlink &	Low	2516.01	503202	2496.57	499314	0	15	6246	499710	0	1	0 (0)	1
			Mid	2593.005	518601	2555.205	511041	102		6441	515310	7	2	2 (4)	108
		Uplink	High	2670	534000	2559.84	511968	504		6633	530670	6	1	2 (4)	509
50	270	Downlink &	Low	2521.005	504201	2496.705	499341	0	15	6246	499710	3	0	0 (0)	0
			Mid	2593.005	518601	2550.345	510069	102		6426	514110	3	0	0 (0)	102
		Uplink	High	2664.99	532998	2549.97	509994	504		6606	528510	4	0	0 (0)	504
Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-1 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.															
Note 2: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs.															

Table 4.3.1.1.1.41-2: Test frequencies for NR operating band n41, SCS 30 kHz and ΔF_{Raster} 30 kHz

CB W [MHz]	carrierBandwidth [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequencyPointA [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS [kHz]	GS CN	absoluteFrequencySSB [ARFCN]	k_{SSB}	Offset Carrier CORES ET#0 [RBs] Note 2	CORES ET#0 Index (Offset [RBs]) Note 1	offsetToPointA (SIB1) [PRBs] Note 1
10	24	Downlink &	Low	2501.01	500202	2496.69	499338	0	30	6252	500190	20	0	1 (1)	2
			Mid	2592.99	518598	2551.95	510390	102		6483	518670	0	0	3 (3)	210
		Uplink	High	2685	537000	2499.24	499848	504		6711	536910	18	0	0 (0)	1008
15	38	Downlink &	Low	2503.5	500700	2496.66	499332	0	30	6252	500190	22	0	1 (1)	2
			Mid	2592.99	518598	2549.43	509886	102		6474	517950	0	0	0 (0)	204
		Uplink	High	2682.48	536496	2494.2	498840	504		6699	535950	10	0	1 (1)	1010
20	51	Downlink &	Low	2506.02	501204	2496.84	499368	0	30	6252	500190	10	0	1 (1)	2
			Mid	2592.99	518598	2547.09	509418	102		6471	517710	4	0	3 (3)	210
		Uplink	High	2679.99	535998	2489.37	497874	504		6687	534990	12	0	1 (1)	1010
30	78	Downlink	Low	2511	502200	2496.96	499392	0	30	6252	500190	2	0	1 (1)	2
		&	Mid	2592.99	518598	2542.23	508446	102		6456	516510	0	0	0 (0)	204
		Uplink	High	2674.98	534996	2479.5	495900	504		6663	533070	6	0	2 (2)	1012
40	106	Downlink &	Low	2516.01	503202	2496.93	499386	0	30	6252	500190	4	0	1 (1)	2
			Mid	2592.99	518598	2537.19	507438	102		6444	515550	16	0	0 (0)	204
		Uplink	High	2670	534000	2469.48	493896	504		6636	530910	2	0	0 (0)	1008
50	133	Downlink	Low	2521.02	504204	2497.08	499416	0	30	6252	500190	18	0	0 (0)	0

		&	Mid	2592 .99	51859 8	2532 .33	506466	102		643 2	514590	20	0	0 (0)	204
		Uplink	High	2664 .99	53299 8	2459 .61	491922	504		661 2	528990	20	0	0 (0)	1008
60	162	Downlink &	Low	2526 0	50520 0	2496 .84	499368	0	30	625 2	500190	10	0	1 (1)	2
			Mid	2592 .99	51859 8	2527 .11	505422	102		642 0	513630	0	0	2 (2)	208
		Uplink	High	2659 .98	53199 6	2449 .38	489876	504		658 8	527070	14	0	2 (2)	1012
70	189	Downlink &	Low	2531 .01	50620 2	2496 .99	499398	0	30	625 2	500190	0	0	1 (1)	2
			Mid	2592 .99	51859 8	2522 .25	504450	102		640 8	512670	4	0	2 (2)	208
		Uplink	High	2655 0	53100 0	2439 .54	487908	504		656 4	525150	6	0	3 (3)	1014
80	217	Downlink &	Low	2536 .02	50720 4	2496 .96	499392	0	30	625 2	500190	2	0	1 (1)	2
			Mid	2592 .99	51859 8	2517 .21	503442	102		639 6	511710	20	0	2 (2)	208
		Uplink	High	2649 .99	52999 8	2429 .49	485898	504		653 7	522990	4	0	1 (1)	1010
90	245	Downlink &	Low	2541 0	50820 0	2496 .9	499380	0	30	625 2	500190	6	0	1 (1)	2
			Mid	2592 .99	51859 8	2512 .17	502434	102		638 1	510510	4	0	0 (0)	204
		Uplink	High	2644 .98	52899 6	2419 .44	483888	504		651 3	521070	10	0	2 (2)	1012
100	273	Downlink &	Low	2546 .01	50920 2	2496 .87	499374	0	30	625 2	500190	8	0	1 (1)	2
			Mid	2592 .99	51859 8	2507 .13	501426	102		636 9	509550	20	0	0 (0)	204
		Uplink	High	2640 0	52800 0	2409 .42	481884	504		648 6	518910	6	0	0 (0)	1008
Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-4 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.															
Note 2: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs.															

Table 4.3.1.1.1.41-3: Test frequencies for NR operating band n41, SCS 60 kHz and ΔF_{Raster} 15 kHz without CORESET#0

CBW [MHz]	carrierBand width [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequencyPointA [ARFCN]	offsetTo Carrier [PRBs]	SS block SCS [kHz]	GSCN	absolute FrequencySSB [ARFCN]
10	11	Downlink & Uplink	Low	2501.01	500202	2497.05	499410	0	15	-	499770
			Mid	2593.005	518601	2515.605	503121	102		-	518169
			High	2685	537000	2318.16	463632	504		-	536568
15	18	Downlink & Uplink	Low	2503.5	500700	2497.02	499404	0	15	-	499764
			Mid	2593.005	518601	2513.085	502617	102		-	517665
			High	2682.495	536499	2313.135	462627	504		-	535563
20	24	Downlink & Uplink	Low	2506.005	501201	2497.365	499473	0	15	-	499833
			Mid	2593.005	518601	2510.925	502185	102		-	517233
			High	2679.99	535998	2308.47	461694	504		-	534630
30	38	Downlink	Low	2511	502200	2497.32	499464	0	15	-	499824
		&	Mid	2593.005	518601	2505.885	501177	102		-	516225
		Uplink	High	2674.995	534999	2298.435	459687	504		-	532623
40	51	Downlink & Uplink	Low	2516.01	503202	2497.65	499530	0	15	-	499890
			Mid	2593.005	518601	2501.205	500241	102		-	515289
			High	2670	534000	2288.76	457752	504		-	530688
50	65	Downlink & Uplink	Low	2521.005	504201	2497.605	499521	0	15	-	499881
			Mid	2593.005	518601	2496.165	499233	102		-	514281
			High	2664.99	532998	2278.71	455742	504		-	528678
60	79	Downlink & Uplink	Low	2526	505200	2497.56	499512	0	15	-	499872
			Mid	2593.005	518601	2491.125	498225	102		-	513273
			High	2659.995	531999	2268.675	453735	504		-	526671
70	93	Downlink & Uplink	Low	2531.01	506202	2497.53	499506	0	15	-	499866
			Mid	2593.005	518601	2486.085	497217	102		-	512265
			High	2655	531000	2258.64	451728	504		-	524664
80	107	Downlink & Uplink	Low	2536.005	507201	2497.485	499497	0	15	-	499857
			Mid	2593.005	518601	2481.045	496209	102		-	511257
			High	2649.99	529998	2248.59	449718	504		-	522654
90	121	Downlink & Uplink	Low	2541	508200	2497.44	499488	0	15	-	499848
			Mid	2593.005	518601	2476.005	495201	102		-	510249
			High	2644.995	528999	2238.555	447711	504		-	520647
100	135	Downlink & Uplink	Low	2546.01	509202	2497.41	499482	0	15	-	499842
			Mid	2593.005	518601	2470.965	494193	102		-	509241
			High	2640	528000	2228.52	445704	504		-	518640
Note: FR1 carrier without CORESET#0 is indicated in the MIB by setting $k_{\text{SSB}}=31$, $\text{controlResourceSetZero}=0$ and $\text{searchSpaceZero} = 0$ (TS 38.213 [22], clause 13).											

4.3.1.1.1.42 to 4.3.1.1.1.45 FFS

4.3.1.1.1.46 Reference test frequencies for NR operating band n46

Table 4.3.1.1.1.46-1: Test frequencies for NR operating band n46 and SCS 15 kHz (Note 3)

CB W [MHz]	carrierBandwidth [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN] Note 4	point A [MHz]	absoluteFrequencyPointA [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS [kHz]	GS CN	absoluteFrequencySSB [ARFCN]	k_{SSB}	Offset Carrier CORESET#0 [RBs] Note 2	CORESET#0 Index (Offset [RBs]) Note 1	offsetToPointA (SIB1) [PRBs] Note 1
10	52	Downlink &	Low	5730	782000	5725.32	781688	0	30	-	781928	31	-	-	-
			Mid							-					
		Uplink	High	5830.02	788668	5734.62	782308	504		-	788596	31	-	-	-
20	106	Downlink &	Low	5160	744000	5150.46	743364	0	30	-	743604	31	-	-	-
			Mid	5479.98	765332	5452.08	763472	102		-	764936	31	-	-	-
		Uplink	High	5905.02	793668	5804.76	786984	504		-	793272	31	-	-	-
40	216	Downlink &	Low	5170.02	744668	5150.58	743372	0	30	-	743612	31	-	-	-
			Mid	5509.98	767332	5472.18	764812	102		-	766276	31	-	-	-
		Uplink	High	5895	793000	5784.84	785656	504		-	791944	31	-	-	-
Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-3 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.															
Note 2: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs.															
Note 3: NR band n46 with SCS =15 kHz is restricted for operation when carrier is configured as an SCell part of a DC or CA configuration. As the bandwidth is limited to SCell then absence of CORESET#0 is indicated in the MIB by setting k_{SSB} =31, <i>controlResourceSetZero</i> =0 and <i>searchSpaceZero</i> = 0 (TS 38.213 [22], clause 13).															

Note 4: The selection of Low, Mid and High test frequencies are restricted to the limited allowed ARFCN values as specified in TS 38.101 [7], Table 5.4.2.3-2.

Table 4.3.1.1.1.46-2: Test frequencies for NR operating band n46 and SCS 30 kHz

CB W [MHz]	carrierBandwidth [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN] Note 4	point A [MHz]	absoluteFrequencyPointA [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS [kHz]	GS CN	absoluteFrequencySSB [ARFCN]	k_{SSB}	Offset Carrier CORESET#0 [RBs] Note 2	CORESET#0 Index (Offset [RBs]) Note 1	offsetToPointA (SIB1) [PRBs] Note 1
10 Note 3	24	Downlink &	Low	5730	782000	5725.68	781712	0	30	-	781952	31	-	-	-
			Mid							-	788620	31	-	-	-
		Uplink	High	5830.02	788668	5644.26	776284	504		-	788620	31	-	-	-
20	51	Downlink &	Low	5160	744000	5150.82	743388	0	30	8996	743712	12	0	3 (3)	6
			Mid	5479.98	765332	5434.08	762272	102		9218	765024	16	0	2 (2)	208
		Uplink	High	5905.02	793668	5714.4	780960	504		9513	793344	0	0	2 (2)	1012
40	106	Downlink &	Low	5170.02	744668	5150.94	743396	0	30	8996	743712	4	0	3 (3)	6
			Mid	5509.98	767332	5454.18	763612	102		9232	766368	20	0	2 (2)	208
		Uplink	High	5895	793000	5694.48	779632	504		9499	792000	8	0	1 (1)	1010
60	162	Downlink &	Low	5200.02	746668 Note 5	5170.86	744724	0	30	9010	745056	20	0	3 (3)	6
			Mid	5500.02	766668	5434.14	762276	102		9218	765024	12	0	2 (2)	208
		Uplink	High	5884.98	792332	5674.38	778292	504		9485	790656	4	0	1 (1)	1010
80	217	Downlink	Low	5190	746000	5150.94	743396	0	30	8996	743712	4	0	3 (3)	6

		&	Mid	5530,02	768668	5454,24	763616	102		9232	766368	16	0	2 (2)	208
		Uplink	High	5875,02	791668	5654,52	776968	504		9472	789408	8	1	3 (3)	1016

Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-4 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.

Note 2: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs.

Note 3: For this bandwidth, the minimum requirements are restricted to operation when carrier is configured as an SCell part of a DC or CA configuration. As the bandwidth is limited to SCell then absence of CORESET#0 is indicated in the MIB by setting $k_{\text{SSB}}=31$, *controlResourceSetZero*=0 and *searchSpaceZero* = 0 (TS 38.213 [22], clause 13).

Note 4: The selection of Low, Mid and High test frequencies are restricted to the limited allowed ARFCN values as specified in TS 38.101 [7], Table 5.4.2.3-2.

Note 5: The next lowest allowed ARFCN values has been selected as the lowest ARFCN value in TS 38.101 [7], Table 5.4.2.3-2 for CBW=60 MHz will cause the required guardband to exceed the bands lower edge.

Table 4.3.1.1.1.46-3: Test frequencies for NR operating band n46 and SCS 60 kHz without CORESET#0 (Note 1)

CBW [MHz]	carrierBand width [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN] Note 2	point A [MHz]	absolute FrequencyPoint A [ARFCN]	offsetTo Carrier [PRBs]	SS block SCS [kHz]	GSCN	absolute FrequencySSB [ARFCN]
10	11	Downlink & Uplink	Low	5730	782000	5726.04	781736	0	30	-	781976
			Mid							-	
			High	5830.02	788668	5463.18	764212	504		-	788644
20	24	Downlink & Uplink	Low	5160	744000	5151.36	743424	0	30	-	743664
			Mid	5479.98	765332	5397.9	759860	102		-	764996
			High	5905.02	793668	5533.5	768900	504		-	793332
40	51	Downlink & Uplink	Low	5170.02	744668	5151.66	743444	0	30	-	743684
			Mid	5509.98	767332	5418.18	761212	102		-	766348
			High	5895	793000	5513.76	767584	504		-	792016
60	79	Downlink & Uplink	Low	5179.98	745332	5151.54	743436	0	30	-	743676
			Mid	5500.02	766668	5398.14	759876	102		-	765012
			High	5884.98	792332	5493.66	766244	504		-	790676
80	107	Downlink & Uplink	Low	5190	746000	5151.48	743432	0	30	-	743672
			Mid	5530.02	768668	5418,06	761204	102		-	766340
			High	5875.02	791668	5473.62	764908	504		-	789340

- Note 1: FR1 carrier without CORESET#0 is indicated in the MIB by setting $k_{SSB}=31$, *controlResourceSetZero*=0 and *searchSpaceZero* = 0 (TS 38.213 [22], clause 13).
- Note 2: The selection of Low, Mid and High test frequencies are restricted to the limited allowed ARFCN values as specified in TS 38.101 [7], Table 5.4.2.3-2.

4.3.1.1.1.47 FFS

4.3.1.1.1.48 Reference test frequencies for NR operating band n48

Table 4.3.1.1.1.48-1: Test frequencies for NR operating band n48 and SCS 15 kHz

CBW [MHz]	carrierBandwidth [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequencyPointA [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS [kHz]	GS CN	absoluteFrequencySSB [ARFCN]	k_{SSB} (Note 4)	Offset Carrier CORESET#0 [RBs] Note 2	CORESET#0 Index (Offset [RBs]) Note 1	offsetToPointA (SIB1) [PRBs] Note 1
5	25	Downlink & Uplink	Low	3552.51	636834	3550.26	636684	0	(Note 3)	-	-	-	-	-	-
			Mid	3625.005	641667	3604.395	640293	102		-	-	-	-	-	-
			High	3697.5	646500	3604.53	640302	504		-	-	-	-	-	-
10	52	Downlink & Uplink	Low	3555	637000	3550.32	636688	0	30	7884	636960	8	0	0 (2)	2
			Mid	3624.99	641666	3601.95	640130	102		7933	641664	10	3	0 (2)	107
			High	3694.98	646332	3599.58	639972	504		7982	646368	0	3	1 (6)	513
15	79	Downlink & Uplink	Low	3557.52	637168	3550.41	636694	0	30	7884	636960	2	0	0 (2)	2
			Mid	3624.99	641666	3599.52	639968	102		7931	641472	4	1	0 (2)	105
			High	3692.49	646166	3594.66	639644	504		7978	645984	4	2	0 (2)	508
20	106	Downlink & Uplink	Low	3560.01	637334	3550.47	636698	0	30	7885	637056	10	3	1 (6)	9
			Mid	3624.99	641666	3597.09	639806	102		7930	641376	10	2	1 (6)	110

		Uplink	High	3690	646000	3589.74	639316	504		7975	645696	8	1	1 (6)	511
30	160	Downlink &	Low	3565.02	637668	3550.62	636708	0	30	7885	637056	0	3	1 (6)	9
			Mid	3624.99	641666	3592.23	639482	102		7926	640992	10	1	0 (2)	105
		Uplink	High	3684.99	645666	3579.87	638658	504		7968	645024	6	0	1 (6)	510
40	216	Downlink &	Low	3570	638000	3550.56	636704	0	30	7885	637056	4	3	1 (6)	9
			Mid	3624.99	641666	3587.19	639146	102		7923	640704	10	1	1 (6)	109
		Uplink	High	3679.98	645332	3569.82	637988	504		7961	644352	4	0	1 (6)	510
50	270	Downlink (Note 4)	Low	3575.01	638334	3550.71	636714	0	30		637056	31			
			Mid	3624.99	641666	3582.33	638822	102			640320	31			
		Uplink	High	3675	645000	3559.98	637332	504			643680	31			
Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-3 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.															
Note 2: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs.															
Note 3: No SS/PBCH block fits within the channel bandwidth. The channel bandwidth can only be used as SCell.															
Note 4: For this bandwidth, the minimum requirements are restricted to operation when carrier is configured as a downlink only SCell part of a CA configuration. As the bandwidth is limited to SCell then absence of CORESET#0 is indicated in the MIB by setting $k_{\text{SSB}}=31$, <i>controlResourceSetZero</i> =0 and <i>searchSpaceZero</i> = 0 (TS 38.213 [22], clause 13).															

Table 4.3.1.1.48-2: Test frequencies for NR operating band n48 and SCS 30 kHz

CBW [MHz]	carrierBandwidth [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequencyPointA [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS [kHz]	GS CN	absoluteFrequencySSB [ARFCN]	k_{SSB}	Offset Carrier CORESET#0 [RBs] Note 2	CORESET#0 Index (Offset [RBs]) Note 1	offsetToPointA (SIB1) [PRBs] Note 1
10	24	Downlink	Low	3555	637000	3550.68	636712	0	30	7884	636960	8	0	0 (0)	0

		&	Mi d	3624 .99	64166 6	3583 .95	638930	102		793 3	641664	22	0	1 (1)	206
		Uplin k	Hi gh	3694 .98	64633 2	3509 .22	633948	504		798 2	646368	12	0	3 (3)	1014
15	38	Down link &	Lo w	3557 .52	63716 8	3550 .68	636712	0	30	788 4	636960	8	0	0 (0)	0
		Uplin k	Mi d	3624 .99	64166 6	3581 .43	638762	102		793 1	641472	22	0	0 (0)	204
			Hi gh	3692 .49	64616 6	3504 .21	633614	504		797 8	645984	10	0	1 (1)	1010
20	51	Down link &	Lo w	3560 .01	63733 4	3550 .83	636722	0	30	788 5	637056	22	0	3 (3)	6
		Uplin k	Mi d	3624 .99	64166 6	3579 .09	638606	102		793 0	641376	10	0	3 (3)	210
			Hi gh	3690	64600 0	3499 .38	633292	504		797 5	645696	20	0	2 (2)	1012
30	78	Down link &	Lo w	3565 .02	63766 8	3550 .98	636732	0	30	788 5	637056	12	0	3 (3)	6
		Uplin k	Mi d	3624 .99	64166 6	3574 .23	638282	102		792 6	640992	22	0	0 (0)	204
			Hi gh	3684 .99	64566 6	3489 .51	632634	504		796 8	645024	6	0	2 (2)	1012
40	106	Down link &	Lo w	3570	63800 0	3550 .92	636728	0	30	788 5	637056	16	0	3 (3)	6
		Uplin k	Mi d	3624 .99	64166 6	3569 .19	637946	102		792 3	640704	22	0	2 (2)	208
			Hi gh	3679 .98	64533 2	3479 .46	631964	504		796 1	644352	4	0	2 (2)	1012
50	133	Down link (Note 3) (Note 3)	Lo w	3575 .01	63833 4	3551 .07	636738	0	30		637056	31			
			Mi d	3624 .99	64166 6	3564 .33	637622	102			640320	31			
			Hi gh	3675	64500 0	3469 .62	631308	504			643680	31			
60	162	Down link (Note 3) (Note 3)	Lo w	3580 .02	63866 8	3550 .86	636724	0	30		637056	31			
			Mi d	3624 .99	64166 6	3559 .11	637274	102			640032	31			
			Hi gh	3669 .99	64466 6	3459 .39	630626	504			643008	31			
70	189	Down link	Lo w	3585	63900 0	3550 .98	636732	0	30	-	637056	31	-	-	-

		(Note 3)	Mid	3624.99	641666	3554.25	636950	102		-	639648	31	-	-	-
			High	3664.98	644332	3449.52	629968	504		-	642336	31	-	-	-
80	217	Downlink (Note 3)	Low	3590.01	639334	3550.95	636730	0	30		637056	31			
		(Note 3)	Mid	3624.99	641666	3549.21	636614	102			639360	31			
		(Note 3)	High	3660	644000	3439.5	629300	504			641664	31			
90	245	Downlink (Note 3)	Low	3595.02	639668	3550.92	636728	0	30		637056	31			
		(Note 3)	Mid	3624.99	641666	3544.17	636278	102			638976	31			
		(Note 3)	High	3654.99	643666	3429.45	628630	504			640992	31			
100	273	Downlink (Note 3)	Low	3600	640000	3550.86	636724	0	30		637056	31			
		(Note 3)	Mid	3624.99	641666	3539.13	635942	102			638688	31			
		(Note 3)	High	3649.98	643332	3419.4	627960	504			640320	31			
Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-4 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2. Note 2: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs. Note 3: For this bandwidth, the minimum requirements are restricted to operation when carrier is configured as a downlink only SCell part of a CA configuration. As the bandwidth is limited to SCell then absence of CORESET#0 is indicated in the MIB by setting $k_{\text{SSB}}=31$, <i>controlResourceSetZero=0</i> and <i>searchSpaceZero = 0</i> (TS 38.213 [22], clause 13).															

Table 4.3.1.1.1.48-3: Test frequencies for NR operating band n48 and SCS 60 kHz without CORESET#0 (Note 1)

CBW [MHz]	carrierBandwidth [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absolute FrequencyPoint A [ARFCN]	offsetToCarrier [PRBs]	SS block SCS [kHz]	GSCN	absolute FrequencySSB [ARFCN]
10	11	Downlink &	Low	3555	637000	3551.04	636736	0	30	-	636976
			Mid	3624.99	641666	3547.59	636506	102		-	641642

		Uplink	High	3694.98	646332	3328.14	621876	504		-	646308
15	18	Downlink & Uplink	Low	3557.52	637168	3551.04	636736	0	30	-	636976
			Mid	3624.99	641666	3545.07	636338	102		-	641474
			High	3692.49	646166	3323.13	621542	504		-	645974
20	24	Downlink & Uplink	Low	3560.01	637334	3551.37	636758	0	30	-	636998
			Mid	3624.99	641666	3542.91	636194	102		-	641330
			High	3690	646000	3318.48	621232	504		-	645664
30	78	Downlink & Uplink	Low	3565.02	637668	3550.98	636732	0	30	7885	637056
			Mid	3624.99	641666	3574.23	638282	102		7926	640992
			High	3684.99	645666	3489.51	632634	504		7968	645024
40	51	Downlink & Uplink	Low	3570	638000	3551.64	636776	0	30	-	637016
			Mid	3624.99	641666	3533.19	635546	102		-	640682
			High	3679.98	645332	3298.74	619916	504		-	644348
50	65	Downlink (Note 2)	Low	3575.01	638334	3551.61	636774	0	30	-	637014
			Mid	3624.99	641666	3528.15	635210	102		-	640346
			High	3675	645000	3288.72	619248	504		-	643680
60	79	Downlink (Note 2)	Low	3580.02	638668	3551.58	636772	0	30	-	637012
			Mid	3624.99	641666	3523.11	634874	102		-	640010
			High	3669.99	644666	3278.67	618578	504		-	643010
70	93	Downlink (Note 2)	Low	3585	639000	3551.52	636768	0	30	-	637008
			Mid	3624.99	641666	3518.07	634538	102		-	639674
			High	3664.98	644332	3268.62	617908	504		-	642340
80	107	Downlink (Note 2)	Low	3590.01	639334	3551.49	636766	0	30	-	637006
			Mid	3624.99	641666	3513.03	634202	102		-	639338
			High	3660	644000	3258.6	617240	504		-	641672
90	121	Downlink (Note 2)	Low	3595.02	639668	3551.46	636764	0	30	-	637004
			Mid	3624.99	641666	3507.99	633866	102		-	639002
			High	3654.99	643666	3248.55	616570	504		-	641002
100	135	Downlink (Note 2)	Low	3600	640000	3551.4	636760	0	30	-	637000
			Mid	3624.99	641666	3502.95	633530	102		-	638666
			High	3649.98	643332	3238.5	615900	504		-	640332

Note: FR1 carrier without CORESET#0 is indicated in the MIB by setting $k_{SSB} = 31$, *controlResourceSetZero*=0 and *searchSpaceZero* = 0 (TS 38.213 [22], clause 13).

Note 2: For this bandwidth, the minimum requirements are restricted to operation when carrier is configured as a downlink only SCell part of a CA configuration.

4.3.1.1.1.49 FFS

4.3.1.1.1.50 Reference test frequencies for NR operating band n50

Table 4.3.1.1.1.50-1: Test frequencies for NR operating band n50 and SCS 15 kHz

CBW [MHz]	carrierBandwidth [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequencyPointA [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS [kHz]	GS CN	absoluteFrequencySSB [ARFCN]	k_{SSB}	Offset Carrier CORESET#0 [RBs] Note 2	CORESET#0 Index (Offset [RBs]) Note 1	offsetToPointA (SIB1) [PRBs] Note 1
5	25	Downlink & Uplink	Low	1434.5	286900	1432.25	286450	0	(Note 3)	-	287170	-	-	-	-
			Mid	1474.5	294900	1453.89	290778	102		-	295170	-	-	-	-
			High	1514.5	302900	1421.53	284306	504		-	303170	-	-	-	-
10	52	Downlink & Uplink	Low	1437	287400	1432.32	286464	0	30	3591	287310	6	1	0 (2)	3
			Mid	1474.5	294900	1451.46	290292	102		3687	294990	6	2	1 (6)	110
			High	1512	302400	1416.6	283320	504		3780	302430	10	0	1 (6)	510
15	79	Downlink & Uplink	Low	1439.5	287900	1432.39	286478	0	30	3592	287330	8	1	0 (2)	3
			Mid	1474.5	294900	1449.03	289806	102		3678	294270	0	0	0 (2)	104
			High	1509.5	301900	1411.67	282334	504		3767	301450	0	1	1 (6)	511
20	106	Downlink & Uplink	Low	1442	288400	1432.46	286492	0	30	3590	287290	2	0	0 (2)	2
			Mid	1474.5	294900	1446.6	289320	102		3672	293790	2	0	0 (2)	104
			High	1507	301400	1406.74	281348	504		3754	300290	2	0	0 (2)	506
40	216	Downlink & Uplink	Low	1452	290400	1432.56	286512	0	30	3591	287310	2	0	0 (2)	2
			Mid	1474.5	294900	1436.7	287340	102		3648	291870	10	1	0 (2)	105

		Uplink	High	1497	299400	1386.84	277368	504		3705	296430	6	3	0 (2)	509
50	270	Downlink &	Low	1457	291400	1432.7	286540	0	30	3593	287530	6	1	1 (6)	7
			Mid	1474.5	294900	1431.84	286368	102		3636	290910	2	2	0 (2)	106
		Uplink	High	1492	298400	1376.98	275396	504		3682	294530	6	1	1 (6)	511
Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-1 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.															
Note 2: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs.															
Note 3: No SS/PBCH block fits within the channel bandwidth. The channel bandwidth can only be used as SCell															

Table 4.3.1.1.1.50-2: Test frequencies for NR operating band n50 and SCS 30 kHz

CBW [MHz]	carrierBandwidth [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequencyPointA [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS [kHz]	GS CN	absoluteFrequencySSB [ARFCN]	k_{SSB}	Offset Carrier CORESET#0 [RBs] Note 2	CORESET#0 Index (Offset [RBs]) Note 1	offsetToPointA (SIB1) [PRBs] Note 1
10	24	Downlink &	Low	1437	287400	1432.68	286536	0	30	3591	287310	18	0	0 (0)	0
			Mid	1474.5	294900	1433.46	286692	102		3687	294990	6	0	3 (3)	210
		Uplink	High	1512	302400	1326.24	265248	504		3780	302430	10	0	2 (2)	1012
15	38	Downlink &	Low	1439.5	287900	1432.66	286532	0	30	3592	287330	2	0	1 (1)	2
			Mid	1474.5	294900	1430.94	286188	102		3678	294270	6	0	0 (0)	204
		Uplink	High	1509.5	301900	1321.22	264244	504		3767	301450	18	0	2 (2)	1012
20	51	Downlink &	Low	1442	288400	1432.82	286564	0	30	3590	287290	2	0	0 (0)	0
			Mid	1474.5	294900	1428.6	285720	102		3672	293790	2	0	0 (0)	204

		Uplink	High	1507	301400	1316.38	263276	504		3754	300290	2	0	0 (0)	1008
40	106	Downlink & Uplink	Low	1452	290400	1432.92	286584	0	30	3591	287310	2	0	0 (0)	0
			Mid	1474.5	294900	1418.7	283740	102		3648	291870	22	0	0 (0)	204
			High	1497	299400	1296.48	259296	504		3705	296430	18	0	1 (1)	1010
50	133	Downlink & Uplink	Low	1457	291400	1433.06	286612	0	30	3593	287530	18	0	2 (2)	4
			Mid	1474.5	294900	1413.84	282768	102		3636	290910	2	0	1 (1)	206
			High	1492	298400	1286.62	257324	504		3682	294530	18	0	2 (2)	1012
60	162	Downlink & Uplink	Low	1462	292400	1432.84	286568	0	30	3592	287330	14	0	0 (0)	0
			Mid	1474.5	294900	1408.62	281724	102		3624	289950	6	0	2 (2)	208
			High	1487	297400	1276.4	255280	504		3653	292330	14	0	0 (0)	1008
80 (Note 3)	217	Downlink	Low	1472	294400	1432.94	286588	0	30	3593	287530	2	0	3 (3)	6
			Mid	1474.5	294900	1398.72	279744	102		3600	288030	2	0	3 (3)	210
			High	1477	295400	1256.5	251300	504		3607	288530	2	0	3 (3)	1014
Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-2 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2. Note 2: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs. Note 3: This UE channel bandwidth is applicable only to downlink (TS 38.101-1 table 5.3.5-1).															

Table 4.3.1.1.1.50-3: Test frequencies for NR operating band n50 and SCS 60 kHz without CORESET#0

CBW [MHz]	carrierBandwidth [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequencyPointA [ARFCN]	offsetToCarrier [PRBs]	SS block SCS [kHz]	GSCN	absoluteFrequencySSB [ARFCN]
10	11	Downlink	Low	1437	287400	1433.04	286608	0	30	-	287328

		& Uplink	Mid	1474.5	294900	1397.1	279420	102		-	294828
			High	1512	302400	1145.16	229032	504		-	302328
15	18	Downlink & Uplink	Low	1439.5	287900	1433.02	286604	0	30	-	287324
			Mid	1474.5	294900	1394.58	278916	102		-	294324
			High	1509.5	301900	1140.14	228028	504		-	301324
20	24	Downlink & Uplink	Low	1442	288400	1433.36	286672	0	30	-	287392
			Mid	1474.5	294900	1392.42	278484	102		-	293892
			High	1507	301400	1135.48	227096	504		-	300392
40	51	Downlink & Uplink	Low	1452	290400	1433.64	286728	0	30	-	287448
			Mid	1474.5	294900	1382.7	276540	102		-	291948
			High	1497	299400	1115.76	223152	504		-	296448
50	65	Downlink & Uplink	Low	1457	291400	1433.6	286720	0	30	-	287440
			Mid	1474.5	294900	1377.66	275532	102		-	290940
			High	1492	298400	1105.72	221144	504		-	294440
60	79	Downlink & Uplink	Low	1462	292400	1433.56	286712	0	30	-	287432
			Mid	1474.5	294900	1372.62	274524	102		-	289932
			High	1487	297400	1095.68	219136	504		-	292432
80 (Note 2)	107	Downlink	Low	1472	294400	1433.48	286696	0	30	-	287416
			Mid	1474.5	294900	1362.54	272508	102		-	287916
			High	1477	295400	1075.6	215120	504		-	288416
Note: FR1 carrier without CORESET#0 is indicated in the MIB by setting k_{SSB} =31, <i>controlResourceSetZero</i> =0 and <i>searchSpaceZero</i> = 0 (TS 38.213 [22], clause 13).											
Note 2: This UE channel bandwidth is applicable only to downlink (TS 38.101-1 table 5.3.5-1).											

4.3.1.1.1.51

Reference test frequencies for NR operating band n51

Table 4.3.1.1.51-1: Test frequencies for NR operating band n51 and SCS 15 kHz

[M Hz]	carrierBandwidth [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequencyPointA [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS [kHz]	GS CN	absoluteFrequencySSB [ARFCN]	k_{SSB}	Offset Carrier CORESET#0 [RBs] Note 2	CORESET#0 Index (Offset [RBs]) Note 1	offsetToPointA (SIB1) [PRBs] Note 1
5	25	Downlink &	Low Mid	1429.5	285900	1427.25	285450	0	15	3573	285870	8	1	0 (0)	1

		Uplink	High												
Note 1:	The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-1 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.														
Note 2:	The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs.														

4.3.1.1.1.52 FFS

4.3.1.1.1.53 Reference test frequencies for NR operating band n53

Table 4.3.1.1.1.53-1: Test frequencies for NR operating band n53 and SCS 15 kHz

CB W [MHz]	carrierBandwidth [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequencyPointA [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS [kHz]	GS CN	absoluteFrequencySSB [ARFCN]	k_{SSE}	Offset Carrier CORESET#0 [RBs] Note 2	CORESET#0 Index (Offset [RBs]) Note 1	offsetToPointA (SIB1) [PRBs] Note 1
5	25	Downlink &	Low	2486	497200	2483.75	496750	0	15	6215	497290	0	1	2 (4)	5
			Mid	2489.3	497860	2468.69	493738	102		6221	497770	0	0	0 (0)	102
		Uplink	High	2492.5	498500	2399.53	479906	504		6232	498530	4	1	1 (2)	507
10	52	Downlink &	Low	2488.5	497700	2483.82	496764	0	15	6216	497310	2	1	2 (4)	5
			Mid	2489.3	497860	2466.6	493252	102		6215	497290	2	0	0 (0)	102
		Uplink	High	2490	498000	2394.6	478920	504		6219	497550	6	1	1 (2)	507
Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-1 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.															
Note 2: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs.															

Table 4.3.1.1.1.53-2: Test frequencies for NR operating band n53 and SCS 30 kHz

CB W [MHz]	carrierBandwidth [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequencyPointA [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS [kHz]	GS CN	absoluteFrequencySSB [ARFCN]	k_{SSB}	Offset Carrier CORESET#0 [RBs] Note 2	CORESET#0 Index (Offset [RBs]) Note 1	offsetToPointA (SIB1) [PRBs] Note 1
10	24	Downlink &	Low	2488.5	497700	2484.18	496836	0	30	6222	497790	6	0	3 (3)	6
			Mid	2489.3	497860	2448.26	489652	102		6221	497770	18	0	0 (0)	204
		Uplink	High	2490	498000	2304.24	460848	504		6225	498030	10	0	2 (2)	1012
Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-2 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.															
Note 2: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs.															

Table 4.3.1.1.1.53-3: Test frequencies for NR operating band n53 and SCS 60 kHz without CORESET#0

CBW [MHz]	carrierBand width [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequencyPointA [ARFCN]	offsetTo Carrier [PRBs]	SS block SCS [kHz]	GSCN	absoluteFrequencySSB [ARFCN]
10	11	Downlink & Uplink	Low	2488.5	497700	2484.54	496908	0	15	-	497268
			Mid	2489.3	497860	2411.9	482380	102		-	497428
			High	2490	498000	2123.16	424632	504		-	497568
Note: FR1 carrier without CORESET#0 is indicated in the MIB by setting $k_{SSB}=31$, <i>controlResourceSetZero</i> =0 and <i>searchSpaceZero</i> = 0 (TS 38.213 [22], clause 13).											

4.3.1.1.1.54 Reference test frequencies for NR operating band n54

Table 4.3.1.1.1.54-1: Test frequencies for NR operating band n54 and SCS 15 kHz

CBW [MHz]	carrierBandwidth	Range	Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequencyPoint	offsetToCarrier	SS block SCS	GSCN	absoluteFrequencySSB	k_{SSB}	Offset Carrier	CORESET#0	offsetToPointA (SIB1)

	[PRBs]						A [ARFCN]	[Carrier PRBs]	[kHz]		[ARFCN]		CORE SET#0 [RBs] Note 2	Index (Offset [RBs]) Note 1	[PRBs] Note 1
5	25	Downlink & Uplink	Low	1672.5	334500	1670.25	334050	0	15	4182	334590	0	1	2(4)	5
	Mid														
	High														
Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-1 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.															
Note 2: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs.															

4.3.1.1.1.55 to 4.3.1.1.1.64 FFS

4.3.1.1.1.65 Reference test frequencies for NR operating band n65

Table 4.3.1.1.1.65-1: Test frequencies for NR operating band n65 and SCS 15 kHz

CB W [M Hz]	carrierBand width [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARF CN]	point A [MHz]	absoluteFrequencyPointA [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS [kHz]	GS CN	absoluteFrequencySSB [ARFCN]	k_{SSB}	Offset Carrier CORE SET#0 [RBs] Note 2	CORE SET#0 Index (Offset [RBs]) Note 1	offsetToPointA (SIB1) [PRBs] Note 1
5	25	Down link	Lo w	211 2.5	42250 0	2110 .25	422050	0	15	527 9	422410	0	0	0 (0)	0
			Mid	215 5	43100 0	2134 .39	426878	102		538 9	431090	0	1	2 (4)	107
			High	219 7.5	43950 0	2104 .53	420906	504		549 3	439470	8	1	0 (0)	505
		Uplink	Lo w	192 2.5	38450 0	1920 .25	384050	0	-	-	-	-	-	-	-
			Mid	196 5	39300 0	1872 .03	374406	504		-	-	-	-	-	-
			High	200 7.5	40150 0	2004 .17	400834	6		-	-	-	-	-	-
10	52	Down link	Lo w	211 5	42300 0	2110 .32	422064	0	15	528 0	422430	2	0	0 (0)	0

			Mid	215 5	43100 0	2131 .96	426392	102		538 3	430610	2	1	2 (4)	107
			High	219 5	43900 0	2099 .6	419920	504		548 0	438490	10	1	0 (0)	505
		Uplink	Low	192 5	38500 0	1920 .32	384064	0	-	-	-	-	-	-	-
			Mid	196 5	39300 0	1869 .6	373920	504		-	-	-	-	-	-
			High	200 5	40100 0	1999 .24	399848	6		-	-	-	-	-	-
15	79	Downlink	Low	211 7.5	42350 0	2110 .39	422078	0	15	528 1	422450	4	0	0 (0)	0
			Mid	215 5	43100 0	2129 .53	425906	102		537 7	430130	4	1	2 (4)	107
			High	219 2.5	43850 0	2094 .67	418934	504		547 0	437570	8	1	1 (2)	507
		Uplink	Low	192 7.5	38550 0	1920 .39	384078	0	-	-	-	-	-	-	-
			Mid	196 5	39300 0	1867 .17	373434	504		-	-	-	-	-	-
			High	200 2.5	40050 0	1994 .31	398862	6		-	-	-	-	-	-
20	106	Downlink	Low	212 0	42400 0	2110 .46	422092	0	15	528 2	422650	6	1	2 (4)	5
			Mid	215 5	43100 0	2127 .1	425420	102		537 1	429650	6	1	2 (4)	107
			High	219 0	43800 0	2089 .74	417948	504		545 7	436590	10	1	1 (2)	507
		Uplink	Low	193 0	38600 0	1920 .46	384092	0	-	-	-	-	-	-	-
			Mid	196 5	39300 0	1864 .74	372948	504		-	-	-	-	-	-
			High	200 0	40000 0	1989 .38	397876	6		-	-	-	-	-	-
Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-1 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.															
Note 2: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs.															

Table 4.3.1.1.1.65-2: Test frequencies for NR operating band n65 and SCS 30 kHz

CB W [MHz]	carrierBandwidth [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequencyPointA [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS [kHz]	GS CN	absoluteFrequencySSB [ARFCN]	k_{SSE}	Offset Carrier CORESET#0 [RBs] Note 2	CORESET#0 Index (Offset [RBs]) Note 1	offsetToPointA (SIB1) [PRBs] Note 1
10	24	Downlink	Low	2115	423000	2110.68	422136	0	15	5286	422910	18	0	0 (5)	10
			Mid	2155	431000	2113.96	422792	102		5389	431090	6	0	3 (8)	220
			High	2195	439000	2009.24	401848	504		5486	438970	14	0	1 (6)	1020
		Uplink	Low	1925	385000	1920.68	384136	0	-	-	-	-	-	-	-
			Mid	1965	393000	1779.24	355848	504		-	-	-	-	-	-
			High	2005	401000	1998.52	399704	6		-	-	-	-	-	-
15	38	Downlink	Low	2117.5	423500	2110.66	422132	0	15	5287	422930	2	0	1 (6)	12
			Mid	2155	431000	2111.44	422288	102		5380	430370	6	0	0 (5)	214
			High	2192.5	438500	2004.22	400844	504		5476	438050	18	0	2 (7)	1022
		Uplink	Low	1927.5	385500	1920.66	384132	0	-	-	-	-	-	-	-
			Mid	1965	393000	1776.72	355344	504		-	-	-	-	-	-
			High	2002.5	400500	1993.5	398700	6		-	-	-	-	-	-
20	51	Downlink	Low	2120	424000	2110.82	422164	0	15	5285	422890	2	0	0 (5)	10
			Mid	2155	431000	2109.1	421820	102		5374	429890	2	0	0 (5)	214
			High	2190	438000	1999.38	399876	504		5463	437070	14	0	2 (7)	1022
		Uplink	Low	1930	386000	1920.82	384164	0	-	-	-	-	-	-	-

			Mid	1965	393000	1774.38	354876	504	-	-	-	-	-	-
			High	2000	400000	1988.66	397732	6	-	-	-	-	-	-

Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-2 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.

Note 2: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs.

Table 4.3.1.1.1.65-3: Test frequencies for NR operating band n65 and SCS 60 kHz without CORESET#0

CBW [MHz]	carrierBand width [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absolute FrequencyPoint A [ARFCN]	offsetTo Carrier [PRBs]	SS block SCS [kHz]	GSCN	absolute FrequencySSB [ARFCN]
10	11	Downlink	Low	2115	423000	2111.04	422208	0	15	-	422568
			Mid	2155	431000	2077.6	415520	102		-	430568
			High	2195	439000	1828.16	365632	504		-	438568
		Uplink	Low	1925	385000	1921.04	384208	0	-	-	-
			Mid	1965	393000	1598.16	319632	504		-	-
			High	2005	401000	1996.72	399344	6		-	-
15	18	Downlink	Low	2117.5	423500	2111.02	422204	0	15	-	422564
			Mid	2155	431000	2075.08	415016	102		-	430064
			High	2192.5	438500	1823.14	364628	504		-	437564
		Uplink	Low	1927.5	385500	1921.02	384204	0	-	-	-
			Mid	1965	393000	1595.64	319128	504		-	-
			High	2002.5	400500	1991.7	398340	6		-	-
20	24	Downlink	Low	2120	424000	2111.36	422272	0	15	-	422632
			Mid	2155	431000	2072.92	414584	102		-	429632
			High	2190	438000	1818.48	363696	504		-	436632
		Uplink	Low	1930	386000	1921.36	384272	0	-	-	-
			Mid	1965	393000	1593.48	318696	504		-	-
			High	2000	400000	1987.04	397408	6		-	-

Note: FR1 carrier without CORESET#0 is indicated in the MIB by setting $k_{\text{SSB}}=31$, *controlResourceSetZero*=0 and *searchSpaceZero* = 0 (TS 38.213 [22], clause 13).

4.3.1.1.1.66 Reference test frequencies for NR operating band n66

Table 4.3.1.1.1.66-1: Test frequencies for NR operating band n66, uplink and downlink channel bandwidth combinations and SCS 15 kHz

UL/DLC BW Combination (Asymmetric BCS) Note 3	CB W [M Hz]	carrierBandwidth [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequencyPointA [ARFCN]	offsetTo Carrier [Carrier PRBs]	SS block SCS [kHz]	GS CN	absoluteFrequencySSB [ARFCN]	k_{SS}	Offset Carrier CORESET#0 [RBs] Note 2	CORESET#0 Index (Offset [RBs]) Note 1	offsetTo PointA (SIB1) [PRBs] Note 1
5/5	5	25	Downlink	Low	211.25	422500	2110.25	422050	0	15	5279	422410	0	0	0 (0)	0
				Mid	214.5	429000	2124.39	424878	102		5361	428910	0	0	0 (0)	102
				High	217.75	435500	2084.53	416906	504		5443	435410	0	0	0 (0)	504
	5	25	Uplink	Low	171.25	342500	1710.25	342050	0	-	-	-	-	-	-	-
				Mid	174.5	349000	1652.03	330406	504		-	-	-	-	-	-
				High	177.75	355500	1774.17	354834	6		-	-	-	-	-	-
5/20 (0,1)	20	106	Downlink	Low	212.0	424000	2110.46	422092	0	15	5282	422650	6	1	2 (4)	5
				Mid	215.25	430500	2124.6	424920	102		5364	429150	6	1	2 (4)	107
				High	218.5	437000	2084.74	416948	504		5446	435650	6	1	2 (4)	509
	5	25	Uplink	Low	171.25	342500	1710.25	342050	0	-	-	-	-	-	-	-
				Mid	174.5	349000	1652.03	330406	504		-	-	-	-	-	-
				High	177.75	355500	1774.17	354834	6		-	-	-	-	-	-
5/25 (1)	25	133	Downlink	Low	212.25	424500	2110.53	422106	0	15	5283	422670	8	1	2 (4)	5
				Mid	215.5	431000	2124.67	424934	102		5365	429170	8	1	2 (4)	107
				High	218.75	437500	2084.81	416962	504		5444	435610	0	0	2 (4)	508

	5	25	Uplink	Low	171 2.5	3425 00	1710 .25	342050	0	-	-	-	-	-	-	-
				Mid	174 5	3490 00	1652 .03	330406	504		-	-	-	-	-	-
				High	177 7.5	3555 00	1774 .17	354834	6		-	-	-	-	-	-
5/30 (1)	30	160	Downlink	Low	212 5	4250 00	2110 .6	422120	0	15	528 4	422690	10	1	2 (4)	5
				Mid	215 5	4310 00	2122 .24	424448	102		535 9	428690	10	1	2 (4)	107
				High	218 5	4370 00	2079 .88	415976	504		543 4	434690	10	1	2 (4)	509
	5	25	Uplink	Low	171 2.5	3425 00	1710 .25	342050	0	-	-	-	-	-	-	-
				Mid	174 2.5	3485 00	1649 .53	329906	504		-	-	-	-	-	-
				High	177 2.5	3545 00	1769 .17	353834	6		-	-	-	-	-	-
5/40 (0,1)	40	216	Downlink	Low	213 0	4260 00	2110 .56	422112	0	15	528 3	422670	6	1	2 (4)	5
				Mid	215 5	4310 00	2117 .2	423440	102		534 4	427490	6	0	0 (0)	102
				High	218 0	4360 00	2069 .84	413968	504		540 5	432490	6	0	0 (0)	504
	5	25	Uplink	Low	171 2.5	3425 00	1710 .25	342050	0	-	-	-	-	-	-	-
				Mid	173 7.5	3475 00	1644 .53	328906	504		-	-	-	-	-	-
				High	176 2.5	3525 00	1759 .17	351834	6		-	-	-	-	-	-
10/10	10	52	Downlink	Low	211 5	4230 00	2110 .32	422064	0	15	528 0	422430	2	0	0 (0)	0
				Mid	214 5	4290 00	2121 .96	424392	102		535 5	428430	2	0	0 (0)	102
				High	217 5	4350 00	2079 .6	415920	504		543 0	434430	2	0	0 (0)	504
	10	52	Uplink	Low	171 5	3430 00	1710 .32	342064	0	-	-	-	-	-	-	-
				Mid	174 5	3490 00	1649 .6	329920	504		-	-	-	-	-	-
				High	177 5	3550 00	1769 .24	353848	6		-	-	-	-	-	-

10/20 (0,1)	20	106	Downlink	Low	212 0	4240 00	2110 .46	422092	0	15	528 2	422650	6	1	2 (4)	5
				Mid	215 0	4300 00	2122 .1	424420	102		535 7	428650	6	1	2 (4)	107
				High	218 0	4360 00	2079 .74	415948	504		543 2	434650	6	1	2 (4)	509
	10	52	Uplink	Low	171 5	3430 00	1710 .32	342064	0	-	-	-	-	-	-	-
				Mid	174 5	3490 00	1649 .6	329920	504		-	-	-	-	-	-
				High	177 5	3550 00	1769 .24	353848	6		-	-	-	-	-	-
10/25 (1)	25	133	Downlink	Low	212 2.5	4245 00	2110 .53	422106	0	15	528 3	422670	8	1	2 (4)	5
				Mid	215 2.5	4305 00	2122 .17	424434	102		535 8	428670	8	1	2 (4)	107
				High	218 2.5	4365 00	2079 .81	415962	504		543 3	434670	8	1	2 (4)	509
	10	52	Uplink	Low	171 5	3430 00	1710 .32	342064	0	-	-	-	-	-	-	-
				Mid	174 5	3490 00	1649 .6	329920	504		-	-	-	-	-	-
				High	177 5	3550 00	1769 .24	353848	6		-	-	-	-	-	-
10/30 (1)	30	160	Downlink	Low	212 5	4250 00	2110 .6	422120	0	15	528 4	422690	10	1	2 (4)	5
				Mid	215 5	4310 00	2122 .24	424448	102		535 9	428690	10	1	2 (4)	107
				High	218 5	4370 00	2079 .88	415976	504		543 4	434690	10	1	2 (4)	509
	10	52	Uplink	Low	171 5	3430 00	1710 .32	342064	0	-	-	-	-	-	-	-
				Mid	174 5	3490 00	1649 .6	329920	504		-	-	-	-	-	-
				High	177 5	3550 00	1769 .24	353848	6		-	-	-	-	-	-
10/40 (0,1)	40	216	Downlink	Low	213 0	4260 00	2110 .56	422112	0	15	528 3	422670	6	1	2 (4)	5
				Mid	215 5	4310 00	2117 .2	423440	102		534 4	427490	6	0	0 (0)	102
				High	218 0	4360 00	2069 .84	413968	504		540 5	432490	6	0	0 (0)	504

	10	52	Uplink	Low	1715	343000	1710.32	342064	0	-	-	-	-	-	-	-
				Mid	1740	348000	1644.6	328920	504		-	-	-	-	-	-
				High	1765	353000	1759.24	351848	6		-	-	-	-	-	-
15/15	15	79	Downlink	Low	2117.5	423500	2110.39	422078	0	15	5281	422450	4	0	0 (0)	0
				Mid	2145	429000	2119.53	423906	102		5349	427950	4	0	0 (0)	102
				High	2172.5	434500	2074.67	414934	504		5417	433450	4	0	0 (0)	504
	15	79	Uplink	Low	1717.5	343500	1710.39	342078	0	-	-	-	-	-	-	-
				Mid	1745	349000	1647.17	329434	504		-	-	-	-	-	-
				High	1772.5	354500	1764.31	352862	6		-	-	-	-	-	-
20/20	20	106	Downlink	Low	2120	424000	2110.46	422092	0	15	5282	422650	6	1	2 (4)	5
				Mid	2145	429000	2117.1	423420	102		5343	427470	6	0	0 (0)	102
				High	2170	434000	2069.74	413948	504		5407	432530	2	0	1 (2)	506
	20	106	Uplink	Low	1720	344000	1710.46	342092	0	-	-	-	-	-	-	-
				Mid	1745	349000	1644.74	328948	504		-	-	-	-	-	-
				High	1770	354000	1759.38	351876	6		-	-	-	-	-	-
20/40 (0,1)	40	216	Downlink	Low	2130	426000	2110.56	422112	0	15	5283	422670	6	1	2 (4)	5
				Mid	2155	431000	2117.2	423440	102		5344	427490	6	0	0 (0)	102
				High	2180	436000	2069.84	413968	504		5405	432490	6	0	0 (0)	504
	20	106	Uplink	Low	1720	344000	1710.46	342092	0	-	-	-	-	-	-	-
				Mid	1745	349000	1644.74	328948	504		-	-	-	-	-	-
				High	1770	354000	1759.38	351876	6		-	-	-	-	-	-

25/25	25	133	Downlink	Low	212 2.5	4245 00	2110 .53	422106	0	15	528 3	422670	8	1	2 (4)	5
				Mid	214 5	4290 00	2114 .67	422934	102		533 7	426990	8	0	0 (0)	102
				High	216 7.5	4335 00	2064 .81	412962	504		539 4	431550	4	0	1 (2)	506
	25	133	Uplink	Low	172 2.5	3445 00	1710 .53	342106	0	-	-	-	-	-	-	-
				Mid	174 5	3490 00	1642 .31	328462	504		-	-	-	-	-	-
				High	176 7.5	3535 00	1754 .45	350890	6		-	-	-	-	-	-
25/40 (1)	40	216	Downlink	Low	213 0	4260 00	2110 .56	422112	0	15	528 3	422670	6	1	2 (4)	5
				Mid	215 2.5	4305 00	2114 .7	422940	102		533 7	426990	6	0	0 (0)	102
				High	217 5	4350 00	2064 .84	412968	504		539 4	431550	2	0	1 (2)	506
	25	133	Uplink	Low	172 2.5	3445 00	1710 .53	342106	0	-	-	-	-	-	-	-
				Mid	174 5	3490 00	1642 .31	328462	504		-	-	-	-	-	-
				High	176 7.5	3535 00	1754 .45	350890	6		-	-	-	-	-	-
30/30	30	160	Downlink	Low	212 5	4250 00	2110 .6	422120	0	15	528 4	422690	10	1	2 (4)	5
				Mid	214 5	4290 00	2112 .24	422448	102		533 1	426510	10	0	0 (0)	102
				High	216 5	4330 00	2059 .88	411976	504		538 1	430570	6	0	1 (2)	506
	30	160	Uplink	Low	172 5	3450 00	1710 .6	342120	0	-	-	-	-	-	-	-
				Mid	174 5	3490 00	1639 .88	327976	504		-	-	-	-	-	-
				High	176 5	3530 00	1749 .52	349904	6		-	-	-	-	-	-
30/40 (1)	40	216	Downlink	Low	213 0	4260 00	2110 .56	422112	0	15	528 3	422670	6	1	2 (4)	5
				Mid	215 0	4300 00	2112 .2	422440	102		533 0	426490	6	0	0 (0)	102
				High	217 0	4340 00	2059 .84	411968	504		538 3	430610	10	1	1 (2)	507

	30	160	Uplink	Low	1725	345000	1710.6	342120	0	-	-	-	-	-	-	-
				Mid	1745	349000	1639.88	327976	504		-	-	-	-	-	-
				High	1765	353000	1749.52	349904	6		-	-	-	-	-	-
40/40	40	216	Downlink	Low	2130	426000	2110.56	422112	0	15	5283	422670	6	1	2 (4)	5
				Mid	2145	429000	2107.2	421440	102		5319	425550	2	0	1 (2)	104
				High	2160	432000	2049.84	409968	504		5358	428670	6	1	2 (4)	509
	40	216	Uplink	Low	1730	346000	1710.56	342112	0	-	-	-	-	-	-	-
				Mid	1745	349000	1634.84	326968	504		-	-	-	-	-	-
				High	1760	352000	1739.48	347896	6		-	-	-	-	-	-
N.A./40 (Note4)	40	216	Downlink	High	2180	436000	2069.84	413968	504		5405	432490	6	0	0 (0)	504
45/45	45	242	Downlink	Low	2132.5	426500	2110.72	422144	0	15	5284	422690	2	1	2 (4)	5
				Mid	2145	429000	2104.86	420972	102		5313	425070	10	1	0 (0)	103
				High	2157.5	431500	2045	409000	504		5345	427690	2	1	2 (4)	509
	45	242	Uplink	Low	1732.5	346500	1710.72	342144	0	-	-	-	-	-	-	-
				Mid	1745	349000	1632.5	326500	504	-	-	-	-	-	-	-
				High	1757.5	351500	1734.64	346928	6	-	-	-	-	-	-	-

- Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-1 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.
- Note 2: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs.
- Note 3: Asymmetric CBW BCS refers to applicable asymmetric UL and DL channel bandwidth combination set as specified in TS 38.101-1 [7], Table 5.3.6-1 for NR band n66.
- Note 4: Used only for non-contiguous CA x+40 combination and CA x+x+40 combination with no UL configuration on the SB in Table 4.3.1.1.5.66.1-1 and Table 4.3

Table 4.3.1.1.1.66-1A: Void

Table 4.3.1.1.1.66-2: Test frequencies for NR operating band n66, uplink and downlink channel bandwidth combinations and SCS 30 kHz

UL/DLC BW Combination (Asymmetric BCS) Note 3	CB W [M Hz]	carrierBandwidth [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequencyPointA [ARFCN]	offsetTo Carrier [Carrier PRBs]	SS block SCS [kHz]	GS CN	absoluteFrequencySSB [ARFCN]	k_{SSB}	Offset Carrier CORESET#0 [RBs] Note 2	CORESET#0 Index (Offset [RBs]) Note 1	offsetToPointA (SIB1) [PRBs] Note 1
10/10	10	24	Downlink	Low	2115	423000	2110.68	422136	0	15	5286	422910	18	0	0 (5)	10
				Mid	2145	429000	2103.96	420792	102		5361	428910	18	0	0 (5)	214
				High	2175	435000	1989.24	397848	504		5436	434910	18	0	0 (5)	1018
	10	24	Uplink	Low	1715	343000	1710.68	342136	0	-	-	-	-	-	-	-
				Mid	1745	349000	1559.24	311848	504		-	-	-	-	-	-
				High	1775	355000	1768.52	353704	6		-	-	-	-	-	-
10/20 (0,1)	20	51	Downlink	Low	2120	424000	2110.82	422164	0	15	5285	422890	2	0	0 (5)	10
				Mid	2150	430000	2104.1	420820	102		5360	428890	2	0	0 (5)	214
				High	2180	436000	1989.38	397876	504		5435	434890	2	0	0 (5)	1018
	10	24	Uplink	Low	1715	343000	1710.68	342136	0	-	-	-	-	-	-	-
				Mid	1745	349000	1559.24	311848	504		-	-	-	-	-	-
				High	1775	355000	1768.52	353704	6		-	-	-	-	-	-
10/25 (1)	25	65	Downlink	Low	2122.5	424500	2110.8	422160	0	15	5286	422910	10	0	0 (5)	10
				Mid	2152.5	430500	2104.08	420816	102		5361	428910	10	0	0 (5)	214

	10	24	Uplink	High	218 2.5	4365 00	1989 .36	397872	504	-	543 6	434910	10	0	0 (5)	1018
				Low	171 5	3430 00	1710 .68	342136	0		-	-	-	-	-	-
				Mid	174 5	3490 00	1559 .24	311848	504		-	-	-	-	-	-
				High	177 5	3550 00	1768 .52	353704	6		-	-	-	-	-	-
10/30 (1)	30	78	Downlink	Low	212 5	4250 00	2110 .96	422192	0	15	528 7	422930	6	0	0 (5)	10
				Mid	215 5	4310 00	2104 .24	420848	102		536 2	428930	6	0	0 (5)	214
				High	218 5	4370 00	1989 .52	397904	504		543 7	434930	6	0	0 (5)	1018
	10	24	Uplink	Low	171 5	3430 00	1710 .68	342136	0	-	-	-	-	-	-	-
				Mid	174 5	3490 00	1559 .24	311848	504		-	-	-	-	-	-
				High	177 5	3550 00	1768 .52	353704	6		-	-	-	-	-	-
10/40 (0,1)	40	106	Downlink	Low	213 0	4260 00	2110 .92	422184	0	15	528 6	422910	2	0	0 (5)	10
				Mid	215 5	4310 00	2099 .2	419840	102		535 0	427970	22	0	0 (5)	214
				High	218 0	4360 00	1979 .48	395896	504		541 1	432970	22	0	0 (5)	1018
	10	24	Uplink	Low	171 5	3430 00	1710 .68	342136	0	-	-	-	-	-	-	-
				Mid	174 0	3480 00	1554 .24	310848	504		-	-	-	-	-	-
				High	176 5	3530 00	1758 .52	351704	6		-	-	-	-	-	-
15/15	15	38	Downlink	Low	211 7.5	4235 00	2110 .66	422132	0	15	528 7	422930	2	0	1 (6)	12
				Mid	214 5	4290 00	2101 .44	420288	102		535 5	428430	2	0	1 (6)	216
				High	217 2.5	4345 00	1984 .22	396844	504		542 3	433930	2	0	1 (6)	1020
	15	38	Uplink	Low	171 7.5	3435 00	1710 .66	342132	0	-	-	-	-	-	-	-
				Mid	174 5	3490 00	1556 .72	311344	504		-	-	-	-	-	-

				High	177 2.5	3545 00	1763 .5	352700	6		-	-	-	-	-	-
20/20	20	51	Downlink	Low	212 0	4240 00	2110 .82	422164	0	15	528 5	422890	2	0	0 (5)	10
				Mid	214 5	4290 00	2099 .1	419820	102		534 9	427950	22	0	0 (5)	214
				High	217 0	4340 00	1979 .38	395876	504		541 3	433010	18	0	1 (6)	1020
				Low	172 0	3440 00	1710 .82	342164	0		-	-	-	-	-	-
		20	Uplink	Mid	174 5	3490 00	1554 .38	310876	504		-	-	-	-	-	-
				High	177 0	3540 00	1758 .66	351732	6		-	-	-	-	-	-
20/40 (0,1)	40	106	Downlink	Low	213 0	4260 00	2110 .92	422184	0	15	528 6	422910	2	0	0 (5)	10
				Mid	215 5	4310 00	2099 .2	419840	102		535 0	427970	22	0	0 (5)	214
				High	218 0	4360 00	1979 .48	395896	504		541 1	432970	22	0	0 (5)	1018
	20	51	Uplink	Low	172 0	3440 00	1710 .82	342164	0	-	-	-	-	-	-	-
				Mid	174 5	3490 00	1554 .38	310876	504		-	-	-	-	-	-
				High	177 0	3540 00	1758 .66	351732	6		-	-	-	-	-	-
25/25	25	65	Downlink	Low	212 2.5	4245 00	2110 .8	422160	0	15	528 6	422910	10	0	0 (5)	10
				Mid	214 5	4290 00	2096 .58	419316	102		534 3	427470	6	0	1 (6)	216
				High	216 7.5	4335 00	1974 .36	394872	504		540 0	432030	2	0	2 (7)	1022
	25	65	Uplink	Low	172 2.5	3445 00	1710 .8	342160	0	-	-	-	-	-	-	-
				Mid	174 5	3490 00	1551 .86	310372	504		-	-	-	-	-	-
				High	176 7.5	3535 00	1753 .64	350728	6		-	-	-	-	-	-
25/40 (1)	40	106	Downlink	Low	213 0	4260 00	2110 .92	422184	0	15	528 6	422910	2	0	0 (5)	10
				Mid	215 2.5	4305 00	2096 .7	419340	102		534 3	427470	22	0	0 (5)	214

	25	65	Uplink	High	217 5	4350 00	1974 .48	394896	504	-	540 0	432030	18	0	1 (6)	1020
				Low	172 2.5	3445 00	1710 .8	342160	0		-	-	-	-	-	-
				Mid	174 5	3490 00	1551 .86	310372	504		-	-	-	-	-	-
				High	176 7.5	3535 00	1753 .64	350728	6		-	-	-	-	-	-
30/30	30	78	Downlink	Low	212 5	4250 00	2110 .96	422192	0	15	528 7	422930	6	0	0 (5)	10
				Mid	214 5	4290 00	2094 .24	418848	102		533 7	426990	2	0	1 (6)	216
				High	216 5	4330 00	1969 .52	393904	504		538 7	431050	22	0	1 (6)	1020
	30	78	Uplink	Low	172 5	3450 00	1710 .96	342192	0	-	-	-	-	-	-	-
				Mid	174 5	3490 00	1549 .52	309904	504		-	-	-	-	-	-
				High	176 5	3530 00	1748 .8	349760	6		-	-	-	-	-	-
30/40 (1)	40	106	Downlink	Low	213 0	4260 00	2110 .92	422184	0	15	528 6	422910	2	0	0 (5)	10
				Mid	215 0	4300 00	2094 .2	418840	102		533 6	426970	22	0	0 (5)	214
				High	217 0	4340 00	1969 .48	393896	504		538 9	431090	14	0	2 (7)	1022
	30	78	Uplink	Low	172 5	3450 00	1710 .96	342192	0	-	-	-	-	-	-	-
				Mid	174 5	3490 00	1549 .52	309904	504		-	-	-	-	-	-
				High	176 5	3530 00	1748 .8	349760	6		-	-	-	-	-	-
40/40	40	106	Downlink	Low	213 0	4260 00	2110 .92	422184	0	15	528 6	422910	2	0	0 (5)	10
				Mid	214 5	4290 00	2089 .2	417840	102		532 5	426030	18	0	1 (6)	216
				High	216 0	4320 00	1959 .48	391896	504		536 1	428910	2	0	0 (5)	1018
	40	106	Uplink	Low	173 0	3460 00	1710 .92	342184	0	-	-	-	-	-	-	-
				Mid	174 5	3490 00	1544 .48	308896	504		-	-	-	-	-	-

				High	1760	352000	1738.76	347752	6		-	-	-	-	-	-
N.A./40 (Note4)	40	106	Downlink	High	2180	436000	1979.48	395896	504		5411	432970	22	0	0 (5)	1018
45/45	45	119	Downlink	Low	2132.5	426500	2111.08	422216	0	15	5290	423170	6	0	3 (8)	16
				Mid	2145	429000	2086.86	417372	102		5319	425550	14	0	1 (6)	216
				High	2157.5	431500	1954.64	390928	504		5351	428170	6	0	3 (8)	1024
	45	119	Uplink	Low	1732.5	346500	1711.08	342216	0	-	-	-	-	-	-	-
				Mid	1745	349000	1542.14	308428	504	-	-	-	-	-	-	-
				High	1757.5	351500	1733.92	346784	6	-	-	-	-	-	-	-
Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-2 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.																
Note 2: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs.																
Note 3: Asymmetric CBW BCS refers to applicable asymmetric UL and DL channel bandwidth combination set as specified in TS 38.101-1 [7], Table 5.3.6-1 for NR band n66.																
Note 4: Used only for non-contiguous CA x+40 combination and CA x+x+40 combination with no UL configuration on the SB in Table 4.3.1.1.5.66.1-2 and Table 4.3.1.1.5.66.2-2																

Table 4.3.1.1.1.66-2A: Void

Table 4.3.1.1.1.66-3: Test frequencies for NR operating band n66, uplink and downlink channel bandwidth combinations and SCS 60 kHz without CORESET#0

UL/DL CBW (Asymmetric BCS) Note 2	CBW [MHz]	carrier Bandwidth [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequencyPointA [ARFCN]	offsetTo Carrier [Carrier PRBs]	SS block SCS [kHz]	GSCN	absolute FrequencySSB [ARFCN]
10/10	10	11	Downlink	Low	2115	423000	2111.04	422208	0	15	-	422568
				Mid	2145	429000	2067.6	413520	102		-	428568

	10	11	Uplink	High	2175	435000	1808.16	361632	504	-	-	434568
				Low	1715	343000	1711.04	342208	0		-	-
				Mid	1745	349000	1378.16	275632	504		-	-
				High	1775	355000	1766.72	353344	6		-	-
10/20	20	24	Downlink	Low	2120	424000	2111.36	422272	0	15	-	422632
				Mid	2150	430000	2067.92	413584	102		-	428632
				High	2180	436000	1808.48	361696	504		-	434632
	10	11	Uplink	Low	1715	343000	1711.04	342208	0	-	-	-
				Mid	1745	349000	1378.16	275632	504		-	-
				High	1775	355000	1766.72	353344	6		-	-
	25	31	Downlink	Low	2122.5	424500	2111.34	422268	0	15	-	422628
				Mid	2152.5	430500	2067.9	413580	102		-	428628
				High	2182.5	436500	1808.46	361692	504		-	434628
10/25 (1)	10	11	Uplink	Low	1715	343000	1711.04	342208	0	-	-	-
				Mid	1745	349000	1378.16	275632	504		-	-
				High	1775	355000	1766.72	353344	6		-	-
	30	38	Downlink	Low	2125	425000	2111.32	422264	0	15	-	422624
				Mid	2155	431000	2067.88	413576	102		-	428624
				High	2185	437000	1808.44	361688	504		-	434624
	10	11	Uplink	Low	1715	343000	1711.04	342208	0	-	-	-
				Mid	1745	349000	1378.16	275632	504		-	-
				High	1775	355000	1766.72	353344	6		-	-
10/30 (1)	40	51	Downlink	Low	2130	426000	2111.64	422328	0	15	-	422688
				Mid	2155	431000	2063.2	412640	102		-	427688
				High	2180	436000	1798.76	359752	504		-	432688
	10	11	Uplink	Low	1715	343000	1711.04	342208	0	-	-	-
				Mid	1740	348000	1373.16	274632	504		-	-
				High	1765	353000	1756.72	351344	6		-	-
	15	18	Downlink	Low	2117.5	423500	2111.02	422204	0	15	-	422564
				Mid	2145	429000	2065.08	413016	102		-	428064
				High	2172.5	434500	1803.14	360628	504		-	433564
15/15	15	18	Uplink	Low	1717.5	343500	1711.02	342204	0	-	-	-
				Mid	1745	349000	1375.64	275128	504		-	-
				High	1772.5	354500	1761.7	352340	6		-	-
	20	24	Downlink	Low	2120	424000	2111.36	422272	0	15	-	422632
				Mid	2145	429000	2062.92	412584	102		-	427632
				High	2170	434000	1798.48	359696	504		-	432632
	20	24	Uplink	Low	1720	344000	1711.36	342272	0	-	-	-
				Mid	1745	349000	1373.48	274696	504		-	-
				High	1770	354000	1757.04	351408	6		-	-
20/40	40	51	Downlink	Low	2130	426000	2111.64	422328	0	15	-	422688

	20	24	Uplink	Mid	2155	431000	2063.2	412640	102	-	-	427688
				High	2180	436000	1798.76	359752	504		-	432688
				Low	1720	344000	1711.36	342272	0		-	-
				Mid	1745	349000	1373.48	274696	504		-	-
				High	1770	354000	1757.04	351408	6		-	-
25/25	25	31	Downlink	Low	2122.5	424500	2111.34	422268	0	15	-	422628
				Mid	2145	429000	2060.4	412080	102		-	427128
				High	2167.5	433500	1793.46	358692	504		-	431628
	25	31	Uplink	Low	1722.5	344500	1711.34	342268	0	-	-	-
				Mid	1745	349000	1370.96	274192	504		-	-
				High	1767.5	353500	1752.02	350404	6		-	-
25/40 (1)	40	51	Downlink	Low	2130	426000	2111.64	422328	0	15	-	422688
				Mid	2152.5	430500	2060.7	412140	102		-	427188
				High	2175	435000	1793.76	358752	504		-	431688
	25	31	Uplink	Low	1722.5	344500	1711.34	342268	0	-	-	-
				Mid	1745	349000	1370.96	274192	504		-	-
				High	1767.5	353500	1752.02	350404	6		-	-
30/30	30	38	Downlink	Low	2125	425000	2111.32	422264	0	15	-	422624
				Mid	2145	429000	2057.88	411576	102		-	426624
				High	2165	433000	1788.44	357688	504		-	430624
	30	38	Uplink	Low	1725	345000	1711.32	342264	0	-	-	-
				Mid	1745	349000	1368.44	273688	504		-	-
				High	1765	353000	1747	349400	6		-	-
30/40 (1)	40	51	Downlink	Low	2130	426000	2111.64	422328	0	15	-	422688
				Mid	2150	430000	2058.2	411640	102		-	426688
				High	2170	434000	1788.76	357752	504		-	430688
	30	38	Uplink	Low	1725	345000	1711.32	342264	0	-	-	-
				Mid	1745	349000	1368.44	273688	504		-	-
				High	1765	353000	1747	349400	6		-	-
40/40	40	51	Downlink	Low	2130	426000	2111.64	422328	0	15	-	422688
				Mid	2145	429000	2053.2	410640	102		-	425688
				High	2160	432000	1778.76	355752	504		-	428688
	40	51	Uplink	Low	1730	346000	1711.64	342328	0	-	-	-
				Mid	1745	349000	1363.76	272752	504		-	-
				High	1760	352000	1737.32	347464	6		-	-
45/45	45	58	Downlink	Low	2132.5	426500	2111.62	422324	0	15	-	422684
				Mid	2145	429000	2050.68	410136	102	15	-	425184
				High	2157.5	431500	1773.74	354748	504	15	-	427684
	45	58	Uplink	Low	1732.5	346500	1711.62	342324	0	-	-	-
				Mid	1745	349000	1361.24	272248	504	-	-	-
				High	1757.5	351500	1732.3	346460	6	-	-	-

Note 1:	FR1 carrier without CORESET#0 is indicated in the MIB by setting $k_{SSB}=31$, <i>controlResourceSetZero</i> =0 and <i>searchSpaceZero</i> = 0 (TS 38.213 [22], clause 13).
Note 2:	Asymmetric CBW BCS refers to applicable asymmetric UL and DL channel bandwidth combination set as specified in TS 38.101-1 [7], Table 5.3.6-1 for NR band n66.

Table 4.3.1.1.1.66-3A: Void

4.3.1.1.1.67 – 4.3.1.1.1.69 FFS

4.3.1.1.1.70 Reference test frequencies for NR operating band n70

Table 4.3.1.1.1.70-1: Test frequencies for NR operating band n70 and SCS 15 kHz

UL/DL Bandwidth combination	CBW [MHz]	carrier Bandwidth [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequencyPointA [ARFCN]	offsetTo Carrier [Carrier PRBs]	SS block SCS [kHz]	GS CN	absoluteFrequencySSB [ARFCN]	k_{SSB}	Offset Carrier CORESET#0 [RBs] Note 2	CORESET#0 Index (Offset [RBs]) Note 1	offsetToPointA (SIB1) [PRBs] Note 1
5/5	5	25	Downlink	Low	1997.5	399500	1995.25	399050	0	15	4993	399410	0	0	0 (0)	0
				Mid	2002.5	400500	1981.89	396378	102		5007	400590	0	1	2 (4)	107
				High	2007.5	401500	1914.53	382906	504		5018	401530	4	1	1 (2)	507
	5	25	Uplink	Low	1697.5	339500	1695.25	339050	0	-	-	-	-	-	-	-
				Mid	1702.5	340500	1609.53	321906	504		-	-	-	-	-	-
				High	1707.5	341500	1704.17	340834	6		-	-	-	-	-	-
5/15	15	79	Downlink	Low	2002.5	400500	1995.39	399078	0	15	4995	399630	4	1	2 (4)	5
				Mid	2007.5	401500	1982.03	396406	102		5006	400570	8	1	1 (2)	105
				High	2012.5	402500	1914.67	382934	504		5020	401570	8	1	1 (2)	507

	5	25	Uplink	Low	169 7.5	3395 00	169 5.25	339050	0	-	-	-	-	-	-	-
				Mid	170 2.5	3405 00	160 9.53	321906	504		-	-	-	-	-	-
				High	170 7.5	3415 00	170 4.17	340834	6		-	-	-	-	-	-
5/20	20	106	Downlink	Low	200 5	4010 00	199 5.46	399092	0	15	499 6	399650	6	1	2 (4)	5
				Mid	200 7.5	4015 00	197 9.6	395920	102		500 0	400090	10	1	1 (2)	105
				High	201 0	4020 00	190 9.74	381948	504		500 7	400590	10	1	1 (2)	507
	5	25	Uplink	Low	169 7.5	3395 00	169 5.25	339050	0	-	-	-	-	-	-	-
				Mid	170 0	3400 00	160 7.03	321406	504		-	-	-	-	-	-
				High	170 2.5	3405 00	169 9.17	339834	6		-	-	-	-	-	-
5/25	25	133	Downlink	Low	200 7.5	4015 00	199 5.53	399106	0	15	499 4	399610	0	0	2 (4)	4
				Mid												
				High												
	5	25	Uplink	Low	169 7.5	3395 00	169 5.25	339050	0	-	-	-	-	-	-	-
				Mid												
				High												
10/10	10	52	Downlink	Low	200 0	4000 00	199 5.32	399064	0	15	499 4	399610	2	1	2 (4)	5
				Mid	200 2.5	4005 00	197 9.46	395892	102		500 1	400110	2	1	2 (4)	107
				High	200 5	4010 00	190 9.6	381920	504		500 8	400610	2	1	2 (4)	509
	10	52	Uplink	Low	170 0	3400 00	169 5.32	339064	0	-	-	-	-	-	-	-
				Mid	170 2.5	3405 00	160 7.1	321420	504		-	-	-	-	-	-
				High	170 5	3410 00	169 9.24	339848	6		-	-	-	-	-	-

10/15	15	79	Downlink	Low	200 2.5	4005 00	199 5.39	399078	0	15	499 5	399630	4	1	2 (4)	5
				Mid	200 5	4010 00	197 9.53	395906	102		500 2	400130	4	1	2 (4)	107
				High	200 7.5	4015 00	190 9.67	381934	504		500 6	400570	8	1	1 (2)	507
	10	52	Uplink	Low	170 0	3400 00	169 5.32	339064	0	-	-	-	-	-	-	-
				Mid	170 2.5	3405 00	160 7.1	321420	504		-	-	-	-	-	-
				High	170 5	3410 00	169 9.24	339848	6		-	-	-	-	-	-
10/20	20	106	Downlink	Low	200 5	4010 00	199 5.46	399092	0	15	499 6	399650	6	1	2 (4)	5
				Mid	200 7.5	4015 00	197 9.6	395920	102		500 0	400090	10	1	1 (2)	105
				High	201 0	4020 00	190 9.74	381948	504		500 7	400590	10	1	1 (2)	507
	10	52	Uplink	Low	170 0	3400 00	169 5.32	339064	0	-	-	-	-	-	-	-
				Mid	170 2.5	3405 00	160 7.1	321420	504		-	-	-	-	-	-
				High	170 5	3410 00	169 9.24	339848	6		-	-	-	-	-	-
10/25	25	133	Downlink	Low	200 7.5	4015 00	199 5.53	399106	0	15	499 4	399610	0	0	2 (4)	4
				Mid												
				High												
	10	52	Uplink	Low	170 0	3400 00	169 5.32	339064	0	-	-	-	-	-	-	-
				Mid												
				High												
15/15	15	79	Downlink	Low	200 2.5	4005 00	199 5.39	399078	0	15	499 5	399630	4	1	2 (4)	5
				Mid												
				High												

	15	79	Uplink	Low	170 2.5	3405 00	169 5.39	339078	0	-	-	-	-	-	-	-
				Mid												
				High												
15/20	20	106	Downlink	Low	200 5	4010 00	199 5.46	399092	0	15	499 6	399650	6	1	2 (4)	5
				Mid												
				High												
	15	79	Uplink	Low	170 2.5	3405 00	169 5.39	339078	0	-	-	-	-	-	-	-
				Mid												
				High												
15/25	25	133	Downlink	Low	200 7.5	4015 00	199 5.53	399106	0	15	499 4	399610	0	0	2 (4)	4
				Mid												
				High												
	15	79	Uplink	Low	170 2.5	3405 00	169 5.39	339078	0	-	-	-	-	-	-	-
				Mid												
				High												
Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-1 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2. Note 2: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs. Note 3: 5/25 MHz, 10/25 MHz, 15/15 MHz, 15/20 MHz and 15/25 MHz UL/DL Bandwidth combination is tested with Low range test frequency only. Low range test frequency shall be used instead of Mid range and High range test frequencies.																

Table 4.3.1.1.70-2: Test frequencies for NR operating band n70 and SCS 30 kHz

UL/DL Bandwidth combination	CBW [MHz]	carrier Bandwidth [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequencyPointA [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS [kHz]	GS CN	absoluteFrequencySSB [ARFCN]	k_{SSB}	Offset Carrier CORESET#0 [RBs] Note 2	CORESET#0 Index (Offset [RBs]) Note 1	offsetToPointA (SIB1) [PRBs] Note 1
10/10	10	24	Downlink	Low	2000	400000	1995.68	399136	0	15	5000	400090	6	0	3 (8)	16
				Mid	2002.5	400500	1961.46	392292	102		5007	400590	6	0	3 (8)	220
				High	2005	401000	1819.24	363848	504		5014	401090	6	0	3 (8)	1024
	10	24	Uplink	Low	1700	340000	1695.68	339136	0	-	-	-	-	-	-	-
				Mid	1702.5	340500	1516.74	303348	504		-	-	-	-	-	-
				High	1705	341000	1698.52	339704	6		-	-	-	-	-	-
10/15	15	38	Downlink	Low	2002.5	400500	1995.66	399132	0	15	4998	399870	6	0	0 (5)	10
				Mid	2005	401000	1961.44	392288	102		5005	400370	6	0	0 (5)	214
				High	2007.5	401500	1819.22	363844	504		5012	401050	18	0	2 (7)	1022
	10	24	Uplink	Low	1700	340000	1695.68	339136	0	-	-	-	-	-	-	-
				Mid	1702.5	340500	1516.74	303348	504		-	-	-	-	-	-
				High	1705	341000	1698.52	339704	6		-	-	-	-	-	-
10/20	20	51	Downlink	Low	2005	401000	1995.82	399164	0	15	4999	399890	2	0	0 (5)	10
				Mid	2007.5	401500	1961.6	392320	102		5006	400570	14	0	2 (7)	218
				High	2010	402000	1819.38	363876	504		5013	401070	14	0	2 (7)	1022
	10	24	Uplink	Low	1700	340000	1695.68	339136	0	-	-	-	-	-	-	-

				Mid	170 2.5	3405 00	151 6.74	303348	504		-	-	-	-	-	-
				High	170 5	3410 00	169 8.52	339704	6		-	-	-	-	-	-
10/25	25	65	Downlink	Low	200 7.5	4015 00	199 5.8	399160	0	15	500 0	400090	22	0	2 (7)	14
				Mid												
				High												
				Low												
	10	24	Uplink	Low	170 0	3400 00	169 5.68	339136	0	-	-	-	-	-	-	-
				Mid												
				High												
				Low												
15/15	15	38	Downlink	Low	200 2.5	4005 00	199 5.66	399132	0	15	499 8	399870	6	0	0 (5)	10
				Mid												
				High												
				Low												
	15	38	Uplink	Low	170 2.5	3405 00	169 5.66	339132	0	-	-	-	-	-	-	-
				Mid												
				High												
				Low												
15/20	20	51	Downlink	Low	200 5	4010 00	199 5.82	399164	0	15	499 9	399890	2	0	0 (5)	10
				Mid												
				High												
				Low												
	15	38	Uplink	Low	170 2.5	3405 00	169 5.66	339132	0	-	-	-	-	-	-	-
				Mid												
				High												
				Low												
15/25	25	65	Downlink	Low	200 7.5	4015 00	199 5.8	399160	0	15	500 0	400090	22	0	2 (7)	14

				Mid												
				High												
	15	38	Uplink	Low	1702.5	340500	1695.66	339132	0	-	-	-	-	-	-	-
				Mid												
				High												
Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-2 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1 in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2. Note 2: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs. Note 3: 10/25 MHz, 15/15 MHz, 15/20 MHz and 15/25 MHz UL/DL Bandwidth combination is tested with Low range test frequency only. Low range test frequency shall be used instead of Mid range and High range test frequencies.																

Table 4.3.1.1.1.70-3: Test frequencies for NR operating band n70 and SCS 60 kHz without CORESET#0

UL/DL Band width combination	CBW [MHz]	carrier Bandwidth [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absolute FrequencyPoint A [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS [kHz]	GSCN	absolute FrequencySSB [ARFCN]
10/10	10	11	Downlink	Low	2000	400000	1996.04	399208	0	15	-	399568
				Mid	2002.5	400500	1925.1	385020	102		-	400068
				High	2005	401000	1638.16	327632	504		-	400568
	10	11	Uplink	Low	1700	340000	1696.04	339208	0	-	-	-
				Mid	1702.5	340500	1335.66	267132	504		-	-
				High	1705	341000	1696.72	339344	6		-	-
10/15	15	18	Downlink	Low	2002.5	400500	1996.02	399204	0	15	-	399564
				Mid	2005	401000	1925.08	385016	102		-	400064
				High	2007.5	401500	1638.14	327628	504		-	400564
	10	11	Uplink	Low	1700	340000	1696.04	339208	0	-	-	-
				Mid	1702.5	340500	1335.66	267132	504		-	-
				High	1705	341000	1696.72	339344	6		-	-
10/20	20	24	Downlink	Low	2005	401000	1996.36	399272	0	15	-	399632
				Mid	2007.5	401500	1925.42	385084	102		-	400132
				High	2010	402000	1638.48	327696	504		-	400632
	10	11	Uplink	Low	1700	340000	1696.04	339208	0	-	-	-

10/25	25	31	Downlink	Mid	1702.5	340500	1335.66	267132	504	15	-	-
				High	1705	341000	1696.72	339344	6		-	-
				Low	2007.5	401500	1996.34	399268	0		-	399628
	10	11	Uplink	Mid	1700	340000	1696.04	339208	0	-	-	-
				High								
				Low								
15/15	15	18	Downlink	Mid	2002.5	400500	1996.02	399204	0	15	-	399564
				High								
				Low								
	15	18	Uplink	Mid	1702.5	340500	1696.02	339204	0	-	-	-
				High								
				Low								
15/20	20	24	Downlink	Mid	2005	401000	1996.36	399272	0	15	-	399632
				High								
				Low								
	15	18	Uplink	Mid	1702.5	340500	1696.02	339204	0	-	-	-
				High								
				Low								
15/25	25	31	Downlink	Mid	2007.5	401500	1996.34	399268	0	15	-	399628
				High								
				Low								
	15	18	Uplink	Mid	1702.5	340500	1696.02	339204	0	-	-	-
				High								
				Low								

Note 1: FR1 carrier without CORESET#0 is indicated in the MIB by setting $k_{SSB}=31$, *controlResourceSetZero*=0 and *searchSpaceZero* = 0 (TS 38.213 [22], clause 13).

Note 2: 10/25 MHz, 15/15 MHz, 15/20 MHz and 15/25 MHz UL/DL Bandwidth combination is tested with Low range test frequency only. Low range test frequency shall be used instead of Mid range and High range test frequencies.

4.3.1.1.1.71 Reference test frequencies for NR operating band n71

Table 4.3.1.1.1.71-1: Test frequencies for NR operating band n71 and SCS 15 kHz

UL/DL Bandwidth combination	carrierBandwidth [PRBs]	Range	Carrier centre	Carrier centre	point A [MHz]	absoluteFrequencyPointA [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS	GS CN	absoluteFrequencySSB [ARFCN]	k_{SSB}	Offset Carrier CORESET#0 [RBs]	CORESET#0 Index (Offset [RBs])	offsetToPointA (SIB1) [PRBs] Note 1

ation [MHz]				[MH z]	[ARF CN]				[kH z]				Note 2	Note 1	
5/5	25	Down link	Lo w	619. 5	1239 00	617. 25	123450	0	15	154 8	123870	8	1	0 (0)	1
			Mi d	634. 5	1269 00	613. 89	122778	102		158 7	126990	0	1	2 (4)	107
			Hi gh	649. 5	1299 00	556. 53	111306	504		162 3	129870	8	1	0 (0)	505
		Uplin k	Lo w	665. 5	1331 00	663. 25	132650	0	-	-	-	-	-	-	-
			Mi d	680. 5	1361 00	587. 53	117506	504		-	-	-	-	-	-
			Hi gh	695. 5	1391 00	692. 17	138434	6		-	-	-	-	-	-
		Down link	Lo w	622	1244 00	617. 32	123464	0	15	154 9	123890	10	1	0 (0)	1
			Mi d	634. 5	1269 00	611. 46	122292	102		158 1	126510	2	1	2 (4)	107
			Hi gh	647	1294 00	551. 6	110320	504		161 0	128890	10	1	0 (0)	505
5/10	52	Down link	Lo w	622	1244 00	617. 32	123464	0	15	154 9	123890	10	1	0 (0)	1
			Mi d	634. 5	1269 00	611. 46	122292	102		158 1	126510	2	1	2 (4)	107
			Hi gh	647	1294 00	551. 6	110320	504		161 0	128890	10	1	0 (0)	505
	25	Uplin k	Lo w	665. 5	1331 00	663. 25	132650	0	-	-	-	-	-	-	-
			Mi d	678	1356 00	585. 03	117006	504		-	-	-	-	-	-
			Hi gh	690. 5	1381 00	687. 17	137434	6		-	-	-	-	-	-
10/10	52	Down link	Lo w	622	1244 00	617. 32	123464	0	15	154 9	123890	10	1	0 (0)	1
			Mi d	634. 5	1269 00	611. 46	122292	102		158 1	126510	2	1	2 (4)	107
			Hi gh	647	1294 00	551. 6	110320	504		161 0	128890	10	1	0 (0)	505
		Uplin k	Lo w	668	1336 00	663. 32	132664	0	-	-	-	-	-	-	-
			Mi d	680. 5	1361 00	585. 1	117020	504		-	-	-	-	-	-
			Hi gh	693	1386 00	687. 24	137448	6		-	-	-	-	-	-

10/15	79	Down link	Lo w	624.5	124900	617.39	123478	0	15	1547	123850	4	0	0 (0)	0
			Mi d	634.5	126900	609.03	121806	102		1575	126030	4	1	2 (4)	107
			Hi gh	644.5	128900	546.67	109334	504		1600	127970	8	1	1 (2)	507
	52	Uplink	Lo w	668	133600	663.32	132664	0	-	-	-	-	-	-	-
			Mi d	678	135600	582.6	116520	504		-	-	-	-	-	-
			Hi gh	688	137600	682.24	136448	6		-	-	-	-	-	-
15/15	79	Down link	Lo w	624.5	124900	617.39	123478	0	15	1547	123850	4	0	0 (0)	0
			Mi d	634.5	126900	609.03	121806	102		1575	126030	4	1	2 (4)	107
			Hi gh	644.5	128900	546.67	109334	504		1600	127970	8	1	1 (2)	507
		Uplink	Lo w	670.5	134100	663.39	132678	0	-	-	-	-	-	-	-
			Mi d	680.5	136100	582.67	116534	504		-	-	-	-	-	-
			Hi gh	690.5	138100	682.31	136462	6		-	-	-	-	-	-
15/20	106	Down link	Lo w	627	125400	617.46	123492	0	15	1548	123870	6	0	0 (0)	0
			Mi d	634.5	126900	606.6	121320	102		1569	125550	6	1	2 (4)	107
			Hi gh	642	128400	541.74	108348	504		1587	126990	10	1	1 (2)	507
	79	Uplink	Lo w	670.5	134100	663.39	132678	0	-	-	-	-	-	-	-
			Mi d	678	135600	580.17	116034	504		-	-	-	-	-	-
			Hi gh	685.5	137100	677.31	135462	6		-	-	-	-	-	-
20/20	106	Down link	Lo w	627	125400	617.46	123492	0	15	1548	123870	6	0	0 (0)	0

			Mid	634.5	126900	606.6	121320	102		1569	125550	6	1	2 (4)	107
			High	64200	128400	541.74	108348	504		1587	126990	10	1	1 (2)	507
		Uplink	Low	673	134600	663.46	132692	0		-	-	-	-	-	-
			Mid	680.5	136100	580.24	116048	504		-	-	-	-	-	-
			High	68800	137600	677.38	135476	6		-	-	-	-	-	-
20/25	133	Downlink	Low	629.5	125900	617.53	123506	0	15	1549	123890	8	0	0 (0)	0
			Mid	634.5	126900	604.17	120834	102		1563	125070	8	1	2 (4)	107
			High	639.5	127900	536.81	107362	504		1574	126010	0	0	2 (4)	508
	106	Uplink	Low	675.5	135100	665.96	133192	0	-	-	-	-	-	-	-
			Mid	680.5	136100	580.24	116048	504		-	-	-	-	-	-
			High	685.5	137100	674.88	134976	6		-	-	-	-	-	-
25/25	133	Downlink	Low	629.5	125900	617.53	123506	0	15	1549	123890	8	0	0 (0)	0
			Mid	634.5	126900	604.17	120834	102		1563	125070	8	1	2 (4)	107
			High	639.5	127900	536.81	107362	504		1574	126010	0	0	2 (4)	508
	133	Uplink	Low	675.5	135100	663.53	132706	0	-	-	-	-	-	-	-
			Mid	680.5	136100	577.81	115562	504		-	-	-	-	-	-
			High	685.5	137100	672.45	134490	6		-	-	-	-	-	-
20/30	160	Downlink	Low	632	126400	617.6	123520	0	15	1550	124090	10	1	2 (4)	5
			Mid	634.5	126900	601.74	120348	102		1557	124590	10	1	2 (4)	107

			High	637	1274 00	531. 88	106376	504		156 4	125090	10	1	2 (4)	509
	106	Uplink	Low	678	1356 00	668. 46	133692	0	-	-	-	-	-	-	-
			Mid	680. 5	1361 00	580. 24	116048	504		-	-	-	-	-	-
			High	683	1366 00	672. 38	134476	6		-	-	-	-	-	-
30/30	160	Downlink	Low	632	1264 00	617. 6	123520	0	15	155 0	124090	10	1	2 (4)	5
			Mid	634. 5	1269 00	601. 74	120348	102		155 7	124590	10	1	2 (4)	107
			High	637	1274 00	531. 88	106376	504		156 4	125090	10	1	2 (4)	509
	160	Uplink	Low	678	1356 00	663. 6	132720	0	-	-	-	-	-	-	-
			Mid	680. 5	1361 00	575. 38	115076	504		-	-	-	-	-	-
			High	683	1366 00	667. 52	133504	6		-	-	-	-	-	-
20/35	188	Downlink	Low	634. 5	1269 00	617. 58	123516	0	15	155 1	124110	6	2	2 (4)	6
			Mid												
			High												
	106	Uplink	Low	680. 5	1361 00	670. 96	134192	0	-	-	-	-	-	-	-
			Mid												
			High												
35/35	188	Downlink	Low	634. 5	1269 00	617. 58	123516	0	15	155 1	124110	6	2	2 (4)	6
			Mid												
			High												

	188	Uplink	Low	680.5	136100	663.58	132716	0	-	-	-	-	-	-
			Mid											
			High											
Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-1 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.														
Note 2: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs.														
Note 3: 20/35 MHz UL/DL Bandwidth combination is tested with Low range test frequency only. Low range test frequency shall be used instead of Mid range and High range test frequencies.														

Table 4.3.1.1.1.71-2: Test frequencies for NR operating band n71 and SCS 30 kHz

UL/DL Bandwidth combination [MHz]	carrierBandwidth [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequencyPointA [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS [kHz]	GS CN	absoluteFrequencySSB [ARFCN]	k_{SSB}	Offset Carrier CORESET#0 [RBs] Note 2	CORESET#0 Index (Offset [RBs]) Note 1	offsetToPointA (SIB1) [PRBs] Note 1
10/10	24	Downlink	Low	622	124400	617.68	123536	0	15	1555	124370	14	0	1 (6)	12
			Mid	634.5	126900	593.46	118692	102		1587	126990	6	0	3 (8)	220
			High	647	129400	461.24	92248	504		1616	129370	14	0	1 (6)	1020
		Uplink	Low	668	133600	663.68	132736	0	-	-	-	-	-	-	-
			Mid	680.5	136100	494.74	98948	504		-	-	-	-	-	-
			High	693	138600	686.52	137304	6		-	-	-	-	-	-
10/15	38	Downlink	Low	624.5	124900	617.66	123532	0	15	1553	124330	2	0	1 (6)	12
			Mid	634.5	126900	590.94	118188	102		1578	126270	6	0	0 (5)	214

	24	Uplink	High	644.5	128900	456.22	91244	504	-	1606	128450	18	0	2 (7)	1022
			Low	668	133600	663.68	132736	0		-	-	-	-	-	-
			Mid	678	135600	492.24	98448	504		-	-	-	-	-	-
			High	688	137600	681.52	136304	6		-	-	-	-	-	-
15/15	38	Downlink	Low	624.5	124900	617.66	123532	0	15	1553	124330	2	0	1 (6)	12
			Mid	634.5	126900	590.94	118188	102		1578	126270	6	0	0 (5)	214
			High	644.5	128900	456.22	91244	504		1606	128450	18	0	2 (7)	1022
		Uplink	Low	670.5	134100	663.66	132732	0	-	-	-	-	-	-	-
			Mid	680.5	136100	492.22	98444	504		-	-	-	-	-	-
			High	690.5	138100	681.5	136300	6		-	-	-	-	-	-
15/20	51	Downlink	Low	627	125400	617.82	123564	0	15	1554	124350	22	0	0 (5)	10
			Mid	634.5	126900	588.6	117720	102		1572	125790	2	0	0 (5)	214
			High	642	128400	451.38	90276	504		1593	127470	14	0	2 (7)	1022
	38	Uplink	Low	670.5	134100	663.66	132732	0	-	-	-	-	-	-	-
			Mid	678	135600	489.72	97944	504		-	-	-	-	-	-
			High	685.5	137100	676.5	135300	6		-	-	-	-	-	-
20/20	51	Downlink	Low	627	125400	617.82	123564	0	15	1554	124350	22	0	0 (5)	10
			Mid	634.5	126900	588.6	117720	102		1572	125790	2	0	0 (5)	214
			High	642	128400	451.38	90276	504		1593	127470	14	0	2 (7)	1022

		Uplink	Low	673	134600	663.82	132764	0	-	-	-	-	-	-	-
			Mid	680.5	136100	489.88	97976	504		-	-	-	-	-	-
			High	688	137600	676.66	135332	6		-	-	-	-	-	-
20/25	65	Downlink	Low	629.5	125900	617.8	123560	0	15	1555	124370	6	0	1 (6)	12
			Mid	634.5	126900	586.08	117216	102		1566	125310	10	0	0 (5)	214
			High	639.5	127900	446.36	89272	504		1580	126490	22	0	2 (7)	1022
	51	Uplink	Low	675.5	135100	666.32	133264	0	-	-	-	-	-	-	-
			Mid	680.5	136100	489.88	97976	504		-	-	-	-	-	-
			High	685.5	137100	674.16	134832	6		-	-	-	-	-	-
25/25	65	Downlink	Low	629.5	125900	617.8	123560	0	15	1555	124370	6	0	1 (6)	12
			Mid	634.5	126900	586.08	117216	102		1566	125310	10	0	0 (5)	214
			High	639.5	127900	446.36	89272	504		1580	126490	22	0	2 (7)	1022
	65	Uplink	Low	675.5	135100	663.8	132760	0	-	-	-	-	-	-	-
			Mid	680.5	136100	487.36	97472	504		-	-	-	-	-	-
			High	685.5	137100	671.64	134328	6		-	-	-	-	-	-
20/30	78	Downlink	Low	632	126400	617.96	123592	0	15	1553	124330	6	0	0 (5)	10
			Mid	634.5	126900	583.74	116748	102		1560	124830	6	0	0 (5)	214
			High	637	127400	441.52	88304	504		1567	125330	6	0	0 (5)	1018
	51	Uplink	Low	678	135600	668.82	133764	0	-	-	-	-	-	-	-

30/30	78	Down link	Mid	680.5	136100	489.88	97976	504	15	-	-	-	-	-	-
			High	683	136600	671.66	134332	6		-	-	-	-	-	-
			Low	632	126400	617.96	123592	0		1553	124330	6	0	0 (5)	10
	78	Uplink	Mid	634.5	126900	583.74	116748	102	-	1560	124830	6	0	0 (5)	214
			High	637	127400	441.52	88304	504		1567	125330	6	0	0 (5)	1018
			Low	678	135600	663.96	132792	0		-	-	-	-	-	-
	78	Uplink	Mid	680.5	136100	485.02	97004	504	-	-	-	-	-	-	-
			High	683	136600	666.8	133360	6		-	-	-	-	-	-
			Low	634.5	126900	617.94	123588	0		1554	124350	14	0	0 (5)	10
	51	Uplink	Mid	680.5	136100	489.88	97976	504	-	-	-	-	-	-	-
			High	680.5	136100	669.16	133832	6		-	-	-	-	-	-
			Low	680.5	136100	671.32	134264	0		-	-	-	-	-	-
35/35	92	Down link	Low	634.5	126900	617.94	123588	0	15	1554	124350	14	0	0 (5)	10
			Mid												
			High												
	92	Uplink	Low	680.5	136100	663.94	132788	0	-	-	-	-	-	-	-
			Mid												

			High											
Note 1:	The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-2 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.													
Note 2:	The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs.													
Note 3:	20/35 MHz UL/DL Bandwidth combination is tested with Low range test frequency only. Low range test frequency shall be used instead of Mid range and High range test frequencies.													

4.3.1.1.1.72 Reference test frequencies for NR operating band n72

Table 4.3.1.1.1.72-1: Test frequencies for NR operating band n72 and SCS 15 kHz

CB W [MHz]	carrierBandwidth [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequencyPointA [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS [kHz]	GS CN	absoluteFrequencySSB [ARFCN]	k_{SSB}	Offset Carrier CORESET#0 [RBs] Note 2	CORESET#0 Index (Offset [RBs]) Note 1	offsetToPointA (SIB1) [PRBs] Note 1
3	15	Downlink	Low	462.5	92500	461.15	92230	0	15	28947	92470	8	0	0 (0)	0
			Mid	463.5	92700	443.79	88758	102		28954	92730	4	2	0 (0)	104
			High	464.5	92900	372.43	74486	504		28958	92870	8	0	0 (0)	504
		Uplink	Low	452.5	90500	451.15	90230	0	-	-	-	-	-	-	-
			Mid	453.5	90700	361.43	72286	504		-	-	-	-	-	-
			High	454.5	90900	452.07	90414	6		-	-	-	-	-	-
5	25	Downlink	Low	463.5	92700	461.25	92250	0	15	1158	92670	8	1	0 (0)	1
			Mid												
			High												

		Uplink	Low	453.5	90700	451.25	90250	0	-	-	-	-	-	-
			Mid											
			High											
Note 1: For 3 MHz CBW, the CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-0 in TS 38.213 [22]. For 5 MHz CBW, the CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-1 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2. Note 2: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs.														

4.3.1.1.1.73 FFS

4.3.1.1.1.74 Reference test frequencies for NR operating band n74

Table 4.3.1.1.1.74-1: Test frequencies for NR operating band n74 and SCS 15 kHz

CBW [MHz]	carrierBandwidth [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequencyPointA [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS [kHz]	GS CN	absoluteFrequencySSB [ARFCN]	k_{SS}	Offset Carrier CORESET#0 [RBs] Note 2	CORESET#0 Index (Offset [RBs]) Note 1	offsetToPointA (SIB1) [PRBs] Note 1
5	25	Downlink	Low	1477.5	29550	1475.25	295050	0	15	3693	295470	8	1	0 (0)	1
			Mid	1496.5	29930	1475.89	295178	102		3742	299330	4	1	1 (2)	105
			High	1515.5	30310	1422.53	284506	504		3788	303130	4	1	1 (2)	507
		Uplink	Low	1429.5	28590	1427.25	285450	0	-	-	-	-	-	-	-
			Mid	1448.5	28970	1355.53	271106	504		-	-	-	-	-	-
			High	1467.5	29350	1464.17	292834	6		-	-	-	-	-	-
10	52	Downlink	Low	1480	29600	1475.32	295064	0	15	3694	295490	10	1	0 (0)	1

		Uplink	Mid	1496.5	299300	1473.46	294692	102		3736	298850	6	1	1 (2)	105
			High	1513	302600	1417.6	283520	504		3778	302210	2	1	2 (4)	509
			Low	1432	286400	1427.32	285464	0		-	-	-	-	-	-
			Mid	1448.5	289700	1353.1	270620	504		-	-	-	-	-	-
			High	1465	293000	1459.24	291848	6		-	-	-	-	-	-
			15	79	Downlink	Low	1482.5	296500		1475.39	295078	0	15	3692	295450	4	0	0 (0)	0
Mid	1496.5	299300				1471.03	294206	102	3730	298370	8	1		1 (2)	105
High	1510.5	302100				1412.67	282534	504	3765	301230	4	1		2 (4)	509
Uplink	Low	1434.5			286900	1427.39	285478	0	-	-	-	-	-	-	-
	Mid	1448.5			289700	1350.67	270134	504		-	-	-	-	-	-
	High	1462.5			292500	1454.31	290862	6		-	-	-	-	-	-
20	106	Downlink	Low	1485	297000	1475.46	295092	0	15	3693	295470	6	0	0 (0)	0
			Mid	1496.5	299300	1468.6	293720	102		3724	297890	10	1	1 (2)	105
			High	1508	301600	1407.74	281548	504		3752	300250	6	1	2 (4)	509
		Uplink	Low	1437	287400	1427.46	285492	0	-	-	-	-	-	-	-
			Mid	1448.5	289700	1348.24	269648	504		-	-	-	-	-	-
			High	1460	292000	1449.38	289876	6		-	-	-	-	-	-
Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-1 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.															
Note 2: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs.															

Table 4.3.1.1.1.74-2: Test frequencies for NR operating band n74 and SCS 30 kHz

CB W [MHz]	carrierBandwidth [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequencyPointA [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS [kHz]	GS CN	absoluteFrequencySSB [ARFCN]	k_{SS}	Offset Carrier CORES ET#0 [RBs] Note 2	CORES ET#0 Index (Offset [RBs]) Note 1	offsetToPointA (SIB1) [PRBs] Note 1
10	24	Downlink	Low	1480	296000	1475.68	295136	0	15	3700	295970	14	0	1 (6)	12
			Mid	1496.5	299300	1455.46	291092	102		3742	299330	10	0	2 (7)	218
			High	1513	302600	1327.24	265448	504		3784	302690	6	0	3 (8)	1024
		Uplink	Low	1432	286400	1427.68	285536	0	-	-	-	-	-	-	-
			Mid	1448.5	289700	1262.74	252548	504		-	-	-	-	-	-
			High	1465	293000	1458.52	291704	6		-	-	-	-	-	-
15	38	Downlink	Low	1482.5	296500	1475.66	295132	0	15	3698	295930	2	0	1 (6)	12
			Mid	1496.5	299300	1452.94	290588	102		3736	298850	18	0	2 (7)	218
			High	1510.5	302100	1322.22	264444	504		3768	301470	6	0	0 (5)	1018
		Uplink	Low	1434.5	286900	1427.66	285532	0	-	-	-	-	-	-	-
			Mid	1448.5	289700	1260.22	252044	504		-	-	-	-	-	-
			High	1462.5	292500	1453.5	290700	6		-	-	-	-	-	-
20	51	Downlink	Low	1485	297000	1475.82	295164	0	15	3699	295950	22	0	0 (5)	10
			Mid	1496.5	299300	1450.6	290120	102		3730	298370	14	0	2 (7)	218
			High	1508	301600	1317.38	263476	504		3755	300490	2	0	0 (5)	1018
		Uplink	Low	1437	287400	1427.82	285564	0	-	-	-	-	-	-	-

			Mid	1448.5	289700	1257.88	251576	504		-	-	-	-	-	-
			High	1460	292000	1448.66	289732	6		-	-	-	-	-	-

Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-2 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1 in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.

Note 2: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs.

Table 4.3.1.1.74-3: Test frequencies for NR operating band n74 and SCS 60 kHz without CORESET#0

CBW [MHz]	carrier Bandwidth [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absolute FrequencyPoint A [ARFCN]	offsetTo Carrier [Carrier PRBs]	SS block SCS [kHz]	GSCN	absolute FrequencySSB [ARFCN]
10	11	Downlink	Low	1480	296000	1476.04	295208	0	15	-	295568
			Mid	1496.5	299300	1419.1	283820	102		-	298868
			High	1513	302600	1146.16	229232	504		-	302168
		Uplink	Low	1432	286400	1428.04	285608	0	-	-	-
			Mid	1448.5	289700	1081.66	216332	504		-	-
			High	1465	293000	1456.72	291344	6		-	-
15	18	Downlink	Low	1482.5	296500	1476.02	295204	0	15	-	295564
			Mid	1496.5	299300	1416.58	283316	102		-	298364
			High	1510.5	302100	1141.14	228228	504		-	301164
		Uplink	Low	1434.5	286900	1428.02	285604	0	-	-	-
			Mid	1448.5	289700	1079.14	215828	504		-	-
			High	1462.5	292500	1451.7	290340	6		-	-
20	24	Downlink	Low	1485	297000	1476.36	295272	0	15	-	295632
			Mid	1496.5	299300	1414.42	282884	102		-	297932
			High	1508	301600	1136.48	227296	504		-	300232
		Uplink	Low	1437	287400	1428.36	285672	0	-	-	-
			Mid	1448.5	289700	1076.98	215396	504		-	-
			High	1460	292000	1447.04	289408	6		-	-

Note: FR1 carrier without CORESET#0 is indicated in the MIB by setting $k_{\text{SSB}}=31$, *controlResourceSetZero*=0 and *searchSpaceZero* = 0 (TS 38.213 [22], clause 13).

4.3.1.1.1.75 Reference test frequencies for NR operating band n75 (SDL)

Table 4.3.1.1.1.75-1: Test frequencies for NR operating band n75 and SCS 15 kHz without CORESET#0

CBW [MHz]	carrierBand width [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absolute Frequen cyPoint A [ARFCN]	offsetTo Carrier [PRBs]	SS block SCS [kHz]	GSCN	absolute Frequen cySSB [ARFCN]	offsetTo PointA [PRBs] Note 2
5	25	Downlink	Low	1434.5	286900	1432.25	286450	0	15	-	286810	0
			Mid	1474.5	294900	1453.89	290778	102		-	294810	102
			High	1514.5	302900	1421.53	284306	504		-	302810	504
10	52	Downlink	Low	1437	287400	1432.32	286464	0	15	-	286824	0
			Mid	1474.5	294900	1451.46	290292	102		-	294324	102
			High	1512	302400	1416.6	283320	504		-	301824	504
15	79	Downlink	Low	1439.5	287900	1432.39	286478	0	15	-	286838	0
			Mid	1474.5	294900	1449.03	289806	102		-	293838	102
			High	1509.5	301900	1411.67	282334	504		-	300838	504
20	106	Downlink	Low	1442	288400	1432.46	286492	0	15	-	286852	0
			Mid	1474.5	294900	1446.6	289320	102		-	293352	102
			High	1507	301400	1406.74	281348	504		-	299852	504
Note 1: FR1 carrier without CORESET#0 is indicated in the MIB by setting k_{SSB} =31, <i>controlResourceSetZero</i> =0 and <i>searchSpaceZero</i> = 0 (TS 38.213 [22], clause 13).												
Note 2: The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.												

Table 4.3.1.1.1.75-2: Test frequencies for NR operating band n75 and SCS 30 kHz without CORESET#0

CBW [MHz]	carrierBand width [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absolute FrequencyPoint A [ARFCN]	offsetTo Carrier [PRBs]	SS block SCS [kHz]	GSCN	absolute FrequencySSB [ARFCN]	offsetTo PointA [PRBs] Note 2
10	24	Downlink	Low	1437	287400	1432.68	286536	0	15	-	286896	0
			Mid	1474.5	294900	1433.46	286692	102		-	294396	204
			High	1512	302400	1326.24	265248	504		-	301896	1008
15	38	Downlink	Low	1439.5	287900	1432.66	286532	0	15	-	286892	0
			Mid	1474.5	294900	1430.94	286188	102		-	293892	204
			High	1509.5	301900	1321.22	264244	504		-	300892	1008
20	51	Downlink	Low	1442	288400	1432.82	286564	0	15	-	286924	0
			Mid	1474.5	294900	1428.6	285720	102		-	293424	204

			High	1507	301400	1316.38	263276	504		-	299924	1008
Note 1: FR1 carrier without CORESET#0 is indicated in the MIB by setting $k_{SSB}=31$, <i>controlResourceSetZero</i> =0 and <i>searchSpaceZero</i> = 0 (TS 38.213 [22], clause 13).												
Note 2: The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.												

Table 4.3.1.1.175-3: Test frequencies for NR operating band n75 and SCS 60 kHz without CORESET#0

CBW [MHz]	carrierBand width [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absolute Frequen cyPoint A [ARFCN]	offsetTo Carrier [PRBs]	SS block SCS [kHz]	GSCN	absolute Frequen cySSB [ARFCN]	offsetTo PointA [PRBs] Note 2
10	11	Downlink	Low	1437	287400	1433.04	286608	0	15	-	286968	0
			Mid	1474.5	294900	1397.1	279420	102		-	294468	408
			High	1512	302400	1145.16	229032	504		-	301968	2016
15	18	Downlink	Low	1439.5	287900	1433.02	286604	0	15	-	286964	0
			Mid	1474.5	294900	1394.58	278916	102		-	293964	408
			High	1509.5	301900	1140.14	228028	504		-	300964	2016
20	24	Downlink	Low	1442	288400	1433.36	286672	0	15	-	287032	0
			Mid	1474.5	294900	1392.42	278484	102		-	293532	408
			High	1507	301400	1135.48	227096	504		-	300032	2016
Note 1: FR1 carrier without CORESET#0 is indicated in the MIB by setting $k_{SSB}=31$, <i>controlResourceSetZero</i> =0 and <i>searchSpaceZero</i> = 0 (TS 38.213 [22], clause 13).												
Note 2: The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.												

4.3.1.1.176 Reference test frequencies for NR operating band n76 (SDL)

Table 4.3.1.1.176-1: Test frequencies for NR operating band n76 and SCS 15 kHz without CORESET#0

CBW [MHz]	carrierBand width [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absolute FrequencyPointA [ARFCN]	offsetTo Carrier [PRBs]	SS block SCS [kHz]	GSCN	absoluteFrequencySSB [ARFCN]	offsetTo PointA [PRBs] Note 2
5	25	Downlink	Low, Mid, High	1429.5	285900	1427.25	285450	0	15	-	285810	0
Note 1: FR1 carrier without CORESET#0 is indicated in the MIB by setting $k_{SSB}=31$, <i>controlResourceSetZero</i> =0 and <i>searchSpaceZero</i> = 0 (TS 38.213 [22], clause 13).												

Note 2: The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.

4.3.1.1.1.77 Reference test frequencies for NR operating band n77

Table 4.3.1.1.1.77-1: Test frequencies for NR operating band n77, SCS 15 kHz and ΔF_{Raster} 15 kHz

CBW [MHz]	carrierBandwidth [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequencyPointA [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS [kHz]	GS CN	absoluteFrequencySSB [ARFCN]	k_{SSB}	Offset Carrier CORESET#0 [RBs] Note 2	CORESET#0 Index (Offset [RBs]) Note 1	offsetToPointA (SIB1) [PRBs] Note 1
10	52	Downlink & Uplink	Low	3305.01	620334	3300.33	620022	0	30	7711	620352	6	1	1 (6)	7
			Mid	3750	650000	3726.96	648464	102		8020	650016	4	1	1 (6)	109
			High	4194.99	679666	4099.59	673306	504		8329	679680	2	1	1 (6)	511
15	79	Downlink & Uplink	Low	3307.5	620500	3300.39	620026	0	30	7711	620352	2	1	1 (6)	7
			Mid	3750	650000	3724.53	648302	102		8018	649824	10	2	0 (2)	106
			High	4192.5	679500	4094.67	672978	504		8325	679296	6	0	0 (2)	506
20	106	Downlink & Uplink	Low	3310.02	620668	3300.48	620032	0	30	7711	620352	8	0	1 (6)	6
			Mid	3750	650000	3722.1	648140	102		8016	649632	4	0	0 (2)	104
			High	4189.98	679332	4089.72	672648	504		8322	679008	0	0	1 (6)	510
25	133	Downlink & Uplink	Low	3312.51	620834	3300.54	620036	0	30	7711	620352	4	0	1 (6)	6
			Mid	3750	650000	3719.67	647978	102		8015	649536	10	1	1 (6)	109
			High	4187.49	679166	4084.8	672320	504		8319	678720	4	3	1 (6)	513
30	160	Downlink & Uplink	Low	3315	621000	3300.6	620040	0	30	7711	620352	0	0	1 (6)	6
			Mid	3750	650000	3717.24	647816	102		8013	649344	4	3	0 (2)	107

		Uplink	High	4185	679000	4079.88	671992	504		8315	678336	8	2	0 (2)	508
40	216	Downlink & Uplink	Low	3320.01	621334	3300.57	620038	0	30	7711	620352	2	0	1 (6)	6
			Mid	3750	650000	3712.2	647480	102		8010	649056	4	3	1 (6)	111
			High	4179.99	678666	4069.83	671322	504		8308	677664	6	2	0 (2)	508
50	270	Downlink & Uplink	Low	3325.02	621668	3300.72	620048	0	30	7711	620352	4	3	0 (2)	5
			Mid	3750	650000	3707.34	647156	102		8006	648672	4	2	0 (2)	106
			High	4174.98	678332	4059.96	670664	504		8301	676992	4	1	0 (2)	507
Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-3 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2. Note 2: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs.															

Table 4.3.1.1.1.77-2: Test frequencies for NR operating band n77, SCS 30 kHz and ΔF_{Raster} 30 kHz

CB W [M Hz]	carrierBandwidth [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequencyPointA [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS [kHz]	GS CN	absoluteFrequencySSB [ARFCN]	k_{SSB}	Offset Carrier CORESET#0 [RBs] Note 2	CORESET#0 Index (Offset [RBs]) Note 1	offsetToPointA (SIB1) [PRBs] Note 1
10	24	Downlink &	Low	3305.01	620334	3300.69	620046	0	30	7711	620352	18	0	2 (2)	4
			Mid	3750	650000	3708.96	647264	102		8020	650016	16	0	2 (2)	208
		Uplink	High	4194.99	679666	4009.23	667282	504		8329	679680	14	0	2 (2)	1012
15	38	Downlink &	Low	3307.5	620500	3300.66	620044	0	30	7711	620352	20	0	2 (2)	4
			Mid	3750	650000	3706.44	647096	102		8018	649824	16	0	1 (1)	206
		Uplink	High	4192.5	679500	4004.22	666948	504		8325	679296	12	0	0 (0)	1008

20	51	Down link & Uplink	Low	3310 .02	62066 8	3300 .84	620056	0	30	771 1	620352	8	0	2 (2)	4
			Mid	3750	65000 0	3704 .1	646940	102		801 6	649632	4	0	0 (0)	204
		Uplink	High	4189 .98	67933 2	3999 .36	666624	504		832 2	679008	0	0	2 (2)	1012
25	65	Down link & Uplink	Low	3312 .51	62083 4	3300 .81	620054	0	30	771 1	620352	10	0	2 (2)	4
			Mid	3750	65000 0	3701 .58	646772	102		801 5	649536	4	0	3 (3)	210
		Uplink	High	4187 .49	67916 6	3994 .35	666290	504		831 9	678720	22	0	3 (3)	1014
30	78	Down link & Uplink	Low	3315	62100 0	3300 .96	620064	0	30	771 1	620352	0	0	2 (2)	4
			Mid	3750	65000 0	3699 .24	646616	102		801 3	649344	16	0	1 (1)	206
		Uplink	High	4185	67900 0	3989 .52	665968	504		831 5	678336	8	0	1 (1)	1010
40	106	Down link & Uplink	Low	3320 .01	62133 4	3300 .93	620062	0	30	771 1	620352	2	0	2 (2)	4
			Mid	3750	65000 0	3694 .2	646280	102		801 0	649056	16	0	3 (3)	210
		Uplink	High	4179 .99	67866 6	3979 .47	665298	504		830 8	677664	6	0	1 (1)	1010
50	133	Down link & Uplink	Low	3325 .02	62166 8	3301 .08	620072	0	30	771 1	620352	16	0	1 (1)	2
			Mid	3750	65000 0	3689 .34	645956	102		800 6	648672	4	0	1 (1)	206
		Uplink	High	4174 .98	67833 2	3969 .6	664640	504		830 1	676992	16	0	0 (0)	1008
60	162	Down link & Uplink	Low	3330	62200 0	3300 .84	620056	0	30	771 1	620352	8	0	2 (2)	4
			Mid	3750	65000 0	3684 .12	645608	102		800 3	648384	16	0	3 (3)	210
		Uplink	High	4170	67800 0	3959 .4	663960	504		829 4	676320	0	0	1 (1)	1010
70	189	Down link & Uplink	Low	3335 .01	62233 4	3300 .99	620066	0	30	771 1	620352	22	0	1 (1)	2
			Mid	3750	65000 0	3679 .26	645284	102		799 9	648000	4	0	1 (1)	206
		Uplink	High	4164 .99	67766 6	3949 .53	663302	504		828 7	675648	10	0	0 (0)	1008

80	217	Down link &	Lo w	3340 .02	62266 8	3300 .96	620064	0	30	771 1	620352	0	0	2 (2)	4
			Mi d	3750	65000 0	3674 .22	644948	102		799 6	647712	4	0	3 (3)	210
		Uplin k	Hi gh	4159 .98	67733 2	3939 .48	662632	504		828 0	674976	8	0	0 (0)	1008
90	245	Down link &	Lo w	3345	62300 0	3300 .9	620060	0	30	771 1	620352	4	0	2 (2)	4
			Mi d	3750	65000 0	3669 .18	644612	102		799 2	647328	4	0	1 (1)	206
		Uplin k	Hi gh	4155	67700 0	3929 .46	661964	504		827 3	674304	4	0	0 (0)	1008
100	273	Down link &	Lo w	3350 .01	62333 4	3300 .87	620058	0	30	771 1	620352	6	0	2 (2)	4
			Mi d	3750	65000 0	3664 .14	644276	102		798 9	647040	4	0	3 (3)	210
		Uplin k	Hi gh	4149 .99	67666 6	3919 .41	661294	504		826 6	673632	2	0	0 (0)	1008
Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-4 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.															
Note 2: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs.															

Table 4.3.1.1.1.77-3: Test frequencies for NR operating band n77, SCS 60 kHz and ΔF_{Raster} 30 kHz without CORESET#0

CBW [MHz]	carrierBand width [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absolute FrequencyPoint A [ARFCN]	offsetTo Carrier [PRBs]	SS block SCS [kHz]	GSCN	absolute FrequencySSB [ARFCN]
10	11	Downlink & Uplink	Low	3305.01	620334	3301.05	620070	0	30	-	620310
			Mid	3750	650000	3672.6	644840	102		-	649976
			High	4194.99	679666	3828.15	655210	504		-	679642
15	18	Downlink & Uplink	Low	3307.5	620500	3301.02	620068	0	30	-	620308
			Mid	3750	650000	3670.08	644672	102		-	649808
			High	4192.5	679500	3823.14	654876	504		-	679308
20	24	Downlink & Uplink	Low	3310.02	620668	3301.38	620092	0	30	-	620332
			Mid	3750	650000	3667.92	644528	102		-	649664
			High	4189.98	679332	3818.46	654564	504		-	678996
25	31	Downlink	Low	3312.51	620834	3301.35	620090	0	30	-	620330

		& Uplink	Mid	3750	650000	3665.4	644360	102		-	649496
			High	4187.49	679166	3813.45	654230	504		-	678662
30	38	Downlink & Uplink	Low	3315	621000	3301.32	620088	0	30	-	620328
			Mid	3750	650000	3662.88	644192	102		-	649328
			High	4185	679000	3808.44	653896	504		-	678328
			Low	3320.01	621334	3301.65	620110	0		-	620350
40	51	Downlink & Uplink	Mid	3750	650000	3658.2	643880	102	30	-	649016
			High	4179.99	678666	3798.75	653250	504		-	677682
50	65	Downlink & Uplink	Low	3325.02	621668	3301.62	620108	0	30	-	620348
			Mid	3750	650000	3653.16	643544	102		-	648680
			High	4174.98	678332	3788.7	652580	504		-	677012
			Low	3330	622000	3301.56	620104	0		-	620344
60	79	Downlink & Uplink	Mid	3750	650000	3648.12	643208	102	30	-	648344
			High	4170	678000	3778.68	651912	504		-	676344
70	93	Downlink & Uplink	Low	3335.01	622334	3301.53	620102	0	30	-	620342
			Mid	3750	650000	3643.08	642872	102		-	648008
			High	4164.99	677666	3768.63	651242	504		-	675674
			Low	3340.02	622668	3301.5	620100	0		-	620340
80	107	Downlink & Uplink	Mid	3750	650000	3638.04	642536	102	30	-	647672
			High	4159.98	677332	3758.58	650572	504		-	675004
90	121	Downlink & Uplink	Low	3345	623000	3301.44	620096	0	30	-	620336
			Mid	3750	650000	3633	642200	102		-	647336
			High	4155	677000	3748.56	649904	504		-	674336
			Low	3350.01	623334	3301.41	620094	0	30	-	620334
100	135	Downlink & Uplink	Mid	3750	650000	3627.96	641864	102		-	647000
			High	4149.99	676666	3738.51	649234	504		-	673666

Note: FR1 carrier without CORESET#0 is indicated in the MIB by setting $k_{SSB}=31$, *controlResourceSetZero*=0 and *searchSpaceZero* = 0 (TS 38.213 [22], clause 13).

4.3.1.1.1.78

Reference test frequencies for NR operating band n78

Table 4.3.1.1.1.78-1: Test frequencies for NR operating band n78, SCS 15 kHz and ΔF_{Raster} 15 kHz

CB W [M Hz]	carrierBandwidth [PRBs]	Range	Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequencyPointA [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS [kHz]	GS CN	absoluteFrequencySSB [ARFCN]	k_{SSB}	Offset Carrier CORESET#0 [RBs] Note 2	CORESET#0 Index (Offset [RBs]) Note 1	offsetToPointA (SIB1) [PRBs] Note 1

10	52	Down link & Uplink	Low	3305.01	620334	3300.33	620022	0	30	7711	620352	6	1	1 (6)	7
			Mid	3549.99	636666	3526.95	635130	102		7881	636672	6	0	1 (6)	108
		Uplink	High	3795	653000	3699.6	646640	504		8051	652992	4	3	0 (2)	509
15	79	Down link & Uplink	Low	3307.5	620500	3300.39	620026	0	30	7711	620352	2	1	1 (6)	7
			Mid	3549.99	636666	3524.52	634968	102		7879	636480	0	2	0 (2)	106
		Uplink	High	3792.48	652832	3694.65	646310	504		8048	652704	10	2	1 (6)	512
20	106	Down link & Uplink	Low	3310.02	620668	3300.48	620032	0	30	7711	620352	8	0	1 (6)	6
			Mid	3549.99	636666	3522.09	634806	102		7878	636384	6	3	1 (6)	111
		Uplink	High	3789.99	652666	3689.73	645982	504		8044	652320	2	2	0 (2)	508
25	133	Down link & Uplink	Low	3312.51	620834	3300.54	620036	0	30	7711	620352	4	0	1 (6)	6
			Mid	3549.99	636666	3519.66	634644	102		7876	636192	0	1	1 (6)	109
		Uplink	High	3787.5	652500	3684.81	645654	504		8041	652032	6	1	1 (6)	511
30	160	Down link & Uplink	Low	3315	621000	3300.6	620040	0	30	7711	620352	0	0	1 (6)	6
			Mid	3549.99	636666	3517.23	634482	102		7874	636000	6	2	0 (2)	106
		Uplink	High	3784.98	652332	3679.86	645324	504		8037	651648	0	1	0 (2)	507
40	216	Down link & Uplink	Low	3320.01	621334	3300.57	620038	0	30	7711	620352	2	0	1 (6)	6
			Mid	3549.99	636666	3512.19	634146	102		7871	635712	6	2	1 (6)	110
		Uplink	High	3780	652000	3669.84	644656	504		8030	650976	8	0	0 (2)	506
50	270	Down link & Uplink	Low	3325.02	621668	3300.72	620048	0	30	7711	620352	4	3	0 (2)	5
			Mid	3549.99	636666	3507.33	633822	102		7867	635328	6	1	0 (2)	105
		Uplink	High	3774.99	651666	3659.97	643998	504		8024	650400	6	3	1 (6)	513

- Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-3 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.
- Note 2: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs.

Table 4.3.1.1.78-2: Test frequencies for NR operating band n78, SCS 30 kHz and ΔF_{Raster} 30 kHz

CB W [MHz]	carrierBandwidth [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequencyPointA [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS [kHz]	GS CN	absoluteFrequencySSB [ARFCN]	k_{SSB}	Offset Carrier CORESET#0 [RBs] Note 2	CORESET#0 Index (Offset [RBs]) Note 1	offsetToPointA (SIB1) [PRBs] Note 1
10	24	Downlink &	Low	3305.01	620334	3300.69	620046	0	30	7711	620352	18	0	2 (2)	4
			Mid	3549.99	636666	3508.95	633930	102		7881	636672	6	0	2 (2)	208
		Uplink	High	3795	653000	3609.24	640616	504		8051	652992	16	0	1 (1)	1010
15	38	Downlink &	Low	3307.5	620500	3300.66	620044	0	30	7711	620352	20	0	2 (2)	4
			Mid	3549.99	636666	3506.43	633762	102		7879	636480	6	0	1 (1)	206
		Uplink	High	3792.48	652832	3604.2	640280	504		8048	652704	16	0	3 (3)	1014
20	51	Downlink &	Low	3310.02	620668	3300.84	620056	0	30	7711	620352	8	0	2 (2)	4
			Mid	3549.99	636666	3504.09	633606	102		7878	636384	18	0	3 (3)	210
		Uplink	High	3789.99	652666	3599.37	639958	504		8044	652320	2	0	1 (1)	1010
25	65	Downlink &	Low	3312.51	620834	3300.81	620054	0	30	7711	620352	10	0	2 (2)	4
			Mid	3549.99	636666	3501.57	633438	102		7876	636192	18	0	2 (2)	208
		Uplink	High	3787.5	652500	3594.36	639624	504		8041	652032	0	0	3 (3)	1014
30	78	Downlink	Low	3315	621000	3300.96	620064	0	30	7711	620352	0	0	2 (2)	4

		&	Mi d	3549 .99	63666 6	3499 .23	633282	102		787 4	636000	6	0	1 (1)	206
		Uplin k	Hi gh	3784 .98	65233 2	3589 .5	639300	504		803 7	651648	12	0	0 (0)	1008
40	106	Down link &	Lo w	3320 .01	62133 4	3300 .93	620062	0	30	771 1	620352	2	0	2 (2)	4
		Uplin k	Mi d	3549 .99	63666 6	3494 .19	632946	102		787 1	635712	6	0	3 (3)	210
			Hi gh	3780	65200 0	3579 .48	638632	504		803 0	650976	8	0	0 (0)	1008
50	133	Down link &	Lo w	3325 .02	62166 8	3301 .08	620072	0	30	771 1	620352	16	0	1 (1)	2
		Uplin k	Mi d	3549 .99	63666 6	3489 .33	632622	102		786 7	635328	18	0	0 (0)	204
			Hi gh	3774 .99	65166 6	3569 .61	637974	504		802 4	650400	18	0	3 (3)	1014
60	162	Down link &	Lo w	3330	62200 0	3300 .84	620056	0	30	771 1	620352	8	0	2 (2)	4
		Uplin k	Mi d	3549 .99	63666 6	3484 .11	632274	102		786 4	635040	6	0	3 (3)	210
			Hi gh	3769 .98	65133 2	3559 .38	637292	504		801 6	649632	4	0	0 (0)	1008
70	189	Down link	Lo w	3335 .01	62233 4	3300 .99	620066	0	30	771 1	620352	22	0	1 (1)	2
		&	Mi d	3549 .99	63666 6	3479 .25	631950	102		786 0	634656	18	0	0 (0)	204
		Uplin k	Hi gh	3765	65100 0	3549 .54	636636	504		801 0	649056	12	0	3 (3)	1014
80	217	Down link &	Lo w	3340 .02	62266 8	3300 .96	620064	0	30	771 1	620352	0	0	2 (2)	4
		Uplin k	Mi d	3549 .99	63666 6	3474 .21	631614	102		785 7	634368	18	0	2 (2)	208
			Hi gh	3759 .99	65066 6	3539 .49	635966	504		800 3	648384	10	0	3 (3)	1014
90	245	Down link &	Lo w	3345	62300 0	3300 .9	620060	0	30	771 1	620352	4	0	2 (2)	4
		Uplin k	Mi d	3549 .99	63666 6	3469 .17	631278	102		785 3	633984	18	0	0 (0)	204
			Hi gh	3754 .98	65033 2	3529 .44	635296	504		799 6	647712	8	0	3 (3)	1014
100	273	Down link	Lo w	3350 .01	62333 4	3300 .87	620058	0	30	771 1	620352	6	0	2 (2)	4

		&	Mid	3549.99	636666	3464.13	630942	102		7850	633696	18	0	2 (2)	208
		Uplink	High	3750	650000	3519.42	634628	504		7989	647040	4	0	3 (3)	1014

Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-4 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.

Note 2: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs.

Table 4.3.1.1.1.78-3: Test frequencies for NR operating band n78, SCS 60 kHz and ΔF_{Raster} 30 kHz without CORESET#0.

CBW [MHz]	carrierBand width [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequencyPointA [ARFCN]	offsetToCarrier [PRBs]	SS block SCS [kHz]	GSCN	absoluteFrequencySSB [ARFCN]
10	11	Downlink & Uplink	Low	3305.01	620334	3301.05	620070	0	30	-	620310
			Mid	3549.99	636666	3472.59	631506	102		-	636642
			High	3795	653000	3428.16	628544	504		-	652976
15	18	Downlink & Uplink	Low	3307.5	620500	3301.02	620068	0	30	-	620308
			Mid	3549.99	636666	3470.07	631338	102		-	636474
			High	3792.48	652832	3423.12	628208	504		-	652640
20	24	Downlink & Uplink	Low	3310.02	620668	3301.38	620092	0	30	-	620332
			Mid	3549.99	636666	3467.91	631194	102		-	636330
			High	3789.99	652666	3418.47	627898	504		-	652330
25	31	Downlink & Uplink	Low	3312.51	620834	3301.35	620090	0	30	-	620330
			Mid	3549.99	636666	3465.39	631026	102		-	636162
			High	3787.5	652500	3413.46	627564	504		-	651996
30	38	Downlink & Uplink	Low	3315	621000	3301.32	620088	0	30	-	620328
			Mid	3549.99	636666	3462.87	630858	102		-	635994
			High	3784.98	652332	3408.42	627228	504		-	651660
40	51	Downlink & Uplink	Low	3320.01	621334	3301.65	620110	0	30	-	620350
			Mid	3549.99	636666	3458.19	630546	102		-	635682
			High	3780	652000	3398.76	626584	504		-	651016
50	65	Downlink & Uplink	Low	3325.02	621668	3301.62	620108	0	30	-	620348
			Mid	3549.99	636666	3453.15	630210	102		-	635346
			High	3774.99	651666	3388.71	625914	504		-	650346
60	79	Downlink & Uplink	Low	3330	622000	3301.56	620104	0	30	-	620344
			Mid	3549.99	636666	3448.11	629874	102		-	635010
			High	3769.98	651332	3378.66	625244	504		-	649676
70	93		Low	3335.01	622334	3301.53	620102	0	30		620342

		Downlink & Uplink	Mid	3549.99	636666	3443.07	629538	102			634674
			High	3765	651000	3368.64	624576	504			649008
80	107	Downlink & Uplink	Low	3340.02	622668	3301.5	620100	0	30	-	620340
			Mid	3549.99	636666	3438.03	629202	102		-	634338
			High	3759.99	650666	3358.59	623906	504		-	648338
90	121	Downlink & Uplink	Low	3345	623000	3301.44	620096	0	30	-	620336
			Mid	3549.99	636666	3432.99	628866	102		-	634002
			High	3754.98	650332	3348.54	623236	504		-	647668
100	135	Downlink & Uplink	Low	3350.01	623334	3301.41	620094	0	30	-	620334
			Mid	3549.99	636666	3427.95	628530	102		-	633666
			High	3750	650000	3338.52	622568	504		-	647000
Note: FR1 carrier without CORESET#0 is indicated in the MIB by setting k_{SSB} =31, <i>controlResourceSetZero</i> =0 and <i>searchSpaceZero</i> = 0 (TS 38.213 [22], clause 13).											

4.3.1.1.1.79

Reference test frequencies for NR operating band n79

Table 4.3.1.1.1.79-1: Test frequencies for NR operating band n79, SCS 15 kHz and ΔF_{Raster} 15 kHz

CBW [MHz]	carrierBandwidth [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequencyPointA [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS [kHz]	GS CN	absoluteFrequencySSB [ARFCN]	k_{SSB}	Offset Carrier CORESET#0 [RBs] Note 2	CORESET#0 Index (Offset [RBs]) Note 1	offsetToPointA (SIB1) [PRBs] Note 1
10 ³	52	Downlink & Uplink	Low	4405.02	693668	4400.34	693356	0	30	8475	693696	4	4	0 (4)	8
			Mid (Note 4)	4700.13	713342	4677.09	711806	102		8680	713376	10	4	0 (4)	110
		Uplink	High (Note 4)	4994.76	732984	4899.36	726624	504		8884	732960	0	0	0 (4)	508
20	106	Downlink	Low	4410	694000	4400.46	693364	0	30	8475	693696	8	3	0 (4)	7

		&	Mid	4699 .98	71333 2	4672 .08	711472	102		867 6	712992	8	0	0 (4)	106
		Uplink	High	4989 .99	73266 6	4889 .73	725982	504		887 8	732384	6	5	0 (4)	513
40	216	Downlink &	Low	4420 .02	69466 8	4400 .58	693372	0	30	848 0	694176	0	43	0 (4)	47
			Mid	4699 .98	71333 2	4662 .18	710812	102		867 2	712608	8	23	0 (4)	129
		Uplink	High	4980	73200 0	4869 .84	724656	504		886 4	731040	0	4	0 (4)	512
50	270	Downlink &	Low	4425	69500 0	4400 .7	693380	0	30	848 0	694176	4	42	0 (4)	46
			Mid	4699 .98	71333 2	4657 .32	710488	102		867 2	712608	8	50	0 (4)	156
		Uplink	High	4974 .99	73166 6	4859 .97	723998	504		886 4	731040	10	58	0 (4)	566
Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-5 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2. Note 2: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs. Note 3: The High range frequency can't cover the two RBs at the right edge of band due to the limit of GSCN range in TS 38.101-1 table 5.4.3.3-1. Note 4: This frequency is obtained applying certain exceptions over general rules defined in annex C.3.2.															

Table 4.3.1.1.79-2: Test frequencies for NR operating band n79, SCS 30 kHz and ΔF_{Raster} 30 kHz

CBW [MHz]	carrierBandwidth [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequencyPointA [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS [kHz]	GS CN	absoluteFrequencySSB [ARFCN]	k_{SSB}	Offset Carrier CORESET#0 [RBs] Note 2	CORESET#0 Index (Offset [RBs]) Note 1	offsetToPointA (SIB1) [PRBs] Note 1
10	24	Downlink	Low (Note 3)	4405 .83	69372 2	4401 .51	693434	0	30	847 5	693696	22	0	0 (0)	0
		&	Mid	4699 .92	71332 8	4658 .88	710592	102		867 9	713280	0	0	0 (0)	204

		Uplink	High	4995	733000	4809.24	720616	504		8884	732960	8	0	0 (0)	1008
20	51	Downlink	Low	4410	694000	4400.82	693388	0	30	8475	693696	20	2	0 (0)	4
		&	Mid	4700.01	713334	4654.11	710274	102		8676	712992	6	1	0 (0)	206
		Uplink	High	4989.99	732666	4799.37	719958	504		8878	732384	18	3	0 (0)	1014
30	78	Downlink	Low	4415.01	694334	4400.97	693398	0	30	8475	693696	10	2	0(0)	4
		&	Mid	4700.01	713334	4649.25	709950	102		8673	712704	18	2	0(0)	208
		Uplink	High	4984.98	732332	4789.5	719300	504		8871	731712	4	3	0(0)	1014
40	106	Downlink	Low	4420.02	694668	4400.94	693396	0	30	8480	694176	12	18	1 (4)	44
		&	Mid	4700.01	713334	4644.21	709614	102		8672	712608	18	8	1 (4)	228
		Uplink	High	4980	732000	4779.48	718632	504		8864	731040	0	3	0 (0)	1014
50	133	Downlink	Low	4425	695000	4401.06	693404	0	30	8480	694176	4	18	1 (4)	44
		&	Mid	4700.01	713334	4639.35	709290	102		8672	712608	6	22	1 (4)	256
		Uplink	High	4974.99	731666	4769.61	717974	504		8864	731040	10	26	1 (4)	1068
60	162	Downlink	Low	4430.01	695334	4400.85	693390	0	30	8480	694176	18	18	1 (4)	44
		&	Mid	4700.01	713334	4634.13	708942	102		8672	712608	18	36	1 (4)	284
		Uplink	High	4969.98	731332	4759.38	717292	504		8864	731040	20	54	1 (4)	1124
70	189	Downlink	Low	4435.02	695668	4401	693400	0	30	8480	694176	8	18	1(4)	44
		&	Mid	4700.01	713334	4629.27	708618	102		8672	712608	6	26	5(28)	312
		Uplink	High	4965	731000	4749.54	716636	504		8848	729504	4	18	1(4)	1052
80	217	Downlink	Low	4440	696000	4400.94	693396	0	30	8480	694176	12	18	1 (4)	44

		&	Mid	4700 .01	71333 4	4624 .23	708282	102		865 6	711072	6	0	1 (4)	212
		Uplink	High	4959 .99	73066 6	4739 .49	715966	504		884 8	729504	2	46	1 (4)	1108
90	245	Downlink &	Low	4445 .01	69633 4	4400 .91	693394	0	30	848 0	694176	14	18	1(4)	44
			Mid	4700 .01	71333 4	4619 .19	707946	102		865 6	711072	6	14	1(4)	240
		Uplink	High	4954 .98	73033 2	4729 .44	715296	504		883 2	727968	0	10	1(4)	1036
100	273	Downlink &	Low	4450 .02	69666 8	4400 .88	693392	0	30	848 0	694176	16	18	1 (4)	44
			Mid	4700 .01	71333 4	4614 .15	707610	102		865 6	711072	6	28	1 (4)	268
		Uplink	High	4950 0	73000 0	4719 .42	714628	504		883 2	727968	20	37	1 (4)	1090
Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-6 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2. Note 2: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs. Note 3: This frequency is obtained applying certain exceptions over general rules defined in annex C.3.2.															

Table 4.3.1.1.1.79-3: Test frequencies for NR operating band n79, SCS 60 kHz and ΔF_{Raster} 30 kHz without CORESET#0.

CBW [MHz]	carrierBand width [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequency PointA [ARFCN]	offsetTo Carrier [PRBs]	SS block SCS [kHz]	GSCN	absolute FrequencySSB [ARFCN]
10	11	Downlink & Uplink	Low	4405.02	693668	4401.06	693404	0	30	-	693644
			Mid	4700.01	713334	4622.61	708174	102		-	713310
			High	4995	733000	4628.16	708544	504		-	732976
20	24	Downlink & Uplink	Low	4410	694000	4401.36	693424	0	30	-	693664
			Mid	4700.01	713334	4617.93	707862	102		-	712998
			High	4989.99	732666	4618.47	707898	504		-	732330
40	51	Downlink & Uplink	Low	4420.02	694668	4401.66	693444	0	30	-	693684
			Mid	4700.01	713334	4608.21	707214	102		-	712350
			High	4980	732000	4598.76	706584	504		-	731016
50	65	Downlink	Low	4425	695000	4401.6	693440	0	30	-	693680

		& Uplink	Mid	4700.01	713334	4603.17	706878	102		-	712014
			High	4974.99	731666	4588.71	705914	504		-	730346
		60	79	Downlink & Uplink	Low	4430.01	695334	4401.57		693438	0	30	-	693678
Mid	4700.01				713334	4598.13	706542	102	-	711678	
High	4969.98			731332	4578.66	705244	504	-	729676		
80	107	Downlink & Uplink	Low	4440	696000	4401.48	693432	0	30	-	693672
			Mid	4700.01	713334	4588.05	705870	102		-	711006
		High	4959.99	730666	4558.59	703906	504	-		728338	
100	135	Downlink & Uplink	Low	4450.02	696668	4401.42	693428	0	30	-	693668
			Mid	4700.01	713334	4577.97	705198	102		-	710334
		High	4950	730000	4538.52	702568	504	-		727000	
Note: FR1 carrier without CORESET#0 is indicated in the MIB by setting $k_{SSB}=31$, <i>controlResourceSetZero</i> =0 and <i>searchSpaceZero</i> = 0 (TS 38.213 [22], clause 13).											

4.3.1.1.1.80 Reference test frequencies for NR operating band n80 (SUL)

Table 4.3.1.1.1.80-1: Test frequencies for NR operating band n80 and SCS 15 kHz

Bandwidth [MHz]	carrierBand width [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequency PointA [ARFCN]	offsetTo Carrier [PRBs]
5	25	Uplink	Low	1712.5	342500	1710.25	342050	0
			Mid	1747.5	349500	1654.53	330906	504
			High	1782.5	356500	1779.17	355834	6
10	52	Uplink	Low	1715	343000	1710.32	342064	0
			Mid	1747.5	349500	1652.1	330420	504
			High	1780	356000	1774.24	354848	6
15	79	Uplink	Low	1717.5	343500	1710.39	342078	0
			Mid	1747.5	349500	1649.67	329934	504
			High	1777.5	355500	1769.31	353862	6
20	106	Uplink	Low	1720	344000	1710.46	342092	0
			Mid	1747.5	349500	1647.24	329448	504
			High	1775	355000	1764.38	352876	6
25	133	Uplink	Low	1722.5	344500	1710.53	342106	0
			Mid	1747.5	349500	1644.81	328962	504
			High	1772.5	354500	1759.45	351890	6
30	160	Uplink	Low	1725	345000	1710.6	342120	0
			Mid	1747.5	349500	1642.38	328476	504
			High	1770	354000	1754.52	350904	6

Table 4.3.1.1.1.80-2: Test frequencies for NR operating band n80 and SCS 30 kHz

Bandwidth [MHz]	carrierBand width [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequency PointA [ARFCN]	offsetTo Carrier [PRBs]
10	24	Uplink	Low	1715	343000	1710.68	342136	0
			Mid	1747.5	349500	1561.74	312348	504
			High	1780	356000	1773.52	354704	6
15	38	Uplink	Low	1717.5	343500	1710.66	342132	0
			Mid	1747.5	349500	1559.22	311844	504
			High	1777.5	355500	1768.5	353700	6
20	51	Uplink	Low	1720	344000	1710.82	342164	0
			Mid	1747.5	349500	1556.88	311376	504
			High	1775	355000	1763.66	352732	6
25	65	Uplink	Low	1722.5	344500	1710.8	342160	0
			Mid	1747.5	349500	1554.36	310872	504
			High	1772.5	354500	1758.64	351728	6
30	78	Uplink	Low	1725	345000	1710.96	342192	0
			Mid	1747.5	349500	1552.02	310404	504
			High	1770	354000	1753.8	350760	6

Table 4.3.1.1.1.80-3: Test frequencies for NR operating band n80 and SCS 60 kHz

Bandwidth [MHz]	carrierBand width [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequency PointA [ARFCN]	offsetTo Carrier [PRBs]

10	11	Uplink	Low	1715	343000	1711.04	342208	0
			Mid	1747.5	349500	1380.66	276132	504
			High	1780	356000	1771.72	354344	6
15	18	Uplink	Low	1717.5	343500	1711.02	342204	0
			Mid	1747.5	349500	1378.14	275628	504
			High	1777.5	355500	1766.7	353340	6
20	24	Uplink	Low	1720	344000	1711.36	342272	0
			Mid	1747.5	349500	1375.98	275196	504
			High	1775	355000	1762.04	352408	6
25	31	Uplink	Low	1722.5	344500	1711.34	342268	0
			Mid	1747.5	349500	1373.46	274692	504
			High	1772.5	354500	1757.02	351404	6
30	38	Uplink	Low	1725	345000	1711.32	342264	0
			Mid	1747.5	349500	1370.94	274188	504
			High	1770	354000	1752	350400	6

4.3.1.1.1.81 Reference test frequencies for NR operating band n81 (SUL)

Table 4.3.1.1.1.81-1: Test frequencies for NR operating band n81 and SCS 15 kHz

Bandwidth [MHz]	carrierBand width [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequency PointA [ARFCN]	offsetTo Carrier [PRBs]
5	25	Uplink	Low	882.5	176500	880.25	176050	0
			Mid	897.5	179500	804.53	160906	504
			High	912.5	182500	909.17	181834	6
10	52	Uplink	Low	885	177000	880.32	176064	0
			Mid	897.5	179500	802.1	160420	504
			High	910	182000	904.24	180848	6
15	79	Uplink	Low	887.5	177500	880.39	176078	0
			Mid	897.5	179500	799.67	159934	504
			High	907.5	181500	899.31	179862	6
20	106	Uplink	Low	890	178000	880.46	176092	0
			Mid	897.5	179500	797.24	159448	504
			High	905	181000	894.38	178876	6

Table 4.3.1.1.1.81-2: Test frequencies for NR operating band n81 and SCS 30 kHz

Bandwidth [MHz]	carrierBand width [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequency PointA [ARFCN]	offsetTo Carrier [PRBs]
10	24	Uplink	Low	885	177000	880.68	176136	0
			Mid	897.5	179500	711.74	142348	504
			High	910	182000	903.52	180704	6
15	38	Uplink	Low	887.5	177500	880.66	176132	0
			Mid	897.5	179500	709.22	141844	504
			High	907.5	181500	898.5	179700	6
20	51	Uplink	Low	890	178000	880.82	176164	0
			Mid	897.5	179500	706.88	141376	504
			High	905	181000	893.66	178732	6

4.3.1.1.1.82 Reference test frequencies for NR operating band n82 (SUL)

Table 4.3.1.1.1.82-1: Test frequencies for NR operating band n82 and SCS 15 kHz

Bandwidth [MHz]	carrierBand width [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequency PointA [ARFCN]	offsetTo Carrier [PRBs]
5	25	Uplink	Low	834.5	166900	832.25	166450	0
			Mid	847	169400	754.03	150806	504
			High	859.5	171900	856.17	171234	6
10	52	Uplink	Low	837	167400	832.32	166464	0
			Mid	847	169400	751.6	150320	504
			High	857	171400	851.24	170248	6
15	79	Uplink	Low	839.5	167900	832.39	166478	0
			Mid	847	169400	749.17	149834	504
			High	854.5	170900	846.31	169262	6
20	106	Uplink	Low	842	168400	832.46	166492	0
			Mid	847	169400	746.74	149348	504
			High	852	170400	841.38	168276	6

Table 4.3.1.1.1.82-2: Test frequencies for NR operating band n82 and SCS 30 kHz

Bandwidth [MHz]	carrierBand width [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequency PointA [ARFCN]	offsetTo Carrier [PRBs]
10	24	Uplink	Low	837	167400	832.68	166536	0
			Mid	847	169400	661.24	132248	504
			High	857	171400	850.52	170104	6
15	38	Uplink	Low	839.5	167900	832.66	166532	0
			Mid	847	169400	658.72	131744	504
			High	854.5	170900	845.5	169100	6
20	51	Uplink	Low	842	168400	832.82	166564	0
			Mid	847	169400	656.38	131276	504
			High	852	170400	840.66	168132	6

4.3.1.1.1.83 Reference test frequencies for NR operating band n83 (SUL)

Table 4.3.1.1.1.83-1: Test frequencies for NR operating band n83 and SCS 15 kHz

Bandwidth [MHz]	carrierBand width [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequency PointA [ARFCN]	offsetTo Carrier [PRBs]
5	25	Uplink	Low	705.5	141100	703.25	140650	0
			Mid	725.5	145100	632.53	126506	504
			High	745.5	149100	742.17	148434	6
10	52	Uplink	Low	708	141600	703.32	140664	0
			Mid	725.5	145100	630.1	126020	504
			High	743	148600	737.24	147448	6
15	79	Uplink	Low	710.5	142100	703.39	140678	0
			Mid	725.5	145100	627.67	125534	504
			High	740.5	148100	732.31	146462	6
20 (Note 1)	106	Uplink	Low	713	142600	703.46	140692	0
			Mid	728	145600	627.74	125548	504
			High	738	147600	727.38	145476	6

25 (Note 1)	133	Uplink	Low	715.5	143100	703.53	140706	0
			Mid	730.5	146100	627.81	125562	504
			High	735.5	147100	722.45	144490	6
30 (Note 2)	160	Uplink	Low	718	143600	703.6	140720	0
			High	733	146600	717.52	143504	6
Note 1:	Carrier centre frequency moved for Mid Range and CBW=20 MHz or CBW=25MHz due to Note 7 in TS 38.101-1 [7], Table 5.3.5-1							
Note 2:	No carrier centre frequency specified for Mid Range and CBW=30 MHz due to Note 7 in TS 38.101-1 [7], Table 5.3.5-1. For test cases specifying Mid range and CBW=30 MHz to be tested, use Low range and CBW=30 MHz instead.							

Table 4.3.1.1.1.83-2: Test frequencies for NR operating band n83 and SCS 30 kHz

Bandwidth [MHz]	carrierBand width [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absolu teFreq uency PointA [ARFC N]	offsetTo Carrier [PRBs]
10	24	Uplink	Low	708	141600	703.68	140736	0
			Mid	725.5	145100	539.7	107948	504
			High	743	148600	736.52	147304	6
15	38	Uplink	Low	710.5	142100	703.66	140732	0
			Mid	725.5	145100	537.22	107444	504
			High	740.5	148100	731.5	146300	6
20 (Note 1)	51	Uplink	Low	713	142600	703.82	140764	0
			Mid	728	145600	537.38	107476	504
			High	738	147600	726.66	145332	6
25 (Note 1)	65	Uplink	Low	715.5	143100	703.8	140760	0
			Mid	730.5	146100	537.36	107472	504
			High	735.5	147100	721.64	144328	6
30 (Note 2)	78	Uplink	Low	718	143600	703.96	140792	0
			High	733	146600	716.8	143360	6
Note 1: Carrier centre frequency moved for Mid Range and CBW=20 MHz or CBW=25MHz due to Note 7 in TS 38.101-1 [7], Table 5.3.5-1								
Note 2: No carrier centre frequency specified for Mid Range and CBW=30 MHz due to Note 7 in TS 38.101-1 [7], Table 5.3.5-1. For test cases specifying Mid range and CBW=30 MHz to be tested, use Low range and CBW=30 MHz instead.								

4.3.1.1.1.84 Reference test frequencies for NR operating band n84 (SUL)

Table 4.3.1.1.1.84-1: Test frequencies for NR operating band n84 and SCS 15 kHz

Bandwidth [MHz]	carrierBand width [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequency PointA [ARFCN]	offsetTo Carrier [PRBs]
5	25	Uplink	Low	1922.5	384500	1920.25	384050	0
			Mid	1950	390000	1857.03	371406	504
			High	1977.5	395500	1974.17	394834	6
10	52	Uplink	Low	1925	385000	1920.32	384064	0
			Mid	1950	390000	1854.6	370920	504
			High	1975	395000	1969.24	393848	6
15	79	Uplink	Low	1927.5	385500	1920.39	384078	0
			Mid	1950	390000	1852.17	370434	504
			High	1972.5	394500	1964.31	392862	6
20	106	Uplink	Low	1930	386000	1920.46	384092	0
			Mid	1950	390000	1849.74	369948	504
			High	1970	394000	1959.38	391876	6
25	133	Uplink	Low	1932.5	386500	1920.53	384106	0
			Mid	1950	390000	1847.31	369462	504

30	160	Uplink	High	1967.5	393500	1954.45	390890	6
			Low	1935	387000	1920.6	384120	0
			Mid	1950	390000	1844.88	368976	504
			High	1965	393000	1949.52	389904	6
40	216	Uplink	Low	1940	388000	1920.56	384112	0
			Mid	1950	390000	1839.84	367968	504
			High	1960	392000	1939.48	387896	6
			Low	1945	389000	1920.7	384140	0
50	270	Uplink	Mid	1950	390000	1834.98	366996	504
			High	1955	391000	1929.62	385924	6

Table 4.3.1.1.1.84-2: Test frequencies for NR operating band n84 and SCS 30 kHz

Bandwidth [MHz]	carrierBand width [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequency PointA [ARFCN]	offsetTo Carrier [PRBs]
10	24	Uplink	Low	1925	385000	1920.68	384136	0
			Mid	1950	390000	1764.24	352848	504
			High	1975	395000	1968.52	393704	6
15	38	Uplink	Low	1927.5	385500	1920.66	384132	0
			Mid	1950	390000	1761.72	352344	504
			High	1972.5	394500	1963.5	392700	6
20	51	Uplink	Low	1930	386000	1920.82	384164	0
			Mid	1950	390000	1759.38	351876	504
			High	1970	394000	1958.66	391732	6
25	65	Uplink	Low	1932.5	386500	1920.8	384160	0
			Mid	1950	390000	1756.86	351372	504
			High	1967.5	393500	1953.64	390728	6
30	78	Uplink	Low	1935	387000	1920.96	384192	0
			Mid	1950	390000	1754.52	350904	504
			High	1965	393000	1948.8	389760	6
40	106	Uplink	Low	1940	388000	1920.92	384184	0
			Mid	1950	390000	1749.48	349896	504
			High	1960	392000	1938.76	387752	6
50	133	Uplink	Low	1945	389000	1921.06	384212	0
			Mid	1950	390000	1744.62	348924	504
			High	1955	391000	1928.9	385780	6

Table 4.3.1.1.1.84-3: Test frequencies for NR operating band n84 and SCS 60 kHz

Bandwidth [MHz]	carrierBand width [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequency PointA [ARFCN]	offsetTo Carrier [PRBs]
10	11	Uplink	Low	1925	385000	1921.04	384208	0
			Mid	1950	390000	1583.16	316632	504
			High	1975	395000	1966.72	393344	6
15	18	Uplink	Low	1927.5	385500	1921.02	384204	0
			Mid	1950	390000	1580.64	316128	504
			High	1972.5	394500	1961.7	392340	6
20	24	Uplink	Low	1930	386000	1921.36	384272	0
			Mid	1950	390000	1578.48	315696	504
			High	1970	394000	1957.04	391408	6
25	31	Uplink	Low	1932.5	386500	1921.34	384268	0
			Mid	1950	390000	1575.96	315192	504
			High	1967.5	393500	1952.02	390404	6
30	38	Uplink	Low	1935	387000	1921.32	384264	0
			Mid	1950	390000	1573.44	314688	504

40	51	Uplink	High	1965	393000	1947	389400	6
			Low	1940	388000	1921.64	384328	0
			Mid	1950	390000	1568.76	313752	504
50	65	Uplink	High	1960	392000	1937.32	387464	6
			Low	1945	389000	1921.6	384320	0
			Mid	1950	390000	1563.72	312744	504
			High	1955	391000	1927.28	385456	6

4.3.1.1.1.85

Reference test frequencies for NR operating band n85

Table 4.3.1.1.1.85-1: Test frequencies for NR operating band n85 and SCS 15 kHz

C B W [M H z]	carrie rBand width [PRB s]	Range		C a r r i e n t r e [M H z]	C a r r i e n t r e [A R F C N]	p o i n t A [M H z]	absolut eFrequ encyPointA [ARFCN]	offse tToC arrier [Carr ier PRB s]	S S C S [k H z]	G S C N	absolut eFrequ encySSB [ARFCN]	k_{SS}	Offs et Carr ier CO RES ET# 0 [RB s] Not e 2	CO RES ET# 0 Index (Off set [RB s]) Not e 1	offse tToP ointA (SIB1) [PRB s] Note 1
3	15	Do wn lin k	L o w	72 9. 5	14 59 00	7 2 8. 1 5	145630	0	1 5	3 0 2 8 2	145870	8	0	0 (0)	0
			M i d	73 7	14 74 00	7 1 7. 2 9	143458	102		3 0 3 2 1	147430	4	2	0 (0)	104
			H i g h	74 4. 5	14 89 00	6 5 2. 4 3	130486	504		3 0 3 5 7	148870	8	0	0 (0)	504
		Up lin k	L o w	69 9. 5	13 99 00	6 9 8. 1 5	139630	0	-	-	-	-	-	-	-
			M i d	70 7	14 14 00	6 1 4. 9 3	122986	504		-	-	-	-	-	-
			H i g h	71 4. 5	14 29 00	7 1 2. 0 7	142414	6		-	-	-	-	-	-
5	25	Do wn lin k	L o w	73 0. 5	14 61 00	7 2 8. 2 5	145650	0	1 5	1 8 2 6	146170	0	0	2 (4)	4
			M i d	73 7	14 74 00	7 1 6. 3 9	143278	102		1 8 4 3	147410	0	0	1 (2)	104

			H i g h	74 3. 5	14 87 00	6 5 0. 5 3	130106	504		1 8 5 8	148610	0	0	0 (0)	504
			Up lin k	L o w	70 0. 5	14 01 00	6 9 8. 2 5	139650	0	-	-	-	-	-	-
			M i d	70 7	14 14 00	6 1 4. 0 3	122806	504		-	-	-	-	-	-
			H i g h	71 3. 5	14 27 00	7 1 0. 1 7	142034	6		-	-	-	-	-	-
1 0	52	Do wn lin k	L o w	73 3	14 66 00	7 2 8. 3 2	145664	0	1 5	1 8 2 6	146170	1	2	2 (4)	6
			M i d	73 7	14 74 00	7 1 3. 9 6	142792	102		1 8 3 5	146890	2	2	1 (2)	106
			H i g h	74 1	14 82 00	6 4 5. 6	129120	504		1 8 4 6	147650	2	2	0 (0)	506
		Up lin k	L o w	70 3	14 06 00	6 9 8. 3 2	139664	0	-	-	-	-	-	-	-
			M i d	70 7	14 14 00	6 1 1. 6	122320	504		-	-	-	-	-	-
			H i g h	71 1	14 22 00	7 0 5. 2 4	141048	6		-	-	-	-	-	-
1 5	79	Do wn lin k	L o w	73 5. 5	14 71 00	7 2 8. 3 9	145678	0	1 5	1 8 2 7	146190	2	4	2 (4)	8
			M i d	73 7	14 74 00	7 1 1. 5 3	142306	102		1 8 2 9	146410	2	4	1 (2)	108
			H i g h	73 8. 5	14 77 00	6 4 0. 6 7	128134	504		1 8 3 2	146650	2	4	0 (0)	508
		Up lin k	L o w	70 5. 5	14 11 00	6 9 8.	139678	0	-	-	-	-	-	-	-

					3 9										
		M i d	70 7	14 14 00	6 0 9. 1 7	121834	504		-	-	-	-	-	-	-
		H i g h	70 8. 5	14 17 00	7 0 0. 3 1	140062	6		-	-	-	-	-	-	-

Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-0 with minimum channel bandwidth 3 MHz and channel bandwidth 3 MHz or 5 MHz in TS 38.213 [22]. The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-1 with minimum channel bandwidth 3 MHz and channel bandwidth larger than 3 MHz in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.

Note 2: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs.

Table 4.3.1.1.185-2: Test frequencies for NR operating band n85 and SCS 30 kHz

C B W [M H z]	carrie rBand width [PRB s]	Range		C a r r i e r c e n t r e [M H z]	C a r r i e r c e n t r e [A R F C N]	p o i n t A [M H z]	absolute Frequen cyPointA [ARFCN]	offse tToC arrier [Carr ier PRB s]	S S b l o c k S C S [k H z]	G S C N	absolut eFrequ ncySSB [ARFCN]	k_{ss}	Offs et Carr ier CO RES ET# 0 [RB s] Not e 2	CO RES ET# 0 Inde x (Off set [RB s]) Not e 1	offse tToP ointA (SIB1) [PRB s] Note 1
1 0	24	Do wn lin k	L o w	73 3	14 66 00	7 2 8. 6 8	145736	0	1 5	1 8 3 2	146650	1 2	0	1 (2)	4
			M i d	73 7	14 74 00	6 9 5. 9 6	139192	102		1 8 4 7	147850	1 6	0	3 (8)	220
			H i g h	74 1	14 82 00	5 5 5. 2 4	111048	504		1 8 5 2	148130	1 6	0	0 (0)	1008
		Up lin k	L o w	70 3	14 06 00	6 9 8. 6 8	139736	0	-	-	-	-	-	-	-
			M i d	70 7	14 14 00	5 2 1. 2 4	104248	504	-	-	-	-	-	-	
			H i	71 1	14 22 00	7 0 0 4	140904	6	-	-	-	-	-	-	

			g h			5 2									
1 5	38	Do wn lin k	L o w	73 5. 5	14 71 00	7 2 8. 6 6	145732	0	1 5	1 8 3 7	146930	2 2	1	2 (4)	8
			M i d	73 7	14 74 00	6 9 3. 4 4	138688	102		1 8 3 8	147130	2 3	1	0 (0)	206
			H i g h	73 8. 5	14 77 00	5 5 0. 2 2	110044	504		1 8 4 3	147410	2 3	1	0 (0)	1010
		Up lin k	L o w	70 5. 5	14 11 00	6 9 8. 6 6	139732	0	-	-	-	-	-	-	-
			M i d	70 7	14 14 00	5 1 8. 7 2	103744	504		-	-	-	-	-	-
			H i g h	70 8. 5	14 17 00	6 9 9. 5	139900	6		-	-	-	-	-	-
Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-2 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2. Note 2: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs.															

4.3.1.1.1.86

Reference test frequencies for NR operating band n86 (SUL)

Table 4.3.1.1.1.86-1: Test frequencies for NR operating band n86 and SCS 15 kHz

Bandwidth [MHz]	carrierBand width [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absolu teFreq uency PointA [ARFC N]	offsetTo Carrier [PRBs]
5	25	Uplink	Low	1712.5	342500	1710.25	342050	0
			Mid	1745	349000	1652.03	330406	504
			High	1777.5	355500	1774.17	354834	6
10	52	Uplink	Low	1715	343000	1710.32	342064	0
			Mid	1745	349000	1649.6	329920	504
			High	1775	355000	1769.24	353848	6
15	79	Uplink	Low	1717.5	343500	1710.39	342078	0
			Mid	1745	349000	1647.17	329434	504
			High	1772.5	354500	1764.31	352862	6
20	106	Uplink	Low	1720	344000	1710.46	342092	0
			Mid	1745	349000	1644.74	328948	504
			High	1770	354000	1759.38	351876	6
40	216	Uplink	Low	1730	346000	1710.56	342112	0
			Mid	1745	349000	1634.84	326968	504

			High	1760	352000	1739.48	347896	6

Table 4.3.1.1.1.86-2: Test frequencies for NR operating band n86 and SCS 30 kHz

Bandwidth [MHz]	carrierBand width [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequency PointA [ARFCN]	offsetTo Carrier [PRBs]
10	24	Uplink	Low	1715	343000	1710.68	342136	0
			Mid	1745	349000	1559.24	311848	504
			High	1775	355000	1768.52	353704	6
15	38	Uplink	Low	1717.5	343500	1710.66	342132	0
			Mid	1745	349000	1556.72	311344	504
			High	1772.5	354500	1763.5	352700	6
20	51	Uplink	Low	1720	344000	1710.82	342164	0
			Mid	1745	349000	1554.38	310876	504
			High	1770	354000	1758.66	351732	6
40	106	Uplink	Low	1730	346000	1710.92	342184	0
			Mid	1745	349000	1544.48	308896	504
			High	1760	352000	1738.76	347752	6

Table 4.3.1.1.1.86-3: Test frequencies for NR operating band n86 and SCS 60 kHz

Bandwidth [MHz]	carrierBand width [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequency PointA [ARFCN]	offsetTo Carrier [PRBs]
10	11	Uplink	Low	1715	343000	1711.04	342208	0
			Mid	1745	349000	1378.16	275632	504
			High	1775	355000	1766.72	353344	6
15	18	Uplink	Low	1717.5	343500	1711.02	342204	0
			Mid	1745	349000	1375.64	275128	504
			High	1772.5	354500	1761.7	352340	6
20	24	Uplink	Low	1720	344000	1711.36	342272	0
			Mid	1745	349000	1373.48	274696	504
			High	1770	354000	1757.04	351408	6
40	51	Uplink	Low	1730	346000	1711.64	342328	0
			Mid	1745	349000	1363.76	272752	504
			High	1760	352000	1737.32	347464	0

4.3.1.1.1.87

Reference test frequencies for NR operating band n87

Table 4.3.1.1.1.87-1: Test frequencies for NR operating band n87 and SCS 15 kHz

CBW [MHz]	carrierBand width [PRBs]	Range	Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequency PointA [ARFCN]	offsetToCarrier [Carrier PRBs]	SSB offset [kHz]	SSB offset [kHz]	absoluteFrequencySSB [ARFCN]	k_{SS}	Offset Carrier CO RES ET# 0 [RBs] Note 2	CO RES ET# 0 Index (Offset [RBs]) Note 1	offsetToPointA (SIB1) [PRBs] Note 1

3	15	Downlink	Low	421.5	84300	420.15	84030	0	15	28744	84330	4	2	0 (0)	2
			Mid	422.5	84500	402.79	80558	102		28748	84470	8	0	0 (0)	102
			High	423.5	84700	331.43	66286	504		28752	84670	8	0	0 (0)	504
		Uplink	Low	411.5	82300	410.15	82030	0	-	-	-	-	-	-	-
			Mid	412.5	82500	320.43	64086	504		-	-	-	-	-	-
			High	413.5	82700	411.07	82214	6		-	-	-	-	-	-
5	25	Downlink	Low	422.5	84500	420.25	84050	0	15	1057	84530	4	3	0 (0)	3
			Mid												
			High												
		Uplink	Low												
			Mid												
			High												

Note 1: For 3 MHz CBW, the CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-0 in TS 38.213 [22]. For 5 MHz CBW, the CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-1 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.

Note 2: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs.

4.3.1.1.1.88

Reference test frequencies for NR operating band n88

Table 4.3.1.1.1.88-1: Test frequencies for NR operating band n88 and SCS 15 kHz

C B W [M H z]	carrie rBand width [PRB s]	Range		C ar ri er ce ntre [M H z]	Ca rri er ce ntr e [A R F C N]	p oi nt A [M H z]	absolute Frequen cyPointA [ARFCN]	offse tToC arrier [Carr ier PRB s]	S S bl oc k S C S [k H z]	G S C N	absolut eFreque ncySSB [ARFCN]	k_{SS}	Offs et Carr ier CO RES ET# 0 [RB s] Not e 2	CO RES ET# 0 Inde x (Off set [RB s]) Not e 1	offse tToP ointA (SIB1) [PRB s] Note 1
3	15	Do wn lin k	L o w	42 3. 5	84 70 0	4 2 2. 1 5	84430	0	1 5	2 8 7 5 2	84670	8	0	0 (0)	0
			M i d	42 4. 5	84 90 0	4 0 4. 7 9	80958	102		2 8 7 5 9	84930	4	2	0 (0)	104
			H i g h	42 5. 5	85 10 0	3 3 3. 4 3	66686	504		2 8 7 6 3	85070	8	0	0 (0)	504
		Up lin k	L o w	41 3. 5	82 70 0	4 1 2. 1 5	82430	0	-	-	-	-	-	-	-
			M i d	41 4. 5	82 90 0	3 2 2. 4 3	64486	504		-	-	-	-	-	-
			H i g h	41 5. 5	83 10 0	4 1 3. 0 7	82614	6		-	-	-	-	-	-
5	25	Do wn lin k	L o w	42 4. 5	84 90 0	4 2 2. 2 5	84450	0	1 5	1 0 6 2	84990	0	5	0 (0)	5
			M i d												
			H i g h												
		Up lin k	L o w	41 4. 5	82 90 0	4 1 2. 2 5	82450	0	-	-	-	-	-	-	-
			M i d												

			H i g h											
Note 1:	For 3 MHz CBW, the CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-0 in TS 38.213 [22]. For 5 MHz CBW, the CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-1 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.													
Note 2:	The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs.													

4.3.1.1.1.89 to 4.3.1.1.1.90 FFS

4.3.1.1.1.91 Reference test frequencies for NR operating band n91

Table 4.3.1.1.1.91-1: Test frequencies for NR operating band n91 and SCS 15 kHz

UL/DL Bandwidth combination [MHz]	carrier Bandwidth [PRBs]	Range		Carrier centre frequency [MHz]	Carrier centre frequency [ARFCN]	point A [MHz]	absolute Frequency Point A [ARFCN]	offsetToCarrier [Carrier PRBs]	SSB block SCS [kHz]	GSN	absolute Frequency SSB [ARFCN]	k_{S}	Offset Carrier CORESET#0 [RBs] Note 2	CORESET#0 Index (Offset [RBs]) Note 1	offsetToPoint A (SIB 1) [PRBs] Note 1
5/5	25	Downlink	Low	1429.5	285900	1427.25	285450	0	15	3573	285870	8	1	0 (0)	1
			Mid												
			High												
		Uplink	Low	834.5	166900	832.25	166450	0	-	-	-	-	-	-	-
			Mid	847	169400	754.03	150806	504	-	-	-	-	-	-	-
			High	859.5	171900	856.17	171234	6	-	-	-	-	-	-	-
10/5	25	Downlink	Low	1429.5	285900	1427.25	285450	0	15	3573	285870	8	1	0 (0)	1
			Mid												

			H i g h												
	52	Up lin k	L o w	8 3 7	16 74 00	83 2. 32	166464	0	-	-	-	-	-	-	-
			M i d	8 4 7	16 94 00	75 1. 6	150320	504		-	-	-	-	-	-
			H i g h	8 5 7	17 14 00	85 1. 24	170248	6		-	-	-	-	-	-
Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-1 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2. Note 2: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET-0}}$ carrier in Annex C expressed in number of common RBs. Note 3: Void.															

4.3.1.1.1.92

Reference test frequencies for NR operating band n92

Table 4.3.1.1.1.92-1: Test frequencies for NR operating band n92 and SCS 15 kHz

UL/D L Band width comb ination[MH z]	carri erBa ndwi dth [PRB s]	Range		C ar ri er c e n t re [M H z]	Ca rri er c e n t r e [A R F C N]	p oi nt A [M H z]	absolut eFrequ encyPoin tA [ARFCN]	offs etTo Carrier [Car rier PRB s]	S S b l o c k S C S [k H z]	G S C N	absolut eFrequ encySS B [ARFC N]	k_s	Off set Car rier CO RE SET #0 [RB s] Not e 2	CO RE SET #0 Ind ex (Off set [RB s]) Not e 1	offset ToPoi ntA (SIB1) [PRBs] Note 1
5/5	25	Do wn lin k	L o w	1434.5	286900	1432.25	286450	0	15	3584	286810	0	0	0 (0)	0
			M i d	1474.5	294900	1453.89	290778	102		3687	294990	0	1	2 (4)	107
			H i g h	1514.5	302900	1421.53	284306	504		3787	302930	4	1	1 (2)	507
		Up lin k	L o w	834.5	166900	832.25	166450	0	-	-	-	-	-	-	-

			M i d	8 4 7	16 94 00	75 4. 03	150806	504		-	-	-	-	-	-
			H i g h	8 5 9. 5	17 19 00	85 6. 17	171234	6		-	-	-	-	-	-
5/10	52	Do w n l i n k	L o w	1 4 3 7	28 74 00	14 32 .3 2	286464	0	1 5	3 5 8 5	286830	2	0	0 (0)	0
			M i d	1 4 7 4. 5	29 49 00	14 51 .4 6	290292	102		3 6 8 1	294510	2	1	2 (4)	107
			H i g h	1 5 1 2	30 24 00	14 16 .6	283320	504		3 7 7 4	301950	6	1	1 (2)	507
	25	Up l i n k	L o w	8 3 4. 5	16 69 00	83 2. 25	166450	0	-	-	-	-	-	-	-
			M i d	8 4 7 00 03	16 94 00	75 4. 03	150806	504		-	-	-	-	-	-
			H i g h	8 5 9. 5	17 19 00	85 6. 17	171234	6		-	-	-	-	-	-
5/15	79	Do w n l i n k	L o w	1 4 3 9. 5	28 79 00	14 32 .3 9	286478	0	1 5	3 5 8 6	286850	4	0	0 (0)	0
			M i d	1 4 7 4. 5	29 49 00	14 49 .0 3	289806	102		3 6 7 5	294030	4	1	2 (4)	107
			H i g h	1 5 0 9. 5	30 19 00	14 11 .6 7	282334	504		3 7 6 1	300970	8	1	1 (2)	507
	25	Up l i n k	L o w	8 3 4. 5	16 69 00	83 2. 25	166450	0	-	-	-	-	-	-	-
			M i d	8 4 7 00 03	16 94 00	75 4. 03	150806	504		-	-	-	-	-	-
			H i g h	8 5 9. 5	17 19 00	85 6. 17	171234	6		-	-	-	-	-	-
5/20	106	Do w n l i n k	L o w	1 4 4 2	28 84 00	14 32 .4 6	286492	0	1 5	3 5 8 7	287050	6	1	2 (4)	5

			M i d	1 4 7 4. 5	29 49 00	14 46 .6	289320	102		3 6 6 9	293550	6	1	2 (4)	107
			H i g h	1 5 0 7	30 14 00	14 06 .7 4	281348	504		3 7 5 1	300050	6	1	2 (4)	509
	25	Up lin k	L o w	8 3 4. 5	16 69 00	83 2. 25	166450	0	-	-	-	-	-	-	-
			M i d	8 4 7	16 94 00	75 4. 03	150806	504		-	-	-	-	-	-
			H i g h	8 5 9. 5	17 19 00	85 6. 17	171234	6		-	-	-	-	-	-
	10/10	Do wn lin k	L o w	1 4 3 7	28 74 00	14 32 .3 2	286464	0	1 5	3 5 8 5	286830	2	0	0 (0)	0
			M i d	1 4 7 4. 5	29 49 00	14 51 .4 6	290292	102		3 6 8 1	294510	2	1	2 (4)	107
			H i g h	1 5 1 2	30 24 00	14 16 .6	283320	504		3 7 7 4	301950	6	1	1 (2)	507
		Up lin k	L o w	8 3 7	16 74 00	83 2. 32	166464	0	-	-	-	-	-	-	-
			M i d	8 4 7	16 94 00	75 1. 6	150320	504		-	-	-	-	-	-
			H i g h	8 5 7	17 14 00	85 1. 24	170248	6		-	-	-	-	-	-
10/15	70	Do wn lin k	L o w	1 4 3 9. 5	28 79 00	14 32 .3 9	286478	0	1 5	3 5 8 6	286850	4	0	0 (0)	0
			M i d	1 4 7 4. 5	29 49 00	14 49 .0 3	289806	102		3 6 7 5	294030	4	1	2 (4)	107
			H i g h	1 5 0 9. 5	30 19 00	14 11 .6 7	282334	504		3 7 6 1	300970	8	1	1 (2)	507
	52	Up lin k	L o w	8 3 7	16 74 00	83 2. 32	166464	0	-	-	-	-	-	-	-

			M i d	8 4 7	16 94 00	75 1. 6	150320	504		-	-	-	-	-	-
			H i g h	8 5 7	17 14 00	85 1. 24	170248	6		-	-	-	-	-	-
10/20	106	Do wn lin k	L o w	1 4 4 2	28 84 00	14 32 .4 6	286492	0	1 5	3 5 8 7	287050	6	1	2 (4)	5
			M i d	1 4 7 4. 5	29 49 00	14 46 .6	289320	102		3 6 6 9	293550	6	1	2 (4)	107
			H i g h	1 5 0 7	30 14 00	14 06 .7 4	281348	504		3 7 5 1	300050	6	1	2 (4)	509
	52	Up lin k	L o w	8 3 7	16 74 00	83 2. 32	166464	0	-	-	-	-	-	-	-
			M i d	8 4 7	16 94 00	75 1. 6	150320	504		-	-	-	-	-	-
			H i g h	8 5 7	17 14 00	85 1. 24	170248	6		-	-	-	-	-	-
15/15	79	Do wn lin k	L o w	1 4 3 9. 5	28 79 00	14 32 .3 9	286478	0	1 5	3 5 8 6	286850	4	0	0 (0)	0
			M i d	1 4 7 4. 5	29 49 00	14 49 .0 3	289806	102		3 6 7 5	294030	4	1	2 (4)	107
			H i g h	1 5 0 9. 5	30 19 00	14 11 .6 7	282334	504		3 7 6 1	300970	8	1	1 (2)	507
		Up lin k	L o w	8 3 9. 5	16 79 00	83 2. 39	166478	0	-	-	-	-	-	-	-
			M i d	8 4 7	16 94 00	74 9. 17	149834	504		-	-	-	-	-	-
			H i g h	8 5 4. 5	17 09 00	84 6. 31	169262	6		-	-	-	-	-	-
20/20	106	Do wn lin k	L o w	1 4 4 2	28 84 00	14 32 .4 6	286492	0	1 5	3 5 8 7	287050	6	1	2 (4)	5

			M i d	1 4 7 4. 5	29 49 00	14 46 .6	289320	102		3 6 6 9	293550	6	1	2 (4)	107
			H i g h	1 5 0 7	30 14 00	14 06 .7 4	281348	504		3 7 5 1	300050	6	1	2 (4)	509
		Up lin k	L o w	8 4 2	16 84 00	83 2. 46	166492	0	-	-	-	-	-	-	-
			M i d	8 4 7	16 94 00	74 6. 74	149348	504		-	-	-	-	-	-
			H i g h	8 5 2	17 04 00	84 1. 38	168276	6		-	-	-	-	-	-
Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-1 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.															
Note 2: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET}-0}$ Carrier in Annex C expressed in number of common RBs.															
Note 3: Void.															

Table 4.3.1.1.92-2: Test frequencies for NR operating band n92 and SCS 30 kHz

UL/DL Bandwidth combination [MHz]	carrier Bandwidth [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absolute FrequencyPoint A [ARFCN]	offsetToCarrier [Carrier PRBs]	SSB block SCS [kHz]	GSN	absolute FrequencySSB [ARFCN]	k_s	Offset Carrier CORESET#0 [RBs] Note 2	CORESET#0 Index (Offset [RBs]) Note 1	offsetToPoint A (SIB1) [PRBs] Note 1
10/10	24	Downlink	L o w	1 4 3 7	28 74 00	14 32 .6 8	286536	0	1 5	3 5 9 1	287310	1 8	0	0 (5)	10
			M i d	1 4 7 4. 5	29 49 00	14 33 .4 6	286692	102		3 6 8 7	294990	6	0	3 (8)	220
			H i g h	1 5 1 2	30 24 00	13 26 .2 4	265248	504		3 7 8 0	302430	1 0	0	2 (7)	1022
		Uplink	L o w	8 3 7	16 74 00	83 2. 68	166536	0	-	-	-	-	-	-	-

			M i d	8 4 7	16 94 00	66 1. 24	132248	504		-	-	-	-	-	-
			H i g h	8 5 7	17 14 00	85 0. 52	170104	6		-	-	-	-	-	-
10/15	38	Do wn lin k	L o w	1 4 3 9. 5	28 79 00	14 32 .6 6	286532	0	1 5	3 5 9 2	287330	2	0	1 (6)	12
			M i d	1 4 7 4. 5	29 49 00	14 30 .9 4	286188	102		3 6 7 8	294270	6	0	0 (5)	214
			H i g h	1 5 0 9. 5	30 19 00	13 21 .2 2	264244	504		3 7 6 7	301450	1 8	0	2 (7)	1022
	24	Up lin k	L o w	8 3 7	16 74 00	83 2. 68	166536	0	-	-	-	-	-	-	-
			M i d	8 4 7	16 94 00	66 1. 24	132248	504		-	-	-	-	-	-
			H i g h	8 5 7	17 14 00	85 0. 52	170104	6		-	-	-	-	-	-
10/20	51	Do wn lin k	L o w	1 4 4 2	28 84 00	14 32 .8 2	286564	0	1 5	3 5 9 0	287290	2	0	0 (5)	10
			M i d	1 4 7 4. 5	29 49 00	14 28 .6	285720	102		3 6 7 2	293790	2	0	0 (5)	214
			H i g h	1 5 0 7	30 14 00	13 16 .3 8	263276	504		3 7 5 4	300290	2	0	0 (5)	1018
	24	Up lin k	L o w	8 3 7	16 74 00	83 2. 68	166536	0	-	-	-	-	-	-	-
			M i d	8 4 7	16 94 00	66 1. 24	132248	504		-	-	-	-	-	-
			H i g h	8 5 7	17 14 00	85 0. 52	170104	6		-	-	-	-	-	-
15/15	38	Do wn lin k	L o w	1 4 3 9. 5	28 79 00	14 32 .6 6	286532	0	1 5	3 5 9 2	287330	2	0	1 (6)	12

			M i d	1 4 7 4. 5	29 49 00	14 30 .9 4	286188	102		3 6 7 8	294270	6	0	0 (5)	214		
			H i g h	1 5 0 9. 5	30 19 00	13 21 .2 2	264244	504		3 7 6 7	301450	1 8	0	2 (7)	1022		
		Up lin k	L o w	8 3 9. 5	16 79 00	83 2. 66	166532	0	-	-	-	-	-	-	-		
			M i d	8 4 7	16 94 00	65 8. 72	131744	504	-	-	-	-	-	-	-		
			H i g h	8 5 4. 5	17 09 00	84 5. 5	169100	6	-	-	-	-	-	-	-		
		20/20	51	Do wn lin k	L o w	1 4 4 2	28 84 00	14 32 .8 2	286564	0	1 5	3 5 9 0	287290	2	0	0 (5)	10
M i d	1 4 7 4. 5				29 49 00	14 28 .6	285720	102	3 6 7 2	293790		2	0	0 (5)	214		
H i g h	1 5 0 7				30 14 00	13 16 .3 8	263276	504	3 7 5 4	300290		2	0	0 (5)	1018		
Up lin k	L o w			8 4 2	16 84 00	83 2. 82	166564	0	-	-	-	-	-	-	-		
	M i d			8 4 7	16 94 00	65 6. 38	131276	504	-	-	-	-	-	-	-		
	H i g h			8 5 2	17 04 00	84 0. 66	168132	6	-	-	-	-	-	-	-		
Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-1 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.																	
Note 2: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs.																	

4.3.1.1.1.93

Reference test frequencies for NR operating band n93

Table 4.3.1.1.1.93-1: Test frequencies for NR operating band n93 and SCS 15 kHz

UL/ DL Band width co	carrie rBand width h [PRB s]	Range	C ar ri er ce	Ca rri er ce ntr e	po int A [M Hz]	absolute Frequen cyPoint A [ARFCN]	offse tToC arrie r [Carr ier	S S bl o c k	G S C N	absolut eFrequ encySS B [ARFCN]	k_{SSB}	Offs et Carr ier CO RES	CO RES ET# 0 Inde x	offse tToP oint A (SIB 1)

mbi nati on [MH z]				nt re [M H z]	[A RF CN]			PRB s]	S C S [k H z]				ET# 0 [RB s] Not e 2	(Off set [RB s]) Not e 1	[PRB s] Note 1	
5/5	25	Do wn lin k	L o w	14 29 .5	28 59 00	14 27 .2 5	285450	0	1 5	3 5 7 3	285870	8	1	0 (0)	1	
			M i d													
			H i g h													
		Up lin k	L o w	88 2. 5	17 65 00	88 0. 25	176050	0	-	-	-	-	-	-	-	
			M i d	89 7. 5	17 95 00	80 4. 53	160906	504		-	-	-	-	-	-	
			H i g h	91 2. 5	18 25 00	90 9. 17	181834	6		-	-	-	-	-	-	
10/5	25	Do wn lin k	L o w	14 29 .5	28 59 00	14 27 .2 5	285450	0	1 5	3 5 7 3	285870	8	1	0 (0)	1	
			M i d													
			H i g h													
		52	Up lin k	L o w	88 5	17 70 00	88 0. 32	176064	0	-	-	-	-	-	-	-
				M i d	89 7. 5	17 95 00	80 2. 1	160420	504		-	-	-	-	-	-
				H i g h	91 0	18 20 00	90 4. 24	180848	6		-	-	-	-	-	-
Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-1 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.																
Note 2: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs.																
Note 3: Void.																

4.3.1.1.1.94

Reference test frequencies for NR operating band n94

Table 4.3.1.1.1.94-1: Test frequencies for NR operating band n94 and SCS 15 kHz

UL/D L	carrie rBan	Range	C ar	Ca rri oi	p oi	absolute Frequen	offse tToC	S S	G S	absolut eFrequ	k_s	Offs et	CO RE	offse tToP

Band width comb ination[MH z]	dwidht h [PRB s]			ri er ce ntr e [A RF C N] [M H z]	er ce ntr e [A RF C N] [M H z]	nt A [M H z]	cyPoint A [ARFCN]	arrie r [Carr ier PRB s]	b l o c k S C S [k H z]	C N	encySS B [ARFC N]		Car rier CO RE SET #0 [RB s] Not e 2	SET #0 Ind ex (Off set [RB s]) Not e 1	oint A (SIB 1) [PR Bs] Note 1
5/5	25	Do wnl ink	L o w	1 4 3 4.5	28 69 00	14 32 .2 5	286450	0	1 5	3 5 8 4	286810	0	0	0 (0)	0
			M i d	1 4 7 4.5	29 49 00	14 53 .8 9	290778	102		3 6 8 7	294990	0	1	2 (4)	107
			H i g h	1 5 1 4.5	30 29 00	14 21 .5 3	284306	504		3 7 8 7	302930	4	1	1 (2)	507
		Upl ink	L o w	8 8 2.5	17 65 00	88 0. 25	176050	0	-	-	-	-	-	-	-
			M i d	8 9 7.5	17 95 00	80 4. 53	160906	504	-	-	-	-	-	-	-
			H i g h	9 1 2.5	18 25 00	90 9. 17	181834	6	-	-	-	-	-	-	-
5/10	52	Do wnl ink	L o w	1 4 3 7	28 74 00	14 32 .3 2	286464	0	1 5	3 5 8 5	286830	2	0	0 (0)	0
			M i d	1 4 7 4.5	29 49 00	14 51 .4 6	290292	102		3 6 8 1	294510	2	1	2 (4)	107
			H i g h	1 5 1 2	30 24 00	14 16 .6	283320	504		3 7 7 4	301950	6	1	1 (2)	507
	25	Upl ink	L o w	8 8 2.5	17 65 00	88 0. 25	176050	0	-	-	-	-	-	-	-
			M i d	8 9 7.5	17 95 00	80 4. 53	160906	504	-	-	-	-	-	-	-

			H i g h	9 1 2. 5	18 25 00	90 9. 17	181834	6		-	-	-	-	-	-
5/15	79	Do wn lin k	L o w	1 4 3 9. 5	28 79 00	14 32 .3 9	286478	0	1 5	3 5 8 6	286850	4	0	0 (0)	0
			M i d	1 4 7 4. 5	29 49 00	14 49 .0 3	289806	102		3 6 7 5	294030	4	1	2 (4)	107
			H i g h	1 5 0 9. 5	30 19 00	14 11 .6 7	282334	504		3 7 6 1	300970	8	1	1 (2)	507
	25	Up lin k	L o w	8 8 2. 5	17 65 00	88 0. 25	176050	0	-	-	-	-	-	-	-
			M i d	8 9 7. 5	17 95 00	80 4. 53	160906	504		-	-	-	-	-	-
			H i g h	9 1 2. 5	18 25 00	90 9. 17	181834	6		-	-	-	-	-	-
5/20	106	Do wn lin k	L o w	1 4 4 2	28 84 00	14 32 .4 6	286492	0	1 5	3 5 8 7	287050	6	1	2 (4)	5
			M i d	1 4 7 4. 5	29 49 00	14 46 .6	289320	102		3 6 6 9	293550	6	1	2 (4)	107
			H i g h	1 5 0 7	30 14 00	14 06 .7 4	281348	504		3 7 5 1	300050	6	1	2 (4)	509
	25	Up lin k	L o w	8 8 2. 5	17 65 00	88 0. 25	176050	0	-	-	-	-	-	-	-
			M i d	8 9 7. 5	17 95 00	80 4. 53	160906	504		-	-	-	-	-	-
			H i g h	9 1 2. 5	18 25 00	90 9. 17	181834	6		-	-	-	-	-	-
10/10	52	Do wnl ink	L o w	1 4 3 7	28 74 00	14 32 .3 2	286464	0	1 5	3 5 8 5	286830	2	0	0 (0)	0

			M i d	1 4 7 4. 5	29 49 00	14 51 .4 6	290292	102		3 6 8 1	294510	2	1	2 (4)	107
			H i g h	1 5 1 2	30 24 00	14 16 .6	283320	504		3 7 7 4	301950	6	1	1 (2)	507
		Uplink	L o w	8 8 5	17 70 00	88 0. 32	176064	0		-	-	-	-	-	-
			M i d	8 9 7. 5	17 95 00	80 2. 1	160420	504		-	-	-	-	-	-
			H i g h	9 1 0	18 20 00	90 4. 24	180848	6		-	-	-	-	-	-
10/15	70	Downlink	L o w	1 4 3 9. 5	28 79 00	14 32 .3 9	286478	0	1 5	3 5 8 6	286850	4	0	0 (0)	0
			M i d	1 4 7 4. 5	29 49 00	14 49 .0 3	289806	102		3 6 7 5	294030	4	1	2 (4)	107
			H i g h	1 5 0 9. 5	30 19 00	14 11 .6 7	282334	504		3 7 6 1	300970	8	1	1 (2)	507
	52	Uplink	L o w	8 8 5	17 70 00	88 0. 32	176064	0	-	-	-	-	-	-	-
			M i d	8 9 7. 5	17 95 00	80 2. 1	160420	504		-	-	-	-	-	-
			H i g h	9 1 0	18 20 00	90 4. 24	180848	6		-	-	-	-	-	-
10/20	106	Downlink	L o w	1 4 4 2	28 84 00	14 32 .4 6	286492	0	1 5	3 5 8 7	287050	6	1	2 (4)	5
			M i d	1 4 7 4. 5	29 49 00	14 46 .6	289320	102		3 6 6 9	293550	6	1	2 (4)	107
			H i g h	1 5 0 7	30 14 00	14 06 .7 4	281348	504		3 7 5 1	300050	6	1	2 (4)	509

	52	Uplink	L o w	8 8 5	17 70 00	88 0. 32	176064	0	-	-	-	-	-	-	-
			M i d	8 9 7. 5	17 95 00	80 2. 1	160420	504		-	-	-	-	-	-
			H i g h	9 1 0	18 20 00	90 4. 24	180848	6		-	-	-	-	-	-
15/15	79	Downlink	L o w	1 4 3 9. 5	28 79 00	14 32 .3 9	286478	0	1 5	3 5 8 6	286850	4	0	0 (0)	0
			M i d	1 4 7 4. 5	29 49 00	14 49 .0 3	289806	102		3 6 7 5	294030	4	1	2 (4)	107
			H i g h	1 5 0 9. 5	30 19 00	14 11 .6 7	282334	504		3 7 6 1	300970	8	1	1 (2)	507
		Uplink	L o w	8 8 7. 5	17 75 00	88 0. 39	176078	0	-	-	-	-	-	-	-
			M i d	8 9 7. 5	17 95 00	79 9. 67	159934	504		-	-	-	-	-	-
			H i g h	9 0 7. 5	18 15 00	89 9. 31	179862	6		-	-	-	-	-	-
20/20	106	Downlink	L o w	1 4 4 2	28 84 00	14 32 .4 6	286492	0	1 5	3 5 8 7	287050	6	1	2 (4)	5
			M i d	1 4 7 4. 5	29 49 00	14 46 .6	289320	102		3 6 6 9	293550	6	1	2 (4)	107
			H i g h	1 5 0 7	30 14 00	14 06 .7 4	281348	504		3 7 5 1	300050	6	1	2 (4)	509
		Uplink	L o w	8 9 0	17 80 00	88 0. 46	176092	0	-	-	-	-	-	-	-
			M i d	8 9 7. 5	17 95 00	79 7. 24	159448	504		-	-	-	-	-	-
			H i g h	9 0 5	18 10 00	89 4. 38	178876	6		-	-	-	-	-	-

- Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-1 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.
- Note 2: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET-0}}$ Carrier in Annex C expressed in number of common RBs.
- Note 3: Void.

Table 4.3.1.1.94-2: Test frequencies for NR operating band n94 and SCS 30 kHz

UL/DL Bandwidth combination [MHz]	carrier Bandwidth [PRBs]	Range	Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absolute FrequencyPoint A [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS [kHz]	GS CN	absoluteFrequencySSB [ARFCN]	k_s	Offset Carrier CORESET#0 [RBs] Note 2	CORESET#0 Index (Offset [RBs]) Note 1	offsetToPoint A (SIB1) [PRBs] Note 1
10/10	24	Downlink	Low	1437	287400	1432.68	286536	0	15	3591	18	0	0 (5)	10
			Mid	1474.5	294900	1433.46	286692	102		3687	6	0	3 (8)	220
			High	1512	302400	1326.24	265248	504		3780	10	0	2 (7)	1022
		Uplink	Low	885	177000	880.68	176136	0	-	-	-	-	-	-
			Mid	897.5	179500	71.74	142348	504		-	-	-	-	-
			High	910	182000	903.52	180704	6		-	-	-	-	-
		Downlink	Low	1439.5	287900	1432.66	286532	0	15	3592	2	0	1 (6)	12
			Mid	1474.5	294900	1430.94	286188	102		3678	6	0	0 (5)	214
			High	1509.5	301900	1321.22	264244	504		3767	18	0	2 (7)	1022
10/15	24	Uplink	Low	885	177000	880.68	176136	0	-	-	-	-	-	-

			M i d	89 7. 5	17 95 00	71 1. 74	142348	504		-	-	-	-	-	-
			H i g h	91 0	18 20 00	90 3. 52	180704	6		-	-	-	-	-	-
10/ 20	51	Do wn lin k	L o w	14 42	28 84 00	14 32 .8 2	286564	0	1 5	3 5 9 0	287290	2	0	0 (5)	10
			M i d	14 74 .5	29 49 00	14 28 .6	285720	102		3 6 7 2	293790	2	0	0 (5)	214
			H i g h	15 07	30 14 00	13 16 .3 8	263276	504		3 7 5 4	300290	2	0	0 (5)	1018
	24	Up lin k	L o w	88 5	17 70 00	88 0. 68	176136	0	-	-	-	-	-	-	-
			M i d	89 7. 5	17 95 00	71 1. 74	142348	504		-	-	-	-	-	-
			H i g h	91 0	18 20 00	90 3. 52	180704	6		-	-	-	-	-	-
15/1 5	38	Do wn lin k	L o w	14 39 .5	28 79 00	14 32 .6 6	286532	0	1 5	3 5 9 2	287330	2	0	1 (6)	12
			M i d	14 74 .5	29 49 00	14 30 .9 4	286188	102		3 6 7 8	294270	6	0	0 (5)	214
			H i g h	15 09 .5	30 19 00	13 21 .2 2	264244	504		3 7 6 7	301450	1 8	0	2 (7)	1022
		Up lin k	L o w	88 7. 5	17 75 00	88 0. 66	176132	0	-	-	-	-	-	-	-
			M i d	89 7. 5	17 95 00	70 9. 22	141844	504		-	-	-	-	-	-
			H i g h	90 7. 5	18 15 00	89 8. 5	179700	6		-	-	-	-	-	-
20/2 0	51	Do wn lin k	L o w	14 42	28 84 00	14 32 .8 2	286564	0	1 5	3 5 9 0	287290	2	0	0 (5)	10
			M i d	14 74 .5	29 49 00	14 28 .6	285720	102		3 6 7 2	293790	2	0	0 (5)	214

			H i g h	15 07	30 14 00	13 16 .3 8	263276	504		3 7 5 4	300290	2	0	0 (5)	1018
		Uplink	L o w	89 0	17 80 00	88 0. 82	176164	0	-	-	-	-	-	-	-
			M i d	89 7. 5	17 95 00	70 6. 88	141376	504		-	-	-	-	-	-
			H i g h	90 5	18 10 00	89 3. 66	178732	6		-	-	-	-	-	-
Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-1 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2. Note 2: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs.															

4.3.1.1.1.95 Reference test frequencies for NR operating band n95 (SUL)

Table 4.3.1.1.1.95-1: Test frequencies for NR operating band n95 and SCS 15 kHz

CBW [MHz]	carrierBand width [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequency PointA [ARFCN]	offsetTo Carrier [PRBs]
5	25	Uplink	Low	2012.5	402500	2010.25	402050	0
			Mid	2017.5	403500	1924.53	384906	504
			High	2022.5	404500	2019.17	403834	6
10	52	Uplink	Low	2015	403000	2010.32	402064	0
			Mid	2017.5	403500	1922.1	384420	504
			High	2020	404000	2014.24	402848	6
15	79	Uplink	Low, Mid, High	2017.5	403500	2010.39	402078	0

Table 4.3.1.1.1.95-2: Test frequencies for NR operating band n95 and SCS 30 kHz

CBW [MHz]	carrierBand width [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequency PointA [ARFCN]	offsetTo Carrier [PRBs]
10	24	Uplink	Low	2015	403000	2010.68	402136	0
			Mid	2017.5	403500	1831.74	366348	504
			High	2020	404000	2013.52	402704	6
15	38	Uplink	Low, Mid, High	2017.5	403500	2010.66	402132	0

Table 4.3.1.1.1.95-3: Test frequencies for NR operating band n95 and SCS 60 kHz

CBW [MHz]	carrierBand width [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequency	offsetTo Carrier [PRBs]

							PointA [ARFCN]	
10	11	Uplink	Low	2015	403000	2011.04	402208	0
			Mid	2017.5	403500	1650.66	330132	504
			High	2020	404000	2011.72	402344	6
15	18	Uplink	Low, Mid, High	2017.5	403500	2011.02	402204	0

4.3.1.1.1.96

Reference test frequencies for NR operating band n96

Table 4.3.1.1.1.96-1: Test frequencies for NR operating band n96 and SCS 15 kHz (Note 3)

CBW [MHz]	carrierBandwidth [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN] Note 4	point A [MHz]	absolute FrequencyPointA [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS [kHz]	GS CN	absoluteFrequencySSB [ARFCN]	k_{SSB}	Offset Carrier CORESET#0 [RBs] Note 2	CORESET#0 Index (Offset [RBs]) Note 1	offsetToPointA (SIB1) [PRBs] Note 1
20	106	Downlink &	Low	5955	797000	5945.46	796364	0	30	-	796604	31	-	-	-
			Mid	6535.02	835668	6507.12	833808	102		-	835272	31	-	-	-
		Uplink	High	7114.98	874332	7014.72	867648	504		-	873936	31	-	-	-
40	216	Downlink &	Low	5965.02	797668	5945.58	796372	0	30	-	796612	31	-	-	-
			Mid	6525	835000	6487.2	832480	102		-	833944	31	-	-	-
		Uplink	High	7084.98	872332	6974.82	864988	504		-	871276	31	-	-	-
Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-3 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.															
Note 2: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta f_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs.															
Note 3: NR band n46 with SCS =15 kHz is restricted for operation when carrier is configured as an SCell part of a DC or CA configuration. As the bandwidth is limited to SCell then absence of CORESET#0 is indicated in the MIB by setting k_{SSB} =31, <i>controlResourceSetZero</i> =0 and <i>searchSpaceZero</i> = 0 (TS 38.213 [22], clause 13).															
Note 4: The selection of Low, Mid and High test frequencies are restricted to the limited allowed ARFCN values as specified in TS 38.101 [7], Table 5.4.2.3-3.															

Table 4.3.1.1.1.96-2: Test frequencies for NR operating band n96 and SCS 30 kHz

C B W [M H z]	carrie rBand width [PRB s]	Range		Carri er cent re [M Hz]	Carri er cent re [A R F C N] No te 3	po int A [M Hz]	absolute Frequen cyPointA [ARFCN]	offse tToC arrier [Carr ier PRB s]	S S bl oc k S C S [k H z]	G S C N	absolut eFrequ ncySSB [ARFCN]	k_s	Offs et Carr ier CO RES ET# 0 [RB s] Not e 2	CO RES ET# 0 Inde x (Off set [RB s]) Not e 1	offse tToP ointA (SIB 1) [PRB s] Note 1
2 0	51	Do wn lin k &	L o w	59 55	79 70 00	59 45 .8 2	796388	0	3 0	9 5 4 8	796704	2 2	0	0 (0)	0
			M i d	65 35 .0 2	83 56 68	64 89 .1 2	832608	102		9 9 5 1	835392	2 2	0	1 (0)	204
		Up lin k	H i g h	71 14 .9 8	87 43 32	69 24 .3 6	861624	504		1 0 3 5 3	873984	2 2	0	0 (0)	1008
4 0	106	Do wn lin k &	L o w	59 65 .0 2	79 76 68	59 45 .9 4	796396	0	3 0	9 5 4 8	796704	2 2	0	0 (0)	0
			M i d	65 25	83 50 00	64 69 .2	831280	102		9 9 3 7	834048	2 2	0	0 (0)	204
		Up lin k	H i g h	70 84 .9 8	87 23 32	68 84 .4 6	858964	504		1 0 3 3 9	872640	2 2	40	3 (3)	1112
6 0	162	Do wn lin k &	L o w	59 74 .9 8	79 83 32	59 45 .8 2	796388	0	3 0	9 5 4 8	796704	2 2	0	0 (0)	0
			M i d	69 85 .0 2	86 56 68	69 19 .1 4	861276	102		1 0 2 5 6	864672	2 2	16	3 (3)	260
		Up lin k	H i g h	70 95	87 30 00	68 84 .4	858960	504		1 0 3 2 5	871296	0	0	0 (0)	1008
8 0	217	Do wn lin k &	L o w	59 85	79 90 00	59 45 .9 4	796396	0	3 0	9 5 4 8	796704	2 2	0	0 (0)	0
			M i d	65 44 .9 8	83 63 32	64 69 .2	831280	102		9 9 3 7	834048	2 2	0	0 (0)	204
		Up lin k	H i	70 24	86 83 32	68 04	853632	504		1 0 2	866016	2 2	0	0 (0)	1008

			g h	.9 8		.4 8				7 0					
Note 1:	The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-4 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.														
Note 2:	The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs.														
Note 3:	The selection of Low, Mid and High test frequencies are restricted to the limited allowed ARFCN values as specified in TS 38.101 [7], Table 5.4.2.3-3.														

Table 4.3.1.1.96-3: Test frequencies for NR operating band n96 and SCS 60 kHz without CORESET#0 (Note 1)

CB W [M Hz]	carrierBandwidth [PRBs]	Range		Carrier centre [MH z]	Carrier centre [ARFCN] Note 2	point A [MH z]	absoluteFrequencyPointA [ARFCN]	offsetTo Carrier [PRBs]	SS block SCS [k Hz]	GS CN	absoluteFrequencySSB [ARFCN]
20	24	Dow nlink &	Lo w	595 5	7970 00	594 6.36	796424	0	30	-	796664
			Mi d	653 5.02	8356 68	645 2.94	830196	102		-	835332
		Upli nk	Hi gh	711 4.98	8743 32	674 3.46	849564	504		-	873996
40	51	Dow nlink &	Lo w	596 5.02	7976 68	594 6.66	796444	0	30	-	796684
			Mi d	652 5	8350 00	643 3.2	828880	102		-	834016
		Upli nk	Hi gh	708 4.98	8723 32	670 3.74	846916	504		-	871348
60	79	Dow nlink &	Lo w	597 4.98	7983 32	594 6.54	796436	0	30	-	796676
			Mi d	698 5.02	8656 68	688 3.14	858876	102		-	864012
		Upli nk	Hi gh	709 5	8730 00	670 3.68	846912	504		-	871344
80	107	Dow nlink &	Lo w	598 5	7990 00	594 6.48	796432	0	30	-	796672
			Mi d	654 4.98	8363 32	643 3.02	828868	102		-	834004
		Upli nk	Hi gh	702 4.98	8683 32	662 3.58	841572	504		-	866004
Note 1: FR1 carrier without CORESET#0 is indicated in the MIB by setting $k_{\text{SSB}}=31$, <i>controlResourceSetZero</i> =0 and <i>searchSpaceZero</i> = 0 (TS 38.213 [22], clause 13).											
Note 2: The selection of Low, Mid and High test frequencies are restricted to the limited allowed ARFCN values as specified in TS 38.101 [7]. Table 5.4.2.3-3.											

4.3.1.1.1.97 Reference test frequencies for NR operating band n97 (SUL)

Table 4.3.1.1.1.97-1: Test frequencies for NR operating band n97 and SCS 15 kHz

CBW [MHz]	carrierBandwidth	Range	Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequencyPoint	offsetToCarrier

	[PRBs]						A [ARFCN]	[Carrier PRBs]
5	25	Uplink	Low	2302.5	460500	2300.25	460050	0
			Mid	2350	470000	2329.39	465878	102
			High	2397.5	479500	2304.53	460906	504
10	52	Uplink	Low	2305	461000	2300.32	460064	0
			Mid	2350	470000	2326.96	465392	102
			High	2395	479000	2299.6	459920	504
15	79	Uplink	Low	2307.5	461500	2300.39	460078	0
			Mid	2350	470000	2324.53	464906	102
			High	2392.5	478500	2294.67	458934	504
20	106	Uplink	Low	2310	462000	2300.46	460092	0
			Mid	2350	470000	2322.1	464420	102
			High	2390	478000	2289.74	457948	504
25	133	Uplink	Low	2312.5	462500	2300.53	460106	0
			Mid	2350	470000	2319.67	463934	102
			High	2387.5	477500	2284.81	456962	504
30	160	Uplink	Low	2315	463000	2300.6	460120	0
			Mid	2350	470000	2317.24	463448	102
			High	2385	477000	2279.88	455976	504
40	216	Uplink	Low	2320	464000	2300.56	460112	0
			Mid	2350	470000	2312.2	462440	102
			High	2380	476000	2269.84	453968	504
50	270	Uplink	Low	2325	465000	2300.7	460140	0
			Mid	2350	470000	2307.34	461468	102
			High	2375	475000	2259.98	451996	504

Table 4.3.1.1.97-2: Test frequencies for NR operating band n97 and SCS 30 kHz

CBW [MHz]	carrier Bandw idth [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absolute Frequen cyPoint A [ARFCN]	offsetTo Carrier [Carrier PRBs]
10	24	Uplink	Low	2305	461000	2300.68	460136	0
			Mid	2350	470000	2308.96	461792	102
			High	2395	479000	2209.24	441848	504
15	38	Uplink	Low	2307.5	461500	2300.66	460132	0
			Mid	2350	470000	2306.44	461288	102
			High	2392.5	478500	2204.22	440844	504
20	51	Uplink	Low	2310	462000	2300.82	460164	0
			Mid	2350	470000	2304.1	460820	102
			High	2390	478000	2199.38	439876	504
25	65	Uplink	Low	2312.5	462500	2300.8	460160	0
			Mid	2350	470000	2301.58	460316	102
			High	2387.5	477500	2194.36	438872	504
30	78	Uplink	Low	2315	463000	2300.96	460192	0
			Mid	2350	470000	2299.24	459848	102
			High	2385	477000	2189.52	437904	504
40	106	Uplink	Low	2320	464000	2300.92	460184	0
			Mid	2350	470000	2294.2	458840	102
			High	2380	476000	2179.48	435896	504
50	133	Uplink	Low	2325	465000	2301.06	460212	0
			Mid	2350	470000	2289.34	457868	102
			High	2375	475000	2169.62	433924	504
60	162	Uplink	Low	2330	466000	2300.84	460168	0
			Mid	2350	470000	2284.12	456824	102
			High	2370	474000	2159.4	431880	504
70	189	Uplink	Low	2335	467000	2300.98	460196	0
			Mid	2350	470000	2279.26	455852	102
			High	2365	473000	2149.54	429908	504
80	217	Uplink	Low	2340	468000	2300.94	460188	0
			Mid	2350	470000	2274.22	454844	102

90	245	Uplink	High	2360	472000	2139.5	427900	504
			Low	2345	469000	2300.9	460180	0
			Mid	2350	470000	2269.18	453836	102
			High	2355	471000	2129.46	425892	504
100	273	Uplink	Low	2350	470000	2300.86	460172	0
			Mid	2350	470000	2264.14	452828	102
			High	2350	470000	2119.42	423884	504

Table 4.3.1.1.1.97-3: Test frequencies for NR operating band n97 and SCS 60 kHz

CBW [MHz]	carrierBand width [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absolute Frequency Point A [ARFCN]	offsetTo Carrier [PRBs]
10	11	Uplink	Low	2305	461000	2301.04	460208	0
			Mid	2350	470000	2272.6	454520	102
			High	2395	479000	2028.16	405632	504
15	18	Uplink	Low	2307.5	461500	2301.02	460204	0
			Mid	2350	470000	2270.08	454016	102
			High	2392.5	478500	2023.14	404628	504
20	24	Uplink	Low	2310	462000	2301.36	460272	0
			Mid	2350	470000	2267.92	453584	102
			High	2390	478000	2018.48	403696	504
25	31	Uplink	Low	2312.5	462500	2301.34	460268	0
			Mid	2350	470000	2265.4	453080	102
			High	2387.5	477500	2013.46	402692	504
30	38	Uplink	Low	2315	463000	2301.32	460264	0
			Mid	2350	470000	2262.88	452576	102
			High	2385	477000	2008.44	401688	504
40	51	Uplink	Low	2320	464000	2301.64	460328	0
			Mid	2350	470000	2258.2	451640	102
			High	2380	476000	1998.76	399752	504
50	65	Uplink	Low	2325	465000	2301.6	460320	0
			Mid	2350	470000	2253.16	450632	102
			High	2375	475000	1988.72	397744	504
60	79	Uplink	Low	2330	466000	2301.56	460312	0
			Mid	2350	470000	2248.12	449624	102
			High	2370	474000	1978.68	395736	504
70	93	Uplink	Low	2335	467000	2301.52	460304	0
			Mid	2350	470000	2243.08	448616	102
			High	2365	473000	1968.64	393728	504
80	107	Uplink	Low	2340	468000	2301.48	460296	0
			Mid	2350	470000	2238.04	447608	102
			High	2360	472000	1958.6	391720	504
90	121	Uplink	Low	2345	469000	2301.44	460288	0
			Mid	2350	470000	2233	446600	102
			High	2355	471000	1948.56	389712	504
100	135	Uplink	Low	2350	470000	2301.4	460280	0
			Mid	2350	470000	2227.96	445592	102
			High	2350	470000	1938.52	387704	504

4.3.1.1.1.98 Reference test frequencies for NR operating band n98 (SUL)

Table 4.3.1.1.1.98-1: Test frequencies for NR operating band n98 and SCS 15 kHz

CBW [MHz]	carrier Bandwidth [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absolute Frequency Point A [ARFCN]	offsetTo Carrier [Carrier PRBs]
5	25	Uplink	Low	1882.5	376500	1880.25	376050	0
			Mid	1899.1	379820	1878.49	375698	102

10	52	Uplink	High	1917.5	383500	1824.53	364906	504
			Low	1885	377000	1880.32	376064	0
			Mid	1900	380000	1876.96	375392	102
			High	1915	383000	1819.6	363920	504
15	79	Uplink	Low	1887.5	377500	1880.39	376078	0
			Mid	1900	380000	1874.53	374906	102
			High	1912.5	382500	1814.67	362934	504
			Low	1890	378000	1880.46	376092	0
20	106	Uplink	Mid	1900	380000	1872.1	374420	102
			High	1910	382000	1809.74	361948	504
			Low	1892.5	378500	1880.53	376106	0
			Mid	1900	380000	1869.67	373934	102
25	133	Uplink	High	1907.5	381500	1804.81	360962	504
			Low	1895	379000	1880.6	376120	0
			Mid	1900	380000	1867.24	373448	102
			High	1905	381000	1799.88	359976	504
35	188	Uplink	Low	1897.5	379500	1880.58	376116	0
			Mid	1900	380000	1864.72	372944	102
			High	1902.5	380500	1794.86	358972	504
			Low	1900	380000	1880.56	376112	0
40	216	Uplink	Mid					
			High					

Table 4.3.1.1.1.98-2: Test frequencies for NR operating band n98 and SCS 30 kHz

CBW [MHz]	carrier Bandwidth [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absolute FrequencyPoint A [ARFCN]	offsetTo Carrier [Carrier PRBs]
10	24	Uplink	Low	1885	377000	1880.68	376136	0
			Mid	1900	380000	1858.96	371792	102
			High	1915	383000	1729.24	345848	504
			Low	1887.5	377500	1880.66	376132	0
15	38	Uplink	Mid	1900	380000	1856.44	371288	102
			High	1912.5	382500	1724.22	344844	504
			Low	1890	378000	1880.82	376164	0
			Mid	1900	380000	1854.1	370820	102
20	51	Uplink	High	1910	382000	1719.38	343876	504
			Low	1892.5	378500	1880.8	376160	0
			Mid	1900	380000	1851.58	370316	102
			High	1907.5	381500	1714.36	342872	504
25	65	Uplink	Low	1895	379000	1880.96	376192	0
			Mid	1900	380000	1849.24	369848	102
			High	1905	381000	1709.52	341904	504
			Low	1897.5	379500	1880.94	376188	0
35	92	Uplink	Mid	1900	380000	1846.72	369344	102
			High	1902.5	380500	1704.5	340900	504
			Low	1900	380000	1880.92	376184	0
			Mid					
40	106	Uplink	High					

Table 4.3.1.1.1.98-3: Test frequencies for NR operating band n98 and SCS 60 kHz

CBW [MHz]	carrierBandwidth [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absolute FrequencyPoint A [ARFCN]	offsetTo Carrier [PRBs]
10	11	Uplink	Low	1885	377000	1881.04	376208	0
			Mid	1900	380000	1822.6	364520	102
			High	1915	383000	1548.16	309632	504

15	18	Uplink	Low	1887.5	377500	1881.02	376204	0
			Mid	1900	380000	1820.08	364016	102
			High	1912.5	382500	1543.14	308628	504
20	24	Uplink	Low	1890	378000	1881.36	376272	0
			Mid	1900	380000	1817.92	363584	102
			High	1910	382000	1538.48	307696	504
25	31	Uplink	Low	1892.5	378500	1881.34	376268	0
			Mid	1900	380000	1815.4	363080	102
			High	1907.5	381500	1533.46	306692	504
30	38	Uplink	Low	1895	379000	1881.32	376264	0
			Mid	1900	380000	1812.88	362576	102
			High	1905	381000	1528.44	305688	504
35	44	Uplink	Low	1897.5	379500	1881.66	376332	0
			Mid	1900	380000	1810.72	362144	102
			High	1902.5	380500	1523.78	304756	504
40	51	Uplink	Low	1900	380000	1881.64	376328	0
			Mid					
			High					

4.3.1.1.1.99 Reference test frequencies for NR operating band n99 (SUL)

Table 4.3.1.1.1.99-1: Test frequencies for NR operating band n99 and SCS 15 kHz

UL CBW [MHz]	carrier Bandwidth [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absolute FrequencyPoint A [ARFCN]	offsetTo Carrier [Carrier PRBs]
5	25	Uplink	Low	1630.0	326000	1627.75	325550	0
			Mid	1635.0	327000	1542.03	308406	504
			High	1654.0	330800	1650.67	330134	6
10	52	Uplink	Low	1632.5	326500	1627.82	325564	0
			Mid					
			High	1651.5	330300	1645.74	329148	6

Table 4.3.1.1.1.99-2: Test frequencies for NR operating band n99 and SCS 30 kHz

UL CBW [MHz]	carrier Bandwidth [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absolute FrequencyPoint A [ARFCN]	offsetTo Carrier [Carrier PRBs]
10	24	Uplink	Low	1632.5	326500	1628.18	325636	0
			Mid					
			High	1651.5	330300	1645.02	329004	6

Table 4.3.1.1.1.99-3: Test frequencies for NR operating band n99 and SCS 60 kHz

UL CBW [MHz]	carrier Bandwidth [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absolute FrequencyPoint A [ARFCN]	offsetTo Carrier [Carrier PRBs]
10	11	Uplink	Low	1632.5	326500	1628.54	325708	0
			Mid					
			High	1651.5	330300	1643.22	328644	6

4.3.1.1.1.100

Reference test frequencies for NR operating band n100

Table 4.3.1.1.1.100-1: Test frequencies for NR operating band n100 and SCS 15 kHz

C B W [M H z]	carrie rBand width [PRB s]	Range		C ar ri er ce ntr e [M H z]	Ca rri er ce ntr e [A R F C N]	p oi nt A [M H z]	absolute Frequen cyPointA [ARFCN]	offse tToC arrier [Carri er PRB s]	S S bl oc k S C S [k H z]	G S C N	absolut eFreque ncySSB [ARFCN]	k_{SS}	Offs et Carri er CO RES ET# 0 [RB s] Note 2	CO RES ET# 0 Inde x (Off set [RB s]) Note 1	offse tToP ointA (SIB1) [PRB s] Note 1
3	15	Do wn lin k	L o w	92 1. 0	18 42 00	9 1 9. 6 5	183930	0	1 5	3 1 2 4 0	184170	8	0	0 (0)	0
			M i d	92 2. 2	18 44 40	9 0 2. 4 9	180498	102		3 1 2 4 6	184410	8	0	0 (0)	102
			H i g h	92 3. 5	18 47 00	8 3 1. 4 3	166286	504		3 1 2 5 3	184670	8	0	0 (0)	504
		Up lin k	L o w	87 6. 0	17 52 00	8 7 4. 6 5	174930	0	-	-	-	-	-	-	-
			M i d	87 7. 2	17 54 40	7 8 5. 1 3	157026	504	-	-	-	-	-	-	
			H i g h	87 8. 5	17 57 00	8 7 6. 0 7	175214	6	-	-	-	-	-	-	
5	25	Do wn lin k	L o w	92 1. 9	18 43 80	9 1 9. 6 5	183930	0	1 5	2 3 0 4	184350	8	1	0 (0)	1
			M i d	92 2. 2	18 44 40	9 0 1. 5 9	180318	102		2 3 0 4	184350	0	0	0 (0)	102
			H i g h	92 2. 5	18 45 00	8 2 9. 5 3	165906	504		2 3 0 7	184590	0	1	2 (4)	509
		Up lin k	L o w	87 6. 9	17 53 80	8 7 4. 6 5	174930	0	-	-	-	-	-	-	

			M i d	87 7. 2	17 54 40	7 8 4. 2 3	156846	504		-	-	-	-	-	-
			H i g h	87 7. 5	17 55 00	8 7 4. 1 7	174834	6		-	-	-	-	-	-
Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-0 with minimum channel bandwidth 3 MHz and channel bandwidth 3 MHz or 5 MHz in TS 38.213 [22]. The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-1 with minimum channel bandwidth 3 MHz and channel bandwidth larger than 3 MHz in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2. Note 2: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs.															

4.3.1.1.1.101

Reference test frequencies for NR operating band n101

Table 4.3.1.1.1.101-1: Test frequencies for NR operating band n101 and SCS 15 kHz

C B W [M H z]	carrie rBand width [PRB s]	Range		C a r r i e r c e n t r e [M H z]	C a r r i e r c e n t r e [A R F C N]	p o i n t A [M H z]	absolute Frequen cyPointA [ARFCN]	offse tToC arrier [Carr ier PRB s]	S S C S [k H z]	G S C N	absolut eFrequen cySSB [ARFCN]	k_S	Offs et Carr ier CO RES ET# 0 [RB s] Not e 2	CO RES ET# 0 Inde x (Off set [RB s]) Not e 1	offse tToP ointA (SIB1) [PRB s] Note 1
5	25	Do wn lin k & Up lin k	L o w	19 02 .5	38 05 00	19 00 .2 5	380050	0	1 5	4 7 5 4	380410	0	1	2 (4)	5
			M i d	19 05	38 10 00	18 84 .3 9	376878	102		4 7 6 1	380910	0	0	0 (0)	102
			H i g h	19 07 .5	38 15 00	18 14 .5 3	362906	504		4 7 6 8	381410	0	1	1 (2)	507
1 0	52	Do wn lin k & Up lin k	L o w	19 05	38 10 00	19 00 .3 2	380064	0	1 5	4 7 5 5	380430	2	1	2 (4)	5
			M i d												
			H i g h												
Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-1 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.															

Note 2: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs.

Table 4.3.1.1.101-2: Test frequencies for NR operating band n101 and SCS 30 kHz

C B W [M H z]	carrie rBand width [PRB s]	Range		C a r r i e r c e n t r e [M H z]	C a r r i e r c e n t r e [A R F C N]	p o i n t A [M H z]	absolute Frequen cyPointA [ARFCN]	offse tToC a r r i e r [C a r r i e r P R B s]	S S b l o c k S C S [k H z]	G S C N	absolut eFrequen cySSB [ARFCN]	k_s	Offs et C a r r i e r C O R E S E T # 0 [R B s] N o t e 2	C O R E S E T # 0 I n d e x (O f f s e t [R B s]) N o t e 1	offse tToP o i n t A (S I B 1) [P R B s] N o t e 1
1 0	24	Do wn l i n k & U p l i n k	L o w M i d H i g h	19 05	38 10 00	19 00 ,6 8	380136	0	1 5	4 7 6 2	380930	6	0	3 (8)	16
Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-2 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2. Note 2: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs.															

4.3.1.1.1.102 to 4.3.1.1.1.103 FFS

4.3.1.1.1.104 Reference test frequencies for NR operating band n104

Table 4.3.1.1.104-1: Test frequencies for NR operating band n104 and SCS 15 kHz

C B W [M H z]	carrie rBand width [PRB s]	Range		C a r r i e r c e n t r e [M H z]	C a r r i e r c e n t r e [A R F C N]	p o i n t A [M H z]	absolute Frequen cyPointA [ARFCN]	offse tToC a r r i e r [C a r r i e r P R B s]	S S b l o c k S C S [k H z]	G S C N	absolut eFrequen cySSB [ARFCN]	k_s	Offs et C a r r i e r C O R E S E T # 0 [R B s] N o t e 2	C O R E S E T # 0 I n d e x (O f f s e t [R B s]) N o t e 1	offse tToP o i n t A (S I B 1) [P R B s] N o t e 1
2 0	106	Do wn l i n k & U p l i n k	L o w M i d	64 35 .0 0	82 90 00	64 25 .4 6	828364	0	3 0	9 8 8 2	828768	8	9	0 (4)	13
				67 74 .9 9	85 16 66	67 47 .0 9	849806	102		1 0 1 2 0	851616	1 0	24	0 (4)	130

		Up lin k		te 4												
			H i g h	71 14 .9 8 No te 4	87 43 32	70 14 .7 2	867648	504		1 0 3 5 8	874464	0	40	0 (4)	548	
3 0	160	Do wn lin k &	L o w	64 40 .0 1	82 93 34	64 25 .6 1	828374	0	3 0	9 8 8 2	828768	1 0	8	0 (4)	12	
			M i d	67 74 .9 9 No te 4	85 16 66	67 42 .2 3	849482	102		1 0 1 2 0	851616	1 0	51	0 (4)	157	
		Up lin k	H i g h	71 10 .0 0	87 40 00	70 04 .8 8	866992	504		1 0 3 5 1	873792	8	38	0 (4)	546	
4 0	216	Do wn lin k &	L o w	64 45 .0 2 No te 3	82 96 68	64 25 .5 8	828372	0	3 0	9 8 8 2	828768	-0	9	0 (4)	13	
			M i d	67 74 .9 9 No te 4	85 16 66	67 37 .1 9	849146	102		1 0 1 1 3	850944	1 0	23	0 (4)	129	
		Up lin k	H i g h	71 04 .9 9	87 36 66	69 94 .8 3	866322	504		1 0 3 4 4	873120	6	38	0 (4)	546	
5 0	270	Do wn lin k &	L o w	64 50 .0 0	83 00 00	64 25 .7 0	828380	0	3 0	9 8 8 2	828768	4	8	0 (4)	12	
			M i d	67 74 .9 9 No te 4	85 16 66	67 32 .3 3	848822	102		1 0 1 1 3	850944	1 0	50	0 (4)	156	
		Up lin k	H i g h	70 99 .9 8 No te 4	87 33 32	69 84 .9 6	865664	504		1 0 3 3 7	872448	4	37	0 (4)	545	
Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-5 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.																

- Note 2: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs.
- Note 3: Centre frequency shifted 15 kHz to align with the synchronisation raster (According to R1-1809879).
- Note 4: Centre frequency shifted -15 kHz to align with the synchronisation raster (According to R1-1809879).

Table 4.3.1.1.104-2: Test frequencies for NR operating band n104 and SCS 30 kHz

C B W [M H z]	carrie rBand width [PRB s]	Range		Ca rri er ce ntr e [M Hz]	Ca rri er ce ntr e [A R F C N]	po int A [M Hz]	absolut eFrequ encyPointA [ARFCN]	offse tToC arrier [Carr ier PRB s]	S S bl oc k S C S [k H z]	G S C N	absolut eFrequ encySSB [ARFCN]	k_s	Offs et Carr ier CO RES ET# 0 [RB s] Not e 2	CO RES ET# 0 Inde x (Off set [RB s]) Not e 1	offse tToP oint A (SIB 1) [PRB s] Note 1
2 0	51	Do wn lin k & M i d	L o w	64 35 .0 0	82 90 00	64 25 .8 2	828388	0	3 0	9 8 8 2	828768	2 0	1	1 (4)	10
			M i d	67 74 .9 9	85 16 66	67 29 .0 9	848606	102		1 0 1 2 0	851616	1 0	9	1 (4)	230
		Up lin k	H i g h	71 14 .9 8	87 43 32	69 24 .3 6	861624	504		1 0 3 5 8	874464	0	17	1 (4)	1050
3 0	78	Do wn lin k & M i d	L o w	64 40 .0 1	82 93 34	64 25 .9 7	828398	0	3 0	9 8 8 2	828768	1 0	1	1 (4)	10
			M i d	67 74 .9 9	85 16 66	67 24 .2 3	848282	102		1 0 1 2 0	851616	2 2	22	1 (4)	256
		Up lin k	H i g h	71 10 .0 0	87 40 00	69 14 .5 2	860968	504		1 0 3 5 1	873792	8	16	1 (4)	1048
4 0	106	Do wn lin k & M i d	L o w	64 45 .0 2	82 96 68	64 25 .9 4	828396	0	3 0	9 8 8 2	828768	1 2	1	1 (4)	10
			M i d	67 74 .9 9	85 16 66	67 19 .1 9	847946	102		1 0 1 1 3	850944	2 2	8	1 (4)	228
		Up lin k	H i g h	71 04 .9 9	87 36 66	69 04 .4 7	860298	504		1 0 3 4 4	873120	6	16	1 (4)	1048

50	133	Downlink & Mid	Low	6450.000	8300.000	6426.06	828404	0	30	9882	828768	4	1	1 (4)	10
			Mid	6774.99	8516.66	6714.33	847622	102		10113	850944	10	22	1 (4)	256
		Uplink	High	7099.98	8733.32	6894.60	859640	504		10337	872448	16	15	1 (4)	1046
60	162	Downlink & Mid	Low	6455.01	8303.34	6425.85	828390	0	30	9882	828768	18	1	1 (4)	10
			Mid	6774.99	8516.66	6709.11	847274	102		10106	850272	22	8	1 (4)	228
		Uplink	High	7095.00	8730.00	6884.40	858960	504		10330	871776	0	16	1 (4)	1048
70	189	Downlink & Mid	Low	6460.02	8306.68	6426.00	828400	0	30	9882	828768	8	1	1 (4)	10
			Mid	6774.99	8516.66	6704.25	846950	102		10106	850272	10	22	1 (4)	256
		Uplink	High	7089.99	8726.66	6874.53	858302	504		10323	871104	10	15	1 (4)	1046
80	217	Downlink & Mid	Low	6465.00	8310.00	6425.94	828396	0	30	9882	828768	12	1	1 (4)	10
			Mid	6774.99	8516.66	6699.21	846614	102		10099	849600	10	8	1 (4)	228
		Uplink	High	7084.98	8723.32	6864.48	857632	504		10316	870432	8	15	1 (4)	1046
90	245	Downlink & Mid	Low	6470.01	8313.34	6425.91	828394	0	30	9882	828768	14	1	1 (4)	10
			Mid	6774.99	8516.66	6694.17	846278	102		10099	849600	10	22	1 (4)	256

		Up lin k	H i g h	70 80 .0 0	87 20 00	68 54 .4 6	856964	504		1 0 3 0 9	869760	4	15	1 (4)	1046
1 0 0	273	Do wn lin k &	L o w	64 75 .0 2	83 16 68	64 25 .8 8	828392	0	3 0	9 8 8 2	828768	1 6	1	1 (4)	10
			M i d	67 74 .9 9	85 16 66	66 89 .1 3	845942	102		1 0 0 9 2	848928	1 0	8	1 (4)	228
		Up lin k	H i g h	70 74 .9 9	87 16 66	68 44 .4 1	856294	504		1 0 3 0 2	869088	2	15	1 (4)	1046
Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-6 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2. Note 2: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs.															

4.3.1.1.1.105

Reference test frequencies for NR operating band n105

Table 4.3.1.1.1.105-1: Test frequencies for NR operating band n105 and SCS 15 kHz

UL/ DL Bandwidth combination [MHz]	carrierBandwidth [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absolute FrequencyPoint A [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS [kHz]	GS CN	absoluteFrequencySSB [ARFCN]	k_s	Offset Carrier CORESET# 0 [RBs] Note 2	CORESET# 0 Index (Offset [RBs]) Note 1	offsetToPoint A (SIB 1) [PRBs] Note 1
5/5	25	Downlink	Low	614.5	122900	612.25	122450	0	15	1537	122930	4	1	1 (2)	3
			Mid	632	126400	611.39	122278	102		1580	126490	0	1	2 (4)	107
			High	649.5	129900	556.53	111306	504		1623	129870	8	1	0 (0)	505
		Uplink	Low	665.5	133100	663.25	132650	0	-	-	-	-	-	-	

			M i d	68 3	13 66 00	5 9 0. 0 3	118006	504		-	-	-	-	-	-
			H i g h	70 0. 5	14 01 00	6 9 7. 1 7	139434	6		-	-	-	-	-	-
10/1 0	52	Do wn lin k	L o w	61 7	12 34 00	6 1 2. 3 2	122464	0	1 5	1 5 3 5	122890	1 0	1	0 (0)	1
			M i d	63 2	12 64 00	6 0 8. 9 6	121792	102		1 5 7 4	126010	2	1	2 (4)	107
			H i g h	64 7	12 94 00	5 5 1. 6	110320	504		1 6 1 0	128890	1 0	1	0 (0)	505
		Up lin k	L o w	66 8	13 36 00	6 6 3. 3 2	132664	0		-	-	-	-	-	-
			M i d	68 3	13 66 00	5 8 7. 6	117520	504		-	-	-	-	-	-
			H i g h	69 8	13 96 00	6 9 2. 2 4	138448	6		-	-	-	-	-	-
15/1 5	79	Do wn lin k	L o w	61 9. 5	12 39 00	6 1 2. 3 9	122478	0	1 5	1 5 3 6	122910	0	0	1 (2)	2
			M i d	63 2	12 64 00	6 0 6. 5 3	121306	102		1 5 6 8	125530	4	1	2 (4)	107
			H i g h	64 4. 5	12 89 00	5 4 6. 6 7	109334	504		1 6 0 0	127970	8	1	1 (2)	507
		Up lin k	L o w	67 0. 5	13 41 00	6 6 3. 3 9	132678	0		-	-	-	-	-	-
			M i d	68 3	13 66 00	5 8 5. 1 7	117034	504		-	-	-	-	-	-
			H i	69 5. 5	13 91 00	6 8 7.	137462	6		-	-	-	-	-	-

			g h			3 1									
20/2 0	106	Do wn lin k	L o w	62 2	12 44 00	6 1 2. 4 6	122492	0	1 5	1 5 3 7	122930	2	0	1 (2)	2
			M i d	63 2	12 64 00	6 0 4. 1	120820	102		1 5 6 2	125050	6	1	2 (4)	107
			H i g h	64 2	12 84 00	5 4 1. 7 4	108348	504		1 5 8 7	126990	1 0	1	1 (2)	507
		Up lin k	L o w	67 3	13 46 00	6 6 3. 4 6	132692	0	-	-	-	-	-	-	-
			M i d	68 3	13 66 00	5 8 2. 7 4	116548	504		-	-	-	-	-	-
			H i g h	69 3	13 86 00	6 8 2. 3 8	136476	6		-	-	-	-	-	-
20/2 5	133	Do wn lin k	L o w	62 4. 5	12 49 00	6 1 2. 5 3	122506	0	1 5	1 5 3 5	122890	8	0	0 (0)	0
			M i d	63 2	12 64 00	6 0 1. 6 7	120334	102		1 5 5 6	124570	8	1	2 (4)	107
			H i g h	63 9. 5	12 79 00	5 3 6. 8 1	107362	504		1 5 7 4	126010	0	0	2 (4)	508
	106	Up lin k	L o w	67 5. 5	13 51 00	6 6 5. 9 6	133192	0	-	-	-	-	-	-	-
			M i d	68 3	13 66 00	5 8 2. 7 4	116548	504		-	-	-	-	-	-
			H i g h	69 0. 5	13 81 00	6 7 9. 8 8	135976	6		-	-	-	-	-	-
20/3 0	160	Do wn lin k	L o w	62 7	12 54 00	6 1 2. 6	122520	0	1 5	1 5 3 6	122910	1 0	0	0 (0)	0

			M i d	63 2	12 64 00	5 9 2 4	119848	102		1 5 5 0	124090	1 0	1	2 (4)	107
			H i g h	63 7	12 74 00	5 3 1. 8 8	106376	504		1 5 6 4	125090	1 0	1	2 (4)	509
	106	Up lin k	L o w	67 8	13 56 00	6 6 8. 4 6	133692	0		-	-	-	-	-	-
			M i d	68 3	13 66 00	5 8 2. 7 4	116548	504		-	-	-	-	-	-
			H i g h	68 8	13 76 00	6 7 7. 3 8	135476	6		-	-	-	-	-	-
	20/3 5	Do wn lin k	L o w	62 9. 5	12 59 00	6 1 2. 5 8	122516	0	1 5	1 5 3 7	122930	6	1	0 (0)	1
			M i d	63 2	12 64 00	5 9 6. 7 2	119344	102		1 5 4 4	123610	6	2	2 (4)	108
			H i g h	63 4. 5	12 69 00	5 2 6. 8 6	105372	504		1 5 5 1	124110	6	2	2 (4)	510
		Up lin k	L o w	68 0. 5	13 61 00	6 7 0. 9 6	134192	0	-	-	-	-	-	-	-
			M i d	68 3	13 66 00	5 8 2. 7 4	116548	504		-	-	-	-	-	-
			H i g h	68 5. 5	13 71 00	6 7 4. 8 8	134976	6		-	-	-	-	-	-

Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-1 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.

Note 2: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs.

Table 4.3.1.1.105-2: Test frequencies for NR operating band n105 and SCS 30 kHz

UL/ DL Band width com bina tion [MH z]	carrie rBand width [PRB s]	Range		C ar ri er ce n tr e [M H z]	Ca rri er ce n tr e [A R F C N]	p oi nt A [M H z]	absolute Frequen cyPoint A [ARFCN]	offse tToC arrie r [Carr ier PRB s]	S S bl o c k S C S [k H z]	G S C N	absolut eFrequen cySSB [ARFCN]	$k_{S\beta}$	Offs et Carr ier CO RES ET# 0 [RB s] Not e 2	CO RES ET# 0 Inde x (Off set [RB s]) Not e 1	offse tToP oint A (SIB 1) [PRB s] Note 1
10/1 0	24	Do wn lin k	L o w	61 7	12 34 00	6 1 2. 6 8	122536	0	1 5	1 5 4 1	123370	1 4	0	1 (6)	12
			M i d	63 2	12 64 00	5 9 0. 9 6	118192	102		1 5 8 0	126490		0		
			H i g h	64 7	12 94 00	4 6 1. 2 4	92248	504		1 6 1 6	129370	1 4	0	1 (6)	1020
		Up lin k	L o w	66 8	13 36 00	6 6 3. 6 8	132736	0	-	-	-	-	-	-	-
			M i d	68 3	13 66 00	4 9 7. 2 4	99448	504		-	-	-	-	-	-
			H i g h	69 8	13 96 00	6 9 1. 5 2	138304	6		-	-	-	-	-	-
15/1 5	38	Do wn lin k	L o w	61 9. 5	12 39 00	6 1 2. 6 6	122532	0	1 5	1 5 4 2	123390	2 2	0	1 (6)	12
			M i d	63 2	12 64 00	5 8 8. 4 4	117688	102		1 5 7 1	125770	6	0	0 (5)	214
			H i g h	64 4. 5	12 89 00	4 5 6. 2 2	91244	504		1 6 0 6	128450	1 8	0	2 (7)	1022
		Up lin k	L o w	67 0. 5	13 41 00	6 6 3. 6 6	132732	0	-	-	-	-	-	-	-

			M i d	68 3	13 66 00	4 9 4. 7 2	98944	504		-	-	-	-	-	-
			H i g h	69 5. 5	13 91 00	6 8 6. 5	137300	6		-	-	-	-	-	-
20/2 0	51	Do wn lin k	L o w	62 2	12 44 00	6 1 2. 8 2	122564	0	1 5	1 5 4 3	123410	1 8	0	1 (6)	12
			M i d	63 2	12 64 00	5 8 6. 1	117220	102		1 5 6 5	125290	2		0 (5)	214
			H i g h	64 2	12 84 00	4 5 1. 3 8	90276	504		1 5 9 3	127470	1 4	0	2 (7)	1022
		Up lin k	L o w	67 3	13 46 00	6 6 3. 8 2	132764	0	-	-	-	-	-	-	-
			M i d	68 3	13 66 00	4 9 2. 3 8	98476	504		-	-	-	-	-	-
			H i g h	69 3	13 86 00	6 8 1. 6 6	136332	6		-	-	-	-	-	-
20/2 5	65	Do wn lin k	L o w	62 4. 5	12 49 00	6 1 2. 8	122560	0	1 5	1 5 4 1	123370	6	0	1 (6)	12
			M i d	63 2	12 64 00	5 8 3. 5 8	116716	102		1 5 5 9	124810	1 0	0	0 (5)	214
			H i g h	63 9. 5	12 79 00	4 4 6. 3 6	89272	504		1 5 8 0	126490	2 2	0	2 (7)	1022
	51	Up lin k	L o w	67 5. 5	13 51 00	6 6 6. 3 2	133264	0	-	-	-	-	-	-	-
			M i d	68 3	13 66 00	4 9 2. 3 8	98476	504		-	-	-	-	-	-
			H i	69 0. 5	13 81 00	6 7 9.	135832	6		-	-	-	-	-	-

			g h			1 6									
20/3 0	78	Do wn lin k	L o w	62 7	12 54 00	6 1 2. 9 6	122592	0	1 5	1 5 4 2	123390	2	0	1 (6)	12
			M i d	63 2	12 64 00	5 8 1. 2 4	116248	102		1 5 5 3	124330	6	0	0 (5)	214
			H i g h	63 7	12 74 00	4 4 1. 5 2	88304	504		1 5 6 7	125330	6	0	0 (5)	1018
	51	Up lin k	L o w	67 8	13 56 00	6 6 8. 8 2	133764	0	-	-	-	-	-	-	-
			M i d	68 3	13 66 00	4 9 2. 3 8	98476	504		-	-	-	-	-	-
			H i g h	68 8	13 76 00	6 7 6. 6 6	135332	6		-	-	-	-	-	-
20/3 5	92	Do wn lin k	L o w	62 9. 5	12 59 00	6 1 2. 9 4	122588	0	1 5	1 5 4 3	123410	1 0	0	1 (6)	12
			M i d	63 2	12 64 00	5 7 8. 7 2	115744	102		1 5 4 7	123850	1 4	0	0 (5)	214
			H i g h	63 4. 5	12 69 00	4 3 6. 5	87300	504		1 5 5 4	124350	1 4	0	0 (5)	1018
	51	Up lin k	L o w	68 0. 5	13 61 00	6 7 1. 3 2	134264	0	-	-	-	-	-	-	-
			M i d	68 3	13 66 00	4 9 2. 3 8	98476	504		-	-	-	-	-	-
			H i g h	68 5. 5	13 71 00	6 7 4. 1 6	134832	6		-	-	-	-	-	-
Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-2 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.															

Note 2: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs.

4.3.1.1.1.106 Reference test frequencies for NR operating band n106

Table 4.3.1.1.1.106-1: Test frequencies for NR operating band n106 and SCS 15 kHz

C B W [M H z]	carrie rBand width [PRB s]	Range		C a r r i e r c e n t r e [M H z]	C a r r i e r c e n t r e [A R F C N]	p o i n t A [M H z]	absolute Frequen cyPointA [ARFCN]	offse tToC arrier [Carr ier PRB s]	S S b l o c k S C S [k H z]	G S C N	absolut eFrequen cySSB [ARFCN]	k_s	Offs et Carr ier CO RES ET# 0 [RB s] Not e 2	CO RES ET# 0 Inde x (Off set [RB s]) Not e 1	offse tToP ointA (SIB1) [PRB s] Note 1
3	15	Do wn lin k	L o w	93 8. 0	18 76 00	9 3 6. 6 5	187330	0	1 5	3 1 3 2 6	187630	4	2	0 (0)	2
			M i d												
			H i g h												
		Up lin k	L o w	89 9. 0	17 98 00	8 9 7. 6 5	179530	0	-	-	-	-	-	-	-
			M i d												
			H i g h												
Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-0 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.															
Note 2: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs.															

4.3.1.1.1.107 to 4.3.1.1.1.108 FFS

4.3.1.1.1.109 Reference test frequencies for NR operating band n109

Table 4.3.1.1.1.109-1: Test frequencies for NR operating band n109 and SCS 15 kHz

UL/DLC BW Combination [MHz]	CB W [MHz]	carrierBandwidth [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequencyPointA [ARFCN]	offsetTo Carrier [Carrier PRBs]	SS block SCS [kHz]	GS CN	absoluteFrequencySSB [ARFCN]	k_{SSB}	Offset Carrier CORESET#0 [RBs] Note 2	CORESET#0 Index (Offset [RBs]) Note 1	offsetTo PointA (SIB1) [PRBs] Note 1
5/5	5	25	Downlink	Low	143.4.5	286900	1432.25	286450	0	15	3584	286810	0	0	0 (0)	0
				Mid	147.4.5	294900	1453.89	290778	102		3687	294990	0	1	2 (4)	107
				High	151.4.5	302900	1421.53	284306	504		3787	302930	4	1	1 (2)	507
	5	25	Uplink	Low	705.5	141100	703.25	140650	0	-	-	-	-	-	-	-
				Mid	718	143600	625.03	125006	504		-	-	-	-	-	-
				High	730.5	146100	727.17	145434	6		-	-	-	-	-	-
5/10	10	52	Downlink	Low	1437	287400	1432.32	286464	0		3585	286830	2	0	0 (0)	0
				Mid	1474.5	294900	1451.46	290292	102		3681	294510	2	1	2 (4)	107
				High	1512	302400	1416.6	283320	504		3774	301950	6	1	1 (2)	507
	5	25	Uplink	Low	705.5	141100	703.25	140650	0	-	-	-	-	-	-	-
				Mid	718	143600	625.03	125006	504		-	-	-	-	-	-
				High	730.5	146100	727.17	145434	6		-	-	-	-	-	-
5/15	15	79	Downlink	Low	1439.5	287900	1432.39	286478	0	15	3586	286850	4	0	0 (0)	0
				Mid	1474.5	294900	1449.03	289806	102		3675	294030	4	1	2 (4)	107

	5	25	Uplink	High	150 9.5	3019 00	1411 .67	282334	504	-	376 1	300970	8	1	1 (2)	507
				Low	705. 5	1411 00	703. 25	140650	0		-	-	-	-	-	-
				Mid	718	1436 00	625. 03	125006	504		-	-	-	-	-	-
				High	730. 5	1461 00	727. 17	145434	6		-	-	-	-	-	-
5/20	20	106	Downlink	Low	144 2	2884 00	1432 .46	286492	0	15	358 7	287050	6	1	2 (4)	5
				Mid	147 4.5	2949 00	1446 .6	289320	102		366 9	293550	6	1	2 (4)	107
				High	150 7	3014 00	1406 .74	281348	504		375 1	300050	6	1	2 (4)	509
	5	25	Uplink	Low	705. 5	1411 00	703. 25	140650	0	-	-	-	-	-	-	-
				Mid	718	1436 00	625. 03	125006	504		-	-	-	-	-	-
				High	730. 5	1461 00	727. 17	145434	6		-	-	-	-	-	-
5/25	25	133	Downlink	Low	144 4.5	2889 00	1432 .53	286506	0	15	358 8	287070	8	1	2 (4)	5
				Mid	147 4.5	2949 00	1444 .17	288834	102		366 3	293070	8	1	2 (4)	107
				High	150 4.5	3009 00	1401 .81	280362	504		373 8	299070	8	1	2 (4)	509
	5	25	Uplink	Low	705. 5	1411 00	703. 25	140650	0	-	-	-	-	-	-	-
				Mid	718	1436 00	625. 03	125006	504		-	-	-	-	-	-
				High	730. 5	1461 00	727. 17	145434	6		-	-	-	-	-	-
5/30	30	160	Downlink	Low	144 7	2894 00	1432 .6	286520	0	15	358 9	287090	10	1	2 (4)	5
				Mid	147 4.5	2949 00	1441 .74	288348	102		365 7	292590	10	1	2 (4)	107
				High	150 2	3004 00	1396 .88	279376	504		372 5	298090	10	1	2 (4)	509
	5	25	Uplink	Low	705. 5	1411 00	703. 25	140650	0	-	-	-	-	-	-	-
				Mid	718	1436 00	625. 03	125006	504		-	-	-	-	-	-

				High	730.5	146100	727.17	145434	6		-	-	-	-	-	-
5/40	40	216	Downlink	Low	1452	290400	1432.56	286512	0	15	3588	287070	6	1	2 (4)	5
				Mid	1474.5	294900	1436.7	287340	102		3642	291390	6	0	0 (0)	102
				High	1497	299400	1386.84	277368	504		3699	295950	2	0	1 (2)	506
				Low	705.5	141100	703.25	140650	0		-	-	-	-	-	-
		5	Uplink	Mid	718	143600	625.03	125006	504		-	-	-	-	-	-
				High	730.5	146100	727.17	145434	6		-	-	-	-	-	-
5/50	50	270	Downlink	Low	1457	291400	1432.7	286540	0	15	3587	287050	2	2	1 (2)	4
				Mid	1474.5	294900	1431.84	286368	102		3630	290430	10	0	0 (0)	102
				High	1492	298400	1376.98	275396	504		3676	294050	2	2	1 (2)	508
		5	Uplink	Low	705.5	141100	703.25	140650	0	-	-	-	-	-	-	-
				Mid	718	143600	625.03	125006	504		-	-	-	-	-	-
				High	730.5	146100	727.17	145434	6		-	-	-	-	-	-
10/10	10	52	Downlink	Low	1437	287400	1432.32	286464	0	15	3585	286830	2	0	0 (0)	0
				Mid	1474.5	294900	1451.46	290292	102		3681	294510	2	1	2 (4)	107
				High	1512	302400	1416.6	283320	504		3774	301950	6	1	1 (2)	507
		10	Uplink	Low	708	141600	703.32	140664	0	-	-	-	-	-	-	-
				Mid	718	143600	622.6	124520	504		-	-	-	-	-	-
				High	728	145600	722.24	144448	6		-	-	-	-	-	-
10/15	15	79	Downlink	Low	1439.5	287900	1432.39	286478	0	15	3586	286850	4	0	0 (0)	0
				Mid	1474.5	294900	1449.03	289806	102		3675	294030	4	1	2 (4)	107

				High	150 9.5	3019 00	1411 .67	282334	504		376 1	300970	8	1	1 (2)	507
	10	52	Uplink	Low	708	1416 00	703. 32	140664	0	-	-	-	-	-	-	-
				Mid	718	1436 00	622. 6	124520	504		-	-	-	-	-	-
				High	728	1456 00	722. 24	144448	6		-	-	-	-	-	-
10/20	20	106	Downdlink	Low	144 2	2884 00	1432 .46	286492	0	15	358 7	287050	6	1	2 (4)	5
				Mid	147 4.5	2949 00	1446 .6	289320	102		366 9	293550	6	1	2 (4)	107
				High	150 7	3014 00	1406 .74	281348	504		375 1	300050	6	1	2 (4)	509
	10	52	Uplink	Low	708	1416 00	703. 32	140664	0	-	-	-	-	-	-	-
				Mid	718	1436 00	622. 6	124520	504		-	-	-	-	-	-
				High	728	1456 00	722. 24	144448	6		-	-	-	-	-	-
10/25	25	133	Downdlink	Low	144 4.5	2889 00	1432 .53	286506	0	15	358 8	287070	8	1	2 (4)	5
				Mid	147 4.5	2949 00	1444 .17	288834	102		366 3	293070	8	1	2 (4)	107
				High	150 4.5	3009 00	1401 .81	280362	504		373 8	299070	8	1	2 (4)	509
	10	52	Uplink	Low	708	1416 00	703. 32	140664	0	-	-	-	-	-	-	-
				Mid	718	1436 00	622. 6	124520	504		-	-	-	-	-	-
				High	728	1456 00	722. 24	144448	6		-	-	-	-	-	-
10/30	30	160	Downdlink	Low	144 7	2894 00	1432 .6	286520	0	15	358 9	287090	10	1	2 (4)	5
				Mid	147 4.5	2949 00	1441 .74	288348	102		365 7	292590	10	1	2 (4)	107
				High	150 2	3004 00	1396 .88	279376	504		372 5	298090	10	1	2 (4)	509
	10	52	Uplink	Low	708	1416 00	703. 32	140664	0	-	-	-	-	-	-	-
				Mid	718	1436 00	622. 6	124520	504		-	-	-	-	-	-

				High	728	145600	722.24	144448	6		-	-	-	-	-	-
10/40	40	216	Downlink	Low	1452	290400	1432.56	286512	0	15	3588	287070	6	1	2 (4)	5
				Mid	1474.5	294900	1436.7	287340	102		3642	291390	6	0	0 (0)	102
				High	1497	299400	1386.84	277368	504		3699	295950	2	0	1 (2)	506
				Low	708	141600	703.32	140664	0		-	-	-	-	-	-
	10	52	Uplink	Mid	718	143600	622.6	124520	504		-	-	-	-	-	-
				High	728	145600	722.24	144448	6		-	-	-	-	-	-
10/50	50	270	Downlink	Low	1457	291400	1432.7	286540	0	15	3587	287050	2	2	1 (2)	4
				Mid	1474.5	294900	1431.84	286368	102		3630	290430	10	0	0 (0)	102
				High	1492	298400	1376.98	275396	504		3676	294050	2	2	1 (2)	508
	10	52	Uplink	Low	708	141600	703.32	140664	0	-	-	-	-	-	-	-
				Mid	718	143600	622.6	124520	504		-	-	-	-	-	-
				High	728	145600	722.24	144448	6		-	-	-	-	-	-
15/15	15	79	Downlink	Low	1439.5	287900	1432.39	286478	0	15	3586	286850	4	0	0 (0)	0
				Mid	1474.5	294900	1449.03	289806	102		3675	294030	4	1	2 (4)	107
				High	1509.5	301900	1411.67	282334	504		3761	300970	8	1	1 (2)	507
	15	79	Uplink	Low	710.5	142100	703.39	140678	0	-	-	-	-	-	-	-
				Mid	718	143600	620.17	124034	504		-	-	-	-	-	-
				High	725.5	145100	717.31	143462	6		-	-	-	-	-	-
15/20	20	106	Downlink	Low	1442	288400	1432.46	286492	0	15	3587	287050	6	1	2 (4)	5
				Mid	1474.5	294900	1446.6	289320	102		3669	293550	6	1	2 (4)	107

	15	79	Uplink	High	1507	301400	140674	281348	504	-	3751	300050	6	1	2 (4)	509
				Low	710.5	142100	703.39	140678	0		-	-	-	-	-	-
				Mid	718	143600	620.17	124034	504		-	-	-	-	-	-
				High	725.5	145100	717.31	143462	6		-	-	-	-	-	-
15/25	25	133	Downlink	Low	1444.5	288900	1432.53	286506	0	15	3588	287070	8	1	2 (4)	5
				Mid	1474.5	294900	1444.17	288834	102		3663	293070	8	1	2 (4)	107
				High	1504.5	300900	1401.81	280362	504		3738	299070	8	1	2 (4)	509
	15	79	Uplink	Low	710.5	142100	703.39	140678	0	-	-	-	-	-	-	-
				Mid	718	143600	620.17	124034	504		-	-	-	-	-	-
				High	725.5	145100	717.31	143462	6		-	-	-	-	-	-
15/30	30	160	Downlink	Low	1447	289400	1432.6	286520	0	15	3589	287090	10	1	2 (4)	5
				Mid	1474.5	294900	1441.74	288348	102		3657	292590	10	1	2 (4)	107
				High	1502	300400	1396.88	279376	504		3725	298090	10	1	2 (4)	509
	15	79	Uplink	Low	710.5	142100	703.39	140678	0	-	-	-	-	-	-	-
				Mid	718	143600	620.17	124034	504		-	-	-	-	-	-
				High	725.5	145100	717.31	143462	6		-	-	-	-	-	-
15/40	40	216	Downlink	Low	1452	290400	1432.56	286512	0	15	3588	287070	6	1	2 (4)	5
				Mid	1474.5	294900	1436.7	287340	102		3642	291390	6	0	0 (0)	102
				High	1497	299400	1386.84	277368	504		3699	295950	2	0	1 (2)	506
	15	79	Uplink	Low	710.5	142100	703.39	140678	0	-	-	-	-	-	-	-
				Mid	718	143600	620.17	124034	504		-	-	-	-	-	-

				High	725.5	145100	717.31	143462	6		-	-	-	-	-	-
15/50	50	270	Downlink	Low	1457	291400	1432.7	286540	0	15	3587	287050	2	2	1 (2)	4
				Mid	1474.5	294900	1431.84	286368	102		3630	290430	10	0	0 (0)	102
				High	1492	298400	1376.98	275396	504		3676	294050	2	2	1 (2)	508
				Low	710.5	142100	703.39	140678	0		-	-	-	-	-	-
	15	79	Uplink	Mid	718	143600	620.17	124034	504		-	-	-	-	-	-
				High	725.5	145100	717.31	143462	6		-	-	-	-	-	-
20/20	20	106	Downlink	Low	1442	288400	1432.46	286492	0	15	3587	287050	6	1	2 (4)	5
				Mid	1474.5	294900	1446.6	289320	102		3669	293550	6	1	2 (4)	107
				High	1507	301400	1406.74	281348	504		3751	300050	6	1	2 (4)	509
	20	106	Uplink	Low	713	142600	703.46	140692	0	-	-	-	-	-	-	-
				Mid	718	143600	617.74	123548	504		-	-	-	-	-	-
				High	723	144600	712.38	142476	6		-	-	-	-	-	-
20/25	25	133	Downlink	Low	1444.5	288900	1432.53	286506	0	15	3588	287070	8	1	2 (4)	5
				Mid	1474.5	294900	1444.17	288834	102		3663	293070	8	1	2 (4)	107
				High	1504.5	300900	1401.81	280362	504		3738	299070	8	1	2 (4)	509
	20	106	Uplink	Low	713	142600	703.46	140692	0	-	-	-	-	-	-	-
				Mid	718	143600	617.74	123548	504		-	-	-	-	-	-
				High	723	144600	712.38	142476	6		-	-	-	-	-	-
20/30	30	160	Downlink	Low	1447	289400	1432.6	286520	0	15	3589	287090	10	1	2 (4)	5
				Mid	1474.5	294900	1441.74	288348	102		3657	292590	10	1	2 (4)	107

	20	106	Uplink	High	1502	300400	1396.88	279376	504	-	3725	298090	10	1	2 (4)	509
				Low	713	142600	703.46	140692	0		-	-	-	-	-	-
				Mid	718	143600	617.74	123548	504		-	-	-	-	-	-
				High	723	144600	712.38	142476	6		-	-	-	-	-	-
20/40	40	216	Downlink	Low	1452	290400	1432.56	286512	0	15	3588	287070	6	1	2 (4)	5
				Mid	1474.5	294900	1436.7	287340	102		3642	291390	6	0	0 (0)	102
				High	1497	299400	1386.84	277368	504		3699	295950	2	0	1 (2)	506
	20	106	Uplink	Low	713	142600	703.46	140692	0	-	-	-	-	-	-	-
				Mid	718	143600	617.74	123548	504		-	-	-	-	-	-
				High	723	144600	712.38	142476	6		-	-	-	-	-	-
20/50	50	270	Downlink	Low	1457	291400	1432.7	286540	0	15	3587	287050	2	2	1 (2)	4
				Mid	1474.5	294900	1431.84	286368	102		3630	290430	10	0	0 (0)	102
				High	1492	298400	1376.98	275396	504		3676	294050	2	2	1 (2)	508
	20	106	Uplink	Low	713	142600	703.46	140692	0	-	-	-	-	-	-	-
				Mid	718	143600	617.74	123548	504		-	-	-	-	-	-
				High	723	144600	712.38	142476	6		-	-	-	-	-	-
25/25	25	133	Downlink	Low	1444.5	288900	1432.53	286506	0	15	3588	287070	8	1	2 (4)	5
				Mid	1474.5	294900	1444.17	288834	102		3663	293070	8	1	2 (4)	107
				High	1504.5	300900	1401.81	280362	504		3738	299070	8	1	2 (4)	509
	25	133	Uplink	Low	715.5	143100	703.53	140706	0	-	-	-	-	-	-	-
				Mid	718	143600	615.31	123062	504		-	-	-	-	-	-

				High	720.5	144100	707.45	141490	6		-	-	-	-	-	-
25/30	30	160	Downlink	Low	1447	289400	1432.6	286520	0	15	3589	287090	10	1	2 (4)	5
				Mid	1474.5	294900	1441.74	288348	102		3657	292590	10	1	2 (4)	107
				High	1502	300400	1396.88	279376	504		3725	298090	10	1	2 (4)	509
	25	133	Uplink	Low	715.5	143100	703.53	140706	0	-	-	-	-	-	-	-
				Mid	718	143600	615.31	123062	504		-	-	-	-	-	-
				High	720.5	144100	707.45	141490	6		-	-	-	-	-	-
25/40	40	216	Downlink	Low	1452	290400	1432.56	286512	0	15	3588	287070	6	1	2 (4)	5
				Mid	1474.5	294900	1436.7	287340	102		3642	291390	6	0	0 (0)	102
				High	1497	299400	1386.84	277368	504		3699	295950	2	0	1 (2)	506
	25	133	Uplink	Low	715.5	143100	703.53	140706	0	-	-	-	-	-	-	-
				Mid	718	143600	615.31	123062	504		-	-	-	-	-	-
				High	720.5	144100	707.45	141490	6		-	-	-	-	-	-
25/50	50	270	Downlink	Low	1457	291400	1432.7	286540	0	15	3587	287050	2	2	1 (2)	4
				Mid	1474.5	294900	1431.84	286368	102		3630	290430	10	0	0 (0)	102
				High	1492	298400	1376.98	275396	504		3676	294050	2	2	1 (2)	508
	25	133	Uplink	Low	715.5	143100	703.53	140706	0	-	-	-	-	-	-	-
				Mid	718	143600	615.31	123062	504		-	-	-	-	-	-
				High	720.5	144100	707.45	141490	6		-	-	-	-	-	-
30/30	30	160	Downlink	Low	1474.5	294900	1460.1	292020	0	15	3657	292590	10	1	2 (4)	5
				Mid												

				High												
	30	160	Uplink	Low	718	143600	703.6	140720	0	-	-	-	-	-	-	-
				Mid												
High																
30/40	40	216	Downlink	Low	1474.5	294900	1455.06	291012	0	15	3642	291390	6	0	0 (0)	0
				Mid												
				High												
	30	160	Uplink	Low	718	143600	703.6	140720	0	-	-	-	-	-	-	-
				Mid												
				High												
30/50	50	270	Downlink	Low	1474.5	294900	1450.2	290040	0	15	3630	290430	10	0	0 (0)	0
				Mid												
				High												
	30	160	Uplink	Low	718	143600	703.6	140720	0	-	-	-	-	-	-	-
				Mid												
				High												
Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-1 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.																
Note 2: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs.																

Table 4.3.1.1.1.109-2: Test frequencies for NR operating band n109 and SCS 30 kHz

UL/DLC BW Combination [MHz]	CB W [MHz]	carrierBandwidth [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequencyPointA [ARFCN]	offsetTo Carrier [Carrier PRBs]	SS block SCS [kHz]	GS CN	absoluteFrequencySSB [ARFCN]	k_{SSB}	Offset Carrier CORESET#0 [RBs] Note 2	CORESET#0 Index (Offset [RBs]) Note 1	offsetToPointA (SIB1) [PRBs] Note 1
10/10	10	24	Downlink	Low	1437	287400	1432.68	286536	0	15	3591	287310	18	0	0 (5)	10
				Mid	1474.5	294900	1433.46	286692	102		3687	294990	6	0	3 (8)	220
				High	1512	302400	1326.24	265248	504		3780	302430	10	0	2 (7)	1022
	10	24	Uplink	Low	708	141600	703.68	140736	0	-	-	-	-	-	-	-
				Mid	718	143600	532.24	106448	504		-	-	-	-	-	-
				High	728	145600	721.52	144304	6		-	-	-	-	-	-
10/15	15	38	Downlink	Low	1439.5	287900	1432.66	286532	0	15	3592	287330	2	0	1 (6)	12
				Mid	1474.5	294900	1430.94	286188	102		3678	294270	6	0	0 (5)	214
				High	1509.5	301900	1321.22	264244	504		3767	301450	18	0	2 (7)	1022
	10	24	Uplink	Low	708	141600	703.68	140736	0	-	-	-	-	-	-	-
				Mid	718	143600	532.24	106448	504		-	-	-	-	-	-
				High	728	145600	721.52	144304	6		-	-	-	-	-	-
10/20	20	51	Downlink	Low	1442	288400	1432.82	286564	0	15	3590	287290	2	0	0 (5)	10
				Mid	1474.5	294900	1428.6	285720	102		3672	293790	2	0	0 (5)	214
				High	1507	301400	1316.38	263276	504		3754	300290	2	0	0 (5)	1018
	10	24	Uplink	Low	708	141600	703.68	140736	0	-	-	-	-	-	-	-

				Mid	718	143600	532.24	106448	504		-	-	-	-	-	-
				High	728	145600	721.52	144304	6		-	-	-	-	-	-
10/25	25	65	Downlink	Low	1444.5	288900	1432.8	286560	0	15	3591	287310	10	0	0 (5)	10
				Mid	1474.5	294900	1426.08	285216	102		3666	293310	10	0	0 (5)	214
				High	1504.5	300900	1311.36	262272	504		3741	299310	10	0	0 (5)	1018
	10	24	Uplink	Low	708	141600	703.68	140736	0	-	-	-	-	-	-	-
				Mid	718	143600	532.24	106448	504		-	-	-	-	-	-
				High	728	145600	721.52	144304	6		-	-	-	-	-	-
10/30	30	78	Downlink	Low	1447	289400	1432.96	286592	0	15	3592	287330	6	0	0 (5)	10
				Mid	1474.5	294900	1423.74	284748	102		3660	292830	6	0	0 (5)	214
				High	1502	300400	1306.52	261304	504		3731	298570	14	0	3 (8)	1024
	10	24	Uplink	Low	708	141600	703.68	140736	0	-	-	-	-	-	-	-
				Mid	718	143600	532.24	106448	504		-	-	-	-	-	-
				High	728	145600	721.52	144304	6		-	-	-	-	-	-
10/40	40	106	Downlink	Low	1452	290400	1432.92	286584	0	15	3591	287310	2	0	0 (5)	10
				Mid	1474.5	294900	1418.7	283740	102		3648	291870	22	0	0 (5)	214
				High	1497	299400	1296.48	259296	504		3705	296430	18	0	1 (6)	1020
	10	24	Uplink	Low	708	141600	703.68	140736	0	-	-	-	-	-	-	-
				Mid	718	143600	532.24	106448	504		-	-	-	-	-	-
				High	728	145600	721.52	144304	6		-	-	-	-	-	-
10/50	50	133	Downlink	Low	1457	291400	1433.06	286612	0	15	3593	287530	18	0	2 (7)	14

				Mi d	147 4.5	2949 00	1413 .84	282768	102		363 6	290910	2	0	1 (6)	216
				Hi gh	149 2	2984 00	1286 .62	257324	504		368 2	294530	18	0	2 (7)	1022
				Lo w	708	1416 00	703. 68	140736	0		-	-	-	-	-	-
	10	24	Uplin k	Mi d	718	1436 00	532. 24	106448	504		-	-	-	-	-	-
				Hi gh	728	1456 00	721. 52	144304	6		-	-	-	-	-	-
				Lo w	143 9.5	2879 00	1432 .66	286532	0	15	359 2	287330	2	0	1 (6)	12
15/15	15	38	Dow nlink	Mi d	147 4.5	2949 00	1430 .94	286188	102		367 8	294270	6	0	0 (5)	214
				Hi gh	150 9.5	3019 00	1321 .22	264244	504		376 7	301450	18	0	2 (7)	1022
				Lo w	710. 5	1421 00	703. 66	140732	0		-	-	-	-	-	-
	15	38	Uplin k	Mi d	718	1436 00	529. 72	105944	504		-	-	-	-	-	-
				Hi gh	725. 5	1451 00	716. 5	143300	6		-	-	-	-	-	-
				Lo w	144 2	2884 00	1432 .82	286564	0	15	359 0	287290	2	0	0 (5)	10
15/20	20	51	Dow nlink	Mi d	147 4.5	2949 00	1428 .6	285720	102		367 2	293790	2	0	0 (5)	214
				Hi gh	150 7	3014 00	1316 .38	263276	504		375 4	300290	2	0	0 (5)	1018
				Lo w	710. 5	1421 00	703. 66	140732	0		-	-	-	-	-	-
	15	38	Uplin k	Mi d	718	1436 00	529. 72	105944	504		-	-	-	-	-	-
				Hi gh	725. 5	1451 00	716. 5	143300	6		-	-	-	-	-	-
				Lo w	144 4.5	2889 00	1432 .8	286560	0	15	359 1	287310	10	0	0 (5)	10
15/25	25	65	Dow nlink	Mi d	147 4.5	2949 00	1426 .08	285216	102		366 6	293310	10	0	0 (5)	214
				Hi gh	150 4.5	3009 00	1311 .36	262272	504		374 1	299310	10	0	0 (5)	1018
				Lo w	710. 5	1421 00	703. 66	140732	0		-	-	-	-	-	-
	15	38	Uplin k	Lo w	710. 5	1421 00	703. 66	140732	0		-	-	-	-	-	-

				Mid	718	143600	529.72	105944	504		-	-	-	-	-	-
				High	725.5	145100	716.5	143300	6		-	-	-	-	-	-
15/30	30	78	Downlink	Low	1447	289400	1432.96	286592	0	15	3592	287330	6	0	0 (5)	10
				Mid	1474.5	294900	1423.74	284748	102		3660	292830	6	0	0 (5)	214
				High	1502	300400	1306.52	261304	504		3731	298570	14	0	3 (8)	1024
	15	38	Uplink	Low	710.5	142100	703.66	140732	0	-	-	-	-	-	-	-
				Mid	718	143600	529.72	105944	504		-	-	-	-	-	-
				High	725.5	145100	716.5	143300	6		-	-	-	-	-	-
15/40	40	106	Downlink	Low	1452	290400	1432.92	286584	0	15	3591	287310	2	0	0 (5)	10
				Mid	1474.5	294900	1418.7	283740	102		3648	291870	22	0	0 (5)	214
				High	1497	299400	1296.48	259296	504		3705	296430	18	0	1 (6)	1020
	15	38	Uplink	Low	710.5	142100	703.66	140732	0	-	-	-	-	-	-	-
				Mid	718	143600	529.72	105944	504		-	-	-	-	-	-
				High	725.5	145100	716.5	143300	6		-	-	-	-	-	-
15/50	50	133	Downlink	Low	1457	291400	1433.06	286612	0	15	3593	287530	18	0	2 (7)	14
				Mid	1474.5	294900	1413.84	282768	102		3636	290910	2	0	1 (6)	216
				High	1492	298400	1286.62	257324	504		3682	294530	18	0	2 (7)	1022
	15	38	Uplink	Low	710.5	142100	703.66	140732	0	-	-	-	-	-	-	-
				Mid	718	143600	529.72	105944	504		-	-	-	-	-	-
				High	725.5	145100	716.5	143300	6		-	-	-	-	-	-
20/20	20	51	Downlink	Low	1442	288400	1432.82	286564	0	15	3590	287290	2	0	0 (5)	10

				Mi d	147 4.5	2949 00	1428 .6	285720	102		367 2	293790	2	0	0 (5)	214
				Hi gh	150 7	3014 00	1316 .38	263276	504		375 4	300290	2	0	0 (5)	1018
				Lo w	713	1426 00	703. 82	140764	0		-	-	-	-	-	-
				Mi d	718	1436 00	527. 38	105476	504		-	-	-	-	-	-
				Hi gh	723	1446 00	711. 66	142332	6		-	-	-	-	-	-
				Lo w	713	1426 00	703. 82	140764	0		-	-	-	-	-	-
20/25	25	65	Dow nlink	Mi d	147 4.5	2949 00	1426 .08	285216	102	15	359 1	287310	10	0	0 (5)	10
				Hi gh	150 4.5	3009 00	1311 .36	262272	504		366 6	293310	10	0	0 (5)	214
				Lo w	713	1426 00	703. 82	140764	0		374 1	299310	10	0	0 (5)	1018
				Mi d	718	1436 00	527. 38	105476	504		-	-	-	-	-	-
				Hi gh	723	1446 00	711. 66	142332	6		-	-	-	-	-	-
				Lo w	713	1426 00	703. 82	140764	0		-	-	-	-	-	-
20/30	30	78	Dow nlink	Mi d	147 4.5	2949 00	1423 .74	284748	102	15	359 2	287330	6	0	0 (5)	10
				Hi gh	150 2	3004 00	1306 .52	261304	504		366 0	292830	6	0	0 (5)	214
				Lo w	713	1426 00	703. 82	140764	0		373 1	298570	14	0	3 (8)	1024
				Mi d	718	1436 00	527. 38	105476	504		-	-	-	-	-	-
				Hi gh	723	1446 00	711. 66	142332	6		-	-	-	-	-	-
				Lo w	713	1426 00	703. 82	140764	0		-	-	-	-	-	-
20/40	40	106	Dow nlink	Mi d	147 4.5	2949 00	1418 .7	283740	102	15	359 1	287310	2	0	0 (5)	10
				Hi gh	149 7	2994 00	1296 .48	259296	504		364 8	291870	22	0	0 (5)	214
				Lo w	713	1426 00	703. 82	140764	0		370 5	296430	18	0	1 (6)	1020
				Mi d	147 4.5	2949 00	1418 .7	283740	102		-	-	-	-	-	-
				Hi gh	149 7	2994 00	1296 .48	259296	504		-	-	-	-	-	-
				Lo w	713	1426 00	703. 82	140764	0		-	-	-	-	-	-

				Mid	718	143600	527.38	105476	504		-	-	-	-	-	-
				High	723	144600	711.66	142332	6		-	-	-	-	-	-
20/50	50	133	Downlink	Low	1457	291400	1433.06	286612	0	15	3593	287530	18	0	2 (7)	14
				Mid	1474.5	294900	1413.84	282768	102		3636	290910	2	0	1 (6)	216
				High	1492	298400	1286.62	257324	504		3682	294530	18	0	2 (7)	1022
	20	51	Uplink	Low	713	142600	703.82	140764	0	-	-	-	-	-	-	-
				Mid	718	143600	527.38	105476	504		-	-	-	-	-	-
				High	723	144600	711.66	142332	6		-	-	-	-	-	-
25/25	25	65	Downlink	Low	1444.5	288900	1432.8	286560	0	15	3591	287310	10	0	0 (5)	10
				Mid	1474.5	294900	1426.08	285216	102		3666	293310	10	0	0 (5)	214
				High	1504.5	300900	1311.36	262272	504		3741	299310	10	0	0 (5)	1018
	25	65	Uplink	Low	715.5	143100	703.8	140760	0	-	-	-	-	-	-	-
				Mid	718	143600	524.86	104972	504		-	-	-	-	-	-
				High	720.5	144100	706.64	141328	6		-	-	-	-	-	-
25/30	30	78	Downlink	Low	1447	289400	1432.96	286592	0	15	3592	287330	6	0	0 (5)	10
				Mid	1474.5	294900	1423.74	284748	102		3660	292830	6	0	0 (5)	214
				High	1502	300400	1306.52	261304	504		3731	298570	14	0	3 (8)	1024
	25	65	Uplink	Low	715.5	143100	703.8	140760	0	-	-	-	-	-	-	-
				Mid	718	143600	524.86	104972	504		-	-	-	-	-	-
				High	720.5	144100	706.64	141328	6		-	-	-	-	-	-
25/40	40	106	Downlink	Low	1452	290400	1432.92	286584	0	15	3591	287310	2	0	0 (5)	10

				Mid	147 4.5	2949 00	1418 .7	283740	102		364 8	291870	22	0	0 (5)	214
				High	149 7	2994 00	1296 .48	259296	504		370 5	296430	18	0	1 (6)	1020
				Low	715. 5	1431 00	703. 8	140760	0		-	-	-	-	-	-
				Mid	718	1436 00	524. 86	104972	504		-	-	-	-	-	-
				High	720. 5	1441 00	706. 64	141328	6		-	-	-	-	-	-
25/50	50	133	Downlink	Low	145 7	2914 00	1433 .06	286612	0	15	359 3	287530	18	0	2 (7)	14
				Mid	147 4.5	2949 00	1413 .84	282768	102		363 6	290910	2	0	1 (6)	216
				High	149 2	2984 00	1286 .62	257324	504		368 2	294530	18	0	2 (7)	1022
	25	65	Uplink	Low	715. 5	1431 00	703. 8	140760	0	-	-	-	-	-	-	-
				Mid	718	1436 00	524. 86	104972	504		-	-	-	-	-	-
				High	720. 5	1441 00	706. 64	141328	6		-	-	-	-	-	-
30/30	30	78	Downlink	Low	147 4.5	2949 00	1460 .46	292092	0	15	366 0	292830	6	0	0 (5)	10
				Mid												
				High												
	30	78	Uplink	Low	718	1436 00	703. 96	140792	0	-	-	-	-	-	-	-
				Mid												
				High												
30/40	40	106	Downlink	Low	147 4.5	2949 00	1455 .42	291084	0	15	364 8	291870	22	0	0 (5)	10
				Mid												
				High												
	30	78	Uplink	Low	718	1436 00	703. 96	140792	0	-	-	-	-	-	-	-

				Mid												
				High												
30/50	50	133	Downlink	Low	1474.5	294900	1450.56	290112	0	15	3636	290910	2	0	1 (6)	12
				Mid												
				High												
	30	78	Uplink	Low	718	143600	703.96	140792	0	-	-	-	-	-	-	-
			Mid													
			High													
Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-1 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.																
Note 2: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs.																

4.3.1.1.1.110

Reference test frequencies for NR operating band n110

Table 4.3.1.1.1.110-1: Test frequencies for NR operating band n110 and SCS 15 kHz

CBW [MHz]	carrierBandwidth [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequencyPointA [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS [kHz]	GS CN	absoluteFrequencySSB [ARFCN]	k_{SSE}	Offset Carrier CORESET#0 [RBs] Note 2	CORESET#0 Index (Offset [RBs]) Note 1	offsetToPointA (SIB1) [PRBs] Note 1
3	15	Downlink	Low	1433.5	286700	1432.15	286430	0	15	33803	286670	8	0	2 (0)	0
			Mid												
			High												
		Uplink	Low	1391.5	278300	1390.15	278030	0	-	-	-	-	-	-	-

			Mi d	139 3.5	27870 0	1392 .15	278430	0		-	-	-	-	-	-
			Hi gh												

Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-0 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.

Note 2: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs.

4.3.1.1.2 NR inter-band CA configurations in FR1

4.3.1.1.2.0 General

Test configurations for NR CA band combinations in FR1 in this clause are used by both RF and Signalling testing. General rules for deciding test configurations are applied in Table 4.3.1.1.2.2-1 and Table 4.3.1.1.2.3-1 if no explicit test configurations are defined. In such cases, the test configurations are referenced to the general rules which are represented by symbolic CA configurations in the corresponding tables. Any CA configurations not applying the general rules such as special cases for test configurations are listed separately for each configuration. General rules for deciding test configurations are not applied to CA band combinations applicable to signalling tests and to CA band combinations with two bands in Table 4.3.1.1.2.1-1.

4.3.1.1.2.1 NR inter-band CA configurations in FR1 (two bands)

Table 4.3.1.1.2.1-1: Inter-band NR CA configurations (FR1, two bands)

NR CA configuration	Uplink NR CA configuration	NR CA downlink configuration band 1 (Note 3)	NR CA downlink configuration band 2	NR CA uplink configuration band 1	NR CA uplink configuration band 2	Applicable for protocol testing (Note 2)
CA n1A-n3A	CA n1A-n3A	n1A	n3A	n1A	n3A	Yes
CA n1A-n8A	CA n1A-n8A	n1A	n8A	n1A	n8A	Yes
CA n1(2A)-n3A	-	CA n1(2A)	n3A	n1A	n3A	No
CA n1A-n5A	CA n1A-n5A	n1A	n5A	n1A	n5A	Yes
CA n1(2A)-n5A	-	CA n1(2A)	n5A	-	-	No
CA n1(2A)-n8A	-	CA n1(2A)	n8A	-	-	No
CA n1A-n26A	CA n1A-n26A	n1A	n26A	n1A	n26A	Yes
CA n1A-n28A	CA n1A-n28A	n1A	n28A	n1A	n28A	Yes
CA n1A-n41A	CA n1A-n41A	n1A	n41A	n1A	n41A	Yes
CA n1A-n71A	CA n1A-n71A	n1A	n71A	n1A	n71A	Yes
CA n1A-n77A	CA n1A-n77A	n1A	n77A	n1A	n77A	Yes
CA n1A-n77(2A)	CA n1A-n77A	n1A	CA n77(2A)	n1A	n77A	No

NR CA configuration	Uplink NR CA configuration	NR CA downlink configuration band 1 (Note 3)	NR CA downlink configuration band 2	NR CA uplink configuration band 1	NR CA uplink configuration band 2	Applicable for protocol testing (Note 2)
CA_n1A-n78A	CA_n1A-n78A	n1A	n78A	n1A	n78A	Yes
CA_n1A-n78(2A)	CA_n1A-n78A	n1A	CA_n78(2A)	n1A	n78A	No
CA_n1A-n78C	CA_n1A-n78A	n1A	CA_n78C	n1A	n78A	No
CA_n1(2A)-n78A	-	CA_n1(2A)	n78A	-	-	No
CA_n1A-n79A	CA_n1A-n79A	n1A	n79A	n1A	n79A	Yes
CA_n2A-n5A	CA_n2A-n5A	n2A	n5A	n2A	n5A	Yes
CA_n2(2A)-n5A	CA_n2A-n5A	CA_n2(2A)	n5A	n2A	n5A	No
CA_n2A-n12A	CA_n2A-n12A	n2A	n12A	n2A	n12A	Yes
CA_n2A-n14A	CA_n2A-n14A	n2A	n14A	n2A	n14A	Yes
CA_n2(2A)-n14A	CA_n2A-n14A	CA_n2(2A)	n14A	n2A	n14A	No
CA_n2A-n30A	CA_n2A-n30A	n2A	n30A	n2A	n30A	Yes
CA_n2(2A)-n30A	CA_n2A-n30A	CA_n2(2A)	n30A	n2A	n30A	No
CA_n2A-n48A	CA_n2A-n48A	n2A	n48A	n2A	n48A	Yes
CA_n2A-n48(2A)	CA_n2A-n48A	n2A	CA_n48(2A)	n2A	n48A	No
CA_n2A-n48B	CA_n2A-n48A	n2A	CA_n48B	n2A	n48A	No
CA_n2A-n48B	CA_n48B	CA_n48B	n2A	CA_n48B	-	No
CA_n2A-n66A	CA_n2A-n66A	n2A	n66A	n2A	n66A	Yes
CA_n2(2A)-n66A	CA_n2A-n66A	CA_n2(2A)	n66A	n2A	n66A	No
CA_n2A-n66(2A)	CA_n2A-n66A	n2A	CA_n66(2A)	n2A	n66A	No
CA_n2(2A)-n66(2A)	CA_n2A-n66A	CA_n2(2A)	CA_n66(2A)	n2A	n66A	No
CA_n2A-n66(3A)	CA_n2A-n66A	n2A	CA_n66(3A)	n2A	n66A	No
CA_n2A-n77A	CA_n2A-n77A	n2A	n77A	n2A	n77A	Yes
CA_n2A-n77C	CA_n2A-n77A	n2A	CA_n77C	n2A	n77A	No
CA_n2A-n77C	CA_n77C	CA_n77C	n2A	CA_n77C	-	No
CA_n2A-n77(2A)	CA_n2A-n77A	n2A	CA_n77(2A)	n2A	n77A	No
CA_n2(2A)-n77A	CA_n2A-n77A	CA_n2(2A)	n77A	n2A	n77A	No
CA_n2(2A)-n77(2A)	CA_n2A-n77A	CA_n2(2A)	CA_n77(2A)	n2A	n77A	No
CA_n3A-n5A	CA_n3A-n5A	n3A	n5A	n3A	n5A	Yes
CA_n3(2A)-n5A	-	CA_n3(2A)	n5A	-	-	No
CA_n3A-n8A	CA_n3A-n8A	n3A	n8A	n3A	n8A	Yes
CA_n3(2A)-n8A	-	CA_n3(2A)	n8A	-	-	No
CA_n3A-n28A	CA_n3A-n28A	n3A	n28A	n3A	n28A	Yes
CA_n3A-n40A	CA_n3A-n40A	n3A	n40A	n3A	n40A	Yes
CA_n3A-n41A	CA_n3A-n41A	n3A	n41A	n3A	n41A	Yes
CA_n3A-n71A	CA_n3A-n71A	n3A	n71A	n3A	n71A	Yes
CA_n3A-n77A	CA_n3A-n77A	n3A	n77A	n3A	n77A	Yes

NR CA configuration	Uplink NR CA configuration	NR CA downlink configuration band 1 (Note 3)	NR CA downlink configuration band 2	NR CA uplink configuration band 1	NR CA uplink configuration band 2	Applicable for protocol testing (Note 2)
CA_n3A-n77(2A)	CA_n3A-n77A	n3A	CA_n77(2A)	n3A	n77A	No
CA_n3A-n77(2A)	CA_n77(2A)	n3A	CA_n77(2A)	-	CA_n77(2A)	No
CA_n3A-n78A	CA_n3A-n78A	n3A	n78A	n3A	n78A	Yes
CA_n3A-n78(2A)	CA_n3A-n78A	n3A	CA_n78(2A)	n3A	n78A	No
	CA_n78(2A)	n3A	CA_n78(2A)	-	CA_n78(2A)	No
CA_n3(2A)-n78A	-	CA_n3(2A)	n78A	-	-	No
CA_n3A-n79A	CA_n3A-n79A	n3A	n79A	n3A	n79A	Yes
CA_n5A-n7A	-	n5A	n7A	-	-	Yes
CA_n5A-n25A	CA_n5A-n25A	n5A	n25A	n5A	n25A	Yes
CA_n5A-n28A	CA_n5A-n28A	n5A	n28A	n5A	n28A	Yes
CA_n5A-n29A	CA_n5A-n29A	n5A	n29A	n5A	-	Yes
CA_n5A-n30A	CA_n5A-n30A	n5A	n30A	n5A	n30A	Yes
CA_n5A-n48A	CA_n5A-n48A	n5A	n48A	n5A	n48A	Yes
CA_n5A-n48(2A)	CA_n5A-n48A	N5A	CA_n48(2A)	n5A	n48A	No
CA_n5A-n48B	CA_n5A-n48A	n5A	CA_n48B	n5A	n48A	No
CA_n5A-n48B	CA_n48B	CA_n48B	n5A	CA_n48B	-	No
CA_n5A-n66A	CA_n5A-n66A	n5A	n66A	n5A	n66A	Yes
CA_n5A-n66(2A)	CA_n5A-n66A	n5A	CA_n66(2A)	n5A	n66A	No
CA_n5A-n66(3A)	CA_n5A-n66A	n5A	CA_n66(3A)	n5A	n66A	No
CA_n5A-n77A	CA_n5A-n77A	n5A	n77A	n5A	n77A	Yes
CA_n5A-n77C	CA_n5A-n77A	n5A	CA_n77C	n5A	n77A	No
CA_n5A-n77C	CA_n77C	CA_n77C	n5A	CA_n77C	-	No
CA_n5A-n77(2A)	CA_n5A-n77A	n5A	CA_n77(2A)	n5A	n77A	No
CA_n5A-n78A	CA_n5A-n78A	n5A	n78A	n5A	n78A	Yes
CA_n5A-n78(2A)	CA_n5A-n78A	n5A	CA_n78(2A)	n5A	n78A	No
CA_n5B-n77A	CA_n5A-n77A	CA_n5B	n77A	n5A	n77A	No
CA_n5B-n77C	CA_n5A-n77A	CA_n5B	CA_n77C	n5A	n77A	No
CA_n5A-n79A	CA_n5A-n79A	n5A	n79A	n5A	n79A	Yes
CA_n7A-n78A	-	n7A	n78A	-	-	Yes
CA_n8A-n77A	CA_n8A-n77A	n8A	n77A	n8A	n77A	Yes
CA_n8A-n77(2A)	CA_n8A-n77A	n8A	CA_n77(2A)	n8A	n77A	No
CA_n8A-n78A	CA_n8A-n78A	n8A	n78A	n8A	n78A	Yes
CA_n8A-n78(2A)	CA_n8A-n78A	n8A	CA_n78(2A)	n8A	CA_n78(2A)	No
CA_n14A-n30A	CA_n14A-n30A	n14A	n30A	n14A	n30A	Yes
CA_n14A-n66A	CA_n14A-n66A	n14A	n66A	n14A	n66A	Yes
CA_n14A-n66(2A)	CA_n14A-n66A	n14A	CA_n66(2A)	n14A	n66A	No

NR CA configuration	Uplink NR CA configuration	NR CA downlink configuration band 1 (Note 3)	NR CA downlink configuration band 2	NR CA uplink configuration band 1	NR CA uplink configuration band 2	Applicable for protocol testing (Note 2)
CA_n14A-n66(3A)	CA_n14A-n66A	n14A	CA_n66(3A)	n14A	n66A	No
CA_n14A-n77A	CA_n14A-n77A	n14A	n77A	n14A	n77A	Yes
CA_n14A-n77(2A)	CA_n14A-n77A	n14A	CA_n77(2A)	n14A	n77A	No
CA_n20A-n78A	CA_n20A-n78A	n20A	n78A	n20A	n78A	Yes
CA_n24A-n41A	CA_n24A-n41A	n24A	n41A	n24A	n41A	Yes
CA_n24A-n41(2A)	CA_n24A-n41A	n24A	CA_n41(2A)	n24A	n41A	No
CA_n24A-n48A	CA_n24A-n48A	n24A	n48A	n24A	n48A	Yes
CA_n24A-n48B	CA_n24A-n48A	n24A	CA_n48B	n24A	n48A	No
CA_n24A-n48(2A)	CA_n24A-n48A	n24A	CA_n48(2A)	n24A	n48A	No
CA_n24A-n77A	CA_n24A-n77A	n24A	n77A	n24A	n77A	Yes
CA_n24A-n77C	CA_n24A-n77A	n24A	CA_n77C	n24A	n77A	No
CA_n25A-n41A	CA_n25A-n41A	n25A	n41A	n25A	n41A	Yes
CA_n25A-n41(2A)	CA_n25A-n41A	n25A	CA_n41(2A)	n25A	n41A	No
CA_n25(2A)-n41A	CA_n25A-n41A	CA_n25(2A)	n41A	n25A	n41A	No
CA_n25A-n41C	CA_n25A-n41A	n25A	CA_n41C	n25A	n41A	No
CA_n25A-n46A	CA_n25A-n46A	n25A	n46A	n25A	n46A	Yes
CA_n25A-n66A	CA_n25A-n66A	n25A	n66A	n25A	n66A	Yes
CA_n25A-n66(2A)	CA_n25A-n66A	n25A	n66(2A)	n25A	n66A	No
CA_n25(2A)-n66A	CA_n25A-n66A	n25(2A)	n66A	n25A	n66A	No
CA_n25A-n71A	CA_n25A-n71A	n25A	n71A	n25A	n71A	Yes
CA_n25A-n77A	CA_n25A-n77A	n25A	n77A	n25A	n77A	Yes
CA_n25A-n77A(2A)	CA_n25A-n77A	n25A	CA_n77(2A)	n25A	n77A	No
CA_n25A-n78A	CA_n25A-n78A	n25A	n78A	n25A	n78A	Yes
CA_n25A-n78A(2A)	CA_n25A-n78A	n25A	CA_n78(2A)	n25A	n78A	No
CA_n26A-n28A	CA_n26A-n28A	n26A	n28A	n26A	n28A	Yes
CA_n26A-n66A	CA_n26A-n66A	n26A	n66A	n26A	n66A	Yes
CA_n26A-n66(2A)	CA_n26A-n66A	n26A	CA_n66(2A)	n26A	n66A	No
CA_n26A-n70A	CA_n26A-n70A	n26A	n70A	n26A	n70A	Yes
CA_n26A-n78A	CA_n26A-n78A	n26A	n78A	n26A	n78A	Yes
CA_n28A-n40A	CA_n28A-n40A	n28A	n40A	n28A	n40A	Yes
CA_n28A-n41A	CA_n28A-n41A	n28A	n41A	n28A	n41A	Yes
CA_n28A-n41C	CA_n28A-n41A	n28A	CA_n41C	n28A	n41A	No
	CA_n41C	n28A	CA_n41C	-	CA_n41C	No
CA_n28A-n71A	CA_n28A-n71A	n28A	n71A	n28A	n71A	Yes
CA_n28A-n77A	CA_n28A-n77A	n28A	n77A	n28A	n77A	Yes
CA_n28A-n77(2A)	CA_n28A-n77A	n28A	CA_n77(2A)	n28A	n77A	No

NR CA configuration	Uplink NR CA configuration	NR CA downlink configuration band 1 (Note 3)	NR CA downlink configuration band 2	NR CA uplink configuration band 1	NR CA uplink configuration band 2	Applicable for protocol testing (Note 2)
CA_n28A-n77(2A)	CA_n77(2A)	n28A	CA_n77(2A)	-	CA_n77(2A)	No
CA_n28A-n78A	CA_n28A-n78A	n28A	n78A	n28A	n78A	Yes
CA_n28A-n78(2A)	CA_n28A-n78A	n28A	CA_n78(2A)	n28A	n78A	No
CA_n28A-n78(2A)	CA_n78(2A)	n28A	CA_n78(2A)	-	CA_n78(2A)	No
CA_n28A-n79A	CA_n28A-n79A	n28A	n79A	n28A	n79A	Yes
CA_n29A-n66A	-	n29A	n66A (Note 1)	-	-	Yes
CA_n29B-n66B	-	n29A	CA_n66B (Note 1)	-	-	No
CA_n29A-n66(2A)	-	n29A	CA_n66(2A) (Note 1)	-	-	No
CA_n29A-n70A	-	n29A	n70A (Note 1)	-	-	Yes
CA_n29A-n71A	-	n29A	n71A (Note 1)	-	-	Yes
CA_n30A-n66A	CA_n30A-n66A	n30A	n66A	n30A	n66A	Yes
CA_n30A-n66(2A)	CA_n30A-n66A	n30A	CA_n66(2A)	n30A	n66A	No
CA_n30A-n66(3A)	CA_n30A-n66A	n30A	CA_n66(3A)	n30A	n66A	No
CA_n30A-n77A	CA_n30A-n77A	n30A	n77A	n30A	n77A	Yes
CA_n30A-n77(2A)	CA_n30A-n77A	n30A	CA_n77(2A)	n30A	n77A	No
CA_n39A-n41A	CA_n39A-n41A	n39A	n41A	n39A	n41A	Yes
CA_n40A-n41A	CA_n40A-n41A	n40A	n41A	n40A	n41A	Yes
CA_n40A-n71A	CA_n40A-n71A	n40A	n71A	n40A	n71A	Yes
CA_n40A-n77A	CA_n40A-n77A	n40A	n77A	n40A	n77A	Yes
CA_n41A-n66A	-	n41A	n66A	-	-	Yes
CA_n41A-n71A	CA_n41A-n71A	n41A	n71A	n41A	n71A	Yes
CA_n41A-n71B	-	n41A	CA_n71B	-	-	No
CA_n41A-n77A	CA_n41A-n77A	n41A	n77A	n41A	n77A	Yes
CA_n41A-n79A	CA_n41A-n79A	n41A	n79A	n41A	n79A	Yes
CA_n41A-n79C	CA_n79C	CA_n79C	n41A	CA_n79C	-	No
CA_n41C-n66A	-	CA_n41C	n66A	-	-	No
CA_n41C-n71A	-	CA_n41C	n71A	-	-	No
CA_n41C-n79A	CA_n41A-n79A	CA_n41C	n79A	n41A	n79A	No
	CA_n41C	CA_n41C	n79A	CA_n41C	-	No
CA_n41C-n79C	-	CA_n41C	CA_n79C	-	-	No
	CA_n41C	CA_n41C	CA_n79C	CA_n41C	-	No

NR CA configuration	Uplink NR CA configuration	NR CA downlink configuration band 1 (Note 3)	NR CA downlink configuration band 2	NR CA uplink configuration band 1	NR CA uplink configuration band 2	Applicable for protocol testing (Note 2)
	CA_n79C	CA_n79C	CA_n41C	CA_n79C	-	No
	CA_n41A-n79A	CA_n41C	CA_n79C	n41A	n79A	No
CA_n41(2A)-n66A	-	CA_n41(2A)	n66A	-	-	No
CA_n41(2A)-n71A	-	CA_n41(2A)	n71A	-	-	No
CA_n48A-n66A	CA_n48A-n66A	n48A	n66A	n48A	n66A	Yes
CA_n48A-n66(2A)	CA_n48A-n66A	n48A	CA_n66(2A)	n48A	n66A	No
CA_n48A-n70A	CA_n48A-n70A	n48A	n70A	n48A	n70A	Yes
CA_n48A-n71A	CA_n48A-n71A	n48A	n71A	n48A	n71A	Yes
CA_n48A-n71(2A)	CA_n48A-n71A	n48A	CA_n71(2A)	n48A	n71A	No
CA_n48A-n77A	-	n48A	n77A	-	-	Yes
CA_n48A-n77C	-	CA_n77C	n48A	-	-	No
	CA_n77C	CA_n77C	n48A	CA_n77C	-	No
CA_n48B-n66A	CA_n48A-n66A	CA_n48B	n66A	n48A	n66A	No
CA_n48B-n66A	CA_n48B	CA_n48B	n66A	CA_n48B	-	No
CA_n48B-n70A	CA_n48A-n70A	CA_n48B	n70A	n48A	n70A	No
CA_n48B-n71A	CA_n48A-n71A	CA_n48B	n71A	n48A	n71A	No
CA_n48B-n77A	-	n77A	CA_n48B	-	-	No
	CA_n48B	CA_n48B	n77A	CA_n48B	-	No
CA_n48B-n77C	-	CA_n77C	CA_n48B	-	-	No
	CA_n48B	CA_n48B	CA_n77C	CA_n48B	-	No
	CA_n77C	CA_n77C	CA_n48B	CA_n77C	-	No
CA_n48(2A)-n66A	CA_n48A-n66A	CA_n48(2A)	n66A	n48A	n66A	No
CA_n48(2A)-n66(2A)	CA_n48A-n66A	CA_n48(2A)	CA_n66(2A)	n48A	n66A	No
CA_n48(2A)-n70A	CA_n48A-n70A	CA_n48(2A)	n70A	n48A	n70A	No
CA_n48(2A)-n71A	CA_n48A-n71A	CA_n48(2A)	n71A	n48A	n71A	No
CA_n48(2A)-n71(2A)	CA_n48A-n71A	CA_n48(2A)	CA_n71(2A)	n48A	n71A	No
CA_n48(2A)-n77A	-	n77A	CA_n48(2A)	-	-	No
CA_n48(2A)-n77C	-	CA_n77C	CA_n48(2A)	-	-	No
	CA_n77C	CA_n77C	CA_n48(2A)	CA_n77C	-	No
CA_n66A-n70A	-	n66A	n70A	-	-	Yes
CA_n66B-n70A	-	CA_n66B	n70A	-	-	No
CA_n66(2A)-n70A	-	CA_n66(2A)	n70A	-	-	No
CA_n66A-n71A	CA_n66A-n71A	n66A	n71A	n66A	n71A	Yes
CA_n66A-n71(2A)	CA_n66A-n71A	n66A	CA_n71(2A)	n66A	n71A	No
CA_n66B-n71A	CA_n66A-n71A	CA_n66B	n71A	n66A	n71A	No
CA_n66(2A)-n71A	CA_n66A-n71A	CA_n66(2A)	n71A	n66A	n71A	No

NR CA configuration	Uplink NR CA configuration	NR CA downlink configuration band 1 (Note 3)	NR CA downlink configuration band 2	NR CA uplink configuration band 1	NR CA uplink configuration band 2	Applicable for protocol testing (Note 2)
CA_n66(2A)-n71(2A)	CA_n66A-n71A	CA_n66(2A)	CA_n71(2A)	n66A	n71A	No
CA_n66A-n77A	CA_n66A-n77A	n66A	n77A	n66A	n77A	Yes
CA_n66A-n77(2A)	CA_n66A-n77A	n66A	CA_n77(2A)	n66A	n77A	No
CA_n66A-n77(3A)	CA_n66A-n77A	n66A	CA_n77(3A)	n66A	n77A	No
	CA_n77(2A)	n66A	CA_n77(3A)	-	CA_n77(2A)	No
CA_n66A-n77C	CA_n66A-n77A	n66A	CA_n77C	n66A	n77A	No
CA_n66A-n77C	CA_n77C	CA_n77C	n66A	CA_n77C	-	No
CA_n66(2A)-n77A	CA_n66A-n77A	CA_n66(2A)	n77A	n66A	n77A	No
CA_n66(2A)-n77(2A)	CA_n66A-n77A	CA_n66(2A)	CA_n77(2A)	n66A	n77A	No
CA_n66(3A)-n77A	CA_n66A-n77A	CA_n66(3A)	n77A	n66A	n77A	No
CA_n66A-n78A	CA_n66A-n78A	n66A	n78A	n66A	n78A	Yes
CA_n66A-n78A(2A)	CA_n66A-n78A	n66A	CA_n78(2A)	n66A	n78A	No
CA_n70A-n71A	CA_n70A-n71A	n70A	n71A	n70A	n71A	Yes
CA_n70A-n71(2A)	CA_n70A-n71A	n70A	CA_n71(2A)	n70A	n71A	No
CA_n71A-n77A	CA_n71A-n77A	n71A	n77A	n71A	n77A	Yes
CA_n71A-n77A(2A)	CA_n71A-n77A	n71A	CA_n77(2A)	n71A	n77A	No
CA_n71A-n78A	CA_n71A-n78A	n71A	n78A	n71A	n78A	Yes
CA_n71A-n78A(2A)	CA_n71A-n78A	n71A	CA_n78(2A)	n71A	n78A	No
CA_n77A-n79A	-	n77A	n79A	-	-	Yes
CA_n78A-n79A	CA_n78A-n79A	n78A	n79A	n78A	n79A	Yes
Note 1: This band is used as PCell.						
Note 2: Protocol testing is limited to NR CA configurations with 2CC.						
Note 3: PCell is configured on this band unless otherwise stated.						

4.3.1.1.2.2

NR inter-band CA configurations in FR1 (three bands)

Table 4.3.1.1.2.2-1: Inter-band NR CA configurations within FR1 (three bands)

NR CA configuration (Note 3)	Uplink NR CA configuration	NR CA downlink configuration band 1 (Note 4)	NR CA downlink configuration band 2	NR CA downlink configuration band 3	NR CA uplink configuration band 1	NR CA uplink configuration band 2	NR CA uplink configuration band 3	Applicable for protocol testing (Note 2)
CA_nXA-nYA-nZA	-	nXA	nYA	nZA	-	-	-	No
	CA_nXA-nYA	nXA	nYA	nZA	nXA	nYA	-	
	CA_nXA-nZA	nXA	nZA	nYA	nXA	nZA	-	
	CA_nYA-nZA	nYA	nZA	nXA	nYA	nZA	-	

NR CA configuration (Note 3)	Uplink NR CA configuration	NR CA downlink configuration band 1 (Note 4)	NR CA downlink configuration band 2	NR CA downlink configuration band 3	NR CA uplink configuration band 1	NR CA uplink configuration band 2	NR CA uplink configuration band 3	Applicable for protocol testing (Note 2)
CA_nXA-nYA-nZB	-	nXA	nYA	CA_nZB	-	-	-	No
	CA_nXA-nYA	nXA	nYA	CA_nZB	nXA	nYA	-	
	CA_nXA-nZA	nXA	CA_nZB	nYA	nXA	nZA	-	
	CA_nYA-nZA	nYA	CA_nZB	nXA	nYA	nZA	-	
	CA_nZB	CA_nZB	nXA	nYA	CA_nZB	-	-	
CA_nXA-nYA-nZC	-	nXA	nYA	CA_nZC	-	-	-	No
	CA_nXA-nYA	nXA	nYA	CA_nZC	nXA	nYA	-	
	CA_nXA-nZA	nXA	CA_nZC	nYA	nXA	nZA	-	
	CA_nYA-nZA	nYA	CA_nZC	nXA	nYA	nZA	-	
	CA_nZC	CA_nZC	nXA	nYA	CA_nZC	-	-	
CA_nXA-nYB-nZA	-	nXA	CA_nYB	nZA	-	-	-	No
	CA_nXA-nYA	nXA	CA_nYB	nZA	nXA	nYA	-	
	CA_nXA-nZA	nXA	nZA	CA_nYB	nXA	nZA	-	
	CA_nYA-nZA	CA_nYB	nZA	nXA	nYA	nZA	-	
	CA_nYB	CA_nYB	nXA	nZA	CA_nYB	-	-	
CA_nXA-nYB-nZC	-	nXA	CA_nYB	CA_nZC	-	-	-	No
	CA_nXA-nYA	nXA	CA_nYB	CA_nZC	nXA	nYA	-	
	CA_nXA-nZA	nXA	CA_nZC	CA_nYB	nXA	nZA	-	
	CA_nYA-nZA	CA_nYB	CA_nZC	nXA	nYA	nZA	-	
	CA_nYB	CA_nYB	nXA	CA_nZC	CA_nYB	-	-	
	CA_nZC	CA_nZC	nXA	CA_nYB	CA_nZC	-	-	
CA_nXA-nYA-nZ(2A)	-	nXA	nYA	CA_nZ(2A)	-	-	-	No
	CA_nXA-nYA	nXA	nYA	CA_nZ(2A)	nXA	nYA	-	
	CA_nXA-nZA	nXA	CA_nZ(2A)	nYA	nXA	nZA	-	
	CA_nYA-nZA	nYA	CA_nZ(2A)	nXA	nYA	nZA	-	
CA_nXA-nY(2A)-nZA	-	nXA	CA_nY(2A)	nZA	-	-	-	No
	CA_nXA-nYA	nXA	CA_nY(2A)	nZA	nXA	nYA	-	
	CA_nXA-nZA	nXA	nZA	CA_nY(2A)	nXA	nZA	-	
	CA_nYA-nZA	CA_nY(2A)	nZA	nXA	nYA	nZA	-	
CA_nXA-nY(2A)-nZC	-	nXA	CA_nY(2A)	CA_nZC	-	-	-	No
	CA_nXA-nYA	nXA	CA_nY(2A)	CA_nZC	nXA	nYA	-	
	CA_nXA-nZA	nXA	CA_nZC	CA_nY(2A)	nXA	nZA	-	
	CA_nYA-nZA	CA_nY(2A)	CA_nZC	nXA	nYA	nZA	-	
	CA_nZC	CA_nZC	nXA	CA_nY(2A)	CA_nZC	-	-	
CA_nX(2A)-nYA-nZA	-	CA_nX(2A)	nYA	nZA	-	-	-	No
	CA_nXA-nYA	CA_nX(2A)	nYA	nZA	nXA	nYA	-	
	CA_nXA-nZA	CA_nX(2A)	nZA	nYA	nXA	nZA	-	

NR CA configuration (Note 3)	Uplink NR CA configuration	NR CA downlink configuration band 1 (Note 4)	NR CA downlink configuration band 2	NR CA downlink configuration band 3	NR CA uplink configuration band 1	NR CA uplink configuration band 2	NR CA uplink configuration band 3	Applicable for protocol testing (Note 2)
	CA_nYA-nZA	nYA	nZA	CA_nX(2A)	nYA	nZA	-	
CA_nX(2A)-nYA-nZC	-	CA_nX(2A)	nYA	CA_nZC	-	-	-	No
	CA_nXA-nYA	CA_nX(2A)	nYA	CA_nZC	nXA	nYA	-	
	CA_nXA-nZA	CA_nX(2A)	CA_nZC	nYA	nXA	nZA	-	
	CA_nYA-nZA	nYA	CA_nZC	CA_nX(2A)	nYA	nZA	-	
	CA_nZC	CA_nZC	CA_nX(2A)	nYA	CA_nZC	-	-	
CA_nXB-nYA-nZA	-	CA_nXB	nYA	nZA	-	-	-	No
	CA_nXA-nYA	CA_nXB	nYA	nZA	nXA	nYA	-	
	CA_nXA-nZA	CA_nXB	nZA	nYA	nXA	nZA	-	
	CA_nYA-nZA	nYA	nZA	CA_nXB	nYA	nZA	-	
CA_nXB-nYA-nZC	-	CA_nXB	nYA	CA_nZC	-	-	-	No
	CA_nXA-nYA	CA_nXB	nYA	CA_nZC	nXA	nYA	-	
	CA_nXA-nZA	CA_nXB	CA_nZC	nYA	nXA	nZA	-	
	CA_nYA-nZA	nYA	CA_nZC	CA_nXB	nYA	nZA	-	
	CA_nXB	CA_nXB	nYA	CA_nZC	CA_nXB	-	-	
	CA_nZC	CA_nZC	CA_nXB	nYA	CA_nZC	-	-	
CA_n2A-n48A-n66A	CA_n2A-n48A	n2A	n48A	n66A	n2A	n48A	-	No
	CA_n2A-n66A	n2A	n66A	n48A	n2A	n66A	-	No
	CA_n48A-n66A	n66A	n48A	n2A	n66A	n48A	-	No
CA_n2A-n48(2A)-n66A	CA_n2A-n48A	n2A	CA_n48(2A)	n66A	n2A	n48A	-	No
	CA_n2A-n66A	n2A	n66A	CA_n48(2A)	n2A	n66A	-	No
	CA_n48A-n66A	n66A	CA_n48(2A)	n2A	n66A	n48A	-	No
CA_n2A-n48B-n66A	CA_n2A-n48A	n2A	CA_n48B	n66A	n2A	n48A	-	No
	CA_n2A-n66A	n2A	n66A	CA_n48B	n2A	n66A	-	No
	CA_n48A-n66A	n66A	CA_n48B	n2A	n66A	n48A	-	No
	CA_n48B	CA_n48B	n2A	n66A	CA_n48B	-	-	No
CA_n5A-n48A-n66A	CA_n5A-n48A	n5A	n48A	n66A	n5A	n48A	-	No
	CA_n5A-n66A	n5A	n66A	n48A	n5A	n66A	-	No
	CA_n48A-n66A	n66A	n48A	n5A	n66A	n48A	-	No
CA_n5A-n48(2A)-n66A	CA_n5A-n48A	5A	CA_n48(2A)	n66A	n5A	n48A	-	No
	CA_n5A-n66A	n5A	n66A	CA_n48(2A)	n5A	n66A	-	No
	CA_n48A-n66A	n66A	CA_n48(2A)	n5A	n66A	n48A	-	No
CA_n5A-n48B-n66A	CA_n5A-n48A	n5A	CA_n48B	n66A	n5A	n48A	-	No
	CA_n5A-n66A	n5A	n66A	CA_n48B	n5A	n66A	-	No
	CA_n48A-n66A	n66A	CA_n48B	n5A	n66A	n48A	-	No
	CA_n48B	CA_n48B	n5A	n66A	CA_n48B	-	-	No
CA_n48A-n66A-n70A	CA_n48A-n66A	n48A	n66A	n70A	n48A	n66A	-	No

NR CA configuration (Note 3)	Uplink NR CA configuration	NR CA downlink configuration band 1 (Note 4)	NR CA downlink configuration band 2	NR CA downlink configuration band 3	NR CA uplink configuration band 1	NR CA uplink configuration band 2	NR CA uplink configuration band 3	Applicable for protocol testing (Note 2)
	CA_n48A-n70A	n48A	n66A	n70A	n48A	-	n70A	No
CA_n48A-n66A-n71A	CA_n48A-n66A	n48A	n66A	n71A	n48A	n66A	-	No
	CA_n48A-n71A	n48A	n66A	n71A	n48A	-	n71A	No
	CA_n66A-n71A	n48A	n66A	n71A	-	n66A	n71A	No
CA_n48A-n66A-n71(2A)	CA_n48A-n66A	n48A	n66A	CA_n71(2A)	n48A	n66A	-	No
	CA_n48A-n71A	n48A	n66A	CA_n71(2A)	n48A	-	n71A	No
	CA_n66A-n71A	n48A	n66A	CA_n71(2A)	-	n66A	n71A	No
CA_n48A-n66(2A)-n70A	CA_n48A-n66A	n48A	CA_n66(2A)	n70A	n48A	n66A	-	No
	CA_n48A-n70A	n48A	CA_n66(2A)	n70A	n48A	-	n70A	No
CA_n48A-n66(2A)-n71A	CA_n48A-n66A	n48A	CA_n66(2A)	n71A	n48A	n66A	-	No
	CA_n48A-n71A	n48A	CA_n66(2A)	n71A	n48A	-	n71A	No
	CA_n66A-n71A	n48A	CA_n66(2A)	n71A	-	n66A	n71A	No
CA_n48A-n66A-n77A	CA_n48A-n66A	n66A	n48A	n77A	n66A	n48A	-	No
	CA_n66A-n77A	n66A	n77A	n48A	n66A	n77A	-	No
CA_n48A-n66A-n77C	-	n66A	n48A	CA_n77C	-	-	-	No
	CA_n48A-n66A	n66A	n48A	CA_n77C	n66A	n48A	-	No
	CA_n66A-n77A	n66A	CA_n77C	n48A	n66A	n77A	-	No
	CA_n77C	CA_n77C	n66A	n48A	CA_n77C	-	-	No
CA_n48(2A)-n66A-n77C	-	n66A	CA_n77C	CA_n48(2A)	-	-	-	No
	CA_n48A-n66A	n66A	CA_n48(2A)	CA_n77C	n66A	n48A	-	No
	CA_n66A-n77A	n66A	CA_n77C	CA_n48(2A)	n66A	n77A	-	No
	CA_n77C	CA_n77C	n66A	CA_n48(2A)	CA_n77C	-	-	No
CA_n48B-n66A-n70A	CA_n48A-n66A	CA_n48B	n66A	n70A	n48A	n66A	-	No
	CA_n48A-n70A	CA_n48B	n66A	n70A	n48A	-	n70A	No
CA_n48B-n66A-n71A	CA_n48A-n66A	CA_n48B	n66A	n71A	n48A	n66A	-	No
	CA_n48A-n71A	CA_n48B	n66A	n71A	n48A	-	n71A	No
	CA_n66A-n71A	CA_n48B	n66A	n71A	-	n66A	n71A	No
CA_n48B-n66A-n77A	CA_n48A-n66A	n66A	CA_n48B	n77A	n66A	n48A	-	No
	CA_n66A-n77A	n66A	n77A	CA_n48B	n66A	n77A	-	No
	CA_n48B	CA_n48B	n66A	n77A	CA_n48B	-	-	No
CA_n48B-n66A-n77C	-	n66A	CA_n77C	CA_n48B	-	-	-	No
	CA_n48A-n66A	n66A	CA_n48B	CA_n77C	n66A	n48A	-	No
	CA_n66A-n77A	n66A	CA_n77C	CA_n48B	n66A	n77A	-	No
	CA_n77C	CA_n77C	n66A	CA_n48B	CA_n77C	-	-	No
	CA_n48B	CA_n48B	n66A	CA_n77C	CA_n48B	-	-	No
CA_n48(2A)-n66A-n70A	CA_n48A-n66A	CA_n48(2A)	n66A	n70A	n48A	n66A	-	No
	CA_n48A-n70A	CA_n48(2A)	n66A	n70A	n48A	-	n70A	No

NR CA configuration (Note 3)	Uplink NR CA configuration	NR CA downlink configuration band 1 (Note 4)	NR CA downlink configuration band 2	NR CA downlink configuration band 3	NR CA uplink configuration band 1	NR CA uplink configuration band 2	NR CA uplink configuration band 3	Applicable for protocol testing (Note 2)
CA_n48(2A)-n66A-n71A	CA_n48A-n66A	CA_n48(2A)	n66A	n71A	n48A	n66A	-	No
	CA_n48A-n71A	CA_n48(2A)	n66A	n71A	n48A	-	n71A	No
	CA_n66A-n71A	CA_n48(2A)	n66A	n71A	-	n66A	n71A	No
CA_n48(2A)-n66A-n77A	CA_n48A-n66A	n66A	CA_n48(2A)	n77A	n66A	n48A	-	No
	CA_n66A-n77A	n66A	n77A	CA_n48(2A)	n66A	n77A	-	No
Note 1: This band cannot be used as PCell. Note 2: Protocol testing is limited to NR CA configurations with 3CC. Note 3: The band with the lowest UL frequency is used as PCell if nothing else is specified for in the table or in the test case for the specific configuration. Note 4: PCell is configured on this band unless otherwise stated. Note 5: The specified NR inter-band CA configurations can be found in TS 38.521-1 [14] clause 5.5A.3. The general rule for deciding test configurations applies if no explicit value defined. The general rule is that the inter-band CA configurations are represented by symbolic CA configurations using nX, nY and nZ as the different bands in the CA Configuration E.g. CA_nXA-nYA-nZA could be representing the configuration CA_n1A-n3A-n78A by interpreting of nX=n1, nY=n3 and nZ=n78. Any CA configurations not applying the general rule could be listed separately.								

4.3.1.1.2.3 NR inter-band CA configurations in FR1 (four bands)

Table 4.3.1.1.2.3-1: Inter-band NR CA configurations within FR1 (four bands)

NR CA configuration (Note 3)	Uplink NR CA configuration	NR CA downlink configuration band 1 (Note 1)	NR CA downlink configuration band 2	NR CA downlink configuration band 3	NR CA downlink configuration band 4	NR CA uplink configuration band 1	NR CA uplink configuration band 2	NR CA uplink configuration band 3	NR CA uplink configuration band 4	Applicable for protocol testing (Note 2)
CA_nXA-nYA-nZA-nWA	-	nXA	nYA	nZA	nWA	-	-	-	-	No
	CA_nXA-nYA	nXA	nYA	nZA	nWA	nXA	nYA	-	-	
	CA_nXA-nZA	nXA	nZA	nYA	nWA	nXA	nZA	-	-	
	CA_nXA-nWA	nXA	nWA	nYA	nZA	nXA	nWA	-	-	
	CA_nYA-nZA	nYA	nZA	nXA	nWA	nYA	nZA	-	-	
	CA_nYA-nWA	nYA	nWA	nXA	nZA	nYA	nWA	-	-	
	CA_nZA-nWA	nZA	nWA	nXA	nYA	nZA	nWA	-	-	
CA_nXA-nYA-nZB-nWA	-	nXA	nYA	CA_nZB	nWA	-	-	-	-	No
	CA_nXA-nYA	nXA	nYA	CA_nZB	nWA	nXA	nYA	-	-	
	CA_nXA-nZA	nXA	CA_nZB	nYA	nWA	nXA	nZA	-	-	
	CA_nXA-nWA	nXA	nWA	nYA	CA_nZB	nXA	nWA	-	-	
	CA_nYA-nZA	nYA	CA_nZB	nXA	nWA	nYA	nZA	-	-	
	CA_nYA-nWA	nYA	nWA	nXA	CA_nZB	nYA	nWA	-	-	
	CA_nZA-nWA	CA_nZB	nWA	nXA	nYA	nZA	nWA	-	-	

NR CA configuration (Note 3)	Uplink NR CA configuration	NR CA downlink configuration band 1 (Note 1)	NR CA downlink configuration band 2	NR CA downlink configuration band 3	NR CA downlink configuration on band 4	NR CA uplink configuration on band 1	NR CA uplink configuration on band 2	NR CA uplink configuration on band 3	NR CA uplink configuration on band 4	Applicable for protocol testing (Note 2)
	CA_nZB	CA_nZB	nXA	nYA	nWA	CA_nZB	-	-	-	
CA_nXA-nYA-nZA-nWC	-	nXA	nYA	nZA	CA_nWC	-	-	-	-	No
	CA_nXA-nYA	nXA	nYA	nZA	CA_nWC	nXA	nYA	-	-	
	CA_nXA-nZA	nXA	nZA	nYA	CA_nWC	nXA	nZA	-	-	
	CA_nXA-nWA	nXA	CA_nWC	nYA	nZA	nXA	nWA	-	-	
	CA_nYA-nZA	nYA	nZA	nXA	CA_nWC	nYA	nZA	-	-	
	CA_nYA-nWA	nYA	CA_nWC	nXA	nZA	nYA	nWA	-	-	
	CA_nZA-nWA	nZA	CA_nWC	nXA	nYA	nZA	nWA	-	-	
	CA_nWC	CA_nWC	nXA	nYA	nZA	CA_nWC	-	-	-	
CA_nXA-nYA-nZA-nW(2A)	-	nXA	nYA	nZA	CA_nW(2A)	-	-	-	-	No
	CA_nXA-nYA	nXA	nYA	nZA	CA_nW(2A)	nXA	nYA	-	-	
	CA_nXA-nZA	nXA	nZA	nYA	CA_nW(2A)	nXA	nZA	-	-	
	CA_nXA-nWA	nXA	CA_nW(2A)	nYA	nZA	nXA	nWA	-	-	
	CA_nYA-nZA	nYA	nZA	nXA	CA_nW(2A)	nYA	nZA	-	-	
	CA_nYA-nWA	nYA	CA_nW(2A)	nXA	nZA	nYA	nWA	-	-	
	CA_nZA-nWA	nZA	CA_nW(2A)	nXA	nYA	nZA	nWA	-	-	
CA_nXA-nYA-nZ(2A)-nWA	-	nXA	nYA	CA_nZ(2A)	nWA	-	-	-	-	No
	CA_nXA-nYA	nXA	nYA	CA_nZ(2A)	nWA	nXA	nYA	-	-	
	CA_nXA-nZA	nXA	CA_nZ(2A)	nYA	nWA	nXA	nZA	-	-	
	CA_nXA-nWA	nXA	nWA	nYA	CA_nZ(2A)	nXA	nWA	-	-	
	CA_nYA-nZA	nYA	CA_nZ(2A)	nXA	nWA	nYA	nZA	-	-	
	CA_nYA-nWA	nYA	nWA	nXA	CA_nZ(2A)	nYA	nWA	-	-	
	CA_nZA-nWA	CA_nZ(2A)	nWA	nXA	nYA	nZA	nWA	-	-	
CA_nXA-nYA-nZ(2A)-nWC	-	nXA	nYA	CA_nZ(2A)	CA_nWC	-	-	-	-	No
	CA_nXA-nYA	nXA	nYA	CA_nZ(2A)	CA_nWC	nXA	nYA	-	-	
	CA_nXA-nZA	nXA	CA_nZ(2A)	nYA	CA_nWC	nXA	nZA	-	-	
	CA_nXA-nWA	nXA	CA_nWC	nYA	CA_nZ(2A)	nXA	nWA	-	-	
	CA_nYA-nZA	nYA	CA_nZ(2A)	nXA	CA_nWC	nYA	nZA	-	-	
	CA_nYA-nWA	nYA	CA_nWC	nXA	CA_nZ(2A)	nYA	nWA	-	-	
	CA_nZA-nWA	CA_nZ(2A)	CA_nWC	nXA	nYA	nZA	nWA	-	-	
	CA_nWC	CA_nWC	nXA	nYA	CA_nZ(2A)	CA_nWC	-	-	-	
CA_nXA-nYA-nZB-nWC	-	nXA	nYA	CA_nZB	CA_nWC	-	-	-	-	No
	CA_nXA-nYA	nXA	nYA	CA_nZB	CA_nWC	nXA	nYA	-	-	

NR CA configuration (Note 3)	Uplink NR CA configuration	NR CA downlink configuration band 1 (Note 1)	NR CA downlink configuration band 2	NR CA downlink configuration band 3	NR CA downlink configuration on band 4	NR CA uplink configuration on band 1	NR CA uplink configuration on band 2	NR CA uplink configuration on band 3	NR CA uplink configuration on band 4	Applicable for protocol testing (Note 2)
	CA_nXA-nZA	nXA	CA_nZB	nYA	CA_nWC	nXA	nZA	-	-	
	CA_nXA-nWA	nXA	CA_nWC	nYA	CA_nZB	nXA	nWA	-	-	
	CA_nYA-nZA	nYA	CA_nZB	nXA	CA_nWC	nYA	nZA	-	-	
	CA_nYA-nWA	nYA	CA_nWC	nXA	CA_nZB	nYA	nWA	-	-	
	CA_nZA-nWA	CA_nZB	CA_nWC	nXA	nYA	nZA	nWA	-	-	
	CA_nZB	CA_nZB	nXA	nYA	CA_nWC	CA_nZB	-	-	-	
	CA_nWC	CA_nWC	nXA	nYA	CA_nZB	CA_nWC	-	-	-	
CA_n2A-n5A-n48(2A)-n66A	-	n2A	n5A	CA_n48(2A)	n66A	-	-	-	-	No
	CA_n2A-n5A	n2A	n5A	CA_n48(2A)	n66A	n2A	n5A	-	-	No
	CA_n2A-n48A	n2A	CA_n48(2A)	n5A	n66A	n2A	n48A	-	-	No
	CA_n2A-n66A	n2A	n66A	n5A	CA_n48(2A)	n2A	n66A	-	-	No
	CA_n5A-n48A	n5A	CA_n48(2A)	n2A	n66A	n5A	n48A	-	-	No
	CA_n5A-n66A	n5A	n66A	n2A	CA_n48(2A)	n5A	n66A	-	-	No
	CA_n48A-n66A	n66A	CA_n48(2A)	n2A	n5A	n66A	n48A	-	-	No
CA_n2A-n5A-n48B-n66A	-	n2A	n5A	CA_n48B	n66A	-	-	-	-	No
	CA_n2A-n5A	n2A	n5A	CA_n48B	n66A	n2A	n5A	-	-	No
	CA_n2A-n48A	n2A	CA_n48B	n5A	n66A	n2A	n48A	-	-	No
	CA_n2A-n66A	n2A	n66A	n5A	CA_n48B	n2A	n66A	-	-	No
	CA_n5A-n48A	n5A	CA_n48B	n2A	n66A	n5A	n48A	-	-	No
	CA_n5A-n66A	n5A	n66A	n2A	CA_n48B	n5A	n66A	-	-	No
	CA_n48A-n66A	n66A	CA_n48B	n2A	n5A	n66A	n48A	-	-	No
	CA_n48B	CA_n48B	n2A	n5A	n66A	CA_n48B	-	-	-	No
CA_n2A-n48(2A)-n66A-n77A	-	n2A	n66A	n77A	CA_n48(2A)	-	-	-	-	No
	CA_n2A-n48A	n2A	CA_n48(2A)	n66A	n77A	n2A	n48A	-	-	No
	CA_n2A-n66A	n2A	n66A	n77A	CA_n48(2A)	n2A	n66A	-	-	No
	CA_n2A-n77A	n2A	n77A	n66A	CA_n48(2A)	n2A	n77A	-	-	No
	CA_n48A-n66A	n66A	CA_n48(2A)	n2A	n77A	n66A	n48A	-	-	No
	CA_n66A-n77A	n66A	n77A	n2A	CA_n48(2A)	n66A	n77A	-	-	No
CA_n2A-n48B-n66A-n77A	-	n2A	n66A	n77A	CA_n48B	-	-	-	-	No
	CA_n2A-n48A	n2A	CA_n48B	n66A	n77A	n2A	n48A	-	-	No
	CA_n2A-n66A	n2A	n66A	n77A	CA_n48B	n2A	n66A	-	-	No
	CA_n2A-n77A	n2A	n77A	n66A	CA_n48B	n2A	n77A	-	-	No
	CA_n48A-n66A	n66A	CA_n48B	n2A	n77A	n66A	n48A	-	-	No

NR CA configuration (Note 3)	Uplink NR CA configuration	NR CA downlink configuration band 1 (Note 1)	NR CA downlink configuration band 2	NR CA downlink configuration band 3	NR CA downlink configuration on band 4	NR CA uplink configuration on band 1	NR CA uplink configuration on band 2	NR CA uplink configuration on band 3	NR CA uplink configuration on band 4	Applicable for protocol testing (Note 2)
	CA_n66A-n77A	n66A	n77A	n2A	CA_n48B	n66A	n77A	-	-	No
	CA_n48B	CA_n48B	n2A	n66A	n77A	CA_n48B	-	-	-	No
CA_n2A-n48(2A)-n66A-n77C	CA_n2A-n48A	n2A	CA_n48(2A)	n66A	CA_n77C	n2A	n48A	-	-	No
	CA_n2A-n66A	n2A	n66A	CA_n48(2A)	CA_n77C	n2A	n66A	-	-	No
	CA_n2A-n77A	n2A	CA_n77C	CA_n48(2A)	n66A	n2A	n77A	-	-	No
	CA_n48A-n66A	n66A	CA_n48(2A)	n2A	CA_n77C	n66A	n48A	-	-	No
	CA_n66A-n77A	n66A	CA_n77C	n2A	CA_n48(2A)	n66A	n77A	-	-	No
	CA_n77C	CA_n77C	n2A	CA_n48(2A)	n66A	CA_n77C	-	-	-	No
CA_n2A-n48B-n66A-n77C	CA_n2A-n48A	n2A	CA_n48B	n66A	CA_n77C	n2A	n48A	-	-	No
	CA_n2A-n66A	n2A	n66A	CA_n48B	CA_n77C	n2A	n66A	-	-	No
	CA_n2A-n77A	n2A	CA_n77C	CA_n48B	n66A	n2A	n77A	-	-	No
	CA_n48A-n66A	n66A	CA_n48B	n2A	CA_n77C	n66A	n48A	-	-	No
	CA_n66A-n77A	n66A	CA_n77C	n2A	CA_n48B	n66A	n77A	-	-	No
	CA_n77C	CA_n77C	n2A	CA_n48B	n66A	CA_n77C	-	-	-	No
	CA_n48B	CA_n48B	n2A	n66A	CA_n77C	CA_n48B	-	-	-	No
CA_n5A-n48(2A)-n66A-n77A	-	n5A	n66A	n77A	CA_n48(2A)	-	-	-	-	No
	CA_n5A-n48A	n5A	CA_n48(2A)	n66A	n77A	n5A	n48A	-	-	No
	CA_n5A-n66A	n5A	n66A	n77A	CA_n48(2A)	n5A	n66A	-	-	No
	CA_n5A-n77A	n5A	n77A	n66A	CA_n48(2A)	n5A	n77A	-	-	No
	CA_n48A-n66A	n66A	CA_n48(2A)	n5A	n77A	n66A	n48A	-	-	No
	CA_n66A-n77A	n66A	n77A	n5A	CA_n48(2A)	n66A	n77A	-	-	No
CA_n5A-n48B-n66A-n77A	-	n5A	n66A	n77A	CA_n48B	-	-	-	-	No
	CA_n5A-n48A	n5A	CA_n48B	n66A	n77A	n5A	n48A	-	-	No
	CA_n5A-n66A	n5A	n66A	n77A	CA_n48B	n5A	n66A	-	-	No
	CA_n5A-n77A	n5A	n77A	n66A	CA_n48B	n5A	n77A	-	-	No
	CA_n48A-n66A	n66A	CA_n48B	n5A	n77A	n66A	n48A	-	-	No
	CA_n66A-n77A	n66A	n77A	n5A	CA_n48B	n66A	n77A	-	-	No
	CA_n48B	CA_n48B	n5A	n66A	n77A	CA_n48B	-	-	-	No
CA_n5A-n48(2A)-n66A-n77C	CA_n5A-n48A	n5A	CA_n48(2A)	n66A	CA_n77C	n5A	n48A	-	-	No
	CA_n5A-n66A	n5A	n66A	CA_n48(2A)	CA_n77C	n5A	n66A	-	-	No
	CA_n5A-n77A	n5A	CA_n77C	CA_n48(2A)	n66A	n5A	n77A	-	-	No

NR CA configuration (Note 3)	Uplink NR CA configuration	NR CA downlink configuration band 1 (Note 1)	NR CA downlink configuration band 2	NR CA downlink configuration band 3	NR CA downlink configuration on band 4	NR CA uplink configuration on band 1	NR CA uplink configuration on band 2	NR CA uplink configuration on band 3	NR CA uplink configuration on band 4	Applicable for protocol testing (Note 2)
	CA_n48A-n66A	n66A	CA_n48(2A)	n5A	CA_n77C	n66A	n48A	-	-	No
	CA_n66A-n77A	n66A	CA_n77C	n5A	CA_n48(2A)	n66A	n77A	-	-	No
	CA_n77C	CA_n77C	n5A	CA_n48(2A)	n66A	CA_n77C	-	-	-	No
CA_n5A-n48B-n66A-n77C	CA_n5A-n48A	n5A	CA_n48B	n66A	CA_n77C	n5A	n48A	-	-	No
	CA_n5A-n66A	n5A	n66A	CA_n48B	CA_n77C	n5A	n66A	-	-	No
	CA_n5A-n77A	n5A	CA_n77C	CA_n48B	n66A	n5A	n77A	-	-	No
	CA_n48A-n66A	n66A	CA_n48B	n5A	CA_n77C	n66A	n48A	-	-	No
	CA_n66A-n77A	n66A	CA_n77C	n5A	CA_n48B	n66A	n77A	-	-	No
	CA_n77C	CA_n77C	n5A	CA_n48B	n66A	CA_n77C	-	-	-	No
	CA_n48B	CA_n48B	n5A	n66A	CA_n77C	CA_n48B	-	-	-	No
Note 1: PCell is configured on this band unless otherwise stated. Note 2: Protocol testing is limited to NR CA configurations with 2CC. Note 3: The band with the lowest UL frequency is used as PCell if nothing else is specified for in the table or in the test case for the specific configuration. Note 4: The specified NR inter-band CA configurations can be found in TS 38.521-1 [14] clause 5.5A.3. The general rule for deciding test configurations applies if no explicit value defined. The general rule is that the inter-band CA configurations are represented by symbolic CA configurations using nX, nY, nZ and nW as the different bands in the CA Configuration E.g. CA_nXA-nYA-nZA-nWA could be representing the configuration CA_n1A-n3A-n28A-n78A by interpreting of nX=n1, nY=n3, nZ=n28 and nW=n78. Any CA configurations not applying the general rule could be listed separately.										

4.3.1.1.3 NR intra-band contiguous CA in FR1

4.3.1.1.3.1 – 4.3.1.1.3.4 FFS

4.3.1.1.3.5 NR Intra-band contiguous configurations CA_n5B

4.3.1.1.3.5.1 CA_n5B

Editor's note: Test frequencies for CA_n5B with mixed numerology with SCS CC1=15kHz and SCS CC2=30 kHz; and SCS CC1=30kHz and SCS CC2=15 kHz is FFS.

Table 4.3.1.1.3.5.1-1: NR Intra-Band contiguous CA configuration CA_n5B (PCC=CC1 and SCC=CC2), SCS 15 kHz

CBW combination	C C N ot	CB W [M Hz]	S C S	carrierBandwidth [PRBs]	Range	Carrier centre	Carrier centre	point A [M Hz]	absoluteFrequencyPointA [ARFCN]	offsetTo Carrier [Carrier PRBs]	SS bl oc k	GS CN	absoluteFrequencySSB [ARFCN]	k_{SSB}	Offset carrier CORE SET#0 [RBs]	CORE SET#0 Index (Offset [RBs])	offsetTo PointA (SIB1) [PRBs] Note 4

	e 2		[k Hz]				[M Hz] Not e 2	[AR FCN]				SC S [k Hz]				Note 3	Note 4	
5+10	C C 1	5	15	25	Dow nlink	Lo w	871 .5	1743 00	869 .25	173850	0	15	21 78	174270	8	1	0 (0)	1
						Mi d	876 .5	1753 00	855 .89	171178	102		21 89	175210	0	0	0 (0)	102
						Hi gh	881 .8	1763 60	788 .83	157766	504		22 06	176450	12	0	2 (4)	508
					Uplin k	Lo w	826 .5	1653 00	824 .25	164850	0	-	-	-	-	-	-	-
						Mi d	831 .5	1663 00	738 .53	147706	504	-	-	-	-	-	-	-
						Hi gh	836 .8	1673 60	833 .47	166694	6	-	-	-	-	-	-	-
	Channel spacing CC1-CC2=7.2 MHz (Note 1)																	
	C C 2	10	15	52	Dow nlink	Lo w	878 .7	1757 40	874 .02	174804	0	15	21 90	175230	10	1	0 (0)	1
						Mi d	883 .7	1767 40	860 .66	172132	102		22 01	176170	2	0	0 (0)	102
						Hi gh	889	1778 00	793 .6	158720	504		22 18	177410	2	1	2 (4)	509
10+5	C C 1	10	15	52	Dow nlink	Lo w	874	1748 00	869 .32	173864	0	15	21 79	174290	10	1	0 (0)	1
						Mi d	879	1758 00	855 .96	171192	102		21 90	175230	2	0	0 (0)	102
						Hi gh	884 .3	1768 60	788 .9	157780	504		22 04	176410	6	1	1 (2)	507
					Uplin k	Lo w	829	1658 00	824 .32	164864	0	-	-	-	-	-	-	-
						Mi d	834	1668 00	738 .6	147720	504		-	-	-	-	-	-
						Hi gh	839 .3	1678 60	833 .54	166708	6		-	-	-	-	-	-
	Channel spacing CC1-CC2=7.2 MHz (Note 1)																	

	C C 2	5	15	25	Dow nlink	Lo w	881 .2	1762 40	878 .95	175790	0	15	22 03	176210	8	1	0 (0)	1					
						Mi d	886 .2	1772 40	865 .59	173118	102		22 14	177150	0	0	0 (0)	102					
						Hi gh	891 .5	1783 00	798 .53	159706	504		22 28	178330	4	1	1 (2)	507					
5+15	C C 1	5	15	25	Dow nlink	Lo w	871 .5	1743 00	869 .25	173850	0	15	21 78	174270	8	1	0 (0)	1					
						Mi d	874	1748 00	853 .39	170678	102		21 85	174770	8	1	0 (0)	103					
						Hi gh	876 .9	1753 80	783 .93	156786	504		21 93	175470	12	0	2 (4)	508					
					Uplin k	Lo w	826 .5	1653 00	824 .25	164850	0	-	-	-	-	-	-	-					
						Mi d	829	1658 00	736 .03	147206	504		-	-	-	-	-	-					
						Hi gh	831 .9	1663 80	828 .57	165714	6		-	-	-	-	-	-					
					Channel spacing CC1-CC2=9.6 MHz (Note 1)																		
						C C 2	15	15	79	Dow nlink	Lo w	881 .1	1762 20	873 .99	174798	0	15	21 90	175230	0	2	0 (0)	2
											Mi d	883 .6	1767 20	858 .13	171626	102		21 97	175730	0	2	0 (0)	104
											Hi gh	886 .5	1773 00	788 .67	157734	504		22 05	176430	4	1	2 (4)	509
15+5	C C 1	15	15	79	Dow nlink	Lo w	876 .5	1753 00	869 .39	173878	0	15	21 77	174250	4	0	0 (0)	0					
						Mi d	879	1758 00	853 .53	170706	102		21 84	174750	4	0	0 (0)	102					
						Hi gh	881 .9	1763 80	784 .07	156814	504		21 92	175450	8	1	1 (2)	507					
					Uplin k	Lo w	831 .5	1663 00	824 .39	164878	0	-	-	-	-	-	-	-					
						Mi d	834	1668 00	736 .17	147234	504		-	-	-	-	-	-					
						Hi gh	836 .9	1673 80	828 .71	165742	6		-	-	-	-	-	-					
					Channel spacing CC1-CC2=9.6 MHz (Note 1)																		

	C C 2	5	15	25	Dow nlink	Lo w	886 .1	1772 20	883 .85	176770	0	15	22 13	177130	0	0	0 (0)	0	
						Mi d	888 .6	1777 20	867 .99	173598	102		22 20	177630	0	0	0 (0)	102	
						Hi gh	891 .5	1783 00	798 .53	159706	504		22 28	178330	4	1	1 (2)	507	
	5+5	C C 1	5	15	25	Dow nlink	Lo w	871 .5	1743 00	869 .25	173850	0	15	21 78	174270	8	1	0 (0)	1
Mi d							879	1758 00	858 .39	171678	102	21 96		175710	0	0	0 (0)	102	
Hi gh							886 .7	1773 40	793 .73	158746	504	22 16		177370	4	1	2 (4)	507	
Uplin k						Lo w	826 .5	1653 00	824 .25	164850	0	-	-	-	-	-	-	-	
						Mi d	834	1668 00	741 .03	148206	504		-	-	-	-	-	-	
						Hi gh	841 .7	1683 40	838 .37	167674	6		-	-	-	-	-	-	
Channel spacing CC1-CC2=4.8 MHz (Note 1)																			
		C C 2	5	15	25	Dow nlink	Lo w	876 .3	1752 60	874 .05	174810	0	15	21 90	175230	8	1	0 (0)	1
							Mi d	883 .8	1767 60	863 .19	172638	102		22 14	177150	4	1	6 (12)	115
							Hi gh	891 .5	1783 00	798 .53	159706	504		22 34	178810	8	0	7 (16)	520
	10+10	C C 1	10	15	52	Dow nlink	Lo w	874	1748 00	869 .32	173864	0	15	21 79	174290	10	1	0 (0)	1
Mi d							876 .5	1753 00	853 .46	170692	102	21 83		174730	2	0	0 (0)	102	
Hi gh							879 .1	1758 20	783 .7	156740	504	21 91		175250	2	0	0 (0)	504	
Uplin k						Lo w	829	1658 00	824 .32	164864	0	-	-	-	-	-	-	-	
						Mi d	831 .5	1663 00	736 .1	147220	504		-	-	-	-	-	-	
						Hi gh	834 .1	1668 20	828 .34	165668	6		-	-	-	-	-	-	
Channel spacing CC1-CC2=9.9 MHz (Note 1)																			

	C C 2	10	15	52	Dow nlink	Lo w	883 .9	1767 80	879 .22	175844	0	15	22 03	176210	2	0	0 (0)	0
						Mi d	886 .4	1772 80	863 .36	172672	102		22 10	176890	2	1	2 (4)	107
						Hi gh	889	1778 00	793 .6	158720	504		22 18	177410	2	1	2 (4)	509
Note 1:	Corresponds to nominal channel spacing in accordance with TS 38.101-1 [7], clause 5.4A.1 for the CC1 and CC2 channel bandwidth combination.																	
Note 2:	CCs are specified in increasing frequency order. CC1 is used as PCell if nothing else is specified in the test case.																	
Note 3:	The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs.																	
Note 4:	The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-1 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.																	

Table 4.3.1.1.3.5.1-2: NR Intra-Band contiguous CA configuration CA_n5B (PCC=CC1 and SCC=CC2), SCS 30 kHz

CBW combi nation	C C N o t e 2	CB W [M Hz]	S C S [k Hz]	carrierBa ndwidth [PRBs]	Range		Car rier cen tre [M Hz] Not e 2	Car rier cen tre [AR FCN]	poi nt A [M Hz]	absoluteFreq uencyPointA [ARFCN]	offsetTo Carrier [Carrier PRBs]	SS bl oc k SC S [k Hz]	GS CN	absoluteFreq uencySSB [ARFCN]	k_{SSB}	Offset carrier CORE SET#0 [RBs] Note 3	CORE SET#0 Index (Offset [RBs]) Note 4	offsetTo PointA (SIB1) [PRBs] Note 4	
10+10	C C 1	10	30	24	Dow nlink	Lo w	874	1748 00	869 .68	173936	0	15	21 82	174530	6	1	0 (5)	6	
						Mi d	876 .5	1753 00	835 .46	167092	102		21 92	175450	2	0	8 (18)	222	
						Hi gh	879 .1	1758 20	693 .34	138668	504		22 00	175970	2	0	8 (18)	1026	
					Upli nk	Lo w	829	1658 00	824 .68	164936	0	-	-	-	-	-	-	-	-
						Mi d	831 .5	1663 00	645 .74	129148	504		-	-	-	-	-	-	
						Hi gh	834 .1	1668 20	827 .62	165524	6		-	-	-	-	-	-	
					Channel spacing CC1-CC2=9.9 MHz (Note 1)														

	C C 2	10	30	24	Dow nlink	Lo w	883 .9	1767 80	879 .58	175916	0	15	22 12	176930	2	0	8 (18)	18
						Mi d	886 .4	1772 80	845 .36	169072	102		22 13	177130	10	1	3 (8)	213
						Hi gh	889	1778 00	703 .24	140648	504		22 21	177650	10	1	3 (8)	1017
Note 1: Corresponds to nominal channel spacing in accordance with TS 38.101-1 [7], clause 5.4A.1 for the CC1 and CC2 channel bandwidth combination. Note 2: CCs are specified in increasing frequency order. CC1 is used as PCell if nothing else is specified in the test case. Note 3: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs. Note 4: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-2 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.																		

4.3.1.1.3.6 – 4.3.1.1.3.39 FFS

4.3.1.1.3.40 NR Intra-band contiguous configurations CA_n40

4.3.1.1.3.40.1 CA_n40B

Editor's note: CA_n40B Test frequencies are FFS.

Table 4.3.1.1.3.40.1-1: NR Intra-Band contiguous CA configuration CA_n40B (PCC=CC1 and SCC=CC2), CC1 SCS = 15kHz, CC2 SCS = 15kHz

CBW combin ation [MHz]	C C No te 2	CB W [M Hz]	SC S [k Hz]	carrierBa ndwidth [PRBs]	Ra nge	Car rier cen tre [MH z] Not e 2	Carri er centr e [ARF CN]	poi nt A [M Hz]	absoluteFrequ encyPointA [ARFCN]	offsetTo Carrier [Carrier PRBs]	SS blo ck SC S [k Hz]	GS CN	absoluteFrequ encySSB [ARFCN]	k_{SSB}	Offset carrier CORE SET#0 [RBs] Note 3	CORES ET#0 Index (Offset [RBs]) Note 4	offsetTo PointA (SIB1) [PRBs] Note 4

Table 4.3.1.1.3.40.1-2: NR Intra-Band contiguous CA configuration CA_n40B (PCC=CC1 and SCC=CC2), CC1 SCS = 30kHz, CC2 SCS = 30kHz

CBW combin ation [MHz]	C C	CB W [M Hz]	SC S	carrierBa ndwidth [PRBs]	Ra nge	Car rier cen tre	Carri er centr e	poi nt A	absoluteFrequ encyPointA [ARFCN]	offsetTo Carrier [Carrier PRBs]	SS blo ck	GS CN	absoluteFrequ encySSB [ARFCN]	k_{SSB}	Offset carrier CORE SET#0 Index (Offset [RBs])	CORES ET#0 Index (Offset [RBs])	offsetTo PointA (SIB1) [PRBs]

	No te 2		[k Hz]			[MH z] Not e 2	[ARF CN]	[M Hz]			SC S [k Hz]					ET#0 [RBs] Note 3	[RBs]) Note 4	Note 4

4.3.1.1.3.41 NR Intra-band contiguous configurations CA_n41

4.3.1.1.3.41.1 CA_n41C

Editor's note: Test frequencies for CA_n41C with mixed numerology with SCS CC1=15 kHz and SCS CC2=30 kHz or 60 kHz; and SCS CC1=30 kHz and SCS CC2= 30 kHz or 60kHz is FFS.

Table 4.3.1.1.3.41.1-1: NR Intra-Band contiguous CA configuration CA_n41C (PCC=CC1 and SCC=CC2), CC1 SCS = 30kHz, CC2 SCS = 30 kHz

CBW combination	CC Note 2	CBW [MHz]	SCS [kHz]	carrierBandwidth [PRBs]	Range		Carrier centre [MHz] Note 2	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequencyPointA [ARFCN]	offsetTo Carrier [Carrier PRBs]	SS block SCS [kHz]	GS CN	absoluteFrequencySSB [ARFCN]	k_{SS}	carrier CORE SET#0 [RBs] Note 3	CORE SET#0 Index (Offset [RBs]) Note 4	offsetTo PointA (SIB1) [PRBs] Note 4	
40+80	CC1	40	30	106	Downlink	Low	251 6.01	5032 02	249 6.93	499386	0	30	62 52	500190	4	0	1 (1)	2	
					&	Mid	255 3	5106 00	249 7.2	499440	102		63 45	507630	18	0	1 (1)	206	
					Uplink	High	259 0.17	5180 34	238 9.65	477930	504		64 38	515070	20	0	1 (1)	1010	
	Channel spacing CC1-CC2=59.82 MHz (Note 1)																		
	CC2	80	30	217	Downlink	Low	257 5.83	5151 66	253 6.77	507354	0	30	63 51	508110	12	0	0 (0)	0	
					&	Mid	261 2.82	5225 64	253 7.04	507408	102		64 44	515550	2	0	1 (1)	206	
					Uplink	High	264 9.99	5299 98	242 9.49	485898	504		65 37	522990	4	0	1 (1)	1010	
	40+100	CC1	40	30	106	Downlink	Low	251 6.01	5032 02	249 6.93	499386	0	30	62 52	500190	4	0	1 (1)	2
&						Mid	254 3.01	5086 02	248 7.21	497442	102	63 21		505710	20	0	2 (2)	208	
Uplink						High	257 0.28	5140 56	236 9.76	473952	504	63 87		510990	10	0	0 (0)	1008	
Channel spacing CC1-CC2=69.72 MHz (Note 1)																			
	CC2	100	30	273	Downlink	Low	258 5.73	5171 46	253 6.59	507318	0	30	63 51	508110	0	0	1 (1)	2	

50+60	C C 1	50	30	133	&	Mid	261 2.73	5225 46	252 6.87	505374	102	30	64 20	513630	16	0	2 (2)	208	
					Uplink	High	264 0	5280 00	240 9.42	481884	504		64 86	518910	6	0	0 (0)	1008	
					Downdlink	Low	252 1.02	5042 04	249 7.08	499416	0		62 52	500190	18	0	0 (0)	0	
					&	Mid	256 2.99	5125 98	250 2.33	500466	102		63 57	508590	20	0	0 (0)	204	
	Uplink	High	260 5.02	5210 04	239 9.64	479928	504	64 62	516990	18	0	0 (0)	1008						
	Channel spacing CC1-CC2=54.96 MHz (Note 1)																		
	C C 2	60	30	162	Downdlink	Low	257 5.98	5151 96	254 6.82	509364	0	30	63 78	510270	14	0	2 (2)	4	
					&	Mid	261 7.95	5235 90	255 2.07	510414	102		64 83	518670	16	0	2 (2)	208	
					Uplink	High	265 9.98	5319 96	244 9.38	489876	504		65 88	527070	14	0	2 (2)	1012	
	50+80	C C 1	50	30	133	Downdlink	Low	252 1.02	5042 04	249 7.08	499416	0	30	62 52	500190	18	0	0 (0)	0
&						Mid	255 3	5106 00	249 2.34	498468	102	63 33		506670	22	0	1 (1)	206	
Uplink						High	258 5.13	5170 26	237 9.75	475950	504	64 14		513150	16	0	2 (2)	1012	
Channel spacing CC1-CC2=64.86 MHz (Note 1)																			
C C 2		80	30	217	Downdlink	Low	258 5.88	5171 76	254 6.82	509364	0	30	63 78	510270	14	0	2 (2)	4	
					&	Mid	261 7.86	5235 72	254 2.08	508416	102		64 56	516510	10	0	0 (0)	204	
					Uplink	High	264 9.99	5299 98	242 9.49	485898	504		65 37	522990	4	0	1 (1)	1010	
50+100		C C 1	50	30	133	Downdlink	Low	252 1.02	5042 04	249 7.08	499416	0	30	62 52	500190	18	0	0 (0)	0
						&	Mid	254 3.01	5086 02	248 2.35	496470	102		63 09	504750	0	0	3 (3)	210
						Uplink	High	256 5.24	5130 48	235 9.86	471972	504		63 63	509070	6	0	1 (1)	1010
	Channel spacing CC1-CC2=74.76 MHz (Note 1)																		

	C C 2	10 0	30	273	Dow nlink	Lo w	259 5.78	5191 56	254 6.64	509328	0	30	63 78	510270	2	0	3(3)	6
					&	Mi d	261 7.77	5235 54	253 1.91	506382	102		64 32	514590	0	0	2(2)	208
					Upli nk	Hi gh	264 0	5280 00	240 9.42	481884	504		64 86	518910	6	0	0(0)	1008
60+50	C C 1	60	30	162	Dow nlink	Lo w	252 6	5052 00	249 6.84	499368	0	30	62 52	500190	10	0	1 (1)	2
					&	Mi d	256 8	5136 00	250 2.12	500424	102		63 57	508590	10	0	1 (1)	206
					Upli nk	Hi gh	261 0.03	5220 06	239 9.43	479886	504		64 62	516990	8	0	1 (1)	1010
	Channel spacing CC1-CC2=54.96 MHz (Note 1)																	
	C C 2	50	30	133	Dow nlink	Lo w	258 0.96	5161 92	255 7.02	511404	0	30	64 02	512190	22	0	0 (0)	0
					&	Mi d	262 2.96	5245 92	256 2.3	512460	102		65 07	520590	22	0	0 (0)	204
					Upli nk	Hi gh	266 4.99	5329 98	245 9.61	491922	504		66 12	528990	20	0	0 (0)	1008
60+60	C C 1	60	30	162	Dow nlink	Lo w	252 6	5052 00	249 6.84	499368	0	30	62 52	500190	10	0	1 (1)	2
					&	Mi d	256 2.99	5125 98	249 7.11	499422	102		63 45	507630	0	0	2 (2)	208
					Upli nk	Hi gh	259 9.98	5199 96	238 9.38	477876	504		64 38	515070	14	0	2 (2)	1012
	Channel spacing CC1-CC2=60 MHz (Note 1)																	
	C C 2	60	30	162	Dow nlink	Lo w	258 6	5172 00	255 6.84	511368	0	30	64 02	512190	10	0	1 (1)	2
					&	Mi d	262 2.99	5245 98	255 7.11	511422	102		64 95	519630	0	0	2 (2)	208
					Upli nk	Hi gh	265 9.98	5319 96	244 9.38	489876	504		65 88	527070	14	0	2 (2)	1012
60+80	C C 1	60	30	162	Dow nlink	Lo w	252 6	5052 00	249 6.84	499368	0	30	62 52	500190	10	0	1 (1)	2
					&	Mi d	255 3	5106 00	248 7.12	497424	102		63 21	505710	2	0	3 (3)	210

					Uplink	High	258 0.09	5160 18	236 9.49	473898	504		63 87	510990	4	0	1 (1)	1010
Channel spacing CC1-CC2=69.9 MHz (Note 1)																		
	CC2	80	30	217	Downdlink	Low	259 5.9	5191 80	255 6.84	511368	0	30	64 02	512190	10	0	1 (1)	2
					&	Mid	262 2.9	5245 80	254 7.12	509424	102		64 71	517710	2	0	3 (3)	210
					Uplink	High	264 9.99	5299 98	242 9.49	485898	504		65 37	522990	4	0	1 (1)	1010
60+100	CC1	60	30	162	Downdlink	Low	252 6	5052 00	249 6.84	499368	0	30	62 52	500190	10	0	1 (1)	2
					&	Mid	254 3.01	5086 02	247 7.13	495426	102		62 94	503550	20	0	0 (0)	204
					Uplink	High	256 0.2	5120 40	234 9.6	469920	504		63 39	507150	2	0	3 (3)	1014
Channel spacing CC1-CC2=79.8 MHz (Note 1)																		
	CC2	100	30	273	Downdlink	Low	260 5.8	5211 60	255 6.66	511332	0	30	64 02	512190	22	0	1 (1)	2
					&	Mid	262 2.81	5245 62	253 6.95	507390	102		64 44	515550	8	0	1 (1)	206
					Uplink	High	264 0	5280 00	240 9.42	481884	504		64 86	518910	6	0	0 (0)	1008
80+40	CC1	80	30	217	Downdlink	Low	253 6.02	5072 04	249 6.96	499392	0	30	62 52	500190	2	0	1 (1)	2
					&	Mid	257 3.01	5146 02	249 7.23	499446	102		63 45	507630	16	0	1 (1)	206
					Uplink	High	261 0.18	5220 36	238 9.68	477936	504		64 38	515070	18	0	1 (1)	1010
Channel spacing CC1-CC2=59.82 MHz (Note 1)																		
	CC2	40	30	106	Downdlink	Low	259 5.84	5191 68	257 6.76	515352	0	30	64 53	516270	18	0	2 (2)	4
					&	Mid	263 2.83	5265 66	257 7.03	515406	102		65 43	523470	0	0	0 (0)	204
					Uplink	High	267 0	5340 00	246 9.48	493896	504		66 36	530910	2	0	0 (0)	1008

80+50	C C 1	80	30	217	Dow nlink	Lo w	253 6.02	5072 04	249 6.96	499392	0	30	62 52	500190	2	0	1 (1)	2	
					&	Mi d	256 8	5136 00	249 2.22	498444	102		63 33	506670	6	0	2 (2)	208	
					Upli nk	Hi gh	260 0.13	5200 26	237 9.63	475926	504		64 14	513150	0	0	3 (3)	1014	
	Channel spacing CC1-CC2=64.86 MHz (Note 1)																		
	C C 2	50	30	133	Dow nlink	Lo w	260 0.88	5201 76	257 6.94	515388	0	30	64 53	516270	6	0	2 (2)	4	
					&	Mi d	263 2.86	5265 72	257 2.2	514440	102		65 31	522510	2	0	0 (0)	204	
					Upli nk	Hi gh	266 4.99	5329 98	245 9.61	491922	504		66 12	528990	20	0	0 (0)	1008	
	80+60	C C 1	80	30	217	Dow nlink	Lo w	253 6.02	5072 04	249 6.96	499392	0	30	62 52	500190	2	0	1 (1)	2
						&	Mi d	256 2.99	5125 98	248 7.21	497442	102		63 21	505710	20	0	2 (2)	208
						Upli nk	Hi gh	259 0.08	5180 16	236 9.58	473916	504		63 87	510990	22	0	0 (0)	1008
Channel spacing CC1-CC2=69.9 MHz (Note 1)																			
C C 2		60	30	162	Dow nlink	Lo w	260 5.92	5211 84	257 6.76	515352	0	30	64 53	516270	18	0	2 (2)	4	
					&	Mi d	263 2.89	5265 78	256 7.01	513402	102		65 19	521550	4	0	1 (1)	206	
					Upli nk	Hi gh	265 9.98	5319 96	244 9.38	489876	504		65 88	527070	14	0	2 (2)	1012	
80+80		C C 1	80	30	217	Dow nlink	Lo w	253 6.02	5072 04	249 6.96	499392	0	30	62 52	500190	2	0	1 (1)	2
						&	Mi d	255 3	5106 00	247 7.22	495444	102		62 94	503550	14	0	0 (0)	204
						Upli nk	Hi gh	257 0.01	5140 02	234 9.51	469902	504		63 36	506910	0	0	0 (0)	1008
	Channel spacing CC1-CC2=79.98 MHz (Note 1)																		
	C C 2	80	30	217	Dow nlink	Lo w	261 6	5232 00	257 6.94	515388	0	30	64 53	516270	6	0	2 (2)	4	

80+10 0	C C 1	80	30	217	&	Mid	263 2.98	5265 96	255 7.2	511440	102	30	64 95	519630	18	0	1 (1)	206	
					Uplink	High	264 9.99	5299 98	242 9.49	485898	504		65 37	522990	4	0	1 (1)	1010	
					Downlink	Low	253 6.02	5072 04	249 6.96	499392	0		62 52	500190	2	0	1 (1)	2	
					&	Mid	254 3.01	5086 02	246 7.23	493446	102		62 70	501630	16	0	1 (1)	206	
	Uplink	High	255 0.12	5100 24	232 9.62	465924	504	62 88	503070	22	0	1 (1)	1010						
	Channel spacing CC1-CC2=89.88 MHz (Note 1)																		
	C C 2	10 0	30	273	Downlink	Low	262 5.9	5251 80	257 6.76	515352	0	30	64 53	516270	18	0	2 (2)	4	
					&	Mid	263 2.89	5265 78	254 7.03	509406	102		64 68	517470	0	0	0 (0)	204	
					Uplink	High	264 0	5280 00	240 9.42	481884	504		64 86	518910	6	0	0 (0)	1008	
	100+4 0	C C 1	10 0	30	273	Downlink	Low	254 6.01	5092 02	249 6.87	499374	0	30	62 52	500190	8	0	1 (1)	2
&						Mid	257 3.01	5146 02	248 7.15	497430	102	63 21		505710	0	0	3 (3)	210	
Uplink						High	260 0.28	5200 56	236 9.7	473940	504	63 87		510990	14	0	0 (0)	1008	
Channel spacing CC1-CC2=69.72 MHz (Note 1)																			
C C 2		40	30	106	Downlink	Low	261 5.73	5231 46	259 6.65	519330	0	30	65 01	520110	20	0	0 (0)	0	
					&	Mid	264 2.73	5285 46	258 6.93	517386	102		65 70	525630	12	0	2 (2)	208	
					Uplink	High	267 0	5340 00	246 9.48	493896	504		66 36	530910	2	0	0 (0)	1008	
100+5 0		C C 1	10 0	30	273	Downlink	Low	254 6.01	5092 02	249 6.87	499374	0	30	62 52	500190	8	0	1 (1)	2
						&	Mid	256 8	5136 00	248 2.14	496428	102		63 06	504510	6	0	0 (0)	204
						Uplink	High	259 0.23	5180 46	235 9.65	471930	504		63 63	509070	20	0	1 (1)	1010
	Channel spacing CC1-CC2=74.76 MHz (Note 1)																		

	C C 2	50	30	133	Downlink	Low	262 0.77	5241 54	259 6.83	519366	0	30	65 01	520110	8	0	0 (0)	0	
					&	Mid	264 2.76	5285 52	258 2.1	516420	102		65 58	524670	14	0	2 (2)	208	
					Uplink	High	266 4.99	5329 98	245 9.61	491922	504		66 12	528990	20	0	0 (0)	1008	
100+60	C C 1	100	30	273	Downlink	Low	254 6.01	5092 02	249 6.87	499374	0	30	62 52	500190	8	0	1 (1)	2	
					&	Mid	256 2.99	5125 98	247 7.13	495426	102		62 94	503550	20	0	0 (0)	204	
					Uplink	High	258 0.18	5160 36	234 9.6	469920	504		63 39	507150	2	0	3 (3)	1014	
	Channel spacing CC1-CC2=79.8 MHz (Note 1)																		
	C C 2	60	30	162	Downlink	Low	262 5.81	5251 62	259 6.65	519330	0	30	65 01	520110	20	0	0 (0)	0	
					&	Mid	264 2.79	5285 58	257 6.91	515382	102		65 43	523470	8	0	0 (0)	204	
					Uplink	High	265 9.98	5319 96	244 9.38	489876	504		65 88	527070	14	0	2 (2)	1012	
	100+80	C C 1	100	30	273	Downlink	Low	254 6.01	5092 02	249 6.87	499374	0	30	62 52	500190	8	0	1 (1)	2
						&	Mid	255 3	5106 00	246 7.14	493428	102		62 70	501630	22	0	1 (1)	206
						Uplink	High	256 0.11	5120 22	232 9.53	465906	504		62 88	503070	4	0	2 (2)	1012
Channel spacing CC1-CC2=89.88 MHz (Note 1)																			
C C 2		80	30	217	Downlink	Low	263 5.89	5271 78	259 6.83	519366	0	30	65 01	520110	8	0	0 (0)	0	
					&	Mid	264 2.88	5285 76	256 7.1	513420	102		65 19	521550	22	0	0 (0)	204	
					Uplink	High	264 9.99	5299 98	242 9.49	485898	504		65 37	522990	4	0	1 (1)	1010	
Note 1:		Corresponds to nominal channel spacing in accordance with TS 38.101-1 [7], clause 5.4A.1 for the CC1 and CC2 channel bandwidth combination.																	
Note 2:		CCs are specified in increasing frequency order. CC1 is used as PCell if nothing else is specified in the test case.																	
Note 3:		The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs.																	

Note 4: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-4 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.

4.3.1.1.3.42 – 4.3.1.1.3.47 FFS

4.3.1.1.3.48 NR Intra-band contiguous configurations CA_n48

4.3.1.1.3.48.1 CA_n48B

Editor's note: Test frequencies for CA_n48B with mixed numerology with SCS CC1=15 kHz and SCS CC2=30 kHz or 60 kHz; and SCS CC1=30 kHz and SCS CC2= 15 kHz or 60kHz is FFS.

Editor's note: Test frequencies for all possible bandwidth combinations are not provided in tables, 4.3.1.1.3.48.1-1 and 4.3.1.1.3.48.1-2. How to handle the case where a specific bandwidth combination is missing in the table, is FFS.

Table 4.3.1.1.3.48.1-1: NR Intra-Band contiguous CA configuration CA_n48B (PCC=CC1 and SCC=CC2), CC1 SCS = 15kHz, CC2 SCS = 15kHz

CBW combi nation (BCS)	C C N o t e 2	CB W [M Hz]	S C S [k Hz]	carrierBa ndwidth [PRBs]	Range		Car rier cen tre [MH z] Not e 2	Carri er cent re [AR FCN]	poi nt A [MH z]	absoluteFrequ encyPointA [ARFCN]	offsetTo Carrier [Carrier PRBs]	SS bl oc k SC S [k Hz]	GS CN	absoluteFrequ encySSB [ARFCN]	k_{SSB}	Offset carrier CORE SET#0 [RBs] Note 3	CORE SET#0 Index (Offset [RBs]) Note 4	offsetTo PointA (SIB1) [PRBs] Note 4	
15+5 (0)	C C 1	15	15	79	Dow nlink	Lo w	355 7.52 Not e 8	6371 68	355 0.41	636694	0	30	78 84	636960	2	0	0 (2)	2	
						& Uplin k	Mid	362 2.50	6415 00	359 7.03	639802		102	79 30	641376	2	3	1 (6)	111
					High		368 7.63 Not e 9	6458 42	358 9.80	639320	504		79 75	645696	4	1	1 (6)	511	
	Channel spacing CC1-CC2 = 9.855 MHz (Note 1)																		
	C C 2 N o t e 5	5	15	25	Dow nlink & Uplin k	Lo w	356 7.38	6378 25	356 5.12	637675	0	-	-	-	31	-	-	-	
Mid						363 2.36	6421 57	361 1.74	640783	102	-		-	31	-	-	-		
High						369 7.49	6464 99	360 4.51	640301	504	-		-	31	-	-	-		

10+10 (0,2) Note 6	C C 1	10	15	52	Dow nlink	Lo w	355 5.00	6370 00	355 0.32	636688	0	30	78 84	636960	8	0	0 (2)	2
					&	Mi d	361 9.98 Not e 9	6413 32	359 6.94	639796	102		79 30	641376	8	3	1 (6)	111
	Uplin k	Hi gh	368 5.02 Not e 9	6456 68	358 9.62	639308	504	79 75	645696	4	2	1 (6)	512					
Channel spacing CC1-CC2 = 9.96 MHz (Note 1)																		
20+10 (0,2) Note 6	C C 2	10	15	52	Dow nlink	Lo w	356 4.96	6376 64	356 0.28	637352	0	30	78 91	637632	4	1	0 (2)	3
					&	Mi d	362 9.94	6419 96	360 6.90	640460	102		79 36	641952	4	0	0 (2)	104
	Uplin k	Hi gh	369 4.98	6463 32	359 9.58	639972	504	79 82	646368	0	3	1 (6)	513					
Channel spacing CC1-CC2 = 14.64 MHz (Note 1)																		
20+20	C C 1	20	15	106	Dow nlink	Lo w	356 0.01	6373 34	355 0.47	636698	0	30	78 85	637056	10	3	1 (6)	9
					&	Mi d	361 9.98 Not e 9	6413 32	359 2.08	639472	102		79 26	640992	8	2	0 (2)	106
	Uplin k	Hi gh	368 0.34 Not e 9	6453 56	358 0.08	638672	504	79 68	645024	4	3	0 (2)	509					
Channel spacing CC1-CC2 = 14.64 MHz (Note 1)																		
20+20	C C 2	10	15	52	Dow nlink	Lo w	357 4.65	6383 10	356 9.97	637998	0	30	78 98	638304	6	3	0 (2)	5
					&	Mi d	363 4.62	6423 08	361 1.58	640772	102		79 40	642336	4	2	1 (6)	110
	Uplin k	Hi gh	369 4.98	6463 32	359 9.58	639972	504	79 82	646368	0	3	1 (6)	513					
Channel spacing CC1-CC2 = 14.64 MHz (Note 1)																		

(0,2) Note 6					& Uplink	Mi d	361 5.00	6410 00	358 7.10	639140	102		79 23	640704	4	2	1 (6)	110	
						Hi gh	367 0.02	6446 68	356 9.76	637984	504		79 61	644352	8	0	1 (6)	510	
	Channel spacing CC1-CC2 = 19.98 MHz (Note 1)																		
	C C 2	20	15	106	Dow nlink & Uplink	Lo w Mi d Hi gh	357 9.99 363 4.98 369 0.00	6386 66 6423 32 6460 00	357 0.45 360 7.08 358 9.74	638030 640472 639316	0 102 504	30	78 98 79 37 79 75	638304 642048 645696	10 4 8	0 3 1	0 (2) 1 (6) 1 (6)	2 111 511	
30+10 (2)	C C 1	30	15	160	Dow nlink & Uplink	Lo w Mi d Hi gh	356 5.02 Not e 8 361 9.98 Not e 9 367 5.30 Not e 9	6376 68 6413 32 6450 20	355 0.62 358 7.22 357 0.18	636708 639148 638012	0 102 504	30	78 85 79 23 79 61	637056 640704 644352	0 8 4	3 1 2	1 (6) 1 (6) 0 (2)	9 109 508	
	Channel spacing CC1-CC2 = 19.68 MHz (Note 1)																		
	C C 2	10	15	52	Dow nlink & Uplink	Lo w Mi d Hi gh	358 4.70 363 9.66 369 4.98	6389 80 6426 44 6463 32	358 0.02 361 6.62 359 9.58	638668 641108 639972	0 102 504	30	79 05 79 43 79 82	638976 642624 646368	8 4 0	3 2 3	0 (2) 0 (2) 1 (6)	5 106 513	
	40+10 (2)	C C 1	40	15	216	Dow nlink	Lo w	357 0.00	6380 00	355 0.56	636704	0	30	78 85	637056	4	3	1 (6)	9
						&	Mi d	361 9.98 Not e 9	6413 32	358 2.18	638812	102	79 19	640320	8	1	0 (2)	105	
						Uplink	Hi gh	367 0.62	6447 08	356 0.46	637364	504	79 54	643680	4	0	0 (2)	506	

							Not e 9											
	Channel spacing CC1-CC2 = 24.36 MHz (Note 1)																	
	C C 2	10	15	52	Dow nlink & Uplin k	Lo w Mi d Hi gh	359 4.36 364 4.34 369 4.98	6396 24 6429 56 6463 32	358 9.68 362 1.30 359 9.58	639312 641420 639972	0 102 504	30	79 12 79 46 79 82	639648 642912 646368	0 4 0	2 0 3	1 (6) 0 (2) 1 (6)	8 104 513
50+10 (1,2)	C C 1 N ot e 7	50	15	270	Dow nlink & Uplin k	Lo w Mi d Hi gh	357 5.01 361 9.98 Not e 9 366 5.58 Not e 9	6383 34 6413 32 6443 72	355 0.71 357 7.32 355 0.56	636714 638488 636704	0 102 504	30	- - -	637056 640032 643104	31 31 31	- - -	- - -	- - -
	Channel spacing CC1-CC2 = 29.4 MHz (Note 1)																	
	C C 2	10	15	52	Dow nlink & Uplin k	Lo w Mi d Hi gh	360 4.41 364 9.38 369 4.98	6402 94 6432 92 6463 32	359 9.73 362 6.34 359 9.58	639982 641756 639972	0 102 504	30	79 19 79 50 79 82	640320 643296 646368	2 4 0	2 0 3	1 (6) 1 (6) 1 (6)	8 108 513
50+20 (1,2)	C C 1 N ot e 7	50	15	270	Dow nlink & Uplin k	Lo w Mi d Hi gh	357 5.01 361 5.00 365 5.26	6383 34 6410 00 6436 84	355 0.71 357 2.34 354 0.24	636714 638156 636016	0 102 504	30	- - -	637056 639648 642336	31 31 31	- - -	- - -	- - -
	Channel spacing CC1-CC2 = 34.74 MHz (Note 1)																	
	C C 2	20	15	106	Dow nlink	Lo w	360 9.75	6406 50	360 0.21	640014	0	30	79 19	640320	6	3	0 (2)	5

40+40 (1,2)	C C 1	40	15	216	&	Mid	364 9.74	6433 16	362 1.84	641456	102	30	79 47	643008	4	1	1 (6)	109	
					Uplink	High	369 0.00	6460 00	358 9.74	639316	504		79 75	645696	8	1	1 (6)	511	
					&	Downlink	Low	357 0.00	6380 00	355 0.56	636704		0	78 85	637056	4	3	1 (6)	9
							Mid	360 4.98 Note 9	6403 32	356 7.18	637812		102	79 09	639360	0	1	1 (6)	109
	Uplink	High	364 0.02 Note 9	6426 68	352 9.86	635324	504	79 33	641664	4	2	0 (2)	508						
	Channel spacing CC1-CC2 = 39.96 MHz (Note 1)																		
	C C 2	40	15	216	Downlink	Low	360 9.96	6406 64	359 0.52	639368	0	30	79 12	639648	4	1	0 (2)	3	
					&	Uplink	Mid	364 4.94	6429 96	360 7.14	640476		102	79 37	642048	0	3	1 (6)	111
					High		367 9.98	6453 32	356 9.82	637988	504		79 61	644352	4	0	1 (6)	510	
	50+30 (0,1)	C C 1 Note 7	50	15	270	&	Downlink	Low	357 5.01	6383 34	355 0.71	636714	0	30	-	637056	31	-	-
&						Mid	360 9.99 Note 9	6406 66	356 7.33	637822	102	-	639360		31	-	-	-	
							Uplink	High	364 5.27	6430 18	353 0.25	635350	504		-	641664	31	-	-
Channel spacing CC1-CC2 = 39.72 MHz (Note 1)																			
C C 2		30	15	160	Downlink	Low	361 4.73	6409 82	360 0.33	640022	0	30	79 19	640320	10	2	0 (2)	4	
					&	Uplink	Mid	364 9.71	6433 14	361 6.95	641130		102	79 43	642624	6	0	0 (2)	104
	High				368 4.99		6456 66	357 9.87	638658	504	79 68		645024	6	0	1 (6)	510		

(50+40) (1,2)	C C 1 N o t e 7	50	15	270	Downlink & Uplink	Low	357 5.01	6383 34	355 0.71	636714	0	30	-	637056	31	-	-	-
						Mid	360 4.98 Note 9	6403 32	356 2.32	637488	102		-	638976	31	-	-	-
						High	363 5.04 Note 9	6423 36	352 0.02	634668	504		-	640992	31	-	-	-
						Channel spacing CC1-CC2 = 44.94 MHz (Note 1)												
C C 2	40	15	216	Downlink & Uplink	Low	361 9.95	6413 30	360 0.51	640034	0	30	79 19	640320	10	1	0 (2)	3	
					Mid	364 9.92	6433 28	361 2.12	640808	102		79 40	642336	4	3	0 (2)	107	
					High	367 9.98	6453 32	356 9.82	637988	504		79 61	644352	4	0	1 (6)	510	
Note 1:	Corresponds to nominal channel spacing in accordance with TS 38.101-1 [7], clause 5.4A.1 for the CC1 and CC2 channel bandwidth combination.																	
Note 2:	CCs are specified in increasing frequency order. CC1 is used as PCell for CBW>5 MHz if nothing else is specified in the test case. For the case CC1 CBW=5 MHz then CC2 is used as Pcell-																	
Note 3:	The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs.																	
Note 4:	The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-3 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.																	
Note 5:	This UE channel bandwidth is restricted for operation when carrier is configured as a downlink SCell part of a DC or CA configuration (TS 38.101-1, Table 5.3.5-1 Note 6). No SS/PBCH block fits within the channel bandwidth. As the bandwidth is limited to SCell then absence of CORESET#0 is indicated in the MIB by setting =31, controlResourceSetZero=0 and searchSpaceZero = 0 (TS 38.213 [22], clause 13).																	
Note 6:	UL CA is only supported for BCS0. I.e.the test frequencies for uplink CC2 are only supported for BCS0.																	
Note 7:	This UE channel bandwidth is restricted for operation when carrier is configured as a downlink SCell part of a DC or CA configuration (TS 38.101-1, Table 5.3.5-1 Note 7). As the bandwidth is limited to SCell then absence of CORESET#0 is indicated in the MIB by setting =31, controlResourceSetZero=0 and searchSpaceZero = 0 (TS 38.213 [22], clause 13).																	
Note 8:	Centre frequency shifted 15 kHz to align with the synchronisation raster.																	
Note 9:	Centre frequency shifted -15 kHz to align with the synchronisation raster.																	

Table 4.3.1.1.3.48.1-2: NR Intra-Band contiguous CA configuration CA_n48B (PCC=CC1 and SCC=CC2), CC1 SCS = 30kHz, CC2 SCS = 30kHz

CBW combi nation (BCS)	C C N o t e 2	CB W [M Hz]	S C S [k Hz]	carrierBa ndwidth [PRBs]	Range		Carrier cen tre [MH z] Not e 2	Carri er cent re [AR FCN]	poi nt A [MH z]	absoluteFrequ encyPointA [ARFCN]	offsetTo Carrier [Carrier PRBs]	SS bl oc k SC S [k Hz]	GS CN	absoluteFrequ encySSB [ARFCN]	k_{SSB}	Offset carrier CORE SET#0 [RBs] Note 3	CORE SET#0 Index (Offset [RBs]) Note 4	offsetTo PointA (SIB1) [PRBs] Note 4	
10+10 (0,2) Note 5	C C 1	10	30	24	Dow nlink	Lo w	355 5.00	6370 00	355 0.68	636712	0	30	78 84	636960	8	0	0 (0)	0	
						&	Mid	362 0.01	6413 34	357 8.97	638598		102	79 30	641376	18	0	3 (3)	210
					Uplin k	Hi gh	368 5.02	6456 68	349 9.26	633284	504		79 75	645696	4	0	3 (3)	1014	
	Channel spacing CC1-CC2 = 9.96 MHz (Note 1)																		
	C C 2	10	30	24	Dow nlink	Lo w	356 4.96	6376 64	356 0.64	637376	0	30	78 91	637632	16	0	0 (0)	0	
						&	Mid	362 9.97	6419 98	358 8.93	639262		102	79 36	641952	2	0	0 (0)	204
					Uplin k	Hi gh	369 4.98	6463 32	350 9.22	633948	504		79 82	646368	12	0	3 (3)	1014	
	20+10 (0,2) Note 5	C C 1	20	30	51	Dow nlink	Lo w	356 0.01	6373 34	355 0.83	636722	0	30	78 85	637056	22	0	3 (3)	6
							&	Mid	362 0.01	6413 34	357 4.11	638274		102	79 26	640992	6	0	1 (1)	206
						Uplin k	Hi gh	368 0.34	6453 56	348 9.72	632648	504		79 68	645024	16	0	1 (1)	1010
Channel spacing CC1-CC2 = 14.64 MHz (Note 1)																			
C C 2		10	30	24	Dow nlink	Lo w	357 4.65	6383 10	357 0.33	638022	0	30	78 98	638304	18	0	1 (1)	2	
						&	Mid	363 4.65	6423 10	359 3.61	639574		102	79 40	642336	2	0	3 (3)	210
					Uplin k	Hi gh	369 4.98	6463 32	350 9.22	633948	504		79 82	646368	12	0	3 (3)	1014	

20+20 (0,2) Note 5	C C 1	20	30	51	Dow nlink	Lo w	356 0.01	6373 34	355 0.83	636722	0	30	78 85	637056	22	0	3 (3)	6
					&	Mi d	361 5.00	6410 00	356 9.10	637940	102		79 23	640704	4	0	3 (3)	210
					Uplin k	Hi gh	367 0.02	6446 68	347 9.40	631960	504		79 61	644352	8	0	2 (2)	1012
	Channel spacing CC1-CC2 = 19.98 MHz (Note 1)																	
	C C 2	20	30	51	Dow nlink	Lo w	357 9.99	6386 66	357 0.81	638054	0	30	78 98	638304	10	0	0 (0)	0
&	Mi d	363 4.98	6423 32	358 9.08	639272	102	79 37	642048	16	0	3 (3)		210					
Uplin k	Hi gh	369 0.00	6460 00	349 9.38	633292	504	79 75	645696	20	0	2 (2)		1012					
30+10 (2)	C C 1	30	30	78	Dow nlink	Lo w	356 5.02	6376 68	355 0.98	636732	0	30	78 85	637056	12	0	3 (3)	6
					&	Mi d	362 0.01	6413 34	356 9.25	637950	102		79 23	640704	18	0	2 (2)	208
					Uplin k	Hi gh	367 5.30	6450 20	347 9.82	631988	504		79 61	644352	4	0	1 (1)	1010
	Channel spacing CC1-CC2 = 19.68 MHz (Note 1)																	
	C C 2	10	30	24	Dow nlink	Lo w	358 4.70	6389 80	358 0.38	638692	0	30	79 05	638976	20	0	1 (1)	2
&	Mi d	363 9.69	6426 46	359 8.65	639910	102	79 43	642624	2	0	1 (1)		206					
Uplin k	Hi gh	369 4.98	6463 32	350 9.22	633948	504	79 82	646368	12	0	3 (3)		1014					
40+10 (2)	C C 1	40	30	106	Dow nlink	Lo w	357 0.00	6380 00	355 0.92	636728	0	30	78 85	637056	16	0	3 (3)	6
					&	Mi d	362 0.01	6413 34	356 4.21	637614	102		79 19	640320	18	0	0 (0)	204
					Uplin k	Hi gh	367 0.62	6447 08	347 0.10	631340	504		79 54	643680	4	0	0 (0)	1008
	Channel spacing CC1-CC2 = 24.36 MHz (Note 1)																	
	C C 2	10	30	24	Dow nlink	Lo w	359 4.36	6396 24	359 0.04	639336	0	30	79 12	639648	0	0	3 (3)	6

40+20 (2)	C C 1	40	30	106	& Uplink	Mid	364 4.37	6429 58	360 3.33	640222	102	30	79 46	642912	2	0	0 (0)	204
						High	369 4.98	6463 32	350 9.22	633948	504		79 82	646368	12	0	3 (3)	1014
					Dow nlink	Low	357 0	6380 00	355 0.92	636728	0		78 85	637056	16	0	3 (3)	6
						& Uplink	Mid	361 5	6410 00	355 9.2	637280		102	79 16	640032	16	0	2 (2)	208
					High	366 0.3	6440 20	345 9.78	630652	504	79 47		643008	20	0	0 (0)	1008	
	Channel spacing CC1-CC2=29.7 MHz (Note 1)																	
	C C 2	20	30	51	Dow nlink	Low	359 9.7	6399 80	359 0.52	639368	0	30	79 12	639648	16	0	1 (1)	2
						Mid	364 4.7	6429 80	359 8.8	639920	102		79 43	642624	16	0	0 (0)	204
						High	369 0	6460 00	349 9.38	633292	504		79 75	645696	20	0	2 (2)	1012
	50+10 (1,2)	C C 1 N o t e 6	50	30		133	Dow nlink	Low	357 5.01	6383 34	355 1.07		636738	0	30	-	636978	31
& Uplink					Mid			362 0.01	6413 34	355 9.35	637290	102	-	639978		31	-	-
High					366 5.58		6443 72	346 0.20	630680	504	-	643016	31	-		-	-	
Channel spacing CC1-CC2 = 29.4 MHz (Note 1)																		
C C 2	10	30	24	Dow nlink	Low	360 4.41	6402 94	360 0.09	640006	0	30	79 19	640320	2	0	3 (3)	6	
					& Uplink	Mid	364 9.41	6432 94	360 8.37	640558		102	79 50	643296	2	0	2 (2)	208
					High	369 4.98	6463 32	350 9.22	633948	504		79 82	646368	12	0	3 (3)	1014	
40+30 (2)	C C 1	40	30		106	Dow nlink	Low	357 0	6380 00	355 0.92		636728	0	30	78 85	637056	16	0	3 (3)	6
				& Uplink			Mid	360 9.99	6406 66	355 4.19	636946	102	79 12		639648	14	0	0 (0)	204

					Uplink	High	365 0.31	6433 54	344 9.79	629986	504		79 40	642336	14	0	0 (0)	1008
	Channel spacing CC1-CC2=34.68 MHz (Note 1)																	
	CC2	30	30	78	Downlink	Low	360 4.68	6403 12	359 0.64	639376	0	30	79 12	639648	8	0	1 (1)	2
				Mid		364 4.67	6429 78	359 3.91	639594	102	79 40		642336	6	0	2 (2)	208	
				High		368 4.99	6456 66	348 9.51	632634	504	79 68		645024	6	0	2 (2)	1012	
60+10 (1,2)	CC1 Note 6	60	30	162	Downlink	Low	358 0.02	6386 68	355 0.86	636724	0	30	-	636964	31	-	-	-
						&	Mid	362 0.01	6413 34	355 4.13	636942		102	-	639630	31	-	-
					Uplink	High	366 0.54	6440 36	344 9.94	629996	504		-	642332	31	-	-	-
	Channel spacing CC1-CC2 = 34.44 MHz (Note 1)																	
	CC2	10	30	24	Downlink	Low	361 4.46	6409 64	361 0.14	640676	0	30	79 26	640992	4	0	3 (3)	6
						&	Mid	365 4.45	6436 30	361 3.41	640894		102	79 53	643584	2	0	0 (0)	204
					Uplink	High	369 4.98	6463 32	350 9.22	633948	504		79 82	646368	12	0	3 (3)	1014
60+20 (1,2)	CC1 Note 6	60	30	162	Downlink	Low	358 0.02	6386 68	355 0.86	636724	0	30	-	636964	31	-	-	-
						&	Mid	361 5.00	6410 00	354 9.12	636608		102	-	639296	31	-	-
					Uplink	High	365 0.22	6433 48	343 9.62	629308	504		-	641644	31	-	-	-
	Channel spacing CC1-CC2 = 39.78 MHz (Note 1)																	
	CC2	20	30	51	Downlink	Low	361 9.80	6413 20	361 0.62	640708	0	30	79 26	640992	20	0	1 (1)	2
						&	Mid	365 4.78	6436 52	360 8.88	640592		102	79 50	643296	16	0	0 (0)	204

					Uplink	High	369 0.00	6460 00	349 9.38	633292	504		79 75	645696	20	0	2 (2)	1012	
70+10 (2)	CC1 Note 6	70	30	189	Downlink	Low	358 5.00	6390 00	355 0.98	636732	0	30	-	636972	31	-	-	-	
						Mid	362 0.01	6413 34	354 9.27	636618	102		-	639306	31	-	-	-	
					Uplink	High	365 5.50	6437 00	344 0.04	629336	504		-	641672	31	-	-	-	
	Channel spacing CC1-CC2 = 39.48 MHz (Note 1)																		
	CC2	10	30	24	Downlink	Low	362 4.48	6416 32	362 0.16	641344	0	30	79 33	641664	8	0	3 (3)	6	
						&	Mid	365 9.49	6439 66	361 8.45	641230		102	79 57	643968	2	0	2 (2)	208
					Uplink	High	369 4.98	6463 32	350 9.22	633948	504		79 82	646368	12	0	3 (3)	1014	
	40+50 (1,2)	CC1	40	30	106	Downlink	Low	357 0	6380 00	355 0.92	636728	0	30	78 85	637056	16	0	3 (3)	6
							&	Mid	360 0	6400 00	354 4.2	636280		102	79 05	638976	8	0	0 (0)	204
						Uplink	High	363 0.06	6420 04	342 9.54	628636	504		79 26	640992	20	0	0 (0)	1008
Channel spacing CC1-CC2=44.94 MHz (Note 1)																			
CC2		50	30	133	Downlink	Low	361 4.94	6409 96	359 1	639400	0	30	79 12	639648	8	0	0 (0)	0	
						Mid	364 4.94	6429 96	358 4.28	638952	102		79 33	641664	0	0	1 (1)	206	
						High	367 5	6450 00	346 9.62	631308	504		79 54	643680	12	0	1 (1)	1010	
80+10 (1,2)	CC1 Note 6	80	30	217	Downlink	Low	359 0.01	6393 34	355 0.95	636730	0	30	-	636970	31	-	-	-	
						&	Mid	362 0.01	6413 34	354 4.23	636282		102	-	638970	31	-	-	-

					Uplink	High	365 0.46	6433 64	342 9.96	628664	504		-	641000	31	-	-	-
	Channel spacing CC1-CC2 = 44.52 MHz (Note 1)																	
	CC2	10	30	24	Downlink	Low	363 4.53	6423 02	363 0.21	642014	0	30	79 40	642336	10	0	3 (3)	6
					&	Mid	366 4.53	6443 02	362 3.49	641566	102		79 60	644256	2	0	0 (0)	204
Uplink					High	369 4.98	6463 32	350 9.22	633948	504	79 82		646368	12	0	3 (3)	1014	
40+60 (1,2)	CC1	40	30	106	Downlink	Low	357 0	6380 00	355 0.92	636728	0	30	78 85	637056	16	0	3 (3)	6
					&	Mid	359 4.99	6396 66	353 9.19	635946	102		79 02	638688	6	0	2 (2)	208
					Uplink	High	362 0.07	6413 38	341 9.55	627970	504		79 19	640320	14	0	0 (0)	1008
	Channel spacing CC1-CC2=49.92 MHz (Note 1)																	
CC2	60	30	162	Downlink	Low	361 9.92	6413 28	359 0.76	639384	0	30	79 12	639648	0	0	1 (1)	2	
					Mid	364 4.91	6429 94	357 9.03	638602	102		79 30	641376	14	0	3 (3)	210	
					High	366 9.99	6446 66	345 9.39	630626	504		79 47	643008	22	0	1 (1)	1010	
90+10 (1,2)	CC1 Note 6	90	30	245	Downlink	Low	359 5.02	6396 68	355 0.92	636728	0	30	-	636968	31	-	-	-
					&	Mid	362 0.01	6413 34	353 9.19	635946	102		-	638634	31	-	-	-
					Uplink	High	364 5.42	6430 28	341 9.88	627992	504		-	640328	31	-	-	-
	Channel spacing CC1-CC2 = 49.56 MHz (Note 1)																	
CC2	10	30	24	Downlink	Low	364 4.58	6429 72	364 0.26	642684	0	30	79 47	643008	12	0	3 (3)	6	
				&	Mid	366 9.57	6446 38	362 8.53	641902	102		79 64	644640	2	0	2 (2)	208	
				Uplink	High	369 4.98	6463 32	350 9.22	633948	504		79 82	646368	12	0	3 (3)	1014	

- Note 1: Corresponds to nominal channel spacing in accordance with TS 38.101-1 [7], clause 5.4A.1 for the CC1 and CC2 channel bandwidth combination.
- Note 2: CCs are specified in increasing frequency order. CC1 is used as PCell if nothing else is specified in the test case.
- Note 3: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs.
- Note 4: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-4 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.
- Note 5: UL CA is only supported for BCS0. I.e. the test frequencies for uplink CC2 are only supported for BCS0.
- Note 6: This UE channel bandwidth is restricted for operation when carrier is configured as a downlink SCell part of a DC or CA configuration (TS 38.101-1, Table 5.3.5-1 Note 6). As the bandwidth is limited to SCell then absence of CORESET#0 is indicated in the MIB by setting $\text{offsetToCarrier} = 31$, controlResourceSetZero=0 and searchSpaceZero = 0 (TS 38.213 [22], clause 13).

4.3.1.1.3.48.2 CA_n48C

Editor's note: Test frequencies for CA_n48C with mixed numerology with SCS CC1=15 kHz and SCS CC2=30 kHz or 60 kHz; and SCS CC1=30 kHz and SCS CC2= 15 kHz or 60kHz is FFS.

Table 4.3.1.1.3.48.2-1: NR Intra-Band contiguous CA configuration CA_n48C (PCC=CC1 and SCC=CC2), CC1 SCS = 30kHz, CC2 SCS = 30kHz

CBW combination (BCS)	CC Note 2	CBW [MHz]	SCS [kHz]	carrierBandwidth [PRBs]	Range		Carrier centre [MHz] Note 2	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequencyPointA [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS [kHz]	GS CN	absoluteFrequencySSB [ARFCN]	k_{SSB}	Offset carrier CORE SET#0 [RBs] Note 3	CORE SET#0 Index (Offset [RBs]) Note 4	offsetToPointA (SIB1) [PRBs] Note 4
(90+15) (0)	CC1	90 Note 5	30	245	Downlink	Low	359 5.02	6396 68	355 0.92	636728	0	30	0	636968	31	-	-	-
						Mid	361 7.49	6411 66	353 6.67	635778	102		0	638466	31	-	-	-
					Uplink	High	364 0.05	6426 70	341 4.51	627634	504		0	639970	31	-	-	-
	Channel spacing CC1-CC2 = 52.08 MHz (Note 1)																	
	CC2	15	30	38	Downlink	Low	364 7.10	6431 40	364 0.26	642684	0	30	79 47	643008	12	0	3 (3)	6

(15+90) (0)	C C 1	15	30	38	&	Mid	366 9.57	6446 38	362 6.01	641734	102	30	79 62	644448	2	0	1 (1)	206
					Uplink	High	369 2.13	6461 42	350 3.85	633590	504		79 78	645984	10	0	2 (2)	1012
					Downdlink	Low	355 7.94	6371 96	355 1.10	636740	0		78 85	637056	4	0	3 (3)	6
					&	Mid	357 9.99	6386 66	353 6.43	635762	102		79 00	638496	22	0	1 (1)	206
					Uplink	High	360 2.91	6401 94	341 4.63	627642	504		79 16	640032	6	0	2 (2)	1012
	Channel spacing CC1-CC2 = 52.08 MHz (Note 1)																	
	C C 2	90 Note 5	30	245	Downdlink	Low	361 0.02	6406 68	356 5.92	637728	0	30	0	637968	31	-	-	-
					&	Mid	363 2.07	6421 38	355 1.25	636750	102		0	639438	31	-	-	-
					Uplink	High	365 4.99	6436 66	342 9.45	628630	504		0	640966	31	-	-	-
	(100+10) (0)	C C 1	10 0 Note 5	30	273	Downdlink	Low	360 0.00	6400 00	355 0.86	636724	0	30	0	636964	31	-	-
&						Mid	362 0.01	6413 34	353 4.15	635610	102	0		638298	31	-	-	-
Uplink						High	364 0.08	6426 72	340 9.50	627300	504	0		639636	31	-	-	-
Channel spacing CC1-CC2 = 54.6 MHz (Note 1)																		
C C 2		10	30	24	Downdlink	Low	365 4.60	6436 40	365 0.28	643352	0	30	79 54	643680	16	0	3 (3)	6
					&	Mid	367 4.61	6449 74	363 3.57	642238	102		79 67	644928	2	0	0 (0)	204
					Uplink	High	369 4.68	6463 12	350 8.92	633928	504		79 81	646272	8	0	0 (0)	1008
(20+90) (0)		C C 1	20	30	51	Downdlink	Low	356 0.10	6373 40	355 0.92	636728	0	30	78 85	637056	16	0	3 (3)	6
	&					Mid	357 9.99	6386 66	353 4.09	635606	102	78 98		638304	10	0	0 (0)	204

					Uplink	High	360 0.09	6400 06	340 9.47	627298	504		79 12	639648	14	0	0 (0)	1008
					Channel spacing CC1-CC2 = 54.9 MHz (Note 1)													
	CC2	90	30	245	Dow nlink	Lo w	361 5.00	6410 00	357 0.90	638060	0	30	0	638300	31	-	-	-
		Notes			&	Mid	363 4.89	6423 26	355 4.07	636938	102		0	639626	31	-	-	-
					Uplink	High	365 4.99	6436 66	342 9.45	628630	504		0	640966	31	-	-	-
(90+20) (0)	CC1	90	30	245	Dow nlink	Lo w	359 5.02	6396 68	355 0.92	636728	0	30	0	636968	31	-	-	-
		Notes			&	Mid	361 5.00	6410 00	353 4.18	635612	102		0	638300	31	-	-	-
					Uplink	High	363 5.07	6423 38	340 9.53	627302	504		0	639638	31	-	-	-
					Channel spacing CC1-CC2 = 54.9 MHz (Note 1)													
	CC2	20	30	51	Dow nlink	Lo w	364 9.92	6433 28	364 0.74	642716	0	30	79 47	643008	4	0	2 (2)	4
					&	Mid	366 9.90	6446 60	362 4.00	641600	102		79 61	644352	16	0	2 (2)	208
(10+100) (0)					Uplink	High	368 9.97	6459 98	349 9.35	633290	504		79 75	645696	22	0	2 (2)	1012
	CC1	10	30	24	Dow nlink	Lo w	355 5.39	6370 26	355 1.07	636738	0	30	78 85	637056	6	0	3 (3)	6
					&	Mid	357 5.01	6383 34	353 3.97	635598	102		78 98	638304	18	0	0 (0)	204
					Uplink	High	359 5.38	6396 92	340 9.62	627308	504		79 12	639648	4	0	0 (0)	1008
					Channel spacing CC1-CC2 = 54.6 MHz (Note 1)													
	CC2	100	30	273	Dow nlink	Lo w	360 9.99	6406 66	356 0.85	637390	0	30	0	637630	31	-	-	-
		Notes			&	Mid	362 9.61	6419 74	354 3.75	636250	102		0	638938	31	-	-	-

(100+15) (0)	C C 1	10 0 No te 5	30	273	Uplink	High	364 9.98	6433 32	341 9.40	627960	504	30	0	640296	31	-	-	-	
					&	Low	360 0.00	6400 00	355 0.86	636724	0		0	636964	31	-	-	-	
						Mid	361 7.49	6411 66	353 1.63	635442	102		0	638130	31	-	-	-	
					Uplink	High	363 5.04	6423 36	340 4.46	626964	504		0	639300	31	-	-	-	
	Channel spacing CC1-CC2 = 57.12 MHz (Note 1)																		
	C C 2	15	30	38	Downdlink	Low	365 7.12	6438 08	365 0.28	643352	0	30	79 54	643680	16	0	3 (3)	6	
					&	Mid	367 4.61	6449 74	363 1.05	642070	102		79 66	644832	2	0	3 (3)	210	
						Uplink	High	369 2.16	6461 44	350 3.88	633592		504	79 78	645984	8	0	2 (2)	1012
	(15+100) (0)	C C 1	15	30	38	Downdlink	Low	355 7.91	6371 94	355 1.07	636738	0	30	78 85	637056	6	0	3 (3)	6
						&	Mid	357 5.01	6383 34	353 1.45	635430	102		78 97	638208	18	0	3 (3)	210
Uplink							High	359 2.86	6395 24	340 4.58	626972	504		79 09	639360	4	0	2 (2)	1012
Channel spacing CC1-CC2 = 57.12 MHz (Note 1)																			
C C 2		10 0 No te 5	30	273	Downdlink	Low	361 5.03	6410 02	356 5.89	637726	0	30	0	637966	31	-	-	-	
					&	Mid	363 2.13	6421 42	354 6.27	636418	102		0	639106	31	-	-	-	
						Uplink	High	364 9.98	6433 32	341 9.40	627960		504	0	640296	31	-	-	-
(100+20) (0)	C C 1	10 0 No te 5	30	273	Downdlink	Low	360 0.00	6400 00	355 0.86	636724	0	30	0	636964	31	-	-	-	
					&	Mid	361 5.00	6410 00	352 9.14	635276	102		0	637964	31	-	-	-	
						Uplink	High	363 0.06	6420 04	339 9.48	626632		504	0	638968	31	-	-	-

(40+80) (0)	Channel spacing CC1-CC2 = 59.94 MHz (Note 1)																		
	C C 2	20	30	51	Dow nlink	Lo w	365 9.94	6439 96	365 0.76	643384	0	30	79 54	643680	8	0	2 (2)	4	
					& Uplin k	Mid	367 4.94	6449 96	362 9.04	641936	102		79 64	644640	16	0	0 (0)	204	
						High	369 0.00	6460 00	349 9.38	633292	504		79 75	645696	20	0	2 (2)	1012	
	C C 1	40	30	106	Dow nlink	Lo w	357 0.00	6380 00	355 0.92	636728	0	30	78 85	637056	16	0	3 (3)	6	
					& Uplin k	Mid	358 5.00	6390 00	352 9.20	635280	102		78 95	638016	0	0	2 (2)	208	
						High	360 0.06	6400 04	339 9.54	626636	504		79 05	638976	4	0	0 (0)	1008	
	Channel spacing CC1-CC2 = 59.82 MHz (Note 1)																		
	(80+40) (0)	C C 2	80 No te 5	30	217	Dow nlink	Lo w	362 9.82	6419 88	359 0.76	639384	0	30	0	639624	31	-	-	-
						& Uplin k	Mid	364 4.82	6429 88	356 9.04	637936	102		0	640624	31	-	-	-
High							365 9.88	6439 92	343 9.38	629292	504	0		641628	31	-	-	-	
C C 1		80 No te 5	30	217	Dow nlink	Lo w	359 0.16	6393 44	355 1.10	636740	0	30	0	636980	31	-	-	-	
					& Uplin k	Mid	360 5.01	6403 34	352 9.23	635282	102		0	637970	31	-	-	-	
						High	362 0.16	6413 44	339 9.66	626644	504		0	638980	31	-	-	-	
Channel spacing CC1-CC2 = 59.82 MHz (Note 1)																			
C C 2		40	30	106	Dow nlink	Lo w	364 9.98	6433 32	363 0.90	642060	0	30	79 40	642336	12	0	1 (1)	2	
					& Uplin k	Mid	366 4.83	6443 22	360 9.03	640602	102		79 50	643296	6	0	0 (0)	204	
						High	367 9.98	6453 32	347 9.46	631964	504		79 61	644352	4	0	2 (2)	1012	

(20+100) (0)	C C 1	20	30	51	Dow nlink	Lo w	356 0.04	6373 36	355 0.86	636724	0	30	78 85	637056	20	0	3 (3)	6
					&	Mi d	357 5.01	6383 34	352 9.11	635274	102		78 95	638016	6	0	2 (2)	208
					Uplin k	Hi gh	359 0.04	6393 36	339 9.42	626628	504		79 05	638976	12	0	0 (0)	1008
	Channel spacing CC1-CC2 = 59.94 MHz (Note 1)																	
	C C 2	10 0 No te 5	30	273	Dow nlink	Lo w	361 9.98	6413 32	357 0.84	638056	0	30	0	638296	31	-	-	-
&	Mi d				363 4.95	6423 30	354 9.09	636606	102	0	639294		31	-	-	-		
Uplin k	Hi gh				364 9.98	6433 32	341 9.40	627960	504	0	640296		31	-	-	-		
(90+40) (0)	C C 1	90	30	245	Dow nlink	Lo w	359 5.20	6396 80	355 1.10	636740	0	30	0	636980	31	-	-	-
					&	Mi d	360 5.01	6403 34	352 4.19	634946	102		0	637634	31	-	-	-
					Uplin k	Hi gh	361 5.18	6410 12	338 9.64	625976	504		0	638312	31	-	-	-
	Channel spacing CC1-CC2 = 64.8 MHz (Note 1)																	
	C C 2	40	30	106	Dow nlink	Lo w	366 0.00	6440 00	364 0.92	642728	0	30	79 47	643008	16	0	1 (1)	2
&	Mi d				366 9.81	6446 54	361 4.01	640934	102	79 54	643680		10	0	2 (2)	208		
Uplin k	Hi gh				367 9.98	6453 32	347 9.46	631964	504	79 61	644352		4	0	2 (2)	1012		
(40+90) (0)	C C 1	40	30	106	Dow nlink	Lo w	357 0.00	6380 00	355 0.92	636728	0	30	78 85	637056	16	0	3 (3)	6
					&	Mi d	357 9.99	6386 66	352 4.19	634946	102		78 92	637728	22	0	3 (3)	210
					Uplin k	Hi gh	359 0.04	6393 36	338 9.52	625968	504		78 98	638304	0	0	0 (0)	1008
	Channel spacing CC1-CC2 = 64.8 MHz (Note 1)																	

(100+40) (0)	CC2	90 Note 5	30	245	Downlink	Low	363 4.80	6423 20	359 0.70	639380	0	30	0	639620	31	-	-	-
					&	Mid	364 4.79	6429 86	356 3.97	637598	102		0	640286	31	-	-	-
					Uplink	High	365 4.84	6436 56	342 9.30	628620	504		0	640956	31	-	-	-
	CC1	100 Note 5	30	273	Downlink	Low	360 0.24	6400 16	355 1.10	636740	0	30	0	636980	31	-	-	-
					&	Mid	360 5.01	6403 34	351 9.15	634610	102		0	637298	31	-	-	-
					Uplink	High	361 0.26	6406 84	337 9.68	625312	504		0	637648	31	-	-	-
	Channel spacing CC1-CC2 = 69.72 MHz (Note 1)																	
	CC2	40	30	106	Downlink	Low	366 9.96	6446 64	365 0.88	643392	0	30	79 54	643680	0	0	2 (2)	4
					&	Mid	367 4.73	6449 82	361 8.93	641262	102		79 57	643968	18	0	0 (0)	204
					Uplink	High	367 9.98	6453 32	347 9.46	631964	504		79 61	644352	4	0	2 (2)	1012
(40+100) (0)	CC1	40	30	106	Downlink	Low	357 0.00	6380 00	355 0.92	636728	0	30	78 85	637056	16	0	3 (3)	6
					&	Mid	357 5.01	6383 34	351 9.21	634614	102		78 88	637344	18	0	1 (1)	206
					Uplink	High	358 0.08	6386 72	337 9.56	625304	504		78 92	637728	16	0	3 (3)	1014
	Channel spacing CC1-CC2 = 69.72 MHz (Note 1)																	
	CC2	100 Note 5	30	273	Downlink	Low	363 9.72	6426 48	359 0.58	639372	0	30	0	639612	31	-	-	-
					&	Mid	364 4.73	6429 82	355 8.87	637258	102		0	639946	31	-	-	-
					Uplink	High	364 9.80	6433 20	341 9.22	627948	504		0	640284	31	-	-	-
	Note 1: Corresponds to nominal channel spacing in accordance with TS 38.101-1 [7], clause 5.4A.1 for the CC1 and CC2 channel bandwidth combination.																	
	Note 2: CCs are specified in increasing frequency order. CC1 is used as PCell if nothing else is specified in the test case.																	

Note 3:	The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs.
Note 4:	The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-4 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.
Note 5:	This UE channel bandwidth is restricted for operation when carrier is configured as a downlink SCell part of a DC or CA configuration (TS 38.101-1, Table 5.3.5-1 Note 6). As the bandwidth is limited to SCell then absence of CORESET#0 is indicated in the MIB by setting $\text{searchSpaceZero} = 0$ (TS 38.213 [22], clause 13).

4.3.1.1.3.49 – 4.3.1.1.3.65 FFS

4.3.1.1.3.66 NR Intra-band contiguous configurations CA_n66

4.3.1.1.3.66.1 CA_n66B

Editor's note: Test frequencies for CA_n66B with mixed numerology with SCS CC1=15kHz and SCS CC2=30 kHz or 60kHz; and SCS CC1=30kHz and SCS CC2=15 kHz or 60 kHz is FFS.

Table 4.3.1.1.3.66.1-1: NR Intra-Band contiguous CA configuration CA_n66B (PCC=CC1 and SCC=CC2), SCS 15 kHz

CBW combination	CC Note 2	CBW [MHz]	SCS [kHz]	carrierBandwidth [PRBs]	Range		Carrier centre [MHz] Note 2	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequencyPointA [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS [kHz]	GS CN	absoluteFrequencySSB [ARFCN]	k_{SSB}	Offset carrier CORESET#0 [RBs] Note 3	CORESET#0 Index (Offset [RBs]) Note 4	offsetToPointA (SIB1) [PRBs] Note 4
5+20	CC 1	5	15	25	Downlink	Low	211.25	422500	211.0.25	422050	0	15	5279	422410	0	0	0 (0)	0
						Mid	214.5	429000	212.4.39	424878	102		5361	428910	0	0	0 (0)	102
						High	217.5	435500	208.4.53	416906	504		5443	435410	0	0	0 (0)	504
					Uplink	Low	171.25	342500	171.0.25	342050	0	-	-	-	-	-	-	-
						Mid	174.5	349000	165.2.03	330406	504		-	-	-	-	-	-
						High	177.5	355500	177.4.17	354834	6		-	-	-	-	-	-

5+40	Channel spacing CC1-CC2=12 MHz (Note 1)																	
	C C 2	20	15	106	Dow nlink	Lo w	212 4.5	4249 00	211 4.96	422992	0	15	52 91	423370	6	0	0 (0)	0
						Mi d	215 7	4314 00	212 9.1	425820	102		53 73	429870	6	0	0 (0)	102
						Hi gh	218 9.5	4379 00	208 9.24	417848	504		54 55	436370	6	0	0 (0)	504
	C C 1	5	15	25	Dow nlink	Lo w	211 2.5	4225 00	211 0.25	422050	0	15	52 79	422410	0	0	0 (0)	0
						Mi d	213 5.3	4270 60	211 4.69	422938	102		53 36	426970	0	0	0 (0)	102
						Hi gh	215 8.1	4316 20	206 5.13	413026	504		53 93	431530	0	0	0 (0)	504
					Uplin k	Lo w	171 2.5	3425 00	171 0.25	342050	0	-	-	-	-	-	-	-
						Mi d	173 5.3	3470 60	164 2.33	328466	504		-	-	-	-	-	-
Hi gh						175 8.1	3516 20	175 4.77	350954	6	-		-	-	-	-	-	
Channel spacing CC1-CC2=21.9 MHz (Note 1)																		
10+15	C C 2	40	15	216	Dow nlink	Lo w	213 4.4	4268 80	211 4.96	422992	0	15	52 91	423370	6	0	0 (0)	0
						Mi d	215 7.2	4314 40	211 9.4	423880	102		53 48	427930	6	0	0 (0)	102
						Hi gh	218 0	4360 00	206 9.84	413968	504		54 05	432490	6	0	0 (0)	504
	C C 1	10	15	52	Dow nlink	Lo w	211 5	4230 00	211 0.32	422064	0	15	52 80	422430	2	0	0 (0)	0
						Mi d	214 5	4290 00	212 1.96	424392	102		53 55	428430	2	0	0 (0)	102
						Hi gh	217 5	4350 00	207 9.6	415920	504		54 30	434430	2	0	0 (0)	504
					Uplin k	Lo w	171 5	3430 00	171 0.32	342064	0	-	-	-	-	-	-	-
						Mi d	174 5	3490 00	164 9.6	329920	504		-	-	-	-	-	-
						Hi gh	177 5	3550 00	176 9.24	353848	6		-	-	-	-	-	-

	Channel spacing CC1-CC2=12.3 MHz (Note 1)																		
	C C 2	15	15	79	Dow nlink	Lo w	212 7.3	4254 60	212 0.19	424038	0	15	53 07	424590	4	1	2 (4)	5	
						Mi d	215 7.3	4314 60	213 1.83	426366	102		53 82	430590	4	1	2 (4)	107	
						Hi gh	218 7.3	4374 60	208 9.47	417894	504		54 57	436590	4	1	2 (4)	509	
10+20	C C 1	10	15	52	Dow nlink	Lo w	211 5	4230 00	211 0.32	422064	0	15	52 80	422430	2	0	0 (0)	0	
						Mi d	214 5	4290 00	212 1.96	424392	102		53 55	428430	2	0	0 (0)	102	
						Hi gh	217 5	4350 00	207 9.6	415920	504		54 30	434430	2	0	0 (0)	504	
	Uplin k	Lo w	171 5	3430 00	171 0.32	342064	0	-	-	-	-	-	-	-					
		Mi d	174 5	3490 00	164 9.6	329920	504	-	-	-	-	-	-	-					
		Hi gh	177 5	3550 00	176 9.24	353848	6	-	-	-	-	-	-	-					
	Channel spacing CC1-CC2=14.4 MHz (Note 1)																		
		C C 2	20	15	106	Dow nlink	Lo w	212 9.4	4258 80	211 9.86	423972	0	15	53 04	424350	6	0	0 (0)	0
							Mi d	215 9.4	4318 80	213 1.5	426300	102		53 79	430350	6	0	0 (0)	102
							Hi gh	218 9.4	4378 80	208 9.14	417828	504		54 54	436350	6	0	0 (0)	504
C C 1		10	15	52	Dow nlink	Lo w	211 5	4230 00	211 0.32	422064	0	15	52 80	422430	2	0	0 (0)	0	
						Mi d	213 5.4	4270 80	211 2.36	422472	102		53 31	426510	2	0	0 (0)	102	
						Hi gh	215 5.7	4311 40	206 0.3	412060	504		53 81	430570	2	0	0 (0)	504	
					Uplin k	Lo w	171 5	3430 00	171 0.32	342064	0	-	-	-	-	-	-	-	
						Mi d	173 5.4	3470 80	164 0	328000	504		-	-	-	-	-	-	
						Hi gh	175 5.7	3511 40	174 9.94	349988	6		-	-	-	-	-	-	

	Channel spacing CC1-CC2=24.3 MHz (Note 1)																		
	C C 2	40	15	216	Dow nlink	Lo w	213 9.3	4278 60	211 9.86	423972	0	15	53 04	424350	6	0	0 (0)	0	
						Mi d	215 9.7	4319 40	212 1.9	424380	102		53 55	428430	6	0	0 (0)	102	
						Hi gh	218 0	4360 00	206 9.84	413968	504		54 05	432490	6	0	0 (0)	504	
15+10	C C 1	15	15	79	Dow nlink	Lo w	211 7.5	4235 00	211 0.39	422078	0	15	52 81	422450	4	0	0 (0)	0	
						Mi d	214 5	4290 00	211 9.53	423906	102		53 49	427950	4	0	0 (0)	102	
						Hi gh	217 2.5	4345 00	207 4.67	414934	504		54 17	433450	4	0	0 (0)	504	
					Uplin k	Lo w	171 7.5	3435 00	171 0.39	342078	0	-	-	-	-	-	-	-	
						Mi d	174 5	3490 00	164 7.17	329434	504	-	-	-	-	-	-	-	
						Hi gh	177 2.5	3545 00	176 4.31	352862	6	-	-	-	-	-	-	-	
	Channel spacing CC1-CC2=12.3 MHz (Note 1)																		
		C C 2	10	15	52	Dow nlink	Lo w	212 9.8	4259 60	212 5.12	425024	0	15	53 20	425570	2	1	2 (4)	5
							Mi d	215 7.3	4314 60	213 4.26	426852	102		53 88	431070	2	1	2 (4)	107
Hi gh							218 4.8	4369 60	208 9.4	417880	504	54 56		436570	2	1	2 (4)	509	
15+15		C C 1	15	15	79	Dow nlink	Lo w	211 7.5	4235 00	211 0.39	422078	0	15	52 81	422450	4	0	0 (0)	0
							Mi d	214 5	4290 00	211 9.53	423906	102		53 49	427950	4	0	0 (0)	102
							Hi gh	217 2.5	4345 00	207 4.67	414934	504		54 17	433450	4	0	0 (0)	504
						Uplin k	Lo w	171 7.5	3435 00	171 0.39	342078	0	-	-	-	-	-	-	-
							Mi d	174 5	3490 00	164 7.17	329434	504		-	-	-	-	-	-
							Hi gh	177 2.5	3545 00	176 4.31	352862	6		-	-	-	-	-	-

	Channel spacing CC1-CC2=15 MHz (Note 1)																			
	C C 2	15	15	79	Dow nlink	Lo w	213 2.5	4265 00	212 5.39	425078	0	15	53 20	425570	8	1	1 (2)	3		
						Mi d	216 0	4320 00	213 4.53	426906	102		53 88	431070	8	1	1 (2)	105		
						Hi gh	218 7.5	4375 00	208 9.67	417934	504		54 56	436570	8	1	1 (2)	507		
15+20	C C 1	15	15	79	Dow nlink	Lo w	211 7.5	4235 00	211 0.39	422078	0	15	52 81	422450	4	0	0 (0)	0		
						Mi d	214 5	4290 00	211 9.53	423906	102		53 49	427950	4	0	0 (0)	102		
						Hi gh	217 2.5	4345 00	207 4.67	414934	504		54 17	433450	4	0	0 (0)	504		
					Uplin k	Lo w	171 7.5	3435 00	171 0.39	342078	0	-	-	-	-	-	-	-		
						Mi d	174 5	3490 00	164 7.17	329434	504	-	-	-	-	-	-	-		
						Hi gh	177 2.5	3545 00	176 4.31	352862	6	-	-	-	-	-	-	-		
	Channel spacing CC1-CC2=17.1 MHz (Note 1)																			
		C C 2	20	15	106	Dow nlink	Lo w	213 4.6	4269 20	212 5.06	425012	0	15	53 20	425570	6	1	2 (4)	5	
							Mi d	216 2.1	4324 20	213 4.2	426840	102		53 88	431070	6	1	2 (4)	107	
Hi gh							218 9.6	4379 20	208 9.34	417868	504	54 56		436570	6	1	2 (4)	509		
20+5		C C 1	20	15	106	Dow nlink	Lo w	212 0	4240 00	211 0.46	422092	0	15	52 82	422650	6	1	2 (4)	5	
							Mi d	214 5	4290 00	211 7.1	423420	102		53 43	427470	6	0	0 (0)	102	
							Hi gh	217 0	4340 00	206 9.74	413948	504		54 07	432530	2	0	1 (2)	506	
						Uplin k	Lo w	172 0	3440 00	171 0.46	342092	0	-	-	-	-	-	-	-	-
							Mi d	174 5	3490 00	164 4.74	328948	504		-	-	-	-	-	-	-
							Hi gh	177 0	3540 00	175 9.38	351876	6		-	-	-	-	-	-	-

	Channel spacing CC1-CC2=12 MHz (Note 1)																						
	C C 2	5	15	25	Dow nlink	Lo w	213 2	4264 00	212 9.75	425950	0	15	53 30	426490	0	1	2 (4)	5					
						Mi d	215 7	4314 00	213 6.39	427278	102		53 91	431310	0	0	0 (0)	102					
						Hi gh	218 2	4364 00	208 9.03	417806	504		54 55	436370	8	1	0 (0)	505					
20+10	C C 1	20	15	106	Dow nlink	Lo w	212 0	4240 00	211 0.46	422092	0	15	52 82	422650	6	1	2 (4)	5					
						Mi d	214 5	4290 00	211 7.1	423420	102		53 43	427470	6	0	0 (0)	102					
						Hi gh	217 0	4340 00	206 9.74	413948	504		54 07	432530	2	0	1 (2)	506					
					Uplin k	Lo w	172 0	3440 00	171 0.46	342092	0	-	-	-	-	-	-	-	-				
						Mi d	174 5	3490 00	164 4.74	328948	504		-	-	-	-	-	-					
						Hi gh	177 0	3540 00	175 9.38	351876	6		-	-	-	-	-	-					
					Channel spacing CC1-CC2=14.4 MHz (Note 1)																		
					20+15	C C 2	10	15	52	Dow nlink	Lo w	213 4.4	4268 80	212 9.72	425944	0	15	53 30	426490	2	1	2 (4)	5
											Mi d	215 9.4	4318 80	213 6.36	427272	102		53 91	431310	2	0	0 (0)	102
	Hi gh	218 4.4	4368 80	208 9							417800	504	54 55	436370	10	1		0 (0)	505				
Dow nlink	Lo w	212 0	4240 00	211 0.46						422092	0	15	52 82	422650	6	1	2 (4)	5					
	Mi d	214 5	4290 00	211 7.1						423420	102		53 43	427470	6	0	0 (0)	102					
	Hi gh	217 0	4340 00	206 9.74						413948	504		54 07	432530	2	0	1 (2)	506					
Uplin k	Lo w	172 0	3440 00	171 0.46						342092	0	-	-	-	-	-	-	-	-				
	Mi d	174 5	3490 00	164 4.74						328948	504		-	-	-	-	-	-	-				
	Hi gh	177 0	3540 00	175 9.38						351876	6		-	-	-	-	-	-	-				

	Channel spacing CC1-CC2=17.1 MHz (Note 1)																		
	C C 2	15	15	79	Dow nlink	Lo w	213 7.1	4274 20	212 9.99	425998	0	15	53 30	426490	8	1	1 (2)	3	
						Mi d	216 2.1	4324 20	213 6.63	427326	102		53 94	431550	4	1	2 (4)	107	
						Hi gh	218 7.1	4374 20	208 9.27	417854	504		54 55	436370	4	0	0 (0)	504	
40+5	C C 1	40	15	216	Dow nlink	Lo w	213 0	4260 00	211 0.56	422112	0	15	52 83	422670	6	1	2 (4)	5	
						Mi d	214 5	4290 00	210 7.2	421440	102		53 19	425550	2	0	1 (2)	104	
						Hi gh	216 0	4320 00	204 9.84	409968	504		53 58	428670	6	1	2 (4)	509	
	Uplin k	Lo w	173 0	3460 00	171 0.56	342112	0	-	-	-	-	-	-	-					
		Mi d	174 5	3490 00	163 4.84	326968	504	-	-	-	-	-	-	-					
		Hi gh	176 0	3520 00	173 9.48	347896	6	-	-	-	-	-	-	-					
	Channel spacing CC1-CC2=21.9 MHz (Note 1)																		
	40+10	C C 2	5	15	25	Dow nlink	Lo w	215 1.9	4303 80	214 9.65	429930	0	15	53 79	430350	8	1	0 (0)	1
							Mi d	216 6.9	4333 80	214 6.29	429258	102		54 18	433470	0	1	2 (4)	107
							Hi gh	218 1.9	4363 80	208 8.93	417786	504		54 54	436350	8	1	0 (0)	505
C C 1		40	15	216	Dow nlink	Lo w	213 0	4260 00	211 0.56	422112	0	15	52 83	422670	6	1	2 (4)	5	
						Mi d	214 5	4290 00	210 7.2	421440	102		53 19	425550	2	0	1 (2)	104	
						Hi gh	216 0	4320 00	204 9.84	409968	504		53 58	428670	6	1	2 (4)	509	
Uplin k		Lo w	173 0	3460 00	171 0.56	342112	0	-	-	-	-	-	-	-	-				
		Mi d	174 5	3490 00	163 4.84	326968	504		-	-	-	-	-	-	-				
		Hi gh	176 0	3520 00	173 9.48	347896	6		-	-	-	-	-	-	-				

Channel spacing CC1-CC2=24.3 MHz (Note 1)																		
C C 2	10	15	52	Dow nlink	Lo w	215 4.3	4308 60	214 9.62	429924	0	15	53 79	430350	10	1	0 (0)	1	
					Mi d	216 9.3	4338 60	214 6.26	429252	102		54 18	433470	2	1	2 (4)	107	
					Hi gh	218 4.3	4368 60	208 8.9	417780	504		54 54	436350	10	1	0 (0)	505	
Note 1:	Corresponds to nominal channel spacing in accordance with TS 38.101-1 [7], clause 5.4A.1 for the CC1 and CC2 channel bandwidth combination.																	
Note 2:	CCs are specified in increasing frequency order. CC1 is used as PCell if nothing else is specified in the test case.																	
Note 3:	The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs.																	
Note 4:	The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-1 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.																	

Table 4.3.1.1.3.66.1-2: NR Intra-Band contiguous CA configuration CA_n66B (PCC=CC1 and SCC=CC2), SCS 30 kHz

CBW combi nation	C C N o t e 2	CB W [M Hz]	S C S [k Hz]	carrierBa ndwidth [PRBs]	Range		Car rier cen tre [M Hz] Not e 2	Carr ier cent re [AR FCN]	poi nt A [MH z]	absoluteFreq uencyPointA [ARFCN]	offsetTo Carrier [Carrier PRBs]	SS bl oc k SC S [k Hz]	GS CN	absoluteFreq uencySSB [ARFCN]	k_{SSB}	Offset carrier CORE SET#0 [RBs] Note 3	CORE SET#0 Index (Offset [RBs]) Note 4	offsetT oPointA (SIB1) [PRBs] Note 4		
10+15	C C 1	10	30	24	Dow nlink	Lo w	211 5	4230 00	211 0.68	422136	0	15	52 86	422910	18	0	0 (5)	10		
						Mi d	214 5	4290 00	210 3.96	420792	102		53 61	428910	18	0	0 (5)	214		
						Hi gh	217 5	4350 00	198 9.24	397848	504		54 36	434910	18	0	0 (5)	1018		
					Upli nk	Lo w	171 5	3430 00	171 0.68	342136	0	-	-	-	-	-	-	-	-	-
						Mi d	174 5	3490 00	155 9.24	311848	504		-	-	-	-	-	-	-	
						Hi gh	177 5	3550 00	176 8.52	353704	6		-	-	-	-	-	-	-	
					Channel spacing CC1-CC2=12.3 MHz (Note 1)															

10+20	C C 2	15	30	38	Dow nlink	Lo w	212 7.3	4254 60	212 0.46	424092	0	15	53 10	424830	6	0	0 (5)	10	
						Mi d	215 7.3	4314 60	211 3.74	422748	102		53 85	430830	6	0	0 (5)	214	
						Hi gh	218 7.3	4374 60	199 9.02	399804	504		54 60	436830	6	0	0 (5)	1018	
	C C 1	10	30	24	Dow nlink	Lo w	211 5	4230 00	211 0.68	422136	0	15	52 86	422910	18	0	0 (5)	10	
						Mi d	214 5	4290 00	210 3.96	420792	102		53 61	428910	18	0	0 (5)	214	
						Hi gh	217 5	4350 00	198 9.24	397848	504		54 36	434910	18	0	0 (5)	1018	
					Upli nk	Lo w	171 5	3430 00	171 0.68	342136	0	-	-	-	-	-	-	-	
						Mi d	174 5	3490 00	155 9.24	311848	504		-	-	-	-	-	-	
						Hi gh	177 5	3550 00	176 8.52	353704	6		-	-	-	-	-	-	
	Channel spacing CC1-CC2=14.4 MHz (Note 1)																		
	C C 2	20	30	51	Dow nlink	Lo w	212 9.4	4258 80	212 0.22	424044	0	15	53 10	424830	22	0	0 (5)	10	
						Mi d	215 9.4	4318 80	211 3.5	422700	102		53 85	430830	22	0	0 (5)	214	
						Hi gh	218 9.4	4378 80	199 8.78	399756	504		54 60	436830	22	0	0 (5)	1018	
Upli nk						Lo w	171 5	3430 00	171 0.68	342136	0		-	-	-	-	-	-	-
						Mi d	173 5.4	3470 80	154 9.64	309928	504			-	-	-	-	-	-
						Hi gh	175 5.7	3511 40	174 9.22	349844	6			-	-	-	-	-	-
Channel spacing CC1-CC2=24.3 MHz (Note 1)																			

	C C 2	40	30	106	Dow nlink	Lo w	213 9.3	4278 60	212 0.22	424044	0	15	53 10	424830	22	0	0 (5)	10				
						Mi d	215 9.7	4319 40	210 3.9	420780	102		53 61	428910	22	0	0 (5)	214				
						Hi gh	218 0	4360 00	197 9.48	395896	504		54 11	432970	22	0	0 (5)	1018				
15+10	C C 1	15	30	38	Dow nlink	Lo w	211 7.5	4235 00	211 0.66	422132	0	15	52 87	422930	2	0	1 (6)	12				
						Mi d	214 5	4290 00	210 1.44	420288	102		53 55	428430	2	0	1 (6)	216				
						Hi gh	217 2.5	4345 00	198 4.22	396844	504		54 23	433930	2	0	1 (6)	1020				
					Upli nk	Lo w	171 7.5	3435 00	171 0.66	342132	0	-	-	-	-	-	-	-	-			
						Mi d	174 5	3490 00	155 6.72	311344	504		-	-	-	-	-	-	-			
						Hi gh	177 2.5	3545 00	176 3.5	352700	6		-	-	-	-	-	-	-			
					Channel spacing CC1-CC2=12.3 MHz (Note 1)																	
					C C 2	10	30	24	Dow nlink	Lo w	212 9.8	4259 60	212 5.48	425096	0	15	53 26	426050	6	0	3 (8)	16
										Mi d	215 7.3	4314 60	211 6.26	423252	102		53 94	431550	6	0	3 (8)	220
	Hi gh	218 4.8	4369 60	199 9.04						399808	504	54 62	437050	6	0		3 (8)	1024				
15+15	C C 1	15	30	38	Dow nlink	Lo w	211 7.5	4235 00	211 0.66	422132	0	15	52 87	422930	2	0	1 (6)	12				
						Mi d	214 5	4290 00	210 1.44	420288	102		53 55	428430	2	0	1 (6)	216				
						Hi gh	217 2.5	4345 00	198 4.22	396844	504		54 23	433930	2	0	1 (6)	1020				
					Upli nk	Lo w	171 7.5	3435 00	171 0.66	342132	0	-	-	-	-	-	-	-	-			
						Mi d	174 5	3490 00	155 6.72	311344	504		-	-	-	-	-	-	-			
						Hi gh	177 2.5	3545 00	176 3.5	352700	6		-	-	-	-	-	-	-			
Channel spacing CC1-CC2=15 MHz (Note 1)																						

15+20	C C 2	15	30	38	Dow nlink	Lo w	213 2.5	4265 00	212 5.66	425132	0	15	53 26	426050	18	0	2 (7)	14	
						Mi d	216 0	4320 00	211 6.44	423288	102		53 94	431550	18	0	2 (7)	218	
						Hi gh	218 7.5	4375 00	199 9.22	399844	504		54 62	437050	18	0	2 (7)	1022	
	C C 1	15	30	38	Dow nlink	Lo w	211 7.5	4235 00	211 0.66	422132	0	15	52 87	422930	2	0	1 (6)	12	
						Mi d	214 5	4290 00	210 1.44	420288	102		53 55	428430	2	0	1 (6)	216	
						Hi gh	217 2.5	4345 00	198 4.22	396844	504		54 23	433930	2	0	1 (6)	1020	
					Upli nk	Lo w	171 7.5	3435 00	171 0.66	342132	0	-	-	-	-	-	-	-	
						Mi d	174 5	3490 00	155 6.72	311344	504		-	-	-	-	-	-	
						Hi gh	177 2.5	3545 00	176 3.5	352700	6		-	-	-	-	-	-	
	Channel spacing CC1-CC2=17.1 MHz (Note 1)																		
	20+10	C C 2	20	30	51	Dow nlink	Lo w	213 4.6	4269 20	212 5.42	425084	0	15	53 23	425810	2	0	0 (5)	10
							Mi d	216 2.1	4324 20	211 6.2	423240	102		53 91	431310	2	0	0 (5)	214
							Hi gh	218 9.6	4379 20	199 8.98	399796	504		54 59	436810	2	0	0 (5)	1018
C C 1		20	30	51	Dow nlink	Lo w	212 0	4240 00	211 0.82	422164	0	15	52 85	422890	2	0	0 (5)	10	
						Mi d	214 5	4290 00	209 9.1	419820	102		53 49	427950	22	0	0 (5)	214	
						Hi gh	217 0	4340 00	197 9.38	395876	504		54 13	433010	18	0	1 (6)	1020	
					Upli nk	Lo w	172 0	3440 00	171 0.82	342164	0	-	-	-	-	-	-	-	
						Mi d	174 5	3490 00	155 4.38	310876	504		-	-	-	-	-	-	
						Hi gh	177 0	3540 00	175 8.66	351732	6		-	-	-	-	-	-	
Channel spacing CC1-CC2=14.4 MHz (Note 1)																			

20+15	C C 2	10	30	24	Dow nlink	Lo w	213 4.4	4268 80	213 0.08	426016	0	15	53 36	426970	6	0	3 (8)	16	
						Mi d	215 9.4	4318 80	211 8.36	423672	102		53 97	431790	18	0	0 (5)	214	
						Hi gh	218 4.4	4368 80	199 8.64	399728	504		54 61	436850	14	0	1 (6)	1020	
	C C 1	20	30	51	Dow nlink	Lo w	212 0	4240 00	211 0.82	422164	0	15	52 85	422890	2	0	0 (5)	10	
						Mi d	214 5	4290 00	209 9.1	419820	102		53 49	427950	22	0	0 (5)	214	
						Hi gh	217 0	4340 00	197 9.38	395876	504		54 13	433010	18	0	1 (6)	1020	
					Upli nk	Lo w	172 0	3440 00	171 0.82	342164	0	-	-	-	-	-	-	-	-
						Mi d	174 5	3490 00	155 4.38	310876	504		-	-	-	-	-	-	-
						Hi gh	177 0	3540 00	175 8.66	351732	6		-	-	-	-	-	-	-
	Channel spacing CC1-CC2=17.1 MHz (Note 1)																		
	40+10	C C 2	15	30	38	Dow nlink	Lo w	213 7.1	4274 20	213 0.26	426052	0	15	53 36	426970	18	0	2 (7)	14
							Mi d	216 2.1	4324 20	211 8.54	423708	102		53 97	431790	6	0	0 (5)	214
							Hi gh	218 7.1	4374 20	199 8.82	399764	504		54 61	436850	2	0	1 (6)	1020
C C 1		40	30	106	Dow nlink	Lo w	213 0	4260 00	211 0.92	422184	0	15	52 86	422910	2	0	0 (5)	10	
						Mi d	214 5	4290 00	208 9.2	417840	102		53 25	426030	18	0	1 (6)	216	
						Hi gh	216 0	4320 00	195 9.48	391896	504		53 61	428910	2	0	0 (5)	1018	
					Upli nk	Lo w	173 0	3460 00	171 0.92	342184	0	-	-	-	-	-	-	-	-
						Mi d	174 5	3490 00	154 4.48	308896	504		-	-	-	-	-	-	-
						Hi gh	176 0	3520 00	173 8.76	347752	6		-	-	-	-	-	-	-
Channel spacing CC1-CC2=24.3 MHz (Note 1)																			

	C C 2	10	30	24	Dow nlink	Lo w	215 4.3	4308 60	214 9.98	429996	0	15	53 85	430830	14	0	1 (6)	12
						Mi d	216 9.3	4338 60	212 8.26	425652	102		54 24	433950	6	0	3 (8)	220
						Hi gh	218 4.3	4368 60	199 8.54	399708	504		54 60	436830	14	0	1 (6)	1020
Note 1:	Corresponds to nominal channel spacing in accordance with TS 38.101-1 [7], clause 5.4A.1 for the CC1 and CC2 channel bandwidth combination.																	
Note 2:	CCs are specified in increasing frequency order. CC1 is used as PCell if nothing else is specified in the test case.																	
Note 3:	The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs.																	
Note 4:	The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-2 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.																	

4.3.1.1.3.67 – 4.3.1.1.3.70 FFS

4.3.1.1.3.71 NR Intra-band contiguous configurations CA_n71

4.3.1.1.3.71.1 FFS

4.3.1.1.3.71.2 CA_n71B

Editor's note: Test frequencies for CA_n71B with mixed numerology with SCS CC1=15kHz and SCS CC2=30 kHz or 60kHz; and SCS CC1=30kHz and SCS CC2=15 kHz or 60 kHz is FFS.

Table 4.3.1.1.3.71.2-1: NR Intra-Band contiguous CA configuration CA_n71B (PCC=CC1 and SCC=CC2), SCS 15 kHz

CBW combi nation	C C Not e 2	CB W [M Hz]	S C S [k Hz]	carrierBa ndwidth [PRBs]	Range		Car rier cen tre [M Hz] Not e 2	Carri er cent re [AR FCN]	poi nt A [M Hz]	absoluteFrequ encyPointA [ARFCN]	offsetTo Carrier [Carrier PRBs]	SS bl oc k SC S [k Hz]	GS CN	absoluteFrequ encySSB [ARFCN]	k_{SSB}	Offset carrier CORE SET#0 [RBs] Note 3	CORE SET#0 Index (Offset [RBs]) Note 4	offsetTo PointA (SIB1) [PRBs] Note 4
5+20	C C 1	5	15	25	Dow nlink	Lo w	619 .5	1239 00	617 .25	123450	0	15	15 48	123870	8	1	0 (0)	1
						Mi d	624 .5	1249 00	603 .89	120778	102		15 62	125050	8	4	1 (2)	108

						High	629.5	125900	536.53	107306	504		1573	125810	0	0	0 (0)	504	
					Uplink	Low	665.5	133100	663.25	132650	0	-	-	-	-	-	-	-	
						Mid	670.5	134100	649.89	129978	504		-	-	-	-	-	-	
						High	675.5	135100	672.17	134434	6		-	-	-	-	-	-	
	Channel spacing CC1-CC2=12.3 MHz (Note 1)																		
	CC2	20	15	106	Downlink	Low	631.8	126360	622.26	124452	0	15	1563	125070	2	5	1 (2)	7	
						Mid	636.8	127360	608.9	121780	102		1574	126010	6	1	2 (4)	107	
						High	641.8	128360	541.54	108308	504		1588	127010	6	3	2 (4)	511	
	20+5	CC1	20	15	106	Downlink	Low	627	125400	617.46	123492	0	15	1551	124110	2	5	1 (2)	7
							Mid	632	126400	604.1	120820	102		1562	125050	6	3	1 (2)	107
High							637	127400	536.74	107348	504	1576		126050	6	3	1 (2)	509	
Uplink						Low	673	134600	663.46	132692	0	-	-	-	-	-	-	-	-
						Mid	678	135600	577.74	115548	102		-	-	-	-	-	-	-
						High	683	136600	672.38	134476	504		-	-	-	-	-	-	-
Channel spacing CC1-CC2=12.3 MHz (Note 1)																			
CC2		5	15	25	Downlink	Low	639.3	127860	637.05	127410	0	15	1602	128190	8	7	2 (4)	11	
						Mid	644.3	128860	623.69	124738	102		1610	128890	4	1	1 (2)	105	
						High	649.3	129860	556.33	111266	504		1624	129890	4	1	1 (2)	507	
10+15	CC1	10	15	52	Downlink	Low	622	124400	617.32	123464	0	15	1549	123890	10	1	0 (0)	1	
						Mid	627	125400	603.96	120792	102		1563	125070	10	2	2 (4)	108	

					Uplink	High	632	126400	536.6	107320	504		1574	126010	2	3	1 (2)	509	
						Low	668	133600	663.32	132664	0		-	-	-	-	-	-	
						Mid	673	134600	577.6	115520	504		-	-	-	-	-	-	
						High	678	135600	672.24	134448	6		-	-	-	-	-	-	
	Channel spacing CC1-CC2=12.4 MHz (Note 1)																		
	CC2	15	15	79	Downlink	Low	634.4	126880	627.29	125458	0	15	1574	126010	4	3	1 (2)	5	
						Mid	639.4	127880	613.93	122786	102		1588	127010	4	3	1 (2)	107	
						High	644.4	128880	546.57	109314	504		1602	128190	4	6	2 (4)	514	
	15+10	CC1	15	15	79	Downlink	Low	624.5	124900	617.39	123478	0	15	1553	124330	8	9	2 (4)	13
							Mid	629.5	125900	604.03	120806	102		1567	125330	8	9	2 (4)	115
High							634.5	126900	536.67	107334	504	1575		126030	4	3	1 (2)	509	
Uplink						Low	670.5	134100	663.39	132678	0	-	-	-	-	-	-	-	-
						Mid	675.5	135100	577.67	115534	504		-	-	-	-	-	-	
						High	680.5	136100	672.31	134462	6		-	-	-	-	-	-	
						Channel spacing CC1-CC2=12.4 MHz (Note 1)													
CC2	10	15	52	Downlink	Low	636.9	127380	632.22	126444	0	15	1587	126990	2	3	1 (2)	5		
					Mid	641.9	128380	618.86	123772	102		1601	128170	2	6	2 (4)	112		
					High	646.9	129380	551.5	110300	504		1612	128930	6	1	1 (2)	507		

Note 1:

Note 2:

Note 3:

Corresponds to nominal channel spacing in accordance with TS 38.101-1 [7], clause 5.4A.1 for the CC1 and CC2 channel bandwidth combination.

CCs are specified in increasing frequency order. CC1 is used as PCell if nothing else is specified in the test case.

The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs.

Note 4: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-1 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.

Table 4.3.1.1.3.71.2-2: NR Intra-Band contiguous CA configuration CA_n71B (PCC=CC1 and SCC=CC2), SCS 30 kHz

CBW combination	CCN Note 2	CBW [MHz]	SCS [kHz]	carrierBandwidth [PRBs]	Range		Carrier centre [MHz] Note 2	Carrier centre [ARFCN]]	point A [MHz]	absoluteFrequencyPointA [ARFCN]	offsetTo Carrier [Carrier PRBs]	SS block SCS [kHz]]	GS CN	absoluteFrequencySSB [ARFCN]	k_{SSB}	Offset carrier CORE SET#0 [RBs] Note 3	CORE SET#0 Index (Offset [RBs]) Note 4	offsetTo PointA (SIB1) [PRBs] Note 4
10+15	CC1	10	30	24	Downlink	Low	622	124400	617.68	123536	0	15	1555	124370	2	3	0 (5)	16
						Mid	627	125400	585.96	117192	102		1566	125310	6	1	0 (5)	216
						High	632	126400	446.24	89248	504		1580	126490	6	0	3 (8)	1024
					Uplink	Low	668	133600	663.68	132736	0	-	-	-	-	-	-	-
						Mid	673	134600	487.24	97448	504		-	-	-	-	-	-
						High	678	135600	671.52	134304	6		-	-	-	-	-	-
	Channel spacing CC1-CC2=10.0 MHz (Note 1)																	
	CC2	15	30	38	Downlink	Low	634.4	126880	627.56	125512	0	15	1577	126250	6	0	0 (5)	10
						Mid	639.4	127880	595.84	119168	102		1591	127250	6	0	0 (5)	214
						High	644.4	128880	456.12	91224	504		1605	128430	6	3	1 (6)	1026
15+10	CC1	15	30	38	Downlink	Low	624.5	124900	617.66	123532	0	15	1553	124330	2	2	0 (5)	14
						Mid	629.5	125900	585.94	117188	102		1567	125330	2	2	0 (5)	218

				Uplink	High	634.5	1269.00	446.22	89244	504		1578	126270	6	0	0 (5)	1018
					Low	670.5	1341.00	663.66	132732	0	-	-	-	-	-	-	-
					Mid	675.5	1351.00	487.22	97444	504		-	-	-	-	-	-
					High	680.5	1361.00	671.5	134300	6		-	-	-	-	-	-
Channel spacing CC1-CC2=10.0 MHz (Note 1)																	
CC2	10	30	24	Downlink	Low	636.9	1273.80	632.58	126516	0	15	1593	127470	6	6	0 (5)	22
					Mid	641.9	1283.80	600.86	120172	102		1604	128410	10	0	2 (7)	218
					High	646.9	1293.80	461.14	92228	504		1618	129410	10	0	2 (7)	1022
Note 1: Corresponds to nominal channel spacing in accordance with TS 38.101-1 [7], clause 5.4A.1 for the CC1 and CC2 channel bandwidth combination.																	
Note 2: CCs are specified in increasing frequency order. CC1 is used as PCell if nothing else is specified in the test case.																	
Note 3: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs.																	
Note 4: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-2 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.																	

4.3.1.1.3.72 – 4.3.1.1.3.76 FFS

4.3.1.1.3.77 NR Intra-band contiguous configurations CA_n77

4.3.1.1.3.77.1 CA_n77C

Editor's note: Test frequencies for CA_n77C with mixed numerology with SCS CC1=15kHz and SCS CC2=30 kHz or 60kHz; and SCS CC1=30kHz and SCS CC2=15 kHz or 60 kHz is FFS.

Editor's note: Test frequencies for all possible bandwidth combinations are not provided in tables for UL CA, Table 4.3.1.1.3.77.1-1. How to handle the case where a specific bandwidth combination is missing in the table, is FFS.

Table 4.3.1.1.3.77.1-1: NR Intra-Band contiguous CA configuration CA_n77C (PCC=CC1 and SCC=CC2), SCS 30 kHz

CBW combination	CC	CBW	SCS	carrierBandwidth [PRBs]	Range	Carrier	Carrier	point A	absoluteFrequencyPointA [ARFCN]	offsetToCarrier	SS block	GS CN	absoluteFrequencySSB [ARFCN]	k_{SSE}	Offset carrier CORE	CORE SET#0	offsetToPointA (SIB1)

(BCS)	Not e 2	[M Hz]	[k Hz]			cent re [MH z] Not e 2	cent re [AR FCN]	[MH z]		[Carrier PRBs]	k SC S [k Hz]				SET#0 [RBs] Note 3	Index (Offset [RBs]) Note 4	[PRBs] Note 4		
(60+50) (0,1)	C C 1	60	30	162	Dow nlink	Lo w	333 0.00	6220 00	330 0.84	620056	0	30	77 11	620352	8	0	2 (2)	4	
					&	Uplin k	Mid	372 5.01	6483 34	365 9.13	643942		102	79 85	646656	2	0	1 (1)	206
						High	412 0.02	6746 68	390 9.42	660628	504		82 60	673056	20	0	3 (3)	1014	
	Channel spacing CC1-CC2 = 54.96 MHz (Note 1)																		
	C C 2	50	30	133	Dow nlink	Lo w	338 4.96	6256 64	336 1.02	624068	0	30	77 53	624384	4	0	3 (3)	6	
&	Uplin k	Mid	377 9.97	6519 98	371 9.31	647954	102	80 27	650688	22	0		1 (1)	206					
		High	417 4.98	6783 32	396 9.60	664640	504	83 01	676992	16	0		0 (0)	1008					
(100+1 0) (1)	C C 1	10 0	30	273	Dow nlink	Lo w	335 0.01	6233 34	330 0.87	620058	0	30	77 11	620352	6	0	2 (2)	4	
					&	Uplin k	Mid	374 4.99	6496 66	365 9.13	643942		102	79 85	646656	2	0	1 (1)	206
						High	414 0.39	6760 26	390 9.81	660654	504		82 60	673056	18	0	2 (2)	1012	
	Channel spacing CC1-CC2 = 54.6 MHz (Note 1)																		
	C C 2	10	30	24	Dow nlink	Lo w	340 4.61	6269 74	340 0.29	626686	0	30	77 80	626976	2	0	2 (2)	4	
&					Uplin k	Mid	379 9.59	6533 06	375 8.55	650570	102		80 54	653280	22	0	0 (0)	204	
					High	419 4.99	6796 66	400 9.23	667282	504	83 29		679680	14	0	2 (2)	1012		
(60+60) (0,1)	C C 1	60	30	162	Dow nlink	Lo w	333 0.00	6220 00	330 0.84	620056	0	30	77 11	620352	8	0	2 (2)	4	
					&	Mid	372 0.00	6480 00	365 4.12	643608	102		79 82	646368	0	0	3 (3)	210	

					Uplink	High	411 0.00	6740 00	389 9.40	659960	504		82 53	672384	16	0	3 (3)	1014
	Channel spacing CC1-CC2 = 60.0 MHz (Note 1)																	
	CC2	60	30	162	Downdlink & Uplink	Low	339 0.00	6260 00	336 0.84	624056	0	30	77 53	624384	16	0	3 (3)	6
						Mid	378 0.00	6520 00	371 4.12	647608	102		80 23	650304	8	0	0 (0)	204
High						417 0.00	6780 00	395 9.40	663960	504	82 94		676320	0	0	1 (1)	1010	
(100+20) (1)	CC1	100	30	273	Downdlink & Uplink	Low	335 0.01	6233 34	330 0.87	620058	0	30	77 11	620352	6	0	2 (2)	4
						Mid	374 0.01	6493 34	365 4.15	643610	102		79 82	646368	22	0	2 (2)	208
						High	413 0.04	6753 36	389 9.46	659964	504		82 53	672384	12	0	3 (3)	1014
	Channel spacing CC1-CC2 = 59.94 MHz (Note 1)																	
	CC2	20	30	51	Downdlink & Uplink	Low	340 9.95	6273 30	340 0.77	626718	0	30	77 80	626976	18	0	0 (0)	0
						Mid	379 9.95	6533 30	375 4.05	650270	102		80 51	652992	10	0	1 (1)	206
						High	418 9.98	6793 32	399 9.36	666624	504		83 22	679008	0	0	2 (2)	1012
(80+50) (0,1)	CC1	80	30	217	Downdlink & Uplink	Low	334 0.02	6226 68	330 0.96	620064	0	30	77 11	620352	0	0	2 (2)	4
						Mid	372 5.01	6483 34	364 9.23	643282	102		79 78	645984	14	0	0 (0)	204
						High	411 0.12	6740 08	388 9.62	659308	504		82 46	671712	20	0	2 (2)	1012
	Channel spacing CC1-CC2 = 64.86 MHz (Note 1)																	
	CC2	50	30	133	Downdlink & Uplink	Low	340 4.88	6269 92	338 0.94	625396	0	30	77 67	625728	20	0	3 (3)	6
						Mid	378 9.87	6526 58	372 9.21	648614	102		80 34	651360	10	0	2 (2)	208
						High	417 4.98	6783 32	396 9.60	664640	504		83 01	676992	16	0	0 (0)	1008

(100+30) (1)	C C 1	10 0	30	273	Dow nlink	Lo w	335 0.01	6233 34	330 0.87	620058	0	30	77 11	620352	6	0	2 (2)	4
					&	Mi d	373 5.00	6490 00	364 9.14	643276	102		79 78	645984	20	0	0 (0)	204
					Uplin k	Hi gh	412 0.08	6746 72	388 9.50	659300	504		82 46	671712	4	0	3 (3)	1014
	Channel spacing CC1-CC2 = 64.92 MHz (Note 1)																	
	C C 2	30	30	78	Dow nlink	Lo w	341 4.93	6276 62	340 0.89	626726	0	30	77 80	626976	10	0	0 (0)	0
				&	Mi d	379 9.92	6533 28	374 9.16	649944	102		80 48	652704	0	0	3 (3)	210	
				Uplin k	Hi gh	418 5.00	6790 00	398 9.52	665968	504		83 15	678336	8	0	1 (1)	1010	
(80+60) (0,1)	C C 1	80	30	217	Dow nlink	Lo w	334 0.02	6226 68	330 0.96	620064	0	30	77 11	620352	0	0	2 (2)	4
					&	Mi d	372 0.00	6480 00	364 4.22	642948	102		79 75	645696	12	0	2 (2)	208
					Uplin k	Hi gh	410 0.10	6733 40	387 9.60	658640	504		82 39	671040	16	0	2 (2)	1012
	Channel spacing CC1-CC2 = 69.9 MHz (Note 1)																	
	C C 2	60	30	162	Dow nlink	Lo w	340 9.92	6273 28	338 0.76	625384	0	30	77 66	625632	8	0	0 (0)	0
				&	Mi d	378 9.90	6526 60	372 4.02	648268	102		80 30	650976	20	0	0 (0)	204	
				Uplin k	Hi gh	417 0.00	6780 00	395 9.40	663960	504		82 94	676320	0	0	1 (1)	1010	
(100+40) (1)	C C 1	10 0	30	273	Dow nlink	Lo w	335 0.01	6233 34	330 0.87	620058	0	30	77 11	620352	6	0	2 (2)	4
					&	Mi d	372 9.99	6486 66	364 4.13	642942	102		79 75	645696	18	0	2 (2)	208
					Uplin k	Hi gh	411 0.27	6740 18	387 9.69	658646	504		82 39	671040	10	0	2 (2)	1012
	Channel spacing CC1-CC2 = 69.72 MHz (Note 1)																	
	C C 2	40	30	106	Dow nlink	Lo w	341 9.73	6279 82	340 0.65	626710	0	30	77 80	626976	2	0	1 (1)	2

(100+50) (0,1)	C C 1	10 0	30	273	&	Mid	379 9.71	6533 14	374 3.91	649594	102	30	80 44	652320	14	0	1 (1)	206	
					Uplink	High	417 9.99	6786 66	397 9.47	665298	504		83 08	677664	6	0	1 (1)	1010	
					Downdlink	Low	335 0.01	6233 34	330 0.87	620058	0		77 11	620352	6	0	2 (2)	4	
					&	Mid	372 5.01	6483 34	363 9.15	642610	102		79 71	645312	14	0	0 (0)	204	
	Uplink	High	410 0.22	6733 48	386 9.64	657976	504	82 32	670368	8	0	2 (2)	1012						
	Channel spacing CC1-CC2 = 74.76 MHz (Note 1)																		
	C C 2	50	30	133	Downdlink	Low	342 4.77	6283 18	340 0.83	626722	0	30	77 80	626976	14	0	0 (0)	0	
					&	Mid	379 9.77	6533 18	373 9.11	649274	102		80 41	652032	22	0	2 (2)	208	
					Uplink	High	417 4.98	6783 32	396 9.60	664640	504		83 01	676992	16	0	0 (0)	1008	
	(100+60) (0,1)	C C 1	10 0	30	273	Downdlink	Low	335 0.01	6233 34	330 0.87	620058	0	30	77 11	620352	6	0	2 (2)	4
&						Mid	372 0.00	6480 00	363 4.14	642276	102	79 68		645024	12	0	2 (2)	208	
Uplink						High	409 0.20	6726 80	385 9.62	657308	504	82 25		669696	4	0	2 (2)	1012	
Channel spacing CC1-CC2 = 79.8 MHz (Note 1)																			
C C 2		60	30	162	Downdlink	Low	342 9.81	6286 54	340 0.65	626710	0	30	77 80	626976	2	0	1 (1)	2	
					&	Mid	379 9.80	6533 20	373 3.92	648928	102		80 37	651648	8	0	1 (1)	206	
					Uplink	High	417 0.00	6780 00	395 9.40	663960	504		82 94	676320	0	0	1 (1)	1010	
(100+70) (1)		C C 1	10 0	30	273	Downdlink	Low	335 0.01	6233 34	330 0.87	620058	0	30	77 11	620352	6	0	2 (2)	4
						&	Mid	371 4.99	6476 66	362 9.13	641942	102		79 64	644640	10	0	0 (0)	204
						Uplink	High	408 0.15	6720 10	384 9.57	656638	504		82 18	669024	2	0	2 (2)	1012
	Channel spacing CC1-CC2 = 84.84 MHz (Note 1)																		

	C C 2	70	30	189	Dow nlink & Uplin k	Lo w	343 4.85	6289 90	340 0.83	626722	0	30	77 80	626976	14	0	0 (0)	0
						Mi d	379 9.83	6533 22	372 9.09	648606	102		80 34	651360	18	0	2 (2)	208
						Hi gh	416 4.99	6776 66	394 9.53	663302	504		82 87	675648	10	0	0 (0)	1008
						Channel spacing CC1-CC2 = 89.88 MHz (Note 1)												
(100+8 0) (0,1)	C C 1	10 0	30	273	Dow nlink & Uplin k	Lo w	335 0.01	6233 34	330 0.87	620058	0	30	77 11	620352	6	0	2 (2)	4
						Mi d	371 0.01	6473 34	362 4.15	641610	102		79 61	644352	6	0	2 (2)	208
						Hi gh	407 0.10	6713 40	383 9.52	655968	504		82 11	668352	0	0	2 (2)	1012
						Channel spacing CC1-CC2 = 89.88 MHz (Note 1)												
	C C 2	80	30	217	Dow nlink & Uplin k	Lo w	343 9.89	6293 26	340 0.83	626722	0	30	77 80	626976	14	0	0 (0)	0
						Mi d	379 9.89	6533 26	372 4.11	648274	102		80 30	650976	14	0	0 (0)	204
						Hi gh	415 9.98	6773 32	393 9.48	662632	504		82 80	674976	8	0	0 (0)	1008
						Channel spacing CC1-CC2 = 89.88 MHz (Note 1)												
(100+9 0) (1)	C C 1	10 0	30	273	Dow nlink & Uplin k	Lo w	335 0.01	6233 34	330 0.87	620058	0	30	77 11	620352	6	0	2 (2)	4
						Mi d	370 5.00	6470 00	361 9.14	641276	102		79 57	643968	4	0	0 (0)	204
						Hi gh	406 0.08	6706 72	382 9.50	655300	504		82 04	667680	20	0	1 (1)	1010
						Channel spacing CC1-CC2 = 94.92 MHz (Note 1)												
	C C 2	90	30	245	Dow nlink & Uplin k	Lo w	344 4.93	6296 62	340 0.83	626722	0	30	77 80	626976	14	0	0 (0)	0
						Mi d	379 9.92	6533 28	371 9.10	647940	102		80 27	650688	12	0	2 (2)	208
						Hi gh	415 5.00	6770 00	392 9.46	661964	504		82 73	674304	4	0	0 (0)	1008
						Channel spacing CC1-CC2 = 94.92 MHz (Note 1)												
(100+1 00) (0,1)	C C 1	10 0	30	273	Dow nlink &	Lo w	335 0.01	6233 34	330 0.87	620058	0	30	77 11	620352	6	0	2 (2)	4
						Mi d	369 9.99	6466 66	361 4.13	640942	102		79 54	643680	2	0	2 (2)	208

					Uplink	High	405 0.03	6700 02	381 9.45	654630	504		81 97	667008	18	0	1 (1)	1010
Channel spacing CC1-CC2 = 99.96 MHz (Note 1)																		
CC2	10 0	30	273	Downlink & Uplink	Low	344 9.97	6299 98	340 0.83	626722	0	30	77 80	626976	14	0	0 (0)	0	
					Mid	379 9.95	6533 30	371 4.09	647606	102		80 23	650304	10	0	0 (0)	204	
					High	414 9.99	6766 66	391 9.41	661294	504		82 66	673632	2	0	0 (0)	1008	
Note 1:	Corresponds to nominal channel spacing in accordance with TS 38.101-1 [7], clause 5.4A.1 for the CC1 and CC2 channel bandwidth combination.																	
Note 2:	CCs are specified in increasing frequency order. CC1 is used as PCell if nothing else is specified in the test case.																	
Note 3:	The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs.																	
Note 4:	The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-4 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.																	

4.3.1.1.3.78 NR Intra-band contiguous configurations CA_n78

4.3.1.1.3.78.1 CA_n78C

Editor's note: Test frequencies for CA_n78C with mixed numerology with SCS CC1=15kHz and SCS CC2=30 kHz or 60kHz; and SCS CC1=30kHz and SCS CC2=15 kHz or 60 kHz is FFS.

Table 4.3.1.1.3.78.1-1: NR Intra-Band contiguous CA configuration CA_n78C (PCC=CC1 and SCC=CC2), SCS 30 kHz

CBW combination (BCS)	CC Note 2	CBW [MHz]	SCS [kHz]	carrierBandwidth [PRBs]	Range	Carrier centre [MHz] Note 2	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequencyPointA [ARFCN]	offsetToCarrier [Carrier PRBs]	SSB block SCS [kHz]	GSCN	absoluteFrequencySSB [ARFCN]	k_s	Offset carrier CORESET#0 [RBs] Note 3	CORESET#0 Index (Offset [RBs]) Note 4	offsetToPointA (SIB1) [PRBs] Note 4

10+100 (1)	C C 1	10	30	24	Dow nlink	Lo w	330 5.01	6203 34	330 0.69	620046	0	30	77 11	620352	18	0	2 (2)	4
					&	Mi d	350 0.01	6333 34	345 8.97	630598	102		78 46	633312	2	0	1 (1)	206
					Upli nk	Hi gh	369 5.4	6463 60	350 9.64	633976	504		79 82	646368	8	0	2 (2)	1012
	Channel spacing CC1-CC2=54.6 MHz (Note 1)																	
	C C 2	10 0	30	273	Dow nlink	Lo w	335 9.61	6239 74	331 0.47	620698	0	30	77 18	621024	14	0	3 (3)	6
					&	Mi d	355 4.61	6369 74	346 8.75	631250	102		78 53	633984	22	0	1 (1)	206
Upli nk					Hi gh	375 0	6500 00	351 9.42	634628	504	79 89		647040	4	0	3 (3)	1014	
15+90 (1)	C C 1	15	30	38	Dow nlink	Lo w	330 7.5	6205 00	330 0.66	620044	0	30	77 11	620352	20	0	2 (2)	4
					&	Mi d	350 4.99	6336 66	346 1.43	630762	102		78 48	633504	6	0	2 (2)	208
					Upli nk	Hi gh	370 2.9	6468 60	351 4.62	634308	504		79 85	646656	12	0	0 (0)	1008
	Channel spacing CC1-CC2=52.08 MHz (Note 1)																	
	C C 2	90	30	245	Dow nlink	Lo w	335 9.58	6239 72	331 5.48	621032	0	30	77 21	621312	16	0	1 (1)	2
					&	Mi d	355 7.07	6371 38	347 6.25	631750	102		78 58	634464	2	0	1 (1)	206
Upli nk					Hi gh	375 4.98	6503 32	352 9.44	635296	504	79 96		647712	8	0	3 (3)	1014	
15+100 (1)	C C 1	15	30	38	Dow nlink	Lo w	330 7.5	6205 00	330 0.66	620044	0	30	77 11	620352	20	0	2 (2)	4
					&	Mi d	350 0.01	6333 34	345 6.45	630430	102		78 44	633120	2	0	0 (0)	204
					Upli nk	Hi gh	369 2.88	6461 92	350 4.6	633640	504		79 78	645984	8	0	0 (0)	1008
	Channel spacing CC1-CC2=57.12 MHz (Note 1)																	
	C C 2	10 0	30	273	Dow nlink	Lo w	336 4.62	6243 08	331 5.48	621032	0	30	77 21	621312	16	0	1 (1)	2

					&	Mi d	355 7.13	6371 42	347 1.27	631418	102		78 55	634176	22	0	2 (2)	208		
					Upli nk	Hi gh	375 0	6500 00	351 9.42	634628	504		79 89	647040	4	0	3 (3)	1014		
	20+90 (1)	C C 1	20	30	51	Dow nlink	Lo w	331 0.02	6206 68	330 0.84	620056		0	30	77 11	620352	8	0	2 (2)	4
						&	Mi d	350 4.99	6336 66	345 9.09	630606		102	78 46	633312	18	0	0 (0)	204	
						Upli nk	Hi gh	370 0.08	6466 72	350 9.46	633964		504	79 82	646368	20	0	2 (2)	1012	
Channel spacing CC1-CC2=54.9 MHz (Note 1)																				
C C 2	90	30	245	Dow nlink	Lo w	336 4.92	6243 28	332 0.82	621388	0	30	77 25	621696	20	0	2 (2)	4			
				&	Mi d	355 9.89	6373 26	347 9.07	631938	102	78 60	634656	6	0	1 (1)	206				
				Upli nk	Hi gh	375 4.98	6503 32	352 9.44	635296	504	79 96	647712	8	0	3 (3)	1014				
20+10 0 (1)	C C 1	20	30	51	Dow nlink	Lo w	331 0.02	6206 68	330 0.84	620056	0	30	77 11	620352	8	0	2 (2)	4		
					&	Mi d	350 0.01	6333 34	345 4.11	630274	102	78 43	633024	14	0	2 (2)	208			
					Upli nk	Hi gh	369 0.06	6460 04	349 9.44	633296	504	79 75	645696	16	0	2 (2)	1012			
	Channel spacing CC1-CC2=59.94 MHz (Note 1)																			
	C C 2	10 0	30	273	Dow nlink	Lo w	336 9.96	6246 64	332 0.82	621388	0	30	77 25	621696	20	0	2 (2)	4		
					&	Mi d	355 9.95	6373 30	347 4.09	631606	102	78 57	634368	2	0	3 (3)	210			
					Upli nk	Hi gh	375 0	6500 00	351 9.42	634628	504	79 89	647040	4	0	3 (3)	1014			
25+80 (1)	C C 1	25	30	65	Dow nlink	Lo w	331 2.51	6208 34	330 0.81	620054	0	30	77 11	620352	10	0	2 (2)	4		
					&	Mi d	351 0	6340 00	346 1.58	630772	102	78 48	633504	20	0	1 (1)	206			
					Upli nk	Hi gh	370 7.67	6471 78	351 4.53	634302	504	79 85	646656	18	0	0 (0)	1008			
	Channel spacing CC1-CC2=52.32 MHz (Note 1)																			

	C C 2	80	30	217	Dow nlink	Lo w	336 4.83	6243 22	332 5.77	621718	0	30	77 28	621984	2	0	1 (1)	2
					&	Mi d	356 2.32	6374 88	348 6.54	632436	102		78 65	635136	12	0	0 (0)	204
					Upli nk	Hi gh	375 9.99	6506 66	353 9.49	635966	504		80 03	648384	10	0	3 (3)	1014
25+90 (1)	C C 1	25	30	65	Dow nlink	Lo w	331 2.51	6208 34	330 0.81	620054	0	30	77 11	620352	10	0	2 (2)	4
					&	Mi d	350 4.99	6336 66	345 6.57	630438	102		78 45	633216	18	0	3 (3)	210
					Upli nk	Hi gh	369 7.62	6465 08	350 4.48	633632	504		79 78	645984	16	0	0 (0)	1008
	Channel spacing CC1-CC2=57.36 MHz (Note 1)																	
	C C 2	90	30	245	Dow nlink	Lo w	336 9.87	6246 58	332 5.77	621718	0	30	77 28	621984	2	0	1 (1)	2
					&	Mi d	356 2.35	6374 90	348 1.53	632102	102		78 62	634848	10	0	2 (2)	208
					Upli nk	Hi gh	375 4.98	6503 32	352 9.44	635296	504		79 96	647712	8	0	3 (3)	1014
25+10 0 (1)	C C 1	25	30	65	Dow nlink	Lo w	331 2.51	6208 34	330 0.81	620054	0	30	77 11	620352	10	0	2 (2)	4
					&	Mi d	350 0.01	6333 34	345 1.59	630106	102		78 41	632832	14	0	1 (1)	206
					Upli nk	Hi gh	368 7.6	6458 40	349 4.46	632964	504		79 71	645312	12	0	0 (0)	1008
	Channel spacing CC1-CC2=62.4 MHz (Note 1)																	
	C C 2	10 0	30	273	Dow nlink	Lo w	337 4.91	6249 94	332 5.77	621718	0	30	77 28	621984	2	0	1 (1)	2
					&	Mi d	356 2.41	6374 94	347 6.55	631770	102		78 58	634464	6	0	0 (0)	204
					Upli nk	Hi gh	375 0	6500 00	351 9.42	634628	504		79 89	647040	4	0	3 (3)	1014
30+80 (1)	C C 1	30	30	78	Dow nlink	Lo w	331 5	6210 00	330 0.96	620064	0	30	77 11	620352	0	0	2 (2)	4
					&	Mi d	351 0	6340 00	345 9.24	630616	102		78 46	633312	8	0	0 (0)	204

					Uplink	High	370 5.15	6470 10	350 9.67	633978	504		79 82	646368	6	0	2 (2)	1012
					Channel spacing CC1-CC2=54.84 MHz (Note 1)													
	CC2	80	30	217	Downdlink	Low	336 9.84	6246 56	333 0.78	622052	0	30	77 32	622368	4	0	3 (3)	6
					&	Mid	356 4.84	6376 56	348 9.06	632604	102		78 67	635328	12	0	1 (1)	206
					Uplink	High	375 9.99	6506 66	353 9.49	635966	504		80 03	648384	10	0	3 (3)	1014
30+90 (1)	CC1	30	30	78	Downdlink	Low	331 5	6210 00	330 0.96	620064	0	30	77 11	620352	0	0	2 (2)	4
					&	Mid	350 4.99	6336 66	345 4.23	630282	102		78 43	633024	6	0	2 (2)	208
					Uplink	High	369 5.1	6463 40	349 9.62	633308	504		79 75	645696	4	0	2 (2)	1012
					Channel spacing CC1-CC2=59.88 MHz (Note 1)													
	CC2	90	30	245	Downdlink	Low	337 4.88	6249 92	333 0.78	622052	0	30	77 32	622368	4	0	3 (3)	6
					&	Mid	356 4.87	6376 58	348 4.05	632270	102		78 64	635040	10	0	3 (3)	210
					Uplink	High	375 4.98	6503 32	352 9.44	635296	504		79 96	647712	8	0	3 (3)	1014
30+100 (1)	CC1	30	30	78	Downdlink	Low	331 5	6210 00	330 0.96	620064	0	30	77 11	620352	0	0	2 (2)	4
					&	Mid	350 0.01	6333 34	344 9.25	629950	102		78 39	632640	2	0	0 (0)	204
					Uplink	High	368 5.08	6456 72	348 9.6	632640	504		79 68	645024	0	0	2 (2)	1012
					Channel spacing CC1-CC2=64.92 MHz (Note 1)													
	CC2	100	30	273	Downdlink	Low	337 9.92	6253 28	333 0.78	622052	0	30	77 32	622368	4	0	3 (3)	6
					&	Mid	356 4.93	6376 62	347 9.07	631938	102	30	78 60	634656	6	0	1 (1)	206
					Uplink	High	375 0	6500 00	351 9.42	634628	504	30	79 89	647040	4	0	3 (3)	1014

40+70 (1)	C C 1	40	30	106	Dow nlink	Lo w	332 0.01	6213 34	330 0.93	620062	0	30	77 11	620352	2	0	2 (2)	4	
					&	Mi d	351 5.01	6343 34	345 9.21	630614	102		30	78 46	633312	10	0	0 (0)	204
					Upli nk	Hi gh	371 0.16	6473 44	350 9.64	633976	504		30	79 82	646368	8	0	2 (2)	1012
	Channel spacing CC1-CC2=54.84 MHz (Note 1)																		
	C C 2	70	30	189	Dow nlink	Lo w	337 4.85	6249 90	334 0.83	622722	0	30	77 39	623040	6	0	3 (3)	6	
					&	Mi d	356 9.85	6379 90	349 9.11	633274	102		30	78 74	636000	14	0	1 (1)	206
Upli nk					Hi gh	376 5	6510 00	354 9.54	636636	504	30		80 10	649056	12	0	3 (3)	1014	
40+80 (1)	C C 1	40	30	106	Dow nlink	Lo w	332 0.01	6213 34	330 0.93	620062	0	30	77 11	620352	2	0	2 (2)	4	
					&	Mi d	351 0	6340 00	345 4.2	630280	102		30	78 43	633024	8	0	2 (2)	208
					Upli nk	Hi gh	370 0.17	6466 78	349 9.65	633310	504		30	79 75	645696	2	0	2 (2)	1012
	Channel spacing CC1-CC2=59.82 MHz (Note 1)																		
	C C 2	80	30	217	Dow nlink	Lo w	337 9.83	6253 22	334 0.77	622718	0	30	77 39	623040	10	0	3 (3)	6	
					&	Mi d	356 9.82	6379 88	349 4.04	632936	102		30	78 71	635712	16	0	3 (3)	210
Upli nk					Hi gh	375 9.99	6506 66	353 9.49	635966	504	30		80 03	648384	10	0	3 (3)	1014	
40+90 (1)	C C 1	40	30	106	Dow nlink	Lo w	332 0.01	6213 34	330 0.93	620062	0	30	77 11	620352	2	0	2 (2)	4	
					&	Mi d	350 4.99	6336 66	344 9.19	629946	102		30	78 39	632640	6	0	0 (0)	204
					Upli nk	Hi gh	369 0.18	6460 12	348 9.66	632644	504		30	79 68	645024	20	0	1 (1)	1010
	Channel spacing CC1-CC2=64.8 MHz (Note 1)																		
	C C 2	90	30	245	Dow nlink	Lo w	338 4.81	6256 54	334 0.71	622714	0	30	77 39	623040	14	0	3 (3)	6	

40+100 (1)	C C 1	40	30	106	&	Mid	356 9.79	6379 86	348 8.97	632598	102	30	78 67	635328	18	0	1 (1)	206	
					Uplink	High	375 4.98	6503 32	352 9.44	635296	504	30	79 96	647712	8	0	3 (3)	1014	
					Dowlink	Low	332 0.01	6213 34	330 0.93	620062	0	30	77 11	620352	2	0	2 (2)	4	
					&	Mid	350 0.01	6333 34	344 4.21	629614	102	30	78 36	632352	2	0	2 (2)	208	
	Uplink	High	368 0.28	6453 52	347 9.76	631984	504	30	79 61	644352	8	0	1 (1)	1010					
	Channel spacing CC1-CC2=69.72 MHz (Note 1)																		
	C C 2	100	30	273	Dowlink	Low	338 9.73	6259 82	334 0.59	622706	0	30	77 39	623040	22	0	3 (3)	6	
					&	Mid	356 9.73	6379 82	348 3.87	632258	102	30	78 64	635040	22	0	3 (3)	210	
					Uplink	High	375 0	6500 00	351 9.42	634628	504	30	79 89	647040	4	0	3 (3)	1014	
50+60 (0,1)	C C 1	50	30	133	Dowlink	Low	332 5.02	6216 68	330 1.08	620072	0	30	77 11	620352	16	0	1 (1)	2	
					&	Mid	351 9.99	6346 66	345 9.33	630622	102		78 46	633312	2	0	0 (0)	204	
					Uplink	High	371 5.02	6476 68	350 9.64	633976	504		79 82	646368	8	0	2 (2)	1012	
	Channel spacing CC1-CC2=54.96 MHz (Note 1)																		
	C C 2	60	30	162	Dowlink	Low	337 9.98	6253 32	335 0.82	623388	0	30	77 46	623712	12	0	3 (3)	6	
					&	Mid	357 4.95	6383 30	350 9.07	633938	102		78 81	636672	22	0	1 (1)	206	
					Uplink	High	376 9.98	6513 32	355 9.38	637292	504		80 16	649632	4	0	0 (0)	1008	
	50+70 (1)	C C 1	50	30	133	Dowlink	Low	332 5.02	6216 68	330 1.08	620072	0	30	77 11	620352	16	0	1 (1)	2
						&	Mid	351 5.01	6343 34	345 4.35	630290	102	30	78 43	633024	22	0	1 (1)	206
Uplink						High	370 5.12	6470 08	349 9.74	633316	504	30	79 75	645696	20	0	1 (1)	1010	
Channel spacing CC1-CC2=59.88 MHz (Note 1)																			

	C C 2	70	30	189	Dow nlink & Upli nk	Lo w	338 4.9	6256 60	335 0.88	623392	0	30	77 46	623712	8	0	3 (3)	6
						Mi d	357 4.89	6383 26	350 4.15	633610	102	30	78 78	636384	14	0	3 (3)	210
						Hi gh	376 5	6510 00	354 9.54	636636	504	30	80 10	649056	12	0	3 (3)	1014
						Channel spacing CC1-CC2=64.86 MHz (Note 1)												
50+80 (0,1)	C C 1	50	30	133	Dow nlink & Upli nk	Lo w	332 5.02	6216 68	330 1.08	620072	0	30	77 11	620352	16	0	1 (1)	2
						Mi d	351 0	6340 00	344 9.34	629956	102		78 40	632736	20	0	3 (3)	210
						Hi gh	369 5.13	6463 42	348 9.75	632650	504		79 68	645024	14	0	1 (1)	1010
						Channel spacing CC1-CC2=64.86 MHz (Note 1)												
	C C 2	80	30	217	Dow nlink & Upli nk	Lo w	338 9.88	6259 92	335 0.82	623388	0	30	77 46	623712	12	0	3 (3)	6
						Mi d	357 4.86	6383 24	349 9.08	633272	102		78 74	636000	16	0	1 (1)	206
						Hi gh	375 9.99	6506 66	353 9.49	635966	504		80 03	648384	10	0	3 (3)	1014
						Channel spacing CC1-CC2=64.86 MHz (Note 1)												
50+90 (1)	C C 1	50	30	133	Dow nlink & Upli nk	Lo w	332 5.02	6216 68	330 1.08	620072	0	30	77 11	620352	16	0	1 (1)	2
						Mi d	350 4.99	6336 66	344 4.33	629622	102	30	78 36	632352	18	0	1 (1)	206
						Hi gh	368 5.14	6456 76	347 9.76	631984	504	30	79 61	644352	8	0	1 (1)	1010
						Channel spacing CC1-CC2=69.84 MHz (Note 1)												
	C C 2	90	30	245	Dow nlink & Upli nk	Lo w	339 4.86	6263 24	335 0.76	623384	0	30	77 46	623712	16	0	3 (3)	6
						Mi d	357 4.83	6383 22	349 4.01	632934	102	30	78 71	635712	18	0	3 (3)	210
						Hi gh	375 4.98	6503 32	352 9.44	635296	504	30	79 96	647712	8	0	3 (3)	1014
						Channel spacing CC1-CC2=69.84 MHz (Note 1)												
50+10 0 (0,1)	C C 1	50	30	133	Dow nlink &	Lo w	332 5.02	6216 68	330 1.08	620072	0	30	77 11	620352	16	0	1 (1)	2
						Mi d	350 0.01	6333 34	343 9.35	629290	102		78 33	632064	14	0	3 (3)	210

					Uplink	High	367 5.24	6450 16	346 9.86	631324	504		79 54	643680	20	0	0 (0)	1008
					Channel spacing CC1-CC2=74.76 MHz (Note 1)													
	CC2	10 0	30	273	Dow nlink	Low	339 9.78	6266 52	335 0.64	623376	0	30	77 45	623616	0	0	0 (0)	0
					&	Mid	357 4.77	6383 18	348 8.91	632594	102		78 67	635328	22	0	1 (1)	206
					Uplink	High	375 0	6500 00	351 9.42	634628	504		79 89	647040	4	0	3 (3)	1014
60+50 (0,1)	CC1	60	30	162	Dow nlink	Low	333 0	6220 00	330 0.84	620056	0	30	77 11	620352	8	0	2 (2)	4
					&	Mid	352 5	6350 00	345 9.12	630608	102		78 46	633312	16	0	0 (0)	204
					Uplink	High	372 0.03	6480 02	350 9.43	633962	504		79 82	646368	22	0	2 (2)	1012
					Channel spacing CC1-CC2=54.96 MHz (Note 1)													
	CC2	50	30	133	Dow nlink	Low	338 4.96	6256 64	336 1.02	624068	0	30	77 53	624384	4	0	3 (3)	6
					&	Mid	357 9.96	6386 64	351 9.3	634620	102		78 88	637344	12	0	1 (1)	206
60+60 (0,1)					Uplink	High	377 4.99	6516 66	356 9.61	637974	504		80 24	650400	18	0	3 (3)	1014
	CC1	60	30	162	Dow nlink	Low	333 0	6220 00	330 0.84	620056	0	30	77 11	620352	8	0	2 (2)	4
					&	Mid	351 9.99	6346 66	345 4.11	630274	102		78 43	633024	14	0	2 (2)	208
					Uplink	High	370 9.98	6473 32	349 9.38	633292	504		79 75	645696	20	0	2 (2)	1012
					Channel spacing CC1-CC2=60 MHz (Note 1)													
	CC2	60	30	162	Dow nlink	Low	339 0	6260 00	336 0.84	624056	0	30	77 53	624384	16	0	3 (3)	6
					&	Mid	357 9.99	6386 66	351 4.11	634274	102		78 85	637056	22	0	3 (3)	210
					Uplink	High	376 9.98	6513 32	355 9.38	637292	504		80 16	649632	4	0	0 (0)	1008

60+70 (1)	C C 1	60	30	162	Dow nlink	Lo w	333 0	6220 00	330 0.84	620056	0	30	77 11	620352	8	0	2 (2)	4	
					&	Mi d	351 5.01	6343 34	344 9.13	629942	102		30	78 39	632640	10	0	0 (0)	204
					Upli nk	Hi gh	370 0.08	6466 72	348 9.48	632632	504		30	79 68	645024	8	0	2 (2)	1012
	Channel spacing CC1-CC2=64.92 MHz (Note 1)																		
	C C 2	70	30	189	Dow nlink	Lo w	339 4.92	6263 28	336 0.9	624060	0	30	77 53	624384	12	0	3 (3)	6	
&	Mi d				357 9.93	6386 62	350 9.19	633946	102	30	78 81		636672	14	0	1 (1)	206		
Upli nk	Hi gh				376 5	6510 00	354 9.54	636636	504	30	80 10		649056	12	0	3 (3)	1014		

60+80 (0,1)	C C 1	60	30	162	Dow nlink	Lo w	333 0	6220 00	330 0.84	620056	0	30	77 11	620352	8	0	2 (2)	4
&	Mi d	351 0	6340 00	344 4.12	629608	102	78 36	632352	8	0	2 (2)	208						
Upli nk	Hi gh	369 0.09	6460 06	347 9.49	631966	504	79 61	644352	2	0	2 (2)	1012						
Channel spacing CC1-CC2=69.9 MHz (Note 1)																		
C C 2	80	30	217	Dow nlink	Lo w	339 9.9	6266 60	336 0.84	624056	0	30	77 53	624384	16	0	3 (3)	6	
&	Mi d	357 9.9	6386 60	350 4.12	633608	102	78 78	636384	16	0	3 (3)	210						
Upli nk	Hi gh	375 9.99	6506 66	353 9.49	635966	504	80 03	648384	10	0	3 (3)	1014						
60+90 (1)	C C 1	60	30	162	Dow nlink	Lo w	333 0	6220 00	330 0.84	620056	0	30	77 11	620352	8	0	2 (2)	4
&	Mi d	350 4.99	6336 66	343 9.11	629274	102	30	78 32	631968	6	0	0 (0)	204					
Upli nk	Hi gh	368 0.1	6453 40	346 9.5	631300	504	30	79 54	643680	20	0	1 (1)	1010					
Channel spacing CC1-CC2=74.88 MHz (Note 1)																		
C C 2	90	30	245	Dow nlink	Lo w	340 4.88	6269 92	336 0.78	624052	0	30	77 53	624384	20	0	3 (3)	6	

60+100 (0,1)	C C 1	60	30	162	&	Mid	357 9.87	6386 58	349 9.05	633270	102	30	78 74	636000	18	0	1 (1)	206
					Uplink	High	375 4.98	6503 32	352 9.44	635296	504	30	79 96	647712	8	0	3 (3)	1014
					Downdlink	Low	333 0	6220 00	330 0.84	620056	0	30	77 11	620352	8	0	2 (2)	4
					&	Mid	350 0.01	6333 34	343 4.13	628942	102		78 29	631680	2	0	2 (2)	208
	Uplink	High	367 0.2	6446 80	345 9.6	630640	504		79 47	643008	8	0	1 (1)	1010				
	Channel spacing CC1-CC2=79.8 MHz (Note 1)																	
	C C 2	100	30	273	Downdlink	Low	340 9.8	6273 20	336 0.66	624044	0	30	77 52	624288	4	0	0 (0)	0
					&	Mid	357 9.81	6386 54	349 3.95	632930	102		78 71	635712	22	0	3 (3)	210
					Uplink	High	375 0	6500 00	351 9.42	634628	504		79 89	647040	4	0	3 (3)	1014
	70+60 (1)	C C 1	70	30	189	Downdlink	Low	333 5.01	6223 34	330 0.99	620066	0	30	77 11	620352	22	0	1 (1)	2
&						Mid	351 9.99	6346 66	344 9.25	629950	102	30	78 39	632640	2	0	0 (0)	204
Uplink						High	370 5.06	6470 04	348 9.6	632640	504	30	79 68	645024	0	0	2 (2)	1012
Channel spacing CC1-CC2=64.92 MHz (Note 1)																		
C C 2		60	30	162	Downdlink	Low	339 9.93	6266 62	337 0.77	624718	0	30	77 59	624960	2	0	0 (0)	0
					&	Mid	358 4.91	6389 94	351 9.03	634602	102	30	78 88	637344	6	0	2 (2)	208
					Uplink	High	376 9.98	6513 32	355 9.38	637292	504	30	80 16	649632	4	0	0 (0)	1008
70+70 (1)	C C 1	70	30	189	Downdlink	Low	333 5.01	6223 34	330 0.99	620066	0	30	77 11	620352	22	0	1 (1)	2
					&	Mid	351 5.01	6343 34	344 4.27	629618	102	30	78 36	632352	22	0	1 (1)	206
					Uplink	High	369 5.04	6463 36	347 9.58	631972	504	30	79 61	644352	20	0	1 (1)	1010
	Channel spacing CC1-CC2=69.96 MHz (Note 1)																	

	C C 2	70	30	189	Dow nlink & Upli nk	Lo w	340 4.97	6269 98	337 0.95	624730	0	30	77 60	625056	14	0	3 (3)	6
						Mi d	358 4.97	6389 98	351 4.23	634282	102	30	78 85	637056	14	0	3 (3)	210
						Hi gh	376 5	6510 00	354 9.54	636636	504	30	80 10	649056	12	0	3 (3)	1014
70+80 (1)	C C 1	70	30	189	Dow nlink & Upli nk	Lo w	333 5.01	6223 34	330 0.99	620066	0	30	77 11	620352	22	0	1 (1)	2
						Mi d	351 0	6340 00	343 9.26	629284	102	30	78 33	632064	20	0	3 (3)	210
						Hi gh	368 5.05	6456 70	346 9.59	631306	504	30	79 54	643680	14	0	1 (1)	1010
	Channel spacing CC1-CC2=74.94 MHz (Note 1)																	
	C C 2	80	30	217	Dow nlink & Upli nk	Lo w	340 9.95	6273 30	337 0.89	624726	0	30	77 60	625056	18	0	3 (3)	6
Mi d	358 4.94	6389 96	350 9.16	633944		102	30	78 81	636672	16	0	1 (1)	206					
Hi gh	375 9.99	6506 66	353 9.49	635966		504	30	80 03	648384	10	0	3 (3)	1014					
70+90 (1)	C C 1	70	30	189	Dow nlink & Upli nk	Lo w	333 5.01	6223 34	330 0.99	620066	0	30	77 11	620352	22	0	1 (1)	2
						Mi d	350 4.99	6336 66	343 4.25	628950	102	30	78 29	631680	18	0	1 (1)	206
						Hi gh	367 5.06	6450 04	345 9.6	630640	504	30	79 47	643008	8	0	1 (1)	1010
	Channel spacing CC1-CC2=79.92 MHz (Note 1)																	
	C C 2	90	30	245	Dow nlink & Upli nk	Lo w	341 4.93	6276 62	337 0.83	624722	0	30	77 60	625056	22	0	3 (3)	6
Mi d	358 4.91	6389 94	350 4.09	633606		102	30	78 78	636384	18	0	3 (3)	210					
Hi gh	375 4.98	6503 32	352 9.44	635296		504	30	79 96	647712	8	0	3 (3)	1014					
70+10 0 (1)	C C 1	70	30	189	Dow nlink &	Lo w	333 5.01	6223 34	330 0.99	620066	0	30	77 11	620352	22	0	1 (1)	2
						Mi d	350 0.01	6333 34	342 9.27	628618	102	30	78 26	631392	14	0	3 (3)	210

					Uplink	High	366 5.16	6443 44	344 9.7	629980	504	30	79 40	642336	20	0	0 (0)	1008
					Channel spacing CC1-CC2=84.84 MHz (Note 1)													
	CC2	10 0	30	273	Downdlink	Low	341 9.85	6279 90	337 0.71	624714	0	30	77 59	624960	6	0	0 (0)	0
					&	Mid	358 4.85	6389 90	349 8.99	633266	102	30	78 74	636000	22	0	1 (1)	206
					Uplink	High	375 0	6500 00	351 9.42	634628	504	30	79 89	647040	4	0	3 (3)	1014
80+50 (0,1)	CC1	80	30	217	Downdlink	Low	334 0.02	6226 68	330 0.96	620064	0	30	77 11	620352	0	0	2 (2)	4
					&	Mid	352 5	6350 00	344 9.22	629948	102		78 39	632640	4	0	0 (0)	204
					Uplink	High	371 0.13	6473 42	348 9.63	632642	504		79 68	645024	22	0	1 (1)	1010
					Channel spacing CC1-CC2=64.86 MHz (Note 1)													
	CC2	50	30	133	Downdlink	Low	340 4.88	6269 92	338 0.94	625396	0	30	77 67	625728	20	0	3 (3)	6
					&	Mid	358 9.86	6393 24	352 9.2	635280	102		78 95	638016	0	0	2 (2)	208
					Uplink	High	377 4.99	6516 66	356 9.61	637974	504		80 24	650400	18	0	3 (3)	1014
80+60 (0,1)	CC1	80	30	217	Downdlink	Low	334 0.02	6226 68	330 0.96	620064	0	30	77 11	620352	0	0	2 (2)	4
					&	Mid	351 9.99	6346 66	344 4.21	629614	102		78 36	632352	2	0	2 (2)	208
					Uplink	High	370 0.08	6466 72	347 9.58	631972	504		79 61	644352	20	0	1 (1)	1010
					Channel spacing CC1-CC2=69.9 MHz (Note 1)													
	CC2	60	30	162	Downdlink	Low	340 9.92	6273 28	338 0.76	625384	0	30	77 66	625632	8	0	0 (0)	0
					&	Mid	358 9.89	6393 26	352 4.01	634934	102		78 91	637632	10	0	0 (0)	204
					Uplink	High	376 9.98	6513 32	355 9.38	637292	504		80 16	649632	4	0	0 (0)	1008

80+70 (1)	C C 1	80	30	217	Dow nlink	Lo w	334 0.02	6226 68	330 0.96	620064	0	30	77 11	620352	0	0	2 (2)	4
					&	Mi d	351 5.01	6343 34	343 9.23	629282	102	30	78 33	632064	22	0	3 (3)	210
					Upli nk	Hi gh	369 0.06	6460 04	346 9.56	631304	504	30	79 54	643680	16	0	1 (1)	1010
	Channel spacing CC1-CC2=74.94 MHz (Note 1)																	
	C C 2	70	30	189	Dow nlink	Lo w	341 4.96	6276 64	338 0.94	625396	0	30	77 67	625728	20	0	3 (3)	6
					&	Mi d	358 9.95	6393 30	351 9.21	634614	102	30	78 88	637344	18	0	1 (1)	206
80+80 (0,1)					Upli nk	Hi gh	376 5	6510 00	354 9.54	636636	504	30	80 10	649056	12	0	3 (3)	1014
	C C 1	80	30	217	Dow nlink	Lo w	334 0.02	6226 68	330 0.96	620064	0	30	77 11	620352	0	0	2 (2)	4
					&	Mi d	351 0	6340 00	343 4.22	628948	102		78 29	631680	20	0	1 (1)	206
					Upli nk	Hi gh	368 0.01	6453 34	345 9.51	630634	504		79 47	643008	14	0	1 (1)	1010
	Channel spacing CC1-CC2=79.98 MHz (Note 1)																	
	C C 2	80	30	217	Dow nlink	Lo w	342 0	6280 00	338 0.94	625396	0	30	77 67	625728	20	0	3 (3)	6
80+90 (1)					&	Mi d	358 9.98	6393 32	351 4.2	634280	102		78 85	637056	16	0	3 (3)	210
					Upli nk	Hi gh	375 9.99	6506 66	353 9.49	635966	504		80 03	648384	10	0	3 (3)	1014
	C C 1	80	30	217	Dow nlink	Lo w	334 0.02	6226 68	330 0.96	620064	0	30	77 11	620352	0	0	2 (2)	4
					&	Mi d	350 4.99	6336 66	342 9.21	628614	102	30	78 26	631392	18	0	3 (3)	210
					Upli nk	Hi gh	367 0.02	6446 68	344 9.52	629968	504	30	79 40	642336	8	0	1 (1)	1010
	Channel spacing CC1-CC2=84.96 MHz (Note 1)																	
	C C 2	90	30	245	Dow nlink	Lo w	342 4.98	6283 32	338 0.88	625392	0	30	77 66	625632	0	0	0 (0)	0

80+100 (0,1)	C C 1	80	30	217	&	Mi d	358 9.95	6393 30	350 9.13	633942	102	30	78 81	636672	18	0	1 (1)	206
					Upli nk	Hi gh	375 4.98	6503 32	352 9.44	635296	504	30	79 96	647712	8	0	3 (3)	1014
						Lo w	334 0.02	6226 68	330 0.96	620064	0	30	77 11	620352	0	0	2 (2)	4
						&	Mi d	350 0.01	6333 34	342 4.23	628282	102		78 22	631008	14	0	1 (1)	206
	Upli nk	Hi gh	366 0.12	6440 08	343 9.62	629308	504		79 33	641664	20	0	0 (0)	1008				
	Channel spacing CC1-CC2=89.88 MHz (Note 1)																	
	C C 2	10 0	30	273	Downlink	Lo w	342 9.9	6286 60	338 0.76	625384	0	30	77 66	625632	8	0	0 (0)	0
					&	Mi d	358 9.89	6393 26	350 4.03	633602	102		78 78	636384	22	0	3 (3)	210
Uplink					Hi gh	375 0	6500 00	351 9.42	634628	504		79 89	647040	4	0	3 (3)	1014	
90+60 (1)	C C 1	90	30	245	Downlink	Lo w	334 5	6230 00	330 0.9	620060	0	30	77 11	620352	4	0	2 (2)	4
					&	Mi d	351 9.99	6346 66	343 9.17	629278	102	30	78 32	631968	2	0	0 (0)	204
					Uplink	Hi gh	369 5.1	6463 40	346 9.56	631304	504	30	79 54	643680	16	0	1 (1)	1010
	Channel spacing CC1-CC2=74.88 MHz (Note 1)																	
	C C 2	60	30	162	Downlink	Lo w	341 9.88	6279 92	339 0.72	626048	0	30	77 73	626304	16	0	0 (0)	0
					&	Mi d	359 4.87	6396 58	352 8.99	635266	102	30	78 95	638016	14	0	2 (2)	208
					Uplink	Hi gh	376 9.98	6513 32	355 9.38	637292	504	30	80 16	649632	4	0	0 (0)	1008
90+70 (1)	C C 1	90	30	245	Downlink	Lo w	334 5	6230 00	330 0.9	620060	0	30	77 11	620352	4	0	2 (2)	4
					&	Mi d	351 5.01	6343 34	343 4.19	628946	102	30	78 29	631680	22	0	1 (1)	206
					Uplink	Hi gh	368 5.08	6456 72	345 9.54	630636	504	30	79 47	643008	12	0	1 (1)	1010
	Channel spacing CC1-CC2=79.92 MHz (Note 1)																	

	C C 2	70	30	189	Dow nlink & Upli nk	Lo w	342 4.92	6283 28	339 0.9	626060	0	30	77 73	626304	4	0	0 (0)	0
						Mi d	359 4.93	6396 62	352 4.19	634946	102	30	78 92	637728	22	0	3 (3)	210
						Hi gh	376 5	6510 00	354 9.54	636636	504	30	80 10	649056	12	0	3 (3)	1014
90+80 (1)	C C 1	90	30	245	Dow nlink & Upli nk	Lo w	334 5	6230 00	330 0.9	620060	0	30	77 11	620352	4	0	2 (2)	4
						Mi d	351 0	6340 00	342 9.18	628612	102	30	78 26	631392	20	0	3 (3)	210
						Hi gh	367 5.03	6450 02	344 9.49	629966	504	30	79 40	642336	10	0	1 (1)	1010
	Channel spacing CC1-CC2=84.96 MHz (Note 1)																	
	C C 2	80	30	217	Dow nlink & Upli nk	Lo w	342 9.96	6286 64	339 0.9	626060	0	30	77 73	626304	4	0	0 (0)	0
Mi d	359 4.96	6396 64	351 9.18	634612		102	30	78 88	637344	20	0	1 (1)	206					
Hi gh	375 9.99	6506 66	353 9.49	635966		504	30	80 03	648384	10	0	3 (3)	1014					
90+90 (1)	C C 1	90	30	245	Dow nlink & Upli nk	Lo w	334 5	6230 00	330 0.9	620060	0	30	77 11	620352	4	0	2 (2)	4
						Mi d	350 4.99	6336 66	342 4.17	628278	102	30	78 22	631008	18	0	1 (1)	206
						Hi gh	366 4.98	6443 32	343 9.44	629296	504	30	79 33	641664	8	0	1 (1)	1010
	Channel spacing CC1-CC2=90.0 MHz (Note 1)																	
	C C 2	90	30	245	Dow nlink & Upli nk	Lo w	343 5	6290 00	339 0.9	626060	0	30	77 73	626304	4	0	0 (0)	0
Mi d	359 4.99	6396 66	351 4.17	634278		102	30	78 85	637056	18	0	3 (3)	210					
Hi gh	375 4.98	6503 32	352 9.44	635296		504	30	79 96	647712	8	0	3 (3)	1014					
90+10 0 (1)	C C 1	90	30	245	Dow nlink &	Lo w	334 5	6230 00	330 0.9	620060	0	30	77 11	620352	4	0	2 (2)	4
						Mi d	350 0.01	6333 34	341 9.19	627946	102	30	78 19	630720	14	0	3 (3)	210

					Uplink	High	365 5.08	6436 72	342 9.54	628636	504	30	79 26	640992	20	0	0 (0)	1008
					Channel spacing CC1-CC2=94.92 MHz (Note 1)													
	CC2	10 0	30	273	Dow nlink	Low	343 9.92	6293 28	339 0.78	626052	0	30	77 73	626304	12	0	0 (0)	0
					&	Mid	359 4.93	6396 62	350 9.07	633938	102	30	78 81	636672	22	0	1 (1)	206
					Uplink	High	375 0	6500 00	351 9.42	634628	504	30	79 89	647040	4	0	3 (3)	1014
100+5 0 (0,1)	CC1	10 0	30	273	Dow nlink	Low	335 0.01	6233 34	330 0.87	620058	0	30	77 11	620352	6	0	2 (2)	4
					&	Mid	352 5	6350 00	343 9.14	629276	102		78 32	631968	4	0	0 (0)	204
					Uplink	High	370 0.23	6466 82	346 9.65	631310	504		79 54	643680	10	0	1 (1)	1010
					Channel spacing CC1-CC2=74.76 MHz (Note 1)													
	CC2	50	30	133	Dow nlink	Low	342 4.77	6283 18	340 0.83	626722	0	30	77 80	626976	14	0	0 (0)	0
					&	Mid	359 9.76	6399 84	353 9.1	635940	102		79 02	638688	12	0	2 (2)	208
					Uplink	High	377 4.99	6516 66	356 9.61	637974	504		80 24	650400	18	0	3 (3)	1014
100+6 0 (0,1)	CC1	10 0	30	273	Dow nlink	Low	335 0.01	6233 34	330 0.87	620058	0	30	77 11	620352	6	0	2 (2)	4
					&	Mid	351 9.99	6346 66	343 4.13	628942	102		78 29	631680	2	0	2 (2)	208
					Uplink	High	369 0.18	6460 12	345 9.6	630640	504		79 47	643008	8	0	1 (1)	1010
					Channel spacing CC1-CC2=79.8 MHz (Note 1)													
	CC2	60	30	162	Dow nlink	Low	342 9.81	6286 54	340 0.65	626710	0	30	77 80	626976	2	0	1 (1)	2
					&	Mid	359 9.79	6399 86	353 3.91	635594	102		78 98	638304	22	0	0 (0)	204
					Uplink	High	376 9.98	6513 32	355 9.38	637292	504		80 16	649632	4	0	0 (0)	1008

100+70 (1)	C C 1	100	30	273	Dow nlink	Lo w	3350.01	623334	3300.87	620058	0	30	7711	620352	6	0	2 (2)	4
					&	Mi d	3515.01	634334	3429.15	628610	102	30	7826	631392	22	0	3 (3)	210
					Upli nk	Hi gh	3680.16	645344	3449.58	629972	504	30	7940	642336	4	0	1 (1)	1010
	Channel spacing CC1-CC2=84.84 MHz (Note 1)																	
	C C 2	70	30	189	Dow nlink	Lo w	3434.85	628990	3400.83	626722	0	30	7780	626976	14	0	0 (0)	0
&					Mi d	3599.85	639990	3529.11	635274	102	30	7895	638016	6	0	2 (2)	208	
Upli nk					Hi gh	3765	651000	3549.54	636636	504	30	8010	649056	12	0	3 (3)	1014	

100+80 (0,1)	C C 1	100	30	273	Dow nlink	Lo w	3350.01	623334	3300.87	620058	0	30	7711	620352	6	0	2 (2)	4
					&	Mi d	3510	634000	3424.14	628276	102		7822	631008	20	0	1 (1)	206
					Upli nk	Hi gh	3670.11	644674	3439.53	629302	504		7933	641664	2	0	1 (1)	1010
	Channel spacing CC1-CC2=89.88 MHz (Note 1)																	
	C C 2	80	30	217	Dow nlink	Lo w	3439.89	629326	3400.83	626722	0	30	7780	626976	14	0	0 (0)	0
&					Mi d	3599.88	639992	3524.1	634940	102		7891	637632	4	0	0 (0)	204	
Upli nk					Hi gh	3759.99	650666	3539.49	635966	504		8003	648384	10	0	3 (3)	1014	

100+90 (1)	C C 1	100	30	273	Dow nlink	Lo w	3350.01	623334	3300.87	620058	0	30	7711	620352	6	0	2 (2)	4
					&	Mi d	3504.99	633666	3419.13	627942	102	30	7819	630720	18	0	3 (3)	210
					Upli nk	Hi gh	3660.06	644004	3429.48	628632	504	30	7926	640992	0	0	1 (1)	1010
	Channel spacing CC1-CC2=94.92 MHz (Note 1)																	
	C C 2	90	30	245	Dow nlink	Lo w	3444.93	629662	3400.83	626722	0	30	7780	626976	14	0	0 (0)	0

100 +100 (0,1)	C C 1	10 0	30	273	&	Mid	359 9.91	6399 94	351 9.09	634606	102	30	78 88	637344	2	0	2 (2)	208
					Uplink	High	375 4.98	6503 32	352 9.44	635296	504	30	79 96	647712	8	0	3 (3)	1014
					&	Low	335 0.01	6233 34	330 0.87	620058	0	30	77 11	620352	6	0	2 (2)	4
						Uplink	High	365 0.04	6433 36	341 9.46	627964	504		79 19	640320	20	0	0 (0)	1008
	Channel spacing CC1-CC2=99.96 MHz (Note 1)																	
	C C 2	10 0	30	273	Low	344 9.97	6299 98	340 0.83	626722	0	30	77 80	626976	14	0	0 (0)	0	
					&	Mid	359 9.97	6399 98	351 4.11	634274	102		78 85	637056	22	0	3 (3)	210
					Uplink	High	375 0	6500 00	351 9.42	634628	504		79 89	647040	4	0	3 (3)	1014

Note 1:

Note 2:

Note 3:

Note 4:

Corresponds to nominal channel spacing in accordance with TS 38.101-1 [7], clause 5.4A.1 for the CC1 and CC2 channel bandwidth combination.

CCs are specified in increasing frequency order. CC1 is used as PCell if nothing else is specified in the test case.

The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs.

The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-4 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.

4.3.1.1.3.78.2 CA_n78B

Editor's note: Test frequencies for CA_n78B with mixed numerology with SCS CC1=15kHz and SCS CC2=30 kHz or 60kHz; and SCS CC1=30kHz and SCS CC2=15 kHz or 60 kHz is FFS.

Table 4.3.1.1.3.78.2-1: NR Intra-Band contiguous CA configuration CA_n78B (PCC=CC1 and SCC=CC2), SCS 15 kHz and ΔF_{Raster} 15 kHz

CBW combination	C C N o t e 2	CB W [M Hz]	S C S [k Hz]	carrierBandwidth [PRBs]	Range	Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequencyPointA [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS	GS CN	absoluteFrequencySSB [ARFCN]	k_{SSB}	Offset carrier CORE SET#0 [RBs] Note 3	CORE SET#0 Index (Offset [RBs]) Note 4	offsetToPointA (SIB1) [PRBs] Note 4

							Note 2					[k Hz]							
20+50	C C 1	20	15	106	Dow nlink	Lo w	3310 .02	6206 68	330 0.48	620032	0	30	77 11	620352	8	0	1 (6)	6	
					&	Mi d	3525	6350 00	349 7.1	633140	102		78 60	634656	4	2	0 (2)	106	
					Upli nk	Hi gh	3740 .25	6493 50	363 9.99	642666	504		80 10	649056	6	2	1 (6)	512	
	Channel spacing CC1-CC2=34.74 MHz (Note 1)																		
	C C 2	50	15	270	Dow nlink	Lo w	3344 .76	6229 84	332 0.46	621364	0	30	77 25	621696	8	1	1 (6)	7	
&					Mi d	3559 .74	6373 16	351 7.08	634472	102	78 74		636000	4	3	0 (2)	107		
Upli nk					Hi gh	3774 .99	6516 66	365 9.97	643998	504	80 24		650400	6	3	1 (6)	513		
50+20	C C 1	50	15	270	Dow nlink	Lo w	3325 .020	6216 68	330 0.72	620048	0	30	77 11	620352	4	3	0 (2)	5	
					&	Mi d	3540	6360 00	349 7.34	633156	102		78 60	634656	0	1	0 (2)	105	
					Upli nk	Hi gh	3755 .25	6503 50	364 0.23	642682	504		80 10	649056	2	1	1 (6)	511	
	Channel spacing CC1-CC2=34.74 MHz (Note 1)																		
	C C 2	20	15	106	Dow nlink	Lo w	3359 .76	6239 84	335 0.22	623348	0	30	77 45	623616	4	0	0 (2)	2	
&					Mi d	3574 .74	6383 16	354 6.84	636456	102	78 95		638016	0	2	1 (6)	110		
Upli nk					Hi gh	3789 .99	6526 66	368 9.73	645982	504	80 44		652320	2	2	0 (2)	508		
Note 1: Corresponds to nominal channel spacing in accordance with TS 38.101-1 [7], clause 5.4A.1 for the CC1 and CC2 channel bandwidth combination.																			
Note 2: CCs are specified in increasing frequency order. CC1 is used as PCell if nothing else is specified in the test case.																			
Note 3: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs.																			
Note 4: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-4 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.																			

Table 4.3.1.1.3.78.2-2: NR Intra-Band contiguous CA configuration CA_n78B (PCC=CC1 and SCC=CC2), SCS 30 kHz and ΔF_{Raster} 30 kHz

CBW combination	CC Note 2	CBW [MHz]	SCS [kHz]	carrierBandwidth [PRBs]	Range		Carrier centre [MHz] Note 2	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequencyPointA [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS [kHz]	GSCN	absoluteFrequencySSB [ARFCN]	k_s	Offset carrier CORE SET#0 [RBs] Note 3	CORE SET#0 Index (Offset [RBs]) Note 4	offsetToPointA (SIB1) [PRBs] Note 4
20+50	CC1	20	30	51	Downlink	Low	331.002	62068	330.084	620056	0	30	7711	620352	8	0	2 (2)	4
					&	Mid	352.5	63500	347.91	631940	102		7860	634656	4	0	1 (1)	206
					Uplink	High	374.025	649350	354.963	636642	504		8010	649056	6	0	3 (3)	1014
	Channel spacing CC1-CC2=34.74 MHz (Note 1)																	
	CC2	50	30	133	Downlink	Low	334.476	622984	332.082	621388	0	30	7725	621696	20	0	2 (2)	4
					&	Mid	355.974	637316	349.908	633272	102		7874	636000	16	0	1 (1)	206
					Uplink	High	377.499	651666	356.961	637974	504		8024	650400	18	0	3 (3)	1014
	Channel spacing CC1-CC2=34.74 MHz (Note 1)																	
50+20	CC1	50	30	133	Downlink	Low	332.502	62168	330.108	620072	0	30	7711	620352	16	0	1 (1)	2
					&	Mid	354.0	63600	347.934	631956	102		7860	634656	12	0	0 (0)	204
					Uplink	High	375.525	650350	354.987	636658	504		8010	649056	14	0	2 (2)	1012
	Channel spacing CC1-CC2=34.74 MHz (Note 1)																	

	C C 2	20	30	51	Dow nlink & Upli nk	Lo w	335 9.76	6239 84	335 0.58	623372	0	30	77 45	623616	4	0	0 (0)	0
						Mi d	357 4.74	6383 16	352 8.84	635256	102		78 95	638016	0	0	3 (3)	210
						Hi gh	378 9.99	6526 66	359 9.37	639958	504		80 44	652320	2	0	1 (1)	1010
Note 1:	Corresponds to nominal channel spacing in accordance with TS 38.101-1 [7], clause 5.4A.1 for the CC1 and CC2 channel bandwidth combination.																	
Note 2:	CCs are specified in increasing frequency order. CC1 is used as PCell if nothing else is specified in the test case.																	
Note 3:	The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs.																	
Note 4:	The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-4 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.																	

4.3.1.1.3.78.3 CA_n78D

Editor's note: Test frequencies for CA_n78D with mixed numerology with SCS 15kHz, SCS 30 kHz or SCS 60kHz is FFS.

Table 4.3.1.1.3.78.3-1: NR Intra-Band contiguous CA configuration CA_n78D (PCC=CC1, SCC = CC2 and CC3), SCS 30 kHz and ΔF_{Raster} 30 kHz

CBW combi nation	C C N o t e 2	CB W [M Hz]	S C S [k Hz]	carrierBa ndwidth [PRBs]	Range		Car rier cen tre [MH z] Not e 2	Car rier cent re [AR FCN]	poi nt A [MH z]	absoluteFre quencyPointA [ARFCN]	offsetTo Carrier [Carrier PRBs]	SS bl oc k SC S [k Hz]	GS CN	absoluteFre quencySSB [ARFCN]	k_{SSB}	Offset carrier CORE SET#0 [RBs] Note 3	CORE SET#0 Index (Offset [RBs]) Note 4	offsetTo PointA (SIB1) [PRBs] Note 4
100+10 0+100	C C 1	10 0	30	273	Dow nlink	Lo w	335 0.01	6233 34	330 0.87	620058	0	30	77 11	620352	6	0	2	4
						&	Mi d	345 0	6300 00	336 4.14	624276		102	30	77 80	626976	12	0	0	204
					Upli nk	Hi gh	355 0.08	6366 72	331 9.5	621300	504	30	78 50		633696	12	0	2	1012
					Channel spacing CC1-CC2=99.96 MHz (Note 1)													
	C C 2	10 0	30	273	Dow nlink	Lo w	344 9.97	6299 98	340 0.83	626722	0	30	77 80	626976	14	0	0	0

					&	Mid	354 9.96	6366 64	346 4.1	630940	102	30	78 50	633696	20	0	2	208
					Uplink	High	365 0.04	6433 36	341 9.46	627964	504		30	79 19	640320	20	0	0	1008
	Channel spacing CC2-CC3=99.96 MHz (Note 1)																	
	CC3	10 0	30	273	Downlink	Low	354 9.93	6366 62	350 0.79	633386	0	30	78 50	633696	22	0	2	4
				&	Mid	364 9.92	6433 28	356 4.06	637604	102	30	79 19	640320	4	0	1	206	
				Uplink	High	375 0	6500 00	351 9.42	634628	504	30	79 89	647040	4	0	3	1014	
Note 1:	Corresponds to nominal channel spacing in accordance with TS 38.101-1 [7], clause 5.4A.1 for the CC1, CC2 and CC3 channel bandwidth combination.																	
Note 2:	CCs are specified in increasing frequency order. CC1 is used as PCell if nothing else is specified in the test case.																	
Note 3:	The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs.																	
Note 4:	The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-4 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.																	

4.3.1.1.3.79 NR Intra-band contiguous configurations CA_n79

4.3.1.1.3.79.1 CA_n79C

Editor's note: Test frequencies for CA_n79C with mixed numerology with SCS CC1=15kHz and SCS CC2=30 kHz or 60kHz; and SCS CC1=30kHz and SCS CC2=15 kHz or 60 kHz is FFS.

Table 4.3.1.1.3.79.1-1: NR Intra-Band contiguous CA configuration CA_n79C (PCC=CC1 and SCC=CC2), SCS 30 kHzCBW

CBW combination (BSC)	CCNote 2	CBW [MHz]	SCS [kHz]	carrierBandwidth [PRBs]	Range		Carrier centre [MHz] Note 2	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequency Point A [ARFCN]	offsetT oCarrier [Carrier PRBs]	SSblock SCS [kHz]	GSN	absoluteFrequencySSB [ARFCN]	k_s	Offset carrier CORESET# 0 [RBs] Note 3	CORESET# 0 Index (Offset [RBs]) Note 4	offsetT oPointA (SIB 1) [PRBs] Note 4
(50+60) (0)	CC1	50	30	133	Downlink &	Low	4425.000	695000	4401.06	693404	0	30	8480	694176	4	18	1 (4)	44
						Mid	4670.01	711334	4609.35	707290	102		8656	711072	14	41	1 (4)	294
					Uplink	High	4915.02	727668	4709.64	713976	504		8816	726432	0	1	1 (4)	1018
	Channel spacing CC1-CC2 = 54.96 MHz (Note 1)																	
(50+80)	CC2	60	30	162	Downlink &	Low	4479.96	698664	4450.80	696720	0	30	8512	697248	0	8	1 (4)	24
						Mid	4724.97	714998	4659.09	710606	102		8688	714144	10	31	1 (4)	274
					Uplink	High	4969.98	731332	4759.38	717292	504		8864	731040	20	54	1 (4)	1124

(0)					nlink		5.00		1.06				80					
					&	Mid	4659.99	710666	459.33	706622	102		8640	709536	10	5	1(4)	222
					Uplink	High	4895.13	726342	4689.75	712650	504		8816	726432	6	56	1(4)	1128
	Channel spacing CC1-CC2 = 64.86 MHz (Note 1)																	
	CC2	80	30	217	Downlink	Low	4489.86	699324	4450.80	696720	0	30	8512	697248	0	8	1(4)	24
					&	Mid	4724.85	714990	4649.07	709938	102		8688	714144	6	59	1(4)	330
					Uplink	High	4959.99	730666	4739.49	715966	504		8848	729504	2	46	1(4)	1108
(50+100)	CC1	50	30	133	Downlink	Low	4425.00	695000	4401.06	693404	0	30	8480	694176	4	18	1(4)	44
					&	Mid	4650.00	710000	4589.34	705956	102		8640	709536	4	33	1(4)	278
					Uplink	High	4875.24	725016	4669.86	711324	504		8800	724896	12	47	1(4)	1110
	Channel spacing CC1-CC2 = 74.76 MHz (Note 1)																	
	CC2	100	30	273	Downlink	Low	4499.76	699984	4450.62	696708	0	30	8512	697248	12	8	1(4)	24
					&	Mid	4724.76	714984	4643.90	709260	102		8672	712608	12	23	1(4)	258

					U pli nk	H i g h	4 9 5 0. 0 0	73 00 00	4 7 1 9. 4 2	714628	504		8 8 3 2	72796 8	2 0	37	1 (4)	109 0
(60 +5 0)	C C 1	6 0	3 0	162	D o w nli nk	L o w	4 4 3 0. 0 1	69 53 34	4 4 0 0. 8 5	693390	0	3 0	8 4 8 0	69417 6	1 8	18	1 (4)	44
						&	M i d	4 6 7 4. 9 9	71 16 66	4 6 0 9. 1 1	707274		102	8 6 5 6	71107 2	6	42	1 (4)	296
					U pli nk	H i g h	4 9 2 0. 0 3	72 80 02	4 7 0 9. 4 3	713962	504		8 8 1 6	72643 2	1 4	1	1 (4)	101 8
						Channel spacing CC1-CC2 = 54.96 MHz (Note 1)												
(60 +6 0)	C C 2	5 0	3 0	133	D o w nli nk	L o w	4 4 8 4. 9 7	69 89 98	4 4 6 1. 0 3	697402	0	3 0	8 5 2 8	69878 4	1 4	43	1 (4)	94
						&	M i d	4 7 2 9. 9 5	71 53 30	4 6 6 9. 2 9	711286		102	8 6 8 8	71414 4	2	3	1 (4)	218
					U pli nk	H i g h	4 9 7 4. 9 9	73 16 66	4 7 6 9. 6 1	717974	504		8 8 6 4	73104 0	1 0	26	1 (4)	106 8
						Channel spacing CC1-CC2 = 54.96 MHz (Note 1)												
(60 +6 0)	C C 1	6 0	3 0	162	D o w nli nk	L o w	4 4 3 0. 0 1	69 53 34	4 4 0 0. 8 5	693390	0	3 0	8 4 8 0	69417 6	1 8	18	1 (4)	44
						&	M i d	4 6 7 0. 0 1	71 13 34	4 6 0 4. 1 3	706942		102	8 6 5 6	71107 2	2	56	1 (4)	324
					U pli nk	H i g h	4 9 0 9. 9 8	72 73 32	4 6 9 9. 3 8	713292	504		8 8 1 6	72643 2	1 2	29	1 (4)	107 4
						Channel spacing CC1-CC2 = 60.0 MHz (Note 1)												
	C C 2	6 0	3 0	162	D o w	L o w	4 4 9 0.	69 93 34	4 4 6 0.	697390	0	3 0	8 5 2 8	69878 4	2	44	1 (4)	96

					nlink &		01		85									
						Mid	4730.01	715334	4664.13	710942	102		8688	714144	10	17	1(4)	246
						Uplink	High	4969.98	731332	4759.38	717292	504	8864	731040	20	54	1(4)	1124
(60+80) (0)	CC1	60	30	162	Dowlink &	Low	4430.01	695334	4400.85	693390	0	30	8480	694176	18	18	1(4)	44
							4659.99	710666	4594.11	706274	102		8640	709536	22	19	1(4)	250
							4890.09	726006	4679.49	711966	504		8800	724896	18	20	1(4)	1056
							Channel spacing CC1-CC2 = 69.9 MHz (Note 1)											
(60+100) (0)	CC2	80	30	217	Dowlink &	Low	4499.91	699994	4460.85	697390	0	30	8528	698784	2	44	1(4)	96
							4729.89	715326	4654.11	710274	102		8688	714144	6	45	1(4)	302
							4959.99	730666	4739.49	715966	504		8848	729504	2	46	1(4)	1108
							(60+100) (0)	CC1	60	30	162		Dowlink &	Low	4430.01	695334	4400.85	693390	0	30	8480	694176	18	18	1(4)	44
4650.00	710000	4584.12	705608	102	8640	709536						16			47	1(4)	306	
4887	724680	4665	710640	504	87	723360						-0			12	1(4)	1040	

						g h	0. 2 0		9. 6 0				8 4					
Channel spacing CC1-CC2 = 79.8 MHz (Note 1)																		
	C C 2	1 0 0	3 0	273	D o w n l i n k	L o w	4 5 0 9. 8 1	70 06 54	4 4 6 0. 6 7	697378	0	3 0	8 5 2 8	69878 4	1 4	44	1 (4)	96
					&	M i d	4 7 2 9. 8 0	71 53 20	4 6 4 3. 9 4	709596	102		8 6 7 2	71260 8	1 2	9	1 (4)	230
					U p l i n k	H i g h	4 9 5 0. 0 0	73 00 00	4 7 1 9. 4 2	714628	504		8 8 3 2	72796 8	2 0	37	1 (4)	109 0
(80 +5 0)	C C 1	8 0	3 0	217	D o w n l i n k	L o w	4 4 4 0. 0 0	69 60 00	4 4 0 0. 9 4	693396	0	3 0	8 4 8 0	69417 6	1 2	18	1 (4)	44
					&	M i d	4 6 7 4. 9 9	71 16 66	4 5 9 9. 2 1	706614	102		8 6 4 0	70953 6	1 8	5	1 (4)	222
					U p l i n k	H i g h	4 9 1 0. 1 3	72 73 42	4 6 8 9. 6 3	712642	504		8 8 1 6	72643 2	1 4	56	1 (4)	112 8
Channel spacing CC1-CC2 = 64.86 MHz (Note 1)																		
	C C 2	5 0	3 0	133	D o w n l i n k	L o w	4 5 0 4. 8 6	70 03 24	4 4 8 0. 9 2	698728	0	3 0	8 5 4 4	70032 0	8	52	1 (4)	112
					&	M i d	4 7 3 9. 8 5	71 59 90	4 6 7 9. 1 9	711946	102		8 7 0 4	71568 0	1 4	39	1 (4)	290
					U p l i n k	H i g h	4 9 7 4. 9 9	73 16 66	4 7 6 9. 6 1	717974	504		8 8 6 4	73104 0	1 0	26	1 (4)	106 8
(80 +6 0)	C C 1	8 0	3 0	217	D o w n l i n k	L o w	4 4 4 0. 0 0	69 60 00	4 4 0 0. 9 4	693396	0	3 0	8 4 8 0	69417 6	1 2	18	1 (4)	44

(0)					&	M i d	4 6 7 0. 0 1	71 13 34	4 5 9 4. 2 3	706282	102		8 6 4 0	70953 6	1 4	19	1 (4)	250
					U p l i n k	H i g h	4 9 0 0. 0 8	72 66 72	4 6 7 9. 5 8	711972	504		8 8 0 0	72489 6	1 2	20	1 (4)	105 6
	Channel spacing CC1-CC2 = 69.9 MHz (Note 1)																	
	C C 2	6 0	3 0	162	D o w n l i n k	L o w	4 5 0 9. 9 0	70 06 60	4 4 8 0. 7 4	698716	0	3 0	8 5 4 4	70032 0	2 0	52	1 (4)	112
(80 +8 0)					&	M i d	4 7 3 9. 9 1	71 59 94	4 6 7 4. 0 3	711602	102		8 7 0 4	71568 0	2 2	53	1 (4)	318
					U p l i n k	H i g h	4 9 6 9. 9 8	73 13 32	4 7 5 9. 3 8	717292	504		8 8 6 4	73104 0	2 0	54	1 (4)	112 4
	C C 1	8 0	3 0	217	D o w n l i n k	L o w	4 4 4 0. 0 0	69 60 00	4 4 0 0. 9 4	693396	0	3 0	8 4 8 0	69417 6	1 2	18	1 (4)	44
					&	M i d	4 6 5 9. 9 9	71 06 66	4 5 8 4. 2 1	705614	102		8 6 4 0	70953 6	1 0	47	1 (4)	306
(0)					U p l i n k	H i g h	4 8 8 0. 0 1	72 53 34	4 6 5 9. 5 1	710634	504		8 7 8 4	72336 0	6	12	1 (4)	104 0
	Channel spacing CC1-CC2 = 79.98 MHz (Note 1)																	
	C C 2	8 0	3 0	217	D o w n l i n k	L o w	4 5 1 9. 9 8	70 13 32	4 4 8 0. 9 2	698728	0	3 0	8 5 4 4	70032 0	8	52	1 (4)	112
					&	M i d	4 7 3 9. 9 7	71 59 98	4 6 6 4. 1 9	710946	102		8 6 8 8	71414 4	6	17	1 (4)	246
(0)					U p l i n k	H i g h	4 9 5 9.	73 06 66	4 7 3 9.	715966	504		8 8 4 8	72950 4	2	46	1 (4)	110 8

							9 9		4 9									
(80 +1 00)	C C 1	8 0	3 0	217	D o w n l i n k & U p l i n k	L o w	4 4 4 0. 0 0	69 60 00	4 4 0 0. 9 4	693396	0	3 0	8 4 8 0	69417 6	1 2	18	1 (4)	44
						M i d	4 6 5 0	71 00 00	4 5 7 4. 2 2	704948	102	8 6 2 4	70800 0	4	11	1 (4)	234	
						H i g h	4 8 6 0. 1 2	72 40 08	4 6 3 9. 6 2	709308	504	8 7 6 8	72182 4	1 2	3	1 (4)	102 2	
						Channel spacing CC1-CC2 = 89.88 MHz (Note 1)												
(0)	C C 2	1 0 0	3 0	273	D o w n l i n k & U p l i n k	L o w	4 5 2 9. 8 8	70 19 92	4 8 0. 7 4	698716	0	3 0	8 5 4 4	70032 0	2 0	52	1 (4)	112
						M i d	4 7 3 9. 8 8	71 59 92	4 6 5 4. 0 2	710268	102	8 6 8 8	71414 4	1 2	45	1 (4)	302	
						H i g h	4 9 5 0	73 00 00	4 7 1 9. 4 2	714628	504	8 8 3 2	72796 8	2 0	37	1 (4)	109 0	
						Channel spacing CC1-CC2 = 89.88 MHz (Note 1)												
(10 0+ 50)	C C 1	1 0 0	3 0	273	D o w n l i n k & U p l i n k	L o w	4 4 5 0. 0 2	69 66 68	4 4 0 0. 8 8	693392	0	3 0	8 4 8 0	69417 6	1 6	18	1 (4)	44
						M i d	4 6 7 4. 9 9	71 16 66	4 5 8 9. 1 3	705942	102	8 6 4 0	70953 6	1 8	33	1 (4)	278	
						H i g h	4 9 0 0. 2 3	72 66 82	4 6 6 9. 6 5	711310	504	8 8 0 0	72489 6	2	48	1 (4)	111 2	
						Channel spacing CC1-CC2 = 74.76 MHz (Note 1)												
(0)	C C 2	5 0	3 0	133	D o w n l i n k	L o w	4 5 2 4. 7 8	70 16 52	4 5 0 0. 8 4	700056	0	3 0	8 5 4 4	70032 0	0	1	0 (0)	2

					&	M i d	4 7 4 9. 7 5	71 66 50	4 6 8 9. 0 9	712606	102		8 7 0 4	71568 0	2	12	1 (4)	236
					U p l i n k	H i g h	4 9 7 4. 9 9	73 16 66	4 7 6 9. 6 1	717974	504		8 8 6 4	73104 0	1 0	26	1 (4)	106 8
(10 0+ 60)	C C 1	1 0 0	3 0	273	D o w n l i n k	L o w	4 4 5 0. 0 2	69 66 68	4 4 0 0. 8 8	693392	0	3 0	8 4 8 0	69417 6	1 6	18	1 (4)	44
							M i d	4 6 7 0. 0 1	71 13 34	4 5 8 4. 1 5	705610	102	8 6 4 0	70953 6	1 4	47	1 (4)	306
							H i g h	4 8 9 0. 1 8	72 60 12	4 6 5 9. 6 0	710640	504	8 7 8 4	72336 0	- 0	12	1 (4)	104 0
							Channel spacing CC1-CC2 = 79.8 MHz (Note 1)											
(0)	C C 2	6 0	3 0	162	D o w n l i n k	L o w	4 5 2 9. 8 2	70 19 88	4 5 0 0. 6 6	700044	0	3 0	8 5 4 4	70032 0	1 2	1	0 (0)	2
							M i d	4 7 4 9. 8 1	71 66 54	4 6 8 3. 9 3	712262	102	8 7 0 4	71568 0	1 0	26	1 (4)	264
							H i g h	4 9 6 9. 9 8	73 13 32	4 7 5 9. 3 8	717292	504	8 8 6 4	73104 0	2 0	54	1 (4)	112 4
							Channel spacing CC1-CC2 = 79.8 MHz (Note 1)											
(10 0+ 80)	C C 1	1 0 0	3 0	273	D o w n l i n k	L o w	4 4 5 0. 0 2	69 66 68	4 4 0 0. 8 8	693392	0	3 0	8 4 8 0	69417 6	1 6	18	1 (4)	44
							M i d	4 6 5 9. 9 9	71 06 66	4 5 7 4. 1 3	704942	102	8 6 2 4	70800 0	1 0	11	1 (4)	234
							H i g h	4 8 7 0.	72 46 74	4 6 3 9.	709302	504	8 7 6 8	72182 4	1 8	3	1 (4)	102 2
							Channel spacing CC1-CC2 = 79.8 MHz (Note 1)											

						1 1		5 3										
Channel spacing CC1-CC2 = 89.88 MHz (Note 1)																		
	CC2	80	30	217	Downlink	Low	4539.90	702660	4500.84	700056	0	30	8544	700320	0	1	0 (0)	2
					&	Mid	4749.87	716658	4674.09	711606	102		8704	715680	18	53	1 (4)	318
					Uplink	High	4959.99	730666	4739.49	715966	504		8848	729504	2	46	1 (4)	1108
(100+100) (0)	CC1	100	30	273	Downlink	Low	4450.02	696668	4400.88	693392	0	30	8480	694176	16	18	1 (4)	44
					&	Mid	4650.00	710000	4564.14	704276	102		8624	708000	4	39	1 (4)	290
					Uplink	High	4850.04	723336	4661.94	707964	504		8768	721824	12	59	1 (4)	1134
Channel spacing CC1-CC2 = 99.96 MHz (Note 1)																		
	CC2	100	30	273	Downlink	Low	4549.98	703332	4500.84	700056	0	30	8544	700320	0	1	0 (0)	2
					&	Mid	4749.96	716664	4674.10	710940	102		8688	714144	12	17	1 (4)	246
					Uplink	High	4950.00	730000	4739.42	714628	504		8832	727968	20	37	1 (4)	1090
Note 1: Corresponds to nominal channel spacing in accordance with TS 38.101-1 [7], clause 5.4A.1 for the CC1 and CC2 channel bandwidth combination.																		
Note 2: CCs are specified in increasing frequency order. CC1 is used as PCell if nothing else is specified in the test case.																		
Note 3: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs.																		

- Note 4: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-4 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.
- Note 5: UL CA is only supported for BCS0. I.e. the test frequencies for uplink CC2 are only supported for BCS0.

4.3.1.1.4 Void

4.3.1.1.5 NR intra-band non-contiguous CA configurations in FR1

4.3.1.1.5.1 FFS

4.3.1.1.5.2 CA_{n2}(xA)

4.3.1.1.5.2.1 CA_{n2}(2A)

Editor's note: Test frequencies for CA_{n2}(2A) with mixed numerology with SCS CC1=15kHz and SCS CC2=30 kHz or 60kHz; and SCS CC1=30kHz and SCS CC2=15 kHz or 60 kHz is FFS.

Table 4.3.1.1.5.2.1-1: NR Intra-Band non-contiguous CA configuration CA_{n2}(2A) without UL CA, SCS=15 kHz, Max Wgap

Sb CBW combination (BCS)	SB (Note 2)	Bandwidth [MHz]	Range (Note 1,3)	Gap	Test frequencies and signalling parameters
CA_n2(2A): n2A + n2A					
CBW1+CBW2 (0)	SB1	CBW1	Downlink & Uplink	Max Wgap	For CBW1, use Table 4.3.1.1.2-1: Low range for CBW = 5, 10, 15, 20 MHz
	SB2	CBW2	Downlink & Uplink		For CBW2, use Table 4.3.1.1.2-1: High range for CBW = 5, 10, 15, 20 MHz
Note 1:	Only one range has been specified as the maximum maxAggregatedFsBW for FR1 NR intra-band non-contiguous CA without UL CA equals the full bandwidth of the NR band (Table C.2.4.3.1A-1).				
Note 2:	PCC is configured on SB1 unless otherwise stated.				
Note 3:	The test frequencies for both SB1 and SB2 have been specified for both downlink and uplink to enable that the CC of either SB1 or SB2 can be used as PCC.				

Table 4.3.1.1.5.2.1-2: NR Intra-Band non-contiguous CA configuration CA_{n2}(2A) without UL CA, SCS=30 kHz, Max Wgap

Sb CBW combination (BCS)	SB (Note 2)	Bandwidth [MHz]	Range (Note 1,3)	Gap	Test frequencies and signalling parameters
CA_n2(2A): n2A + n2A					
CBW1+CBW2 (0)	SB1	CBW1	Downlink & Uplink	Max Wgap	For CBW1, use Table 4.3.1.1.1.2-2: Low range for CBW = 10, 15, 20 MHz
	SB2	CBW2	Downlink & Uplink		For CBW2, use Table 4.3.1.1.1.2-2: High range for CBW = 10, 15, 20 MHz
Note 1:	Only one range has been specified as the maximum maxAggregatedFsBW for FR1 NR intra-band non-contiguous CA without UL CA equals the full bandwidth of the NR band (Table C.2.4.3.1A-1).				
Note 2:	PCC is configured on SB1 unless otherwise stated.				
Note 3:	The test frequencies for both SB1 and SB2 have been specified for both downlink and uplink to enable that the CC of either SB1 or SB2 can be used as PCC.				

4.3.1.1.5.3 – 4.3.1.1.5.24 FFS

4.3.1.1.5.25 CA_{n25}(xA)

4.3.1.1.5.25.1 CA_{n25}(2A)

Editor's note: Test frequencies for CA_{n25}(2A) with mixed numerology with SCS CC1=15kHz and SCS CC2=30 kHz or 60kHz; and SCS CC1=30kHz and SCS CC2=15 kHz or 60 kHz is FFS.

Table 4.3.1.1.5.25.1-1: NR Intra-Band non-contiguous CA configuration CA_n25(2A) without UL CA, SCS=15 kHz, Max Wgap

Sb CBW combination (BCS)	SB (Note 2)	Bandwidth [MHz]	Range (Note 1,3)	Gap	Test frequencies and signalling parameters
CA_n25(2A): n25A + n25A					
CBW1+CBW2 (0)	SB1	CBW1	Downlink & Uplink	Max Wgap	For CBW1, use Table 4.3.1.1.1.25-1: Low range for CBW = 5, 10, 15, 20 MHz
	SB2	CBW2	Downlink & Uplink		For CBW2, use Table 4.3.1.1.1.25-1: High range for CBW = 5, 10, 15, 20 MHz
Note 1:	Only one range has been specified as the maximum maxAggregatedFsBW for FR1 NR intra-band non-contiguous CA without UL CA equals the full bandwidth of the NR band (Table C.2.4.3.1A-1).				
Note 2:	PCC is configured on SB1 unless otherwise stated.				
Note 3:	The test frequencies for both SB1 and SB2 have been specified for both downlink and uplink to enable that the CC of either SB1 or SB2 can be used as PCC.				

Table 4.3.1.1.5.25.1-2: NR Intra-Band non-contiguous CA configuration CA_n25(2A) without UL CA, SCS=30 kHz, Max Wgap

Sb CBW combination (BCS)	SB (Note 2)	Bandwidth [MHz]	Range (Note 1,3)	Gap	Test frequencies and signalling parameters
CA_n25(2A): n25A + n25A					
CBW1+CBW2 (0)	SB1	CBW1	Downlink & Uplink	Max Wgap	For CBW1, use Table 4.3.1.1.1.25-2: Low range for CBW = 10, 15, 20 MHz
	SB2	CBW2	Downlink & Uplink		For CBW2, use Table 4.3.1.1.1.25-2: High range for CBW = 10, 15, 20 MHz
Note 1:	Only one range has been specified as the maximum maxAggregatedFsBW for FR1 NR intra-band non-contiguous CA without UL CA equals the full bandwidth of the NR band (Table C.2.4.3.1A-1).				
Note 2:	PCC is configured on SB1 unless otherwise stated.				
Note 3:	The test frequencies for both SB1 and SB2 have been specified for both downlink and uplink to enable that the CC of either SB1 or SB2 can be used as PCC.				

4.3.1.1.5.26 – 4.3.1.1.5.40 FFS

4.3.1.1.5.41 CA_n41(xA)

4.3.1.1.5.41.1 CA_n41(2A)

Editor's note: Test frequencies for CA_n41(2A) with mixed numerology with SCS CC1=15kHz and SCS CC2=30 kHz or 60kHz; and SCS CC1=30kHz and SCS CC2=15 kHz or 60 kHz is FFS.

Table 4.3.1.1.5.41.1-1: NR Intra-Band non-contiguous CA configuration CA_n41(2A) without UL CA, SCS=15 kHz, Max Wgap

Sb CBW combination (BCS)	SB (Note 2)	Bandwidth [MHz]	Range (Note 1,3)	Gap	Test frequencies and signalling parameters
CA_n41(2A): n41A + n41A					
CBW1+CBW2 (0)	SB1	CBW1	Downlink & Uplink	Max Wgap	For CBW1, use Table 4.3.1.1.1.41-1: Low range for CBW = 40, 50 MHz
	SB2	CBW2	Downlink & Uplink		For CBW2, use Table 4.3.1.1.1.41-1: High range for CBW = 40, 50 MHz
Note 1:	Only one range has been specified as the maximum maxAggregatedFsBW for FR1 NR intra-band non-contiguous CA without UL CA equals the full bandwidth of the NR band (Table C.2.4.3.1A-1).				
Note 2:	PCC is configured on SB1 unless otherwise stated.				
Note 3:	The test frequencies for both SB1 and SB2 have been specified for both downlink and uplink to enable that the CC of either SB1 or SB2 can be used as PCC.				

Table 4.3.1.1.5.41.1-2: NR Intra-Band non-contiguous CA configuration CA_n41(2A) without UL CA, SCS=30 kHz, Max Wgap

Sb CBW combination (BCS)	SB (Note 2)	Bandwidth [MHz]	Range (Note 1,3)	Gap	Test frequencies and signalling parameters
CA n41(2A): n41A + n41A					
CBW1+CBW2 (0)	SB1	CBW1	Downlink & Uplink	Max Wgap	For CBW1, use Table 4.3.1.1.1.41-2: Low range for CBW = 40, 50, 60, 80, 100 MHz
	SB2	CBW2	Downlink & Uplink		For CBW2, use Table 4.3.1.1.1.41-2: High range for CBW = 40, 50, 60, 80, 100 MHz
Note 1:	Only one range has been specified as the maximum maxAggregatedFsBW for FR1 NR intra-band non-contiguous CA without UL CA equals the full bandwidth of the NR band (Table C.2.4.3.1A-1).				
Note 2:	PCC is configured on SB1 unless otherwise stated.				
Note 3:	The test frequencies for both SB1 and SB2 have been specified for both downlink and uplink to enable that the CC of either SB1 or SB2 can be used as PCC.				

4.3.1.1.5.42 – 4.3.1.1.5.47 FFS

4.3.1.1.5.48 CA_n48(xA)

4.3.1.1.5.48.1 CA_n48(2A)

Editor's note: Test frequencies for CA_n48(2A) with mixed numerology with SCS CC1=15kHz and SCS CC2=30 kHz or 60kHz; and SCS CC1=30kHz and SCS CC2=15 kHz or 60 kHz is FFS.

Table 4.3.1.1.5.48.1-1: NR Intra-Band non-contiguous CA configuration CA_n48(2A) without UL CA, SCS=15 kHz, Max Wgap

Sb CBW combination (BCS)	SB (Note 2)	Bandwidth [MHz]	Range (Note 1,3)	Gap	Test frequencies and signalling parameters
CA_n48(2A): n48A + n48A					
CBW1+CBW2 (0)	SB1	CBW1	Downlink & Uplink	Max Wgap	For CBW1, use Table 4.3.1.1.1.48-1: Low range for CBW = 10, 15, 20, 40, 50 MHz
	SB2	CBW2	Downlink & Uplink		For CBW2, use Table 4.3.1.1.1.48-1: High range for CBW = 10, 15, 20, 40, 50 MHz
CBW1+CBW2 (1)	SB1	CBW1	Downlink & Uplink	Max Wgap	For CBW1, use Table 4.3.1.1.1.48-1: Low range for CBW = 10, 15, 20, 30, 40, 50 MHz
	SB2	CBW2	Downlink & Uplink		For CBW2, use Table 4.3.1.1.1.48-1: High range for CBW = 10, 15, 20, 30, 40, 50 MHz
Note 1: Only one range has been specified as the maximum maxAggregatedFsBW for FR1 NR intra-band non-contiguous CA without UL CA equals the full bandwidth of the NR band (Table C.2.4.3.1A-1).					
Note 2: PCC is configured on SB1 unless otherwise stated.					
Note 3: The test frequencies for both SB1 and SB2 have been specified for both downlink and uplink to enable that the CC of either SB1 or SB2 can be used as PCC.					
Note 4: For the 50 MHz bandwidth or more, the minimum requirements are restricted to operation when carrier is configured as a downlink SCell part of CA configuration.					

Table 4.3.1.1.5.48.1-2: NR Intra-Band non-contiguous CA configuration CA_n48(2A) without UL CA, SCS=30 kHz, Max Wgap

SB CBW combination (BCS)	SB (Note 2)	Bandwidth [MHz]	Range (Note 1,3)	Gap	Test frequencies and signalling parameters
CA_n48(2A): n48A + n48A					
CBW1+CBW2 (0)	SB1	CBW1	Downlink & Uplink	Max Wgap	For CBW1, use Table 4.3.1.1.1.48-2: Low range for CBW = 10, 15, 20, 40, 50, 60, 80, 90, 100 MHz
	SB2	CBW2	Downlink & Uplink		For CBW2, use Table 4.3.1.1.1.48-2: High range for CBW = 10, 15, 20, 40, 50, 60, 80, 90, 100 MHz

CBW1+CBW2 (1)	SB1	CBW1	Downlink & Uplink	Max Wgap	For CBW1, use Table 4.3.1.1.1.48-2: Low range for CBW = 10, 15, 20, 30, 40, 50, 60, 70, 80, 90, 100 MHz
	SB2	CBW2	Downlink & Uplink		For CBW2, use Table 4.3.1.1.1.48-2: High range for CBW = 10, 15, 20, 30, 40, 50, 60, 70, 80, 90, 100 MHz
Note 1:	Only one range has been specified as the maximum maxAggregatedFsBW for FR1 NR intra-band non-contiguous CA without UL CA equals the full bandwidth of the NR band (Table C.2.4.3.1A-1).				
Note 2:	PCC is configured on SB1 unless otherwise stated.				
Note 3:	The test frequencies for both SB1 and SB2 have been specified for both downlink and uplink to enable that the CC of either SB1 or SB2 can be used as PCC.				
Note 4:	For the 50 MHz bandwidth or more, the minimum requirements are restricted to operation when carrier is configured as a downlink SCell part of CA configuration.				

4.3.1.1.5.49 – 4.3.1.1.5.65 FFS

4.3.1.1.5.66 CA_n66(xA)

4.3.1.1.5.66.1 CA_n66(2A)

Editor's note: Test frequencies for CA_n66(2A) with mixed numerology with SCS CC1=15kHz and SCS CC2=30 kHz or 60kHz; and SCS CC1=30kHz and SCS CC2=15 kHz or 60 kHz is FFS.

Table 4.3.1.1.5.66.1-1: NR Intra-Band non-contiguous CA configuration CA_n66(2A) without UL CA, SCS=15 kHz, Max Wgap

Sb CBW combination (BCS)	SB (Note 2)	Bandwidth [MHz]	Range (Note 1,3)	Gap	Test frequencies and signalling parameters
CA_n66(2A): n66A + n66A					
CBW1+CBW2 (0)	SB1	CBW1	Downlink & Uplink	Max Wgap	For CBW1, use Table 4.3.1.1.1.66-1: Low range for CBW = 5, 10, 15, 20, 40 MHz, and if SB1 is used as PCC the applicable UL/DL Bandwidth combination depending on required UL bandwidth
	SB2	CBW2	Downlink & Uplink		For CBW2, use Table 4.3.1.1.1.66-1: High range for CBW = 5, 10, 15, 20, 40 MHz, and if SB2 is used as PCC the applicable UL/DL Bandwidth combination depending on required UL bandwidth
CBW1+CBW2 (1)	SB1	CBW1	Downlink & Uplink	Max Wgap	For CBW1, use Table 4.3.1.1.1.66-1: Low range for CBW = 5, 10, 15, 20, 25, 30, 40 MHz, and if SB1 is used as PCC the applicable UL/DL Bandwidth combination depending on required UL bandwidth
	SB2	CBW2	Downlink & Uplink		For CBW2, use Table 4.3.1.1.1.66-1: High range for CBW = 5, 10, 15, 20, 25, 30, 40 MHz, and if SB2 is used as PCC the applicable UL/DL Bandwidth combination depending on required UL bandwidth
CBW1+CBW2 (2)	SB1	CBW1	Downlink & Uplink	Max Wgap	For CBW1, use Table 4.3.1.1.1.66-1: Low range for CBW = 5, 10, 15, 20, 40 MHz, and if SB1 is used as PCC the applicable UL/DL Bandwidth combination depending on required UL bandwidth
	SB2	CBW2	Downlink & Uplink		For CBW2, use Table 4.3.1.1.1.66-1: High range for CBW = 5, 10, 15, 20, 40 MHz, and if SB2 is used as PCC the applicable UL/DL Bandwidth combination depending on required UL bandwidth
Note 1: Only one range has been specified as the maximum maxAggregatedFsBW for FR1 NR intra-band non-contiguous CA without UL CA equals the full bandwidth of the NR band (Table C.2.4.3.1A-1).					
Note 2: PCC is configured on SB1 unless otherwise stated.					
Note 3: The test frequencies for both SB1 and SB2 have been specified for both downlink and uplink to enable that the CC of either SB1 or SB2 can be used as PCC.					

Table 4.3.1.1.5.66.1-2: NR Intra-Band non-contiguous CA configuration CA_n66(2A) without UL CA, SCS=30 kHz, Max Wgap

SB CBW combination (BCS)	SB (Note 2)	Bandwidth [MHz]	Range (Note 1,3)	Gap	Test frequencies and signalling parameters
CA_n66(2A): n66A + n66A					
CBW1+CBW2 (0)	SB1	CBW1	Downlink & Uplink	Max Wgap	For CBW1, use Table 4.3.1.1.1.66-2: Low range for CBW = 10, 15, 20, 40 MHz, and if SB1 is used as PCC the applicable UL/DL Bandwidth combination depending on required UL bandwidth
	SB2	CBW2	Downlink & Uplink		For CBW2, use Table 4.3.1.1.1.66-2: High range for CBW = 10, 15, 20, 40 MHz, and if SB2 is used as PCC the applicable UL/DL Bandwidth combination depending on required UL bandwidth
CBW1+CBW2 (1)	SB1	CBW1	Downlink & Uplink	Max Wgap	For CBW1, use Table 4.3.1.1.1.66-2: Low range for CBW = 10, 15, 20, 25, 30, 40 MHz, and if SB1 is used as PCC the applicable UL/DL Bandwidth combination depending on required UL bandwidth
	SB2	CBW2	Downlink & Uplink		For CBW2, use Table 4.3.1.1.1.66-2: High range for CBW = 10, 15, 20, 25, 30, 40 MHz, and if SB2 is used as PCC the applicable UL/DL Bandwidth combination depending on required UL bandwidth
CBW1+CBW2 (2)	SB1	CBW1	Downlink & Uplink	Max Wgap	For CBW1, use Table 4.3.1.1.1.66-2: Low range for CBW = 10, 15, 20, 40 MHz, and if SB1 is used as PCC the applicable UL/DL Bandwidth combination depending on required UL bandwidth
	SB2	CBW2	Downlink & Uplink		For CBW2, use Table 4.3.1.1.1.66-2: High range for CBW = 10, 15, 20, 40 MHz, and if SB2 is used as PCC the applicable UL/DL Bandwidth combination depending on required UL bandwidth
Note 1: Only one range has been specified as the maximum maxAggregatedFsBW for FR1 NR intra-band non-contiguous CA without UL CA equals the full bandwidth of the NR band (Table C.2.4.3.1A-1).					
Note 2: PCC is configured on SB1 unless otherwise stated.					
Note 3: The test frequencies for both SB1 and SB2 have been specified for both downlink and uplink to enable that the CC of either SB1 or SB2 can be used as PCC.					

4.3.1.1.5.66.2 CA_n66(3A)

Editor's note: Test frequencies for CA_n66(3A) with mixed numerology is FFS.

Table 4.3.1.1.5.66.2-1: NR Intra-Band non-contiguous CA configuration CA_n66(3A) without UL CA, SCS 15 kHz, frequency raster 100 kHz, and Max Wgap

SB CBW combination (BCS)	SB (Note 2)	Bandwidth [MHz]	Range (Note 1,3)	Gap	Test frequencies and signalling parameters
CA_n66(3A): n66A + n66A + n66A					
CBW1+CBW2 +CBW3 (0)	SB1	CBW1	Downlink & Uplink	Max Wgap	For CBW1, use Table 4.3.1.1.1.66-1: Low range for CBW = 5, 10, 15, 20, 40 MHz, and if SB1 is used as PCC the applicable UL/DL Bandwidth combination depending on required UL bandwidth
	SB2	CBW2	Downlink & Uplink		For CBW2, use Table 4.3.1.1.1.66-1: Mid range for CBW = 5, 10, 15, 20, 40 MHz, and if SB2 is used as PCC the applicable UL/DL

				Bandwidth combination depending on required UL bandwidth
	SB3	CBW3	Downlink & Uplink	For CBW3, use Table 4.3.1.1.1.66-1: High range for CBW = 5, 10, 15, 20, 40 MHz, and if SB3 is used as PCC the applicable UL/DL Bandwidth combination depending on required UL bandwidth
Note 1:	Only one range has been specified as the maximum maxAggregatedFsBW for FR1 NR intra-band non-contiguous CA without UL CA equals the full bandwidth of the NR band (Table C.2.4.3.1A-1).			
Note 2:	PCC is configured on SB1 unless otherwise stated.			
Note 3:	The test frequencies for SB1, SB2 and SB3 have been specified for both downlink and uplink to enable that the CC of either SB1, SB2 or SB3 can be used as PCC.			

Table 4.3.1.1.5.66.2-2: NR Intra-Band non-contiguous CA configuration CA_n66(3A) without UL CA, SCS 30 kHz, frequency raster 100 kHz, and Max Wgap

SB CBW combination (BCS)	SB (Note 2)	Bandwidth [MHz]	Range (Note 1,3)	Gap	Test frequencies and signalling parameters
CA_n66(3A): n66A + n66A + n66A					
CBW1+CBW2 +CBW3 (0)	SB1	CBW1	Downlink & Uplink	Max Wgap	For CBW1, use Table 4.3.1.1.1.66-2: Low range for CBW = 10, 15, 20, 40 MHz, and if SB1 is used as PCC the applicable UL/DL Bandwidth combination depending on required UL bandwidth
	SB2	CBW2	Downlink & Uplink		For CBW2, use Table 4.3.1.1.1.66-2: Mid range for CBW = 10, 15, 20, 40 MHz, and if SB2 is used as PCC the applicable UL/DL Bandwidth combination depending on required UL bandwidth
	SB3	CBW3	Downlink & Uplink		For CBW3, use Table 4.3.1.1.1.66-2: High range for CBW = 10, 15, 20, 40 MHz, and if SB3 is used as PCC the applicable UL/DL Bandwidth combination depending on required UL bandwidth
Note 1:	Only one range has been specified as the maximum maxAggregatedFsBW for FR1 NR intra-band non-contiguous CA without UL CA equals the full bandwidth of the NR band (Table C.2.4.3.1A-1).				
Note 2:	PCC is configured on SB1 unless otherwise stated.				
Note 3:	The test frequencies for SB1, SB2 and SB3 have been specified for both downlink and uplink to enable that the CC of either SB1, SB2 or SB3 can be used as PCC.				

4.3.1.1.5.67 – 4.3.1.1.5.70 FFS

4.3.1.1.5.71 CA_n71(xA)

4.3.1.1.5.71.1 CA_n71(2A)

Editor's note: Test frequencies for CA_n71(2A) with mixed numerology with SCS CC1=15kHz and SCS CC2=30 kHz; and SCS CC1=30kHz and SCS CC2=15 kHz is FFS.

Table 4.3.1.1.5.71.1-1: NR Intra-Band non-contiguous CA configuration CA_n71(2A) without UL CA, SCS=15 kHz, Max Wgap

CBW combination	SB	Band width [MHz]	carrier Bandw idth [PRBs]	Range	Gap	Test frequencies and signalling parameters
CA_n71(2A); n71A (5MHz) + n71A (5-20MHz)						
5+5	SB1	5	25	Downlink & Uplink	Max Wgap	Table 4.3.1.1.1.71-1: Low range for CBW=5 MHz
	SB2	5	25	Downlink & Uplink		Table 4.3.1.1.1.71-1: High range for CBW=5 MHz
5+10	SB1	5	25	Downlink & Uplink	Max Wgap	Table 4.3.1.1.1.71-1: Low range for CBW=5 MHz
	SB2	10	52	Downlink & Uplink		Table 4.3.1.1.1.71-1: High range for CBW=10 MHz
5+15	SB1	5	25	Downlink & Uplink	Max Wgap	Table 4.3.1.1.1.71-1: Low range for CBW=5 MHz
	SB2	15	79	Downlink & Uplink		Table 4.3.1.1.1.71-1: High range for CBW=15 MHz

5+20	SB1	5	25	Downlink & Uplink	Max	Table 4.3.1.1.1.71-1: Low range for CBW=5 MHz
	SB2	20	106	Downlink & Uplink	Wgap	Table 4.3.1.1.1.71-1: High range for CBW=20 MHz
CA_n71(2A); n71A (10MHz) + n71A (5-20MHz)						
10+5	SB1	10	52	Downlink & Uplink	Max	Table 4.3.1.1.1.71-1: Low range for CBW=10 MHz
	SB2	5	25	Downlink & Uplink	Wgap	Table 4.3.1.1.1.71-1: High range for CBW=5 MHz
10+10	SB1	10	52	Downlink & Uplink	Max	Table 4.3.1.1.1.71-1: Low range for CBW=10 MHz
	SB2	10	52	Downlink & Uplink	Wgap	Table 4.3.1.1.1.71-1: High range for CBW=10 MHz
10+15	SB1	10	52	Downlink & Uplink	Max	Table 4.3.1.1.1.71-1: Low range for CBW=10 MHz
	SB2	15	79	Downlink & Uplink	Wgap	Table 4.3.1.1.1.71-1: High range for CBW=15 MHz
10+20	SB1	10	52	Downlink & Uplink	Max	Table 4.3.1.1.1.71-1: Low range for CBW=10 MHz
	SB2	20	106	Downlink & Uplink	Wgap	Table 4.3.1.1.1.71-1: High range for CBW=20 MHz
CA_n71(2A); n71A (15MHz) + n71A (5-15MHz)						
15+5	SB1	15	79	Downlink & Uplink	Max	Table 4.3.1.1.1.71-1: Low range for CBW=15 MHz
	SB2	5	25	Downlink & Uplink	Wgap	Table 4.3.1.1.1.71-1: High range for CBW=5 MHz
15+10	SB1	15	79	Downlink & Uplink	Max	Table 4.3.1.1.1.71-1: Low range for CBW=15 MHz
	SB2	10	52	Downlink & Uplink	Wgap	Table 4.3.1.1.1.71-1: High range for CBW=10 MHz
15+15	SB1	15	79	Downlink & Uplink	Max	Table 4.3.1.1.1.71-1: Low range for CBW=15 MHz
	SB2	15	79	Downlink & Uplink	Wgap	Table 4.3.1.1.1.71-1: High range for CBW=15 MHz
CA_n71(2A); n71A (20MHz) + n71A (5-10MHz)						
20+5	SB1	20	106	Downlink & Uplink	Max	Table 4.3.1.1.1.71-1: Low range for CBW=20 MHz
	SB2	5	25	Downlink & Uplink	Wgap	Table 4.3.1.1.1.71-1: High range for CBW=5 MHz
20+10	SB1	20	106	Downlink & Uplink	Max	Table 4.3.1.1.1.71-1: Low range for CBW=20 MHz
	SB2	10	52	Downlink & Uplink	Wgap	Table 4.3.1.1.1.71-1: High range for CBW=10 MHz
Note 1: CA_n71(2A) is specified in [7] 38.101-1 without uplink CA. PCC is configured on SB1 unless otherwise stated. The test frequencies for both SB1 and SB2 have been specified for both downlink and uplink to enable that the CC of either SB1 or SB2 can be used as PCC.						

Table 4.3.1.1.5.71.1-2: NR Intra-Band non-contiguous CA configuration CA_n71(2A) without UL CA, SCS=30 kHz, Max Wgap

SB CBW combination	SB	Band width [MHz]	carrier Bandw idth [PRBs]	Range	Gap	Test frequencies and signalling parameters
CA_n71(2A); n71A (10MHz) + n71A (10-20MHz)						
10+10	SB1	10	24	Downlink & Uplink	Max	Table 4.3.1.1.1.71-2: Low range for CBW=10 MHz
	SB2	10	24	Downlink & Uplink	Wgap	Table 4.3.1.1.1.71-2: High range for CBW=10 MHz
10+15	SB1	10	24	Downlink & Uplink	Max	Table 4.3.1.1.1.71-2: Low range for CBW=10 MHz
	SB2	15	38	Downlink & Uplink	Wgap	Table 4.3.1.1.1.71-2: High range for CBW=15 MHz
10+20	SB1	10	24	Downlink & Uplink	Max	Table 4.3.1.1.1.71-2: Low range for CBW=10 MHz
	SB2	20	51	Downlink & Uplink	Wgap	Table 4.3.1.1.1.71-2: High range for CBW=20 MHz
CA_n71(2A); n71A (15MHz) + n71A (10-15MHz)						
15+10	SB1	15	38	Downlink & Uplink	Max	Table 4.3.1.1.1.71-2: Low range for CBW=15 MHz
	SB2	10	24	Downlink & Uplink	Wgap	Table 4.3.1.1.1.71-2: High range for CBW=10 MHz
15+15	SB1	15	38	Downlink & Uplink	Max	Table 4.3.1.1.1.71-2: Low range for CBW=15 MHz
	SB2	15	38	Downlink & Uplink	Wgap	Table 4.3.1.1.1.71-2: High range for CBW=15 MHz
CA_n71(2A); n71A (20MHz) + n71A (10MHz)						
20+10	SB1	20	51	Downlink & Uplink	Max	Table 4.3.1.1.1.71-2: Low range for CBW=20 MHz
	SB2	10	24	Downlink & Uplink	Wgap	Table 4.3.1.1.1.71-2: High range for CBW=10 MHz
Note 1: CA_n71(2A) is specified in [7] 38.101-1 without uplink CA. PCC is configured on SB1 unless otherwise stated. The test frequencies for both SB1 and SB2 have been specified for both downlink and uplink to enable that the CC of either SB1 or SB2 can be used as PCC.						

4.3.1.1.5.72 – 4.3.1.1.5.76 FFS

4.3.1.1.5.77 CA_n77(xA)

4.3.1.1.5.77.1 CA_n77(2A)

Editor's note: Test frequencies for CA_n77(2A) with mixed numerology with SCS CC1=15kHz and SCS CC2=30 kHz or 60kHz; and SCS CC1=30kHz and SCS CC2=15 kHz or 60 kHz is FFS.

Test frequencies for all possible bandwidth combinations are not provided in tables for UL CA, Table 4.3.1.1.5.77.1-3 and Table 4.3.1.1.5.77.1-4. How to handle the case where a specific bandwidth combination is missing in the table, is FFS.

Table 4.3.1.1.5.77.1-1: NR Intra-Band non-contiguous CA configuration CA_n77(2A) without UL CA, SCS=15 kHz, Max Wgap

SB CBW combination (BCS)	SB (Note 2)	Bandwidth [MHz]	Range (Note 1,3)	Gap	Test frequencies and signalling parameters
CA_n77(2A): n77A + n77A					
CBW1+CBW2 (0)	SB1	CBW1	Downlink & Uplink	Max Wgap	For CBW1, use Table 4.3.1.1.1.77-1: Low range for CBW = 20, 40 MHz
	SB2	CBW2	Downlink & Uplink		For CBW2, use Table 4.3.1.1.1.77-1: High range for CBW = 20, 40 MHz
CBW1+CBW2 (1)	SB1	CBW1	Downlink & Uplink	Max Wgap	For CBW1, use Table 4.3.1.1.1.77-1: Low range for CBW = 10, 15, 20, 25, 30, 40, 50 MHz
	SB2	CBW2	Downlink & Uplink		For CBW2, use Table 4.3.1.1.1.77-1: High range for CBW = 10, 15, 20, 25, 30, 40, 50 MHz
Note 1: Only one range has been specified as the maximum maxAggregatedFsBW for FR1 NR intra-band non-contiguous CA without UL CA equals the full bandwidth of the NR band (Table C.2.4.3.1A-1).					
Note 2: PCC is configured on SB1 unless otherwise stated.					
Note 3: The test frequencies for both SB1 and SB2 have been specified for both downlink and uplink to enable that the CC of either SB1 or SB2 can be used as PCC.					

Table 4.3.1.1.5.77.1-2: NR Intra-Band non-contiguous CA configuration CA_n77(2A) without UL CA, SCS=30 kHz, Max Wgap

SB CBW combination (BCS)	SB (Note 2)	Bandwidth [MHz]	Range (Note 1,3)	Gap	Test frequencies and signalling parameters
CA_n77(2A): n77A + n77A					
CBW1+CBW2 (0)	SB1	CBW1	Downlink & Uplink	Max Wgap	For CBW1, use Table 4.3.1.1.1.77-2: Low range for CBW = 20, 40, 80, 100 MHz
	SB2	CBW2	Downlink & Uplink		For CBW2, use Table 4.3.1.1.1.77-2: High range for CBW = 20, 40, 80, 100 MHz
CBW1+CBW2 (1)	SB1	CBW1	Downlink & Uplink	Max Wgap	For CBW1, use Table 4.3.1.1.1.77-2: Low range for CBW = 10, 15, 20, 25, 30, 40, 50, 60, 70, 80, 90, 100 MHz
	SB2	CBW2	Downlink & Uplink		For CBW2, use Table 4.3.1.1.1.77-2: High range for CBW = 10, 15, 20, 25, 30, 40, 50, 60, 70, 80, 90, 100 MHz
Note 1: Only one range has been specified as the maximum maxAggregatedFsBW for FR1 NR intra-band non-contiguous CA without UL CA equals the full bandwidth of the NR band (Table C.2.4.3.1A-1).					
Note 2: PCC is configured on SB1 unless otherwise stated.					
Note 3: The test frequencies for both SB1 and SB2 have been specified for both downlink and uplink to enable that the CC of either SB1 or SB2 can be used as PCC.					

Table 4.3.1.1.5.77.1-3: NR Intra-Band non-contiguous CA configuration CA_n77(2A) with UL CA (PCC=CC1 and SCC=CC2), SCS 15kHz

Aggregated BW [MHz] (BCS) (CBW combination)	Range		CCN ote 1	CBW [MHz]	SCS [kHz]	carrierBandwidth [PRBs]	Carrier centre [MHz] Note 1	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequencyPointA [ARFCN]	offsetTo Carrier [Carrier PRBs]	SS block SCS [kHz]	GS CN	absoluteFrequencySSB [ARFCN]	k_{SSB}	Offset carrier CORE SET#0 [RBs] Note 2	CORE SET#0 Index (Offset [RBs]) Note 3	offsetToPointA (SIB1) [PRBs] Note 3
20 (1,4,5) (10+10)	UL & DL	LOW	CC1	10	15	52	330 5.01	6203 34	330 0.33	620022	0	30	77 11	620352	6	1	1 (6)	7
			MaxFsBW = 100 MHz, maxWgap = 80 MHz															
		HIGH	CC2	10	15	52	339 5.01	6263 34	339 0.33	626022	0	30	77 73	626304	6	1	0 (2)	3
			CC1	10	15	52	410 4.99	6736 66	400 9.59	667306	504	30	82 66	673632	2	1	0 (2)	507
			MaxFsBW = 100 MHz, maxWgap = 80 MHz															
30 (1,4,5) (20+10)	UL & DL	LOW	CC1	20	15	106	331 0.02 Note 4	6206 68	330 0.48	620032	0	30	77 11	620352	8	0	1 (6)	6
			MaxFsBW = 100 MHz, maxWgap = 70 MHz															
		HIGH	CC2	10	15	52	339 5.01	6263 34	339 0.33	626022	0	30	77 73	626304	6	1	0 (2)	3
			CC1	20	15	106	411 0.00	6740 00	400 9.74	667316	504	30	82 66	673632	4	0	0 (2)	506
			MaxFsBW = 100 MHz, maxWgap = 70 MHz															
40	UL	LOW	CC1	20	15	106	331 0.02	6206 68	330 0.48	620032	0	30	77 11	620352	8	0	1 (6)	6

(0,1,4,5) (20+20)	& D L						Not e 4											
			MaxFsBW = 100 MHz, maxWgap = 60 MHz															
			C C 2	20	15	106	339 0.00 Not e 5	6260 00	338 0.46	625364	0	30	77 66	625632	4	0	0 (2)	2
		H I G H	C C 1	20	15	106	411 0.00 Not e 4	6740 00	400 9.74	667316	504	30	82 66	673632	4	0	0 (2)	506
		MaxFsBW = 100 MHz, maxWgap = 60 MHz																
			C C 2	20	15	106	418 9.98 Not e 5	6793 32	408 9.72	672648	504	30	83 22	679008	0	0	1 (6)	510
40 (1,4,5) (30+10)	& D L	LO W	C C 1	30	15	160	331 5.00	6210 00	330 0.60	620040	0	30	77 11	620352	0	0	1 (6)	6
			MaxFsBW = 100 MHz, maxWgap = 60 MHz															
			C C 2	10	15	52	339 4.98 Not e 5	6263 32	339 0.30	626020	0	30	77 73	626304	8	1	0 (2)	3
		H I G H	C C 1	30	15	160	411 5.01 Not e 4	6743 34	400 9.89	667326	504	30	82 67	673728	6	3	1 (6)	513
		MaxFsBW = 100 MHz, maxWgap = 60 MHz																
			C C 2	10	15	52	419 4.99	6796 66	409 9.59	673306	504	30	83 29	679680	2	1	1 (6)	511
50 (1,4,5) (40+10)	& D L	LO W	C C 1	40	15	216	332 0.01	6213 34	330 0.57	620038	0	30	77 11	620352	2	0	1 (6)	6
			MaxFsBW = 100 MHz, maxWgap = 50 MHz															
			C C 2	10	15	52	339 5.01	6263 34	339 0.33	626022	0	30	77 73	626304	6	1	0 (2)	3

		H G H	C C 1	40	15	216	411 9.99	6746 66	400 9.83	667322	504	30	82 67	673728	10	3	1 (6)	513
			MaxFsBW = 100 MHz, maxWgap = 50 MHz															
			C C 2	10	15	52	419 4.99	6796 66	409 9.59	673306	504	30	83 29	679680	2	1	1 (6)	511
60 (0,1,4,5) (40+20)	U L & D L	L O W	C C 1	40	15	216	332 0.01	6213 34	330 0.57	620038	0	30	77 11	620352	2	0	1 (6)	6
			MaxFsBW = 100 MHz, maxWgap = 40 MHz															
			C C 2	20	15	106	339 0.00	6260 00	338 0.46	625364	0	30	77 66	625632	4	0	0 (2)	2
		H G H	C C 1	40	15	216	411 9.99	6746 66	400 9.83	667322	504	30	82 67	673728	10	3	1 (6)	513
			MaxFsBW = 100 MHz, maxWgap = 40 MHz															
			C C 2	20	15	106	418 9.98 Not e 5	6793 32	408 9.72	672648	504	30	83 22	679008	0	0	1 (6)	510
60 (1) (50+10)	U L & D L	L O W	C C 1	50	15	270	332 5.02 Not e 4	6216 68	330 0.72	620048	0	30	77 11	620352	4	3	0 (2)	5
			MaxFsBW = 100 MHz, maxWgap = 40 MHz															
			C C 2	10	15	52	339 5.01	6263 34	339 0.33	626022	0	30	77 73	626304	6	1	0 (2)	3
		H G H	C C 1	50	15	270	412 5.00	6750 00	400 9.98	667332	504	30	82 67	673728	0	3	1 (6)	513
			MaxFsBW = 100 MHz, maxWgap = 40 MHz															
			C C 2	10	15	52	419 4.99	6796 66	409 9.59	673306	504	30	83 29	679680	2	1	1 (6)	511
70	U L	L O W	C C 1	50	15	270	332 5.02 Not e 4	6216 68	330 0.72	620048	0	30	77 11	620352	4	3	0 (2)	5

(1,4,5) (50+20)	& D L		MaxFsBW = 100 MHz, maxWgap = 30 MHz															
			C C 2	20	15	106	339 0.00 Not e 5	6260 00	338 0.46	625364	0	30	77 66	625632	4	0	0 (2)	2
			H G H C 1	50	15	270	412 5.00 Not e 4	6750 00	400 9.98	667332	504	30	82 67	673728	0	3	1 (6)	513
			MaxFsBW = 100 MHz, maxWgap = 30 MHz															
			C C 2	20	15	106	418 9.98 Not e 5	6793 32	408 9.72	672648	504	30	83 22	679008	0	0	1 (6)	510
80 (0,1,4,5) (40+40)	U L & D L	L O W	C C 1	40	15	216	332 0.01	6213 34	330 0.57	620038	0	30	77 11	620352	2	0	1 (6)	6
			MaxFsBW = 100 MHz, maxWgap = 20 MHz															
			C C 2	40	15	216	338 0.01	6253 34	336 0.57	624038	0	30	77 53	624384	10	2	1 (6)	8
		H G H	C C 1	40	15	216	411 9.99	6746 66	400 9.83	667322	504	30	82 67	673728	10	3	1 (6)	513
			MaxFsBW = 100 MHz, maxWgap = 20 MHz															
			C C 2	40	15	216	417 9.99	6786 66	406 9.83	671322	504	30	83 08	677664	6	2	0 (2)	508
80 (1,4,5) (50+30)	U L & D L	L O W	C C 1	50	15	270	332 5.02 Not e 4	6216 68	330 0.72	620048	0	30	77 11	620352	4	3	0 (2)	5
			MaxFsBW = 100 MHz, maxWgap = 20 MHz															
		H G H	C C 2	30	15	160	338 5.02	6256 68	337 0.62	624708	0	30	77 60	625056	0	3	1 (6)	9
			C C 1	50	15	270	412 5.00	6750 00	400 9.98	667332	504	30	82 67	673728	0	3	1 (6)	513
			MaxFsBW = 100 MHz, maxWgap = 20 MHz															

			C C 2	30	15	160	418 5.00	6790 00	407 9.88	671992	504	30	83 15	678336	8	2	0 (2)	508
90 (1,4,5) (50+40)	U L & D L	LO W	C C 1	50	15	270	332 5.02 Not e 4	6216 68	330 0.72	620048	0	30	77 11	620352	4	3	0 (2)	5
			MaxFsBW = 100 MHz, maxWgap = 10 MHz															
		HI G H	C C 2	40	15	216	338 0.01	6253 34	336 0.57	624038	0	30	77 53	624384	10	2	1 (6)	8
			C C 1	50	15	270	412 5.00	6750 00	400 9.98	667332	504	30	82 67	673728	0	3	1 (6)	513
			MaxFsBW = 100 MHz, maxWgap = 10 MHz															
100 (1,4,5) (50+50)	U L & D L	LO W	C C 1	50	15	270	332 5.02 Not e 4	6216 68	330 0.72	620048	0	30	77 11	620352	4	3	0 (2)	5
			MaxFsBW = 200 MHz, maxWgap = 100 MHz															
		HI G H	C C 2	50	15	270	347 5.02	6316 68	345 0.72	630048	0	30	78 15	630336	0	2	0 (2)	4
			C C 1	50	15	270	402 4.98	6683 32	390 9.96	660664	504	30	81 97	667008	8	2	0 (2)	508
			MaxFsBW = 200 MHz, maxWgap = 100 MHz															
			C C 2	50	15	270	417 4.98 Not e 5	6783 32	405 9.96	670664	504	30	83 01	676992	4	1	0 (2)	507
			Note 1: CCs are specified in increasing frequency order. CC1 is used as PCell if nothing else is specified in the test case.															
			Note 2: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs.															
			Note 3: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-3 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.															
			Note 4: Centre frequency shifted 15 kHz to align with the synchronisation raster (According to R1-1809879).															
Note 5: Centre frequency shifted -15 kHz to align with the synchronisation raster (According to R1-1809879).																		

Table 4.3.1.1.5.77.1-4: NR Intra-Band non-contiguous CA configuration CA_n77(2A) with UL CA (PCC=CC1 and SCC=CC2), SCS 30kHz

Aggregated BW [MHz] (BCS) (CBW combination)	Range		C N ote 1	CB W [MHz]	SC S [kHz]	carrierBandwidth [PRBs]	Carrier centre [MHz] Note 1	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequencyPointA [ARFCN]	offsetTo Carrier [Carrier PRBs]	SS block SCS [kHz]	GS CN	absoluteFrequencySSB [ARFCN]	k_{SSB}	Offset carrier CORE SET#0 [RBs] Note 2	CORE SET#0 Index (Offset [RBs]) Note 3	offsetTo PointA (SIB1) [PRBs] Note 3
20 (1,4,5) (10+10)	UL & DL	LOW	CC1	10	30	24	3305.01	620334	330.69	620046	0	30	7711	620352	18	0	2 (2)	4
			MaxFsBW = 100 MHz, maxWgap = 80 MHz															
		HIGH	CC2	10	30	24	3395.01	626334	339.69	626046	0	30	7773	626304	18	0	0 (0)	0
			CC1	10	30	24	4104.99	673666	391.9.23	661282	504	30	8266	673632	14	0	0 (0)	1008
			MaxFsBW = 100 MHz, maxWgap = 80 MHz															
			CC2	10	30	24	4194.99	679666	400.9.23	667282	504	30	8329	679680	14	0	2 (2)	1012
30 (1,4,5) (20+10)	UL & DL	LOW	CC1	20	30	51	3310.02	620668	330.84	620056	0	30	7711	620352	8	0	2 (2)	4
			MaxFsBW = 100 MHz, maxWgap = 70 MHz															
		HIGH	CC2	10	30	24	3395.01	626334	339.69	626046	0	30	7773	626304	18	0	0 (0)	0
			CC1	20	30	51	4110.00	674000	391.9.38	661292	504	30	8266	673632	4	0	0 (0)	1008
			MaxFsBW = 100 MHz, maxWgap = 70 MHz															
			CC2	10	30	24	4194.99	679666	400.9.23	667282	504	30	8329	679680	14	0	2 (2)	1012

40 (0,1,4,5) (20+20)	U L & D L	L O W	C C 1	20	30	51	3310 .02	6206 68	330 0.84	620056	0	30	77 11	620352	8	0	2 (2)	4
			MaxFsBW = 100 MHz, maxWgap = 60 MHz															
		H I G H	C C 2	20	30	51	3390 .00	6260 00	338 0.82	625388	0	30	77 66	625632	4	0	0 (0)	0
			C C 1	20	30	51	4110 .00	6740 00	391 9.38	661292	504	30	82 66	673632	4	0	0 (0)	1008
			MaxFsBW = 100 MHz, maxWgap = 60 MHz															
			C C 2	20	30	51	4189 .98	6793 32	399 9.36	666624	504	30	83 22	679008	0	0	2 (2)	1012
40 (1,4,5) (30+10)	U L & D L	L O W	C C 1	30	30	78	3315 .00	6210 00	330 0.96	620064	0	30	77 11	620352	0	0	2 (2)	4
			MaxFsBW = 100 MHz, maxWgap = 60 MHz															
		H I G H	C C 2	10	30	24	3394 .98	6263 32	339 0.66	626044	0	30	77 73	626304	20	0	0 (0)	0
			C C 1	30	30	78	4115 .01	6743 34	391 9.53	661302	504	30	82 67	673728	18	0	3 (3)	1014
			MaxFsBW = 100 MHz, maxWgap = 60 MHz															
			C C 2	10	30	24	4194 .99	6796 66	400 9.23	667282	504	30	83 29	679680	14	0	2 (2)	1012
50 (1,4,5) (40+10)	U L & D L	L O W	C C 1	40	30	106	3320 .01	6213 34	330 0.93	620062	0	30	77 11	620352	2	0	2 (2)	4
			MaxFsBW = 100 MHz, maxWgap = 50 MHz															
		H I G H	C C 2	10	30	24	3395 .01	6263 34	339 0.69	626046	0	30	77 73	626304	18	0	0 (0)	0
			C C 1	40	30	106	4119 .99	6746 66	391 9.47	661298	504	30	82 67	673728	22	0	3 (3)	1014
			MaxFsBW = 100 MHz, maxWgap = 50 MHz															

			C C 2	10	30	24	4194 .99	6796 66	400 9.23	667282	504	30	83 29	679680	14	0	2 (2)	1012
60 (0,1,4,5) (40+20)	U L & D L	L O W	C C 1	40	30	106	3320 .01	6213 34	330 0.93	620062	0	30	77 11	620352	2	0	2 (2)	4
			MaxFsBW = 100 MHz, maxWgap = 40 MHz															
		H I G H	C C 2	20	30	51	3390 .00	6260 00	338 0.82	625388	0	30	77 66	625632	4	0	0 (0)	0
			C C 1	40	30	106	4119 .99	6746 66	391 9.47	661298	504	30	82 67	673728	22	0	3 (3)	1014
			MaxFsBW = 100 MHz, maxWgap = 40 MHz															
			C C 2	20	30	51	4189 .98	6793 32	399 9.36	666624	504	30	83 22	679008	0	0	2 (2)	1012
60 (1,4,5) (50+10)	U L & D L	L O W	C C 1	50	30	133	3325 .02	6216 68	330 1.08	620072	0	30	77 11	620352	16	0	1 (1)	2
			MaxFsBW = 100 MHz, maxWgap = 40 MHz															
		H I G H	C C 2	10	30	24	3395 .01	6263 34	339 0.69	626046	0	30	77 73	626304	18	0	0 (0)	0
			C C 1	50	30	133	4125 .00	6750 00	391 9.62	661308	504	30	82 67	673728	12	0	3 (3)	1014
			MaxFsBW = 100 MHz, maxWgap = 40 MHz															
			C C 2	10	30	24	4194 .99	6796 66	400 9.23	667282	504	30	83 29	679680	14	0	2 (2)	1012
70 (1,4,5) (60+10)	U L & D L	L O W	C C 1	60	30	162	3330 .00	6220 00	330 0.84	620056	0	30	77 11	620352	8	0	2 (2)	4
			MaxFsBW = 100 MHz, maxWgap = 30 MHz															
		H I G H	C C 1	60	30	162	4130 .01	6753 34	391 9.41	661294	504	30	82 66	673632	2	0	0 (0)	1008

80 (0,1,4,5) (40+40)	U L & D L	LO W H I G H	MaxFsBW = 100 MHz, maxWgap = 30 MHz															
			C C 2	10	30	24	4194 .99	6796 66	400 9.23	667282	504	30	83 29	679680	14	0	2 (2)	1012
			C C 1	40	30	106	3320 .01	6213 34	330 0.93	620062	0	30	77 11	620352	2	0	2 (2)	4
			MaxFsBW = 100 MHz, maxWgap = 20 MHz															
			C C 2	40	30	106	3380 .01	6253 34	336 0.93	624062	0	30	77 53	624384	10	0	3 (3)	6
			C C 1	40	30	106	4119 .99	6746 66	391 9.47	661298	504	30	82 67	673728	22	0	3 (3)	1014
80 (1,4,5) (70+10)	U L & D L	LO W H I G H	MaxFsBW = 100 MHz, maxWgap = 20 MHz															
			C C 2	40	30	106	4179 .99	6786 66	397 9.47	665298	504	30	83 08	677664	6	0	1 (1)	1010
			C C 1	70	30	189	3335 .01	6223 34	330 0.99	620066	0	30	77 11	620352	22	0	1 (1)	2
			MaxFsBW = 100 MHz, maxWgap = 20 MHz															
			C C 2	10	30	24	3395 .01	6263 34	339 0.69	626046	0	30	77 73	626304	18	0	0 (0)	0
			C C 1	70	30	189	4134 .99	6756 66	391 9.53	661302	504	30	82 67	673728	18	0	3 (3)	1014
90 (1,4,5) (80+10)	U L & D L	LO W H I G H	MaxFsBW = 100 MHz, maxWgap = 20 MHz															
			C C 2	10	30	24	4194 .99	6796 66	400 9.23	667282	504	30	83 29	679680	14	0	2 (2)	1012
			C C 1	80	30	217	3340 .02	6226 68	330 0.96	620064	0	30	77 11	620352	0	0	2 (2)	4
			MaxFsBW = 100 MHz, maxWgap = 10 MHz															
			C C 2	10	30	24	3395 .01	6263 34	339 0.69	626046	0	30	77 73	626304	18	0	0 (0)	0

		H G H	C C 1	80	30	217	4140 .00	6760 00	391 9.50	661300	504	30	82 67	673728	20	0	3 (3)	1014
			MaxFsBW = 100 MHz, maxWgap = 10 MHz															
			C C 2	10	30	24	4194 .99	6796 66	400 9.23	667282	504	30	83 29	679680	14	0	2 (2)	1012
100 (0,1,4,5) (80+20)	U L & D L	L O W	C C 1	80	30	217	3340 .02	6226 68	330 0.96	620064	0	30	77 11	620352	0	0	2 (2)	4
			MaxFsBW = 200 MHz, maxWgap = 100 MHz															
			C C 2	20	30	51	3490 .02	6326 68	348 0.84	632056	0	30	78 36	632352	8	0	2 (2)	4
		H G H	C C 1	80	30	217	4039 .981	6693 34	381 9.51	654634	504	30	81 97	667008	14	0	1 (1)	1010
			MaxFsBW = 200 MHz, maxWgap = 100 MHz															
			C C 2	20	30	51	4189 .98	6793 32	399 9.36	666624	504	30	83 22	679008	0	0	2 (2)	1012
100 (1,4,5) (90+10)	U L & D L	L O W	C C 1	90	30	245	3345 .00	6230 00	330 0.90	620060	0	30	77 11	620352	4	0	2 (2)	4
			MaxFsBW = 200 MHz, maxWgap = 100 MHz															
			C C 2	10	30	24	3495 .00	6330 00	349 0.68	632712	0	30	78 43	633024	0	0	3 (3)	6
		H G H	C C 1	90	30	245	4044 .99	6696 66	381 9.45	654630	504	30	81 97	667008	18	0	1 (1)	1010
			MaxFsBW = 200 MHz, maxWgap = 100 MHz															
			C C 2	10	30	24	4194 .99	6796 66	400 9.23	667282	504	30	83 29	679680	14	0	2 (2)	1012
110 (1,4,5)	U L &	L O W	C C 1	10 0	30	273	3350 .01	6233 34	330 0.87	620058	0	30	77 11	620352	6	0	2 (2)	4
			MaxFsBW = 200 MHz, maxWgap = 90 MHz															

(100+1 0)	D L		C C 2	10	30	24	3495 .00	6330 00	349 0.68	632712	0	30	78 43	633024	0	0	3 (3)	6
			H G C 1	10 0	30	273	4050 .00	6700 00	381 9.42	654628	504	30	81 97	667008	20	0	1 (1)	1010
			MaxFsBW = 200 MHz, maxWgap = 90 MHz															
			C C 2	10	30	24	4194 .99	6796 66	400 9.23	667282	504	30	83 29	679680	14	0	2 (2)	1012
120 (0,1,4,5) (100+2 0)	U L & D L	L O W	C C 1	10 0	30	273	3350 .01	6233 34	330 0.87	620058	0	30	77 11	620352	6	0	2 (2)	4
			MaxFsBW = 200 MHz, maxWgap = 80 MHz															
		H I G H	C C 2	20	30	51	3489 .99	6326 66	348 0.81	632054	0	30	78 36	632352	10	0	2 (2)	4
			C C 1	10 0	30	273	4050 .00 Note 4	6700 00	381 9.42	654628	504	30	81 97	667008	20	0	1 (1)	1010
			MaxFsBW = 200 MHz, maxWgap = 80 MHz															
			C C 2	20	30	51	4189 .98	6793 32	399 9.36	666624	504	30	83 22	679008	0	0	2 (2)	1012
130 (1,4,5) (100+3 0)	U L & D L	L O W	C C 1	10 0	30	273	3350 .01	6233 34	330 0.87	620058	0	30	77 11	620352	6	0	2 (2)	4
			MaxFsBW = 200 MHz, maxWgap = 70 MHz															
		H I G H	C C 2	30	30	78	3484 .98	6323 32	347 0.94	631396	0	30	78 29	631680	20	0	1 (1)	2
			C C 1	10 0	30	273	4050 .03	6700 02	381 9.45	654630	504	30	81 97	667008	18	0	1 (1)	1010
			MaxFsBW = 200 MHz, maxWgap = 70 MHz															
			C C 2	30	30	78	4185 .00	6790 00	398 9.52	665968	504	30	83 15	678336	8	0	1 (1)	1010

140 (0,1,4,5) (100+40)	U L & D L	LO W	C C 1	10 0	30	273	3350 .01	6233 34	330 0.87	620058	0	30	77 11	620352	6	0	2 (2)	4
			MaxFsBW = 200 MHz, maxWgap = 60 MHz															
		HI G H	C C 2	40	30	106	3480 .00	6320 00	346 0.92	630728	0	30	78 22	631008	16	0	1 (1)	2
			C C 1	10 0	30	273	4050 .00	6700 00	381 9.42	654628	504	30	81 97	667008	20	0	1 (1)	1010
			MaxFsBW = 200 MHz, maxWgap = 60 MHz															
			C C 2	40	30	106	4179 .99	6786 66	397 9.47	665298	504	30	83 08	677664	6	0	1 (1)	1010
150 (1,4,5) (100+50)	U L & D L	LO W	C C 1	10 0	30	273	3350 .01	6233 34	330 0.87	620058	0	30	77 11	620352	6	0	2 (2)	4
			MaxFsBW = 200 MHz, maxWgap = 50 MHz															
		HI G H	C C 2	50	30	133	3474 .99	6316 66	345 1.05	630070	0	30	78 15	630336	2	0	1 (1)	2
			C C 1	10 0	30	273	4050 .00	6700 00	381 9.42	654628	504	30	81 97	667008	20	0	1 (1)	1010
			MaxFsBW = 200 MHz, maxWgap = 50 MHz															
			C C 2	50	30	133	4174 .98	6783 32	396 9.60	664640	504	30	83 01	676992	16	0	0 (0)	1008
160 (0,1,4,5) (80+80)	U L & D L	LO W	C C 1	80	30	217	3340 .02	6226 68	330 0.96	620064	0	30	77 11	620352	0	0	2 (2)	4
			MaxFsBW = 200 MHz, maxWgap = 40 MHz															
		HI G H	C C 2	80	30	217	3460 .02	6306 68	342 0.96	628064	0	30	77 94	628320	16	0	0 (0)	0
			C C 1	80	30	217	4039 .98	6693 32	381 9.48	654632	504	30	81 97	667008	16	0	1 (1)	1010
			MaxFsBW = 200 MHz, maxWgap = 40 MHz															
			MaxFsBW = 200 MHz, maxWgap = 40 MHz															

			C C 2	80	30	217	4159 .98	6773 32	393 9.48	662632	504	30	82 80	674976	8	0	0 (0)	1008
160 (1,4,5) (100+6 0)	U L & D L	L O W	C C 1	10 0	30	273	3350 .01	6233 34	330 0.87	620058	0	30	77 11	620352	6	0	2 (2)	4
			MaxFsBW = 200 MHz, maxWgap = 40 MHz															
		H I G H	C C 2	60	30	162	3470 .01	6313 34	344 0.85	629390	0	30	78 08	629664	10	0	1 (1)	2
			C C 1	10 0	30	273	4050 .00	6700 00	381 9.42	654628	504	30	81 97	667008	20	0	1 (1)	1010
			MaxFsBW = 200 MHz, maxWgap = 40 MHz															
170 (1,4,5) (100+7 0)	U L & D L	L O W	C C 1	10 0	30	273	3350 .01	6233 34	330 0.87	620058	0	30	77 11	620352	6	0	2 (2)	4
			MaxFsBW = 200 MHz, maxWgap = 30 MHz															
		H I G H	C C 2	70	30	189	3465 .00	6310 00	343 0.98	628732	0	30	78 01	628992	20	0	0 (0)	0
			C C 1	10 0	30	273	4050 .00	6700 00	381 9.42	654628	504	30	81 97	667008	20	0	1 (1)	1010
			MaxFsBW = 200 MHz, maxWgap = 30 MHz															
180 (0,1,4,5) (100+8 0)	U L & D L	L O W	C C 1	10 0	30	273	3350 .01	6233 34	330 0.87	620058	0	30	77 11	620352	6	0	2 (2)	4
			MaxFsBW = 200 MHz, maxWgap = 20 MHz															
		H I G H	C C 2	80	30	217	3459 .99	6306 66	342 0.93	628062	0	30	77 94	628320	18	0	0 (0)	0
			C C 1	10 0	30	273	4050 .00	6700 00	381 9.42	654628	504	30	81 97	667008	20	0	1 (1)	1010

190 (1,4,5) (100+90)	U L & D L	LO W H I G H	MaxFsBW = 200 MHz, maxWgap = 20 MHz															
			C C 2	80	30	217	4159 .98	6773 32	393 9.48	662632	504	30	82 80	674976	8	0	0 (0)	1008
			C C 1	10 0	30	273	3350 .01	6233 34	330 0.87	620058	0	30	77 11	620352	6	0	2 (2)	4
			MaxFsBW = 200 MHz, maxWgap = 10 MHz															
			C C 2	90	30	245	3455 .01	6303 34	341 0.91	627394	0	30	77 87	627648	14	0	0 (0)	0
			C C 1	10 0	30	273	4050 .00	6700 00	381 9.42	654628	504	30	81 97	667008	20	0	1 (1)	1010
200 (0,1,4,5) (100+100)	U L & D L	LO W H I G H	MaxFsBW = 200 MHz, maxWgap = 10 MHz															
			C C 2	90	30	245	4155 .00	6770 00	392 9.46	661964	504	30	82 73	674304	4	0	0 (0)	1008
			C C 1	10 0	30	273	3350 .01	6233 34	330 0.87	620058	0	30	77 11	620352	6	0	2 (2)	4
			MaxFsBW = 200 MHz, maxWgap = 0 MHz															
			C C 2	10 0	30	273	3450 .00	6300 00	340 0.86	626724	0	30	77 80	626976	12	0	0 (0)	0
			C C 1	10 0	30	273	4050 .00	6700 00	381 9.42	654628	504	30	81 97	667008	20	0	1 (1)	1010
			MaxFsBW = 200 MHz, maxWgap = 0 MHz															
			C C 2	10 0	30	273	4149 .99	6766 66	391 9.41	661294	504	30	82 66	673632	2	0	0 (0)	1008
Note 1:	CCs are specified in increasing frequency order. CC1 is used as PCell if nothing else is specified in the test case.																	
Note 2:	The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs.																	
Note 3:	The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-3 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.																	
Note 4:	Centre frequency shifted 15 kHz to align with the synchronisation raster (According to R1-1809879).																	
Note 5:	Centre frequency shifted -15 kHz to align with the synchronisation raster (According to R1-1809879).																	

4.3.1.1.5.77.2 CA_n77(3A)

Editor's note: Test frequencies for CA_n77(3A) with mixed numerology is FFS.

Table 4.3.1.1.5.77.2-1: NR Intra-Band non-contiguous CA configuration CA_n77(3A) without UL CA, SCS 15 kHz, frequency raster 100 kHz, and Max Wgap

SB CBW combination (BCS)	SB (Note 2)	Bandwidth [MHz]	Range (Note 1,3)	Gap	Test frequencies and signalling parameters
CA_n77(3A): n77A + n77A + n77A					
CBW1+CBW2 +CBW3 (0)	SB1	CBW1	Downlink & Uplink	Max Wgap	For CBW1, use Table 4.3.1.1.1.77-1: Low range for CBW = 20, 40 MHz, and if SB1 is used as PCC the applicable UL/DL Bandwidth combination depending on required UL bandwidth
	SB2	CBW2	Downlink & Uplink		For CBW2, use Table 4.3.1.1.1.77-1: Mid range for CBW = 20, 40 MHz, and if SB2 is used as PCC the applicable UL/DL Bandwidth combination depending on required UL bandwidth
	SB3	CBW3	Downlink & Uplink		For CBW3, use Table 4.3.1.1.1.77-1: High range for CBW = 20, 40 MHz, and if SB3 is used as PCC the applicable UL/DL Bandwidth combination depending on required UL bandwidth
CBW1+CBW2 +CBW3 (1)	SB1	CBW1	Downlink & Uplink	Max Wgap	For CBW1, use Table 4.3.1.1.1.77-1: Low range for CBW = 10, 15, 20, 25, 30, 40, 50 MHz, and if SB1 is used as PCC the applicable UL/DL Bandwidth combination depending on required UL bandwidth
	SB2	CBW2	Downlink & Uplink		For CBW2, use Table 4.3.1.1.1.77-1: Mid range for CBW = 10, 15, 20, 25, 30, 40, 50 MHz, and if SB2 is used as PCC the applicable UL/DL Bandwidth combination depending on required UL bandwidth
	SB3	CBW3	Downlink & Uplink		For CBW3, use Table 4.3.1.1.1.77-1: High range for CBW = 10, 15, 20, 25, 30, 40, 50 MHz, and if SB3 is used as PCC the applicable UL/DL Bandwidth combination depending on required UL bandwidth
Note 1: Only one range has been specified as the maximum maxAggregatedFsBW for FR1 NR intra-band non-contiguous CA without UL CA equals the full bandwidth of the NR band (Table C.2.4.3.1A-1).					

Note 2: PCC is configured on SB1 unless otherwise stated.
 Note 3: The test frequencies for SB1, SB2 and SB3 have been specified for both downlink and uplink to enable that the CC of either SB1, SB2 or SB3 can be used as PCC.

Table 4.3.1.1.5.77.2-2: NR Intra-Band non-contiguous CA configuration CA_n77(3A) without UL CA, SCS 30 kHz, frequency raster 100 kHz, and Max Wgap

SB CBW combination (BCS)	SB (Note 2)	Bandwidth [MHz]	Range (Note 1,3)	Gap	Test frequencies and signalling parameters
CA_n66(3A): n77A + n77A + n77A					
CBW1+CBW2 +CBW3 (0)	SB1	CBW1	Downlink & Uplink	Max Wgap	For CBW1, use Table 4.3.1.1.1.77-2: Low range for CBW = 20, 40 MHz, and if SB1 is used as PCC the applicable UL/DL Bandwidth combination depending on required UL bandwidth
	SB2	CBW2	Downlink & Uplink		For CBW2, use Table 4.3.1.1.1.77-2: Mid range for CBW = 20, 40 MHz, and if SB2 is used as PCC the applicable UL/DL Bandwidth combination depending on required UL bandwidth
	SB3	CBW3	Downlink & Uplink		For CBW3, use Table 4.3.1.1.1.77-2: High range for CBW = 20, 40 MHz, and if SB3 is used as PCC the applicable UL/DL Bandwidth combination depending on required UL bandwidth
CBW1+CBW2 +CBW3 (1)	SB1	CBW1	Downlink & Uplink	Max Wgap	For CBW1, use Table 4.3.1.1.1.77-2: Low range for CBW = 10, 15, 20, 25, 30, 40, 50, 60, 70, 80, 90, 100 MHz, and if SB1 is used as PCC the applicable UL/DL Bandwidth combination depending on required UL bandwidth
	SB2	CBW2	Downlink & Uplink		For CBW2, use Table 4.3.1.1.1.77-2: Mid range for CBW = 10, 15, 20, 25, 30, 40, 50, 60, 70, 80, 90, 100 MHz, and if SB2 is used as PCC the applicable UL/DL Bandwidth combination depending on required UL bandwidth
	SB3	CBW3	Downlink & Uplink		For CBW3, use Table 4.3.1.1.1.77-2: High range for CBW = 10, 15, 20, 25, 30, 40, 50, 60, 70, 80, 90, 100 MHz, and if SB3 is used as PCC the applicable UL/DL Bandwidth combination depending on required UL bandwidth
Note 1: Only one range has been specified as the maximum maxAggregatedFsBW for FR1 NR intra-band non-contiguous CA without UL CA equals the full bandwidth of the NR band (Table C.2.4.3.1A-1). Note 2: PCC is configured on SB1 unless otherwise stated. Note 3: The test frequencies for SB1, SB2 and SB3 have been specified for both downlink and uplink to enable that the CC of either SB1, SB2 or SB3 can be used as PCC.					

4.3.1.1.5.78 CA_n78(xA)

4.3.1.1.5.78.1 CA_n78(2A)

Editor's note: Test frequencies for CA_n78(2A) with mixed numerology with SCS CC1=15kHz and SCS CC2=30 kHz or 60kHz; and SCS CC1=30kHz and SCS CC2=15 kHz or 60 kHz is FFS.

Test frequencies for all possible bandwidth combinations are not provided in tables for UL CA, Table 4.3.1.1.5.78.1-1A and Table 4.3.1.1.5.78.1-2A. How to handle the case where a specific bandwidth combination is missing in the table, is FFS.

Table 4.3.1.1.5.78.1-1: NR Intra-Band non-contiguous CA configuration CA_n78(2A) without UL CA, SCS=15 kHz, Max Wgap

CBW combination	SB	Bandwidth [MHz]	Range	Gap	Test frequencies and signalling parameters
CA_n78(2A); n78A(10-50MHz) + n78A(10-50MHz)					
CBW1+CBW2	SB1	CBW1	Downlink & Uplink	Max Wgap	For CBW1, use Table 4.3.1.1.1.78-1: Low range for CBW = 10, 20, 25, 30, 40 OR 50 MHz
	SB2	CBW2	Downlink & Uplink		For CBW2, use Table 4.3.1.1.1.78-1: High range for CBW = 10, 20, 25, 30, 40 OR 50 MHz
Note 1: CA_n78(2A) is specified in [7] 38.101-1 with and without uplink CA. PCC is configured on SB1 unless otherwise stated. This table is applicable for the case of without UL CA but test frequencies for both SB1 and SB2 have been specified for both downlink and uplink to enable that the CC of either SB1 or SB2 can be used as PCC.					

Table 4.3.1.1.5.78.1-1A: NR Intra-Band non-contiguous CA configuration CA_n78(2A) with UL CA, SCS=15 kHz, Max Wgap

Aggregated BW [MHz] (BCS) (CBW combination)	Range		CC N _{ot} e 1	CB W [MHz]	SC S [kHz]	carrierBandwidth [PRBs]	Carrier centre [MHz] Note 1	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequencyPointA [ARFCN]	offsetTo Carrier [Carrier PRBs]	SS block SC S [kHz]	GS CN	absoluteFrequencySSB [ARFCN]	k_{SSB}	Offset carrier CORE SET#0 [RBs] Note 2	CORE SET#0 Index (Offset [RBs]) Note 3	offsetTo PointA (SIB1) [PRBs] Note 3
20 (0,1,2) (10+10)	UL & DL	LOW	CC 1	10	15	52	330 5.01	6203 34	330 0.33	620022	0	30	77 11	620352	6	1	1 (6)	7
			MaxFsBW = 100 MHz, maxWgap = 80 MHz															
		HIGH	CC 2	10	15	52	339 5.01	6263 34	339 0.33	626022	0	30	77 73	626304	6	1	0 (2)	3
			CC 1	10	15	52	370 5.00	6470 00	360 9.60	640640	504	30	79 89	647040	4	3	1 (6)	513
			MaxFsBW = 100 MHz, maxWgap = 80 MHz															
			CC 2	10	15	52	379 5.00	6530 00	369 9.60	646640	504	30	80 51	652992	4	3	0 (2)	509
30 (0,1,2) (20+10)	UL & DL	LOW	CC 1	20	15	106	331 0.02 Note 4	6206 68	330 0.48	620032	0	30	77 11	620352	8	0	1 (6)	6
			MaxFsBW = 100 MHz, maxWgap = 70 MHz															
		HIGH	CC 2	10	15	52	339 5.01	6263 34	339 0.33	626022	0	30	77 73	626304	6	1	0 (2)	3
			CC 1	20	15	106	371 0.01	6473 34	360 9.75	640650	504	30	79 89	647040	6	2	1 (6)	512
			MaxFsBW = 100 MHz, maxWgap = 70 MHz															
			CC 2	10	15	52	379 5.00	6530 00	369 9.60	646640	504	30	80 51	652992	4	3	0 (2)	509

40 (0,1,2) (20+20)	U L & D L	L O W	C C 1	20	15	106	331 0.02 Not e 4	6206 68	330 0.48	620032	0	30	77 11	620352	8	0	1 (6)	6
			MaxFsBW = 100 MHz, maxWgap = 60 MHz															
		H I G H	C C 2	20	15	106	339 0.00 Not e 5	6260 00	338 0.46	625364	0	30	77 66	625632	4	0	0 (2)	2
			C C 1	20	15	106	371 0.01 Not e 4	6473 34	360 9.75	640650	504	30	79 89	647040	6	2	1 (6)	512
			MaxFsBW = 100 MHz, maxWgap = 60 MHz															
40 (1,2) (30+10)	U L & D L	L O W	C C 1	30	15	160	331 5.00	6210 00	330 0.60	620040	0	30	77 11	620352	0	0	1 (6)	6
			MaxFsBW = 100 MHz, maxWgap = 60 MHz															
		H I G H	C C 2	10	15	52	339 4.98 Not e 5	6263 32	339 0.30	626020	0	30	77 73	626304	8	1	0 (2)	3
			C C 1	30	15	160	371 5.02 Not e 4	6476 68	360 9.90	640660	504	30	79 89	647040	8	1	1 (6)	511
			MaxFsBW = 100 MHz, maxWgap = 60 MHz															
50 (0,1,2)	U L &	L O W	C C 1	40	15	216	332 0.01	6213 34	330 0.57	620038	0	30	77 11	620352	2	0	1 (6)	6
			MaxFsBW = 100 MHz, maxWgap = 50 MHz															

(40+10)	D L		C C 2	10	15	52	339 5.01	6263 34	339 0.33	626022	0	30	77 73	626304	6	1	0 (2)	3
			H G C 1	40	15	216	372 0.00	6480 00	360 9.84	640656	504	30	79 89	647040	0	2	1 (6)	512
			MaxFsBW = 100 MHz, maxWgap = 50 MHz															
			C C 2	10	15	52	379 5.00	6530 00	369 9.60	646640	504	30	80 51	652992	4	3	0 (2)	509
60 (0,1,2) (50+10)	U L & D L	L O W	C C 1	50	15	270	332 5.02 Not e 4	6216 68	330 0.72	620048	0	30	77 11	620352	4	3	0 (2)	5
			MaxFsBW = 100 MHz, maxWgap = 40 MHz															
			C C 2	10	15	52	339 5.01	6263 34	339 0.33	626022	0	30	77 73	626304	6	1	0 (2)	3
		H I G H	C C 1	50	15	270	372 5.01	6483 34	360 9.99	640666	504	30	79 89	647040	2	1	1 (6)	511
			MaxFsBW = 100 MHz, maxWgap = 40 MHz															
			C C 2	10	15	52	379 5.00	6530 00	369 9.60	646640	504	30	80 51	652992	4	3	0 (2)	509
70 (0,1,2) (50+20)	U L & D L	L O W	C C 1	50	15	270	332 5.02 Not e 4	6216 68	330 0.72	620048	0	30	77 11	620352	4	3	0 (2)	5
			MaxFsBW = 100 MHz, maxWgap = 30 MHz															
		H I G H	C C 2	20	15	106	339 0.00 Not e 5	6260 00	338 0.46	625364	0	30	77 66	625632	4	0	0 (2)	2
			C C 1	50	15	270	372 5.01 Not e 4	6483 34	360 9.99	640666	504	30	79 89	647040	2	1	1 (6)	511
			MaxFsBW = 100 MHz, maxWgap = 30 MHz															

			C C 2	20	15	106	378 9.99	6526 66	368 9.73	645982	504	30	80 44	652320	2	2	0 (2)	508
80 (0,1,2) (40+40)	U L & D L	L O W	C C 1	40	15	216	332 0.01	6213 34	330 0.57	620038	0	30	77 11	620352	2	0	1 (6)	6
			MaxFsBW = 100 MHz, maxWgap = 20 MHz															
		H I G H	C C 2	40	15	216	338 0.01	6253 34	336 0.57	624038	0	30	77 53	624384	10	2	1 (6)	8
			C C 1	40	15	216	372 0.00	6480 00	360 9.84	640656	504	30	79 89	647040	0	2	1 (6)	512
			MaxFsBW = 100 MHz, maxWgap = 20 MHz															
			C C 2	40	15	216	378 0.00	6520 00	366 9.84	644656	504	30	80 30	650976	8	0	0 (2)	506
80 (1,2) (50+30)	U L & D L	L O W	C C 1	50	15	270	332 5.02 Not e 4	6216 68	330 0.72	620048	0	30	77 11	620352	4	3	0 (2)	5
			MaxFsBW = 100 MHz, maxWgap = 20 MHz															
		H I G H	C C 2	30	15	160	338 5.02	6256 68	337 0.62	624708	0	30	77 60	625056	0	3	1 (6)	9
			C C 1	50	15	270	372 4.98	6483 32	360 9.96	640664	504	30	79 89	647040	4	1	1 (6)	511
			MaxFsBW = 100 MHz, maxWgap = 20 MHz															
			C C 2	30	15	160	378 4.98	6523 32	367 9.86	645324	504	30	80 37	651648	0	1	0 (2)	507
90 (0,1,2) (50+40)	U L & D L	L O W	C C 1	50	15	270	332 5.02 Not e 4	6216 68	330 0.72	620048	0	30	77 11	620352	4	3	0 (2)	5
			MaxFsBW = 100 MHz, maxWgap = 10 MHz															
			C C 2	40	15	216	338 0.01	6253 34	336 0.57	624038	0	30	77 53	624384	10	2	1 (6)	8

		H G H	C C 1	50	15	270	372 5.01	6483 34	360 9.99	640666	504	30	79 89	647040	2	1	1 (6)	511
			MaxFsBW = 100 MHz, maxWgap = 10 MHz															
			C C 2	40	15	216	378 0.00	6520 00	366 9.84	644656	504	30	80 30	650976	8	0	0 (2)	506
100 (0,1,2) (50+50)	U L & D L	L O W	C C 1	50	15	270	332 5.02 Not e 4	6216 68	330 0.72	620048	0	30	77 11	620352	4	3	0 (2)	5
			MaxFsBW = 200 MHz, maxWgap = 100 MHz															
		C C 2	50	15	270	347 5.02	6316 68	345 0.72	630048	0	30	78 15	630336	0	2	0 (2)	4	
		H I G H	C C 1	50	15	270	362 4.99	6416 66	350 9.97	633998	504	30	79 19	640320	10	0	0 (2)	506
			MaxFsBW = 200 MHz, maxWgap = 100 MHz															
			C C 2	50	15	270	377 4.99	6516 66	365 9.97	643998	504	30	80 24	650400	6	3	1 (6)	513

Note 1:CCs are specified in increasing frequency order. CC1 is used as PCell if nothing else is specified in the test case.
Note 2:The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs.
Note 3:The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-3 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.
Note 4:Centre frequency shifted 15 kHz to align with the synchronisation raster (According to R1-1809879).
Note 5:Centre frequency shifted -15 kHz to align with the synchronisation raster (According to R1-1809879).

Table 4.3.1.1.5.78.1-2: NR Intra-Band non-contiguous CA configuration CA_n78(2A) without UL CA, SCS=30 kHz, Max Wgap

CBW combination	SB	Bandwidth [MHz]	Range	Gap	Test frequencies and signalling parameters
CA_n78(2A); n78A(10-100MHz) + n78A(10-100MHz)					
CBW1+CBW2	SB1	CBW1	Downlink & Uplink	Max Wgap	For CBW1, use Table 4.3.1.1.1.78-2: Low range for CBW = 10, 20, 25, 30, 40, 50, 60, 70, 80, 90 OR 100 MHz

	SB2	CBW2	Downlink & Uplink		For CBW2, use Table 4.3.1.1.1.78-2: High range for CBW = 10, 20, 25, 30, 40, 50, 60, 70, 80, 90 OR 100 MHz
Note 1: CA_n78(2A) is specified in [7] 38.101-1 with and without uplink CA. PCC is configured on SB1 unless otherwise stated. This table is applicable for the case of without UL CA but test frequencies for both SB1 and SB2 have been specified for both downlink and uplink to enable that the CC of either SB1 or SB2 can be used as PCC.					

Table 4.3.1.1.5.78.1-2A: NR Intra-Band non-contiguous CA configuration CA_n78(2A) with UL CA, SCS=30 kHz, Max Wgap

Aggregated BW [MHz] (BCS) (CBW combination)	Range		CCN	CBW [MHz]	SCS [kHz]	carrierBandwidth [PRBs]	Carrier centre [MHz] Note 1	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequencyPointA [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS [kHz]	GS CN	absoluteFrequencySSB [ARFCN]	k_{SSB}	Offset carrier CORE SET#0 [RBs] Note 2	CORE SET#0 Index (Offset [RBs]) Note 3	offsetToPointA (SIB1) [PRBs] Note 3
20 (0,1,2) (10+10)	U L & D L	LOW	CC1	10	30	24	330 5.01	6203 34	330 0.69	620046	0	30	77 11	620352	18	0	2 (2)	4
			MaxFsBW = 100 MHz, maxWgap = 80 MHz															
		HIGH	CC2	10	30	24	339 5.01	6263 34	339 0.69	626046	0	30	77 73	626304	18	0	0 (0)	0
			CC1	10	30	24	370 5.00	6470 00	351 9.24	634616	504	30	79 89	647040	16	0	3 (3)	1014
			MaxFsBW = 100 MHz, maxWgap = 80 MHz															
			CC2	10	30	24	379 5.00	6530 00	360 9.24	640616	504	30	80 51	652992	16	0	1 (1)	1010
30 (0,1,2) (20+10)	U L & D L	LOW	CC1	20	30	51	331 0.02	6206 68	330 0.84	620056	0	30	77 11	620352	8	0	2 (2)	4
			MaxFsBW = 100 MHz, maxWgap = 70 MHz															
		D L	CC2	10	30	24	339 5.01	6263 34	339 0.69	626046	0	30	77 73	626304	18	0	0 (0)	0

		H G H	C C 1	20	30	51	371 0.01	6473 34	351 9.39	634626	504	30	79 89	647040	6	0	3 (3)	1014
			MaxFsBW = 100 MHz, maxWgap = 70 MHz															
			C C 2	10	30	24	379 5.00	6530 00	360 9.24	640616	504	30	80 51	652992	16	0	1 (1)	1010
40 (0,1,2) (20+20)	U L & D L	L O W	C C 1	20	30	51	331 0.02	6206 68	330 0.84	620056	0	30	77 11	620352	8	0	2 (2)	4
			MaxFsBW = 100 MHz, maxWgap = 60 MHz															
			C C 2	20	30	51	339 0.00	6260 00	338 0.82	625388	0	30	77 66	625632	4	0	0 (0)	0
		H G H	C C 1	20	30	51	371 0.01	6473 34	351 9.39	634626	504	30	79 89	647040	6	0	3 (3)	1014
			MaxFsBW = 100 MHz, maxWgap = 60 MHz															
			C C 2	20	30	51	378 9.99	6526 66	359 9.37	639958	504	30	80 44	652320	2	0	1 (1)	1010
40 (1,2) (30+10)	U L & D L	L O W	C C 1	30	30	78	331 5.00	6210 00	330 0.96	620064	0	30	77 11	620352	0	0	2 (2)	4
			MaxFsBW = 100 MHz, maxWgap = 60 MHz															
			C C 2	10	30	24	339 4.98	6263 32	339 0.66	626044	0	30	77 73	626304	20	0	0 (0)	0
		H G H	C C 1	30	30	78	371 5.02	6476 68	351 9.54	634636	504	30	79 89	647040	20	0	2 (2)	1012
			MaxFsBW = 100 MHz, maxWgap = 60 MHz															
			C C 2	10	30	24	379 5.00	6530 00	360 9.24	640616	504	30	80 51	652992	16	0	1 (1)	1010
50	U L	L O W	C C 1	40	30	106	332 0.01	6213 34	330 0.93	620062	0	30	77 11	620352	2	0	2 (2)	4

(0,1,2) (40+10)	& D L		MaxFsBW = 100 MHz, maxWgap = 50 MHz																
			C C 2	10	30	24	339 5.01	6263 34	339 0.69	626046	0	30	77 73	626304	18	0	0 (0)	0	
			H I G H	C C 1	40	30	106	372 0.00	6480 00	351 9.48	634632	504	30	79 89	647040	0	0	3 (3)	1014
			MaxFsBW = 100 MHz, maxWgap = 50 MHz																
			C C 2	10	30	24	379 5.00	6530 00	360 9.24	640616	504	30	80 51	652992	16	0	1 (1)	1010	
60 (0,1,2) (50+10)	& D L		C C 1	50	30	133	332 5.02	6216 68	330 1.08	620072	0	30	77 11	620352	16	0	1 (1)	2	
			MaxFsBW = 100 MHz, maxWgap = 40 MHz																
			C C 2	10	30	24	339 5.01	6263 34	339 0.69	626046	0	30	77 73	626304	18	0	0 (0)	0	
			H I G H	C C 1	50	30	133	372 5.01	6483 34	351 9.63	634642	504	30	79 89	647040	14	0	2 (2)	1012
			MaxFsBW = 100 MHz, maxWgap = 40 MHz																
70 (0,1,2) (60+10)	& D L		C C 1	60	30	162	333 0.00	6220 00	330 0.84	620056	0	30	77 11	620352	8	0	2 (2)	4	
			MaxFsBW = 100 MHz, maxWgap = 30 MHz																
			C C 2	10	30	24	339 4.98	6263 32	339 0.66	626044	0	30	77 73	626304	20	0	0 (0)	0	
			H I G H	C C 1	60	30	162	373 0.02	6486 68	351 9.42	634628	504	30	79 89	647040	4	0	3 (3)	1014
			MaxFsBW = 100 MHz, maxWgap = 30 MHz																

			C C 2	10	30	24	379 5.00	6530 00	360 9.24	640616	504	30	80 51	652992	16	0	1 (1)	1010
80 (0,1,2) (60+20)	U L & D L	L O W	C C 1	60	30	162	333 0.00	6220 00	330 0.84	620056	0	30	77 11	620352	8	0	2 (2)	4
			MaxFsBW = 100 MHz, maxWgap = 20 MHz															
			C C 2	20	30	51	339 0.00	6260 00	338 0.82	625388	0	30	77 66	625632	4	0	0 (0)	0
		H I G H	C C 1	60	30	162	372 9.99	6486 66	351 9.39	634626	504	30	79 89	647040	6	0	3 (3)	1014
			MaxFsBW = 100 MHz, maxWgap = 20 MHz															
			C C 2	20	30	51	378 9.99	6526 66	359 9.37	639958	504	30	80 44	652320	2	0	1 (1)	1010
80 (2) (70+10)	U L & D L	L O W	C C 1	70	30	189	333 5.01	6223 34	330 0.99	620066	0	30	77 11	620352	22	0	1 (1)	2
			MaxFsBW = 100 MHz, maxWgap = 20 MHz															
			C C 2	10	30	24	339 5.01	6263 34	339 0.69	626046	0	30	77 73	626304	18	0	0 (0)	0
		H I G H	C C 1	70	30	189	373 5.00	6490 00	351 9.54	634636	504	30	79 89	647040	20	0	2 (2)	1012
			MaxFsBW = 100 MHz, maxWgap = 20 MHz															
			C C 2	10	30	24	379 5.00	6530 00	360 9.24	640616	504	30	80 51	652992	16	0	1 (1)	1010
90 (0,1,2) (80+10)	U L & D L	L O W	C C 1	80	30	217	334 0.02	6226 68	330 0.96	620064	0	30	77 11	620352	0	0	2 (2)	4
			MaxFsBW = 100 MHz, maxWgap = 10 MHz															
			C C 2	10	30	24	339 5.01	6263 34	339 0.69	626046	0	30	77 73	626304	18	0	0 (0)	0

		H G H	C C 1	80	30	217	374 0.01	6493 34	351 9.51	634634	504	30	79 89	647040	22	0	2 (2)	1012
			MaxFsBW = 100 MHz, maxWgap = 10 MHz															
			C C 2	10	30	24	379 5.00	6530 00	360 9.24	640616	504	30	80 51	652992	16	0	1 (1)	1010
100 (0,1,2) (90+10)	U L & D L	L O W	C C 1	90	30	245	334 5.00	6230 00	330 0.90	620060	0	30	77 11	620352	4	0	2 (2)	4
			MaxFsBW = 200 MHz, maxWgap = 100 MHz															
		H G H	C C 2	10	30	24	349 5.00	6330 00	349 0.68	632712	0	30	78 43	633024	0	0	3 (3)	6
			C C 1	90	30	245	364 5.00	6430 00	341 9.46	627964	504	30	79 19	640320	20	0	0 (0)	1008
			MaxFsBW = 200 MHz, maxWgap = 100 MHz															
			C C 2	10	30	24	379 5.00	6530 00	360 9.24	640616	504	30	80 51	652992	16	0	1 (1)	1010
110 (0,1,2) (100+10)	U L & D L	L O W	C C 1	10 0	30	273	335 0.01	6233 34	330 0.87	620058	0	30	77 11	620352	6	0	2 (2)	4
			MaxFsBW = 200 MHz, maxWgap = 90 MHz															
		H G H	C C 2	10	30	24	349 5.00	6330 00	349 0.68	632712	0	30	78 43	633024	0	0	3 (3)	6
			C C 1	10 0	30	273	365 0.01	6433 34	341 9.43	627962	504	30	79 19	640320	22	0	0 (0)	1008
			MaxFsBW = 200 MHz, maxWgap = 90 MHz															
			C C 2	10	30	24	379 5.00	6530 00	360 9.24	640616	504	30	80 51	652992	16	0	1 (1)	1010
120	U L	L O W	C C 1	10 0	30	273	335 0.01	6233 34	330 0.87	620058	0	30	77 11	620352	6	0	2 (2)	4

(0,1,2) (100+20)	& D L		MaxFsBW = 200 MHz, maxWgap = 80 MHz																
			C C 2	20	30	51	348 9.99	6326 66	348 0.81	632054	0	30	78 36	632352	10	0	2 (2)	4	
			HI G H	C C 1	10 0	30	273	365 0.01	6433 34	341 9.43	627962	504	30	79 19	640320	22	0	0 (0)	1008
			MaxFsBW = 200 MHz, maxWgap = 80 MHz																
			C C 2	20	30	51	378 9.99	6526 66	359 9.37	639958	504	30	80 44	652320	2	0	1 (1)	1010	
130 (0,1,2) (90+40)	U L & D L	LO W HI G H	C C 1	90	30	245	334 5.00	6230 00	330 0.90	620060	0	30	77 11	620352	4	0	2 (2)	4	
			MaxFsBW = 200 MHz, maxWgap = 70 MHz																
			C C 2	40	30	106	348 0.00	6320 00	346 0.92	630728	0	30	78 22	631008	16	0	1 (1)	2	
			C C 1	90	30	245	364 5.00	6430 00	341 9.46	627964	504	30	79 19	640320	20	0	0 (0)	1008	
			MaxFsBW = 200 MHz, maxWgap = 70 MHz																
130 (1,2) (100+30)	U L & D L	LO W HI G H	C C 1	10 0	30	273	335 0.01	6233 34	330 0.87	620058	0	30	77 11	620352	6	0	2 (2)	4	
			MaxFsBW = 200 MHz, maxWgap = 70 MHz																
			C C 2	30	30	78	348 5.01	6323 34	347 0.97	631398	0	30	78 29	631680	18	0	1 (1)	2	
			C C 1	10 0	30	273	364 9.98	6433 32	341 9.40	627960	504	30	79 19	640320	0	0	1 (1)	1010	
			MaxFsBW = 200 MHz, maxWgap = 70 MHz																

			C C 2	30	30	78	378 4.98	6523 32	358 9.50	639300	504	30	80 37	651648	12	0	0 (0)	1008
140 (0,1,2) (100+4 0)	U L & D L	L O W	C C 1	10 0	30	273	335 0.01	6233 34	330 0.87	620058	0	30	77 11	620352	6	0	2 (2)	4
			MaxFsBW = 200 MHz, maxWgap = 60 MHz															
			C C 2	40	30	106	348 0.00	6320 00	346 0.92	630728	0	30	78 22	631008	16	0	1 (1)	2
		H I G H	C C 1	10 0	30	273	365 0.01	6433 34	341 9.43	627962	504	30	79 19	640320	22	0	0 (0)	1008
			MaxFsBW = 200 MHz, maxWgap = 60 MHz															
			C C 2	40	30	106	378 0.00	6520 00	357 9.48	638632	504	30	80 30	650976	8	0	0 (0)	1008
150 (0,1,2) (100+5 0)	U L & D L	L O W	C C 1	10 0	30	273	335 0.01	6233 34	330 0.87	620058	0	30	77 11	620352	6	0	2 (2)	4
			MaxFsBW = 200 MHz, maxWgap = 50 MHz															
			C C 2	50	30	133	347 4.99	6316 66	345 1.05	630070	0	30	78 15	630336	2	0	1 (1)	2
		H I G H	C C 1	10 0	30	273	365 0.01	6433 34	341 9.43	627962	504	30	79 19	640320	22	0	0 (0)	1008
			MaxFsBW = 200 MHz, maxWgap = 50 MHz															
			C C 2	50	30	133	377 4.99	6516 66	356 9.61	637974	504	30	80 24	650400	18	0	3 (3)	1014
160 (0,1,2) (100+6 0)	U L & D L	L O W	C C 1	10 0	30	273	335 0.01	6233 34	330 0.87	620058	0	30	77 11	620352	6	0	2 (2)	4
			MaxFsBW = 200 MHz, maxWgap = 40 MHz															
			C C 2	60	30	162	347 0.01	6313 34	344 0.85	629390	0	30	78 08	629664	10	0	1 (1)	2

		H G H	C C 1	10 0	30	273	364 9.98	6433 32	341 9.40	627960	504	30	79 19	640320	0	0	1 (1)	1010
			MaxFsBW = 200 MHz, maxWgap = 40 MHz															
			C C 2	60	30	162	376 9.98	6513 32	355 9.38	637292	504	30	80 16	649632	4	0	0 (0)	1008
170 (0,1,2) (90+80)	U L & D L	L O W	C C 1	90	30	245	334 5.00	6230 00	330 0.90	620060	0	30	77 11	620352	4	0	2 (2)	4
			MaxFsBW = 200 MHz, maxWgap = 30 MHz															
			C C 2	80	30	217	345 9.99	6306 66	342 0.93	628062	0	30	77 94	628320	18	0	0 (0)	0
		H G H	C C 1	90	30	245	364 5.00	6430 00	341 9.46	627964	504	30	79 19	640320	20	0	0 (0)	1008
			MaxFsBW = 200 MHz, maxWgap = 30 MHz															
			C C 2	80	30	217	375 9.99	6506 66	353 9.49	635966	504	30	80 03	648384	10	0	3 (3)	1014
170 (2) (100+70)	U L & D L	L O W	C C 1	100	30	273	335 0.01	6233 34	330 0.87	620058	0	30	77 11	620352	6	0	2 (2)	4
			MaxFsBW = 200 MHz, maxWgap = 30 MHz															
			C C 2	70	30	189	346 5.00	6310 00	343 0.98	628732	0	30	78 01	628992	20	0	0 (0)	0
		H G H	C C 1	100	30	273	365 0.01	6433 34	341 9.43	627962	504	30	79 19	640320	22	0	0 (0)	1008
			MaxFsBW = 200 MHz, maxWgap = 30 MHz															
			C C 2	70	30	189	376 5.00	6510 00	354 9.54	636636	504	30	80 10	649056	12	0	3 (3)	1014
180	U L	L O W	C C 1	100	30	273	335 0.01	6233 34	330 0.87	620058	0	30	77 11	620352	6	0	2 (2)	4

(0,1,2) (100+80)	& D L		MaxFsBW = 200 MHz, maxWgap = 20 MHz															
			C C 2	80	30	217	345 9.99	6306 66	342 0.93	628062	0	30	77 94	628320	18	0	0 (0)	0
			HI C 1	10 0	30	273	365 0.01	6433 34	341 9.43	627962	504	30	79 19	640320	22	0	0 (0)	1008
			MaxFsBW = 200 MHz, maxWgap = 20 MHz															
			C C 2	80	30	217	375 9.99	6506 66	353 9.49	635966	504	30	80 03	648384	10	0	3 (3)	1014
190 (0,1,2) (100+90)	& D L	LO W	C C 1	10 0	30	273	335 0.01	6233 34	330 0.87	620058	0	30	77 11	620352	6	0	2 (2)	4
			MaxFsBW = 200 MHz, maxWgap = 10 MHz															
			C C 2	90	30	245	345 5.01	6303 34	341 0.91	627394	0	30	77 87	627648	14	0	0 (0)	0
			HI C 1	10 0	30	273	364 9.98	6433 32	341 9.40	627960	504	30	79 19	640320	0	0	1 (1)	1010
			MaxFsBW = 200 MHz, maxWgap = 10 MHz															
			C C 2	90	30	245	375 4.98	6503 32	352 9.44	635296	504	30	79 96	647712	8	0	3 (3)	1014
200 (0,1,2) (100+100)	& D L	LO W	C C 1	10 0	30	273	335 0.01	6233 34	330 0.87	620058	0	30	77 11	620352	6	0	2 (2)	4
			MaxFsBW = 500 MHz, maxWgap = 300 MHz															
			C C 2	10 0	30	273	375 0.00	6500 00	370 0.86	646724	0	30	79 89	647040	4	0	3 (3)	6
			HI C 1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			High Range not applicable															

			C C 2	-	-	-	-	-	-	-	-	-	-	-	-	-
Note 1:CCs are specified in increasing frequency order. CC1 is used as PCell if nothing else is specified in the test case. Note 2:The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs. Note 3:The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-3 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.																

4.3.1.1.6 NR Operating SUL band combinations in FR1

For SUL band combinations specified in TS 38.101-1 [7] Table 5.5C-1, the test frequencies and signalling parameters in clause 4.3.1.1.1 apply for each operating bands.

For SUL band combinations with intra-band non-contiguous CA specified in TS 38.101-1 [7] Table 5.5C-2, the test frequencies and signalling parameters in clause 4.3.1.1.1 apply for SUL band. The test frequencies and signalling parameters in clause 4.3.1.1.5 apply for each DL CA component carrier.

For SUL band combinations with intra-band contiguous CA specified in TS 38.101-1 [7] Table 5.5C-3, the test frequencies and signalling parameters in clause 4.3.1.1.1 apply for SUL band. The test frequencies and signalling parameters in clause 4.3.1.1.3 apply for each DL CA component carrier.

For SUL band combinations with inter-band CA specified in TS 38.101-1 [7] Table 5.5C-4, the test frequencies and signalling parameters in clause 4.3.1.1.1 apply for each operating bands.

4.3.1.1.7 NR inter-band NR-DC configurations in FR1

4.3.1.1.7.1 NR inter-band NR-DC configurations in FR1 (two bands)

Table 4.3.1.1.7.1-1: Inter-band NR-DC configurations (FR1, two bands)

NR-DC configuration	Uplink NR-DC configuration	NR-DC downlink configuration band 1	NR-DC downlink configuration band 2	NR-DC uplink configuration band 1	NR-DC uplink configuration band 2	Applicable for protocol testing (Note 1)
DC_n48A-n70A	DC_n48A-n70A	n48A	n70A	n48A	n70A	Yes
DC_n28A-n46A	DC_n28A-n46A	n28A	n46A	n28A	n46A	Yes
Note 1: Protocol testing is limited to NR-DC configurations with 2CC.						

4.3.1.2 Test frequencies for NR operating bands in FR2

4.3.1.2.1 NR operating bands in FR2

4.3.1.2.1.1 Reference test frequencies for NR operating band n257

Table 4.3.1.2.1.1-1: Test frequencies for NR operating band n257, SCS 60 kHz and ΔF_{Raster} 60 kHz

CBW [MHz]	carrier Bandwidth [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absolute Frequency PointA [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS [kHz]	GSCN	absolute FrequencySSB [ARFCN]	k_{SSE}	Offset Carrier CORESET#0 [RBs] Note 2	CORESET#0 Index (Offset [RBs]) Note 1	offsetToPointA (SIB1) [PRBs] Note 1
50	66	Downlink & Uplink	Low	26525.04	2054583	26501.28	2054187	0	120	22388	2054683	4	13	1 (8)	21
			Mid	27999.96	2079165	27902.76	2077545	102		22473	2079163	10	4	1 (8)	114
			High	29475	2103749	29088.36	2097305	504		22558	2103643	2	4	0 (0)	508
100	132	Downlink & Uplink	Low	26550	2054999	26502.48	2054207	0	120	22388	2054683	8	11	1 (8)	19
			Mid	27999.96	2079165	27879	2077149	102		22472	2078875	10	13	1 (8)	123
			High	29449.92	2103331	29039.52	2096491	504		22555	2102779	0	0	0 (0)	504
200	264	Downlink & Uplink	Low	26600.04	2055833	26505	2054249	0	120	22388	2054683	2	8	1 (8)	16
			Mid	27999.96	2079165	27831.48	2076357	102		22469	2078011	10	7	1 (8)	117
			High	29400	2102499	28942.08	2094867	504		22550	2101339	4	7	1 (8)	519

Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-7 in TS 38.213 [22]. The value of CORESET#0 Index is signalled controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.

Note 2: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs.

Table 4.3.1.2.1.1-2: Test frequencies for NR operating band n257, SCS 120kHz and ΔF_{Raster} 120 kHz

CBW [MHz]	carrier Bandwidth [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absolute Frequency PointA [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS [kHz]	GSCN	absolute FrequencySSB [ARFCN]	k_{SSE}	Offset Carrier CORESET#0 [RBs] Note 2	CORESET#0 Index (Offset [RBs]) Note 1	offsetToPointA (SIB1) [PRBs] Note 1
50	32	Downlink & Uplink	Low	26525.04	2054583	26502	2054199	0	120	22388	2054683	2	6	1 (4)	20
			Mid	27999.96	2079165	27830.04	2076333	102		22473	2079163	11	1	1 (4)	214
			High	29475	2103749	28726.2	2091269	504		22558	2103643	7	1	0 (0)	1010
100	66	Downlink & Uplink	Low	26550	2054999	26502.48	2054207	0	120	22388	2054683	10	5	1 (4)	18
			Mid	27999.96	2079165	27805.56	2075925	102		22472	2078875	11	6	1 (4)	224

		Uplink	High	29449.92	2103331	28676.64	2090443	504		22555	2102779	0	0	0 (0)	1008
200	132	Downlink & Uplink	Low	26600.04	2055833	26505	2054249	0	120	22388	2054683	1	4	1 (4)	16
			Mid	27999.96	2079165	27758.04	2075133	102		22469	2078011	11	3	1 (4)	218
			High	29400	2102499	28579.2	2088819	504		22550	2101339	8	3	1 (4)	1022
400	264	Downlink & Uplink	Low	26700	2057499	26509.92	2054331	0	120	22388	2054683	8	0	1 (4)	8
			Mid	27999.96	2079165	27663	2073549	102		22463	2076283	11	1	0 (0)	206
			High	29299.92	2100831	28384.08	2085567	504		22539	2098171	2	7	1 (4)	1030
Note 1:	The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-8 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.														
Note 2:	The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs.														

4.3.1.2.1.2

Reference test frequencies for NR operating band n258

Table 4.3.1.2.1.2-1: Test frequencies for NR operating band n258, SCS 60 kHz and ΔF_{Raster} 60 kHz

CBW [MHz]	carrierBandwidth [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequencyPointA [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS [kHz]	GSCN	absoluteFrequencySSB [ARFCN]	k_{SSE}	Offset Carrier CORESET#0 [RBs] Note 2	CORESET#0 Index (Offset [RBs]) Note 1	offsetToPointA (SIB1) [PRBs] Note 1
50	66	Downlink & Uplink	Low	24275.04	2017083	24251.28	2016687	0	120	22257	2016955	4	2	0 (0)	2
			Mid	25875	2043749	25777.8	2042129	102		22350	2043739	2	4	1 (8)	114
			High	27474.96	2070415	27088.32	2063971	504		22443	2070523	0	14	1 (8)	526
100	132	Downlink & Uplink	Low	24300	2017499	24252.48	2016707	0	120	22257	2016955	8	0	0 (0)	0
			Mid	25875	2043749	25754.04	2041733	102		22349	2043451	2	13	1 (8)	123
			High	27450	2069999	27039.6	2063159	504		22440	2069659	8	9	1 (8)	521
200	264	Downlink & Uplink	Low	24350.04	2018333	24255	2016749	0	120	22258	2017243	2	13	1 (8)	21
			Mid	25875	2043749	25706.52	2040941	102		22346	2042587	2	7	1 (8)	117
			High	27399.96	2069165	26942.04	2061533	504		22434	2067931	2	1	1 (8)	513
Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-7 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.															
Note 2: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs.															

Table 4.3.1.2.1.2: Test frequencies for NR operating band n258, SCS 120kHz and ΔF_{Raster} 120 kHz

CBW [MHz]	carrierBandwidth [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequencyPointA [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS [kHz]	GSCN	absoluteFrequencySSB [ARFCN]	k_{SSE}	Offset Carrier CORESET#0 [RBs] Note 2	CORESET#0 Index (Offset [RBs]) Note 1	offsetToPointA (SIB1) [PRBs] Note 1
50	32	Downlink & Uplink	Low	24275.04	2017083	24252	2016699	0	120	22257	2016955	8	0	0 (0)	0
			Mid	25875	2043749	25705.08	2040917	102		22350	2043739	7	1	1 (4)	214
			High	27474.96	2070415	26726.16	2057935	504		22443	2070523	6	6	1 (4)	1028
100	66	Downlink & Uplink	Low	24300	2017499	24252.48	2016707	0	120	22257	2016955	4	0	0 (0)	0
			Mid	25875	2043749	25680.6	2040509	102		22349	2043451	7	6	1 (4)	224
			High	27450	2069999	26676.72	2057111	504		22440	2069659	10	4	1 (4)	1024
200	132	Downlink & Uplink	Low	24350.04	2018333	24255	2016749	0	120	22258	2017243	7	6	1 (4)	20
			Mid	25875	2043749	25633.08	2039717	102		22346	2042587	7	3	1 (4)	218
			High	27399.96	2069165	26579.16	2055485	504		22434	2067931	7	0	1 (4)	1016
400	264	Downlink & Uplink	Low	24450	2019999	24259.92	2016831	0	120	22258	2017243	2	3	1 (4)	14
			Mid	25875	2043749	25538.04	2038133	102		22340	2040859	7	1	0 (0)	206
			High	27300	2067499	26384.16	2052235	504		22423	2064763	0	4	1 (4)	1024
Note 1:		The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-8 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.													
Note 2:		The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs.													

4.3.1.2.1.3

Reference test frequencies for NR operating band n259

Table 4.3.1.2.1.3-1: Test frequencies for NR operating band n259, SCS 60 kHz and ΔF_{Raster} 60 kHz

CBW [MHz]	carrierBandwidth [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequency PointA [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS [kHz]	GSCN	absoluteFrequency SSB [ARFCN]	k_{SSE}	Offset Carrier CORESET#0 [RBs] Note 2	CORESET#0 Index (Offset [RBs]) Note 1	offsetToPointA (SIB1) [PRBs] Note 1
50	66	Downlink & Uplink	Low	39525	2271249	39501.24	2270853	0	120	23140	2271259	10	5	1 (8)	13
			Mid	41499.96	2304165	41402.76	2302545	102		23254	2304091	10	6	0 (0)	108
			High	43474.92	2337081	43088.28	2330637	504		23369	2337211	10	15	1 (8)	527
100	132	Downlink & Uplink	Low	39550.08	2271667	39502.56	2270875	0	120	23140	2271259	0	4	1 (8)	12
			Mid	41499.96	2304165	41379	2302149	102		23253	2303803	10	7	1 (8)	117
			High	43449.96	2336665	43039.56	2329825	504		23366	2336347	6	11	1 (8)	523
200	264	Downlink	Low	39600	2272499	39504.96	2270915	0	120	23140	2271259	8	0	1 (8)	8

		&	Mid	41499.96	2304165	41331.48	2301357	102		23250	2302939	10	1	1 (8)	111
		Uplink	High	43399.92	2335831	42942	2328199	504		23360	2334619	0	3	1 (8)	515

Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-7 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.

Note 2: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs.

Table 4.3.1.2.1.3-2: Test frequencies for NR operating band n259, SCS 120kHz and ΔF_{Raster} 120 kHz

CBW [MHz]	carrierBandwidth [PRBs]	Range	Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequencyPointA [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS [kHz]	GSCN	absoluteFrequencySSB [ARFCN]	k_{SSE}	Offset Carrier CORESET#0 [RBs] Note 2	CORESET#0 Index (Offset [RBs]) Note 1	offsetToPointA (SIB1) [PRBs] Note 1
50	32	Downlink & Uplink	Low	39525	2271249	39501.96	2270865	120	23140	2271259	5	2	1 (4)	12
			Mid	41499.96	2304165	41330.04	2301333		23254	2304091	11	2	0 (0)	208
			High	43474.92	2337081	42726.12	2324601		23369	2337211	5	7	1 (4)	1030
100	66	Downlink & Uplink	Low	39550.08	2271667	39502.56	2270875	120	23140	2271259	0	2	1 (4)	12
			Mid	41499.96	2304165	41305.56	2300925		23253	2303803	11	3	1 (4)	218
			High	43449.96	2336665	42676.68	2323777		23366	2336347	9	5	1 (4)	1026
200	132	Downlink & Uplink	Low	39600	2272499	39504.96	2270915	120	23140	2271259	4	0	1 (4)	8
			Mid	41499.96	2304165	41258.04	2300133		23250	2302939	11	0	1 (4)	212
			High	43399.92	2335831	42579.12	2322151		23360	2334619	6	1	1 (4)	1018
400	264	Downlink & Uplink	Low	39700.08	2274167	39510	2270999	120	23140	2271259	10	0	0 (0)	0
			Mid	41499.96	2304165	41163	2298549		23245	2301499	11	6	1 (4)	224
			High	43299.96	2334165	42384.12	2318901		23349	2331451	11	4	1 (4)	1024

Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-8 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.

Note 2: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs.

4.3.1.2.1.4

Reference test frequencies for NR operating band n260

Table 4.3.1.2.1.4-1: Test frequencies for NR operating band n260, SCS 60 kHz and ΔF_{Raster} 60 kHz

CBW [MHz]	carrierBandwidth [PRBs]	Range	Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequencyPointA [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS [kHz]	GSCN	absoluteFrequencySSB [ARFCN]	k_{SSE}	Offset Carrier CORESET#0	CORESET#0 Index (Offset	offsetToPointA (SIB1) [PRBs]

													[RBs] Note 2	[RBs]) Note 1	Note 1
50	66	Downlink & Uplink	Low	37025.04	2229583	37001.28	2229187	0	120	22995	2229499	0	6	0 (0)	6
			Mid	38499.96	2254165	38402.76	2252545	102		23081	2254267	6	13	1 (8)	123
			High	39975	2278749	39588.36	2272305	504		23166	2278747	10	4	1 (8)	516
100	132	Downlink & Uplink	Low	37050	2229999	37002.48	2229207	0	120	22995	2229499	4	4	0 (0)	4
			Mid	38499.96	2254165	38379	2252149	102		23079	2253691	6	6	0 (0)	108
			High	39949.92	2278331	39539.52	2271491	504		23163	2277883	8	0	1 (8)	512
200	264	Downlink & Uplink	Low	37100.04	2230833	37005	2229249	0	120	22995	2229499	10	0	0 (0)	0
			Mid	38499.96	2254165	38331.48	2251357	102		23076	2252827	6	0	0 (0)	102
			High	39900	2277499	39442.08	2269867	504		23157	2276155	0	0	0 (0)	504

Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-7 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.

Note 2: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs.

Table 4.3.1.2.1.4-2: Test frequencies for NR operating band n260, SCS 120kHz and ΔF_{Raster} 120 kHz

CBW [MHz]	carrierB andwidth h [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absoluteF requency PointA [ARFCN]	offsetToC arrier [Carrier PRBs]	SS block SCS [kHz]	GSCN	absoluteF requency SSB [ARFCN]	k_{SSE}	Offset Carrier CORES ET#0 [RBs] Note 2	CORES ET#0 Index (Offset [RBs]) Note 1	offsetToP ointA (SIB1) [PRBs] Note 1
50	32	Downlink & Uplink	Low	37025.04	2229583	37002	2229199	0	120	22995	2229499	6	2	0 (0)	4
			Mid	38499.96	2254165	38330.04	2251333	102		23081	2254267	3	6	1 (4)	224
			High	39975	2278749	39226.2	2266269	504		23166	2278747	11	1	1 (4)	1018
100	66	Downlink & Uplink	Low	37050	2229999	37002.48	2229207	0	120	22995	2229499	2	2	0 (0)	4
			Mid	38499.96	2254165	38305.56	2250925	102		23079	2253691	3	3	0 (0)	210
			High	39949.92	2278331	39176.64	2265443	504		23163	2277883	4	0	1 (4)	1016
200	132	Downlink & Uplink	Low	37100.04	2230833	37005	2229249	0	120	22995	2229499	5	0	0 (0)	0
			Mid	38499.96	2254165	38258.04	2250133	102		23076	2252827	3	0	0 (0)	204
			High	39900	2277499	39079.2	2263819	504		23157	2276155	0	0	0 (0)	1008
400	264	Downlink & Uplink	Low	37200	2232499	37009.92	2229331	0	120	22996	2229787	0	5	1 (4)	18
			Mid	38499.96	2254165	38163	2248549	102		23071	2251387	3	2	1 (4)	216
			High	39799.92	2275831	38884.08	2260567	504		23146	2272987	6	3	0 (0)	1014

Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-8 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.

Note 2: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs.

Table 4.3.1.2.1.5-1: Test frequencies for NR operating band n261, SCS 60 kHz and ΔF_{Raster} 60 kHz

CBW [MHz]	carrierBandwidth [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequency PointA [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS [kHz]	GSCN	absoluteFrequency SSB [ARFCN]	k_{SSE}	Offset Carrier CORESET#0 [RBs] Note 2	CORESET#0 Index (Offset [RBs]) Note 1	offsetToPointA (SIB1) [PRBs] Note 1
50	66	Downlink & Uplink	Low	27525	2071249	27501.24	2070853	0	120	22446	2071387	6	16	1 (8)	24
			Mid	27924.96	2077915	27827.76	2076295	102		22469	2078011	0	13	1 (8)	123
			High	28324.92	2084581	27938.28	2078137	504		22492	2084635	6	9	1 (8)	521
100	132	Downlink & Uplink	Low	27550.08	2071667	27502.56	2070875	0	120	22446	2071387	8	14	1 (8)	22
			Mid	27924.96	2077915	27804	2075899	102		22467	2077435	0	6	0 (0)	108
			High	28299.96	2084165	27889.56	2077325	504		22489	2083771	2	5	1 (8)	517
200	264	Downlink & Uplink	Low	27600	2072499	27504.96	2070915	0	120	22446	2071387	4	11	1 (8)	19
			Mid	27924.96	2077915	27756.48	2075107	102		22464	2076571	0	0	0 (0)	102
			High	28249.92	2083331	27792	2075699	504		22483	2082043	8	4	0 (0)	508
Note 1:		The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-7 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.													
Note 2:		The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs.													

Table 4.3.1.2.1.5-2: Test frequencies for NR operating band n261, SCS 120kHz and ΔF_{Raster} 120 kHz

CBW [MHz]	carrier Bandwidth [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absolute Frequency PointA [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS [kHz]	GSCN	absolute Frequency SSB [ARFCN]	k_{SSE}	Offset Carrier CORESET#0 [RBs] Note 2	CORESET#0 Index (Offset [RBs]) Note 1	offsetToPointA (SIB1) [PRBs] Note 1
50	32	Downlink & Uplink	Low	27525	2071249	27501.96	2070865	0	120	22446	2071387	9	7	1 (4)	22
			Mid	27924.96	2077915	27755.04	2075083	102		22469	2078011	0	6	1 (4)	224
			High	28324.92	2084581	27576.12	2072101	504		22492	2084635	3	4	1 (4)	1024
100	66	Downlink & Uplink	Low	27550.08	2071667	27502.56	2070875	0	120	22446	2071387	4	7	1 (4)	22
			Mid	27924.96	2077915	27730.56	2074675	102		22467	2077435	0	3	0 (0)	210
			High	28299.96	2084165	27526.68	2071277	504		22489	2083771	7	2	1 (4)	1020
200	132	Downlink & Uplink	Low	27600	2072499	27504.96	2070915	0	120	22446	2071387	8	5	1 (4)	18
			Mid	27924.96	2077915	27683.04	2073883	102		22464	2076571	0	0	0 (0)	204
			High	28249.92	2083331	27429.12	2069651	504		22483	2082043	4	2	0 (0)	1012
400	264	Downlink	Low	27700.08	2074167	27510	2070999	0	120	22446	2071387	2	2	1 (4)	12

		&	Mid	27924.96	2077915	27588	2072299	102		22459	2075131	0	2	1 (4)	216
		Uplink	High	28149.96	2081665	27234.12	2066401	504		22472	2078875	9	1	1 (4)	1018
Note 1:	The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-8 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.														
Note 2:	The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs.														

4.3.1.2.2 NR inter-band CA configurations in FR2

Table 4.3.1.2.2-1: NR inter-band CA configurations in FR2

NR CA configuration	Uplink NR CA configuration	NR CA downlink configuration band 1	NR CA downlink configuration band 2	NR CA uplink configuration band 1	NR CA uplink configuration band 2	Applicable for protocol testing (Note 1)
CA_n260A-n261A	-	n260A	n261A	-	-	Yes
Note 1: Protocol testing is limited to NR CA configurations with 2CC.						

4.3.1.2.3 NR intra-band contiguous CA configurations in FR2

4.3.1.2.3.1 NR Intra-band contiguous CA configurations for CA_n257

4.3.1.2.3.1.1 CA_n257B

Editor's note: CA_n257B Test frequencies are FFS.

Table 4.3.1.2.3.1.1-1: NR Intra-Band contiguous CA configuration CA_n257B, SCS=120 kHz, ΔF_{Raster} 120 kHz

CBW combination	CC Note 2	CBW [MHz]	SCS [kHz]	carrierBandwidth [PRBs]	Range	Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequencyPointA [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS [kHz]	GS CN	absoluteFrequencySSB [ARFCN]	k_{SSB}	Offset Carrier CORESET#0 [RBs] Note 3	CORESET#0 Index (Offset [RBs]) Note 4	offsetToPointA (SIB1) [PRBs] Note 4

4.3.1.2.3.1.2 CA_n257C

Editor's note: CA_n257C Test frequencies are FFS.

Table 4.3.1.2.3.1.2-1: NR Intra-Band contiguous CA configuration CA_n257C, SCS=120 kHz, ΔF_{Raster} 120 kHz

CBW combination	CC Note 2	CBW [MHz]	SCS [kHz]	carrier Bandwidth [PRBs]	Range	Carrier centre [MHz] Note 2	Carrier centre [ARFCN]	point A [MHz]	absolute Frequency Point A [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS [kHz]	GSCN	absolute FrequencySSB [ARFCN]	k_{SSB}	Offset Carrier CORE SET#0 [RBs] Note 3	CORESET #0 Index (Offset [RBs]) Note 4	offsetToPoint A (SIB1) [PRBs] Note 4

4.3.1.2.3.1.3 CA_n257D

Editor's note: CA_n257D Test frequencies are FFS.

Table 4.3.1.2.3.1.3-1: NR Intra-Band contiguous CA configuration CA_n257D, SCS=60 kHz, ΔF_{Raster} 60 kHz

CBW combination	CC Note 2	CBW [MHz]	SCS [kHz]	carrier Bandwidth [PRBs]	Range	Carrier centre [MHz] Note 2	Carrier centre [ARFCN]	point A [MHz]	absolute Frequency Point A [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS [kHz]	GSCN	absolute FrequencySSB [ARFCN]	k_{SSB}	Offset Carrier CORE SET#0 [RBs] Note 3	CORESET #0 Index (Offset [RBs]) Note 4	offsetToPoint A (SIB1) [PRBs] Note 4

Table 4.3.1.2.3.1.3-2: NR Intra-Band contiguous CA configuration CA_n257D, SCS=120 kHz, ΔF_{Raster} 120 kHz

CBW combination	CC Note 2	CBW [MHz]	SCS [kHz]	carrier Bandwidth [PRBs]	Range	Carrier centre [MHz] Note 2	Carrier centre [ARFCN]	point A [MHz]	absolute Frequency Point A [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS [kHz]	GSCN	absolute FrequencySSB [ARFCN]	k_{SSB}	Offset Carrier CORE SET#0 [RBs] Note 3	CORESET #0 Index (Offset [RBs]) Note 4	offsetToPoint A (SIB1) [PRBs] Note 4

											<i>J</i>							[RBs]) Note 4	

4.3.1.2.3.1.4 CA_n257E

Table 4.3.1.2.3.1.4-1: NR Intra-Band contiguous CA configuration CA_n257E, SCS=60 kHz, ΔF_{Raster} 60 kHz.

FFS

Table 4.3.1.2.3.1.4-2: NR Intra-Band contiguous CA configuration CA_n257E, SCS=120 kHz, ΔF_{Raster} 120 kHz.

FFS

4.3.1.2.3.1.5 CA_n257F

Table 4.3.1.2.3.1.5-1: NR Intra-Band contiguous CA configuration CA_n257F, SCS=60 kHz, ΔF_{Raster} 60 kHz.

FFS

Table 4.3.1.2.3.1.5-2: NR Intra-Band contiguous CA configuration CA_n257F, SCS=120 kHz, ΔF_{Raster} 120 kHz.

FFS

4.3.1.2.3.1.6 CA_n257G

Table 4.3.1.2.3.1.6-1: Void

Table 4.3.1.2.3.1.6-2: NR Intra-Band contiguous CA configuration CA_n257G, SCS=60 kHz, ΔF_{Raster} 60 kHz, nominal channel spacing

CBW combina tion	CC Note 2	CBW [MHz]	SCS [kHz]	carrier Bandw idth [PRBs]	Range		Carrier centre [MHz] Note 2	Carrier centre [ARFCN]	point A [MHz]	absolut eFreque ncyPoin tA [ARFCN]	offset ToCa rrier [Carri er PRBs]	SS bloc k SCS [kHz]	GSCN	absolute Frequen cySSB [ARFCN]	k_{SSB}	Offset Carrier CORE SET#0 [RBs] Note 3	CORE SET# 0 Index (Offse t [RBs]) Note 4	offsetT oPoint A (SIB1) [PRBs] Note 4
50+100	CC1	50	60	66	Downlink & Uplink	Low	26525.04	2054583	26501.28	2054187	0	120	22388	2054683	4	13	1 (8)	21
						Mid	27949.92	2078331	27852.72	2076711	102		22470	2078299	4	2	1 (8)	112
						High	29375.52	2102091	28988.88	2095647	504		22553	2102203	4	14	1 (8)	526
					Channel spacing CC1-CC2=74.40 MHz (Note 1)													

100+100	CC2	100	60	132	Downlink & Uplink	Low	26599.44	2055823	26551.92	2055031	0	120	22391	2055547	0	15	1 (8)	23	
	CC1	100	60	132		Downlink & Uplink	Mid	28024.32	2079571	27903.36	2077555		102	22473	2079163	0	4	1 (8)	114
							High	29449.92	2103331	29039.52	2096491		504	22555	2102779	0	0	0 (0)	504
					Low		26550	2054999	26502.48	2054207	0	120	22388	2054683	8	11	1 (8)	19	
	Mid	27949.92	2078331	27828.96	2076315	102	22469	2078011	4	11	1 (8)		121						
	High	29349.96	2101665	28939.56	2094825	504	22550	2101339	10	10	1 (8)		522						
	Channel spacing CC1-CC2=99.96 MHz (Note 1)																		
	CC2	100	60	132	Downlink & Uplink	Low	26649.96	2056665	26602.44	2055873	0	120	22393	2056123	10	0	0 (0)	0	
	CC1	100	60	132		Downlink & Uplink	Mid	28049.88	2079997	27928.92	2077981		102	22474	2079451	6	0	0 (0)	102
High							29449.92	2103331	29039.52	2096491	504		22555	2102779	0	0	0 (0)	504	

Note 1:

Corresponds to nominal channel spacing in accordance with TS 38.101-2 [8], clause 5.4A.1 for the channel bandwidths of the two respective NR component carriers.

Note 2:

CCs are specified in increasing frequency order. CC1 is used as PCell if nothing else is specified in the test case.

Note 3:

The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs.

Note 4:

The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-7 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.

Table 4.3.1.2.3.1.6-3: Void

Table 4.3.1.2.3.1.6-4: NR Intra-Band contiguous CA configuration CA_n257G, SCS=120 kHz, ΔF_{Raster} 120 kHz, nominal channel spacing

CBW combination	CC Note 2	CBW [MHz]	SCS [kHz]	carrier Bandwidth [PRBs]	Range		Carrier centre [MHz] Note 2	Carrier centre [ARFCN]	point A [MHz]	absolute FrequencyPointA [ARFCN]	offset ToCarrier [Carrier PRBs]	SS block SCS [kHz]	GSCN	absolute FrequencySSB [ARFCN]	k_{SSB}	Offset Carrier CORESET#0 [RBs] Note 3	CORESET #0 Index (Offset [RBs]) Note 4	offsetToPointA (SIB1) [PRBs] Note 4	
50+100	CC1	50	120	32	Downlink & Uplink	Low	26525.04	2054583	26502	2054199	0	120	22388	2054683	2	6	1 (4)	20	
						Mid	27950.04	2078333	27780.12	2075501	102		22470	2078299	7	0	1 (4)	212	
						High	29375.52	2102091	28626.72	2089611	504		22553	2102203	8	6	1 (4)	1028	
	Channel spacing CC1-CC2=74.40 MHz (Note 1)																		
	CC2	100	120	66	Downlink & Uplink	Low	26599.44	2055823	26551.92	2055031	0	120	22391	2055547	6	7	1 (4)	22	
						Mid	28024.44	2079573	27830.04	2076333	102		22473	2079163	11	1	1 (4)	214	
						High	29449.92	2103331	28676.64	2090443	504		22555	2102779	0	0	0 (0)	1008	
	100+100	CC1	100	120	66	Downlink & Uplink	Low	26550	2054999	26502.48	2054207	0	120	22388	2054683	10	5	1 (4)	18
							Mid	27950.04	2078333	27755.64	2075093	102		22469	2078011	7	5	1 (4)	222

					Uplink	High	29349.96	2101665	28576.68	2088777	504		22550	2101339	5	5	1 (4)	1026
					Channel spacing CC1-CC2=99.96 MHz (Note 1)													
	CC2	100	120	66	Downlink & Uplink	Low	26649.96	2056665	26602.44	2055873	0	120	22393	2056123	5	0	0 (0)	0
						Mid	28050	2079999	27855.6	2076759	102		22474	2079451	2	0	0 (0)	204
						High	29449.92	2103331	28676.64	2090443	504		22555	2102779	0	0	0 (0)	1008
Note 1:	Corresponds to nominal channel spacing in accordance with TS 38.101-2 [8], clause 5.4A.1 for the channel bandwidths of the two respective NR component carriers.																	
Note 2:	CCs are specified in increasing frequency order. CC1 is used as PCell if nothing else is specified in the test case.																	
Note 3:	The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs.																	
Note 4:	The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-8 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.																	

4.3.1.2.3.1.7

CA_n257H

Table 4.3.1.2.3.1.7-1: Void

Table 4.3.1.2.3.1.7-2: NR Intra-Band contiguous CA configuration CA_n257H, SCS=60 kHz, ΔF_{Raster} 60 kHz, nominal channel spacing

CBW combina tion	CC Note 2	CBW [MHz]	SCS [kHz]	carrier Bandw idth [PRBs]	Range		Carrier centre [MHz] Note 2	Carrier centre [ARFCN]	point A [MHz]	absolute Frequen cyPoint A [ARFCN]	offset ToCa rrier [Carri er PRBs]	SS bloc k SCS [kHz]	GSCN	absolute Frequen cySSB [ARFCN]	k_{SSB}	Offset Carrier CORE SET#0 [RBs] Note 3	COR ESET #0 Index (Offs et [RBs]) Note 4	offsetT oPoint A (SIB1) [PRBs] Note 4
50+100 +100	CC1	50	60	66	Downlink & Uplink	Low	26525.04	2054583	26501.28	2054187	0	120	22388	2054683	4	13	1 (8)	21
						Mid	27900	2077499	27802.8	2075879	102		22467	2077435	8	7	0 (0)	109
						High	29275.56	2100425	28888.92	2093981	504		22547	2100475	2	9	1 (8)	521
	Channel spacing CC1-CC2=74.40 MHz (Note 1)																	
	CC2	100	60	132	Downlink & Uplink	Low	26599.44	2055823	26551.92	2055031	0	120	22391	2055547	0	15	1 (8)	23
						Mid	27974.4	2078739	27853.44	2076723	102		22470	2078299	4	1	1 (8)	111
						High	29349.96	2101665	28939.56	2094825	504		22550	2101339	10	10	1 (8)	522
	Channel spacing CC2-CC3=99.96 MHz (Note 1)																	
	CC3	100	60	132	Downlink & Uplink	Low	26699.4	2057489	26651.88	2056697	0	120	22396	2056987	2	4	0 (0)	4
						Mid	28074.36	2080405	27953.4	2078389	102		22476	2080027	6	6	1 (8)	116
						High	29449.92	2103331	29039.52	2096491	504		22555	2102779	0	0	0 (0)	504
100+100	CC1	100	60	132	Downlink	Low	26550	2054999	26502.48	2054207	0	120	22388	2054683	8	11	1 (8)	19

+100					&	Mid	27900	2077499	27779.04	2075483	102		22466	2077147	8	8	1 (8)	118
					Uplink	High	29250	2099999	28839.6	2093159	504		22544	2099611	8	5	1 (8)	517
	Channel spacing CC1-CC2=99.96 MHz (Note 1)																	
	CC2	100	60	132	Downlink & Uplink	Low	26649.96	2056665	26602.44	2055873	0	120	22393	2056123	10	0	0 (0)	0
						Mid	27999.96	2079165	27879	2077149	102		22472	2078875	10	13	1 (8)	123
						High	29349.96	2101665	28939.56	2094825	504		22550	2101339	10	10	1 (8)	522
	Channel spacing CC2-CC3=99.96 MHz (Note 1)																	
	CC3	100	60	132	Downlink & Uplink	Low	26749.92	2058331	26702.4	2057539	0	120	22399	2057851	0	6	0 (0)	6
						Mid	28099.92	2080831	27978.96	2078815	102		22477	2080315	0	3	0 (0)	105
						High	29449.92	2103331	29039.52	2096491	504		22555	2102779	0	0	0 (0)	504
Note 1:	Corresponds to nominal channel spacing in accordance with TS 38.101-2 [8], clause 5.4A.1 for the channel bandwidths of the two respective NR component carriers.																	
Note 2:	CCs are specified in increasing frequency order. CC1 is used as PCell if nothing else is specified in the test case.																	
Note 3:	The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs.																	
Note 4:	The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-7 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.																	

Table 4.3.1.2.3.1.7-3: Void

Table 4.3.1.2.3.1.7-4: NR Intra-Band contiguous CA configuration CA_n257H, SCS=120 kHz, ΔF_{Raster} 120 kHz, nominal channel spacing

CBW combination	CC Note 2	CBW [MHz]	SCS [kHz]	carrier Bandwidth [PRBs]	Range		Carrier centre [MHz] Note 2	Carrier centre [ARFCN]	point A [MHz]	absolute FrequencyPoint A [ARFCN]	offset ToCarrier [Carrier PRBs]	SS block SCS [kHz]	GSCN	absolute FrequencySSB [ARFCN]	k_{SSB}	Offset Carrier CORESET#0 [RBs] Note 3	CORESET #0 Index (Offset [RBs]) Note 4	offsetToPoint A (SIB1) [PRBs] Note 4	
50+100 +100	CC1	50	120	32	Downlink & Uplink	Low	26525.04	2054583	26502	2054199	0	120	22388	2054683	2	6	1 (4)	20	
						Mid	27900	2077499	27730.08	2074667	102		22467	2077435	4	3	0 (0)	210	
						High	29275.56	2100425	28526.76	2087945	504		22547	2100475	1	4	1 (4)	1024	
	Channel spacing CC1-CC2=74.40 MHz (Note 1)																		
	CC2	100	120	66	Downlink & Uplink	Low	26599.44	2055823	26551.92	2055031	0	120	22391	2055547	6	7	1 (4)	22	
						Mid	27974.4	2078739	27780	2075499	102		22470	2078299	8	0	1 (4)	212	
						High	29349.96	2101665	28576.68	2088777	504		22550	2101339	5	5	1 (4)	1026	
	Channel spacing CC2-CC3=99.96 MHz (Note 1)																		
	CC3	100	120	66	Downlink	Low	26699.4	2057489	26651.88	2056697	0	120	22396	2056987	1	2	0 (0)	4	

100+100 +100					& Uplink	Mid	28074.36	2080405	27879.96	2077165	102		22476	2080027	3	3	1 (4)	218
						High	29449.92	2103331	28676.64	2090443	504		22555	2102779	0	0	0 (0)	1008
	CC1	100	120	66	Downlink & Uplink	Low	26550	2054999	26502.48	2054207	0	120	22388	2054683	10	5	1 (4)	18
						Mid	27900	2077499	27705.6	2074259	102		22466	2077147	4	4	1 (4)	220
						High	29250	2099999	28476.72	2087111	504		22544	2099611	10	2	1 (4)	1020
	Channel spacing CC1-CC2=99.96 MHz (Note 1)																	
	CC2	100	120	66	Downlink & Uplink	Low	26649.96	2056665	26602.44	2055873	0	120	22393	2056123	5	0	0 (0)	0
						Mid	27999.96	2079165	27805.56	2075925	102		22472	2078875	11	6	1 (4)	224
						High	29349.96	2101665	28576.68	2088777	504		22550	2101339	5	5	1 (4)	1026
	Channel spacing CC2-CC3=99.96 MHz (Note 1)																	
	CC3	100	120	66	Downlink & Uplink	Low	26749.92	2058331	26702.4	2057539	0	120	22399	2057851	0	3	0 (0)	6
						Mid	28099.92	2080831	27905.52	2077591	102		22477	2080315	6	1	0 (0)	206
						High	29449.92	2103331	28676.64	2090443	504		22555	2102779	0	0	0 (0)	1008

Note 1:

Corresponds to nominal channel spacing in accordance with TS 38.101-2 [8], clause 5.4A.1 for the channel bandwidths of the two respective NR component carriers.

Note 2:

CCs are specified in increasing frequency order. CC1 is used as PCell if nothing else is specified in the test case.

Note 3:

The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs.

Note 4:

The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-8 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.

4.3.1.2.3.1.8

CA_n257I

Table 4.3.1.2.3.1.8-1: Void

Table 4.3.1.2.3.1.8-2: NR Intra-Band contiguous CA configuration CA_n257I, SCS=60 kHz, ΔF_{Raster} 60 kHz, nominal channel spacing

CBW combinati on	CC Note 2	CBW [MHz]	SCS [kHz]	carrier Bandw idth [PRBs]	Range		Carrier centre [MHz] Note 2	Carrier centre [ARFCN]	point A [MHz]	absolute Frequen cyPoint A [ARFCN]	offset ToCa rrier [Carri er PRBs]	SS bloc k SCS [kHz]	GSCN	absolute Frequen cySSB [ARFCN]	k_{SSB}	Offset Carrier CORE SET#0 [RBs] Note 3	COR ESET #0 Index (Offs et [RBs]) Note 4	offsetT oPoint A (SIB1) [PRBs] Note 4
50+100 +100+100	CC1	50	60	66	Downlink & Uplink	Low	26525.04	2054583	26501.28	2054187	0	120	22388	2054683	4	13	1 (8)	21
						Mid	27849.96	2076665	27752.76	2075045	102		22464	2076571	2	5	0 (0)	107
						High	29175.6	2098759	28788.96	2092315	504		22541	2098747	0	4	1 (8)	516
					Channel spacing CC1-CC2=74.40 MHz (Note 1)													

	CC2	100	60	132	Downlink & Uplink	Low	26599.44	2055823	26551.92	2055031	0	120	22391	2055547	0	15	1 (8)	23	
						Mid	27924.36	2077905	27803.4	2075889	102		22467	2077435	10	6	0 (0)	108	
						High	29250	2099999	28839.6	2093159	504		22544	2099611	8	5	1 (8)	517	
	Channel spacing CC2-CC3=99.96 MHz (Note 1)																		
	CC3	100	60	132	Downlink & Uplink	Low	26699.4	2057489	26651.88	2056697	0	120	22396	2056987	2	4	0 (0)	4	
						Mid	28024.32	2079571	27903.36	2077555	102		22473	2079163	0	4	1 (8)	114	
						High	29349.96	2101665	28939.56	2094825	504		22550	2101339	10	10	1 (8)	522	
	Channel spacing CC3-CC4=99.96 MHz (Note 1)																		
	CC4	100	60	132	Downlink & Uplink	Low	26799.36	2059155	26751.84	2058363	0	120	22402	2058715	4	1	1 (8)	9	
						Mid	28124.28	2081237	28003.32	2079221	102		22479	2080891	2	9	1 (8)	119	
						High	29449.92	2103331	29039.52	2096491	504		22555	2102779	0	0	0 (0)	504	
	100+100 +100+100	CC1	100	60	132	Downlink & Uplink	Low	26550	2054999	26502.48	2054207	0	120	22388	2054683	8	11	1 (8)	19
							Mid	27849.96	2076665	27729	2074649	102		22463	2076283	2	6	1 (8)	116
							High	29150.04	2098333	28739.64	2091493	504		22538	2097883	6	0	1 (8)	512
		Channel spacing CC1-CC2=99.96 MHz (Note 1)																	
CC2		100	60	132	Downlink & Uplink	Low	26649.96	2056665	26602.44	2055873	0	120	22393	2056123	10	0	0 (0)	0	
						Mid	27949.92	2078331	27828.96	2076315	102		22469	2078011	4	11	1 (8)	121	
						High	29250	2099999	28839.6	2093159	504		22544	2099611	8	5	1 (8)	517	
Channel spacing CC2-CC3=99.96 MHz (Note 1)																			
CC3		100	60	132	Downlink & Uplink	Low	26749.92	2058331	26702.4	2057539	0	120	22399	2057851	0	6	0 (0)	6	
						Mid	28049.88	2079997	27928.92	2077981	102		22474	2079451	6	0	0 (0)	102	
						High	29349.96	2101665	28939.56	2094825	504		22550	2101339	10	10	1 (8)	522	
Channel spacing CC3-CC4=99.96 MHz (Note 1)																			
CC4		100	60	132	Downlink & Uplink	Low	26849.88	2059997	26802.36	2059205	0	120	22405	2059579	2	3	1 (8)	11	
						Mid	28149.84	2081663	28028.88	2079647	102		22480	2081179	8	5	0 (0)	107	
						High	29449.92	2103331	29039.52	2096491	504		22555	2102779	0	0	0 (0)	504	
Note 1:	Corresponds to nominal channel spacing in accordance with TS 38.101-2 [8], clause 5.4A.1 for the channel bandwidths of the two respective NR component carriers.																		
Note 2:	CCs are specified in increasing frequency order. CC1 is used as PCell if nothing else is specified in the test case.																		
Note 3:	The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs.																		
Note 4:	The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-7 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.																		

Table 4.3.1.2.3.1.8-3: Void

Table 4.3.1.2.3.1.8-4: NR Intra-Band contiguous CA configuration CA_n257I, SCS=120 kHz, ΔF_{Raster} 120 kHz nominal channel spacing

CBW combinati on	CC Note 2	CBW [MHz]	SCS [kHz]	carrier Bandw idth	Range	Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absolut eFreque ncyPoin	offset ToCa rrier	SS bloc k	GSCN	absolute Frequen cySSB	k_{SSB}	Offset Carrier CORE	CORE SET# 0	offsetT oPoint A

				[PRBs]		Note 2			tA [ARFCN]	[Carrier PRBs]	SCS [kHz]		[ARFCN]		SET#0 [RBs] Note 3	Index (Offset t [RBs]) Note 4	(SIB1) [PRBs] Note 4	
50+100 +100+100	CC1	50	120	32	Downlink & Uplink	Low	26525.04	2054583	26502	2054199	0	120	22388	2054683	2	6	1 (4)	20
						Mid	27849.96	2076665	27680.04	2073833	102		22464	2076571	1	2	0 (0)	208
						High	29175.6	2098759	28426.8	2086279	504		22541	2098747	6	1	1 (4)	1018
	Channel spacing CC1-CC2=74.40 MHz (Note 1)																	
	CC2	100	120	66	Downlink & Uplink	Low	26599.44	2055823	26551.92	2055031	0	120	22391	2055547	6	7	1 (4)	22
						Mid	27924.36	2077905	27729.96	2074665	102		22467	2077435	5	3	0 (0)	210
						High	29250	2099999	28476.72	2087111	504		22544	2099611	10	2	1 (4)	1020
	Channel spacing CC2-CC3=99.96 MHz (Note 1)																	
	CC3	100	120	66	Downlink & Uplink	Low	26699.4	2057489	26651.88	2056697	0	120	22396	2056987	1	2	0 (0)	4
						Mid	28024.32	2079571	27829.92	2076331	102		22473	2079163	0	2	1 (4)	216
						High	29349.96	2101665	28576.68	2088777	504		22550	2101339	5	5	1 (4)	1026
	Channel spacing CC3-CC4=99.96 MHz (Note 1)																	
	CC4	100	120	66	Downlink & Uplink	Low	26799.36	2059155	26751.84	2058363	0	120	22402	2058715	8	0	1 (4)	8
						Mid	28124.28	2081237	27929.88	2077997	102		22479	2080891	7	4	1 (4)	220
						High	29449.92	2103331	28676.64	2090443	504		22555	2102779	0	0	0 (0)	1008
100+100 +100+100	CC1	100	120	66	Downlink & Uplink	Low	26550	2054999	26502.48	2054207	0	120	22388	2054683	10	5	1 (4)	18
						Mid	27849.96	2076665	27655.56	2073425	102		22463	2076283	1	3	1 (4)	218
						High	29150.04	2098333	28376.76	2085445	504		22538	2097883	3	0	1 (4)	1016
	Channel spacing CC1-CC2=99.96 MHz (Note 1)																	
	CC2	100	120	66	Downlink & Uplink	Low	26649.96	2056665	26602.44	2055873	0	120	22393	2056123	5	0	0 (0)	0
						Mid	27949.92	2078331	27755.52	2075091	102		22469	2078011	8	5	1 (4)	222
						High	29250	2099999	28476.72	2087111	504		22544	2099611	10	2	1 (4)	1020
	Channel spacing CC2-CC3=99.96 MHz (Note 1)																	
	CC3	100	120	66	Downlink & Uplink	Low	26749.92	2058331	26702.4	2057539	0	120	22399	2057851	0	3	0 (0)	6
						Mid	28049.88	2079997	27855.48	2076757	102		22474	2079451	3	0	0 (0)	204
						High	29349.96	2101665	28576.68	2088777	504		22550	2101339	5	5	1 (4)	1026
	Channel spacing CC3-CC4=99.96 MHz (Note 1)																	
	CC4	100	120	66	Downlink & Uplink	Low	26849.88	2059997	26802.36	2059205	0	120	22405	2059579	7	1	1 (4)	10
						Mid	28149.84	2081663	27955.44	2078423	102		22480	2081179	10	2	0 (0)	208
						High	29449.92	2103331	28676.64	2090443	504		22555	2102779	0	0	0 (0)	1008
Note 1:	Corresponds to nominal channel spacing in accordance with TS 38.101-2 [8], clause 5.4A.1 for the channel bandwidths of the two respective NR component carriers.																	
Note 2:	CCs are specified in increasing frequency order. CC1 is used as PCell if nothing else is specified in the test case.																	
Note 3:	The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter ΔF _{OffsetCORESET-0-Carrier} in Annex C expressed in number of common RBs.																	
Note 4:	The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-8 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.																	

4.3.1.2.3.1.9 CA_n257J

Editor's note: CA_n257J Test frequencies are FFS.

Table 4.3.1.2.3.1.9-1: Void

Table 4.3.1.2.3.1.9-2: NR Intra-Band contiguous CA configuration CA_n257J, SCS=60 kHz, ΔF_{Raster} 60 kHz, nominal channel spacing

CBW combinati on	CC Note 2	CBW [MHz]	SCS [kHz]	carrier Bandw idth [PRBs]	Range	Carrier centre [MHz] Note 2	Carrier centre [ARFCN]	point A [MHz]	absolute Frequen cyPoint A [ARFCN]	offset ToCa rrier [Carri er PRBs]	SS bloc k SCS [kHz]	GSCN	absolute Frequen cySSB [ARFCN]	k_{SSB}	Offset Carrier CORE SET#0 [RBs] Note 3	COR ESET #0 Index (Offs et [RBs]) Note 4	offsetT oPoint A (SIB1) [PRBs] Note 4

Table 4.3.1.2.3.1.9-3: Void

Table 4.3.1.2.3.1.9-4: NR Intra-Band contiguous CA configuration CA_n257J, SCS=120 kHz, ΔF_{Raster} 120 kHz, nominal channel spacing

CBW combinati on	CC Note 2	CBW [MHz]	SCS [kHz]	carrier Bandw idth [PRBs]	Range	Carrier centre [MHz] Note 2	Carrier centre [ARFCN]	point A [MHz]	absolute Frequen cyPoint A [ARFCN]	offset ToCa rrier [Carri er PRBs]	SS bloc k SCS [kHz]	GSCN	absolute Frequen cySSB [ARFCN]	k_{SSB}	Offset Carrier CORE SET#0 [RBs] Note 3	COR ESET #0 Index (Offs et [RBs]) Note 4	offsetT oPoint A (SIB1) [PRBs] Note 4

4.3.1.2.3.1.10 CA_n257K

Editor's note: CA_n257K Test frequencies are FFS.

Table 4.3.1.2.3.1.10-1: Void

Table 4.3.1.2.3.1.10-2: NR Intra-Band contiguous CA configuration CA_n257K, SCS=60 kHz, ΔF_{Raster} 60 kHz, nominal channel spacing

CBW combinati on	CC Note 2	CBW [MHz]	SCS [kHz]	carrier Bandw idth [PRBs]	Range	Carrier centre [MHz] Note 2	Carrier centre [ARFCN]	point A [MHz]	absolute Frequen cyPoint A [ARFCN]	offset ToCa rrier [Carri er PRBs]	SS bloc k SCS [kHz]	GSCN	absolute Frequen cySSB [ARFCN]	k_{SSB}	Offset Carrier CORE SET#0 [RBs] Note 3	COR ESET #0 Index (Offs et [RBs]) Note 4	offsetT oPoint A (SIB1) [PRBs] Note 4

Table 4.3.1.2.3.1.10-3: Void

Table 4.3.1.2.3.1.10-4: NR Intra-Band contiguous CA configuration CA_n257K, SCS=120 kHz, ΔF_{Raster} 120 kHz, nominal channel spacing

CBW combinati on	CC Note 2	CBW [MHz]	SCS [kHz]	carrier Bandw idth [PRBs]	Range	Carrier centre [MHz] Note 2	Carrier centre [ARFCN]	point A [MHz]	absolute Frequen cyPoint A [ARFCN]	offset ToCa rrier [Carri er PRBs]	SS bloc k SCS [kHz]	GSCN	absolute Frequen cySSB [ARFCN]	k_{SSB}	Offset Carrier CORE SET#0 [RBs] Note 3	COR ESET #0 Index (Offs et [RBs]) Note 4	offsetT oPoint A (SIB1) [PRBs] Note 4

4.3.1.2.3.1.11 CA_n257L

Editor's note: CA_n257L Test frequencies are FFS.

Table 4.3.1.2.3.1.11-1: Void

Table 4.3.1.2.3.1.11-2: NR Intra-Band contiguous CA configuration CA_n257L, SCS=60 kHz, ΔF_{Raster} 60 kHz, nominal channel

CBW combinati on	CC Note 2	CBW [MHz]	SCS [kHz]	carrier Bandw idth [PRBs]	Range	Carrier centre [MHz] Note 2	Carrier centre [ARFCN]	point A [MHz]	absolute Frequen cyPoint A [ARFCN]	offset ToCa rrier [Carri er PRBs]	SS bloc k SCS [kHz]	GSCN	absolute Frequen cySSB [ARFCN]	k_{SSB}	Offset Carrier CORE SET#0 [RBs] Note 3	COR ESET #0 Index (Offs et [RBs]) Note 4	offsetT oPoint A (SIB1) [PRBs] Note 4

Table 4.3.1.2.3.1.11-3: Void

Table 4.3.1.2.3.1.11-4: NR Intra-Band contiguous CA configuration CA_n257L, SCS=120 kHz, ΔF_{Raster} 120 kHz, nominal channel spacing

CBW combinati on	CC Note 2	CBW [MHz]	SCS [kHz]	carrier Bandw idth [PRBs]	Range	Carrier centre [MHz] Note 2	Carrier centre [ARFCN]	point A [MHz]	absolute Frequen cyPoint A [ARFCN]	offset ToCa rrier [Carri er PRBs]	SS bloc k SCS [kHz]	GSCN	absolute Frequen cySSB [ARFCN]	k_{SSB}	Offset Carrier CORE SET#0 [RBs] Note 3	COR ESET #0 Index (Offs et [RBs]) Note 4	offsetT oPoint A (SIB1) [PRBs] Note 4

4.3.1.2.3.1.12 CA_n257M

Editor's note: CA_n257M Test frequencies are FFS.

Table 4.3.1.2.3.1.12-1: Void

Table 4.3.1.2.3.1.12-2: NR Intra-Band contiguous CA configuration CA_n257M, SCS=60 kHz, ΔF_{Raster} 60 kHz, nominal channel

CBW combination	CC Note 2	CBW [MHz]	SCS [kHz]	carrier Bandwidth [PRBs]	Range	Carrier centre [MHz] Note 2	Carrier centre [ARFCN]	point A [MHz]	absolute Frequency Point A [ARFCN]	offset ToCarrier [Carrier PRBs]	SS block SCS [kHz]	GSCN	absolute Frequency SSB [ARFCN]	k_{SSB}	Offset Carrier CORE SET#0 [RBs] Note 3	CORE SET #0 Index (Offset [RBs]) Note 4	offsetT oPoint A (SIB1) [PRBs] Note 4

Table 4.3.1.2.3.1.12-3: Void

Table 4.3.1.2.3.1.12-4: NR Intra-Band contiguous CA configuration CA_n257M, SCS=120 kHz, ΔF_{Raster} 120 kHz, nominal channel spacing

CBW combination	CC Note 2	CBW [MHz]	SCS [kHz]	carrier Bandwidth [PRBs]	Range	Carrier centre [MHz] Note 2	Carrier centre [ARFCN]	point A [MHz]	absolute Frequency Point A [ARFCN]	offset ToCarrier [Carrier PRBs]	SS block SCS [kHz]	GSCN	absolute Frequency SSB [ARFCN]	k_{SSB}	CORE SET#1 Offset from $N_{\text{BW}}^{\text{start}}$ [RBs]	CORE SET #0 Index (Offset [RBs]) Note 1	offsetT oPoint A (SIB1) [PRBs] Note 1

4.3.1.2.3.2 NR Intra-band contiguous CA configurations for CA_n258

4.3.1.2.3.2.1 CA_n258B

Table 4.3.1.2.3.2.1-1: Void

Table 4.3.1.2.3.2.1-2: NR Intra-Band contiguous CA configuration CA_n258B (PCC=CC1 and SCC=CC2), SCS=120 kHz, nominal channel spacing

CBW combinat ion	CC	CBW [MHz]	SCS [kHz]	carrier Band width [PRBs]	Range		Carrier centre [MHz] Note 2	Carrier centre [ARFCN]	point A [MHz]	absolute Frequen cyPoint A [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS [kHz]	GSCN	absolute Frequen cySSB [ARFCN]	k _{SSB}	Offset Carrier CORESET#0 [RBs] Note 3	CORESET #0 Index (Offset [RBs]) Note 4	offsetToPointA (SIB1) [PRBs] Note 4		
50+400	CC1	50	120	32	Downlink & Uplink	Low	24275.04	2017083	24252	2016699	0	120	22257	2016955	8	0	0 (0)	0		
						Mid	25674.96	2040415	25505.04	2037583	102		22338	2040283	6	0	0 (0)	204		
						High	27083.04	2063883	26334.24	2051403	504		22420	2063899	8	2	1 (4)	1020		
	Channel spacing CC1-CC2=216.96 MHz (Note 1)																			
	CC2	400	120	264	Downlink & Uplink	Low	24492	2020699	24301.92	2017531	0	120	22260	2017819	0	2	0 (0)	4		
						Mid	25891.92	2044031	25554.96	2038415	102		22341	2041147	10	1	0 (0)	206		
						High	27300	2067499	26384.16	2052235	504		22423	2064763	0	4	1 (4)	1024		
	100+400	CC1	100	120	66	Downlink & Uplink	Low	24300	2017499	24252.48	2016707	0	120	22257	2016955	4	0	0 (0)	0	
							Mid	25674.96	2040415	25480.56	2037175	102		22337	2039995	6	1	1 (4)	214	
							High	27057.48	2063457	26284.2	2050569	504		22417	2063035	5	1	1 (4)	1018	
		Channel spacing CC1-CC2=242.52 MHz (Note 1)																		
		CC2	400	120	264	Downlink & Uplink	Low	24542.52	2021541	24352.44	2018373	0	120	22263	2018683	11	2	0 (0)	4	
Mid							25917.48	2044457	25580.52	2038841	102	22343		2041723	1	4	1 (4)	220		
High							27300	2067499	26384.16	2052235	504	22423		2064763	0	4	1 (4)	1024		
200+400		CC1	200	120	132	Downlink & Uplink	Low	24350.04	2018333	24255	2016749	0	120	22258	2017243	7	6	1 (4)	20	
							Mid	25674.96	2040415	25433.04	2036383	102		22334	2039131	6	2	0 (0)	208	
							High	27005.04	2062583	26184.24	2048903	504		22411	2061307	10	2	0 (0)	1012	
		Channel spacing CC1-CC2=294.96 MHz (Note 1)																		
		CC2	400	120	264	Downlink & Uplink	Low	24645	2023249	24454.92	2020081	0	120	22269	2020411	9	3	0 (0)	6	
	Mid						25969.92	2045331	25632.96	2039715	102	22346		2042587	8	3	1 (4)	218		
	High						27300	2067499	26384.16	2052235	504	22423		2064763	0	4	1 (4)	1024		
	400+400	CC1	400	120	264	Downlink & Uplink	Low	24450	2019999	24259.92	2016831	0	120	22258	2017243	2	3	1 (4)	14	
							Mid	25674.96	2040415	25338	2034799	102		22329	2037691	6	4	1 (4)	220	
							High	26900.04	2060833	25984.2	2045569	504		22400	2058139	9	5	1 (4)	1026	
		Channel spacing CC1-CC2=399.96 MHz (Note 1)																		
		CC2	400	120	264	Downlink	Low	24849.96	2026665	24659.88	2023497	0	120	22281	2023867	5	1	1 (4)	10	

					&	Mid	26074.92	2047081	25737.96	2041465	102		22352	2044315	9	2	1 (4)	216
					Uplink	High	27300	2067499	26384.16	2052235	504		22423	2064763	0	4	1 (4)	1024
Note 1:	Corresponds to nominal channel spacing in accordance with TS 38.101-2 [8], clause 5.4A.1 for the channel bandwidths of the two respective NR component carriers.																	
Note 2:	CCs are specified in increasing frequency order. CC1 is used as PCell if nothing else is specified in the test case.																	
Note 3:	The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs.																	
Note 4:	The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-8 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.																	

4.3.1.2.3.2.2 CA_n258C

FFS

4.3.1.2.3.2.3 CA_n258D

Table 4.3.1.2.3.2.3-1: NR Intra-Band contiguous CA configuration CA_n258D (PCC=CC1 and SCC=CC2), SCS=60 kHz, nominal channel spacing

CBW combinat ion	CC	CBW [MHz]	SCS [kHz]	carrier Bandwi dth [PRBs]	Range		Carrier centre [MHz] Note 2	Carrier centre [ARFCN]	point A [MHz]	absolute Frequen cyPoint A [ARFCN]	offsetT oCarri er [Carrie r PRBs]	SS block SCS [kHz]	GSCN	absolute Frequen cySSB [ARFCN]	k_{SSB}	Offset Carrier CORE SET#0 [RBs] Note 3	COR ESET #0 Index (Offs et [RBs]) Note 4	offset ToPoi ntA (SIB1) [PRB s] Note 4	
50+200	CC1	50	60	66	Downlink & Uplink	Low	24275.04	2017083	24251.28	2016687	0	120	22257	2016955	4	2	0 (0)	2	
						Mid	25774.92	2042081	25677.72	2040461	102		22344	2042011	2	7	0 (0)	109	
						High	27278.04	2067133	26891.4	2060689	504		22431	2067067	6	7	0 (0)	511	
	Channel spacing CC1-CC2=121.92 MHz (Note 1)																		
	CC2	200	60	264	Downlink & Uplink	Low	24396.96	2019115	24301.92	2017531	0	120	22260	2017819	0	4	0 (0)	4	
						Mid	25896.84	2044113	25728.36	2041305	102		22347	2042875	10	0	1 (8)	110	
						High	27399.96	2069165	26942.04	2061533	504		22434	2067931	2	1	1 (8)	513	
	100+200	CC1	100	60	132	Downlink & Uplink	Low	24300	2017499	24252.48	2016707	0	120	22257	2016955	8	0	0 (0)	0
							Mid	25774.92	2042081	25653.96	2040065	102		22343	2041723	2	8	1 (8)	118
							High	27252.48	2066707	26842.08	2059867	504		22428	2066203	0	4	0 (0)	508
Channel spacing CC1-CC2=147.48 MHz (Note 1)																			
CC2		200	60	264	Downlink & Uplink	Low	24447.48	2019957	24352.44	2018373	0	120	22263	2018683	10	5	0 (0)	5	
						Mid	25922.4	2044539	25753.92	2041731	102		22349	2043451	4	13	1 (8)	123	
						High	27399.96	2069165	26942.04	2061533	504		22434	2067931	2	1	1 (8)	513	

200+200	CC1	200	60	264	Downlink & Uplink	Low	24350.04	2018333	24255	2016749	0	120	22258	2017243	2	13	1 (8)	21	
						Mid	25774.92	2042081	25606.44	2039273	102		22340	2040859	2	2	1 (8)	112	
						High	27200.04	2065833	26742.12	2058201	504		22423	2064763	10	14	1 (8)	526	
						Channel spacing CC1-CC2=199.92 MHz (Note 1)													
	CC2	200	60	264	Downlink & Uplink	Low	24549.96	2021665	24454.92	2020081	0	120	22269	2020411	6	7	0 (0)	7	
						Mid	25974.84	2045413	25806.36	2042605	102		22352	2044315	6	12	1 (8)	122	
						High	27399.96	2069165	26942.04	2061533	504		22434	2067931	2	1	1 (8)	513	
	Note 1: Corresponds to nominal channel spacing in accordance with TS 38.101-2 [8], clause 5.4A.1 for the channel bandwidths of the two respective NR component carriers.																		
	Note 2: CCs are specified in increasing frequency order. CC1 is used as PCell if nothing else is specified in the test case.																		
Note 3: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs.																			
Note 4: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-7 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.																			

Table 4.3.1.2.3.2.3-2: NR Intra-Band contiguous CA configuration CA_n258D (PCC=CC1 and SCC=CC2), SCS=120 kHz, nominal channel spacing

CBW combinati on	CC	CBW [MHz]	SCS [kHz]	carrierB andwidt h [PRBs]	Range		Carrier centre [MHz] Note 2	Carrier centre [ARFCN]	point A [MHz]	absoluteF requency PointA [ARFCN]	offsetTo Carrier [Carrier PRBs]	SS block SCS [kHz]	GSCN	absolute Frequency SSB [ARFCN]	k _{SSB}	Offset Carrier CORES ET#0 [RBs] Note 3	CORE SET#0 Index (Offse t [RBs]) Note 4	offset ToPoi ntA (SIB1) [PRBs] Note 4	
50+200	CC1	50	120	32	Downlink & Uplink	Low	24275.04	2017083	24252	2016699	0	120	22257	2016955	8	0	0 (0)	0	
						Mid	25775.04	2042083	25605.12	2039251	102		22344	2042011	0	3	0 (0)	210	
						High	27278.04	2067133	26529.24	2054653	504		22431	2067067	3	3	0 (0)	1014	
	Channel spacing CC1-CC2=121.92 MHz (Note 1)																		
	CC2	200	120	132	Downlink & Uplink	Low	24396.96	2019115	24301.92	2017531	0	120	22260	2017819	0	2	0 (0)	4	
						Mid	25896.96	2044115	25655.04	2040083	102		22347	2042875	4	0	1 (4)	212	
						High	27399.96	2069165	26579.16	2055485	504		22434	2067931	7	0	1 (4)	1016	
	100+200	CC1	100	120	66	Downlink & Uplink	Low	24300	2017499	24252.48	2016707	0	120	22257	2016955	4	0	0 (0)	0
							Mid	25775.04	2042083	25580.64	2038843	102		22343	2041723	0	4	1 (4)	220
							High	27252.48	2066707	26479.2	2053819	504		22428	2066203	0	2	0 (0)	1012
	Channel spacing CC1-CC2=147.48 MHz (Note 1)																		
	200+200	CC2	200	120	132	Downlink & Uplink	Low	24447.48	2019957	24352.44	2018373	0	120	22263	2018683	11	2	0 (0)	4
Mid							25922.52	2044541	25680.6	2040509	102	22349		2043451	7	6	1 (4)	224	
High							27399.96	2069165	26579.16	2055485	504	22434		2067931	7	0	1 (4)	1016	
200+200	CC1	200	120	132	Downlink & Uplink	Low	24350.04	2018333	24255	2016749	0	120	22258	2017243	7	6	1 (4)	20	
						Mid	25775.04	2042083	25533.12	2038051	102		22340	2040859	0	1	1 (4)	214	
						High	27200.04	2065833	26379.24	2052153	504		22423	2064763	5	7	1 (4)	1030	
Channel spacing CC1-CC2=199.92 MHz (Note 1)																			
200+200	CC2	200	120	132	Downlink	Low	24549.96	2021665	24454.92	2020081	0	120	22269	2020411	9	3	0 (0)	6	
						High	27399.96	2069165	26942.04	2061533	504		22434	2067931	2	1	1 (8)	513	

					&	Mid	25974.96	2045415	25733.04	2041383	102		22352	2044315	2	6	1 (4)	224
					Uplink	High	27399.96	2069165	26579.16	2055485	504		22434	2067931	7	0	1 (4)	1016
Note 1:	Corresponds to nominal channel spacing in accordance with TS 38.101-2 [8], clause 5.4A.1 for the channel bandwidths of the two respective NR component carriers.																	
Note 2:	CCs are specified in increasing frequency order. CC1 is used as PCell if nothing else is specified in the test case.																	
Note 3:	The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs.																	
Note 4:	The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-8 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.																	

4.3.1.2.3.2.4

CA_n258E

Table 4.3.1.2.3.2.4-1: NR Intra-Band contiguous CA configuration CA_n258E (PCC=CC1), SCS 60 kHz and frequency raster 60 kHz

CBW combina tion (BCS)	CC Note 2	CBW [MHz]	SCS [kHz]	carrie rBand width [PRB s]	Range		Carrier centre [MHz] Note 2	Carrier centre [ARFCN]	point A [MHz]	absoluteF requency PointA [ARFCN]	offset ToCar rier [Carri er PRBs]	SS block SCS [kHz]	GSCN	absoluteF requency SSB [ARFCN]	k_{SSB}	Offset carrier CORE SET#0 [RBs] Note 3	CORE SET#0 Index (Offse t [RBs]) Note 4	offsetTo PointA (SIB1) [PRBs] Note 4
50 + 200 + 200 (0)	CC1	50	60	66	Downlink	Low	24275.04	2017083	24251.28	2016687	0	120	22257	2016955	4	2	0 (0)	2
					&	Mid	25674.96	2040415	25577.76	2038795	102		22338	2040283	0	2	0 (0)	104
					Uplink	High	27078.12	2063801	26691.48	2057357	504		22420	2063899	2	13	1 (8)	525
	Channel spacing CC1-CC2=121,92 MHz (Note 1)																	
	CC2	200	60	264	Downlink &	Low	24396.96	2019115	24301.92	2017531	0	120	22260	2017819	0	4	0 (0)	4
					Mid	25796.88	2042447	25628.4	2039639	102	22341		2041147	8	3	0 (0)	105	
					Uplink	High	27200.04	2065833	26742.12	2058201	504		22423	2064763	10	14	1 (8)	526
	Channel spacing CC2-CC3=199,92 MHz (Note 1)																	
	CC3	200	60	264	Downlink &	Low	24596.88	2022447	24501.84	2020863	0	120	22272	2021275	4	6	1 (8)	14
					Mid	25996.8	2045779	25828.32	2042971	102	22353		2044603	0	6	1 (8)	116	
					Uplink	High	27399.96	2069165	26942.04	2061533	504		22434	2067931	2	1	1 (8)	513
100 + 200 + 200 (0)	CC1	100	60	132	Downlink	Low	24300	2017499	24252.48	2016707	0	120	22257	2016955	8	0	0 (0)	0
					&	Mid	25674.96	2040415	25554	2038399	102		22337	2039995	0	3	1 (8)	113

				Uplink	High	27052.56	2063375	26642.16	2056535	504		22417	2063035	8	9	1 (8)	521	
Channel spacing CC1-CC2=147,48 MHz (Note 1)																		
200 + 200 + 200 (0)	CC2	200	60	264	Downlink &	Low	24447.48	2019957	24352.44	2018373	0	120	22263	2018683	10	5	0 (0)	5
						Mid	25822.44	2042873	25653.96	2040065	102		22343	2041723	2	8	1 (8)	118
					Uplink	High	27200.04	2065833	26742.12	2058201	504		22423	2064763	10	14	1 (8)	526
	Channel spacing CC2-CC3=199,92 MHz (Note 1)																	
	CC3	200	60	264	Downlink &	Low	24647.4	2023289	24552.36	2021705	0	120	22275	2022139	2	8	1 (8)	16
						Mid	26022.36	2046205	25853.88	2043397	102		22354	2044891	6	2	0 (0)	104
Uplink					High	27399.96	2069165	26942.04	2061533	504	22434		2067931	2	1	1 (8)	513	
200 + 200 + 200 (0)	CC1	200	60	264	Downlink &	Low	24350.04	2018333	24255	2016749	0	120	22258	2017243	2	13	1 (8)	21
						Mid	25674.96	2040415	25506.48	2037607	102		22334	2039131	0	5	0 (0)	107
					Uplink	High	27000.12	2062501	26542.2	2054869	504		22411	2061307	6	4	1 (8)	516
	Channel spacing CC1-CC2=199,92 MHz (Note 1)																	
	CC2	200	60	264	Downlink &	Low	24549.96	2021665	24454.92	2020081	0	120	22269	2020411	6	7	0 (0)	7
						Mid	25874.88	2043747	25706.4	2040939	102		22346	2042587	4	7	1 (8)	117
					Uplink	High	27200.04	2065833	26742.12	2058201	504		22423	2064763	10	14	1 (8)	526
	Channel spacing CC2-CC3=199,92 MHz (Note 1)																	
	CC3	200	60	264	Downlink &	Low	24749.88	2024997	24654.84	2023413	0	120	22281	2023867	10	9	1 (8)	17
Mid						26074.8	2047079	25906.32	2044271	102	22357		2045755	8	1	0 (0)	103	
Uplink					High	27399.96	2069165	26942.04	2061533	504	22434		2067931	2	1	1 (8)	513	
Note 1:	Corresponds to nominal channel spacing in accordance with TS 38.101-1 [7], clause 5.4A.1 for the CC1 and CC2 channel bandwidth combination.																	
Note 2:	CCs are specified in increasing frequency order. CC1 is used as PCell if nothing else is specified in the test case.																	
Note 3:	The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs.																	
Note 4:	The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-7 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.																	

Table 4.3.1.2.3.2.4-2: NR Intra-Band contiguous CA configuration CA_n258E (PCC=CC1), SCS 120 kHz and frequency raster 120 kHz

CBW combina	CC Note	CBW [MHz]	SCS [kHz]	carrie rBand	Range	Carrier centre	Carrier centre	point A [MHz]	absoluteF requency	offset ToCar	SS block	GSCN	absoluteF requency	k_{SSB}	Offset carrier	CORE SET#0	offsetTo PointA

tion (BCS)	2			width [PRBs]			[MHz] Note 2	[ARFCN]		PointA [ARFCN]	rier [Carrier PRBs]	SCS [kHz]		SSB [ARFCN]		CORES ET#0 [RBs] Note 3	Index (Offset [RBs]) Note 4	(SIB1) [PRBs] Note 4
50 + 200 + 200 (0)	CC1	50	120	32	Downlink	Low	24275.04	2017083	24252	2016699	0	120	22257	2016955	8	0	0 (0)	0
					&	Mid	25674.96	2040415	25505.04	2037583	102		22338	2040283	6	0	0 (0)	204
					Uplink	High	27078.12	2063801	26329.32	2051321	504		22420	2063899	1	6	1 (4)	1028
	Channel spacing CC1-CC2=121,92 MHz (Note 1)																	
	CC2	200	120	132	Downlink	Low	24396.96	2019115	24301.92	2017531	0	120	22260	2017819	0	2	0 (0)	4
					&	Mid	25796.88	2042447	25554.96	2038415	102		22341	2041147	10	1	0 (0)	206
					Uplink	High	27200.04	2065833	26379.24	2052153	504		22423	2064763	5	7	1 (4)	1030
	Channel spacing CC2-CC3=199,92 MHz (Note 1)																	
	CC3	200	120	132	Downlink	Low	24596.88	2022447	24501.84	2020863	0	120	22272	2021275	2	3	1 (4)	14
					&	Mid	25996.8	2045779	25754.88	2041747	102		22353	2044603	0	3	1 (4)	218
					Uplink	High	27399.96	2069165	26579.16	2055485	504		22434	2067931	7	0	1 (4)	1016
100 + 200 + 200 (0)	CC1	100	120	66	Downlink	Low	24300	2017499	24252.48	2016707	0	120	22257	2016955	4	0	0 (0)	0
					&	Mid	25674.96	2040415	25480.56	2037175	102		22337	2039995	6	1	1 (4)	214
					Uplink	High	27052.56	2063375	26279.28	2050487	504		22417	2063035	10	4	1 (4)	1024
	Channel spacing CC1-CC2=147,48 MHz (Note 1)																	
	CC2	200	120	132	Downlink	Low	24447.48	2019957	24352.44	2018373	0	120	22263	2018683	11	2	0 (0)	4
					&	Mid	25822.44	2042873	25580.52	2038841	102		22343	2041723	1	4	1 (4)	220
					Uplink	High	27200.04	2065833	26379.24	2052153	504		22423	2064763	5	7	1 (4)	1030
	Channel spacing CC2-CC3=199,92 MHz (Note 1)																	
	CC3	200	120	132	Downlink	Low	24647.4	2023289	24552.36	2021705	0	120	22275	2022139	1	4	1 (4)	16
					&	Mid	26022.36	2046205	25780.44	2042173	102		22354	2044891	3	1	0 (0)	206
					Uplink	High	27399.96	2069165	26579.16	2055485	504		22434	2067931	7	0	1 (4)	1016
200 + 200 + 200	CC1	200	120	132	Downlink	Low	24350.04	2018333	24255	2016749	0	120	22258	2017243	7	6	1 (4)	20

(0)					&	Mid	25674.96	2040415	25433.04	2036383	102		22334	2039131	6	2	0 (0)	208
					Uplink	High	27000.12	2062501	26179.32	2048821	504		22411	2061307	3	2	1 (4)	1020
	Channel spacing CC1-CC2=199,92 MHz (Note 1)																	
	CC2	200	120	132	Downlink &	Low	24549.96	2021665	24454.92	2020081	0	120	22269	2020411	9	3	0 (0)	6
						Mid	25874.88	2043747	25632.96	2039715	102		22346	2042587	8	3	1 (4)	218
						Uplink	High	27200.04	2065833	26379.24	2052153		504	22423	2064763	5	7	1 (4)	1030
	Channel spacing CC2-CC3=199,92 MHz (Note 1)																	
	CC3	200	120	132	Downlink &	Low	24749.88	2024997	24654.84	2023413	0	120	22281	2023867	11	4	1 (4)	16
						Mid	26074.8	2047079	25832.88	2043047	102		22357	2045755	10	0	0 (0)	204
						Uplink	High	27399.96	2069165	26579.16	2055485		504	22434	2067931	7	0	1 (4)	1016
Note 1: Corresponds to nominal channel spacing in accordance with TS 38.101-1 [7], clause 5.4A.1 for the CC1 and CC2 channel bandwidth combination.																		
Note 2: CCs are specified in increasing frequency order. CC1 is used as PCell if nothing else is specified in the test case.																		
Note 3: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs.																		
Note 4: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-8 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.																		

4.3.1.2.3.2.5

CA_n258F

Table 4.3.1.2.3.2.5-1: NR Intra-Band contiguous CA configuration CA_n258F (PCC=CC1), SCS 60 kHz and frequency raster 60 kHz

CBW combination (BCS)	CC Note 2	CBW [MHz]	SCS [kHz]	carrierBandwidth [PRBs]	Range		Carrier centre [MHz] Note 2	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequency PointA [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS [kHz]	GSCN	absoluteFrequency SSB [ARFCN]	k_{SSB}	Offset carrier CORESET#0 [RBs] Note 3	CORE SET#0 Index (Offset [RBs]) Note 4	offsetToPointA (SIB1) [PRBs] Note 4
50 + 200 + 200 + 200 (0)	CC1	50	60	66	Downlink	Low	24275.04	2017083	24251.28	2016687	0	120	22257	2016955	4	2	0 (0)	2
					&	Mid	25575	2038749	25477.8	2037129	102		22333	2038843	10	12	1 (8)	122
					Uplink	High	26878.2	2060469	26491.56	2054025	504		22408	2060443	10	2	1 (8)	514
	Channel spacing CC1-CC2=121,92 MHz (Note 1)																	
	CC2	200	60	264	Downlink	Low	24396.96	2019115	24301.92	2017531	0	120	22260	2017819	0	4	0 (0)	4

					&	Mid	25696.92	2040781	25528.44	2037973	102		22336	2039707	6	14	1 (8)	124
					Uplink	High	27000.12	2062501	26542.2	2054869	504		22411	2061307	6	4	1 (8)	516
	Channel spacing CC2-CC3=199,92 MHz (Note 1)																	
	CC3	200	60	264	Downlink & Uplink	Low	24596.88	2022447	24501.84	2020863	0	120	22272	2021275	4	6	1 (8)	14
						Mid	25896.84	2044113	25728.36	2041305	102		22347	2042875	10	0	1 (8)	110
						High	27200.04	2065833	26742.12	2058201	504		22423	2064763	10	14	1 (8)	526
	Channel spacing CC3-CC4=199,92 MHz (Note 1)																	
	CC4	200	60	264	Downlink & Uplink	Low	24796.8	2025779	24701.76	2024195	0	120	22283	2024443	8	0	0 (0)	0
						Mid	26096.76	2047445	25928.28	2044637	102		22359	2046331	2	11	1 (8)	121
						High	27399.96	2069165	26942.04	2061533	504		22434	2067931	2	1	1 (8)	513
100 + 200 + 200 + 200 (0)	CC1	100	60	132	Downlink & Uplink	Low	24300	2017499	24252.48	2016707	0	120	22257	2016955	8	0	0 (0)	0
						Mid	25575	2038749	25454.04	2036733	102		22331	2038267	10	5	0 (0)	107
						High	26852.64	2060043	26442.24	2053203	504		22405	2059579	4	7	0 (0)	511
	Channel spacing CC1-CC2=147,48 MHz (Note 1)																	
	CC2	200	60	264	Downlink & Uplink	Low	24447.48	2019957	24352.44	2018373	0	120	22263	2018683	10	5	0 (0)	5
						Mid	25722.48	2041207	25554	2038399	102		22337	2039995	0	3	1 (8)	113
						High	27000.12	2062501	26542.2	2054869	504		22411	2061307	6	4	1 (8)	516
	Channel spacing CC2-CC3=199,92 MHz (Note 1)																	
	CC3	200	60	264	Downlink & Uplink	Low	24647.4	2023289	24552.36	2021705	0	120	22275	2022139	2	8	1 (8)	16
						Mid	25922.4	2044539	25753.92	2041731	102		22349	2043451	4	13	1 (8)	123
						High	27200.04	2065833	26742.12	2058201	504		22423	2064763	10	14	1 (8)	526
	Channel spacing CC3-CC4=199,92 MHz (Note 1)																	
	CC4	200	60	264	Downlink & Uplink	Low	24847.32	2026621	24752.28	2025037	0	120	22286	2025307	6	2	0 (0)	2
						Mid	26122.32	2047871	25953.84	2045063	102		22360	2046619	8	7	0 (0)	109
						High	27399.96	2069165	26942.04	2061533	504		22434	2067931	2	1	1 (8)	513
200 + 200 + 200 +	CC1	200	60	264	Downlink	Low	24350.04	2018333	24255	2016749	0	120	22258	2017243	2	13	1 (8)	21

200 (0)					& Uplink													
						Mid	25575	2038749	25406.52	2035941	102		22329	2037691	10	15	1 (8)	125
						High	26800.2	2059169	26342.28	2051537	504		22399	2057851	2	2	0 (0)	506
	Channel spacing CC1-CC2=199,92 MHz (Note 1)																	
	CC2	200	60	264	Downlink & Uplink	Low	24549.96	2021665	24454.92	2020081	0	120	22269	2020411	6	7	0 (0)	7
						Mid	25774.92	2042081	25606.44	2039273	102		22340	2040859	2	2	1 (8)	112
						High	27000.12	2062501	26542.2	2054869	504		22411	2061307	6	4	1 (8)	516
	Channel spacing CC2-CC3=199,92 MHz (Note 1)																	
	CC3	200	60	264	Downlink & Uplink	Low	24749.88	2024997	24654.84	2023413	0	120	22281	2023867	10	9	1 (8)	17
						Mid	25974.84	2045413	25806.36	2042605	102		22352	2044315	6	12	1 (8)	122
						High	27200.04	2065833	26742.12	2058201	504		22423	2064763	10	14	1 (8)	526
	Channel spacing CC3-CC4=199,92 MHz (Note 1)																	
	CC4	200	60	264	Downlink & Uplink	Low	24949.8	2028329	24854.76	2026745	0	120	22292	2027035	2	4	0 (0)	4
						Mid	26174.76	2048745	26006.28	2045937	102		22363	2047483	10	6	0 (0)	108
High						27399.96	2069165	26942.04	2061533	504	22434		2067931	2	1	1 (8)	513	
Note 1: Corresponds to nominal channel spacing in accordance with TS 38.101-1 [7], clause 5.4A.1 for the CC1 and CC2 channel bandwidth combination.																		
Note 2: CCs are specified in increasing frequency order. CC1 is used as PCell if nothing else is specified in the test case.																		
Note 3: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs.																		
Note 4: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-7 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.																		

Table 4.3.1.2.3.2.5-2 NR Intra-Band contiguous CA configuration CA_n258F (PCC=CC1), SCS 120 kHz and frequency raster 120 kHz

CBW combina tion (BCS)	CC Note 2	CBW [MHz]	SCS [kHz]	carrie rBand width [PRB s]	Range		Carrier centre [MHz] Note 2	Carrier centre [ARFCN]	point A [MHz]	absoluteF requency PointA [ARFCN]	offset ToCar rier [Carri er PRBs]	SS block SCS [kHz]	GSCN	absoluteF requency SSB [ARFCN]	k_{SSB}	Offset carrier CORE SET#0 [RBs] Note 3	CORE SET#0 Index (Offse t [RBs]) Note 4	offsetTo PointA (SIB1) [PRBs] Note 4
50 + 200 + 200 + 200 (0)	CC1	50	120	32	Downlink	Low	24275.04	2017083	24252	2016699	0	120	22257	2016955	8	0	0 (0)	0
					&	Mid	25575	2038749	25405.08	2035917	102		22333	2038843	11	5	1 (4)	222

100 + 200 + 200 + 200 + 200 (0)					Uplink													
					High	26878.2	2060469	26129.4	2047989	504		22408	2060443	11	0	1 (4)	1016	
	Channel spacing CC1-CC2=121,92 MHz (Note 1)																	
	CC2	200	120	132	Downlink &	Low	24396.96	2019115	24301.92	2017531	0	120	22260	2017819	0	2	0 (0)	4
						Mid	25696.92	2040781	25455	2036749	102		22336	2039707	3	7	1 (4)	226
					Uplink	High	27000.12	2062501	26179.32	2048821	504		22411	2061307	3	2	1 (4)	1020
	Channel spacing CC2-CC3=199,92 MHz (Note 1)																	
	CC3	200	120	132	Downlink &	Low	24596.88	2022447	24501.84	2020863	0	120	22272	2021275	2	3	1 (4)	14
						Mid	25896.84	2044113	25654.92	2040081	102		22347	2042875	5	0	1 (4)	212
					Uplink	High	27200.04	2065833	26379.24	2052153	504		22423	2064763	5	7	1 (4)	1030
	Channel spacing CC3-CC4=199,92 MHz (Note 1)																	
	CC4	200	120	132	Downlink &	Low	24796.8	2025779	24701.76	2024195	0	120	22283	2024443	4	0	0 (0)	0
						Mid	26096.76	2047445	25854.84	2043413	102		22359	2046331	7	5	1 (4)	222
					Uplink	High	27399.96	2069165	26579.16	2055485	504		22434	2067931	7	0	1 (4)	1016
	CC1	100	120	66	Downlink &	Low	24300	2017499	24252.48	2016707	0	120	22257	2016955	4	0	0 (0)	0
						Mid	25575	2038749	25380.6	2035509	102		22331	2038267	11	2	0 (0)	208
					Uplink	High	26852.64	2060043	26079.36	2047155	504		22405	2059579	8	3	0 (0)	1014
	Channel spacing CC1-CC2=147,48 MHz (Note 1)																	
	CC2	200	120	132	Downlink &	Low	24447.48	2019957	24352.44	2018373	0	120	22263	2018683	11	2	0 (0)	4
						Mid	25722.48	2041207	25480.56	2037175	102		22337	2039995	6	1	1 (4)	214
					Uplink	High	27000.12	2062501	26179.32	2048821	504		22411	2061307	3	2	1 (4)	1020
	Channel spacing CC2-CC3=199,92 MHz (Note 1)																	
	CC3	200	120	132	Downlink &	Low	24647.4	2023289	24552.36	2021705	0	120	22275	2022139	1	4	1 (4)	16
						Mid	25922.4	2044539	25680.48	2040507	102		22349	2043451	8	6	1 (4)	224
					Uplink	High	27200.04	2065833	26379.24	2052153	504		22423	2064763	5	7	1 (4)	1030
	Channel spacing CC3-CC4=199,92 MHz (Note 1)																	
	CC4	200	120	132	Downlink &	Low	24847.32	2026621	24752.28	2025037	0	120	22286	2025307	3	1	0 (0)	2
Mid						26122.32	2047871	25880.4	2043839	102	22360		2046619	10	3	0 (0)	210	

					Uplink	High	27399.96	2069165	26579.16	2055485	504		22434	2067931	7	0	1 (4)	1016
200 + 200 + 200 + 200 (0)	CC1	200	120	132	Downlink	Low	24350.04	2018333	24255	2016749	0	120	22258	2017243	7	6	1 (4)	20
					& Uplink	Mid	25575	2038749	25333.08	2034717	102		22329	2037691	11	7	1 (4)	226
						High	26800.2	2059169	25979.4	2045489	504		22399	2057851	1	1	0 (0)	1010
	Channel spacing CC1-CC2=199,92 MHz (Note 1)																	
	CC2	200	120	132	Downlink &	Low	24549.96	2021665	24454.92	2020081	0	120	22269	2020411	9	3	0 (0)	6
						Mid	25774.92	2042081	25533	2038049	102		22340	2040859	1	1	1 (4)	214
					Uplink	High	27000.12	2062501	26179.32	2048821	504		22411	2061307	3	2	1 (4)	1020
	Channel spacing CC2-CC3=199,92 MHz (Note 1)																	
	CC3	200	120	132	Downlink &	Low	24749.88	2024997	24654.84	2023413	0	120	22281	2023867	11	4	1 (4)	16
						Mid	25974.84	2045413	25732.92	2041381	102		22352	2044315	3	6	1 (4)	224
					Uplink	High	27200.04	2065833	26379.24	2052153	504		22423	2064763	5	7	1 (4)	1030
	Channel spacing CC3-CC4=199,92 MHz (Note 1)																	
	CC4	200	120	132	Downlink &	Low	24949.8	2028329	24854.76	2026745	0	120	22292	2027035	1	2	0 (0)	4
						Mid	26174.76	2048745	25932.84	2044713	102		22363	2047483	5	3	0 (0)	210
					Uplink	High	27399.96	2069165	26579.16	2055485	504		22434	2067931	7	0	1 (4)	1016

Note 1: Corresponds to nominal channel spacing in accordance with TS 38.101-1 [7], clause 5.4A.1 for the CC1 and CC2 channel bandwidth combination.

Note 2: CCs are specified in increasing frequency order. CC1 is used as PCell if nothing else is specified in the test case.

Note 3: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs.

Note 4: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-8 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.

4.3.1.2.3.2.6

CA_n258G

Table 4.3.1.2.3.2.6-1: NR Intra-Band contiguous CA configuration CA_n258G (PCC=CC1 and SCC=CC2), SCS=60 kHz, nominal channel spacing

CBW combination	CC	CBW [MHz]	SCS [kHz]	carrierB andwidth h [PRBs]	Range	Carrier centre [MHz] Note 2	Carrier centre [ARFCN]	point A [MHz]	absoluteF requency PointA [ARFCN]	offset ToCarrier [Carrier]	SS block SCS	GSCN	absoluteF requency SSB [ARFCN]	k_{SSB}	Offset Carrier CORESET#0	CORE SET#0 Index (Offset)	offset ToPointA (SIB1)

											<i>er</i> <i>PRBs</i>]	[kHz]					[RBs] Note 3	t [RBs]) Note 4	[PRBs] Note 4
50+100	CC1	50	60	66	Downlink & Uplink	Low	24275.04	2017083	24251.28	2016687	0	120	22257	2016955	4	2	0 (0)	2	
						Mid	25824.96	2042915	25727.76	2041295	102		22347	2042875	8	1	1 (8)	111	
						High	27375.6	2068759	26988.96	2062315	504		22437	2068795	0	8	1 (8)	520	
	Channel spacing CC1-CC2=74.4 MHz (Note 1)																		
	CC2	100	60	132	Downlink & Uplink	Low	24349.44	2018323	24301.92	2017531	0	120	22260	2017819	0	4	0 (0)	4	
						Mid	25899.36	2044155	25778.4	2042139	102		22350	2043739	4	3	1 (8)	113	
						High	27450	2069999	27039.6	2063159	504		22440	2069659	8	9	1 (8)	521	
	100+100	CC1	100	60	132	Downlink & Uplink	Low	24300	2017499	24252.48	2016707	0	120	22257	2016955	8	0	0 (0)	0
							Mid	25824.96	2042915	25704	2040899	102		22346	2042587	8	10	1 (8)	120
							High	27350.04	2068333	26939.64	2061493	504		22434	2067931	6	4	1 (8)	516
Channel spacing CC1-CC2=99.96 MHz (Note 1)																			
CC2		100	60	132	Downlink & Uplink	Low	24399.96	2019165	24352.44	2018373	0	120	22263	2018683	10	5	0 (0)	5	
						Mid	25924.92	2044581	25803.96	2042565	102		22352	2044315	10	15	1 (8)	125	
	High					27450	2069999	27039.6	2063159	504	22440		2069659	8	9	1 (8)	521		

Note 1:

Corresponds to nominal channel spacing in accordance with TS 38.101-2 [8], clause 5.4A.1 for the channel bandwidths of the two respective NR component carriers.

Note 2:

CCs are specified in increasing frequency order. CC1 is used as PCell if nothing else is specified in the test case.

Note 3:

The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs.

Note 4:

The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-7 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.

Table 4.3.1.2.3.2.6-2: NR Intra-Band contiguous CA configuration CA_n258G (PCC=CC1 and SCC=CC2), SCS=120 kHz, nominal channel spacing

CBW combinati on	CC	CBW [MHz]	SCS [kHz]	carrierB andwidth [PRBs]	Range		Carrier centre [MHz] Note 2	Carrier centre [ARFCN]	point A [MHz]	absoluteF requency PointA [ARFCN]	offset ToCar rier [Carri er PRBs]	SS bloc k SCS [kHz]	GSCN	absoluteF requency SSB [ARFCN]	k_{SSB}	Offset Carrier CORE SET#0 [RBs] Note 3	CORE SET#0 Index (Offse t [RBs]) Note 1	offset ToPoi ntA (SIB1) [PRBs] Note 1		
50+100	CC1	50	120	32	Downlink & Uplink	Low	24275.04	2017083	24252	2016699	0	120	22257	2016955	8	0	0 (0)	0		
						Mid	25824.96	2042915	25655.04	2040083	102		22347	2042875	4	0	1 (4)	212		
						High	27375.6	2068759	26626.8	2056279	504		22437	2068795	6	3	1 (4)	1022		
	Channel spacing CC1-CC2=74.4 MHz (Note 1)																			
	CC2	100	120	66	Downlink & Uplink	Low	24349.44	2018323	24301.92	2017531	0	120	22260	2017819	0	2	0 (0)	4		
						Mid	25899.36	2044155	25704.96	2040915	102		22350	2043739	8	1	1 (4)	214		
						High	27450	2069999	26676.72	2057111	504		22440	2069659	10	4	1 (4)	1024		
	CC1	100	120	66	Downlink & Uplink	Low	24300	2017499	24252.48	2016707	0	120	22257	2016955	4	0	0 (0)	0		
						Mid	25824.96	2042915	25630.56	2039675	102		22346	2042587	4	5	1 (4)	222		
						High	27350.04	2068333	26576.76	2055445	504		22434	2067931	3	2	1 (4)	1020		

Channel spacing CC1-CC2=99.96 MHz (Note 1)																		
CC2	100	120	66	Downlink & Uplink	Low	24399.96	2019165	24352.44	2018373	0	120	22263	2018683	11	2	0 (0)	4	
					Mid	25924.92	2044581	25730.52	2041341	102		22352	2044315	11	7	1 (4)	226	
					High	27450	2069999	26676.72	2057111	504		22440	2069659	10	4	1 (4)	1024	
Note 1:	Corresponds to nominal channel spacing in accordance with TS 38.101-2 [8], clause 5.4A.1 for the channel bandwidths of the two respective NR component carriers.																	
Note 2:	CCs are specified in increasing frequency order. CC1 is used as PCell if nothing else is specified in the test case.																	
Note 3:	The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs.																	
Note 4:	The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-8 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.																	

4.3.1.2.3.2.7

CA_n258H

Table 4.3.1.2.3.2.7-1: NR Intra-Band contiguous CA configuration CA_n258H (PCC=CC1 and SCC=CC2), SCS=60 kHz, nominal channel spacing

CBW combinati on	CC	CBW [MHz]	SCS [kHz]	carrierB andwidht h [PRBs]	Range		Carrier centre [MHz] Note 2	Carrier centre [ARFCN]	point A [MHz]	absoluteF requency PointA [ARFCN]	offset ToCar rier [Carri er PRBs]	SS bloc k SCS [kHz]	GSCN	absoluteF requency SSB [ARFCN]	<i>k</i> _{SSB}	Offset Carrier CORE SET#0 [RBs] Note 3	CORE SET#0 Index (Offse t [RBs]) Note 4	offset ToPoi ntA (SIB1) [PRBs] Note 4
50+100 +100	CC1	50	60	66	Downlink & Uplink	Low	24275.04	2017083	24251.28	2016687	0	120	22257	2016955	4	2	0 (0)	2
						Mid	25774.92	2042081	25677.72	2040461	102		22344	2042011	2	7	0 (0)	109
						High	27275.64	2067093	26889	2060649	504		22431	2067067	10	2	1 (8)	514
	Channel spacing CC1-CC2=74.4 MHz (Note 1)																	
	CC2	100	60	132	Downlink & Uplink	Low	24349.44	2018323	24301.92	2017531	0	120	22260	2017819	0	4	0 (0)	4
						Mid	25849.32	2043321	25728.36	2041305	102		22347	2042875	10	0	1 (8)	110
						High	27350.04	2068333	26939.64	2061493	504		22434	2067931	6	4	1 (8)	516
	Channel spacing CC2-CC3=99.96 MHz (Note 1)																	
	CC3	100	60	132	Downlink & Uplink	Low	24449.4	2019989	24401.88	2019197	0	120	22266	2019547	2	1	1 (8)	9
						Mid	25949.28	2044987	25828.32	2042971	102		22353	2044603	0	6	1 (8)	116
						High	27450	2069999	27039.6	2063159	504		22440	2069659	8	9	1 (8)	521
100+100 +100	CC1	100	60	132	Downlink & Uplink	Low	24300	2017499	24252.48	2016707	0	120	22257	2016955	8	0	0 (0)	0
						Mid	25774.92	2042081	25653.96	2040065	102		22343	2041723	2	8	1 (8)	118
						High	27250.08	2066667	26839.68	2059827	504		22428	2066203	4	7	0 (0)	511
	Channel spacing CC1-CC2=99.96 MHz (Note 1)																	
	CC2	100	60	132	Downlink & Uplink	Low	24399.96	2019165	24352.44	2018373	0	120	22263	2018683	10	5	0 (0)	5
						Mid	25874.88	2043747	25753.92	2041731	102		22349	2043451	4	13	1 (8)	123
						High	27350.04	2068333	26939.64	2061493	504		22434	2067931	6	4	1 (8)	516
	Channel spacing CC2-CC3=99.96 MHz (Note 1)																	
	CC3	100	60	132	Downlink & Uplink	Low	24499.92	2020831	24452.4	2020039	0	120	22269	2020411	0	3	1 (8)	11
Mid						25974.84	2045413	25853.88	2043397	102	22354		2044891	6	2	0 (0)	104	

					Uplink	High	27450	2069999	27039.6	2063159	504		22440	2069659	8	9	1 (8)	521
Note 1:	Corresponds to nominal channel spacing in accordance with TS 38.101-2 [8], clause 5.4A.1 for the channel bandwidths of the two respective NR component carriers.																	
Note 2:	CCs are specified in increasing frequency order. CC1 is used as PCell if nothing else is specified in the test case.																	
Note 3:	The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs.																	
Note 4:	The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-7 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.																	

Table 4.3.1.2.3.2.7-2: NR Intra-Band contiguous CA configuration CA_n258H (PCC=CC1 and SCC=CC2), SCS=120 kHz, nominal channel spacing

CBW combinati on	CC	CBW [MHz]	SCS [kHz]	carrierB andwidht h [PRBs]	Range		Carrier centre [MHz] Note 2	Carrier centre [ARFCN]	point A [MHz]	absoluteF requency PointA [ARFCN]	offset ToCar rier [Carrie r PRBs]	SS bloc k SCS [kHz]	GSCN	absoluteF requency SSB [ARFCN]	k_{SSB}	Offset Carrier CORES ET#0 [RBs] Note 3	CORE SET#0 Index (Offse t [RBs]) Note 4	offset ToPoi ntA (SIB1) [PRBs] Note 4
50+100 +100	CC1	50	120	32	Downlink & Uplink	Low	24275.04	2017083	24252	2016699	0	120	22257	2016955	8	0	0 (0)	0
						Mid	25775.04	2042083	25605.12	2039251	102		22344	2042011	0	3	0 (0)	210
						High	27275.64	2067093	26526.84	2054613	504		22431	2067067	11	0	1 (4)	1016
	Channel spacing CC1-CC2=74.4 MHz (Note 1)																	
	CC2	100	120	66	Downlink & Uplink	Low	24349.44	2018323	24301.92	2017531	0	120	22260	2017819	0	2	0 (0)	4
						Mid	25849.44	2043323	25655.04	2040083	102		22347	2042875	4	0	1 (4)	212
						High	27350.04	2068333	26576.76	2055445	504		22434	2067931	3	2	1 (4)	1020
	Channel spacing CC2-CC3=99.96 MHz (Note 1)																	
	CC3	100	120	66	Downlink & Uplink	Low	24449.4	2019989	24401.88	2019197	0	120	22266	2019547	7	0	1 (4)	8
						Mid	25949.4	2044989	25755	2041749	102		22353	2044603	11	2	1 (4)	216
						High	27450	2069999	26676.72	2057111	504		22440	2069659	10	4	1 (4)	1024
100+100 +100	CC1	100	120	66	Downlink & Uplink	Low	24300	2017499	24252.48	2016707	0	120	22257	2016955	4	0	0 (0)	0
						Mid	25775.04	2042083	25580.64	2038843	102		22343	2041723	0	4	1 (4)	220
						High	27250.08	2066667	26476.8	2053779	504		22428	2066203	8	3	0 (0)	1014
	Channel spacing CC1-CC2=99.96 MHz (Note 1)																	
	CC2	100	120	66	Downlink & Uplink	Low	24399.96	2019165	24352.44	2018373	0	120	22263	2018683	11	2	0 (0)	4
						Mid	25875	2043749	25680.6	2040509	102		22349	2043451	7	6	1 (4)	224
						High	27350.04	2068333	26576.76	2055445	504		22434	2067931	3	2	1 (4)	1020
	Channel spacing CC2-CC3=99.96 MHz (Note 1)																	
	CC3	100	120	66	Downlink & Uplink	Low	24499.92	2020831	24452.4	2020039	0	120	22269	2020411	6	1	1 (4)	10
						Mid	25974.96	2045415	25780.56	2042175	102		22354	2044891	2	1	0 (0)	206
						High	27450	2069999	26676.72	2057111	504		22440	2069659	10	4	1 (4)	1024
Note 1:	Corresponds to nominal channel spacing in accordance with TS 38.101-2 [8], clause 5.4A.1 for the channel bandwidths of the two respective NR component carriers.																	
Note 2:	CCs are specified in increasing frequency order. CC1 is used as PCell if nothing else is specified in the test case.																	
Note 3:	The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs.																	

Note 4: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-8 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.

4.3.1.2.3.2.8 CA_n258I

Table 4.3.1.2.3.2.8-1: NR Intra-Band contiguous CA configuration CA_n258I (PCC=CC1), SCS 60 kHz and frequency raster 60 kHz

CBW combina tion (BCS)	CC Note 2	CBW [MHz]	SCS [kHz]	carrie rBand width [PRB s]	Range		Carrier centre [MHz] Note 2	Carrier centre [ARFCN]	point A [MHz]	absoluteF requency PointA [ARFCN]	offset ToCar rier [Carri er PRBs]	SS block SCS [kHz]	GSCN	absoluteF requency SSB [ARFCN]	k_{SSB}	Offset carrier CORES ET#0 [RBs] Note 3	CORE SET#0 Index (Offse t [RBs]) Note 4	offsetTo PointA (SIB1) [PRBs] Note 4
50 + 100 + 100 + 100 (0)	CC1	50	60	66	Downlink	Low	24275.04	2017083	24251.28	2016687	0	120	22257	2016955	4	2	0 (0)	2
					& Uplink	Mid	25725	2041249	25627.8	2039629	102		22341	2041147	6	4	0 (0)	106
						High	27175.68	2065427	26789.04	2058983	504		22425	2065339	8	5	0 (0)	509
	Channel spacing CC1-CC2=74,4 MHz (Note 1)																	
	CC2	100	60	132	Downlink & Uplink	Low	24349.44	2018323	24301.92	2017531	0	120	22260	2017819	0	4	0 (0)	4
						Mid	25799.4	2042489	25678.44	2040473	102		22344	2042011	2	6	0 (0)	108
						High	27250.08	2066667	26839.68	2059827	504		22428	2066203	4	7	0 (0)	511
	Channel spacing CC2-CC3=99,96 MHz (Note 1)																	
	CC3	100	60	132	Downlink & Uplink	Low	24449.4	2019989	24401.88	2019197	0	120	22266	2019547	2	1	1 (8)	9
						Mid	25899.36	2044155	25778.4	2042139	102		22350	2043739	4	3	1 (8)	113
						High	27350.04	2068333	26939.64	2061493	504		22434	2067931	6	4	1 (8)	516
	Channel spacing CC3-CC4=99,96 MHz (Note 1)																	
	CC4	100	60	132	Downlink & Uplink	Low	24549.36	2021655	24501.84	2020863	0	120	22272	2021275	4	6	1 (8)	14
						Mid	25999.32	2045821	25878.36	2043805	102		22356	2045467	6	8	1 (8)	118
						High	27450	2069999	27039.6	2063159	504		22440	2069659	8	9	1 (8)	521
100 + 100 + 100 + 100	CC1	100	60	132	Downlink	Low	24300	2017499	24252.48	2016707	0	120	22257	2016955	8	0	0 (0)	0

(0)					&	Mid	25725	2041249	25604.04	2039233	102		22340	2040859	6	5	1 (8)	115
					Uplink	High	27150.12	2065001	26739.72	2058161	504		22422	2064475	2	2	0 (0)	506
	Channel spacing CC1-CC2=99,96 MHz (Note 1)																	
	CC2	100	60	132	Downlink &	Low	24399.96	2019165	24352.44	2018373	0	120	22263	2018683	10	5	0 (0)	5
						Mid	25824.96	2042915	25704	2040899	102		22346	2042587	8	10	1 (8)	120
					Uplink	High	27250.08	2066667	26839.68	2059827	504		22428	2066203	4	7	0 (0)	511
	Channel spacing CC2-CC3=99,96 MHz (Note 1)																	
	CC3	100	60	132	Downlink &	Low	24499.92	2020831	24452.4	2020039	0	120	22269	2020411	0	3	1 (8)	11
						Mid	25924.92	2044581	25803.96	2042565	102		22352	2044315	10	15	1 (8)	125
					Uplink	High	27350.04	2068333	26939.64	2061493	504		22434	2067931	6	4	1 (8)	516
	Channel spacing CC3-CC4=99,96 MHz (Note 1)																	
	CC4	100	60	132	Downlink &	Low	24599.88	2022497	24552.36	2021705	0	120	22275	2022139	2	8	1 (8)	16
						Mid	26024.88	2046247	25903.92	2044231	102		22357	2045755	0	5	0 (0)	107
					Uplink	High	27450	2069999	27039.6	2063159	504		22440	2069659	8	9	1 (8)	521
Note 1:	Corresponds to nominal channel spacing in accordance with TS 38.101-1 [7], clause 5.4A.1 for the CC1 and CC2 channel bandwidth combination.																	
Note 2:	CCs are specified in increasing frequency order. CC1 is used as PCell if nothing else is specified in the test case.																	
Note 3:	The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs.																	
Note 4:	The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-7 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.																	

Table 4.3.1.2.3.2.8-2: NR Intra-Band contiguous CA configuration CA_n258I (PCC=CC1), SCS 120 kHz and frequency raster 120 kHz

CBW combination (BCS)	CC Note 2	CBW [MHz]	SCS [kHz]	carrier Bandwidth [PRBs]	Range		Carrier centre [MHz] Note 2	Carrier centre [ARFCN]	point A [MHz]	absolute Frequency PointA [ARFCN]	offset ToCarrier [Carrier PRBs]	SS block SCS [kHz]	GSCN	absolute Frequency SSB [ARFCN]	k_{SSB}	Offset carrier CORESET#0 [RBs] Note 3	CORESET#0 Index (Offset [RBs]) Note 4	offsetToPointA (SIB1) [PRBs] Note 4
50 + 100 + 100 (0)	CC1	50	120	32	Downlink	Low	24275.04	2017083	24252	2016699	0	120	22257	2016955	8	0	0 (0)	0
						Mid	25725	2041249	25555.08	2038417	102		22341	2041147	9	1	0 (0)	206
					Uplink	High	27175.68	2065427	26426.88	2052947	504		22425	2065339	4	2	0 (0)	1012

Channel spacing CC1-CC2=74,4 MHz (Note 1)																		
CC2	100	120	66	Downlink &	Low	24349.44	2018323	24301.92	2017531	0	120	22260	2017819	0	2	0 (0)	4	
					Mid	25799.4	2042489	25605	2039249	102		22344	2042011	1	3	0 (0)	210	
				Uplink	High	27250.08	2066667	26476.8	2053779	504		22428	2066203	8	3	0 (0)	1014	
Channel spacing CC2-CC3=99,96 MHz (Note 1)																		
CC3	100	120	66	Downlink &	Low	24449.4	2019989	24401.88	2019197	0	120	22266	2019547	7	0	1 (4)	8	
					Mid	25899.36	2044155	25704.96	2040915	102		22350	2043739	8	1	1 (4)	214	
				Uplink	High	27350.04	2068333	26576.76	2055445	504		22434	2067931	3	2	1 (4)	1020	
Channel spacing CC3-CC4=99,96 MHz (Note 1)																		
CC4	100	120	66	Downlink &	Low	24549.36	2021655	24501.84	2020863	0	120	22272	2021275	2	3	1 (4)	14	
					Mid	25999.32	2045821	25804.92	2042581	102		22356	2045467	3	4	1 (4)	220	
				Uplink	High	27450	2069999	26676.72	2057111	504		22440	2069659	10	4	1 (4)	1024	
100 + 100 + 100 + 100 (0)	CC1	100	120	66	Downlink &	Low	24300	2017499	24252.48	2016707	0	120	22257	2016955	4	0	0 (0)	0
						Mid	25725	2041249	25530.6	2038009	102		22340	2040859	9	2	1 (4)	216
					Uplink	High	27150.12	2065001	26376.84	2052113	504		22422	2064475	1	1	0 (0)	1010
	Channel spacing CC1-CC2=99,96 MHz (Note 1)																	
	CC2	100	120	66	Downlink &	Low	24399.96	2019165	24352.44	2018373	0	120	22263	2018683	11	2	0 (0)	4
						Mid	25824.96	2042915	25630.56	2039675	102		22346	2042587	4	5	1 (4)	222
Uplink					High	27250.08	2066667	26476.8	2053779	504	22428		2066203	8	3	0 (0)	1014	
Channel spacing CC2-CC3=99,96 MHz (Note 1)																		
CC3	100	120	66	Downlink &	Low	24499.92	2020831	24452.4	2020039	0	120	22269	2020411	6	1	1 (4)	10	
					Mid	25924.92	2044581	25730.52	2041341	102		22352	2044315	11	7	1 (4)	226	
				Uplink	High	27350.04	2068333	26576.76	2055445	504		22434	2067931	3	2	1 (4)	1020	
Channel spacing CC3-CC4=99,96 MHz (Note 1)																		
CC4	100	120	66	Downlink &	Low	24599.88	2022497	24552.36	2021705	0	120	22275	2022139	1	4	1 (4)	16	
					Mid	26024.88	2046247	25830.48	2043007	102		22357	2045755	6	2	0 (0)	208	
				Uplink	High	27450	2069999	26676.72	2057111	504		22440	2069659	10	4	1 (4)	1024	

Note 1:	Corresponds to nominal channel spacing in accordance with TS 38.101-1 [7], clause 5.4A.1 for the CC1 and CC2 channel bandwidth combination.
Note 2:	CCs are specified in increasing frequency order. CC1 is used as PCell if nothing else is specified in the test case.
Note 3:	The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs.
Note 4:	The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-8 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.

4.3.1.2.3.2.9

CA_n258J

Table 4.3.1.2.3.2.9-1: NR Intra-Band contiguous CA configuration CA_n258J (PCC=CC1), SCS 60 kHz and frequency raster 60 kHz

CBW combination (BCS)	CC Note 2	CBW [MHz]	SCS [kHz]	carrierBand width [PRBs]	Range		Carrier centre [MHz] Note 2	Carrier centre [ARFCN]	point A [MHz]	absoluteF requery PointA [ARFCN]	offset ToCar rier [Carrier PRBs]	SS block SCS [kHz]	GSCN	absoluteF requery SSB [ARFCN]	k_{SSB}	Offset carrier CORES ET#0 [RBs] Note 3	CORE SET#0 Index (Offset [RBs]) Note 4	offsetTo PointA (SIB1) [PRBs] Note 4
50 + 100 + 100 + 100 + 100 (0)	CC1	50	60	66	Downlink & Uplink	Low	24275.04	2017083	24251.28	2016687	0	120	22257	2016955	4	2	0 (0)	2
						Mid	25674.96	2040415	25577.76	2038795	102		22338	2040283	0	2	0 (0)	104
						High	27075.72	2063761	26689.08	2057317	504		22419	2063611	6	0	0 (0)	504
	Channel spacing CC1-CC2=74,4 MHz (Note 1)																	
	CC2	100	60	132	Downlink & Uplink	Low	24349.44	2018323	24301.92	2017531	0	120	22260	2017819	0	4	0 (0)	4
						Mid	25749.36	2041655	25628.4	2039639	102		22341	2041147	8	3	0 (0)	105
						High	27150.12	2065001	26739.72	2058161	504		22422	2064475	2	2	0 (0)	506
	Channel spacing CC2-CC3=99,96 MHz (Note 1)																	
	CC3	100	60	132	Downlink & Uplink	Low	24449.4	2019989	24401.88	2019197	0	120	22266	2019547	2	1	1 (8)	9
						Mid	25849.32	2043321	25728.36	2041305	102		22347	2042875	10	0	1 (8)	110
						High	27250.08	2066667	26839.68	2059827	504		22428	2066203	4	7	0 (0)	511
	Channel spacing CC3-CC4=99,96 MHz (Note 1)																	
	CC4	100	60	132	Downlink & Uplink	Low	24549.36	2021655	24501.84	2020863	0	120	22272	2021275	4	6	1 (8)	14
						Mid	25949.28	2044987	25828.32	2042971	102		22353	2044603	0	6	1 (8)	116
						High	27350.04	2068333	26939.64	2061493	504		22434	2067931	6	4	1 (8)	516

Note 1:	Corresponds to nominal channel spacing in accordance with TS 38.101-1 [7], clause 5.4A.1 for the CC1 and CC2 channel bandwidth combination.
Note 2:	CCs are specified in increasing frequency order. CC1 is used as PCell if nothing else is specified in the test case.
Note 3:	The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs.
Note 4:	The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-7 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-

ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.

Table 4.3.1.2.3.2.9-2: NR Intra-Band contiguous CA configuration CA_n258J (PCC=CC1), SCS 120 kHz and frequency raster 120 kHz

CBW combina tion (BCS)	CC Note 2	CBW [MHz]	SCS [kHz]	carrie rBand width [PRB s]	Range		Carrier centre [MHz] Note 2	Carrier centre [ARFCN]	point A [MHz]	absoluteF requency PointA [ARFCN]	offset ToCar rier [Carri er PRBs]	SS block SCS [kHz]	GSCN	absoluteF requency SSB [ARFCN]	k_{SSB}	Offset carrier CORES ET#0 [RBs] Note 3	CORE SET#0 Index (Offse t [RBs]) Note 4	offsetTo PointA (SIB1) [PRBs] Note 4
50 + 100 + 100 + 100 + 100 (0)	CC1	50	120	32	Downlink	Low	24275.04	2017083	24252	2016699	0	120	22257	2016955	8	0	0 (0)	0
					& Uplink	Mid	25674.96	2040415	25505.04	2037583	102		22338	2040283	6	0	0 (0)	204
						High	27075.72	2063761	26326.92	2051281	504		22420	2063899	9	7	1 (4)	1030
	Channel spacing CC1-CC2=74,4 MHz (Note 1)																	
	CC2	100	120	66	Downlink &	Low	24349.44	2018323	24301.92	2017531	0	120	22260	2017819	0	2	0 (0)	4
						Mid	25749.36	2041655	25554.96	2038415	102		22341	2041147	10	1	0 (0)	206
					Uplink	High	27150.12	2065001	26376.84	2052113	504		22422	2064475	1	1	0 (0)	1010
	Channel spacing CC2-CC3=99,96 MHz (Note 1)																	
	CC3	100	120	66	Downlink &	Low	24449.4	2019989	24401.88	2019197	0	120	22266	2019547	7	0	1 (4)	8
						Mid	25849.32	2043321	25654.92	2040081	102		22347	2042875	5	0	1 (4)	212
					Uplink	High	27250.08	2066667	26476.8	2053779	504		22428	2066203	8	3	0 (0)	1014
	Channel spacing CC3-CC4=99,96 MHz (Note 1)																	
	CC4	100	120	66	Downlink &	Low	24549.36	2021655	24501.84	2020863	0	120	22272	2021275	2	3	1 (4)	14
						Mid	25949.28	2044987	25754.88	2041747	102		22353	2044603	0	3	1 (4)	218
					Uplink	High	27350.04	2068333	26576.76	2055445	504		22434	2067931	3	2	1 (4)	1020
	Channel spacing CC4-CC5=99,96 MHz (Note 1)																	
	CC5	100	120	66	Downlink &	Low	24649.32	2023321	24601.8	2022529	0	120	22278	2023003	9	5	1 (4)	18
						Mid	26049.24	2046653	25854.84	2043413	102		22359	2046331	7	5	1 (4)	222
					Uplink	High	27450	2069999	26676.72	2057111	504		22440	2069659	10	4	1 (4)	1024
100 +	CC1	100	120	66	Downlink	Low	24300	2017499	24252.48	2016707	0	120	22257	2016955	4	0	0 (0)	0

100 + 100 + 100 + 100 + (0)					& Uplink													
						Mid	25674.96	2040415	25480.56	2037175	102		22337	2039995	6	1	1 (4)	214
						High	27050.16	2063335	26276.88	2050447	504		22417	2063035	6	6	1 (4)	1028
	Channel spacing CC1-CC2=99,96 MHz (Note 1)																	
	CC2	100	120	66	Downlink & Uplink	Low	24399.96	2019165	24352.44	2018373	0	120	22263	2018683	11	2	0 (0)	4
						Mid	25774.92	2042081	25580.52	2038841	102		22343	2041723	1	4	1 (4)	220
						High	27150.12	2065001	26376.84	2052113	504		22422	2064475	1	1	0 (0)	1010
	Channel spacing CC2-CC3=99,96 MHz (Note 1)																	
	CC3	100	120	66	Downlink & Uplink	Low	24499.92	2020831	24452.4	2020039	0	120	22269	2020411	6	1	1 (4)	10
						Mid	25874.88	2043747	25680.48	2040507	102		22349	2043451	8	6	1 (4)	224
						High	27250.08	2066667	26476.8	2053779	504		22428	2066203	8	3	0 (0)	1014
	Channel spacing CC3-CC4=99,96 MHz (Note 1)																	
	CC4	100	120	66	Downlink & Uplink	Low	24599.88	2022497	24552.36	2021705	0	120	22275	2022139	1	4	1 (4)	16
						Mid	25974.84	2045413	25780.44	2042173	102		22354	2044891	3	1	0 (0)	206
						High	27350.04	2068333	26576.76	2055445	504		22434	2067931	3	2	1 (4)	1020
	Channel spacing CC4-CC5=99,96 MHz (Note 1)																	
	CC5	100	120	66	Downlink & Uplink	Low	24699.84	2024163	24652.32	2023371	0	120	22281	2023867	8	6	1 (4)	20
						Mid	26074.8	2047079	25880.4	2043839	102		22360	2046619	10	3	0 (0)	210
						High	27450	2069999	26676.72	2057111	504		22440	2069659	10	4	1 (4)	1024
	Note 1:	Corresponds to nominal channel spacing in accordance with TS 38.101-1 [7], clause 5.4A.1 for the CC1 and CC2 channel bandwidth combination.																
Note 2:	CCs are specified in increasing frequency order. CC1 is used as PCell if nothing else is specified in the test case.																	
Note 3:	The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs.																	
Note 4:	The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-8 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.																	

Table 4.3.1.2.3.2.10-1: NR Intra-Band contiguous CA configuration CA_n258K (PCC=CC1), SCS 60 kHz and frequency raster 60 kHz

CBW combina- tion (BCS)	CC Note 2	CBW [MHz]	SCS [kHz]	carrie rBand width [PRB s]	Range		Carrier centre [MHz] Note 2	Carrier centre [ARFCN]	point A [MHz]	absoluteF requency PointA [ARFCN]	offset ToCar rier [Carri er PRBs]	SS block SCS [kHz]	GSCN	absoluteF requency SSB [ARFCN]	k_{SSB}	Offset carrier CORES ET#0 [RBs] Note 3	CORE SET#0 Index (Offse t [RBs]) Note 4	offsetTo PointA (SIB1) [PRBs] Note 4
50 + 100 + 100 + 100 + 100 + 100 (0)	CC1	50	60	66	Downlink	Low	24275.04	2017083	24251.28	2016687	0	120	22257	2016955	4	2	0 (0)	2
						Mid	25624.92	2039581	25527.72	2037961	102		22336	2039707	6	15	1 (8)	125
					High	26975.76	2062095	26589.12	2055651	504	22414		2062171	4	11	1 (8)	523	
	Channel spacing CC1-CC2=74,4 MHz (Note 1)																	
	CC2	100	60	132	Downlink & Uplink	Low	24349.44	2018323	24301.92	2017531	0	120	22260	2017819	0	4	0 (0)	4
						Mid	25699.32	2040821	25578.36	2038805	102		22338	2040283	2	1	0 (0)	103
					High	27050.16	2063335	26639.76	2056495	504	22417		2063035	0	13	1 (8)	525	
	Channel spacing CC2-CC3=99,96 MHz (Note 1)																	
	CC3	100	60	132	Downlink & Uplink	Low	24449.4	2019989	24401.88	2019197	0	120	22266	2019547	2	1	1 (8)	9
						Mid	25799.28	2042487	25678.32	2040471	102		22344	2042011	4	6	0 (0)	108
					High	27150.12	2065001	26739.72	2058161	504	22422		2064475	2	2	0 (0)	506	
	Channel spacing CC3-CC4=99,96 MHz (Note 1)																	
	CC4	100	60	132	Downlink & Uplink	Low	24549.36	2021655	24501.84	2020863	0	120	22272	2021275	4	6	1 (8)	14
						Mid	25899.24	2044153	25778.28	2042137	102		22350	2043739	6	3	1 (8)	113
					High	27250.08	2066667	26839.68	2059827	504	22428		2066203	4	7	0 (0)	511	
	Channel spacing CC4-CC5=99,96 MHz (Note 1)																	
	CC5	100	60	132	Downlink & Uplink	Low	24649.32	2023321	24601.8	2022529	0	120	22278	2023003	6	11	1 (8)	19
						Mid	25999.2	2045819	25878.24	2043803	102		22356	2045467	8	8	1 (8)	118
					High	27350.04	2068333	26939.64	2061493	504	22434		2067931	6	4	1 (8)	516	
	Channel spacing CC5-CC6=99,96 MHz (Note 1)																	
	CC6	100	60	132	Downlink & Uplink	Low	24749.28	2024987	24701.76	2024195	0	120	22283	2024443	8	0	0 (0)	0
Mid						26099.16	2047485	25978.2	2045469	102	22362		2047195	10	13	1 (8)	123	
High					27450	2069999	27039.6	2063159	504	22440	2069659		8	9	1 (8)	521		
100 + 100 + 100 + 100 + 100 (0)	CC1	100	60	132	Downlink &	Low	24300	2017499	24252.48	2016707	0	120	22257	2016955	8	0	0 (0)	0
						Mid	25624.92	2039581	25503.96	2037565	102		22334	2039131	6	0	1 (8)	110

					Uplink	High	26950.2	2061669	26539.8	2054829	504		22411	2061307	10	7	1 (8)	519
Channel spacing CC1-CC2=99,96 MHz (Note 1)																		
CC2	100	60	132	Downlink & Uplink	Low	24399.96	2019165	24352.44	2018373	0	120	22263	2018683	10	5	0 (0)	5	
					Mid	25724.88	2041247	25603.92	2039231	102		22340	2040859	8	5	1 (8)	115	
					High	27050.16	2063335	26639.76	2056495	504		22417	2063035	0	13	1 (8)	525	
Channel spacing CC2-CC3=99,96 MHz (Note 1)																		
CC3	100	60	132	Downlink & Uplink	Low	24499.92	2020831	24452.4	2020039	0	120	22269	2020411	0	3	1 (8)	11	
					Mid	25824.84	2042913	25703.88	2040897	102		22346	2042587	10	10	1 (8)	120	
					High	27150.12	2065001	26739.72	2058161	504		22422	2064475	2	2	0 (0)	506	
Channel spacing CC3-CC4=99,96 MHz (Note 1)																		
CC4	100	60	132	Downlink & Uplink	Low	24599.88	2022497	24552.36	2021705	0	120	22275	2022139	2	8	1 (8)	16	
					Mid	25924.8	2044579	25803.84	2042563	102		22351	2044027	0	0	0 (0)	102	
					High	27250.08	2066667	26839.68	2059827	504		22428	2066203	4	7	0 (0)	511	
Channel spacing CC4-CC5=99,96 MHz (Note 1)																		
CC5	100	60	132	Downlink & Uplink	Low	24699.84	2024163	24652.32	2023371	0	120	22281	2023867	4	13	1 (8)	21	
					Mid	26024.76	2046245	25903.8	2044229	102		22357	2045755	2	5	0 (0)	107	
					High	27350.04	2068333	26939.64	2061493	504		22434	2067931	6	4	1 (8)	516	
Channel spacing CC5-CC6=99,96 MHz (Note 1)																		
CC6	100	60	132	Downlink & Uplink	Low	24799.8	2025829	24752.28	2025037	0	120	22286	2025307	6	2	0 (0)	2	
					Mid	26124.72	2047911	26003.76	2045895	102		22363	2047483	4	2	1 (8)	112	
					High	27450	2069999	27039.6	2063159	504		22440	2069659	8	9	1 (8)	521	
Note 1:	Corresponds to nominal channel spacing in accordance with TS 38.101-1 [7], clause 5.4A.1 for the CC1 and CC2 channel bandwidth combination.																	
Note 2:	CCs are specified in increasing frequency order. CC1 is used as PCell if nothing else is specified in the test case.																	
Note 3:	The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs.																	
Note 4:	The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-7 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.																	

Table 4.3.1.2.3.2.10-2: NR Intra-Band contiguous CA configuration CA_n258K (PCC=CC1), SCS 120 kHz and frequency raster 120 kHz

CBW combination (BCS)	CC Note 2	CBW [MHz]	SCS [kHz]	carrierBandwidth [PRBs]	Range		Carrier centre [MHz] Note 2	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequency PointA [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS [kHz]	GSCN	absoluteFrequency SSB [ARFCN]	k_{SSB}	Offset carrier CORESET#0 [RBs] Note 3	CORE SET#0 Index (Offset [RBs]) Note 4	offsetToPointA (SIB1) [PRBs] Note 4
50 + 100 + 100 + 100 + 100 (0)	CC1	50	120	32	Downlink	Low	24275.04	2017083	24252	2016699	0	120	22257	2016955	8	0	0 (0)	0
					&	Mid	25625.04	2039583	25455.12	2036751	102		22336	2039707	2	7	1 (4)	226

					Uplink	High	26975.76	2062095	26226.96	2049615	504		22414	2062171	2	5	1 (4)	1026														
	Channel spacing CC1-CC2=74,4 MHz (Note 1)																															
	CC2	100	120	66	Downlink & Uplink	Low	24349.44	2018323	24301.92	2017531	0	120	22260	2017819	0	2	0 (0)	4														
						Mid	25699.44	2040823	25505.04	2037583	102		22338	2040283	6	0	0 (0)	204														
						High	27050.16	2063335	26276.88	2050447	504		22417	2063035	6	6	1 (4)	1028														
	Channel spacing CC2-CC3=99,96 MHz (Note 1)																															
	CC3	100	120	66	Downlink & Uplink	Low	24449.4	2019989	24401.88	2019197	0	120	22266	2019547	7	0	1 (4)	8														
						Mid	25799.4	2042489	25605	2039249	102		22344	2042011	1	3	0 (0)	210														
						High	27150.12	2065001	26376.84	2052113	504		22422	2064475	1	1	0 (0)	1010														
	Channel spacing CC3-CC4=99,96 MHz (Note 1)																															
	CC4	100	120	66	Downlink & Uplink	Low	24549.36	2021655	24501.84	2020863	0	120	22272	2021275	2	3	1 (4)	14														
						Mid	25899.36	2044155	25704.96	2040915	102		22350	2043739	8	1	1 (4)	214														
						High	27250.08	2066667	26476.8	2053779	504		22428	2066203	8	3	0 (0)	1014														
	Channel spacing CC4-CC5=99,96 MHz (Note 1)																															
	CC5	100	120	66	Downlink & Uplink	Low	24649.32	2023321	24601.8	2022529	0	120	22278	2023003	9	5	1 (4)	18														
						Mid	25999.32	2045821	25804.92	2042581	102		22356	2045467	3	4	1 (4)	220														
						High	27350.04	2068333	26576.76	2055445	504		22434	2067931	3	2	1 (4)	1020														
	Channel spacing CC5-CC6=99,96 MHz (Note 1)																															
	CC6	100	120	66	Downlink & Uplink	Low	24749.28	2024987	24701.76	2024195	0	120	22283	2024443	4	0	0 (0)	0														
						Mid	26099.28	2047487	25904.88	2044247	102		22362	2047195	10	6	1 (4)	224														
						High	27450	2069999	26676.72	2057111	504		22440	2069659	10	4	1 (4)	1024														
	100 + 100 + 100 + 100 + 100 + 100 (0)	CC1	100	120	66	Downlink	Low	24300	2017499	24252.48	2016707	0	120	22257	2016955	4	0	0 (0)	0													
																				& Uplink	Mid	25625.04	2039583	25430.64	2036343	102	22334	2039131	2	0	1 (4)	212
																					High	26950.2	2061669	26176.92	2048781	504	22411	2061307	11	3	1 (4)	1022
Channel spacing CC1-CC2=99,96 MHz (Note 1)																																
CC2		100	120	66	Downlink & Uplink	Low	24399.96	2019165	24352.44	2018373	0	120	22263	2018683	11	2	0 (0)	4														
						Mid	25725	2041249	25530.6	2038009	102		22340	2040859	9	2	1 (4)	216														
	High					27050.16	2063335	26276.88	2050447	504	22417		2063035	6	6	1 (4)	1028															
Channel spacing CC2-CC3=99,96 MHz (Note 1)																																
CC3	100	120	66	Downlink & Uplink	Low	24499.92	2020831	24452.4	2020039	0	120	22269	2020411	6	1	1 (4)	10															
					Mid	25824.96	2042915	25630.56	2039675	102		22346	2042587	4	5	1 (4)	222															
					High	27150.12	2065001	26376.84	2052113	504		22422	2064475	1	1	0 (0)	1010															
Channel spacing CC3-CC4=99,96 MHz (Note 1)																																
CC4	100	120	66	Downlink & Uplink	Low	24599.88	2022497	24552.36	2021705	0	120	22275	2022139	1	4	1 (4)	16															
					Mid	25924.92	2044581	25730.52	2041341	102		22352	2044315	11	7	1 (4)	226															
					High	27250.08	2066667	26476.8	2053779	504		22428	2066203	8	3	0 (0)	1014															
Channel spacing CC4-CC5=99,96 MHz (Note 1)																																
CC5	100	120	66	Downlink &	Low	24699.84	2024163	24652.32	2023371	0	120	22281	2023867	8	6	1 (4)	20															
					Mid	26024.88	2046247	25830.48	2043007	102		22357	2045755	6	2	0 (0)	208															

					Uplink	High	27350.04	2068333	26576.76	2055445	504		22434	2067931	3	2	1 (4)	1020
Channel spacing CC5-CC6=99,96 MHz (Note 1)																		
CC6	100	120	66	Downlink & Uplink	Low	24799.8	2025829	24752.28	2025037	0	120	22286	2025307	3	1	0 (0)	2	
					Mid	26124.84	2047913	25930.44	2044673	102		22363	2047483	1	1	1 (4)	214	
					High	27450	2069999	26676.72	2057111	504		22440	2069659	10	4	1 (4)	1024	
Note 1:	Corresponds to nominal channel spacing in accordance with TS 38.101-1 [7], clause 5.4A.1 for the CC1 and CC2 channel bandwidth combination.																	
Note 2:	CCs are specified in increasing frequency order. CC1 is used as PCell if nothing else is specified in the test case.																	
Note 3:	The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs.																	
Note 4:	The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-8 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.																	

4.3.1.2.3.2.11 CA_n258L

Table 4.3.1.2.3.2.11-1: NR Intra-Band contiguous CA configuration CA_n258L (PCC=CC1), SCS 60 kHz and frequency raster 60 kHz

CBW combination (BCS)	CC Note 2	CBW [MHz]	SCS [kHz]	carrierBandwidth [PRBs]	Range		Carrier centre [MHz] Note 2	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequency PointA [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS [kHz]	GSCN	absoluteFrequency SSB [ARFCN]	k_{SSB}	Offset carrier CORESET#0 [RBs] Note 3	CORE SET#0 Index (Offset [RBs]) Note 4	offsetToPointA (SIB1) [PRBs] Note 4
50 + 100 + 100 + 100 + 100 + 100 (0)	CC1	50	60	66	Downlink	Low	24275.04	2017083	24251.28	2016687	0	120	22257	2016955	4	2	0 (0)	2
						Mid	25575	2038749	25477.8	2037129	102		22333	2038843	10	12	1 (8)	122
					Uplink	High	26875.8	2060429	26489.16	2053985	504		22408	2060443	2	6	1 (8)	518
	Channel spacing CC1-CC2=74,4 MHz (Note 1)																	
	CC2	100	60	132	Downlink &	Low	24349.44	2018323	24301.92	2017531	0	120	22260	2017819	0	4	0 (0)	4
						Mid	25649.4	2039989	25528.44	2037973	102		22336	2039707	6	14	1 (8)	124
					Uplink	High	26950.2	2061669	26539.8	2054829	504		22411	2061307	10	7	1 (8)	519
	Channel spacing CC2-CC3=99,96 MHz (Note 1)																	
	CC3	100	60	132	Downlink &	Low	24449.4	2019989	24401.88	2019197	0	120	22266	2019547	2	1	1 (8)	9
						Mid	25749.36	2041655	25628.4	2039639	102		22341	2041147	8	3	0 (0)	105

				Uplink	High	27050.16	2063335	26639.76	2056495	504		22417	2063035	0	13	1 (8)	525	
Channel spacing CC3-CC4=99,96 MHz (Note 1)																		
CC4	100	60	132	Downlink &	Low	24549.36	2021655	24501.84	2020863	0	120	22272	2021275	4	6	1 (8)	14	
					Mid	25849.32	2043321	25728.36	2041305	102		22347	2042875	10	0	1 (8)	110	
				Uplink	High	27150.12	2065001	26739.72	2058161	504		22422	2064475	2	2	0 (0)	506	
Channel spacing CC4-CC5=99,96 MHz (Note 1)																		
CC5	100	60	132	Downlink &	Low	24649.32	2023321	24601.8	2022529	0	120	22278	2023003	6	11	1 (8)	19	
					Mid	25949.28	2044987	25828.32	2042971	102		22353	2044603	0	6	1 (8)	116	
				Uplink	High	27250.08	2066667	26839.68	2059827	504		22428	2066203	4	7	0 (0)	511	
Channel spacing CC5-CC6=99,96 MHz (Note 1)																		
CC6	100	60	132	Downlink &	Low	24749.28	2024987	24701.76	2024195	0	120	22283	2024443	8	0	0 (0)	0	
					Mid	26049.24	2046653	25928.28	2044637	102		22359	2046331	2	11	1 (8)	121	
				Uplink	High	27350.04	2068333	26939.64	2061493	504		22434	2067931	6	4	1 (8)	516	
Channel spacing CC6-CC7=99,96 MHz (Note 1)																		
CC7	100	60	132	Downlink &	Low	24849.24	2026653	24801.72	2025861	0	120	22289	2026171	10	5	0 (0)	5	
					Mid	26149.2	2048319	26028.24	2046303	102		22364	2047771	4	0	0 (0)	102	
				Uplink	High	27450	2069999	27039.6	2063159	504		22440	2069659	8	9	1 (8)	521	
100 + 100 + 100 + 100 + 100 + 100 + 100 (0)	CC1	100	60	132	Downlink	Low	24300	2017499	24252.48	2016707	0	120	22257	2016955	8	0	0 (0)	0
						&	Mid	25575	2038749	25454.04	2036733		102	22331	2038267	10	5	0 (0)	107
					Uplink	High	26850.24	2060003	26439.84	2053163	504		22405	2059579	8	2	1 (8)	514
	Channel spacing CC1-CC2=99,96 MHz (Note 1)																	
	CC2	100	60	132	Downlink &	Low	24399.96	2019165	24352.44	2018373	0	120	22263	2018683	10	5	0 (0)	5
						Mid	25674.96	2040415	25554	2038399	102		22337	2039995	0	3	1 (8)	113
					Uplink	High	26950.2	2061669	26539.8	2054829	504		22411	2061307	10	7	1 (8)	519
Channel spacing CC2-CC3=99,96 MHz (Note 1)																		
CC3	100	60	132	Downlink	Low	24499.92	2020831	24452.4	2020039	0	120	22269	2020411	0	3	1 (8)	11	

				&	Mid	25774.92	2042081	25653.96	2040065	102		22343	2041723	2	8	1 (8)	118
				Uplink	High	27050.16	2063335	26639.76	2056495	504		22417	2063035	0	13	1 (8)	525
Channel spacing CC3-CC4=99,96 MHz (Note 1)																	
CC4	100	60	132	Downlink &	Low	24599.88	2022497	24552.36	2021705	0	120	22275	2022139	2	8	1 (8)	16
					Mid	25874.88	2043747	25753.92	2041731	102		22349	2043451	4	13	1 (8)	123
				Uplink	High	27150.12	2065001	26739.72	2058161	504		22422	2064475	2	2	0 (0)	506
Channel spacing CC4-CC5=99,96 MHz (Note 1)																	
CC5	100	60	132	Downlink &	Low	24699.84	2024163	24652.32	2023371	0	120	22281	2023867	4	13	1 (8)	21
					Mid	25974.84	2045413	25853.88	2043397	102		22354	2044891	6	2	0 (0)	104
				Uplink	High	27250.08	2066667	26839.68	2059827	504		22428	2066203	4	7	0 (0)	511
Channel spacing CC5-CC6=99,96 MHz (Note 1)																	
CC6	100	60	132	Downlink &	Low	24799.8	2025829	24752.28	2025037	0	120	22286	2025307	6	2	0 (0)	2
					Mid	26074.8	2047079	25953.84	2045063	102		22360	2046619	8	7	0 (0)	109
				Uplink	High	27350.04	2068333	26939.64	2061493	504		22434	2067931	6	4	1 (8)	516
Channel spacing CC6-CC7=99,96 MHz (Note 1)																	
CC7	100	60	132	Downlink &	Low	24899.76	2027495	24852.24	2026703	0	120	22292	2027035	8	7	0 (0)	7
					Mid	26174.76	2048745	26053.8	2046729	102		22366	2048347	10	4	1 (8)	114
				Uplink	High	27450	2069999	27039.6	2063159	504		22440	2069659	8	9	1 (8)	521

Note 1: Corresponds to nominal channel spacing in accordance with TS 38.101-1 [7], clause 5.4A.1 for the CC1 and CC2 channel bandwidth combination.

Note 2: CCs are specified in increasing frequency order. CC1 is used as PCell if nothing else is specified in the test case.

Note 3: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs.

Note 4: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-7 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.

Table 4.3.1.2.3.2.11-2: NR Intra-Band contiguous CA configuration CA_n258L (PCC=CC1), SCS 120 kHz and frequency raster 120 kHz

CBW combination (BCS)	CC Note 2	CBW [MHz]	SCS [kHz]	carrierBandwidth [PRBs]	Range	Carrier centre [MHz] Note 2	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequencyPointA [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS [kHz]	GSCN	absoluteFrequencySSB [ARFCN]	k_{SSB}	Offset carrier CORESET#0 [RBs] Note 3	CORE SET#0 Index (Offset [RBs])	offsetToPointA (SIB1) [PRBs] Note 4

																		Note 4	
50 + 100 + 100 + 100 + 100 + 100 + 100 (0)	CC1	50	120	32	Downlink	Low	24275.04	2017083	24252	2016699	0	120	22257	2016955	8	0	0 (0)	0	
					&	Mid	25575	2038749	25405.08	2035917	102		22333	2038843	11	5	1 (4)	222	
					Uplink	High	26875.8	2060429	26127	2047949	504		22408	2060443	7	2	1 (4)	1020	
	Channel spacing CC1-CC2=74,4 MHz (Note 1)																		
	CC2	100	120	66	Downlink &	Low	24349.44	2018323	24301.92	2017531	0	120	22260	2017819	0	2	0 (0)	4	
						Mid	25649.4	2039989	25455	2036749	102		22336	2039707	3	7	1 (4)	226	
					Uplink	High	26950.2	2061669	26176.92	2048781	504		22411	2061307	11	3	1 (4)	1022	
	Channel spacing CC2-CC3=99,96 MHz (Note 1)																		
	CC3	100	120	66	Downlink &	Low	24449.4	2019989	24401.88	2019197	0	120	22266	2019547	7	0	1 (4)	8	
						Mid	25749.36	2041655	25554.96	2038415	102		22341	2041147	10	1	0 (0)	206	
					Uplink	High	27050.16	2063335	26276.88	2050447	504		22417	2063035	6	6	1 (4)	1028	
	Channel spacing CC3-CC4=99,96 MHz (Note 1)																		
	CC4	100	120	66	Downlink &	Low	24549.36	2021655	24501.84	2020863	0	120	22272	2021275	2	3	1 (4)	14	
						Mid	25849.32	2043321	25654.92	2040081	102		22347	2042875	5	0	1 (4)	212	
					Uplink	High	27150.12	2065001	26376.84	2052113	504		22422	2064475	1	1	0 (0)	1010	
	Channel spacing CC4-CC5=99,96 MHz (Note 1)																		
	CC5	100	120	66	Downlink &	Low	24649.32	2023321	24601.8	2022529	0	120	22278	2023003	9	5	1 (4)	18	
						Mid	25949.28	2044987	25754.88	2041747	102		22353	2044603	0	3	1 (4)	218	
					Uplink	High	27250.08	2066667	26476.8	2053779	504		22428	2066203	8	3	0 (0)	1014	
	Channel spacing CC5-CC6=99,96 MHz (Note 1)																		
	CC6	100	120	66	Downlink &	Low	24749.28	2024987	24701.76	2024195	0	120	22283	2024443	4	0	0 (0)	0	
						Mid	26049.24	2046653	25854.84	2043413	102		22359	2046331	7	5	1 (4)	222	
					Uplink	High	27350.04	2068333	26576.76	2055445	504		22434	2067931	3	2	1 (4)	1020	
	Channel spacing CC6-CC7=99,96 MHz (Note 1)																		
	CC7	100	120	66	Downlink &	Low	24849.24	2026653	24801.72	2025861	0	120	22289	2026171	11	2	0 (0)	4	
						Mid	26149.2	2048319	25954.8	2045079	102		22364	2047771	2	0	0 (0)	204	

					Uplink	High	27450	2069999	26676.72	2057111	504		22440	2069659	10	4	1 (4)	1024	
100 + 100 + 100 + 100 + 100 + 100 + 100 + 100 + 100 + 100 + (0)	CC1	100	120	66	Downlink	Low	24300	2017499	24252.48	2016707	0	120	22257	2016955	4	0	0 (0)	0	
						& Uplink	Mid	25575	2038749	25380.6	2035509		102	22331	2038267	11	2	0 (0)	208
					High		26850.24	2060003	26076.96	2047115	504		22405	2059579	4	1	1 (4)	1018	
	Channel spacing CC1-CC2=99,96 MHz (Note 1)																		
	CC2	100	120	66	Downlink &	Low	24399.96	2019165	24352.44	2018373	0	120	22263	2018683	11	2	0 (0)	4	
						Mid	25674.96	2040415	25480.56	2037175	102		22337	2039995	6	1	1 (4)	214	
					Uplink	High	26950.2	2061669	26176.92	2048781	504		22411	2061307	11	3	1 (4)	1022	
	Channel spacing CC2-CC3=99,96 MHz (Note 1)																		
	CC3	100	120	66	Downlink &	Low	24499.92	2020831	24452.4	2020039	0	120	22269	2020411	6	1	1 (4)	10	
						Mid	25774.92	2042081	25580.52	2038841	102		22343	2041723	1	4	1 (4)	220	
					Uplink	High	27050.16	2063335	26276.88	2050447	504		22417	2063035	6	6	1 (4)	1028	
	Channel spacing CC3-CC4=99,96 MHz (Note 1)																		
	CC4	100	120	66	Downlink &	Low	24599.88	2022497	24552.36	2021705	0	120	22275	2022139	1	4	1 (4)	16	
						Mid	25874.88	2043747	25680.48	2040507	102		22349	2043451	8	6	1 (4)	224	
					Uplink	High	27150.12	2065001	26376.84	2052113	504		22422	2064475	1	1	0 (0)	1010	
	Channel spacing CC4-CC5=99,96 MHz (Note 1)																		
	CC5	100	120	66	Downlink &	Low	24699.84	2024163	24652.32	2023371	0	120	22281	2023867	8	6	1 (4)	20	
						Mid	25974.84	2045413	25780.44	2042173	102		22354	2044891	3	1	0 (0)	206	
					Uplink	High	27250.08	2066667	26476.8	2053779	504		22428	2066203	8	3	0 (0)	1014	
	Channel spacing CC5-CC6=99,96 MHz (Note 1)																		
CC6	100	120	66	Downlink &	Low	24799.8	2025829	24752.28	2025037	0	120	22286	2025307	3	1	0 (0)	2		
					Mid	26074.8	2047079	25880.4	2043839	102		22360	2046619	10	3	0 (0)	210		
				Uplink	High	27350.04	2068333	26576.76	2055445	504		22434	2067931	3	2	1 (4)	1020		
Channel spacing CC6-CC7=99,96 MHz (Note 1)																			
CC7	100	120	66	Downlink	Low	24899.76	2027495	24852.24	2026703	0	120	22292	2027035	10	3	0 (0)	6		

					&	Mid	26174.76	2048745	25980.36	2045505	102		22366	2048347	5	2	1 (4)	216
					Uplink	High	27450	2069999	26676.72	2057111	504		22440	2069659	10	4	1 (4)	1024
Note 1:	Corresponds to nominal channel spacing in accordance with TS 38.101-1 [7], clause 5.4A.1 for the CC1 and CC2 channel bandwidth combination.																	
Note 2:	CCs are specified in increasing frequency order. CC1 is used as PCell if nothing else is specified in the test case.																	
Note 3:	The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs.																	
Note 4:	The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-8 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.																	

4.3.1.2.3.2.12

CA_n258M

Table 4.3.1.2.3.2.12-1: NR Intra-Band contiguous CA configuration CA_n258M (PCC=CC1), SCS 60 kHz and frequency raster 60 kHz

CBW combination (BCS)	CC Note 2	CBW [MHz]	SCS [kHz]	carrierBandwidth [PRBs]	Range		Carrier centre [MHz] Note 2	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequency PointA [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS [kHz]	GSCN	absoluteFrequency SSB [ARFCN]	k_{SSB}	Offset carrier CORESET#0 [RBs] Note 3	CORE SET#0 Index (Offset [RBs]) Note 4	offsetToPointA (SIB1) [PRBs] Note 4
50 + 100 + 100 + 100 + 100 + 100 (0)	CC1	50	60	66	Downlink	Low	24275.04	2017083	24251.28	2016687	0	120	22257	2016955	4	2	0 (0)	2
						Mid	25524.96	2037915	25427.76	2036295	102		22330	2037979	4	10	1 (8)	120
					Uplink	High	26775.84	2058763	26389.2	2052319	504		22402	2058715	0	1	1 (8)	513
	Channel spacing CC1-CC2=74,4 MHz (Note 1)																	
	CC2	100	60	132	Downlink &	Low	24349.44	2018323	24301.92	2017531	0	120	22260	2017819	0	4	0 (0)	4
						Mid	25599.36	2039155	25478.4	2037139	102		22333	2038843	0	12	1 (8)	122
					Uplink	High	26850.24	2060003	26439.84	2053163	504		22405	2059579	8	2	1 (8)	514
	Channel spacing CC2-CC3=99,96 MHz (Note 1)																	
	CC3	100	60	132	Downlink &	Low	24449.4	2019989	24401.88	2019197	0	120	22266	2019547	2	1	1 (8)	9
						Mid	25699.32	2040821	25578.36	2038805	102		22338	2040283	2	1	0 (0)	103

				Uplink	High	26950.2	2061669	26539.8	2054829	504		22411	2061307	10	7	1 (8)	519	
Channel spacing CC3-CC4=99,96 MHz (Note 1)																		
CC4	100	60	132	Downlink &	Low	24549.36	2021655	24501.84	2020863	0	120	22272	2021275	4	6	1 (8)	14	
					Mid	25799.28	2042487	25678.32	2040471	102		22344	2042011	4	6	0 (0)	108	
				Uplink	High	27050.16	2063335	26639.76	2056495	504		22417	2063035	0	13	1 (8)	525	
Channel spacing CC4-CC5=99,96 MHz (Note 1)																		
CC5	100	60	132	Downlink &	Low	24649.32	2023321	24601.8	2022529	0	120	22278	2023003	6	11	1 (8)	19	
					Mid	25899.24	2044153	25778.28	2042137	102		22350	2043739	6	3	1 (8)	113	
				Uplink	High	27150.12	2065001	26739.72	2058161	504		22422	2064475	2	2	0 (0)	506	
Channel spacing CC5-CC6=99,96 MHz (Note 1)																		
CC6	100	60	132	Downlink &	Low	24749.28	2024987	24701.76	2024195	0	120	22283	2024443	8	0	0 (0)	0	
					Mid	25999.2	2045819	25878.24	2043803	102		22356	2045467	8	8	1 (8)	118	
				Uplink	High	27250.08	2066667	26839.68	2059827	504		22428	2066203	4	7	0 (0)	511	
Channel spacing CC6-CC7=99,96 MHz (Note 1)																		
CC7	100	60	132	Downlink &	Low	24849.24	2026653	24801.72	2025861	0	120	22289	2026171	10	5	0 (0)	5	
					Mid	26099.16	2047485	25978.2	2045469	102		22362	2047195	10	13	1 (8)	123	
				Uplink	High	27350.04	2068333	26939.64	2061493	504		22434	2067931	6	4	1 (8)	516	
Channel spacing CC7-CC8=99,96 MHz (Note 1)																		
CC8	100	60	132	Downlink &	Low	24949.2	2028319	24901.68	2027527	0	120	22295	2027899	0	3	1 (8)	11	
					Mid	26199.12	2049151	26078.16	2047135	102		22367	2048635	0	3	0 (0)	105	
				Uplink	High	27450	2069999	27039.6	2063159	504		22440	2069659	8	9	1 (8)	521	
100 + 100 + 100 + 100 + 100 + 100 + 100 + 100 (0)	CC1	100	60	132	Downlink	Low	24300	2017499	24252.48	2016707	0	120	22257	2016955	8	0	0 (0)	0
						& Uplink	Mid	25524.96	2037915	25404	2035899		102	22328	2037403	4	3	0 (0)	105
					High		26750.28	2058337	26339.88	2051497	504		22399	2057851	6	5	0 (0)	509
	Channel spacing CC1-CC2=99,96 MHz (Note 1)																	

CC2	100	60	132	Downlink &	Low	24399.96	2019165	24352.44	2018373	0	120	22263	2018683	10	5	0 (0)	5
					Mid	25624.92	2039581	25503.96	2037565	102		22334	2039131	6	0	1 (8)	110
				Uplink	High	26850.24	2060003	26439.84	2053163	504		22405	2059579	8	2	1 (8)	514
Channel spacing CC2-CC3=99,96 MHz (Note 1)																	
CC3	100	60	132	Downlink &	Low	24499.92	2020831	24452.4	2020039	0	120	22269	2020411	0	3	1 (8)	11
					Mid	25724.88	2041247	25603.92	2039231	102		22340	2040859	8	5	1 (8)	115
				Uplink	High	26950.2	2061669	26539.8	2054829	504		22411	2061307	10	7	1 (8)	519
Channel spacing CC3-CC4=99,96 MHz (Note 1)																	
CC4	100	60	132	Downlink &	Low	24599.88	2022497	24552.36	2021705	0	120	22275	2022139	2	8	1 (8)	16
					Mid	25824.84	2042913	25703.88	2040897	102		22346	2042587	10	10	1 (8)	120
				Uplink	High	27050.16	2063335	26639.76	2056495	504		22417	2063035	0	13	1 (8)	525
Channel spacing CC4-CC5=99,96 MHz (Note 1)																	
CC5	100	60	132	Downlink &	Low	24699.84	2024163	24652.32	2023371	0	120	22281	2023867	4	13	1 (8)	21
					Mid	25924.8	2044579	25803.84	2042563	102		22351	2044027	0	0	0 (0)	102
				Uplink	High	27150.12	2065001	26739.72	2058161	504		22422	2064475	2	2	0 (0)	506
Channel spacing CC5-CC6=99,96 MHz (Note 1)																	
CC6	100	60	132	Downlink &	Low	24799.8	2025829	24752.28	2025037	0	120	22286	2025307	6	2	0 (0)	2
					Mid	26024.76	2046245	25903.8	2044229	102		22357	2045755	2	5	0 (0)	107
				Uplink	High	27250.08	2066667	26839.68	2059827	504		22428	2066203	4	7	0 (0)	511
Channel spacing CC6-CC7=99,96 MHz (Note 1)																	
CC7	100	60	132	Downlink &	Low	24899.76	2027495	24852.24	2026703	0	120	22292	2027035	8	7	0 (0)	7
					Mid	26124.72	2047911	26003.76	2045895	102		22363	2047483	4	2	1 (8)	112
				Uplink	High	27350.04	2068333	26939.64	2061493	504		22434	2067931	6	4	1 (8)	516
Channel spacing CC7-CC8=99,96 MHz (Note 1)																	
CC8	100	60	132	Downlink &	Low	24999.72	2029161	24952.2	2028369	0	120	22298	2028763	10	4	1 (8)	12
					Mid	26224.68	2049577	26103.72	2047561	102		22369	2049211	6	7	1 (8)	117
				Uplink	High	27450	2069999	27039.6	2063159	504		22440	2069659	8	9	1 (8)	521

Note 1: Corresponds to nominal channel spacing in accordance with TS 38.101-1 [7], clause 5.4A.1 for the CC1 and CC2 channel bandwidth combination.

Note 2: CCs are specified in increasing frequency order. CC1 is used as PCell if nothing else is specified in the test case.

Note 3: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs.

Note 4: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-7 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.

Table 4.3.1.2.3.2.12-2: NR Intra-Band contiguous CA configuration CA_n258M (PCC=CC1), SCS 120 kHz and frequency raster 120 kHz

CBW combina tion (BCS)	CC Note 2	CBW [MHz]	SCS [kHz]	carrie rBand width [PRB s]	Range		Carrier centre [MHz] Note 2	Carrier centre [ARFCN]	point A [MHz]	absoluteF requency PointA [ARFCN]	offset ToCar rier [Carri er PRBs]	SS block SCS [kHz]	GSCN	absoluteF requency SSB [ARFCN]	k_{SSB}	Offset carrier CORES ET#0 [RBs] Note 3	CORE SET#0 Index (Offse t [RBs]) Note 4	offsetTo PointA (SIB1) [PRBs] Note 4						
50 + 100 + 100 + 100 + 100 + 100 + 100 (0)	CC1	50	120	32	Downlink	Low	24275.04	2017083	24252	2016699	0	120	22257	2016955	8	0	0 (0)	0						
						&	Mid	25524.96	2037915	25355.04	2035083								102	22330	2037979	8	4	1 (4)	220
					Uplink	High	26775.84	2058763	26027.04	2046283	504								22402							2058715	0	0	1 (4)	1016
	Channel spacing CC1-CC2=74,4 MHz (Note 1)																							
	CC2	100	120	66	Downlink &	Low	24349.44	2018323	24301.92	2017531	0	120	22260	2017819	0	2	0 (0)	4						
						Mid	25599.36	2039155	25404.96	2035915	102								22333	2038843	0	6	1 (4)	224
					Uplink	High	26850.24	2060003	26076.96	2047115	504														22405	2059579	4	1	1 (4)	1018
	Channel spacing CC2-CC3=99,96 MHz (Note 1)																							
	CC3	100	120	66	Downlink &	Low	24449.4	2019989	24401.88	2019197	0	120	22266	2019547	7	0	1 (4)	8						
						Mid	25699.32	2040821	25504.92	2037581	102								22338	2040283	7	0	0 (0)	204
					Uplink	High	26950.2	2061669	26176.92	2048781	504														22411	2061307	11	3	1 (4)	1022
	Channel spacing CC3-CC4=99,96 MHz (Note 1)																							
	CC4	100	120	66	Downlink &	Low	24549.36	2021655	24501.84	2020863	0	120	22272	2021275	2	3	1 (4)	14						
						Mid	25799.28	2042487	25604.88	2039247	102								22344	2042011	2	3	0 (0)	210
					Uplink	High	27050.16	2063335	26276.88	2050447	504														22417	2063035	6	6	1 (4)	1028
	Channel spacing CC4-CC5=99,96 MHz (Note 1)																							
	CC5	100	120	66	Downlink &	Low	24649.32	2023321	24601.8	2022529	0	120	22278	2023003	9	5	1 (4)	18						
						Mid	25899.24	2044153	25704.84	2040913	102								22350	2043739	9	1	1 (4)	214

100 + 100 + 100 + 100 + 100 + 100 + 100 + 100 + (0)					Uplink	High	27150.12	2065001	26376.84	2052113	504		22422	2064475	1	1	0 (0)	1010
	Channel spacing CC5-CC6=99,96 MHz (Note 1)																	
	CC6	100	120	66	Downlink &	Low	24749.28	2024987	24701.76	2024195	0	120	22283	2024443	4	0	0 (0)	0
						Mid	25999.2	2045819	25804.8	2042579	102		22356	2045467	4	4	1 (4)	220
					Uplink	High	27250.08	2066667	26476.8	2053779	504		22428	2066203	8	3	0 (0)	1014
	Channel spacing CC6-CC7=99,96 MHz (Note 1)																	
	CC7	100	120	66	Downlink &	Low	24849.24	2026653	24801.72	2025861	0	120	22289	2026171	11	2	0 (0)	4
						Mid	26099.16	2047485	25904.76	2044245	102		22362	2047195	11	6	1 (4)	224
					Uplink	High	27350.04	2068333	26576.76	2055445	504		22434	2067931	3	2	1 (4)	1020
	Channel spacing CC7-CC8=99,96 MHz (Note 1)																	
	CC8	100	120	66	Downlink &	Low	24949.2	2028319	24901.68	2027527	0	120	22295	2027899	6	1	1 (4)	10
						Mid	26199.12	2049151	26004.72	2045911	102		22367	2048635	6	1	0 (0)	206
					Uplink	High	27450	2069999	26676.72	2057111	504		22440	2069659	10	4	1 (4)	1024
	CC1	100	120	66	Downlink &	Low	24300	2017499	24252.48	2016707	0	120	22257	2016955	4	0	0 (0)	0
						Mid	25524.96	2037915	25330.56	2034675	102		22328	2037403	8	1	0 (0)	206
					Uplink	High	26750.28	2058337	25977	2045449	504		22399	2057851	9	2	0 (0)	1012
	Channel spacing CC1-CC2=99,96 MHz (Note 1)																	
	CC2	100	120	66	Downlink &	Low	24399.96	2019165	24352.44	2018373	0	120	22263	2018683	11	2	0 (0)	4
						Mid	25624.92	2039581	25430.52	2036341	102		22334	2039131	3	0	1 (4)	212
					Uplink	High	26850.24	2060003	26076.96	2047115	504		22405	2059579	4	1	1 (4)	1018
	Channel spacing CC2-CC3=99,96 MHz (Note 1)																	
	CC3	100	120	66	Downlink &	Low	24499.92	2020831	24452.4	2020039	0	120	22269	2020411	6	1	1 (4)	10
						Mid	25724.88	2041247	25530.48	2038007	102		22340	2040859	10	2	1 (4)	216
					Uplink	High	26950.2	2061669	26176.92	2048781	504		22411	2061307	11	3	1 (4)	1022

Channel spacing CC3-CC4=99,96 MHz (Note 1)																	
CC4	100	120	66	Downlink &	Low	24599.88	2022497	24552.36	2021705	0	120	22275	2022139	1	4	1 (4)	16
					Mid	25824.84	2042913	25630.44	2039673	102		22346	2042587	5	5	1 (4)	222
				Uplink	High	27050.16	2063335	26276.88	2050447	504		22417	2063035	6	6	1 (4)	1028
Channel spacing CC4-CC5=99,96 MHz (Note 1)																	
CC5	100	120	66	Downlink &	Low	24699.84	2024163	24652.32	2023371	0	120	22281	2023867	8	6	1 (4)	20
					Mid	25924.8	2044579	25730.4	2041339	102		22351	2044027	0	0	0 (0)	204
				Uplink	High	27150.12	2065001	26376.84	2052113	504		22422	2064475	1	1	0 (0)	1010
Channel spacing CC5-CC6=99,96 MHz (Note 1)																	
CC6	100	120	66	Downlink &	Low	24799.8	2025829	24752.28	2025037	0	120	22286	2025307	3	1	0 (0)	2
					Mid	26024.76	2046245	25830.36	2043005	102		22357	2045755	7	2	0 (0)	208
				Uplink	High	27250.08	2066667	26476.8	2053779	504		22428	2066203	8	3	0 (0)	1014
Channel spacing CC6-CC7=99,96 MHz (Note 1)																	
CC7	100	120	66	Downlink &	Low	24899.76	2027495	24852.24	2026703	0	120	22292	2027035	10	3	0 (0)	6
					Mid	26124.72	2047911	25930.32	2044671	102		22363	2047483	2	1	1 (4)	214
				Uplink	High	27350.04	2068333	26576.76	2055445	504		22434	2067931	3	2	1 (4)	1020
Channel spacing CC7-CC8=99,96 MHz (Note 1)																	
CC8	100	120	66	Downlink &	Low	24999.72	2029161	24952.2	2028369	0	120	22298	2028763	5	2	1 (4)	12
					Mid	26224.68	2049577	26030.28	2046337	102		22369	2049211	9	3	1 (4)	218
				Uplink	High	27450	2069999	26676.72	2057111	504		22440	2069659	10	4	1 (4)	1024

Note 1: Corresponds to nominal channel spacing in accordance with TS 38.101-1 [7], clause 5.4A.1 for the CC1 and CC2 channel bandwidth combination.

Note 2: CCs are specified in increasing frequency order. CC1 is used as PCell if nothing else is specified in the test case.

Note 3: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs.

Note 4: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-8 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.

4.3.1.2.3.3 FFS

4.3.1.2.3.4 NR Intra-band contiguous CA configurations for CA_n260

4.3.1.2.3.4.1 CA_n260B

Editor's note: CA_n260B Test frequencies are FFS.

Table 4.3.1.2.3.4.1-1: NR Intra-Band contiguous CA configuration CA_n260B (PCC=CC1 and SCC=CC2), SCS=120 kHz, nominal channel spacing

CBW combinati on	CC	CBW [MHz]	SCS [kHz]	carrie rBand width [PRB s]	Range	Carrier centre [MHz] Note 2	Carrier centre [ARFCN]	point A [MHz]	<i>absoluteF</i> <i>requency</i> <i>PointA</i> [ARFCN]	<i>offsetT</i> <i>oCarrie</i> <i>r</i> [Carrier PRBs]	SS block SCS [kHz]	GSCN	<i>absoluteF</i> <i>requency</i> <i>SSB</i> [ARFCN]	k_{SSB}	Offset Carrier CORE SET#0 [RBs] Note 3	CORE SET#0 Index (Offse t [RBs]) Note 4	offsetT oPoint A (SIB1) [PRBs] Note 4

4.3.1.2.3.4.2 CA_n260C

Editor's note: CA_n260C Test frequencies are FFS.

Table 4.3.1.2.3.4.2-1: NR Intra-Band contiguous CA configuration CA_n260C (PCC=CC1 and SCC=CC2, CC3), SCS=120 kHz, nominal channel spacing

CBW combinati on	CC	CBW [MHz]	SCS [kHz]	carrier Band width [PRBs]	Range	Carrier centre [MHz] Note 2	Carrier centre [ARFCN]	point A [MHz]	<i>absoluteF</i> <i>requency</i> <i>PointA</i> [ARFCN]	<i>offset</i> <i>ToCar</i> <i>rier</i> [Carri er PRBs]	SS block SCS [kHz]	GSCN	<i>absoluteF</i> <i>requency</i> <i>SSB</i> [ARFCN]	k_{SSB}	Offset Carrier CORE SET#0 [RBs] Note 3	CORE SET#0 Index (Offse t [RBs]) Note 4	offset ToPoi ntA (SIB1) [PRBs] Note 4

4.3.1.2.3.4.3 CA_n260D

Editor's note: CA_n260D Test frequencies are FFS.

Table 4.3.1.2.3.4.3-1: NR Intra-Band contiguous CA configuration CA_n260D (PCC=CC1 and SCC=CC2), SCS=60 kHz, nominal channel spacing

CBW	CC	CBW	SCS	carrierB	Range	Carrier	Carrier	point A	<i>absoluteF</i>	<i>offsetT</i>	SS	GSCN	<i>absoluteF</i>	k_{SSB}	Offset	CORE	offsetT

combination		[MHz]	[kHz]	bandwidth [PRBs]		centre [MHz] Note 2	centre [ARFCN]	[MHz]	frequency PointA [ARFCN]	carrier [Carrier PRBs]	block SCS [kHz]		frequency SSB [ARFCN]		Carrier CORESET#0 [RBs] Note 3	SET#0 Index (Offset [RBs]) Note 4	offsetT A (SIB1) [PRBs] Note 4

Table 4.3.1.2.3.4.3-2: NR Intra-Band contiguous CA configuration CA_n260D (PCC=CC1 and SCC=CC2), SCS=120 kHz, nominal channel spacing

CBW combination	CC	CBW [MHz]	SCS [kHz]	carrierB bandwidth [PRBs]	Range	Carrier centre [MHz] Note 2	Carrier centre [ARFCN]	point A [MHz]	absoluteF frequency PointA [ARFCN]	offsetT carrier [Carrier PRBs]	SS block SCS [kHz]	GSCN	absoluteF frequency SSB [ARFCN]	k_{SSB}	Offset Carrier CORESET#0 [RBs] Note 3	CORE SET#0 Index (Offset [RBs]) Note 4	offsetT oPoint A (SIB1) [PRBs] Note 4

4.3.1.2.3.4.4 CA_n260E

Table 4.3.1.2.3.4.4-1: NR Intra-Band contiguous CA configuration CA_n260E (PCC=CC1 and SCC=CC2), SCS=60 kHz, nominal channel spacing

FFS

Table 4.3.1.2.3.4.4-2: NR Intra-Band contiguous CA configuration CA_n260E (PCC=CC1 and SCC=CC2), SCS=120 kHz, nominal channel spacing

FFS

4.3.1.2.3.4.5 CA_n260F

Table 4.3.1.2.3.4.5-1: NR Intra-Band contiguous CA configuration CA_n260F (PCC=CC1 and SCC=CC2), SCS=60 kHz, nominal channel spacing

FFS

Table 4.3.1.2.3.4.5-2: NR Intra-Band contiguous CA configuration CA_n260F (PCC=CC1 and SCC=CC2), SCS=120 kHz, nominal channel spacing

FFS

Table 4.3.1.2.3.4.6-1: NR Intra-Band contiguous CA configuration CA_n260G (PCC=CC1 and SCC=CC2), SCS=60 kHz, nominal channel spacing

CBW combinati on	CC	CBW [MHz]	SCS [kHz]	carrie rBand width [PRB s]	Range		Carrier centre [MHz] Note 2	Carrier centre [ARFCN]	point A [MHz]	absoluteF requency PointA [ARFCN]	offsetT oCarrie r [Carrier PRBs]	SS block SCS [kHz]	GSCN	absoluteF requency SSB [ARFCN]	k_{SSB}	Offset Carrier CORE SET#0 [RBs] Note 3	CORE SET#0 Index (Offse t [RBs]) Note 4	offsetT oPoint A (SIB1) [PRBs] Note 4	
50+100	CC1	50	60	66	Downlink & Uplink	Low	37025.04	2229583	37001.28	2229187	0	120	22995	2229499	0	6	0 (0)	6	
						Mid	38449.92	2253331	38352.72	2251711	102		23078	2253403	0	11	1 (8)	121	
						High	39875.52	2277091	39488.88	2270647	504		23160	2277019	0	7	0 (0)	511	
	Channel spacing CC1-CC2=74.4 MHz (Note 1)																		
	CC2	100	60	132	Downlink & Uplink	Low	37099.44	2230823	37051.92	2230031	0	120	22998	2230363	8	7	0 (0)	7	
						Mid	38524.32	2254571	38403.36	2252555	102		23081	2254267	8	12	1 (8)	122	
						High	39949.92	2278331	39539.52	2271491	504		23163	2277883	8	0	1 (8)	512	
	100+100	CC1	100	60	132	Downlink & Uplink	Low	37050	2229999	37002.48	2229207	0	120	22995	2229499	4	4	0 (0)	4
							Mid	38449.92	2253331	38328.96	2251315	102		23076	2252827	0	4	0 (0)	106
							High	39849.96	2276665	39439.56	2269825	504		23157	2276155	6	3	0 (0)	507
		Channel spacing CC1-CC2=99.96 MHz (Note 1)																	
		CC2	100	60	132	Downlink & Uplink	Low	37149.96	2231665	37102.44	2230873	0	120	23001	2231227	6	1	1 (8)	9
							Mid	38549.88	2254997	38428.92	2252981	102		23082	2254555	2	1	1 (8)	111
							High	39949.92	2278331	39539.52	2271491	504		23163	2277883	8	0	1 (8)	512
	Note 1: Corresponds to nominal channel spacing in accordance with TS 38.101-2 [8], clause 5.4A.1 for the channel bandwidths of the two respective NR component carriers.																		
	Note 2: CCs are specified in increasing frequency order. CC1 is used as PCell if nothing else is specified in the test case.																		
Note 3: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs.																			
Note 4: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-7 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.																			

Table 4.3.1.2.3.4.6-2: NR Intra-Band contiguous CA configuration CA_n260G (PCC=CC1 and SCC=CC2), SCS=120 kHz, nominal channel spacing

CBW combinati on	CC	CBW [MHz]	SCS [kHz]	carrierB andwidht h [PRBs]	Range		Carrier centre [MHz] Note 2	Carrier centre [ARFCN]	point A [MHz]	absoluteF requency PointA [ARFCN]	offsetT oCarrie r [Carrier PRBs]	SS block SCS [kHz]	GSCN	absoluteF requency SSB [ARFCN]	k_{SSB}	Offset Carrier CORE SET#0 [RBs] Note 3	CORE SET#0 Index (Offse t [RBs]) Note 1	offsetT oPoint A (SIB1) [PRBs] Note 1
50+100	CC1	50	120	32	Downlink & Uplink	Low	37025.04	2229583	37002	2229199	0	120	22995	2229499	6	2	0 (0)	4
						Mid	38450.04	2253333	38280.12	2250501	102		23078	2253403	11	4	1 (4)	220
						High	39875.52	2277091	39126.72	2264611	504		23160	2277019	0	3	0 (0)	1014

100+100	Channel spacing CC1-CC2=74.4 MHz (Note 1)																	
	CC2	100	120	66	Downlink & Uplink	Low	37099.44	2230823	37051.92	2230031	0	120	22998	2230363	10	3	0 (0)	6
						Mid	38524.44	2254573	38330.04	2251333	102		23081	2254267	3	6	1 (4)	224
						High	39949.92	2278331	39176.64	2265443	504		23163	2277883	4	0	1 (4)	1016
	CC1	100	120	66	Downlink & Uplink	Low	37050	2229999	37002.48	2229207	0	120	22995	2229499	2	2	0 (0)	4
						Mid	38450.04	2253333	38255.64	2250093	102		23076	2252827	11	1	0 (0)	206
						High	39849.96	2276665	39076.68	2263777	504		23157	2276155	9	1	0 (0)	1010
	Channel spacing CC1-CC2=99.96 MHz (Note 1)																	
	CC2	100	120	66	Downlink & Uplink	Low	37149.96	2231665	37102.44	2230873	0	120	23001	2231227	9	0	1 (4)	8
						Mid	38550	2254999	38355.6	2251759	102		23082	2254555	6	0	1 (4)	212
High						39949.92	2278331	39176.64	2265443	504	23163		2277883	4	0	1 (4)	1016	

Note 1:

Corresponds to nominal channel spacing in accordance with TS 38.101-2 [8], clause 5.4A.1 for the channel bandwidths of the two respective NR component carriers.

Note 2:

CCs are specified in increasing frequency order. CC1 is used as PCell if nothing else is specified in the test case.

Note 3:

The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs.

Note 4:

The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-8 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdccch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.

4.3.1.2.3.4.7

CA_n260H

Table 4.3.1.2.3.4.7-1: NR Intra-Band contiguous CA configuration CA_n260H (PCC=CC1 and SCC=CC2, CC3), SCS=60 kHz, nominal channel spacing

CBW combinati on	CC	CBW [MHz]	SCS [kHz]	carrierB andwidht h [PRBs]	Range		Carrier centre [MHz] Note 2	Carrier centre [ARFCN]	point A [MHz]	absoluteF requency PointA [ARFCN]	offsetT oCarrie r [Carrier PRBs]	SS block SCS [kHz]	GSCN	absoluteF requency SSB [ARFCN]	k_{SSB}	Offset Carrier CORE SET#0 [RBs] Note 3	CORE SET#0 Index (Offse t [RBs]) Note 4	offsetT oPoint A (SIB1) [PRBs] Note 4
50+100 +100	CC1	50	60	66	Downlink & Uplink	Low	37025.04	2229583	37001.28	2229187	0	120	22995	2229499	0	6	0 (0)	6
						Mid	38400	2252499	38302.8	2250879	102		23075	2252539	4	8	1 (8)	118
						High	39775.56	2275425	39388.92	2268981	504		23154	2275291	10	1	0 (0)	505
	Channel spacing CC1-CC2=74.4 MHz (Note 1)																	
	CC2	100	60	132	Downlink & Uplink	Low	37099.44	2230823	37051.92	2230031	0	120	22998	2230363	8	7	0 (0)	7
						Mid	38474.4	2253739	38353.44	2251723	102		23078	2253403	0	10	1 (8)	120
						High	39849.96	2276665	39439.56	2269825	504		23157	2276155	6	3	0 (0)	507
	Channel spacing CC2-CC3=99.96 MHz (Note 1)																	
	CC3	100	60	132	Downlink & Uplink	Low	37199.4	2232489	37151.88	2231697	0	120	23004	2232091	10	4	1 (8)	12
						Mid	38574.36	2255405	38453.4	2253389	102		23084	2255131	2	15	1 (8)	125
						High	39949.92	2278331	39539.52	2271491	504		23163	2277883	8	0	1 (8)	512
100+100 +100	CC1	100	60	132	Downlink & Uplink	Low	37050	2229999	37002.48	2229207	0	120	22995	2229499	4	4	0 (0)	4
						Mid	38400	2252499	38279.04	2250483	102		23073	2251963	4	1	0 (0)	103
						High	39750	2274999	39339.6	2268159	504		23152	2274715	4	14	1 (8)	526

Channel spacing CC1-CC2=99.96 MHz (Note 1)																		
CC2	100	60	132	Downlink & Uplink	Low	37149.96	2231665	37102.44	2230873	0	120	23001	2231227	6	1	1 (8)	9	
					Mid	38499.96	2254165	38379	2252149	102		23079	2253691	6	6	0 (0)	108	
					High	39849.96	2276665	39439.56	2269825	504		23157	2276155	6	3	0 (0)	507	
Channel spacing CC2-CC3=99.96 MHz (Note 1)																		
CC3	100	60	132	Downlink & Uplink	Low	37249.92	2233331	37202.4	2232539	0	120	23007	2232955	8	6	1 (8)	14	
					Mid	38599.92	2255831	38478.96	2253815	102		23085	2255419	8	3	1 (8)	113	
					High	39949.92	2278331	39539.52	2271491	504		23163	2277883	8	0	1 (8)	512	

Note 1:

Corresponds to nominal channel spacing in accordance with TS 38.101-2 [8], clause 5.4A.1 for the channel bandwidths of the two respective NR component carriers.

Note 2:

CCs are specified in increasing frequency order. CC1 is used as PCell if nothing else is specified in the test case.

Note 3:

The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs.

Note 4:

The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-7 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.

Table 4.3.1.2.3.4.7-2: NR Intra-Band contiguous CA configuration CA_n260H (PCC=CC1 and SCC=CC2, CC3), SCS=120 kHz, nominal channel spacing

CBW combination	CC	CBW [MHz]	SCS [kHz]	carrier bandwidth [PRBs]	Range		Carrier centre [MHz] Note 2	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequency PointA [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS [kHz]	GSCN	absoluteFrequency SSB [ARFCN]	k_{SSB}	Offset Carrier CORESET#0 [RBs] Note 3	CORE SET#0 Index (Offset [RBs]) Note 4	offsetToPoint A (SIB1) [PRBs] Note 4
50+100+100	CC1	50	120	32	Downlink & Uplink	Low	37025.04	2229583	37002	2229199	0	120	22995	2229499	6	2	0 (0)	4
						Mid	38400	2252499	38230.08	2249667	102		23075	2252539	8	3	1 (4)	218
						High	39775.56	2275425	39026.76	2262945	504		23154	2275291	5	0	0 (0)	1008
	Channel spacing CC1-CC2=74.4 MHz (Note 1)																	
	CC2	100	120	66	Downlink & Uplink	Low	37099.44	2230823	37051.92	2230031	0	120	22998	2230363	10	3	0 (0)	6
						Mid	38474.4	2253739	38280	2250499	102		23078	2253403	0	5	1 (4)	222
						High	39849.96	2276665	39076.68	2263777	504		23157	2276155	9	1	0 (0)	1010
	Channel spacing CC2-CC3=99.96 MHz (Note 1)																	
	CC3	100	120	66	Downlink & Uplink	Low	37199.4	2232489	37151.88	2231697	0	120	23004	2232091	5	2	1 (4)	12
						Mid	38574.36	2255405	38379.96	2252165	102		23084	2255131	7	7	1 (4)	226
						High	39949.92	2278331	39176.64	2265443	504		23163	2277883	4	0	1 (4)	1016
100+100+100	CC1	100	120	66	Downlink & Uplink	Low	37050	2229999	37002.48	2229207	0	120	22995	2229499	2	2	0 (0)	4
						Mid	38400	2252499	38205.6	2249259	102		23073	2251963	8	0	0 (0)	204
						High	39750	2274999	38976.72	2262111	504		23152	2274715	2	7	1 (4)	1030
	Channel spacing CC1-CC2=99.96 MHz (Note 1)																	
	CC2	100	120	66	Downlink & Uplink	Low	37149.96	2231665	37102.44	2230873	0	120	23001	2231227	9	0	1 (4)	8
						Mid	38499.96	2254165	38305.56	2250925	102		23079	2253691	3	3	0 (0)	210
						High	39849.96	2276665	39076.68	2263777	504		23157	2276155	9	1	0 (0)	1010
	Channel spacing CC2-CC3=99.96 MHz (Note 1)																	

	CC3	100	120	66	Downlink & Uplink	Low	37249.92	2233331	37202.4	2232539	0	120	23007	2232955	4	3	1 (4)	14
						Mid	38599.92	2255831	38405.52	2252591	102		23085	2255419	10	1	1 (4)	214
						High	39949.92	2278331	39176.64	2265443	504		23163	2277883	4	0	1 (4)	1016

Note 1: Corresponds to nominal channel spacing in accordance with TS 38.101-2 [8], clause 5.4A.1 for the channel bandwidths of the two respective NR component carriers.

Note 2: CCs are specified in increasing frequency order. CC1 is used as PCell if nothing else is specified in the test case.

Note 3: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs.

Note 4: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-8 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.

4.3.1.2.3.4.8

CA_n260I

Table 4.3.1.2.3.4.8-1: NR Intra-Band contiguous CA configuration CA_n260I (PCC=CC1, SCC=CC2, CC3, CC4), SCS=60 kHz, nominal channel spacing

CBW combination	CC	CBW [MHz]	SCS [kHz]	carrierBandwidth [PRBs]	Range		Carrier centre [MHz] Note 2	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequencyPointA [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS [kHz]	GSCN	absoluteFrequencySSB [ARFCN]	k_{SSB}	Offset Carrier CORESET#0 [RBs] Note 3	CORE SET#0 Index (Offset [RBs]) Note 4	offsetToPoint A (SIB1) [PRBs] Note 4
50+100 +100+100	CC1	50	60	66	Downlink & Uplink	Low	37025.04	2229583	37001.28	2229187	0	120	22995	2229499	0	6	0 (0)	6
						Mid	38349.96	2251665	38252.76	2250045	102		23072	2251675	10	5	1 (8)	115
						High	39675.6	2273759	39288.96	2267315	504		23149	2273851	8	12	1 (8)	524
	Channel spacing CC1-CC2=74.4 MHz (Note 1)																	
	CC2	100	60	132	Downlink & Uplink	Low	37099.44	2230823	37051.92	2230031	0	120	22998	2230363	8	7	0 (0)	7
						Mid	38424.36	2252905	38303.4	2250889	102		23075	2252539	6	7	1 (8)	117
						High	39750	2274999	39339.6	2268159	504		23152	2274715	4	14	1 (8)	526
	Channel spacing CC2-CC3=99.96 MHz (Note 1)																	
	CC3	100	60	132	Downlink & Uplink	Low	37199.4	2232489	37151.88	2231697	0	120	23004	2232091	10	4	1 (8)	12
						Mid	38524.32	2254571	38403.36	2252555	102		23081	2254267	8	12	1 (8)	122
						High	39849.96	2276665	39439.56	2269825	504		23157	2276155	6	3	0 (0)	507
	Channel spacing CC3-CC4=99.96 MHz (Note 1)																	
	CC4	100	60	132	Downlink & Uplink	Low	37299.36	2234155	37251.84	2233363	0	120	23010	2233819	0	10	1 (8)	18
						Mid	38624.28	2256237	38503.32	2254221	102		23086	2255707	10	1	0 (0)	103
						High	39949.92	2278331	39539.52	2271491	504		23163	2277883	8	0	1 (8)	512
100+100 +100+100	CC1	100	60	132	Downlink & Uplink	Low	37050	2229999	37002.48	2229207	0	120	22995	2229499	4	4	0 (0)	4
						Mid	38349.96	2251665	38229	2249649	102		23071	2251387	10	14	1 (8)	124
						High	39650.04	2273333	39239.64	2266493	504		23146	2272987	2	9	1 (8)	521
	Channel spacing CC1-CC2=99.96 MHz (Note 1)																	
	CC2	100	60	132	Downlink & Uplink	Low	37149.96	2231665	37102.44	2230873	0	120	23001	2231227	6	1	1 (8)	9
						Mid	38449.92	2253331	38328.96	2251315	102		23076	2252827	0	4	0 (0)	106
						High	39750	2274999	39339.6	2268159	504		23152	2274715	4	14	1 (8)	526

	Channel spacing CC2-CC3=99.96 MHz (Note 1)																	
	CC3	100	60	132	Downlink & Uplink	Low	37249.92	2233331	37202.4	2232539	0	120	23007	2232955	8	6	1 (8)	14
						Mid	38549.88	2254997	38428.92	2252981	102		23082	2254555	2	1	1 (8)	111
						High	39849.96	2276665	39439.56	2269825	504		23157	2276155	6	3	0 (0)	507
	Channel spacing CC3-CC4=99.96 MHz (Note 1)																	
	CC4	100	60	132	Downlink & Uplink	Low	37349.88	2234997	37302.36	2234205	0	120	23013	2234683	10	11	1 (8)	19
						Mid	38649.84	2256663	38528.88	2254647	102		23088	2256283	4	6	1 (8)	116
						High	39949.92	2278331	39539.52	2271491	504		23163	2277883	8	0	1 (8)	512
	Note 1:	Corresponds to nominal channel spacing in accordance with TS 38.101-2 [8], clause 5.4A.1 for the channel bandwidths of the two respective NR component carriers.																
	Note 2:	CCs are specified in increasing frequency order. CC1 is used as PCell if nothing else is specified in the test case.																
Note 3:	The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs.																	
Note 4:	The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-7 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.																	

Table 4.3.1.2.3.4.8-2: NR Intra-Band contiguous CA configuration CA_n260I (PCC=CC1, SCC=CC2, CC3,CC4), SCS=120 kHz, nominal channel spacing

CBW combination	CC	CBW [MHz]	SCS [kHz]	carrierBandwidth [PRBs]	Range		Carrier centre [MHz] Note 2	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequencyPointA [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS [kHz]	GSCN	absoluteFrequencySSB [ARFCN]	k_{SSB}	Offset Carrier CORESET#0 [RBs] Note 3	CORE SET#0 Index (Offset [RBs]) Note 4	offsetToPoint A (SIB1) [PRBs] Note 4
50+100 +100+100	CC1	50	120	32	Downlink & Uplink	Low	37025.04	2229583	37002	2229199	0	120	22995	2229499	6	2	0 (0)	4
						Mid	38349.96	2251665	38180.04	2248833	102		23072	2251675	5	2	1 (4)	216
						High	39675.6	2273759	38926.8	2261279	504		23149	2273851	10	5	1 (4)	1026
	Channel spacing CC1-CC2=74.4 MHz (Note 1)																	
	CC2	100	120	66	Downlink & Uplink	Low	37099.44	2230823	37051.92	2230031	0	120	22998	2230363	10	3	0 (0)	6
						Mid	38424.36	2252905	38229.96	2249665	102		23075	2252539	9	3	1 (4)	218
						High	39750	2274999	38976.72	2262111	504		23152	2274715	2	7	1 (4)	1030
	Channel spacing CC2-CC3=99.96 MHz (Note 1)																	
	CC3	100	120	66	Downlink & Uplink	Low	37199.4	2232489	37151.88	2231697	0	120	23004	2232091	5	2	1 (4)	12
						Mid	38524.32	2254571	38329.92	2251331	102		23081	2254267	4	6	1 (4)	224
						High	39849.96	2276665	39076.68	2263777	504		23157	2276155	9	1	0 (0)	1010
	Channel spacing CC3-CC4=99.96 MHz (Note 1)																	
	CC4	100	120	66	Downlink & Uplink	Low	37299.36	2234155	37251.84	2233363	0	120	23010	2233819	0	5	1 (4)	18
						Mid	38624.28	2256237	38429.88	2252997	102		23086	2255707	11	0	0 (0)	204
						High	39949.92	2278331	39176.64	2265443	504		23163	2277883	4	0	1 (4)	1016
100+100 +100+100	CC1	100	120	66	Downlink & Uplink	Low	37050	2229999	37002.48	2229207	0	120	22995	2229499	2	2	0 (0)	4
						Mid	38349.96	2251665	38155.56	2248425	102		23071	2251387	5	7	1 (4)	226
						High	39650.04	2273333	38876.76	2260445	504		23146	2272987	7	4	1 (4)	1024
	Channel spacing CC1-CC2=99.96 MHz (Note 1)																	

CC2	100	120	66	Downlink & Uplink	Low	37149.96	2231665	37102.44	2230873	0	120	23001	2231227	9	0	1 (4)	8
					Mid	38449.92	2253331	38255.52	2250091	102		23076	2252827	0	2	0 (0)	208
					High	39750	2274999	38976.72	2262111	504		23152	2274715	2	7	1 (4)	1030
					Channel spacing CC2-CC3=99.96 MHz (Note 1)												
CC3	100	120	66	Downlink & Uplink	Low	37249.92	2233331	37202.4	2232539	0	120	23007	2232955	4	3	1 (4)	14
					Mid	38549.88	2254997	38355.48	2251757	102		23082	2254555	7	0	1 (4)	212
					High	39849.96	2276665	39076.68	2263777	504		23157	2276155	9	1	0 (0)	1010
					Channel spacing CC3-CC4=99.96 MHz (Note 1)												
CC4	100	120	66	Downlink & Uplink	Low	37349.88	2234997	37302.36	2234205	0	120	23013	2234683	11	5	1 (4)	18
					Mid	38649.84	2256663	38455.44	2253423	102		23088	2256283	2	3	1 (4)	218
					High	39949.92	2278331	39176.64	2265443	504		23163	2277883	4	0	1 (4)	1016

Note 1: Corresponds to nominal channel spacing in accordance with TS 38.101-2 [8], clause 5.4A.1 for the channel bandwidths of the two respective NR component carriers.

Note 2: CCs are specified in increasing frequency order. CC1 is used as PCell if nothing else is specified in the test case.

Note 3: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs.

Note 4: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-8 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.

4.3.1.2.3.4.9

CA_n260J

Table 4.3.1.2.3.4.9-1: NR Intra-Band contiguous CA configuration CA_n260J (PCC=CC1, SCC=CC2, CC3, CC4, CC5), SCS=60 kHz, nominal channel spacing

CBW combination	CC	CBW [MHz]	SCS [kHz]	carrierBandwidth [PRBs]	Range		Carrier centre [MHz] Note 2	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequencyPointA [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS [kHz]	GSCN	absoluteFrequencySSB [ARFCN]	k_{SSB}	Offset Carrier CORESET#0 [RBs] Note 3	CORE SET#0 Index Note 4	offsetToPointA (SIB1) [PRBs] Note 4
50+100 +100+100 +100	CC1	50	60	66	Downlink & Uplink	Low	37025.04	2229583	37001.28	2229187	0	120	22995	2229499	0	6	0 (0)	6
						Mid	38299.92	2250831	38202.72	2249211	102		23069	2250811	4	3	1 (8)	113
						High	39575.64	2272093	39189	2265649	504		23143	2272123	6	7	1 (8)	519
	Channel spacing CC1-CC2=74.4 MHz (Note 1)																	
	CC2	100	60	132	Downlink & Uplink	Low	37099.44	2230823	37051.92	2230031	0	120	22998	2230363	8	7	0 (0)	7
						Mid	38374.32	2252071	38253.36	2250055	102		23072	2251675	0	5	1 (8)	115
						High	39650.04	2273333	39239.64	2266493	504		23146	2272987	2	9	1 (8)	521
	Channel spacing CC2-CC3=99.96 MHz (Note 1)																	
	CC3	100	60	132	Downlink & Uplink	Low	37199.4	2232489	37151.88	2231697	0	120	23004	2232091	10	4	1 (8)	12
						Mid	38474.28	2253737	38353.32	2251721	102		23078	2253403	2	10	1 (8)	120
						High	39750	2274999	39339.6	2268159	504		23152	2274715	4	14	1 (8)	526
	Channel spacing CC3-CC4=99.96 MHz (Note 1)																	
	CC4	100	60	132	Downlink & Uplink	Low	37299.36	2234155	37251.84	2233363	0	120	23010	2233819	0	10	1 (8)	18
						Mid	38574.24	2255403	38453.28	2253387	102		23084	2255131	4	15	1 (8)	125

100+100 +100+100 +100					Uplink	High	39849.96	2276665	39439.56	2269825	504		23157	2276155	6	3	0 (0)	507
	Channel spacing CC4-CC5=99.96 MHz (Note 1)																	
	CC5	100	60	132	Downlink & Uplink	Low	37399.32	2235821	37351.8	2235029	0	120	23016	2235547	2	15	1 (8)	23
						Mid	38674.2	2257069	38553.24	2255053	102		23089	2256571	6	4	0 (0)	106
						High	39949.92	2278331	39539.52	2271491	504		23163	2277883	8	0	1 (8)	512
	CC1	100	60	132	Downlink & Uplink	Low	37050	2229999	37002.48	2229207	0	120	22995	2229499	4	4	0 (0)	4
						Mid	38299.92	2250831	38178.96	2248815	102		23068	2250523	4	12	1 (8)	122
						High	39550.08	2271667	39139.68	2264827	504		23140	2271259	0	4	1 (8)	516
	Channel spacing CC1-CC2=99.96 MHz (Note 1)																	
	CC2	100	60	132	Downlink & Uplink	Low	37149.96	2231665	37102.44	2230873	0	120	23001	2231227	6	1	1 (8)	9
						Mid	38399.88	2252497	38278.92	2250481	102		23073	2251963	6	1	0 (0)	103
						High	39650.04	2273333	39239.64	2266493	504		23146	2272987	2	9	1 (8)	521
	Channel spacing CC2-CC3=99.96 MHz (Note 1)																	
	CC3	100	60	132	Downlink & Uplink	Low	37249.92	2233331	37202.4	2232539	0	120	23007	2232955	8	6	1 (8)	14
						Mid	38499.84	2254163	38378.88	2252147	102		23079	2253691	8	6	0 (0)	108
						High	39750	2274999	39339.6	2268159	504		23152	2274715	4	14	1 (8)	526
	Channel spacing CC3-CC4=99.96 MHz (Note 1)																	
	CC4	100	60	132	Downlink & Uplink	Low	37349.88	2234997	37302.36	2234205	0	120	23013	2234683	10	11	1 (8)	19
						Mid	38599.8	2255829	38478.84	2253813	102		23085	2255419	10	3	1 (8)	113
						High	39849.96	2276665	39439.56	2269825	504		23157	2276155	6	3	0 (0)	507
	Channel spacing CC4-CC5=99.96 MHz (Note 1)																	
	CC5	100	60	132	Downlink & Uplink	Low	37449.84	2236663	37402.32	2235871	0	120	23018	2236123	0	1	0 (0)	1
						Mid	38699.76	2257495	38578.8	2255479	102		23091	2257147	0	9	1 (8)	119
						High	39949.92	2278331	39539.52	2271491	504		23163	2277883	8	0	1 (8)	512
Note 1: Corresponds to nominal channel spacing in accordance with TS 38.101-2 [8], clause 5.4A.1 for the channel bandwidths of the two respective NR component carriers.																		
Note 2: CCs are specified in increasing frequency order. CC1 is used as PCell if nothing else is specified in the test case.																		
Note 3: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs.																		
Note 4: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-7 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.																		

Table 4.3.1.2.3.4.9-2: NR Intra-Band contiguous CA configuration CA_n260J (PCC=CC1, SCC=CC2, CC3, CC4, CC5), SCS=120 kHz, nominal channel spacing

CBW combination	CC	CBW [MHz]	SCS [kHz]	carrierBandwidth [PRBs]	Range		Carrier centre [MHz] Note 2	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequencyPointA [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS [kHz]	GSCN	absoluteFrequencySSB [ARFCN]	k_{SSB}	Offset Carrier CORESET#0 [RBs] Note 3	CORE SET#0 Index (Offset [RBs]) Note 4	offsetToPointA (SIB1) [PRBs] Note 4
50+100 +100+100	CC1	50	120	32	Downlink &	Low	37025.04	2229583	37002	2229199	0	120	22995	2229499	6	2	0 (0)	4
						Mid	38300.04	2250833	38130.12	2248001	102		23069	2250811	1	1	1 (4)	214

+100					Uplink	High	39575.64	2272093	38826.84	2259613	504		23143	2272123	3	3	1 (4)	1022
	Channel spacing CC1-CC2=74.4 MHz (Note 1)																	
	CC2	100	120	66	Downlink & Uplink	Low	37099.44	2230823	37051.92	2230031	0	120	22998	2230363	10	3	0 (0)	6
						Mid	38374.44	2252073	38180.04	2248833	102		23072	2251675	5	2	1 (4)	216
						High	39650.04	2273333	38876.76	2260445	504		23146	2272987	7	4	1 (4)	1024
	Channel spacing CC2-CC3=99.96 MHz (Note 1)																	
	CC3	100	120	66	Downlink & Uplink	Low	37199.4	2232489	37151.88	2231697	0	120	23004	2232091	5	2	1 (4)	12
						Mid	38474.4	2253739	38280	2250499	102		23078	2253403	0	5	1 (4)	222
						High	39750	2274999	38976.72	2262111	504		23152	2274715	2	7	1 (4)	1030
	Channel spacing CC3-CC4=99.96 MHz (Note 1)																	
	CC4	100	120	66	Downlink & Uplink	Low	37299.36	2234155	37251.84	2233363	0	120	23010	2233819	0	5	1 (4)	18
Mid						38574.36	2255405	38379.96	2252165	102	23084		2255131	7	7	1 (4)	226	
High						39849.96	2276665	39076.68	2263777	504	23157		2276155	9	1	0 (0)	1010	
Channel spacing CC4-CC5=99.96 MHz (Note 1)																		
CC5	100	120	66	Downlink & Uplink	Low	37399.32	2235821	37351.8	2235029	0	120	23016	2235547	7	7	1 (4)	22	
					Mid	38674.32	2257071	38479.92	2253831	102		23089	2256571	2	2	0 (0)	208	
					High	39949.92	2278331	39176.64	2265443	504		23163	2277883	4	0	1 (4)	1016	
100+100 +100+100 +100	CC1	100	120	66	Downlink & Uplink	Low	37050	2229999	37002.48	2229207	0	120	22995	2229499	2	2	0 (0)	4
						Mid	38300.04	2250833	38105.64	2247593	102		23068	2250523	1	6	1 (4)	224
						High	39550.08	2271667	38776.8	2258779	504		23140	2271259	0	2	1 (4)	1020
	Channel spacing CC1-CC2=99.96 MHz (Note 1)																	
	CC2	100	120	66	Downlink & Uplink	Low	37149.96	2231665	37102.44	2230873	0	120	23001	2231227	9	0	1 (4)	8
						Mid	38400	2252499	38205.6	2249259	102		23073	2251963	8	0	0 (0)	204
						High	39650.04	2273333	38876.76	2260445	504		23146	2272987	7	4	1 (4)	1024
	Channel spacing CC2-CC3=99.96 MHz (Note 1)																	
	CC3	100	120	66	Downlink & Uplink	Low	37249.92	2233331	37202.4	2232539	0	120	23007	2232955	4	3	1 (4)	14
						Mid	38499.96	2254165	38305.56	2250925	102		23079	2253691	3	3	0 (0)	210
High						39750	2274999	38976.72	2262111	504	23152		2274715	2	7	1 (4)	1030	
Channel spacing CC3-CC4=99.96 MHz (Note 1)																		
CC4	100	120	66	Downlink & Uplink	Low	37349.88	2234997	37302.36	2234205	0	120	23013	2234683	11	5	1 (4)	18	
					Mid	38599.92	2255831	38405.52	2252591	102		23085	2255419	10	1	1 (4)	214	
					High	39849.96	2276665	39076.68	2263777	504		23157	2276155	9	1	0 (0)	1010	
Channel spacing CC4-CC5=99.96 MHz (Note 1)																		
CC5	100	120	66	Downlink & Uplink	Low	37449.84	2236663	37402.32	2235871	0	120	23018	2236123	6	0	0 (0)	0	
					Mid	38699.88	2257497	38505.48	2254257	102		23091	2257147	5	4	1 (4)	220	
					High	39949.92	2278331	39176.64	2265443	504		23163	2277883	4	0	1 (4)	1016	
Note 1:	Corresponds to nominal channel spacing in accordance with TS 38.101-2 [8], clause 5.4.A.1 for the channel bandwidths of the two respective NR component carriers.																	
Note 2:	CCs are specified in increasing frequency order. CC1 is used as PCell if nothing else is specified in the test case.																	
Note 3:	The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta f_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs.																	
Note 4:	The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-8 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.																	

Note 1: Corresponds to nominal channel spacing in accordance with TS 38.101-2 [8], clause 5.4A.1 for the channel bandwidths of the two respective NR component carriers.

Note 2: CCs are specified in increasing frequency order. CC1 is used as PCell if nothing else is specified in the test case.

Note 3: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs.

Note 4: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-8 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.

4.3.1.2.3.4.10 CA_n260K

Table 4.3.1.2.3.4.10-1: NR Intra-Band contiguous CA configuration CA_n260K (PCC=CC1, SCC=CC2, CC3, CC4, CC5, CC6), SCS=60 kHz, nominal channel spacing

CBW combinati on	CC	CBW [MHz]	SCS [kHz]	carrier Bandw idth [PRBs]	Range		Carrier centre [MHz] Note 2	Carrier centre [ARFCN]	point A [MHz]	absolute Frequen cyPoint A [ARFCN]	offsetT oCarri er [Carrie r PRBs]	SS bloc k SCS [kHz]	GSCN	absolute Frequen cySSB [ARFCN]	k_{SSB}	Offset Carrier CORE SET#0 [RBs] Note 3	COR ESET #0 Index Note 4	offset ToPoi ntA (SIB1) [PRB s] Note 4	
50+100 +100+100 +100+100	CC1	50	60	66	Downlink & Uplink	Low	37025.0 4	2229583	37001.28	2229187	0	120	22995	2229499	0	6	0 (0)	6	
						Mid	38250	2249999	38152.8	2248379	102		23066	2249947	8	0	1 (8)	110	
						High	39475.6 8	2270427	39089.04	2263983	504		23137	2270395	4	2	1 (8)	514	
	Channel spacing CC1-CC2=74.4 MHz (Note 1)																		
	CC2	100	60	132	Downlink & Uplink	Low	37099.4 4	2230823	37051.92	2230031	0	120	22998	2230363	8	7	0 (0)	7	
						Mid	38324.4	2251239	38203.44	2249223	102		23069	2250811	4	2	1 (8)	112	
						High	39550.0 8	2271667	39139.68	2264827	504		23140	2271259	0	4	1 (8)	516	
	Channel spacing CC2-CC3=99.96 MHz (Note 1)																		
	CC3	100	60	132	Downlink & Uplink	Low	37199.4	2232489	37151.88	2231697	0	120	23004	2232091	10	4	1 (8)	12	
						Mid	38424.3 6	2252905	38303.4	2250889	102		23075	2252539	6	7	1 (8)	117	
						High	39650.0 4	2273333	39239.64	2266493	504		23146	2272987	2	9	1 (8)	521	
	Channel spacing CC3-CC4=99.96 MHz (Note 1)																		
	CC4	100	60	132	Downlink & Uplink	Low	37299.3 6	2234155	37251.84	2233363	0	120	23010	2233819	0	10	1 (8)	18	
						Mid	38524.3 2	2254571	38403.36	2252555	102		23081	2254267	8	12	1 (8)	122	
						High	39750	2274999	39339.6	2268159	504		23152	2274715	4	14	1 (8)	526	
	Channel spacing CC4-CC5=99.96 MHz (Note 1)																		
	CC5	100	60	132	Downlink & Uplink	Low	37399.3 2	2235821	37351.8	2235029	0	120	23016	2235547	2	15	1 (8)	23	
						Mid	38624.2 8	2256237	38503.32	2254221	102		23086	2255707	10	1	0 (0)	103	
						High	39849.9 6	2276665	39439.56	2269825	504		23157	2276155	6	3	0 (0)	507	
	Channel spacing CC5-CC6=99.96 MHz (Note 1)																		
	CC6	100	60	132	Downlink	Low	37499.2	2237487	37451.76	2236695	0	120	23021	2236987	4	4	0 (0)	4	

				&		8												
					Mid	38724.2 4	2257903	38603.28	2255887	102	23092		2257435	0	7	0 (0)	109	
				Uplink	High	39949.9 2	2278331	39539.52	2271491	504			23163	2277883	8	0	1 (8)	512
100+100 +100+100 +100+100	CC1	100	60	132	Downlink & Uplink	Low	37050	2229999	37002.48	2229207	0	120	22995	2229499	4	4	0 (0)	4
						Mid	38250	2249999	38129.04	2247983	102		23065	2249659	8	9	1 (8)	119
						High	39450.1 2	2270001	39039.72	2263161	504		23134	2269531	10	6	0 (0)	510
	Channel spacing CC1-CC2=99.96 MHz (Note 1)																	
	CC2	100	60	132	Downlink & Uplink	Low	37149.9 6	2231665	37102.44	2230873	0	120	23001	2231227	6	1	1 (8)	9
						Mid	38349.9 6	2251665	38229	2249649	102		23071	2251387	10	14	1 (8)	124
						High	39550.0 8	2271667	39139.68	2264827	504		23140	2271259	0	4	1 (8)	516
	Channel spacing CC2-CC3=99.96 MHz (Note 1)																	
	CC3	100	60	132	Downlink & Uplink	Low	37249.9 2	2233331	37202.4	2232539	0	120	23007	2232955	8	6	1 (8)	14
						Mid	38449.9 2	2253331	38328.96	2251315	102		23076	2252827	0	4	0 (0)	106
High						39650.0 4	2273333	39239.64	2266493	504	23146		2272987	2	9	1 (8)	521	
Channel spacing CC3-CC4=99.96 MHz (Note 1)																		
CC4	100	60	132	Downlink & Uplink	Low	37349.8 8	2234997	37302.36	2234205	0	120	23013	2234683	10	11	1 (8)	19	
					Mid	38549.8 8	2254997	38428.92	2252981	102		23082	2254555	2	1	1 (8)	111	
					High	39750	2274999	39339.6	2268159	504		23152	2274715	4	14	1 (8)	526	
Channel spacing CC4-CC5=99.96 MHz (Note 1)																		
CC5	100	60	132	Downlink & Uplink	Low	37449.8 4	2236663	37402.32	2235871	0	120	23018	2236123	0	1	0 (0)	1	
					Mid	38649.8 4	2256663	38528.88	2254647	102		23088	2256283	4	6	1 (8)	116	
					High	39849.9 6	2276665	39439.56	2269825	504		23157	2276155	6	3	0 (0)	507	
Channel spacing CC5-CC6=99.96 MHz (Note 1)																		
CC6	100	60	132	Downlink & Uplink	Low	37549.8	2238329	37502.28	2237537	0	120	23024	2237851	2	6	0 (0)	6	
					Mid	38749.8	2258329	38628.84	2256313	102		23094	2258011	6	11	1 (8)	121	
					High	39949.9 2	2278331	39539.52	2271491	504		23163	2277883	8	0	1 (8)	512	
Note 1: Corresponds to nominal channel spacing in accordance with TS 38.101-2 [8], clause 5.4A.1 for the channel bandwidths of the two respective NR component carriers.																		
Note 2: CCs are specified in increasing frequency order. CC1 is used as PCell if nothing else is specified in the test case.																		
Note 3: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs.																		

Note 4: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-7 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.

Table 4.3.1.2.3.4.10-2: NR Intra-Band contiguous CA configuration CA_n260K (PCC=CC1, SCC=CC2, CC3, CC4, CC5, CC6), SCS=120 kHz, nominal channel spacing

CBW combinati on	CC	CBW [MHz]	SCS [kHz]	carrier Bandw idth [PRBs]	Range		Carrier centre [MHz] Note 2	Carrier centre [ARFCN]	point A [MHz]	absolute Frequen cyPoint A [ARFCN]	offsetT oCarri er [Carrie r PRBs]	SS bloc k SCS [kHz]	GSCN	absolute Frequen cySSB [ARFCN]	k_{SSB}	Offset Carrier CORE SET#0 [RBs] Note 3	COR ESET #0 Index (Offs et [RBs]) Note 4	offset ToPoi ntA (SIB1) [PRB s] Note 4	
50+100 +100+100 +100+100	CC1	50	120	32	Downlink & Uplink	Low	37025.0 4	2229583	37002	2229199	0	120	22995	2229499	6	2	0 (0)	4	
						Mid	38250	2249999	38080.08	2247167	102		23066	2249947	10	3	0 (0)	210	
						High	39475.6 8	2270427	38726.88	2257947	504		23137	2270395	8	0	1 (4)	1016	
	Channel spacing CC1-CC2=74.4 MHz (Note 1)																		
	CC2	100	120	66	Downlink & Uplink	Low	37099.4 4	2230823	37051.92	2230031	0	120	22998	2230363	10	3	0 (0)	6	
						Mid	38324.4	2251239	38130	2247999	102		23069	2250811	2	1	1 (4)	214	
						High	39550.0 8	2271667	38776.8	2258779	504		23140	2271259	0	2	1 (4)	1020	
	Channel spacing CC2-CC3=99.96 MHz (Note 1)																		
	CC3	100	120	66	Downlink & Uplink	Low	37199.4	2232489	37151.88	2231697	0	120	23004	2232091	5	2	1 (4)	12	
						Mid	38424.3 6	2252905	38229.96	2249665	102		23075	2252539	9	3	1 (4)	218	
						High	39650.0 4	2273333	38876.76	2260445	504		23146	2272987	7	4	1 (4)	1024	
	Channel spacing CC3-CC4=99.96 MHz (Note 1)																		
	CC4	100	120	66	Downlink & Uplink	Low	37299.3 6	2234155	37251.84	2233363	0	120	23010	2233819	0	5	1 (4)	18	
						Mid	38524.3 2	2254571	38329.92	2251331	102		23081	2254267	4	6	1 (4)	224	
						High	39750	2274999	38976.72	2262111	504		23152	2274715	2	7	1 (4)	1030	
	Channel spacing CC4-CC5=99.96 MHz (Note 1)																		
	CC5	100	120	66	Downlink &	Low	37399.3 2	2235821	37351.8	2235029	0	120	23016	2235547	7	7	1 (4)	22	
						Mid	38624.2	2256237	38429.88	2252997	102		23086	2255707	11	0	0 (0)	204	

					Uplink	High	39849.9 6	2276665	39076.68	2263777	504		23157	2276155	9	1	0 (0)	1010
	Channel spacing CC5-CC6=99.96 MHz (Note 1)																	
	CC6	100	120	66	Downlink	Low	37499.2 8	2237487	37451.76	2236695	0	120	23021	2236987	2	2	0 (0)	4
					&	Mid	38724.2 4	2257903	38529.84	2254663	102		23092	2257435	6	3	0 (0)	210
100+100 +100+100 +100+100					Uplink	High	39949.9 2	2278331	39176.64	2265443	504		23163	2277883	4	0	1 (4)	1016
	CC1	100	120	66	Downlink	Low	37050	2229999	37002.48	2229207	0	120	22995	2229499	2	2	0 (0)	4
					&	Mid	38250	2249999	38055.6	2246759	102		23065	2249659	10	4	1 (4)	220
					Uplink	High	39450.1 2	2270001	38676.84	2257113	504		23134	2269531	5	3	0 (0)	1014
	Channel spacing CC1-CC2=99.96 MHz (Note 1)																	
	CC2	100	120	66	Downlink	Low	37149.9 6	2231665	37102.44	2230873	0	120	23001	2231227	9	0	1 (4)	8
					&	Mid	38349.9 6	2251665	38155.56	2248425	102		23071	2251387	5	7	1 (4)	226
					Uplink	High	39550.0 8	2271667	38776.8	2258779	504		23140	2271259	0	2	1 (4)	1020
	Channel spacing CC2-CC3=99.96 MHz (Note 1)																	
	CC3	100	120	66	Downlink	Low	37249.9 2	2233331	37202.4	2232539	0	120	23007	2232955	4	3	1 (4)	14
					&	Mid	38449.9 2	2253331	38255.52	2250091	102		23076	2252827	0	2	0 (0)	208
					Uplink	High	39650.0 4	2273333	38876.76	2260445	504		23146	2272987	7	4	1 (4)	1024
	Channel spacing CC3-CC4=99.96 MHz (Note 1)																	
	CC4	100	120	66	Downlink	Low	37349.8 8	2234997	37302.36	2234205	0	120	23013	2234683	11	5	1 (4)	18
					&	Mid	38549.8 8	2254997	38355.48	2251757	102		23082	2254555	7	0	1 (4)	212
					Uplink	High	39750	2274999	38976.72	2262111	504		23152	2274715	2	7	1 (4)	1030
	Channel spacing CC4-CC5=99.96 MHz (Note 1)																	
	CC5	100	120	66	Downlink	Low	37449.8 4	2236663	37402.32	2235871	0	120	23018	2236123	6	0	0 (0)	0
					&	Mid	38649.8 4	2256663	38455.44	2253423	102		23088	2256283	2	3	1 (4)	218
					Uplink	High	39849.9 6	2276665	39076.68	2263777	504		23157	2276155	9	1	0 (0)	1010
	Channel spacing CC5-CC6=99.96 MHz (Note 1)																	
	CC6	100	120	66	Downlink	Low	37549.8	2238329	37502.28	2237537	0	120	23024	2237851	1	3	0 (0)	6
					&	Mid	38749.8	2258329	38555.4	2255089	102		23094	2258011	9	5	1 (4)	222
					Uplink	High	39949.9	2278331	39176.64	2265443	504		23163	2277883	4	0	1 (4)	1016

						2												
Note 1:	Corresponds to nominal channel spacing in accordance with TS 38.101-2 [8], clause 5.4A.1 for the channel bandwidths of the two respective NR component carriers.																	
Note 2:	CCs are specified in increasing frequency order. CC1 is used as PCell if nothing else is specified in the test case.																	
Note 3:	The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs.																	
Note 4:	The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-8 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.																	

4.3.1.2.3.4.11 CA_n260L

Table 4.3.1.2.3.4.11-1: NR Intra-Band contiguous CA configuration CA_n260L (PCC=CC1, SCC=CC2, CC3, CC4, CC5, CC6, CC7), SCS=60 kHz, nominal channel spacing

CBW combinati on	CC	CBW [MHz]	SCS [kHz]	carrier Bandw idth [PRBs]	Range		Carrier centre [MHz] Note 2	Carrier centre [ARFCN]	point A [MHz]	absolute Frequen cyPoint A [ARFCN]	offsetT oCarrier [Carrie r PRBs]	SS bloc k SCS [kHz]	GSCN	absolute Frequen cySSB [ARFCN]	k_{SSB}	Offset Carrier CORE SET#0 [RBs] Note 3	COR ESET #0 Index Note 4	offset ToPoi ntA (SIB1) [PRBs] Note 4
50+100 +100+100 +100+100 +100	CC1	50	60	66	Downlink	Low	37025.04	2229583	37001.28	2229187	0	120	22995	2229499	0	6	0 (0)	6
					& Uplink	Mid	38199.96	2249165	38102.76	2247545	102		23063	2249083	2	6	0 (0)	108
						High	39375.72	2268761	38989.08	2262317	504		23131	2268667	2	5	0 (0)	509
	Channel spacing CC1-CC2=74.4 MHz (Note 1)																	
	CC2	100	60	132	Downlink	Low	37099.44	2230823	37051.92	2230031	0	120	22998	2230363	8	7	0 (0)	7
					& Uplink	Mid	38274.36	2250405	38153.4	2248389	102		23066	2249947	10	7	0 (0)	109
						High	39450.12	2270001	39039.72	2263161	504		23134	2269531	10	6	0 (0)	510
	Channel spacing CC2-CC3=99.96 MHz (Note 1)																	
	CC3	100	60	132	Downlink	Low	37199.4	2232489	37151.88	2231697	0	120	23004	2232091	10	4	1 (8)	12
					& Uplink	Mid	38374.32	2252071	38253.36	2250055	102		23072	2251675	0	5	1 (8)	115
						High	39550.08	2271667	39139.68	2264827	504		23140	2271259	0	4	1 (8)	516
	Channel spacing CC3-CC4=99.96 MHz (Note 1)																	
	CC4	100	60	132	Downlink	Low	37299.3	2234155	37251.84	2233363	0	120	23010	2233819	0	10	1 (8)	18

					&		6												
					Uplink	Mid	38474.2 8	2253737	38353.32	2251721	102		23078	2253403	2	10	1 (8)	120	
						High	39650.0 4	2273333	39239.64	2266493	504		23146	2272987	2	9	1 (8)	521	
	Channel spacing CC4-CC5=99.96 MHz (Note 1)																		
	CC5	100	60	132	Downlink	Low	37399.3 2	2235821	37351.8	2235029	0	120	23016	2235547	2	15	1 (8)	23	
					&	Mid	38574.2 4	2255403	38453.28	2253387	102		23084	2255131	4	15	1 (8)	125	
					Uplink	High	39750	2274999	39339.6	2268159	504		23152	2274715	4	14	1 (8)	526	
	Channel spacing CC5-CC6=99.96 MHz (Note 1)																		
	CC6	100	60	132	Downlink	Low	37499.2 8	2237487	37451.76	2236695	0	120	23021	2236987	4	4	0 (0)	4	
					&	Mid	38674.2	2257069	38553.24	2255053	102		23089	2256571	6	4	0 (0)	106	
					Uplink	High	39849.9 6	2276665	39439.56	2269825	504		23157	2276155	6	3	0 (0)	507	
	Channel spacing CC6-CC7=99.96 MHz (Note 1)																		
	CC7	100	60	132	Downlink	Low	37599.2 4	2239153	37551.72	2238361	0	120	23027	2238715	6	1	1 (8)	9	
					&	Mid	38774.1 6	2258735	38653.2	2256719	102		23095	2258299	8	1	1 (8)	111	
					Uplink	High	39949.9 2	2278331	39539.52	2271491	504		23163	2277883	8	0	1 (8)	512	
	100+100 +100+100 +100	CC1	100	60	132	Downlink	Low	37050	2229999	37002.48	2229207	0	120	22995	2229499	4	4	0 (0)	4
						&	Mid	38199.9 6	2249165	38079	2247149	102		23062	2248795	2	7	1 (8)	117
						Uplink	High	39350.1 6	2268335	38939.76	2261495	504		23128	2267803	8	1	0 (0)	505
		Channel spacing CC1-CC2=99.96 MHz (Note 1)																	
		CC2	100	60	132	Downlink	Low	37149.9 6	2231665	37102.44	2230873	0	120	23001	2231227	6	1	1 (8)	9
					&	Mid	38299.9 2	2250831	38178.96	2248815	102		23068	2250523	4	12	1 (8)	122	
					Uplink	High	39450.1 2	2270001	39039.72	2263161	504		23134	2269531	10	6	0 (0)	510	
Channel spacing CC2-CC3=99.96 MHz (Note 1)																			
CC3		100	60	132	Downlink	Low	37249.9 2	2233331	37202.4	2232539	0	120	23007	2232955	8	6	1 (8)	14	
					&	Mid	38399.8 8	2252497	38278.92	2250481	102		23073	2251963	6	1	0 (0)	103	
					Uplink	High	39550.0 8	2271667	39139.68	2264827	504		23140	2271259	0	4	1 (8)	516	
Channel spacing CC3-CC4=99.96 MHz (Note 1)																			
CC4	100	60	132	Downlink	Low	37349.8	2234997	37302.36	2234205	0	120	23013	2234683	10	11	1 (8)	19		

				& Uplink		8											
					Mid	38499.8 4	2254163	38378.88	2252147	102		23079	2253691	8	6	0 (0)	108
					High	39650.0 4	2273333	39239.64	2266493	504		23146	2272987	2	9	1 (8)	521
Channel spacing CC4-CC5=99.96 MHz (Note 1)																	
CC5	100	60	132	Downlink & Uplink	Low	37449.8 4	2236663	37402.32	2235871	0	120	23018	2236123	0	1	0 (0)	1
					Mid	38599.8	2255829	38478.84	2253813	102		23085	2255419	10	3	1 (8)	113
					High	39750	2274999	39339.6	2268159	504		23152	2274715	4	14	1 (8)	526
Channel spacing CC5-CC6=99.96 MHz (Note 1)																	
CC6	100	60	132	Downlink & Uplink	Low	37549.8	2238329	37502.28	2237537	0	120	23024	2237851	2	6	0 (0)	6
					Mid	38699.7 6	2257495	38578.8	2255479	102		23091	2257147	0	9	1 (8)	119
					High	39849.9 6	2276665	39439.56	2269825	504		23157	2276155	6	3	0 (0)	507
Channel spacing CC6-CC7=99.96 MHz (Note 1)																	
CC7	100	60	132	Downlink & Uplink	Low	37649.7 6	2239995	37602.24	2239203	0	120	23030	2239579	4	3	1 (8)	11
					Mid	38799.7 2	2259161	38678.76	2257145	102		23097	2258875	2	14	1 (8)	124
					High	39949.9 2	2278331	39539.52	2271491	504		23163	2277883	8	0	1 (8)	512
Note 1: Corresponds to nominal channel spacing in accordance with TS 38.101-2 [8], clause 5.4A.1 for the channel bandwidths of the two respective NR component carriers.																	
Note 2: CCs are specified in increasing frequency order. CC1 is used as PCell if nothing else is specified in the test case.																	
Note 3: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs.																	
Note 4: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-7 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.																	

Table 4.3.1.2.3.4.11-2: NR Intra-Band contiguous CA configuration CA_n260L (PCC=CC1, SCC=CC2, CC3, CC4, CC5, CC6, CC7), SCS=120 kHz, nominal channel spacing

CBW combination	CC	CBW [MHz]	SCS [kHz]	carrier Bandwidth [PRBs]	Range	Carrier centre [MHz] Note 2	Carrier centre [ARFCN]	point A [MHz]	absolute Frequency Point A [ARFCN]	offset ToCarrier [Carrier PRBs]	SS block SCS [kHz]	GSCN	absolute Frequency SSB [ARFCN]	k_{SSB}	Offset Carrier CORE SET#0 [RBs] Note 3	COR ESET #0 Index (Offset [RBs]) Note 4	offset ToPointA (SIB1) [PRBs] Note 4

50+100 +100+100 +100+100 +100	CC1	50	120	32	Downlink	Low	37025.0 4	2229583	37002	2229199	0	120	22995	2229499	6	2	0 (0)	4
					&	Mid	38199.9 6	2249165	38030.04	2246333	102		23063	2249083	7	2	0 (0)	208
						Uplink	High	39375.7 2	2268761	38626.92	2256281		504	23131	2268667	1	2	0 (0)	1012
	Channel spacing CC1-CC2=74.4 MHz (Note 1)																	
	CC2	100	120	66	Downlink	Low	37099.4 4	2230823	37051.92	2230031	0	120	22998	2230363	10	3	0 (0)	6
					&	Mid	38274.3 6	2250405	38079.96	2247165	102		23066	2249947	11	3	0 (0)	210
						Uplink	High	39450.1 2	2270001	38676.84	2257113		504	23134	2269531	5	3	0 (0)	1014
	Channel spacing CC2-CC3=99.96 MHz (Note 1)																	
	CC3	100	120	66	Downlink & Uplink	Low	37199.4	2232489	37151.88	2231697	0	120	23004	2232091	5	2	1 (4)	12
						Mid	38374.3 2	2252071	38179.92	2248831	102		23072	2251675	6	2	1 (4)	216
						High	39550.0 8	2271667	38776.8	2258779	504		23140	2271259	0	2	1 (4)	1020
	Channel spacing CC3-CC4=99.96 MHz (Note 1)																	
	CC4	100	120	66	Downlink & Uplink	Low	37299.3 6	2234155	37251.84	2233363	0	120	23010	2233819	0	5	1 (4)	18
						Mid	38474.2 8	2253737	38279.88	2250497	102		23078	2253403	1	5	1 (4)	222
						High	39650.0 4	2273333	38876.76	2260445	504		23146	2272987	7	4	1 (4)	1024
	Channel spacing CC4-CC5=99.96 MHz (Note 1)																	
	CC5	100	120	66	Downlink & Uplink	Low	37399.3 2	2235821	37351.8	2235029	0	120	23016	2235547	7	7	1 (4)	22
						Mid	38574.2 4	2255403	38379.84	2252163	102		23084	2255131	8	7	1 (4)	226
						High	39750	2274999	38976.72	2262111	504		23152	2274715	2	7	1 (4)	1030
	Channel spacing CC5-CC6=99.96 MHz (Note 1)																	
	CC6	100	120	66	Downlink & Uplink	Low	37499.2 8	2237487	37451.76	2236695	0	120	23021	2236987	2	2	0 (0)	4
						Mid	38674.2	2257069	38479.8	2253829	102		23089	2256571	3	2	0 (0)	208
						High	39849.9 6	2276665	39076.68	2263777	504		23157	2276155	9	1	0 (0)	1010
	Channel spacing CC6-CC7=99.96 MHz (Note 1)																	
	CC7	100	120	66	Downlink & Uplink	Low	37599.2 4	2239153	37551.72	2238361	0	120	23027	2238715	9	0	1 (4)	8
						Mid	38774.1 6	2258735	38579.76	2255495	102		23095	2258299	10	0	1 (4)	212
						High	39949.9 2	2278331	39176.64	2265443	504		23163	2277883	4	0	1 (4)	1016

100+100 +100+100 +100+100 +100	CC1	100	120	66	Downlink & Uplink	Low	37050	2229999	37002.48	2229207	0	120	22995	2229499	2	2	0 (0)	4
						Mid	38199.9 6	2249165	38005.56	2245925	102		23062	2248795	7	3	1 (4)	218
						High	39350.1 6	2268335	38576.88	2255447	504		23128	2267803	10	0	0 (0)	1008
	Channel spacing CC1-CC2=99.96 MHz (Note 1)																	
	CC2	100	120	66	Downlink & Uplink	Low	37149.9 6	2231665	37102.44	2230873	0	120	23001	2231227	9	0	1 (4)	8
						Mid	38299.9 2	2250831	38105.52	2247591	102		23068	2250523	2	6	1 (4)	224
						High	39450.1 2	2270001	38676.84	2257113	504		23134	2269531	5	3	0 (0)	1014
	Channel spacing CC2-CC3=99.96 MHz (Note 1)																	
	CC3	100	120	66	Downlink & Uplink	Low	37249.9 2	2233331	37202.4	2232539	0	120	23007	2232955	4	3	1 (4)	14
						Mid	38399.8 8	2252497	38205.48	2249257	102		23073	2251963	9	0	0 (0)	204
						High	39550.0 8	2271667	38776.8	2258779	504		23140	2271259	0	2	1 (4)	1020
	Channel spacing CC3-CC4=99.96 MHz (Note 1)																	
	CC4	100	120	66	Downlink & Uplink	Low	37349.8 8	2234997	37302.36	2234205	0	120	23013	2234683	11	5	1 (4)	18
						Mid	38499.8 4	2254163	38305.44	2250923	102		23079	2253691	4	3	0 (0)	210
						High	39650.0 4	2273333	38876.76	2260445	504		23146	2272987	7	4	1 (4)	1024
	Channel spacing CC4-CC5=99.96 MHz (Note 1)																	
	CC5	100	120	66	Downlink & Uplink	Low	37449.8 4	2236663	37402.32	2235871	0	120	23018	2236123	6	0	0 (0)	0
						Mid	38599.8	2255829	38405.4	2252589	102		23085	2255419	11	1	1 (4)	214
						High	39750	2274999	38976.72	2262111	504		23152	2274715	2	7	1 (4)	1030
	Channel spacing CC5-CC6=99.96 MHz (Note 1)																	
	CC6	100	120	66	Downlink & Uplink	Low	37549.8	2238329	37502.28	2237537	0	120	23024	2237851	1	3	0 (0)	6
						Mid	38699.7 6	2257495	38505.36	2254255	102		23091	2257147	6	4	1 (4)	220
						High	39849.9 6	2276665	39076.68	2263777	504		23157	2276155	9	1	0 (0)	1010
	Channel spacing CC6-CC7=99.96 MHz (Note 1)																	
	CC7	100	120	66	Downlink & Uplink	Low	37649.7 6	2239995	37602.24	2239203	0	120	23030	2239579	8	1	1 (4)	10
						Mid	38799.7 2	2259161	38605.32	2255921	102		23097	2258875	1	7	1 (4)	226
						High	39949.9 2	2278331	39176.64	2265443	504		23163	2277883	4	0	1 (4)	1016

Note 1: Corresponds to nominal channel spacing in accordance with TS 38.101-2 [8], clause 5.4A.1 for the channel bandwidths of the two respective NR component carriers.

Note 2:	CCs are specified in increasing frequency order. CC1 is used as PCell if nothing else is specified in the test case.
Note 3:	The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta f_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs.
Note 4:	The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-8 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.

4.3.1.2.3.4.12 CA_n260M

Table 4.3.1.2.3.4.12-1: NR Intra-Band contiguous CA configuration CA_n260M (PCC=CC1, SCC=CC2, CC3, CC4, CC5, CC6, CC7, CC8), SCS=60 kHz, nominal channel spacing

CBW combinati on	CC	CBW [MHz]	SCS [kHz]	carrier Bandw idth [PRBs]	Range		Carrier centre [MHz] Note 2	Carrier centre [ARFCN]	point A [MHz]	absolute Frequen cyPoint A [ARFCN]	offsetT oCarrier [Carrie r PRBs]	SS bloc k SCS [kHz]	GSCN	absolute Frequen cySSB [ARFCN]	k_{SSB}	Offset Carrier CORE SET#0 [RBs] Note 3	COR ESET #0 Index Note 4	offset ToPoi ntA (SIB1) [PRB s] Note 4
50+100	CC1	50	60	66	Downlink	Low	37025.04	2229583	37001.28	2229187	0	120	22995	2229499	0	6	0 (0)	6
&					Mid	38149.92	2248331	38052.72	2246711	102	23060		2248219	8	3	0 (0)	105	
					Uplink	High	39275.76	2267095	38889.12	2260651	504		23125	2266939	0	0	0 (0)	504
+100+100	Channel spacing CC1-CC2=74.4 MHz (Note 1)																	
+100+100	CC2	100	60	132	Downlink	Low	37099.44	2230823	37051.92	2230031	0	120	22998	2230363	8	7	0 (0)	7
					&	Mid	38224.32	2249571	38103.36	2247555	102		23063	2249083	4	5	0 (0)	107
						Uplink	High	39350.16	2268335	38939.76	2261495		504	23128	2267803	8	1	0 (0)	505
+100+100	Channel spacing CC2-CC3=99.96 MHz (Note 1)																	
	CC3	100	60	132	Downlink	Low	37199.4	2232489	37151.88	2231697	0	120	23004	2232091	10	4	1 (8)	12
					&	Mid	38324.28	2251237	38203.32	2249221	102		23069	2250811	6	2	1 (8)	112
Uplink						High	39450.12	2270001	39039.72	2263161	504		23134	2269531	10	6	0 (0)	510
+100+100	Channel spacing CC3-CC4=99.96 MHz (Note 1)																	
	CC4	100	60	132	Downlink	Low	37299.36	2234155	37251.84	2233363	0	120	23010	2233819	0	10	1 (8)	18
					&	Mid	38424.2	2252903	38303.28	2250887	102		23075	2252539	8	7	1 (8)	117

					Uplink	High	39550.0 8	2271667	39139.68	2264827	504		23140	2271259	0	4	1 (8)	516
	Channel spacing CC4-CC5=99.96 MHz (Note 1)																	
	CC5	100	60	132	Downlink	Low	37399.3 2	2235821	37351.8	2235029	0	120	23016	2235547	2	15	1 (8)	23
					&	Mid	38524.2	2254569	38403.24	2252553	102		23081	2254267	10	12	1 (8)	122
					Uplink	High	39650.0 4	2273333	39239.64	2266493	504		23146	2272987	2	9	1 (8)	521
	Channel spacing CC5-CC6=99.96 MHz (Note 1)																	
	CC6	100	60	132	Downlink	Low	37499.2 8	2237487	37451.76	2236695	0	120	23021	2236987	4	4	0 (0)	4
					&	Mid	38624.1 6	2256235	38503.2	2254219	102		23086	2255707	0	2	0 (0)	104
					Uplink	High	39750	2274999	39339.6	2268159	504		23152	2274715	4	14	1 (8)	526
	Channel spacing CC6-CC7=99.96 MHz (Note 1)																	
	CC7	100	60	132	Downlink	Low	37599.2 4	2239153	37551.72	2238361	0	120	23027	2238715	6	1	1 (8)	9
					&	Mid	38724.1 2	2257901	38603.16	2255885	102		23092	2257435	2	7	0 (0)	109
					Uplink	High	39849.9 6	2276665	39439.56	2269825	504		23157	2276155	6	3	0 (0)	507
	Channel spacing CC7-CC8=99.96 MHz (Note 1)																	
	CC8	100	60	132	Downlink	Low	37699.2	2240819	37651.68	2240027	0	120	23033	2240443	8	6	1 (8)	N/A
					&	Mid	38824.0 8	2259567	38703.12	2257551	102		23098	2259163	4	4	1 (8)	114
					Uplink	High	39949.9 2	2278331	39539.52	2271491	504		23163	2277883	8	0	1 (8)	512
100+100 +100+100 +100+100	CC1	100	60	132	Downlink	Low	37050	2229999	37002.48	2229207	0	120	22995	2229499	4	4	0 (0)	4
					&	Mid	38149.9 2	2248331	38028.96	2246315	102		23059	2247931	8	4	1 (8)	114
					Uplink	High	39250.2	2266669	38839.8	2259829	504		23123	2266363	6	12	1 (8)	524
	Channel spacing CC1-CC2=99.96 MHz (Note 1)																	
	CC2	100	60	132	Downlink	Low	37149.9 6	2231665	37102.44	2230873	0	120	23001	2231227	6	1	1 (8)	9
					&	Mid	38249.8 8	2249997	38128.92	2247981	102		23065	2249659	10	9	1 (8)	119
					Uplink	High	39350.1 6	2268335	38939.76	2261495	504		23128	2267803	8	1	0 (0)	505
	Channel spacing CC2-CC3=99.96 MHz (Note 1)																	
	CC3	100	60	132	Downlink	Low	37249.9 2	2233331	37202.4	2232539	0	120	23007	2232955	8	6	1 (8)	14
					&	Mid	38349.8 4	2251663	38228.88	2249647	102		23071	2251387	0	15	1 (8)	125
					Uplink	High	39450.1	2270001	39039.72	2263161	504		23134	2269531	10	6	0 (0)	510

						2											
Channel spacing CC3-CC4=99.96 MHz (Note 1)																	
CC4	100	60	132	Downlink & Uplink	Low	37349.8 8	2234997	37302.36	2234205	0	120	23013	2234683	10	11	1 (8)	19
					Mid	38449.8	2253329	38328.84	2251313	102		23076	2252827	2	4	0 (0)	106
					High	39550.0 8	2271667	39139.68	2264827	504		23140	2271259	0	4	1 (8)	516
Channel spacing CC4-CC5=99.96 MHz (Note 1)																	
CC5	100	60	132	Downlink & Uplink	Low	37449.8 4	2236663	37402.32	2235871	0	120	23018	2236123	0	1	0 (0)	1
					Mid	38549.7 6	2254995	38428.8	2252979	102		23082	2254555	4	1	1 (8)	111
					High	39650.0 4	2273333	39239.64	2266493	504		23146	2272987	2	9	1 (8)	521
Channel spacing CC5-CC6=99.96 MHz (Note 1)																	
CC6	100	60	132	Downlink & Uplink	Low	37549.8	2238329	37502.28	2237537	0	120	23024	2237851	2	6	0 (0)	6
					Mid	38649.7 2	2256661	38528.76	2254645	102		23088	2256283	6	6	1 (8)	116
					High	39750	2274999	39339.6	2268159	504		23152	2274715	4	14	1 (8)	526
Channel spacing CC6-CC7=99.96 MHz (Note 1)																	
CC7	100	60	132	Downlink & Uplink	Low	37649.7 6	2239995	37602.24	2239203	0	120	23030	2239579	4	3	1 (8)	11
					Mid	38749.6 8	2258327	38628.72	2256311	102		23094	2258011	8	11	1 (8)	121
					High	39849.9 6	2276665	39439.56	2269825	504		23157	2276155	6	3	0 (0)	507
Channel spacing CC7-CC8=99.96 MHz (Note 1)																	
CC8	100	60	132	Downlink & Uplink	Low	37749.7 2	2241661	37702.2	2240869	0	120	23036	2241307	6	8	1 (8)	N/A
					Mid	38849.6 4	2259993	38728.68	2257977	102		23099	2259451	10	0	0 (0)	102
					High	39949.9 2	2278331	39539.52	2271491	504		23163	2277883	8	0	1 (8)	512

Note 1: Corresponds to nominal channel spacing in accordance with TS 38.101-2 [8], clause 5.4A.1 for the channel bandwidths of the two respective NR component carriers.

Note 2: CCs are specified in increasing frequency order. CC1 is used as PCell if nothing else is specified in the test case.

Note 3: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs.

Note 4: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-7 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.

Table 4.3.1.2.3.4.12-2: NR Intra-Band contiguous CA configuration CA_n260M (PCC=CC1, SCC=CC2, CC3, CC4, CC5, CC6, CC7, CC8), SCS=120 kHz, nominal channel spacing

CBW combinati on	CC	CBW [MHz]	SCS [kHz]	carrier Bandw idth [PRBs]	Range		Carrier centre [MHz] Note 2	Carrier centre [ARFCN]	point A [MHz]	absolute Frequen cyPoint A [ARFCN]	offsetT oCarrier [Carrie r PRBs]	SS bloc k SCS [kHz]	GSCN	absolute Frequen cySSB [ARFCN]	k _{SSB}	Offset Carrier CORE SET#0 [RBs] Note 3	COR ESET #0 Index (Offs et [RBs]) Note 4	offset ToPoi ntA (SIB1) [PRB s] Note 4
50+100 +100+100 +100+100 +100+100	CC1	50	120	32	Downlink	Low	37025.04	2229583	37002	2229199	0	120	22995	2229499	6	2	0 (0)	4
						Mid	38150.04	2248333	37980.12	2245501	102		23060	2248219	3	1	0 (0)	206
					Uplink	High	39275.76	2267095	38526.96	2254615	504		23126	2267227	6	7	1 (4)	1030
	Channel spacing CC1-CC2=74.4 MHz (Note 1)																	
	CC2	100	120	66	Downlink	Low	37099.44	2230823	37051.92	2230031	0	120	22998	2230363	10	3	0 (0)	6
						Mid	38224.44	2249573	38030.04	2246333	102		23063	2249083	7	2	0 (0)	208
					Uplink	High	39350.16	2268335	38576.88	2255447	504		23128	2267803	10	0	0 (0)	1008
	Channel spacing CC2-CC3=99.96 MHz (Note 1)																	
	CC3	100	120	66	Downlink & Uplink	Low	37199.4	2232489	37151.88	2231697	0	120	23004	2232091	5	2	1 (4)	12
						Mid	38324.4	2251239	38130	2247999	102		23069	2250811	2	1	1 (4)	214
						High	39450.12	2270001	38676.84	2257113	504		23134	2269531	5	3	0 (0)	1014
	Channel spacing CC3-CC4=99.96 MHz (Note 1)																	
	CC4	100	120	66	Downlink	Low	37299.36	2234155	37251.84	2233363	0	120	23010	2233819	0	5	1 (4)	18
						Mid	38424.36	2252905	38229.96	2249665	102		23075	2252539	9	3	1 (4)	218
					Uplink	High	39550.08	2271667	38776.8	2258779	504		23140	2271259	0	2	1 (4)	1020
	Channel spacing CC4-CC5=99.96 MHz (Note 1)																	
	CC5	100	120	66	Downlink	Low	37399.32	2235821	37351.8	2235029	0	120	23016	2235547	7	7	1 (4)	22
						Mid	38524.32	2254571	38329.92	2251331	102		23081	2254267	4	6	1 (4)	224
					Uplink	High	39650.04	2273333	38876.76	2260445	504		23146	2272987	7	4	1 (4)	1024

Channel spacing CC5-CC6=99.96 MHz (Note 1)																		
CC6	100	120	66	Downlink & Uplink	Low	37499.2 8	2237487	37451.76	2236695	0	120	23021	2236987	2	2	0 (0)	4	
					Mid	38624.2 8	2256237	38429.88	2252997	102		23086	2255707	11	0	0 (0)	204	
					High	39750	2274999	38976.72	2262111	504		23152	2274715	2	7	1 (4)	1030	
Channel spacing CC6-CC7=99.96 MHz (Note 1)																		
CC7	100	120	66	Downlink & Uplink	Low	37599.2 4	2239153	37551.72	2238361	0	120	23027	2238715	9	0	1 (4)	8	
					Mid	38724.2 4	2257903	38529.84	2254663	102		23092	2257435	6	3	0 (0)	210	
					High	39849.9 6	2276665	39076.68	2263777	504		23157	2276155	9	1	0 (0)	1010	
Channel spacing CC7-CC8=99.96 MHz (Note 1)																		
CC8	100	120	66	Downlink & Uplink	Low	37699.2	2240819	37651.68	2240027	0	120	23033	2240443	4	3	1 (4)	N/A	
					Mid	38824.2	2259569	38629.8	2256329	102		23098	2259163	1	2	1 (4)	216	
					High	39949.9 2	2278331	39176.64	2265443	504		23163	2277883	4	0	1 (4)	1016	
100+100 +100+100 +100+100	CC1	100	120	66	Downlink & Uplink	Low	37050	2229999	37002.48	2229207	0	120	22995	2229499	2	2	0 (0)	4
						Mid	38150.0 4	2248333	37955.64	2245093	102		23059	2247931	3	2	1 (4)	216
						High	39250.2	2266669	38476.92	2253781	504		23123	2266363	3	6	1 (4)	1028
	Channel spacing CC1-CC2=99.96 MHz (Note 1)																	
	CC2	100	120	66	Downlink & Uplink	Low	37149.9 6	2231665	37102.44	2230873	0	120	23001	2231227	9	0	1 (4)	8
						Mid	38250	2249999	38055.6	2246759	102		23065	2249659	10	4	1 (4)	220
						High	39350.1 6	2268335	38576.88	2255447	504		23128	2267803	10	0	0 (0)	1008
	Channel spacing CC2-CC3=99.96 MHz (Note 1)																	
	CC3	100	120	66	Downlink & Uplink	Low	37249.9 2	2233331	37202.4	2232539	0	120	23007	2232955	4	3	1 (4)	14
						Mid	38349.9 6	2251665	38155.56	2248425	102		23071	2251387	5	7	1 (4)	226
						High	39450.1 2	2270001	38676.84	2257113	504		23134	2269531	5	3	0 (0)	1014
	Channel spacing CC3-CC4=99.96 MHz (Note 1)																	
	CC4	100	120	66	Downlink & Uplink	Low	37349.8 8	2234997	37302.36	2234205	0	120	23013	2234683	11	5	1 (4)	18
						Mid	38449.9 2	2253331	38255.52	2250091	102		23076	2252827	0	2	0 (0)	208
						High	39550.0 8	2271667	38776.8	2258779	504		23140	2271259	0	2	1 (4)	1020
	Channel spacing CC4-CC5=99.96 MHz (Note 1)																	
	CC5	100	120	66	Downlink	Low	37449.8 4	2236663	37402.32	2235871	0	120	23018	2236123	6	0	0 (0)	0

				&	Mid	38549.8 8	2254997	38355.48	2251757	102		23082	2254555	7	0	1 (4)	212
				Uplink	High	39650.0 4	2273333	38876.76	2260445	504		23146	2272987	7	4	1 (4)	1024
Channel spacing CC5-CC6=99.96 MHz (Note 1)																	
CC6	100	120	66	Downlink	Low	37549.8	2238329	37502.28	2237537	0	120	23024	2237851	1	3	0 (0)	6
				&	Mid	38649.8 4	2256663	38455.44	2253423	102		23088	2256283	2	3	1 (4)	218
				Uplink	High	39750	2274999	38976.72	2262111	504		23152	2274715	2	7	1 (4)	1030
Channel spacing CC6-CC7=99.96 MHz (Note 1)																	
CC7	100	120	66	Downlink	Low	37649.7 6	2239995	37602.24	2239203	0	120	23030	2239579	8	1	1 (4)	10
				&	Mid	38749.8	2258329	38555.4	2255089	102		23094	2258011	9	5	1 (4)	222
				Uplink	High	39849.9 6	2276665	39076.68	2263777	504		23157	2276155	9	1	0 (0)	1010
Channel spacing CC7-CC8=99.96 MHz (Note 1)																	
CC8	100	120	66	Downlink	Low	37749.7 2	2241661	37702.2	2240869	0	120	23036	2241307	3	4	1 (4)	N/A
				&	Mid	38849.7 6	2259995	38655.36	2256755	102		23099	2259451	4	0	0 (0)	204
				Uplink	High	39949.9 2	2278331	39176.64	2265443	504		23163	2277883	4	0	1 (4)	1016
Note 1: Corresponds to nominal channel spacing in accordance with TS 38.101-2 [8], clause 5.4A.1 for the channel bandwidths of the two respective NR component carriers.																	
Note 2: CCs are specified in increasing frequency order. CC1 is used as PCell if nothing else is specified in the test case.																	
Note 3: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs.																	
Note 4: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-8 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.																	

4.3.1.2.3.4.13 CA_n2600

Editor's note: CA_n2600 Test frequencies are FFS.

Table 4.3.1.2.3.4.13-1: NR Intra-Band contiguous CA configuration CA_n2600 (PCC=CC1 and SCC=CC2), SCS=60 kHz, nominal channel spacing

CBW combination	CC	CBW [MHz]	SCS [kHz]	carrier Band width [PRBs]	Range	Carrier centre [MHz] Note 2	Carrier centre [ARFCN]	point A [MHz]	absoluteF requency PointA [ARFCN]	offsetT oCarrie r [Carrier PRBs]	SS block SCS [kHz]	GSCN	absoluteF requency SSB [ARFCN]	k_{SSB}	Offset Carrier CORE SET#0 [RBs] Note 3	CORE SET#0 Index (Offset [RBs]) Note 4	offsetT oPoint A (SIB1) [PRBs] Note 4

[illegible][illegible]

Editor's note: CA_n260P Test frequencies are FFS.

[illegible]

CBW	CC	CBW	SCS	<i>carrie</i>	Range	Carrier	Carrier	point A	<i>absoluteF</i>	<i>offsetT</i>	SS	GSCN	<i>absoluteF</i>	k_{SSR}	Offset	CORE	<i>offsetT</i>

combination		[MHz]	[kHz]	Bandwidth [PRBs]		centre [MHz] Note 2	centre [ARFCN]	[MHz]	frequency PointA [ARFCN]	carrier [Carrier PRBs]	block SCS [kHz]		frequency SSB [ARFCN]		Carrier CORES ET#0 [RBs] Note 3	SET#0 Index (Offset [RBs]) Note 4	Point A (SIB1) [PRBs] Note 4

4.3.1.2.3.4.15 CA_n260Q

FFS

4.3.1.2.3.5 NR Intra-band contiguous CA configurations for CA_n261

4.3.1.2.3.5.1 CA_n261B

Editor's note: CA_n261B Test frequencies are FFS.

Table 4.3.1.2.3.5.1-1: NR Intra-Band contiguous CA configuration CA_n261B (PCC=CC1 and SCC=CC2), SCS=120 kHz, nominal channel spacing

CBW combination	CC	CBW [MHz]	SCS [kHz]	carrier Bandwidth [PRBs]	Range	Carrier centre [MHz] Note 2	Carrier centre [ARFCN]	point A [MHz]	absolute frequency PointA [ARFCN]	offset To Carrier [Carrier PRBs]	SS block SCS [kHz]	GSCN	absolute frequency SSB [ARFCN]	k_{SSB}	Offset Carrier CORES ET#0 [RBs] Note 3	CORE SET#0 Index Note 4	offset To Point A (SIB1) [PRBs] Note 4

4.3.1.2.3.5.2 CA_n261C

Editor's note: CA_n261C Test frequencies are FFS.

Table 4.3.1.2.3.5.2-1: NR Intra-Band contiguous CA configuration CA_n261C (PCC=CC1 and SCC=CC2, CC3), SCS=120 kHz, nominal channel spacing

CBW combination	CC	CBW [MHz]	SCS [kHz]	carrier Bandwidth [PRBs]	Range	Carrier centre [MHz] Note 2	Carrier centre [ARFCN]	point A [MHz]	absolute frequency PointA [ARFCN]	offset To Carrier [Carrier PRBs]	SS block SCS [kHz]	GSCN	absolute frequency SSB [ARFCN]	k_{SSB}	Offset Carrier CORE SET#0 [RBs] Note 3	CORE SET#0 Index (Offset [RBs]) Note 4	offset To Point A (SIB1) [PRBs] Note 4

4.3.1.2.3.5.3 CA_n261D

Editor's note: CA_n261D Test frequencies are FFS.

Table 4.3.1.2.3.5.3-1: NR Intra-Band contiguous CA configuration CA_n261D (PCC=CC1 and SCC=CC2), SCS=60 kHz, nominal channel spacing

CBW combinati on	CC	CBW [MHz]	SCS [kHz]	<i>carrierB andwidht [PRBs]</i>	Range	Carrier centre [MHz] Note 2	Carrier centre [ARFCN]	point A [MHz]	<i>absoluteF requency PointA [ARFCN]</i>	<i>offsetT oCarrie r [Carrier PRBs]</i>	SS block SCS [kHz]	GSCN	<i>absoluteF requency SSB [ARFCN]</i>	k_{SSB}	Offset Carrier CORE SET#0 [RBs] Note 3	CORE SET#0 Index (Offse t [RBs]) Note 4	offsetT oPoint A (SIB1) [PRBs] Note 4

Table 4.3.1.2.3.5.3-2: NR Intra-Band contiguous CA configuration CA_n261D (PCC=CC1 and SCC=CC2), SCS=120 kHz, nominal channel spacing

CBW combinati on	CC	CBW [MHz]	SCS [kHz]	<i>carrierB andwidht [PRBs]</i>	Range	Carrier centre [MHz] Note 2	Carrier centre [ARFCN]	point A [MHz]	<i>absoluteF requency PointA [ARFCN]</i>	<i>offsetT oCarrie r [Carrier PRBs]</i>	SS block SCS [kHz]	GSCN	<i>absoluteF requency SSB [ARFCN]</i>	k_{SSB}	Offset Carrier CORE SET#0 [RBs] Note 3	CORE SET#0 Index (Offse t [RBs]) Note 4	offsetT oPoint A (SIB1) [PRBs] Note 4

4.3.1.2.3.5.4 CA_n261E

Table 4.3.1.2.3.5.4-1: NR Intra-Band contiguous CA configuration CA_n261E (PCC=CC1 and SCC=CC2), SCS=60 kHz, nominal channel spacing.

FFS

Table 4.3.1.2.3.5.4-2: NR Intra-Band contiguous CA configuration CA_n261E (PCC=CC1 and SCC=CC2), SCS=120 kHz, nominal channel spacing.

FFS

4.3.1.2.3.5.5 CA_n261F

Table 4.3.1.2.3.5.5-1: NR Intra-Band contiguous CA configuration CA_n261F (PCC=CC1 and SCC=CC2), SCS=60 kHz, nominal channel spacing.

FFS

Table 4.3.1.2.3.5.5-2: NR Intra-Band contiguous CA configuration CA_n261F (PCC=CC1 and SCC=CC2), SCS=120 kHz, nominal channel spacing.

FFS

4.3.1.2.3.5.6 CA_n261G

Table 4.3.1.2.3.5.6-1: NR Intra-Band contiguous CA configuration CA_n261G (PCC=CC1 and SCC=CC2), SCS=60 kHz, nominal channel spacing

CBW combinati on	CC	CBW [MHz]	SCS [kHz]	carrier Bandwi dth [PRBs]	Range		Carrier centre [MHz] Note 2	Carrier centre [ARFCN]	point A [MHz]	absoluteF requency PointA [ARFCN]	offsetT oCarrie r [Carrier PRBs]	SS block SCS [kHz]	GSCN	absoluteF requency SSB [ARFCN]	k_{SSB}	Offset Carrier CORE SET#0 [RBs] Note 3	CORE SET#0 Index (Offse t [RBs]) Note 4	offsetT oPoint A (SIB1) [PRBs] Note 4
50+100	CC1	50	60	66	Downlink & Uplink	Low	27525	2071249	27501.24	2070853	0	120	22446	2071387	6	16	1 (8)	24
						Mid	27874.92	2077081	27777.72	2075461	102		22466	2077147	6	10	1 (8)	120
						High	28225.56	2082925	27838.92	2076481	504		22486	2082907	6	3	1 (8)	515
	Channel spacing CC1-CC2=74.4 MHz (Note 1)																	
	CC2	100	60	132	Downlink & Uplink	Low	27599.4	2072489	27551.88	2071697	0	120	22448	2071963	2	2	0 (0)	2
						Mid	27949.32	2078321	27828.36	2076305	102		22469	2078011	2	12	1 (8)	122
						High	28299.96	2084165	27889.56	2077325	504		22489	2083771	2	5	1 (8)	517
	CC1	100	60	132	Downlink & Uplink	Low	27550.08	2071667	27502.56	2070875	0	120	22446	2071387	8	14	1 (8)	22
						Mid	27874.92	2077081	27753.96	2075065	102		22464	2076571	6	3	0 (0)	105
						High	28200	2082499	27789.6	2075659	504		22483	2082043	0	0	1 (8)	512
Channel spacing CC1-CC2=99.96 MHz (Note 1)																		
CC2	100	60	132	Downlink & Uplink	Low	27650.04	2073333	27602.52	2072541	0	120	22451	2072827	10	3	0 (0)	3	
					Mid	27974.88	2078747	27853.92	2076731	102		22470	2078299	8	0	1 (8)	110	
					High	28299.96	2084165	27889.56	2077325	504		22489	2083771	2	5	1 (8)	517	

Note 1: Corresponds to nominal channel spacing in accordance with TS 38.101-2 [8], clause 5.4A.1 for the channel bandwidths of the two respective NR component carriers.

Note 2: CCs are specified in increasing frequency order. CC1 is used as PCell if nothing else is specified in the test case.

Note 3: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs.

Note 4: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-7 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.

Table 4.3.1.2.3.5.6-2: NR Intra-Band contiguous CA configuration CA_n261G (PCC=CC1 and SCC=CC2), SCS=120 kHz, nominal channel spacing

CBW combination	CC	CBW [MHz]	SCS [kHz]	carrier Bandwidth [PRBs]	Range		Carrier centre [MHz] Note 2	Carrier centre [ARFCN]	point A [MHz]	absolute Frequency PointA [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS [kHz]	GSCN	absolute frequency SSB [ARFCN]	k_{SSB}	Offset Carrier CORESET#0 [RBs] Note 3	CORESET#0 Index (Offset [RBs]) Note 4	offsetToPoint A (SIB1) [PRBs] Note 4	
50+100	CC1	50	120	32	Downlink & Uplink	Low	27525	2071249	27501.96	2070865	0	120	22446	2071387	9	7	1 (4)	22	
						Mid	27875.04	2077083	27705.12	2074251	102		22466	2077147	8	4	1 (4)	220	
						High	28225.56	2082925	27476.76	2070445	504		22486	2082907	3	1	1 (4)	1018	
	Channel spacing CC1-CC2=74.4 MHz (Note 1)																		
	CC2	100	120	66	Downlink & Uplink	Low	27599.4	2072489	27551.88	2071697	0	120	22448	2071963	1	1	0 (0)	2	
						Mid	27949.44	2078323	27755.04	2075083	102		22469	2078011	0	6	1 (4)	224	
						High	28299.96	2084165	27526.68	2071277	504		22489	2083771	7	2	1 (4)	1020	
	100+100	CC1	100	120	66	Downlink & Uplink	Low	27550.08	2071667	27502.56	2070875	0	120	22446	2071387	4	7	1 (4)	22
							Mid	27875.04	2077083	27680.64	2073843	102		22464	2076571	8	1	0 (0)	206
							High	28200	2082499	27426.72	2069611	504		22483	2082043	0	0	1 (4)	1016
Channel spacing CC1-CC2=99.96 MHz (Note 1)																			
CC2		100	120	66	Downlink & Uplink	Low	27650.04	2073333	27602.52	2072541	0	120	22451	2072827	11	1	0 (0)	2	
						Mid	27975	2078749	27780.6	2075509	102		22470	2078299	3	0	1 (4)	212	
						High	28299.96	2084165	27526.68	2071277	504		22489	2083771	7	2	1 (4)	1020	
Note 1:	Corresponds to nominal channel spacing in accordance with TS 38.101-2 [8], clause 5.4A.1 for the channel bandwidths of the two respective NR component carriers.																		
Note 2:	CCs are specified in increasing frequency order. CC1 is used as PCell if nothing else is specified in the test case.																		
Note 3:	The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs.																		
Note 4:	The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-8 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.																		

4.3.1.2.3.5.7

CA_n261H

Table 4.3.1.2.3.5.7-1: NR Intra-Band contiguous CA configuration CA_n261H (PCC=CC1 and SCC=CC2, CC3), SCS=60 kHz, nominal channel spacing

CBW combination	CC	CBW [MHz]	SCS [kHz]	carrier Bandwidth [PRBs]	Range		Carrier centre [MHz] Note 2	Carrier centre [ARFCN]	point A [MHz]	absolute Frequency PointA [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS [kHz]	GSCN	absolute Frequency SSB [ARFCN]	k_{SSB}	Offset Carrier CORESET#0 [RBs] Note 3	CORESET#0 Index (Offset [RBs]) Note 4	offsetToPoint A (SIB1) [PRBs] Note 4
50+100+100	CC1	50	60	66	Downlink & Uplink	Low	27525	2071249	27501.24	2070853	0	120	22446	2071387	6	16	1 (8)	24
						Mid	27825	2076249	27727.8	2074629	102		22463	2076283	10	7	1 (8)	117

100+100 +100					Uplink	High	28125.6	2081259	27738.96	2074815	504		22480	2081179	4	6	0 (0)	510
	Channel spacing CC1-CC2=74.4 MHz (Note 1)																	
	CC2	100	60	132	Downlink & Uplink	Low	27599.4	2072489	27551.88	2071697	0	120	22448	2071963	2	2	0 (0)	2
						Mid	27899.4	2077489	27778.44	2075473	102		22466	2077147	6	9	1 (8)	119
						High	28200	2082499	27789.6	2075659	504		22483	2082043	0	0	1 (8)	512
	Channel spacing CC2-CC3=99.96 MHz (Note 1)																	
	CC3	100	60	132	Downlink & Uplink	Low	27699.36	2074155	27651.84	2073363	0	120	22454	2073691	4	7	0 (0)	7
						Mid	27999.36	2079155	27878.4	2077139	102		22472	2078875	8	14	1 (8)	124
						High	28299.96	2084165	27889.56	2077325	504		22489	2083771	2	5	1 (8)	517
	CC1	100	60	132	Downlink & Uplink	Low	27550.08	2071667	27502.56	2070875	0	120	22446	2071387	8	14	1 (8)	22
						Mid	27825	2076249	27704.04	2074233	102		22461	2075707	10	0	0 (0)	102
						High	28100.04	2080833	27689.64	2073993	504		22477	2080315	10	2	0 (0)	506
	Channel spacing CC1-CC2=99.96 MHz (Note 1)																	
	CC2	100	60	132	Downlink & Uplink	Low	27650.04	2073333	27602.52	2072541	0	120	22451	2072827	10	3	0 (0)	3
						Mid	27924.96	2077915	27804	2075899	102		22467	2077435	0	6	0 (0)	108
						High	28200	2082499	27789.6	2075659	504		22483	2082043	0	0	1 (8)	512
	Channel spacing CC2-CC3=99.96 MHz (Note 1)																	
	CC3	100	60	132	Downlink & Uplink	Low	27750	2074999	27702.48	2074207	0	120	22457	2074555	0	1	1 (8)	9
						Mid	28024.92	2079581	27903.96	2077565	102		22473	2079163	2	3	1 (8)	113
						High	28299.96	2084165	27889.56	2077325	504		22489	2083771	2	5	1 (8)	517
Note 1:	Corresponds to nominal channel spacing in accordance with TS 38.101-2 [8], clause 5.4A.1 for the channel bandwidths of the two respective NR component carriers.																	
Note 2:	CCs are specified in increasing frequency order. CC1 is used as PCell if nothing else is specified in the test case.																	
Note 3:	The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs.																	
Note 4:	The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-7 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.																	

Table 4.3.1.2.3.5.7-2: NR Intra-Band contiguous CA configuration CA_n261H (PCC=CC1 and SCC=CC2, CC3), SCS=120 kHz, nominal channel spacing

CBW combinati on	CC	CBW [MHz]	SCS [kHz]	carrierB andwidth h [PRBs]	Range		Carrier centre [MHz] Note 2	Carrier centre [ARFCN]	point A [MHz]	absoluteF requency PointA [ARFCN]	offsetT oCarrie r [Carrier PRBs]	SS block SCS [kHz]	GSCN	absoluteF requency SSB [ARFCN]	k_s	Offset Carrier CORE SET#0 [RBs] Note 3	CORE SET#0 Index (Offse t [RBs]) Note 4	offsetT oPoint A (SIB1) [PRBs] Note 4
50+100 +100	CC1	50	120	32	Downlink & Uplink	Low	27525	2071249	27501.96	2070865	0	120	22446	2071387	9	7	1 (4)	22
						Mid	27825	2076249	27655.08	2073417	102		22463	2076283	5	3	1 (4)	218
						High	28125.6	2081259	27376.8	2068779	504		22480	2081179	8	2	0 (0)	1012
	Channel spacing CC1-CC2=74.4 MHz (Note 1)																	
	CC2	100	120	66	Downlink & Uplink	Low	27599.4	2072489	27551.88	2071697	0	120	22448	2071963	1	1	0 (0)	2
						Mid	27899.4	2077489	27705	2074249	102		22466	2077147	9	4	1 (4)	220
						High	28200	2082499	27426.72	2069611	504		22483	2082043	0	0	1 (4)	1016

100+100 +100	Channel spacing CC2-CC3=99.96 MHz (Note 1)																	
	CC3	100	120	66	Downlink & Uplink	Low	27699.36	2074155	27651.84	2073363	0	120	22454	2073691	8	3	0 (0)	6
						Mid	27999.36	2079155	27804.96	2075915	102		22472	2078875	4	7	1 (4)	226
						High	28299.96	2084165	27526.68	2071277	504		22489	2083771	7	2	1 (4)	1020
	CC1	100	120	66	Downlink & Uplink	Low	27550.08	2071667	27502.56	2070875	0	120	22446	2071387	4	7	1 (4)	22
						Mid	27825	2076249	27630.6	2073009	102		22461	2075707	5	0	0 (0)	204
						High	28100.04	2080833	27326.76	2067945	504		22477	2080315	5	1	0 (0)	1010
	Channel spacing CC1-CC2=99.96 MHz (Note 1)																	
	CC2	100	120	66	Downlink & Uplink	Low	27650.04	2073333	27602.52	2072541	0	120	22451	2072827	11	1	0 (0)	2
						Mid	27924.96	2077915	27730.56	2074675	102		22467	2077435	0	3	0 (0)	210
						High	28200	2082499	27426.72	2069611	504		22483	2082043	0	0	1 (4)	1016
	Channel spacing CC2-CC3=99.96 MHz (Note 1)																	
	CC3	100	120	66	Downlink & Uplink	Low	27750	2074999	27702.48	2074207	0	120	22457	2074555	6	0	1 (4)	8
						Mid	28024.92	2079581	27830.52	2076341	102		22473	2079163	7	1	1 (4)	214
High						28299.96	2084165	27526.68	2071277	504	22489		2083771	7	2	1 (4)	1020	

Note 1:

Corresponds to nominal channel spacing in accordance with TS 38.101-2 [8], clause 5.4A.1 for the channel bandwidths of the two respective NR component carriers.

Note 2:

CCs are specified in increasing frequency order. CC1 is used as PCell if nothing else is specified in the test case.

Note 3:

The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs.

Note 4:

The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-8 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.

4.3.1.2.3.5.8

CA_n261l

Table 4.3.1.2.3.5.8-1: NR Intra-Band contiguous CA configuration CA_n261l (PCC=CC1, SCC=CC2, CC3, CC4), SCS=60 kHz, nominal channel spacing

CBW combination	CC	CBW [MHz]	SCS [kHz]	carrierBandwidth [PRBs]	Range		Carrier centre [MHz] Note 2	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequencyPointA [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS [kHz]	GSCN	absoluteFrequencySSB [ARFCN]	k_s	Offset Carrier CORESET#0 [RBs] Note 3	CORE SET#0 Index (Offset [RBs]) Note 4	offsetToPointA (SIB1) [PRBs] Note 4
50+100 +100+100	CC1	50	60	66	Downlink & Uplink	Low	27525	2071249	27501.24	2070853	0	120	22446	2071387	6	16	1 (8)	24
						Mid	27774.96	2075415	27677.76	2073795	102		22460	2075419	4	5	1 (8)	115
						High	28025.64	2079593	27639	2073149	504		22474	2079451	2	1	0 (0)	505
	Channel spacing CC1-CC2=74.4 MHz (Note 1)																	
	CC2	100	60	132	Downlink & Uplink	Low	27599.4	2072489	27551.88	2071697	0	120	22448	2071963	2	2	0 (0)	2
						Mid	27849.36	2076655	27728.4	2074639	102		22463	2076283	0	7	1 (8)	117
						High	28100.04	2080833	27689.64	2073993	504		22477	2080315	10	2	0 (0)	506
	Channel spacing CC2-CC3=99.96 MHz (Note 1)																	
	CC3	100	60	132	Downlink & Uplink	Low	27699.36	2074155	27651.84	2073363	0	120	22454	2073691	4	7	0 (0)	7
						Mid	27949.32	2078321	27828.36	2076305	102		22469	2078011	2	12	1 (8)	122

100+100 +100+100					Uplink	High	28200	2082499	27789.6	2075659	504		22483	2082043	0	0	1 (8)	512
	Channel spacing CC3-CC4=99.96 MHz (Note 1)																	
	CC4	100	60	132	Downlink & Uplink	Low	27799.32	2075821	27751.8	2075029	0	120	22460	2075419	6	4	1 (8)	12
						Mid	28049.28	2079987	27928.32	2077971	102		22474	2079451	4	1	0 (0)	103
						High	28299.96	2084165	27889.56	2077325	504		22489	2083771	2	5	1 (8)	517
	CC1	100	60	132	Downlink & Uplink	Low	27550.08	2071667	27502.56	2070875	0	120	22446	2071387	8	14	1 (8)	22
						Mid	27774.96	2075415	27654	2073399	102		22459	2075131	4	14	1 (8)	124
						High	28000.08	2079167	27589.68	2072327	504		22472	2078875	8	13	1 (8)	525
	Channel spacing CC1-CC2=99.96 MHz (Note 1)																	
	CC2	100	60	132	Downlink & Uplink	Low	27650.04	2073333	27602.52	2072541	0	120	22451	2072827	10	3	0 (0)	3
						Mid	27874.92	2077081	27753.96	2075065	102		22464	2076571	6	3	0 (0)	105
						High	28100.04	2080833	27689.64	2073993	504		22477	2080315	10	2	0 (0)	506
	Channel spacing CC2-CC3=99.96 MHz (Note 1)																	
	CC3	100	60	132	Downlink & Uplink	Low	27750	2074999	27702.48	2074207	0	120	22457	2074555	0	1	1 (8)	9
						Mid	27974.88	2078747	27853.92	2076731	102		22470	2078299	8	0	1 (8)	110
						High	28200	2082499	27789.6	2075659	504		22483	2082043	0	0	1 (8)	512
	Channel spacing CC3-CC4=99.96 MHz (Note 1)																	
	CC4	100	60	132	Downlink & Uplink	Low	27849.96	2076665	27802.44	2075873	0	120	22463	2076283	2	6	1 (8)	14
						Mid	28074.84	2080413	27953.88	2078397	102		22476	2080027	10	5	1 (8)	115
						High	28299.96	2084165	27889.56	2077325	504		22489	2083771	2	5	1 (8)	517
Note 1:	Corresponds to nominal channel spacing in accordance with TS 38.101-2 [8], clause 5.4A.1 for the channel bandwidths of the two respective NR component carriers.																	
Note 2:	CCs are specified in increasing frequency order. CC1 is used as PCell if nothing else is specified in the test case.																	
Note 3:	The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs.																	
Note 4:	The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-7 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.																	

Table 4.3.1.2.3.5.8-2: NR Intra-Band contiguous CA configuration CA_n261l (PCC=CC1, SCC=CC2, CC3,CC4), SCS=120 kHz, nominal channel spacing

CBW combination	CC	CBW [MHz]	SCS [kHz]	carrierBandwidth [PRBs]	Range		Carrier centre [MHz] Note 2	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequencyPointA [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS [kHz]	GSCN	absoluteFrequencySSB [ARFCN]	k_s	Offset Carrier CORESET#0 [RBs] Note 3	CORE SET#0 Index (Offset [RBs]) Note 4	offsetToPoint A (SIB1) [PRBs] Note 4
50+100 +100+100	CC1	50	120	32	Downlink & Uplink	Low	27525	2071249	27501.96	2070865	0	120	22446	2071387	9	7	1 (4)	22
						Mid	27774.96	2075415	27605.04	2072583	102		22460	2075419	2	2	1 (4)	216
						High	28025.64	2079593	27276.84	2067113	504		22474	2079451	1	0	0 (0)	1008
	Channel spacing CC1-CC2=74.4 MHz (Note 1)																	
	CC2	100	120	66	Downlink & Uplink	Low	27599.4	2072489	27551.88	2071697	0	120	22448	2071963	1	1	0 (0)	2
						Mid	27849.36	2076655	27654.96	2073415	102		22463	2076283	6	3	1 (4)	218
						High	28100.04	2080833	27326.76	2067945	504		22477	2080315	5	1	0 (0)	1010

100+100 +100+100	Channel spacing CC2-CC3=99.96 MHz (Note 1)																	
	CC3	100	120	66	Downlink & Uplink	Low	27699.36	2074155	27651.84	2073363	0	120	22454	2073691	8	3	0 (0)	6
						Mid	27949.32	2078321	27754.92	2075081	102		22469	2078011	1	6	1 (4)	224
						High	28200	2082499	27426.72	2069611	504		22483	2082043	0	0	1 (4)	1016
	Channel spacing CC3-CC4=99.96 MHz (Note 1)																	
	CC4	100	120	66	Downlink & Uplink	Low	27799.32	2075821	27751.8	2075029	0	120	22460	2075419	3	2	1 (4)	12
						Mid	28049.28	2079987	27854.88	2076747	102		22474	2079451	8	0	0 (0)	204
						High	28299.96	2084165	27526.68	2071277	504		22489	2083771	7	2	1 (4)	1020
	CC1	100	120	66	Downlink & Uplink	Low	27550.08	2071667	27502.56	2070875	0	120	22446	2071387	4	7	1 (4)	22
						Mid	27774.96	2075415	27580.56	2072175	102		22459	2075131	2	7	1 (4)	226
						High	28000.08	2079167	27226.8	2066279	504		22472	2078875	10	6	1 (4)	1028
	Channel spacing CC1-CC2=99.96 MHz (Note 1)																	
	CC2	100	120	66	Downlink & Uplink	Low	27650.04	2073333	27602.52	2072541	0	120	22451	2072827	11	1	0 (0)	2
						Mid	27874.92	2077081	27680.52	2073841	102		22464	2076571	9	1	0 (0)	206
						High	28100.04	2080833	27326.76	2067945	504		22477	2080315	5	1	0 (0)	1010
	Channel spacing CC2-CC3=99.96 MHz (Note 1)																	
	CC3	100	120	66	Downlink & Uplink	Low	27750	2074999	27702.48	2074207	0	120	22457	2074555	6	0	1 (4)	8
						Mid	27974.88	2078747	27780.48	2075507	102		22470	2078299	4	0	1 (4)	212
						High	28200	2082499	27426.72	2069611	504		22483	2082043	0	0	1 (4)	1016
	Channel spacing CC3-CC4=99.96 MHz (Note 1)																	
	CC4	100	120	66	Downlink & Uplink	Low	27849.96	2076665	27802.44	2075873	0	120	22463	2076283	1	3	1 (4)	14
						Mid	28074.84	2080413	27880.44	2077173	102		22476	2080027	11	2	1 (4)	216
					High	28299.96	2084165	27526.68	2071277	504		22489	2083771	7	2	1 (4)	1020	
Note 1:	Corresponds to nominal channel spacing in accordance with TS 38.101-2 [8], clause 5.4A.1 for the channel bandwidths of the two respective NR component carriers.																	
Note 2:	CCs are specified in increasing frequency order. CC1 is used as PCell if nothing else is specified in the test case.																	
Note 3:	The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs.																	
Note 4:	The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-8 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.																	

4.3.1.2.3.5.9

CA_n261J

Table 4.3.1.2.3.5.9-1: NR Intra-Band contiguous CA configuration CA_n261J (PCC=CC1, SCC=CC2, CC3, CC4), SCS=60 kHz, nominal channel spacing

CBW combination	CC	CBW [MHz]	SCS [kHz]	carrierBandwidth [PRBs]	Range		Carrier centre [MHz] Note 2	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequencyPointA [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS [kHz]	GSCN	absoluteFrequencySSB [ARFCN]	k_s	Offset Carrier CORESET#0 [RBs] Note 3	CORE SET#0 Index (Offset [RBs]) Note 4	offsetToPointA (SIB1) [PRBs] Note 4
50+100 +100+100	CC1	50	60	66	Downlink &	Low	27525	2071249	27501.24	2070853	0	120	22446	2071387	6	16	1 (8)	24
						Mid	27724.92	2074581	27627.72	2072961	102		22457	2074555	10	2	1 (8)	112

+100					Uplink	High	27925.68	2077927	27539.04	2071483	504		22469	2078011	0	12	1 (8)	524
	Channel spacing CC1-CC2=74.4 MHz (Note 1)																	
	CC2	100	60	132	Downlink & Uplink	Low	27599.4	2072489	27551.88	2071697	0	120	22448	2071963	2	2	0 (0)	2
						Mid	27799.32	2075821	27678.36	2073805	102		22460	2075419	6	4	1 (8)	114
						High	28000.08	2079167	27589.68	2072327	504		22472	2078875	8	13	1 (8)	525
	Channel spacing CC2-CC3=99.96 MHz (Note 1)																	
	CC3	100	60	132	Downlink & Uplink	Low	27699.36	2074155	27651.84	2073363	0	120	22454	2073691	4	7	0 (0)	7
						Mid	27899.28	2077487	27778.32	2075471	102		22466	2077147	8	9	1 (8)	119
						High	28100.04	2080833	27689.64	2073993	504		22477	2080315	10	2	0 (0)	506
	Channel spacing CC3-CC4=99.96 MHz (Note 1)																	
	CC4	100	60	132	Downlink & Uplink	Low	27799.32	2075821	27751.8	2075029	0	120	22460	2075419	6	4	1 (8)	12
Mid						27999.24	2079153	27878.28	2077137	102	22472		2078875	10	14	1 (8)	124	
High						28200	2082499	27789.6	2075659	504	22483		2082043	0	0	1 (8)	512	
Channel spacing CC4-CC5=99.96 MHz (Note 1)																		
CC5	100	60	132	Downlink & Uplink	Low	27899.28	2077487	27851.76	2076695	0	120	22466	2077147	8	9	1 (8)	17	
					Mid	28099.2	2080819	27978.24	2078803	102		22477	2080315	0	4	0 (0)	106	
					High	28299.96	2084165	27889.56	2077325	504		22489	2083771	2	5	1 (8)	517	
100+100 +100+100 +100	CC1	100	60	132	Downlink & Uplink	Low	27550.08	2071667	27502.56	2070875	0	120	22446	2071387	8	14	1 (8)	22
						Mid	27724.92	2074581	27603.96	2072565	102		22456	2074267	10	11	1 (8)	121
						High	27900.12	2077501	27489.72	2070661	504		22466	2077147	6	8	1 (8)	520
	Channel spacing CC1-CC2=99.96 MHz (Note 1)																	
	CC2	100	60	132	Downlink & Uplink	Low	27650.04	2073333	27602.52	2072541	0	120	22451	2072827	10	3	0 (0)	3
						Mid	27824.88	2076247	27703.92	2074231	102		22461	2075707	0	1	0 (0)	103
						High	28000.08	2079167	27589.68	2072327	504		22472	2078875	8	13	1 (8)	525
	Channel spacing CC2-CC3=99.96 MHz (Note 1)																	
	CC3	100	60	132	Downlink & Uplink	Low	27750	2074999	27702.48	2074207	0	120	22457	2074555	0	1	1 (8)	9
						Mid	27924.84	2077913	27803.88	2075897	102		22467	2077435	2	6	0 (0)	108
						High	28100.04	2080833	27689.64	2073993	504		22477	2080315	10	2	0 (0)	506
Channel spacing CC3-CC4=99.96 MHz (Note 1)																		
CC4	100	60	132	Downlink & Uplink	Low	27849.96	2076665	27802.44	2075873	0	120	22463	2076283	2	6	1 (8)	14	
					Mid	28024.8	2079579	27903.84	2077563	102		22473	2079163	4	3	1 (8)	113	
					High	28200	2082499	27789.6	2075659	504		22483	2082043	0	0	1 (8)	512	
Channel spacing CC4-CC5=99.96 MHz (Note 1)																		
CC5	100	60	132	Downlink & Uplink	Low	27949.92	2078331	27902.4	2077539	0	120	22469	2078011	4	11	1 (8)	19	
					Mid	28124.76	2081245	28003.8	2079229	102		22479	2080891	6	8	1 (8)	118	
					High	28299.96	2084165	27889.56	2077325	504		22489	2083771	2	5	1 (8)	517	
Note 1:	Corresponds to nominal channel spacing in accordance with TS 38.101-2 [8], clause 5.4A.1 for the channel bandwidths of the two respective NR component carriers.																	
Note 2:	CCs are specified in increasing frequency order. CC1 is used as PCell if nothing else is specified in the test case.																	
Note 3:	The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta f_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs.																	
Note 4:	The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-7 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.																	

Note 1: Corresponds to nominal channel spacing in accordance with TS 38.101-2 [8], clause 5.4A.1 for the channel bandwidths of the two respective NR component carriers.

Note 2: CCs are specified in increasing frequency order. CC1 is used as PCell if nothing else is specified in the test case.

Note 3: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs.

Note 4: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-7 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.

Table 4.3.1.2.3.5.9-2: NR Intra-Band contiguous CA configuration CA_n261J (PCC=CC1, SCC=CC2, CC3, CC4), SCS=120 kHz, nominal channel spacing

CBW combination	CC	CBW [MHz]	SCS [kHz]	carrierBandwidth [PRBs]	Range	Carrier centre [MHz] Note 2	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequency PointA [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS [kHz]	GSCN	absoluteFrequency SSB [ARFCN]	k_s	Offset Carrier CORESET#0 [RBs] Note 3	CORE SET#0 Index (Offset [RBs]) Note 4	offsetToPoint A (SIB1) [PRBs] Note 4	
50+100 +100+100 +100	CC1	50	120	32	Downlink & Uplink	Low	27525	2071249	27501.96	2070865	0	120	22446	2071387	9	7	1 (4)	22
						Mid	27725.04	2074583	27555.12	2071751	102		22457	2074555	10	0	1 (4)	212
						High	27925.68	2077927	27176.88	2065447	504		22469	2078011	6	5	1 (4)	1026
	Channel spacing CC1-CC2=74.4 MHz (Note 1)																	
	CC2	100	120	66	Downlink & Uplink	Low	27599.4	2072489	27551.88	2071697	0	120	22448	2071963	1	1	0 (0)	2
						Mid	27799.44	2075823	27605.04	2072583	102		22460	2075419	2	2	1 (4)	216
						High	28000.08	2079167	27226.8	2066279	504		22472	2078875	10	6	1 (4)	1028
	Channel spacing CC2-CC3=99.96 MHz (Note 1)																	
	CC3	100	120	66	Downlink & Uplink	Low	27699.36	2074155	27651.84	2073363	0	120	22454	2073691	8	3	0 (0)	6
						Mid	27899.4	2077489	27705	2074249	102		22466	2077147	9	4	1 (4)	220
						High	28100.04	2080833	27326.76	2067945	504		22477	2080315	5	1	0 (0)	1010
	Channel spacing CC3-CC4=99.96 MHz (Note 1)																	
	CC4	100	120	66	Downlink & Uplink	Low	27799.32	2075821	27751.8	2075029	0	120	22460	2075419	3	2	1 (4)	12
						Mid	27999.36	2079155	27804.96	2075915	102		22472	2078875	4	7	1 (4)	226
						High	28200	2082499	27426.72	2069611	504		22483	2082043	0	0	1 (4)	1016
	Channel spacing CC4-CC5=99.96 MHz (Note 1)																	
	CC5	100	120	66	Downlink & Uplink	Low	27899.28	2077487	27851.76	2076695	0	120	22466	2077147	10	4	1 (4)	16
						Mid	28099.32	2080821	27904.92	2077581	102		22477	2080315	11	1	0 (0)	206
						High	28299.96	2084165	27526.68	2071277	504		22489	2083771	7	2	1 (4)	1020
100+100 +100+100 +100	CC1	100	120	66	Downlink & Uplink	Low	27550.08	2071667	27502.56	2070875	0	120	22446	2071387	4	7	1 (4)	22
						Mid	27725.04	2074583	27530.64	2071343	102		22456	2074267	10	5	1 (4)	222
						High	27900.12	2077501	27126.84	2064613	504		22466	2077147	3	4	1 (4)	1024
	Channel spacing CC1-CC2=99.96 MHz (Note 1)																	
	CC2	100	120	66	Downlink & Uplink	Low	27650.04	2073333	27602.52	2072541	0	120	22451	2072827	11	1	0 (0)	2
						Mid	27825	2076249	27630.6	2073009	102		22461	2075707	5	0	0 (0)	204
						High	28000.08	2079167	27226.8	2066279	504		22472	2078875	10	6	1 (4)	1028
	Channel spacing CC2-CC3=99.96 MHz (Note 1)																	
	CC3	100	120	66	Downlink & Uplink	Low	27750	2074999	27702.48	2074207	0	120	22457	2074555	6	0	1 (4)	8
						Mid	27924.96	2077915	27730.56	2074675	102		22467	2077435	0	3	0 (0)	210
						High	28100.04	2080833	27326.76	2067945	504		22477	2080315	5	1	0 (0)	1010
	Channel spacing CC3-CC4=99.96 MHz (Note 1)																	
	CC4	100	120	66	Downlink & Uplink	Low	27849.96	2076665	27802.44	2075873	0	120	22463	2076283	1	3	1 (4)	14
						Mid	28024.92	2079581	27830.52	2076341	102		22473	2079163	7	1	1 (4)	214
						High	28200	2082499	27426.72	2069611	504		22483	2082043	0	0	1 (4)	1016
	Channel spacing CC4-CC5=99.96 MHz (Note 1)																	

	CC5	100	120	66	Downlink & Uplink	Low	27949.92	2078331	27902.4	2077539	0	120	22469	2078011	8	5	1 (4)	18
						Mid	28124.88	2081247	27930.48	2078007	102		22479	2080891	2	4	1 (4)	220
						High	28299.96	2084165	27526.68	2071277	504		22489	2083771	7	2	1 (4)	1020
Note 1:	Corresponds to nominal channel spacing in accordance with TS 38.101-2 [8], clause 5.4A.1 for the channel bandwidths of the two respective NR component carriers.																	
Note 2:	CCs are specified in increasing frequency order. CC1 is used as PCell if nothing else is specified in the test case.																	
Note 3:	The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs.																	
Note 4:	The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-8 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.																	

4.3.1.2.3.5.10 CA_n261K

FFS

4.3.1.2.3.5.11 CA_n261L

FFS

4.3.1.2.3.5.12 CA_n261M

Table 4.3.1.2.3.5.12-1: NR Intra-Band contiguous CA configuration CA_n261M (PCC=CC1, SCC=CC2, CC3, CC4, CC5, CC6, CC7, CC8), SCS=60 kHz, nominal channel spacing

CBW combination	CC	CBW [MHz]	SCS [kHz]	carrierBandwidth [PRBs]	Range		Carrier centre [MHz] Note 2	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequency PointA [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS [kHz]	GSCN	absoluteFrequency SSB [ARFCN]	k_{SSB}	Offset Carrier CORESET#0 [RBs] Note 3	CORE SET#0 Index Note 4	offsetToPoint A (SIB1) [PRBs] Note 4
50+100 +100+100 +100+100 +100+100	CC1	50	60	66	Downlink & Uplink	Low	27525	2071249	27501.24	2070853	0	120	22446	2071387	6	16	1 (8)	24
						Mid	27574.92	2072081	27477.72	2070461	102		22448	2071963	2	3	0 (0)	105
						High	27625.8	2072929	27239.16	2066485	504		22451	2072827	6	4	0 (0)	508
	Channel spacing CC1-CC2=74.4 MHz (Note 1)																	
	CC2	100	60	132	Downlink & Uplink	Low	27599.4	2072489	27551.88	2071697	0	120	22448	2071963	2	2	0 (0)	2
						Mid	27649.32	2073321	27528.36	2071305	102		22451	2072827	10	4	0 (0)	106
						High	27700.2	2074169	27289.8	2067329	504		22454	2073691	2	6	0 (0)	510
	Channel spacing CC2-CC3=99.96 MHz (Note 1)																	
	CC3	100	60	132	Downlink & Uplink	Low	27699.36	2074155	27651.84	2073363	0	120	22454	2073691	4	7	0 (0)	7
						Mid	27749.28	2074987	27628.32	2072971	102		22457	2074555	0	2	1 (8)	112
						High	27800.16	2075835	27389.76	2068995	504		22460	2075419	4	3	1 (8)	515

Channel spacing CC3-CC4=99.96 MHz (Note 1)																	
CC4	100	60	132	Downlink & Uplink	Low	27799.32	2075821	27751.8	2075029	0	120	22460	2075419	6	4	1 (8)	12
					Mid	27849.24	2076653	27728.28	2074637	102		22463	2076283	2	7	1 (8)	117
					High	27900.12	2077501	27489.72	2070661	504		22466	2077147	6	8	1 (8)	520
Channel spacing CC4-CC5=99.96 MHz (Note 1)																	
CC5	100	60	132	Downlink & Uplink	Low	27899.28	2077487	27851.76	2076695	0	120	22466	2077147	8	9	1 (8)	17
					Mid	27949.2	2078319	27828.24	2076303	102		22469	2078011	4	12	1 (8)	122
					High	28000.08	2079167	27589.68	2072327	504		22472	2078875	8	13	1 (8)	525
Channel spacing CC5-CC6=99.96 MHz (Note 1)																	
CC6	100	60	132	Downlink & Uplink	Low	27999.24	2079153	27951.72	2078361	0	120	22472	2078875	10	14	1 (8)	22
					Mid	28049.16	2079985	27928.2	2077969	102		22474	2079451	6	1	0 (0)	103
					High	28100.04	2080833	27689.64	2073993	504		22477	2080315	10	2	0 (0)	506
Channel spacing CC6-CC7=99.96 MHz (Note 1)																	
CC7	100	60	132	Downlink & Uplink	Low	28099.2	2080819	28051.68	2080027	0	120	22477	2080315	0	4	0 (0)	4
					Mid	28149.12	2081651	28028.16	2079635	102		22480	2081179	8	6	0 (0)	108
					High	28200	2082499	27789.6	2075659	504		22483	2082043	0	0	1 (8)	512
Channel spacing CC7-CC8=99.96 MHz (Note 1)																	
CC8	100	60	132	Downlink & Uplink	Low	28199.16	2082485	28151.64	2081693	0	120	22483	2082043	2	1	1 (8)	9
					Mid	28249.08	2083317	28128.12	2081301	102		22486	2082907	10	3	1 (8)	113
					High	28299.96	2084165	27889.56	2077325	504		22489	2083771	2	5	1 (8)	517
CC1	100	60	132	Downlink & Uplink	Low	27550.08	2071667	27502.56	2070875	0	120	22446	2071387	8	14	1 (8)	22
					Mid	27574.92	2072081	27453.96	2070065	102		22447	2071675	2	4	1 (8)	114
					High	27600.24	2072503	27189.84	2065663	504		22448	2071963	0	1	0 (0)	505
Channel spacing CC1-CC2=99.96 MHz (Note 1)																	
CC2	100	60	132	Downlink & Uplink	Low	27650.04	2073333	27602.52	2072541	0	120	22451	2072827	10	3	0 (0)	3
					Mid	27674.88	2073747	27553.92	2071731	102		22453	2073403	4	9	1 (8)	119
					High	27700.2	2074169	27289.8	2067329	504		22454	2073691	2	6	0 (0)	510
Channel spacing CC2-CC3=99.96 MHz (Note 1)																	
CC3	100	60	132	Downlink & Uplink	Low	27750	2074999	27702.48	2074207	0	120	22457	2074555	0	1	1 (8)	9
					Mid	27774.84	2075413	27653.88	2073397	102		22459	2075131	6	14	1 (8)	124
					High	27800.16	2075835	27389.76	2068995	504		22460	2075419	4	3	1 (8)	515
Channel spacing CC3-CC4=99.96 MHz (Note 1)																	
CC4	100	60	132	Downlink & Uplink	Low	27849.96	2076665	27802.44	2075873	0	120	22463	2076283	2	6	1 (8)	14
					Mid	27874.8	2077079	27753.84	2075063	102		22464	2076571	8	3	0 (0)	105
					High	27900.12	2077501	27489.72	2070661	504		22466	2077147	6	8	1 (8)	520
Channel spacing CC4-CC5=99.96 MHz (Note 1)																	
CC5	100	60	132	Downlink & Uplink	Low	27949.92	2078331	27902.4	2077539	0	120	22469	2078011	4	11	1 (8)	19
					Mid	27974.76	2078745	27853.8	2076729	102		22470	2078299	10	0	1 (8)	110
					High	28000.08	2079167	27589.68	2072327	504		22472	2078875	8	13	1 (8)	525
Channel spacing CC5-CC6=99.96 MHz (Note 1)																	
CC6	100	60	132	Downlink & Uplink	Low	28049.88	2079997	28002.36	2079205	0	120	22474	2079451	6	0	0 (0)	0
					Mid	28074.72	2080411	27953.76	2078395	102		22476	2080027	0	6	1 (8)	116
					High	28100.04	2080833	27689.64	2073993	504		22477	2080315	10	2	0 (0)	506
Channel spacing CC6-CC7=99.96 MHz (Note 1)																	

	CC7	100	60	132	Downlink & Uplink	Low	28149.84	2081663	28102.32	2080871	0	120	22480	2081179	8	5	0 (0)	5	
						Mid	28174.68	2082077	28053.72	2080061	102		22482	2081755	2	11	1 (8)	121	
						High	28200	2082499	27789.6	2075659	504		22483	2082043	0	0	1 (8)	512	
	Channel spacing CC7-CC8=99.96 MHz (Note 1)																		
	CC8	100	60	132	Downlink & Uplink	Low	28249.8	2083329	28202.28	2082537	0	120	22486	2082907	10	2	1 (8)	10	
						Mid	28274.64	2083743	28153.68	2081727	102		22487	2083195	4	0	0 (0)	102	
						High	28299.96	2084165	27889.56	2077325	504		22489	2083771	2	5	1 (8)	517	
	Note 1: Corresponds to nominal channel spacing in accordance with TS 38.101-2 [8], clause 5.4A.1 for the channel bandwidths of the two respective NR component carriers.																		
	Note 2: CCs are specified in increasing frequency order. CC1 is used as PCell if nothing else is specified in the test case.																		
	Note 3: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter ΔF _{OffsetCORESET-0-Carrier} in Annex C expressed in number of common RBs.																		
Note 4: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-7 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.																			

Table 4.3.1.2.3.5.12-2: NR Intra-Band contiguous CA configuration CA_n261M (PCC=CC1, SCC=CC2, CC3, CC4, CC5, CC6, CC7, CC8), SCS=120 kHz, nominal channel spacing

CBW combination	CC	CBW [MHz]	SCS [kHz]	carrierBandwidth [PRBs]	Range		Carrier centre [MHz] Note 2	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequency PointA [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS [kHz]	GSCN	absoluteFrequency SSB [ARFCN]	k_{SSB}	Offset Carrier CORESET#0 [RBs] Note 3	CORE SET#0 Index (Offset [RBs]) Note 4	offsetToPoint A (SIB1) [PRBs] Note 4
50+100 +100+100 +100+100 +100+100	CC1	50	120	32	Downlink & Uplink	Low	27525	2071249	27501.96	2070865	0	120	22446	2071387	9	7	1 (4)	22
						Mid	27575.04	2072083	27405.12	2069251	102		22448	2071963	0	1	0 (0)	206
						High	27625.8	2072929	26877	2060449	504		22451	2072827	9	1	0 (0)	1010
	Channel spacing CC1-CC2=74.4 MHz (Note 1)																	
	CC2	100	120	66	Downlink & Uplink	Low	27599.4	2072489	27551.88	2071697	0	120	22448	2071963	1	1	0 (0)	2
						Mid	27649.44	2073323	27455.04	2070083	102		22451	2072827	4	2	0 (0)	208
						High	27700.2	2074169	26926.92	2061281	504		22454	2073691	1	3	0 (0)	1014
	Channel spacing CC2-CC3=99.96 MHz (Note 1)																	
	CC3	100	120	66	Downlink & Uplink	Low	27699.36	2074155	27651.84	2073363	0	120	22454	2073691	8	3	0 (0)	6
						Mid	27749.4	2074989	27555	2071749	102		22457	2074555	11	0	1 (4)	212
						High	27800.16	2075835	27026.88	2062947	504		22460	2075419	8	1	1 (4)	1018
	Channel spacing CC3-CC4=99.96 MHz (Note 1)																	
	CC4	100	120	66	Downlink & Uplink	Low	27799.32	2075821	27751.8	2075029	0	120	22460	2075419	3	2	1 (4)	12
						Mid	27849.36	2076655	27654.96	2073415	102		22463	2076283	6	3	1 (4)	218
						High	27900.12	2077501	27126.84	2064613	504		22466	2077147	3	4	1 (4)	1024
	Channel spacing CC4-CC5=99.96 MHz (Note 1)																	
	CC5	100	120	66	Downlink & Uplink	Low	27899.28	2077487	27851.76	2076695	0	120	22466	2077147	10	4	1 (4)	16
						Mid	27949.32	2078321	27754.92	2075081	102		22469	2078011	1	6	1 (4)	224
						High	28000.08	2079167	27226.8	2066279	504		22472	2078875	10	6	1 (4)	1028

100+100 +100+100 +100+100 +100+100	Channel spacing CC5-CC6=99.96 MHz (Note 1)																	
	CC6	100	120	66	Downlink & Uplink	Low	27999.24	2079153	27951.72	2078361	0	120	22472	2078875	5	7	1 (4)	22
						Mid	28049.28	2079987	27854.88	2076747	102		22474	2079451	8	0	0 (0)	204
						High	28100.04	2080833	27326.76	2067945	504		22477	2080315	5	1	0 (0)	1010
	Channel spacing CC6-CC7=99.96 MHz (Note 1)																	
	CC7	100	120	66	Downlink & Uplink	Low	28099.2	2080819	28051.68	2080027	0	120	22477	2080315	0	2	0 (0)	4
						Mid	28149.24	2081653	27954.84	2078413	102		22480	2081179	3	3	0 (0)	210
						High	28200	2082499	27426.72	2069611	504		22483	2082043	0	0	1 (4)	1016
	Channel spacing CC7-CC8=99.96 MHz (Note 1)																	
	CC8	100	120	66	Downlink & Uplink	Low	28199.16	2082485	28151.64	2081693	0	120	22483	2082043	7	0	1 (4)	8
						Mid	28249.2	2083319	28054.8	2080079	102		22486	2082907	10	1	1 (4)	214
						High	28299.96	2084165	27526.68	2071277	504		22489	2083771	7	2	1 (4)	1020
	CC1	100	120	66	Downlink & Uplink	Low	27550.08	2071667	27502.56	2070875	0	120	22446	2071387	4	7	1 (4)	22
						Mid	27575.04	2072083	27380.64	2068843	102		22447	2071675	0	2	1 (4)	216
						High	27600.24	2072503	26826.96	2059615	504		22448	2071963	6	0	0 (0)	1008
	Channel spacing CC1-CC2=99.96 MHz (Note 1)																	
	CC2	100	120	66	Downlink & Uplink	Low	27650.04	2073333	27602.52	2072541	0	120	22451	2072827	11	1	0 (0)	2
						Mid	27675	2073749	27480.6	2070509	102		22453	2073403	7	4	1 (4)	220
						High	27700.2	2074169	26926.92	2061281	504		22454	2073691	1	3	0 (0)	1014
	Channel spacing CC2-CC3=99.96 MHz (Note 1)																	
	CC3	100	120	66	Downlink & Uplink	Low	27750	2074999	27702.48	2074207	0	120	22457	2074555	6	0	1 (4)	8
					Mid	27774.96	2075415	27580.56	2072175	102		22459	2075131	2	7	1 (4)	226	
					High	27800.16	2075835	27026.88	2062947	504		22460	2075419	8	1	1 (4)	1018	
Channel spacing CC3-CC4=99.96 MHz (Note 1)																		
CC4	100	120	66	Downlink & Uplink	Low	27849.96	2076665	27802.44	2075873	0	120	22463	2076283	1	3	1 (4)	14	
					Mid	27874.92	2077081	27680.52	2073841	102		22464	2076571	9	1	0 (0)	206	
					High	27900.12	2077501	27126.84	2064613	504		22466	2077147	3	4	1 (4)	1024	
Channel spacing CC4-CC5=99.96 MHz (Note 1)																		
CC5	100	120	66	Downlink & Uplink	Low	27949.92	2078331	27902.4	2077539	0	120	22469	2078011	8	5	1 (4)	18	
					Mid	27974.88	2078747	27780.48	2075507	102		22470	2078299	4	0	1 (4)	212	
					High	28000.08	2079167	27226.8	2066279	504		22472	2078875	10	6	1 (4)	1028	
Channel spacing CC5-CC6=99.96 MHz (Note 1)																		
CC6	100	120	66	Downlink & Uplink	Low	28049.88	2079997	28002.36	2079205	0	120	22474	2079451	3	0	0 (0)	0	
					Mid	28074.84	2080413	27880.44	2077173	102		22476	2080027	11	2	1 (4)	216	
					High	28100.04	2080833	27326.76	2067945	504		22477	2080315	5	1	0 (0)	1010	
Channel spacing CC6-CC7=99.96 MHz (Note 1)																		
CC7	100	120	66	Downlink & Uplink	Low	28149.84	2081663	28102.32	2080871	0	120	22480	2081179	10	2	0 (0)	4	
					Mid	28174.8	2082079	27980.4	2078839	102		22482	2081755	6	5	1 (4)	222	
					High	28200	2082499	27426.72	2069611	504		22483	2082043	0	0	1 (4)	1016	
Channel spacing CC7-CC8=99.96 MHz (Note 1)																		
CC8	100	120	66	Downlink & Uplink	Low	28249.8	2083329	28202.28	2082537	0	120	22486	2082907	5	1	1 (4)	10	
					Mid	28274.76	2083745	28080.36	2080505	102		22487	2083195	1	0	0 (0)	204	
					High	28299.96	2084165	27526.68	2071277	504		22489	2083771	7	2	1 (4)	1020	
Note 1: Corresponds to nominal channel spacing in accordance with TS 38.101-2 [8], clause 5.4A.1 for the channel bandwidths of the two respective NR component carriers.																		

Note 1: Corresponds to nominal channel spacing in accordance with TS 38.101-2 [8], clause 5.4A.1 for the channel bandwidths of the two respective NR component carriers.

Note 2:	CCs are specified in increasing frequency order. CC1 is used as PCell if nothing else is specified in the test case.
Note 3:	The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta\text{OffsetCORESET-0-Carrier}$ in Annex C expressed in number of common RBs.
Note 4:	The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-8 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.

4.3.1.2.3.5.13 CA_n261O

Editor's note: CA_n261O Test frequencies are FFS.

Table 4.3.1.2.3.5.13-1: NR Intra-Band contiguous CA configuration CA_n261O (PCC=CC1 and SCC=CC2), SCS=60 kHz, nominal channel spacing

CBW combination	CC	CBW [MHz]	SCS [kHz]	carrier Band width [PRBs]	Range	Carrier centre [MHz] Note 2	Carrier centre [ARFCN]	point A [MHz]	absoluteF requency PointA [ARFCN]	offsetT oCarrier [Carrier PRBs]	SS block SCS [kHz]	GSCN	absoluteF requency SSB [ARFCN]	k_S	Offset Carrier CORE SET#0 [RBs] Note 3	CORE SET#0 Index (Offset [RBs]) Note 4	offsetT oPoint A (SIB1) [PRBs] Note 4

Table 4.3.1.2.3.5.13-2: NR Intra-Band contiguous CA configuration CA_n261O (PCC=CC1 and SCC=CC2), SCS=120 kHz, nominal channel spacing

CBW combination	CC	CBW [MHz]	SCS [kHz]	carrier Band width [PRBs]	Range	Carrier centre [MHz] Note 2	Carrier centre [ARFCN]	point A [MHz]	absoluteF requency PointA [ARFCN]	offsetT oCarrier [Carrier PRBs]	SS block SCS [kHz]	GSCN	absoluteF requency SSB [ARFCN]	k_S	Offset Carrier CORE SET#0 [RBs] Note 3	CORE SET#0 Index (Offset [RBs]) Note 4	offsetT oPoint A (SIB1) [PRBs] Note 4

4.3.1.2.3.5.14 CA_n261P

Editor's note: CA_n261P Test frequencies are FFS.

Table 4.3.1.2.3.5.14-1: NR Intra-Band contiguous CA configuration CA_n261P (PCC=CC1 and SCC=CC2, CC3), SCS=60 kHz, nominal channel spacing

CBW combinati on	CC	CBW [MHz]	SCS [kHz]	carrie rBand width [PRB s]	Range	Carrier centre [MHz] Note 2	Carrier centre [ARFCN]	point A [MHz]	absoluteF requency PointA [ARFCN]	offsetT oCarrie r [Carrier PRBs]	SS block SCS [kHz]	GSCN	absoluteF requency SSB [ARFCN]	k_{S1}	Offset Carrier CORE SET#0 [RBs] Note 3	CORE SET#0 Index (Offse t [RBs]) Note 4	offsetT oPoint A (SIB1) [PRBs] Note 4

Table 4.3.1.2.3.5.14-2: NR Intra-Band contiguous CA configuration CA_n261P (PCC=CC1 and SCC=CC2, CC3), SCS=120 kHz, nominal channel spacing

CBW combinati on	CC	CBW [MHz]	SCS [kHz]	carrie rBand width [PRB s]	Range	Carrier centre [MHz] Note 2	Carrier centre [ARFCN]	point A [MHz]	absoluteF requency PointA [ARFCN]	offsetT oCarrie r [Carrier PRBs]	SS block SCS [kHz]	GSCN	absoluteF requency SSB [ARFCN]	k_{S1}	Offset Carrier CORE SET#0 [RBs] Note 3	CORE SET#0 Index (Offse t [RBs]) Note 4	offsetT oPoint A (SIB1) [PRBs] Note 4

4.3.1.2.3.5.15 CA_n261Q

FFS

4.3.1.2.4 NR intra-band non-contiguous CA configurations in FR2

4.3.1.2.4.1 NR Intra-band non-contiguous CA configurations for CA_n257

4.3.1.2.4.2 NR Intra-band non-contiguous CA configurations for CA_n258

4.3.1.2.4.3 FFS

4.3.1.2.4.4 NR Intra-band non-contiguous CA configurations for CA_n260

4.3.1.2.4.4.1 CA_n260(XA)

Editor's note: This clause is reserved for test frequencies for CA_n260(XA) configurations where x is >= 2, e.g. CA_n260(2A), CA_n260(3A) and CA_n260(4A)

4.3.1.2.4.4.2 CA_n260(A-I)

Editor's note: CA_n260(A-I) Test frequencies are FFS.

Table 4.3.1.2.4.4.2-1: NR Intra-Band non-contiguous CA configuration CA_n260(A-I) without UL CA, SCS=120 kHz, Max Wgap

CBW combination	Sub-block Note 2	CC within Sub-Block Note 2	Bandwidth [MHz]	carrier Bandwidth [PRBs]	Range	Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absolute Frequency Point A [ARFCN]	offsetTo Carrier [Carrier PRBs]	SS block SCS [kHz]	GSCN	absolute FrequencySSB [ARFCN]	k_S	carrier CORESET #0 [RBs] Note 3	CORESET #0 Index (Offset [RBs]) Note 4	offsetToPointA (SIB1) [PRBs] Note 4

Table 4.3.1.2.4.4.2-2: NR Intra-Band non-contiguous CA configuration CA_n260(A-I) with UL CA, SCS=120 kHz, Max Wgap

CBW combination	Sub-block Note 2	CC within Sub-Block Note 2	Bandwidth [MHz]	carrier Bandwidth [PRBs]	Range	Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absolute Frequency Point A [ARFCN]	offsetTo Carrier [Carrier PRBs]	SS block SCS [kHz]	GSCN	absolute FrequencySSB [ARFCN]	k_S	carrier CORESET #0 [RBs] Note 3	CORESET #0 Index (Offset [RBs]) Note 4	offsetToPointA (SIB1) [PRBs] Note 4

4.3.1.2.4.5 NR Intra-band non-contiguous CA configurations for CA_n261

4.3.1.2.4.5.1 CA_n261(XA)

Table 4.3.1.2.4.5.1-1: NR Intra-Band non-contiguous CA configuration CA_n261(2A), SCS=120 kHz, Max Wgap

CBW combination	CC	Bandwidth [MHz]	Range	Test frequencies and signalling parameters
CA_n261(2A); A (50-400MHz) - A (50-400MHz)				

CBW1+ CBW2	CC1	CBW1	Downlink & Uplink	Max Wgap	Table 4.3.1.2.1.5-2: Low range for CBW=CBW1, where CBW1= 50 MHz, 100 MHz, 200 MHz or 400 MHz
	CC2	CBW2	Downlink & Uplink		Table 4.3.1.2.1.5-2: High range for CBW=CBW2, where CBW2= 50 MHz, 100 MHz, 200 MHz or 400 MHz

4.3.1.3 Test frequencies for NR band combinations between FR1 and FR2

4.3.1.3.1 NR inter-band CA configurations between FR1 and FR2

Table 4.3.1.3.1-1: NR-CA configurations between FR1 and FR2 (two bands)

NR-CA configuration	Uplink NR-CA configuration	NR FR1 downlink configuration	NR FR2 downlink configuration	NR FR1 uplink configuration	NR FR2 uplink configuration	Applicable for protocol testing (Note 1)
CA_n1A-n258A	CA_n1A-n258A	n1A	n258A	n1A	n258A	Yes
CA_n1A-n258D	CA_n1A-n258A	n1A	CA_n258D	n1A	n258A	No
CA_n1A-n258E	CA_n1A-n258A	n1A	CA_n258E	n1A	n258A	No
CA_n1A-n258F	CA_n1A-n258A	n1A	CA_n258F	n1A	n258A	No
CA_n1A-n258G	CA_n1A-n258A	n1A	CA_n258G	n1A	n258A	No
CA_n1A-n258H	CA_n1A-n258A	n1A	CA_n258H	n1A	n258A	No
CA_n1A-n258I	CA_n1A-n258A	n1A	CA_n258I	n1A	n258A	No
CA_n1A-n258J	CA_n1A-n258A	n1A	CA_n258J	n1A	n258A	No
CA_n1A-n258K	CA_n1A-n258A	n1A	CA_n258K	n1A	n258A	No
CA_n1A-n258L	CA_n1A-n258A	n1A	CA_n258L	n1A	n258A	No
CA_n1A-n258M	CA_n1A-n258A	n1A	CA_n258M	n1A	n258A	No
CA_n2A-n260A	CA_n2A-n260A	n2A	n260A	n2A	n260A	Yes
CA_n2A-n261A	CA_n2A-n261A	n2A	n261A	n2A	n261A	Yes
CA_n5A-n260A	CA_n5A-n260A	n5A	n260A	n5A	n260A	Yes
CA_n5A-n261A	CA_n5A-n261A	n5A	n261A	n5A	n261A	Yes
e	CA_n48A-n260A	n48A	n260A	n48A	n260A	Yes
CA_n48A-n261A	CA_n48A-n261A	n48A	n261A	n48A	n261A	Yes
CA_n66A-n260A	CA_n66A-n260A	n66A	n260A	n66A	n260A	Yes
CA_n66A-n261A	CA_n66A-n261A	n66A	n261A	n66A	n261A	Yes
CA_n77A-n260A	CA_n77A-n260A	n77A	n260A	n77A	n260A	Yes
CA_n77A-n261A	CA_n77A-n261A	n77A	n261A	n77A	n261A	Yes
CA_n78A-n258A	CA_n78A-n258A	n78A	n258A	n78A	n258A	Yes
CA_n78A-n258D	CA_n78A-n258A	n78A	CA_n258D	n78A	n258A	No
CA_n78A-n258E	CA_n78A-n258A	n78A	CA_n258E	n78A	n258A	No
CA_n78A-n258F	CA_n78A-n258A	n78A	CA_n257F	n78A	n258A	No

NR-CA configuration	Uplink NR-CA configuration	NR FR1 downlink configuration	NR FR2 downlink configuration	NR FR1 uplink configuration	NR FR2 uplink configuration	Applicable for protocol testing (Note 1)
CA_n1A-n258A	CA_n1A-n258A	n1A	n258A	n1A	n258A	Yes
CA_n1A-n258D	CA_n1A-n258A	n1A	CA_n258D	n1A	n258A	No
CA_n1A-n258E	CA_n1A-n258A	n1A	CA_n258E	n1A	n258A	No
CA_n1A-n258F	CA_n1A-n258A	n1A	CA_n258F	n1A	n258A	No
CA_n1A-n258G	CA_n1A-n258A	n1A	CA_n258G	n1A	n258A	No
CA_n1A-n258H	CA_n1A-n258A	n1A	CA_n258H	n1A	n258A	No
CA_n1A-n258I	CA_n1A-n258A	n1A	CA_n258I	n1A	n258A	No
CA_n1A-n258J	CA_n1A-n258A	n1A	CA_n258J	n1A	n258A	No
CA_n1A-n258K	CA_n1A-n258A	n1A	CA_n258K	n1A	n258A	No
CA_n1A-n258L	CA_n1A-n258A	n1A	CA_n258L	n1A	n258A	No
CA_n1A-n258M	CA_n1A-n258A	n1A	CA_n258M	n1A	n258A	No
CA_n2A-n260A	CA_n2A-n260A	n2A	n260A	n2A	n260A	Yes
CA_n2A-n261A	CA_n2A-n261A	n2A	n261A	n2A	n261A	Yes
CA_n5A-n260A	CA_n5A-n260A	n5A	n260A	n5A	n260A	Yes
CA_n5A-n261A	CA_n5A-n261A	n5A	n261A	n5A	n261A	Yes
e	CA_n48A-n260A	n48A	n260A	n48A	n260A	Yes
CA_n48A-n261A	CA_n48A-n261A	n48A	n261A	n48A	n261A	Yes
CA_n66A-n260A	CA_n66A-n260A	n66A	n260A	n66A	n260A	Yes
CA_n66A-n261A	CA_n66A-n261A	n66A	n261A	n66A	n261A	Yes
CA_n77A-n260A	CA_n77A-n260A	n77A	n260A	n77A	n260A	Yes
CA_n77A-n261A	CA_n77A-n261A	n77A	n261A	n77A	n261A	Yes
CA_n78A-n258A	CA_n78A-n258A	n78A	n258A	n78A	n258A	Yes
CA_n78A-n258D	CA_n78A-n258A	n78A	CA_n258D	n78A	n258A	No

Note 1: Protocol testing is limited to NR-CA configurations with 2CC.

4.3.1.3.2 Inter-band NR-DC configurations between FR1 and FR2

4.3.1.3.2.1 NR-DC configurations between FR1 and FR2 (two bands)

Table 4.3.1.3.2.1-1: NR-DC configurations between FR1 and FR2 (two bands)

NR-DC configuration	Uplink NR-DC configuration	NR FR1 downlink configuration	NR FR2 downlink configuration	NR FR1 uplink configuration	NR FR2 uplink configuration	Applicable for protocol testing (Note 1)
DC_n1A-n258A	DC_n1A-n258A	n1A	n258A	n1A	n258A	Yes
DC_n1A-n258G	DC_n1A-n258A	n1A	CA_n258G	n1A	n258A	Yes (NR CA 2CC)

DC_n1A-n258H	DC_n1A-n258A	n1A	CA_n258H	n1A	n258A	No
DC_n1A-n258I	DC_n1A-n258A	n1A	CA_n258I	n1A	n258A	No
DC_n1A-n258J	DC_n1A-n258A	n1A	CA_n258J	n1A	n258A	No
DC_n1A-n258K	DC_n1A-n258A	n1A	CA_n258K	n1A	n258A	No
DC_n1A-n258L	DC_n1A-n258A	n1A	CA_n258L	n1A	n258A	No
DC_n1A-n258M	DC_n1A-n258A	n1A	CA_n258M	n1A	n258A	No
DC_n2A-n260A	DC_n2A-n260A	n2A	n260A	n2A	n260A	Yes
DC_n2A-n261A	DC_n2A-n261A	n2A	n261A	n2A	n261A	Yes
DC_n5A-n260A	DC_n5A-n260A	n5A	n260A	n5A	n260A	Yes
DC_n5A-n261A	DC_n5A-n261A	n5A	n261A	n5A	n261A	Yes
DC_n48A-n260A	DC_n48A-n260A	n48A	n260A	n48A	n260A	Yes
DC_n48A-n261A	DC_n48A-n261A	n48A	n261A	n48A	n261A	Yes
DC_n66A-n260A	DC_n66A-n260A	n66A	n260A	n66A	n260A	Yes
DC_n66A-n261A	DC_n66A-n261A	n66A	n261A	n66A	n261A	Yes
DC_n77A-n260A	DC_n77A-n260A	n77A	n260A	n77A	n260A	Yes
DC_n77A-n261A	DC_n77A-n261A	n77A	n261A	n77A	n261A	Yes
DC_n78A-n257A	DC_n78A-n257A	n78A	n257A	n78A	n257A	Yes
DC_n78A-n257G	DC_n78A-n257A	n78A	CA_n257G	n78A	n257A	Yes (NR CA 2CC)
DC_n78A-n257H	DC_n78A-n257A	n78A	CA_n257H	n78A	n257A	No
DC_n78A-n257I	DC_n78A-n257A	n78A	CA_n257I	n78A	n257A	No
DC_n78A-n258A	DC_n78A-n258A	n78A	n258A	n78A	n258A	Yes
DC_n78A-n258G	DC_n78A-n258A	n78A	CA_n258G	n78A	n258A	Yes (NR CA 2CC)
DC_n78A-n258H	DC_n78A-n258A	n78A	CA_n258H	n78A	n258A	No
DC_n78A-n258I	DC_n78A-n258A	n78A	CA_n258I	n78A	n258A	No
DC_n78A-n258J	DC_n78A-n258A	n78A	CA_n258J	n78A	n258A	No
DC_n78A-n258K	DC_n78A-n258A	n78A	CA_n258K	n78A	n258A	No
DC_n78A-n258L	DC_n78A-n258A	n78A	CA_n258L	n78A	n258A	No
DC_n78A-n258M	DC_n78A-n258A	n78A	CA_n258M	n78A	n258A	No
DC_n79A-n257A	DC_n79A-n257A	n79A	n257A	n79A	n257A	Yes
DC_n79A-n257G	DC_n79A-n257A	n79A	CA_n257G	n79A	n257A	Yes (NR CA 2CC)
DC_n79A-n257H	DC_n79A-n257A	n79A	CA_n257H	n79A	n257A	No
DC_n79A-n257I	DC_n79A-n257A	n79A	CA_n257I	n79A	n257A	No

Note 1: Protocol testing is limited to NR-DC configurations with 2CC and NR-DC with NR CA 2CC.

4.3.1.4 Test frequencies for EN-DC band combinations within FR1

4.3.1.4.1 Inter-band EN-DC configurations within FR1

4.3.1.4.1.1 General

For inter-band EN-DC configurations as listed in this clause, the following apply:

For the E-UTRA band and E-UTRA CA configurations, test frequencies as specified in TS 36.508 [2], clause 4.3.1 are used.

For the NR band and NR CA configurations, test frequencies as specified in clause 4.3.1.1 are used.

For the EN-DC inter-band configuration that includes an EN-DC contiguous configuration (e.g. DC_2A-(n)71AA) the EN-DC contiguous configuration is listed in the NR configuration column and the test frequencies as specified in clause 4.3.1.4.2 are used.

For the secondary NR band in inter-band signalling test cases, the band selected is based on the subset of NR bands supported within the EN-DC configurations specified in Table 4.3.1.4.1.2-1 for NR FR1.

Test configurations for EN-DC band combinations within FR1 in this clause are used by both RF and Signalling testing. General rules for deciding test configurations are applied in Table 4.3.1.4.1.4-1, Table 4.3.1.4.1.5-1 and Table 4.3.1.4.1.6-1 if no explicit test configurations are defined. In such cases, the test configurations are referenced to the general rules which are represented by symbolic DC configurations in the corresponding tables. Any DC configurations not applying the general rules such as special cases for test configurations are listed separately for each configuration. General rules for deciding test configurations are not applied to signalling tests and to EN-DC band combinations with two bands and three bands in Table 4.3.1.4.1.2-1 and 4.3.1.4.1.3-1.

4.3.1.4.1.2 Inter-band EN-DC configurations within FR1 (two bands)

Table 4.3.1.4.1.2-1: Inter-band EN-DC configurations within FR1 (two bands)

EN-DC configuration	Uplink EN-DC Configuration	E-UTRA downlink configuration	NR downlink configuration	E-UTRA uplink configuration	NR uplink configuration	Applicable for protocol testing (Note 1)
DC_1A_n3A	DC_1A_n3A	1A	n3A	1A	n3A	Yes
DC_1A_n5A	DC_1A_n5A	1A	n5A	1A	n5A	Yes
DC_1A_n7A	DC_1A_n7A	1A	n7A	1A	n7A	Yes
DC_1A_n28A	DC_1A_n28A	1A	n28A	1A	n28A	Yes
DC_1A_n40A	DC_1A_n40A	1A	n40A	1A	n40A	Yes
DC_1A_n41A	DC_1A_n41A	1A	n41A	1A	n41A	Yes
DC_1A_n71A	DC_1A_n71A	1A	n71A	1A	n71A	Yes
DC_1A_n77A	DC_1A_n77A	1A	n77A	1A	n77A	Yes
DC_1A_n77(2A)	DC_1A_n77A	1A	CA_n77(2A)	1A	n77A	Yes (NR 2CC)
DC_1A_n78A	DC_1A_n78A	1A	n78A	1A	n78A	Yes
DC_1A_n78C	DC_1A_n78A	1A	CA_n78C	1A	n78A	Yes (NR 2CC)

EN-DC configuration	Uplink EN-DC Configuration	E-UTRA downlink configuration	NR downlink configuration	E-UTRA uplink configuration	NR uplink configuration	Applicable for protocol testing (Note 1)
DC 1A-1A n78A	DC 1A n78A	CA 1A-1A	n78A	1A	n78A	No
DC 1A n79A	DC 1A n79A	1A	n79A	1A	n79A	Yes
DC 1A n79C	DC 1A n79A	1A	CA n79C	1A	n79A	Yes (NR 2CC)
DC 2A n5A	DC 2A n5A	2A	n5A	2A	n5A	Yes
DC 2A-2A n5A	DC 2A n5A	CA 2A-2A	n5A	2A	n5A	No
DC 2A n41A	DC 2A n41A	2A	n41A	2A	n41A	Yes
DC 2C n41A	DC 2A n41A	CA 2C	n41A	2A	n41A	No
	DC 2C n41A	CA 2C	n41A	CA 2C	n41A	No
DC 2A n48A	DC 2A n48A	2A	n48A	2A	n48A	Yes
DC 2A n66A	DC 2A n66A	2A	n66A	2A	n66A	Yes
DC 2A-2A n66A	DC 2A n66A	CA 2A-2A	n66A	2A	n66A	No
DC 2A n71A	DC 2A n71A	2A	n71A	2A	n71A	Yes
DC 2A n77A	DC 2A n77A	2A	n77A	2A	n77A	Yes
DC 2A n77(2A)	DC 2A n77A	2A	CA n77(2A)	2A	n77A	Yes (NR 2CC)
DC 2A-2A n77A	DC 2A n77A	CA 2A-2A	n77A	2A	n77A	No
DC 2A-2A n77(2A)	DC 2A n77A	CA 2A-2A	CA n77(2A)	2A	n77A	No
DC 2A n78A	DC 2A n78A	2A	n78A	2A	n78A	Yes
DC 3A n1A	DC 3A n1A	3A	n1A	3A	n1A	Yes
DC 3A n5A	DC 3A n5A	3A	n5A	3A	n5A	Yes
DC 3A n7A	DC 3A n7A	3A	n7A	3A	n7A	Yes
DC 3A n28A	DC 3A n28A	3A	n28A	3A	n28A	Yes
DC 3A n40A	DC 3A n40A	3A	n40A	3A	n40A	Yes
DC 3A n41A	DC 3A n41A	3A	n41A	3A	n41A	Yes
DC 3A n71A	DC 3A n71A	3A	n71A	3A	n71A	Yes
DC 3A n77A	DC 3A n77A	3A	n77A	3A	n77A	Yes
DC 3A n77(2A)	DC 3A n77A	3A	CA n77(2A)	3A	n77A	Yes (NR 2CC)
DC 3A n78A	DC 3A n78A	3A	n78A	3A	n78A	Yes
DC 3A n78C	DC 3A n78A	3A	CA n78C	3A	n78A	Yes (NR 2CC)
DC 3C n40A	DC 3A n40A	CA 3C	n40A	3A	n40A	No
DC 3C n71A	DC 3A n71A	CA 3C	n71A	3A	n71A	No
DC 3C n77A	DC 3A n77A	CA 3C	n77A	3A	n77A	No
DC 3C n77(2A)	DC 3A n77A	CA 3C	n77(2A)	3A	n77A	No
DC 3C n78A	DC 3A n78A	CA 3C	n78A	3A	n78A	No
DC 3A n79A	DC 3A n79A	3A	n79A	3A	n79A	Yes
DC 3A n79C	DC 3A n79A	3A	CA n79C	3A	n79A	Yes (NR 2CC)
DC 5A n2A	DC 5A n2A	5A	n2A	5A	n2A	Yes
DC 5A n66A	DC 5A n66A	5A	n66A	5A	n66A	Yes
DC 5A n77A	DC 5A n77A	5A	n77A	5A	n77A	Yes
DC 5A n78A	DC 5A n78A	5A	n78A	5A	n78A	Yes
DC 5A n78C	DC 5A n78A	5A	CA n78C	5A	n78A	Yes (NR 2CC)

EN-DC configuration	Uplink EN-DC Configuration	E-UTRA downlink configuration	NR downlink configuration	E-UTRA uplink configuration	NR uplink configuration	Applicable for protocol testing (Note 1)
DC_7A-7A_n78A	DC_7A_n78A	CA_7A-7A	n78A	7A	n78A	No
DC_7A_n1A	DC_7A_n1A	7A	n1A	7A	n1A	Yes
DC_7A_n3A	DC_7A_n3A	7A	n3A	7A	n3A	Yes
DC_7A_n5A	DC_7A_n5A	7A	n5A	7A	n5A	Yes
DC_7A_n28A	DC_7A_n28A	7A	n28A	7A	n28A	Yes
DC_7A_n66A	DC_7A_n66A	7A	n66A	7A	n66A	Yes
DC_7A_n78A	DC_7A_n78A	7A	n78A	7A	n78A	Yes
DC_7C_n66A	DC_7A_n66A	CA_7C	n66A	7A	n66A	No
DC_7C_n78A	DC_7A_n78A	CA_7C	n78A	7A	n78A	No
	DC_7C_n78A	CA_7C	n78A	7C	n78A	No
DC_8A_n1A	DC_8A_n1A	8A	n1A	8A	n1A	Yes
DC_8A_n3A	DC_8A_n3A	8A	n3A	8A	n3A	Yes
DC_8A_n20A	DC_8A_n20A	8A	n20A	8A	n20A	Yes
DC_8A_n40A	DC_8A_n40A	8A	n40A	8A	n40A	Yes
DC_8A_n41A	DC_8A_n41A	8A	n41A	8A	n41A	Yes
DC_8A_n71A	DC_8A_n71A	8A	n71A	8A	n71A	Yes
DC_8A_n77A	DC_8A_n77A	8A	n77A	8A	n77A	Yes
DC_8A_n77(2A)	DC_8A_n77A	8A	CA_n77(2A)	8A	n77A	Yes (NR 2CC)
DC_8A_n78A	DC_8A_n78A	8A	n78A	8A	n78A	Yes
DC_11A_n77A	DC_11A_n77A	11A	n77A	11A	n77A	Yes
DC_11A_n78A	DC_11A_n78A	11A	n78A	11A	n78A	Yes
DC_11A_n79A	DC_11A_n79A	11A	n79A	11A	n79A	Yes
DC_12A_n2A	DC_12A_n2A	12A	n2A	12A	n2A	Yes
DC_12A_n5A	DC_12A_n5A	12A	n5A	12A	n5A	Yes
DC_12A_n66A	DC_12A_n66A	12A	n66A	12A	n66A	Yes
DC_12A_n77A	DC_12A_n77A	12A	n77A	12A	n77A	Yes
DC_12A_n77(2A)	DC_12A_n77(2A)	12A	CA_n77(2A)	12A	n77A	Yes (NR 2CC)
DC_12A_n78A	DC_12A_n78A	12A	n78A	12A	n78A	Yes
DC_13A_n2A	DC_13A_n2A	13A	n2A	13A	n2A	Yes
DC_13A_n66A	DC_13A_n66A	13A	n66A	13A	n66A	Yes
DC_13A_n77A	DC_13A_n77A	13A	n77A	13A	n77A	Yes
DC_14A_n2A	DC_14A_n2A	14A	n2A	14A	n2A	Yes
DC_14A_n66A	DC_14A_n66A	14A	n66A	14A	n66A	Yes
DC_14A_n77A	DC_14A_n77A	14A	n77A	14A	n77A	Yes
DC_14A_n77(2A)	DC_14A_n77(2A)	14A	CA_n77(2A)	14A	n77A	Yes (NR 2CC)
DC_18A_n77A	DC_18A_n77A	18A	n77A	18A	n77A	Yes
DC_18A_n78A	DC_18A_n78A	18A	n78A	18A	n78A	Yes
DC_18A_n79A	DC_18A_n79A	18A	n79A	18A	n79A	Yes
DC_19A_n1A	DC_19A_n1A	19A	n1A	19A	n1A	Yes
DC_19A_n77A	DC_19A_n77A	19A	n77A	19A	n77A	Yes

EN-DC configuration	Uplink EN-DC Configuration	E-UTRA downlink configuration	NR downlink configuration	E-UTRA uplink configuration	NR uplink configuration	Applicable for protocol testing (Note 1)
DC 19A_n77(2A)	DC 19A_n77A	19A	CA_n77(2A)	19A	n77A	Yes (NR 2CC)
DC 19A_n78A	DC 19A_n78A	19A	n78A	19A	n78A	Yes
DC 19A_n78(2A)	DC 19A_n78A	19A	CA_n78(2A)	19A	n78A	Yes (NR 2CC)
DC 19A_n78C	DC 19A_n78A	19A	CA_n78C	19A	n78A	Yes (NR 2CC)
DC 19A_n79A	DC 19A_n79A	19A	n79A	19A	n79A	Yes
DC 19A_n79C	DC 19A_n79A	19A	CA_n79C	19A	n79A	Yes (NR 2CC)
DC 20A_n1A	DC 20A_n1A	20A	n1A	20A	n1A	Yes
DC 20A_n3A	DC 20A_n3A	20A	n3A	20A	n3A	Yes
DC 20A_n7A	DC 20A_n7A	20A	n7A	20A	n7A	Yes
DC 20A_n8A	DC 20A_n8A	20A	n8A	20A	n8A	Yes
DC 20A_n28A	DC 20A_n28A	20A	n28A	20A	n28A	Yes
DC 20A_n78A	DC 20A_n78A	20A	n78A	20A	n78A	Yes
DC 21A_n1A	DC 21A_n1A	21A	n1A	21A	n1A	Yes
DC 21A_n28A	DC 21A_n28A	21A	n28A	21A	n28A	Yes
DC 21A_n77A	DC 21A_n77A	21A	n77A	21A	n77A	Yes
DC 21A_n77(2A)	DC 21A_n77A	21A	CA_n77(2A)	21A	n77A	Yes (NR 2CC)
DC 21A_n78A	DC 21A_n78A	21A	n78A	21A	n78A	Yes
DC 21A_n78(2A)	DC 21A_n78A	21A	CA_n78(2A)	21A	n78A	Yes (NR 2CC)
DC 21A_n78C	DC 21A_n78A	21A	CA_n78C	21A	n78A	Yes (NR 2CC)
DC 21A_n79A	DC 21A_n79A	21A	n79A	21A	n79A	Yes
DC 21A_n79C	DC 21A_n79A	21A	CA_n79C	21A	n79A	Yes (NR 2CC)
DC 25A_n41A	DC 25A_n41A	25A	n41A	25A	n41A	Yes
DC 26A_n41A	DC 26A_n41A	26A	n41A	26A	n41A	Yes
DC 26A_n77A	DC 26A_n77A	26A	n77A	26A	n77A	Yes
DC 26A_n78A	DC 26A_n78A	26A	n78A	26A	n78A	Yes
DC 26A_n79A	DC 26A_n79A	26A	n79A	26A	n79A	Yes
DC 28A_n3A	DC 28A_n3A	28A	n3A	28A	n3A	Yes
DC 28A_n5A	DC 28A_n5A	28A	n5A	28A	n5A	Yes
DC 28A_n7A	DC 28A_n7A	28A	n7A	28A	n7A	Yes
DC 28A_n40A	DC 28A_n40A	28A	n40A	28A	n40A	Yes
DC 28A_n71A	DC 28A_n71A	28A	n71A	28A	n71A	Yes
DC 28A_n77A	DC 28A_n77A	28A	n77A	28A	n77A	Yes
DC 28A_n78A	DC 28A_n78A	28A	n78A	28A	n78A	Yes
DC 28A_n78C	DC 28A_n78A	28A	CA_n78C	28A	n78A	Yes (NR 2CC)
DC 28A_n79A	DC 28A_n79A	28A	n79A	28A	n79A	Yes
DC 30A_n2A	DC 30A_n2A	30A	n2A	30A	n2A	Yes
DC 30A_n5A	DC 30A_n5A	30A	n5A	30A	n5A	Yes
DC 30A_n66A	DC 30A_n66A	30A	n66A	30A	n66A	Yes
DC 38A_n78A	DC 38A_n78A	38A	n78A	38A	n78A	Yes
DC 30A_n77A	DC 30A_n77A	30A	n77A	30A	n77A	Yes

EN-DC configuration	Uplink EN-DC Configuration	E-UTRA downlink configuration	NR downlink configuration	E-UTRA uplink configuration	NR uplink configuration	Applicable for protocol testing (Note 1)
DC_30A_n77(2A)	DC_30A_n77(2A)	30A	CA_n77(2A)	30A	n77A	Yes (NR 2CC)
DC_39A_n41A	DC_39A_n41A	39A	n41A	39A	n41A	Yes
DC_39A_n79A	DC_39A_n79A	39A	n79A	39A	n79A	Yes
DC_40A_n1A	DC_40A_n1A	40A	n1A	40A	n1A	Yes
DC_40A_n41A	DC_40A_n41A	40A	n41A	40A	n41A	Yes
DC_40A_n78A	DC_40A_n78A	40A	n78A	40A	n78A	Yes
DC_40C_n78A	DC_40A_n78A	CA_40C	n78A	40A	n78A	No
	DC_40C_n78A	CA_40C	n78A	CA_40C	n78A	No
DC_40A_n79A	DC_40A_n79A	40A	n79A	40A	n79A	Yes
DC_40C_n79A	DC_40A_n79A	CA_40C	n79A	40A	n79A	No
DC_41A_n28A	DC_41A_n28A	41A	n28A	41A	n28A	Yes
DC_41A_n77A	DC_41A_n77A	41A	n77A	41A	n77A	Yes
DC_41A_n77(2A)	DC_41A_n77A	41A	CA_n77(2A)	41A	n77A	Yes (NR 2CC)
DC_41C_n77A	DC_41A_n77A	CA_41C	n77A	41A	n77A	No
DC_41C_n77(2A)	DC_41A_n77A	CA_41C	CA_n77(2A)	41A	n77A	No
DC_41A_n78A	DC_41A_n78A	41A	n78A	41A	n78A	Yes
DC_41C_n78A	DC_41A_n78A	CA_41C	n78A	41A	n78A	No
DC_41A_n79A	DC_41A_n79A	41A	n79A	41A	n79A	Yes
DC_42A_n1A	DC_42A_n1A	42A	n1A	42A	n1A	Yes
DC_42C_n1A	DC_42C_n1A	CA_42C	n1A	CA_42C	n1A	No
DC_42A_n77A	-	42A	n77A	-	-	Yes
DC_42C_n77A	-	CA_42C	n77A	-	-	No
DC_42D_n77A	-	CA_42D	n77A	-	-	No
DC_42A_n78A	-	42A	n78A	-	-	Yes
DC_42A_n78C	-	42A	CA_n78C	-	-	Yes (NR 2CC)
DC_42C_n78A	-	CA_42C	n78A	-	-	No
DC_42C_n78C	-	CA_42C	CA_n78C	-	-	No
DC_42D_n78A	-	CA_42D	n78A	-	-	No
DC_42E_n78A	-	CA_42E	n78A	-	-	No
DC_42A_n79A	-	42A	n79A	-	-	Yes
DC_42A_n79C	-	42A	CA_n79C	-	-	Yes (NR 2CC)
DC_42C_n79A	-	CA_42C	n79A	-	-	No
DC_42C_n79C	-	CA_42C	CA_n79C	-	-	No
DC_42D_n79A	-	CA_42D	n79A	-	-	No
DC_42E_n79A	-	CA_42E	n79A	-	-	No
DC_48A_n5A	DC_48A_n5A	48A	n5A	48A	n5A	Yes
DC_48A_n46A	DC_48A_n46A	48A	n46A	48A	n46A	Yes
DC_48A_n66A	DC_48A_n66A	48A	n66A	48A	n66A	Yes
DC_66A_n2A	DC_66A_n2A	66A	n2A	66A	n2A	Yes
DC_66A-66A_n2A	DC_66A_n2A	CA_66A-66A	n2A	66A	n2A	No

EN-DC configuration	Uplink EN-DC Configuration	E-UTRA downlink configuration	NR downlink configuration	E-UTRA uplink configuration	NR uplink configuration	Applicable for protocol testing (Note 1)
DC_66A_n5A	DC_66A_n5A	66A	n5A	66A	n5A	Yes
DC_66A-66A_n5A	DC_66A-66A_n5A	CA_66A-66A	n5A	66A	n5A	No
DC_66A_n41A	DC_66A_n41A	66A	n41A	66A	n41A	Yes
DC_66A_n71A	DC_66A_n71A	66A	n71A	66A	n71A	Yes
DC_66A_n77A	DC_66A_n77A	66A	n77A	66A	n77A	Yes
DC_66A_n77(2A)	DC_66A_n77A	66A	CA_n77(2A)	66A	n77A	Yes (NR 2CC)
DC_66A-66A_n77A	DC_66A_n77A	CA_66A-66A	n77A	66A	n77A	No
DC_66A-66A-66A_n77A	DC_66A_n77A	CA_66A-66A-66A	n77A	66A	n77A	No
DC_66A-66A_n77(2A)	DC_66A_n77A	CA_66A-66A	CA_n77(2A)	66A	n77A	No
DC_66A-66A-66A_n77(2A)	DC_66A_n77A	CA_66A-66A-66A	CA_n77(2A)	66A	n77A	No
DC_66A_n78A	DC_66A_n78A	66A	n78A	66A	n78A	Yes
DC_71A_n2A	DC_71A_n2A	71A	n2A	71A	n2A	Yes
DC_71A_n66A	DC_71A_n66A	71A	n66A	71A	n66A	Yes

Note 1: Protocol testing is limited to EN-DC configurations with 1 CC E-UTRA and 1CC or 2CC NR configurations.

4.3.1.4.1.3

Inter-band EN-DC configurations within FR1 (three bands)

Table 4.3.1.4.1.3-1: Inter-band EN-DC configurations within FR1 (three bands)

EN-DC configuration	Uplink EN-DC Configuration	E-UTRA downlink configuration	NR downlink configuration	E-UTRA uplink configuration	NR uplink configuration	Applicable for protocol testing (Note 1)
DC_1A-3A_n28A	DC_1A_n28A	CA_1A-3A	n28A	1A	n28A	No
	DC_3A_n28A			3A	n28A	
DC_1A-3A_n41A	DC_1A_n41A	CA_1A-3A	n41A	1A	n41A	No
	DC_3A_n41A			3A	n41A	
DC_1A-3A_n71A	DC_1A_n71A	CA_1A-3A	n71A	1A	n71A	No
	DC_3A_n71A			3A	n71A	No
DC_1A-3A_n77A	DC_1A_n77A	CA_1A-3A	n77A	1A	n77A	No
	DC_3A_n77A			3A	n77A	
DC_1A-3A_n77(2A)	DC_1A_n77A	CA_1A-3A	CA_n77(2A)	1A	n77A	No
	DC_3A_n77A	CA_1A-3A	CA_n77(2A)	3A	n77A	No
DC_1A-3A_n78A	DC_1A_n78A	CA_1A-3A	n78A	1A	n78A	No
	DC_3A_n78A			3A	n78A	
DC_1A-3C_n71A	DC_1A_n71A	CA_1A-3C	n71A	1A	n71A	No

EN-DC configuration	Uplink EN-DC Configuration	E-UTRA downlink configuration	NR downlink configuration	E-UTRA uplink configuration	NR uplink configuration	Applicable for protocol testing (Note 1)
	DC_3A_n71A	CA_1A-3C	n71A	3A	n71A	No
DC_1A-3C_n77A	DC_1A_n77A	CA_1A-3C	n77A	1A	n77A	No
	DC_3A_n77A			3A	n77A	
DC_1A-3C_n77(2A)	DC_1A_n77A	CA_1A-3C	CA_n77(2A)	1A	n77A	No
	DC_3A_n77A			3A	n77A	
DC_1A-3C_n78A	DC_1A_n78A	CA_1A-3C	n78A	1A	n78A	No
	DC_3A_n78A			3A	n78A	
DC_1A-3C_n78(2A)	DC_1A_n78A	CA_1A-3C	CA_n78(2A)	1A	n78A	No
	DC_3A_n78A			3A	n78A	
	DC_3C_n78A			CA_3C	n78A	
DC_1A-1A-3A_n78A	DC_1A_n78A	CA_1A-1A-3A	n78A	1A	n78A	No
	DC_3A_n78A			3A	n78A	
DC_1A-1A-5A_n78A	DC_1A_n78A	CA_1A-1A-5A	n78A	1A	n78A	No
	DC_5A_n78A			5A	n78A	
DC_1A-1A-3C_n78A	DC_1A_n78A	CA_1A-1A-3C	n78A	1A	n78A	No
	DC_3A_n78A			3A	n78A	
	DC_3C_n78A	CA_1A-1A-3C	n78A	CA_3C	n78A	No
DC_1A-3A_n79A	DC_1A_n79A	CA_1A-3A	n79A	1A	n79A	No
	DC_3A_n79A			3A	n79A	
DC_1A-5A_n78C	DC_1A_n78A	CA_1A-5A	CA_n78C	1A	n78A	No
	DC_5A_n78A			5A	n78A	
DC_1A-7A_n3A	DC_1A_n3A	CA_1A-7A	n3A	1A	n3A	No
	DC_7A_n3A			7A	n3A	
DC_1A-7A_n28A	DC_1A_n28A	CA_1A-7A	n28A	1A	n28A	No
	DC_7A_n28A			7A	n28A	
DC_1A-7A_n78A	DC_1A_n78A	CA_1A-7A	n78A	1A	n78A	No
	DC_7A_n78A			7A	n78A	
DC_1A-8A_n3A	DC_1A_n3A	CA_1A-8A	n3A	1A	n3A	No
	DC_8A_n3A			8A	n3A	
eeeeee	DC_1A_n71A	CA_1A-8A	n71A	1A	n71A	No
	DC_8A_n71A	CA_1A-8A	n71A	8A	n71A	No
DC_1A-8A_n77A	DC_1A_n77A	CA_1A-8A	n77A	1A	n77A	No
	DC_8A_n77A			8A	n77A	
DC_1A-8A_n77(2A)	DC_1A_n77A	CA_1A-8A	CA_n77(2A)	1A	n77A	No
	DC_8A_n77A			8A	n77A	
DC_1A-8A_n78A	DC_1A_n78A	CA_1A-8A	n78A	1A	n78A	No
	DC_8A_n78A			8A	n78A	
DC_1A-8A_n78(2A)	DC_1A_n78A	CA_1A-8A	CA_n78(2A)	1A	n78A	No
	DC_8A_n78A			8A	n78A	
DC_1A-11A_n77A	DC_1A_n77A	CA_1A-11A	n77A	1A	n77A	No

EN-DC configuration	Uplink EN-DC Configuration	E-UTRA downlink configuration	NR downlink configuration	E-UTRA uplink configuration	NR uplink configuration	Applicable for protocol testing (Note 1)
DC_1A-18A_n77A	DC_1A_n77A	CA_1A-18A	n77A	1A	n77A	No
	DC_18A_n77A			18A	n77A	
DC_1A-19A_n77(2A)	DC_1A_n77A	CA_1A-19A	CA_n77(2A)	1A	n77A	No
	DC_19A_n77A			19A	n77A	
DC_1A-19A_n78A	DC_1A_n78A	CA_1A-19A	n78A	1A	n78A	No
	DC_19A_n78A			19A	n78A	
DC_1A-19A_n78(2A)	DC_1A_n78A	CA_1A-19A	CA_n78(2A)	1A	n78A	No
	DC_19A_n78A			19A	n78A	
DC_1A-19A_n79A	DC_1A_n79A	CA_1A-19A	n79A	1A	n79A	No
	DC_19A_n79A			19A	n79A	
DC_1A-20A_n3A	DC_1A_n3A	CA_1A-20A	n3A	1A	n3A	No
	DC_20A_n3A			20A	n3A	
DC_1A-20A_n8A	DC_1A_n8A	CA_1A-20A	n8A	1A	n8A	No
	DC_20A_n8A			20A	n8A	
DC_1A-20A_n28A	DC_1A_n28A	CA_1A-20A	n28A	1A	n28A	No
	DC_20A_n28A			20A	n28A	
DC_1A-20A_n78A	DC_1A_n78A	CA_1A-20A	n78A	1A	n78A	No
	DC_20A_n78A			20A	n78A	
DC_1A-21A_n28A	DC_1A_n28A	CA_1A-21A	n28A	1A	n28A	No
	DC_21A_n28A			21A	n28A	
DC_1A-21A_n77(2A)	DC_1A_n77A	CA_1A-21A	CA_n77(2A)	1A	n77A	No
	DC_21A_n77A			21A	n77A	
DC_1A-21A_n78A	DC_1A_n78A	CA_1A-21A	n78A	1A	n78A	No
	DC_21A_n78A			21A	n78A	
DC_1A-21A_n78(2A)	DC_1A_n78A	CA_1A-21A	CA_n78(2A)	1A	n78A	No
	DC_21A_n78A			21A	n78A	
DC_1A-21A_n79A	DC_1A_n79A	CA_1A-21A	n79A	1A	n79A	No
	DC_21A_n79A			21A	n79A	
DC_1A-28A_n3A	DC_1A_n3A	CA_1A-28A	n3A	1A	n3A	No
	DC_28A_n3A			28A	n3A	
DC_1A-28A_n5A ²	DC_1A_n5A	CA_1A-28A	n5A	1A	n5A	No
	DC_28A_n5A			28A	n5A	
DC_1A-28A_n71A	DC_1A_n71A	CA_1A-28A	n71A	1A	n71A	No
	DC_28A_n71A	CA_1A-28A	n71A	28A	n71A	No
DC_1A-28A_n78C	DC_1A_n78A	CA_1A-28A	CA_n78C	1A	n78A	No
	DC_28A_n78A			28A	n78A	
DC_1A_n28A-n78A	DC_1A_n28A	1A	CA_n28A-n78A	1A	n28A	Yes (NR 2CC)
	DC_1A_n78A			1A	n78A	No
DC_1A_n28A-n79A	DC_1A_n28A	1A	CA_n28A-n79A	1A	n28A	Yes (NR 2CC)
	DC_1A_n79A			1A	n79A	No

EN-DC configuration	Uplink EN-DC Configuration	E-UTRA downlink configuration	NR downlink configuration	E-UTRA uplink configuration	NR uplink configuration	Applicable for protocol testing (Note 1)
DC_1A_n40A-n71A	DC_1A_n40A	1A	CA_n40A-n71A	1A	n40A	Yes (NR 2CC)
	DC_1A_n71A	1A	CA_n40A-n71A	1A	n71A	No
DC_1A-41A_n28A	DC_1A_n28A	CA_1A-41A	n28A	1A	n28A	No
	DC_41A_n28A			41A	n28A	
DC_1A-41C_n28A	DC_1A_n28A	CA_1A-41C	n28A	1A	n28A	No
	DC_41A_n28A			41A	n28A	
	DC_41C_n28A			CA_41C	n28A	
DC_1A-41A_n41A	DC_1A_n41A	CA_1A-41A	n41A	1A	n41A	No
DC_1A-41A_n77A	DC_1A_n77A	CA_1A-41A	n77A	1A	n77A	No
	DC_41A_n77A			41A	n77A	
DC_1A-41A_n77(2A)	DC_1A_n77A	CA_1A-41A	CA_n77(2A)	1A	n77A	No
DC_1A-41C_n77A	DC_1A_n77A	CA_1A-41C	n77A	1A	n77A	No
DC_1A-41C_n77(2A)	DC_1A_n77A	CA_1A-41C	CA_n77(2A)	1A	n77A	No
DC_1A-41A_n78A	DC_1A_n78A	CA_1A-41A	n78A	1A	n78A	No
	DC_41A_n78A			41A	n78A	
DC_1A-42A_n77A	DC_1A_n77A	CA_1A-42A	n77A	1A	n77A	No
DC_1A-42C_n77A	DC_1A_n77A	CA_1A-42C	n77A	1A	n77A	No
DC_1A-42A_n78A	DC_1A_n78A	CA_1A-42A	n78A	1A	n78A	No
DC_1A-42C_n78A	DC_1A_n78A	CA_1A-42C	n78A	1A	n78A	No
DC_1A-42D_n78A	DC_1A_n78A	CA_1A-42D	n78A	1A	n78A	No
DC_1A-42E_n78A	DC_1A_n78A	CA_1A-42E	n78A	1A	n78A	No
DC_1A-42A_n79A	DC_1A_n79A	CA_1A-42A	n79A	1A	n79A	No
DC_1A-42C_n79A	DC_1A_n79A	CA_1A-42C	n79A	1A	n79A	No
DC_1A-42D_n79A	DC_1A_n79A	CA_1A-42D	n79A	1A	n79A	No
DC_1A-42E_n79A	DC_1A_n79A	CA_1A-42E	n79A	1A	n79A	No
DC_1A_n71A-n77A	DC_1A_n71A	1A	CA_n71A-n77A	1A	n71A	Yes (NR 2CC)
	DC_1A_n77A	1A	CA_n71A-n77A	1A	n77A	No
DC_1A_n78A-n79A	DC_1A_n78A	1A	CA_n78A-n79A	1A	n78A	Yes (NR 2CC)
	DC_1A_n79A			1A	n79A	No
DC_2A-5A_n2A	DC_2A_n2A	CA_2A-5A	n2A	2A	n2A	No
	DC_5A_n2A			5A	n2A	
DC_2A-5A_n66A	DC_2A_n66A	CA_2A-5A	n66A	2A	n66A	No
	DC_5A_n66A			5A	n66A	
DC_2A-2A-5A_n66A	DC_2A_n66A	CA_2A-2A-5A	n66A	2A	n66A	No
	DC_5A_n66A			5A	n66A	
DC_2A-5A_n77A	DC_2A_n77A	CA_2A-5A	n77A	2A	n77A	No
	DC_5A_n77A			5A	n77A	
DC_2A-5A_n77(2A)	DC_2A_n77A	CA_2A-5A	CA_n77(2A)	2A	n77A	No
	DC_5A_n77A			5A	n77A	
DC_2A-2A-5A_n77A	DC_2A_n77A	CA_2A-2A-5A	n77A	2A	n77A	No

EN-DC configuration	Uplink EN-DC Configuration	E-UTRA downlink configuration	NR downlink configuration	E-UTRA uplink configuration	NR uplink configuration	Applicable for protocol testing (Note 1)
	DC_5A_n77A			5A	n77A	
DC_2A-2A-5A_n77(2A)	DC_2A_n77A	CA_2A-2A-5A	CA_n77(2A)	2A	n77A	No
	DC_5A_n77A			5A	n77A	
DC_2A_n5A-n77A	DC_2A_n5A	2A	CA_n5A-n77A	2A	n5A	Yes (NR 2CC)
	DC_2A_n77A			2A	n77A	No
DC_2A-13A_n77A	DC_2A_n77A	CA_2A-13A	n77A	2A	n77A	No
	DC_13A_n77A			13A	n77A	
DC_2A-2A-14A_n66A	DC_2A_n66A	CA_2A-2A-14A	n66A	2A	n66A	No
	DC_14A_n66A			14A	n66A	
DC_2A-2A-66A_n66A	DC_2A_n66A	CA_2A-2A-66A	n66A	2A	n66A	No
	DC_66A_n66A			66A	n66A	
DC_2A-14A_n2A	DC_2A_n2A	CA_2A-14A	n2A	2A	n2A	No
	DC_14A_n2A			14A	n2A	
DC_2A-14A_n66A	DC_2A_n66A	CA_2A-14A	n66A	2A	n66A	No
	DC_14A_n66A			14A	n66A	
DC_2A-14A_n77A	DC_2A_n77A	CA_2A-14A	n77A	2A	n77A	No
	DC_14A_n77A			14A	n77A	
DC_2A-14A_n77(2A)	DC_2A_n77A	CA_2A-14A	CA_n77(2A)	2A	n77A	No
	DC_14A_n77A			14A	n77A	
DC_2A-2A-14A_n77A	DC_2A_n77A	CA_2A-2A-14A	n77A	2A	n77A	No
	DC_14A_n77A			14A	n77A	
DC_2A-2A-14A_n77(2A)	DC_2A_n77A	CA_2A-2A-14A	CA_n77(2A)	2A	n77A	No
	DC_14A_n77A			14A	n77A	
DC_2A-66A_n2A	DC_2A_n2A	CA_2A-66A	n2A	2A	n2A	No
	DC_66A_n2A			66A	n2A	No
DC_2A-66A_n5A	DC_2A_n5A	CA_2A-66A	n5A	2A	n5A	No
	DC_66A_n5A			66A	n5A	No
DC_2A-2A-66A_n5A	DC_2A_n5A	CA_2A-2A-66A	n5A	2A	n5A	No
	DC_66A_n5A			66A	n5A	No
DC_2A-66A-66A_n5A	DC_2A_n5A	CA_2A-66A-66A	n5A	2A	n5A	No
	DC_66A_n5A			66A	n5A	No
DC_2A-2A-66A_66A_n5A	DC_2A_n5A	CA_2A-2A-66A-66A	n5A	2A	n5A	No
	DC_66A_n5A			66A	n5A	No
DC_2A-66A_n41A	DC_2A_n41A	CA_2A-66A	n41A	2A	n41A	No

EN-DC configuration	Uplink EN-DC Configuration	E-UTRA downlink configuration	NR downlink configuration	E-UTRA uplink configuration	NR uplink configuration	Applicable for protocol testing (Note 1)
	DC_66A_n41A	CA_2A-66A	n41A	66A	n41A	No
DC_2A-66A_n66A	DC_2A_n66A	CA_2A-66A	n66A	2A	n66A	No
	DC_66A_n66A	CA_2A-66A	n66A	66A	n66A	No
DC_2A-66A-66A_n66A	DC_2A_n66A	CA_2A-66A-66A	n66A	2A	n66A	No
	DC_66A_n66A			66A	n66A	
DC_2A-2A-66A-66A_n66A	DC_2A_n66A	CA_2A-2A-66A	n66A	2A	n66A	No
DC_2A-66A_n71A	DC_2A_n71A	CA_2A-66A	n71A	2A	n71A	No
	DC_66A_n71A			66A	n71A	
DC_2A-66A_n77A	DC_2A_n77A	CA_2A-66A	n77A	2A	n77A	No
	DC_66A_n77A			66A	n77A	
DC_2A-66A-66A_n2A	DC_66A_n2A	CA_2A-66A-66A	n2A	66A	n2A	No
DC_2A-66A_n77(2A)	DC_2A_n77A	CA_2A-66A	CA_n77(2A)	2A	n77A	No
	DC_66A_n77A			66A	n77A	
DC_2A-2A-66A_n77A	DC_2A_n77A	CA_2A-2A-66A	n77A	2A	n77A	No
	DC_66A_n77A			66A	n77A	
DC_2A-2A-66A_n77(2A)	DC_2A_n77A	CA_2A-2A-66A	CA_n77(2A)	2A	n77A	No
	DC_66A_n77A			66A	n77A	
DC_2A-66A-66A_n77A	DC_2A_n77A	CA_2A-66A-66A	n77A	2A	n77A	No
	DC_66A_n77A			66A	n77A	
DC_2A-66A-66A_n77(2A)	DC_2A_n77A	CA_2A-66A-66A	CA_n77(2A)	2A	n77A	No
	DC_66A_n77A			66A	n77A	
DC_2A-66A-66A_n77(2A)	DC_2A_n77A	CA_2A-66A-66A	CA_n77(2A)	2A	n77A	No
	DC_66A_n77A			66A	n77A	
DC_2A-2A-66A-66A_n77A	DC_2A_n77A	CA_2A-2A-66A-66A	n77A	2A	n77A	No
	DC_66A_n77A			66A	n77A	
DC_2A-(n)71AA	DC_2A_n71A	2A	DC_(n)71AA	2A	n71A	No
	DC_(n)71AA			-	DC_(n)71AA	
DC_3A-5A_n78C	DC_3A_n78A	CA_3A-5A	CA_n78C	3A	n78A	No
	DC_5A_n78A			5A	n78A	
DC_3A_n1A-n78A	DC_3A_n1A	3A	CA_n1A-n78A	3A	n1A	Yes (NR 2CC)
	DC_3A_n78A			3A	n78A	No
DC_3A_n1A-n79A	DC_3A_n1A	3A	CA_n1A-n79A	3A	n1A	Yes (NR 2CC)
	DC_3A_n79A			3A	n79A	No
DC_3A-7A_n1A	DC_3A_n1A	CA_3A-7A	n1A	3A	n1A	No
	DC_7A_n1A	CA_3A-7A	n1A	7A	n1A	No

EN-DC configuration	Uplink EN-DC Configuration	E-UTRA downlink configuration	NR downlink configuration	E-UTRA uplink configuration	NR uplink configuration	Applicable for protocol testing (Note 1)
DC_3A-7A_n5A	DC_3A_n5A	CA_3A-7A	n5A	3A	n5A	No
	DC_7A_n5A	CA_3A-7A	n5A	7A	n5A	No
DC_3A-7A_n28A	DC_3A_n28A	CA_3A-7A	n28A	3A	n28A	No
	DC_7A_n28A			7A	n28A	
DC_3A-7A_n78A	DC_3A_n78A	CA_3A-7A	n78A	1A	n78A	No
	DC_7A_n78A			7A	n78A	
DC_3A-8A_n1A	DC_3A_n1A	CA_3A-8A	n1A	3A	n1A	No
	DC_8A_n1A	CA_3A-8A	n1A	8A	n1A	No
DC_3A-8A_n28A	DC_3A_n28A	CA_3A-8A	n28A	3A	n28A	No
	DC_8A_n28A	CA_3A-8A	n28A	8A	n28A	No
DC_3A-8A_n71A	DC_3A_n71A	CA_3A-8A	n71A	3A	n71A	No
	DC_8A_n71A	CA_3A-8A	n71A	8A	n71A	No
DC_3C-8A_n71A	DC_3A_n71A	CA_3C-8A	n71A	3A	n71A	No
	DC_8A_n71A	CA_3C-8A	n71A	8A	n71A	No
DC_3A-8A_n77A	DC_3A_n77A	CA_3A-8A	n77A	3A	n77A	No
	DC_8A_n77A	CA_3A-8A	n77A	8A	n77A	No
DC_3A-8A_n77(2A)	DC_3A_n77A	CA_3A-8A	CA_n77(2A)	3A	n77A	No
	DC_8A_n77A	CA_3A-8A	CA_n77(2A)	8A	n77A	No
DC_3A-8A_n78A	DC_3A_n78A	CA_3A-8A	n78A	3A	n78A	No
	DC_8A_n78A			8A	n78A	
DC_3A-8A_n78(2A)	DC_3A_n78A	CA_3A-8A	CA_n78(2A)	3A	n78A	No
	DC_8A_n78A			8A	n78A	
DC_3A-18A_n77A	DC_3A_n77A	CA_3A-18A	n77A	3A	n77A	No
	DC_18A_n77A	CA_3A-18A	n77A	18A	n77A	No
DC_3A-18A_n78A	DC_3A_n78A	CA_3A-18A	n78A	3A	n78A	No
	DC_18A_n78A	CA_3A-18A	n78A	18A	n78A	No
DC_3A-19A_n1A	DC_3A_n1A	CA_3A-19A	n1A	3A	n1A	No
	DC_19A_n1A			19A	n1A	
DC_3A-19A_n77(2A)	DC_3A_n77A	CA_3A-19A	CA_n77(2A)	3A	n77A	No
	DC_19A_n77A			19A	n77A	
DC_3A-19A_n78A	DC_3A_n78A	CA_3A-19A	n78A	3A	n78A	No
	DC_19A_n78A			19A	n78A	
DC_3A-19A_n78(2A)	DC_3A_n78A	CA_3A-19A	CA_n78(2A)	3A	n78A	No
	DC_19A_n78A			19A	n78A	
DC_3A-19A_n79A	DC_3A_n79A	CA_3A-19A	n79A	3A	n79A	No
	DC_19A_n79A			19A	n79A	
DC_3A-20A_n1A	DC_3A_n1A	CA_3A-20A	n1A	3A	n1A	No
	DC_20A_n1A	CA_3A-20A	n1A	20A	n1A	No
DC_3A-20A_n28A	DC_3A_n28A	CA_3A-20A	n28A	3A	n28A	No
	DC_20A_n28A			20A	n28A	

EN-DC configuration	Uplink EN-DC Configuration	E-UTRA downlink configuration	NR downlink configuration	E-UTRA uplink configuration	NR uplink configuration	Applicable for protocol testing (Note 1)
DC_3A-21A_n1A	DC_3A_n1A	CA_3A-21A	n1A	3A	n1A	No
	DC_21A_n1A			21A	n1A	
DC_3A-21A_n28A	DC_3A_n28A	CA_3A-21A	n28A	3A	n28A	No
	DC_21A_n28A			21A	n28A	
DC_3A-21A_n77(2A)	DC_3A_n77A	CA_3A-21A	CA_n77(2A)	3A	n77A	No
	DC_21A_n77A			21A	n77A	
DC_3A-21A_n78A	DC_3A_n78A	CA_3A-21A	n78A	3A	n78A	No
	DC_21A_n78A			21A	n78A	
DC_3A-21A_n78(2A)	DC_3A_n78A	CA_3A-21A	CA_n78(2A)	3A	n78A	No
	DC_21A_n78A			21A	n78A	
DC_3A-21A_n79A	DC_3A_n79A	CA_3A-21A	n79A	3A	n79A	No
	DC_21A_n79A			21A	n79A	
DC_3A-28A_n71A	DC_3A_n71A	CA_3A-28A	n71A	3A	n71A	No
	DC_28A_n71A	CA_3A-28A	n71A	28A	n71A	No
DC_3C-28A_n71A	DC_3A_n71A	CA_3C-28A	n71A	3A	n71A	No
	DC_28A_n71A	CA_3C-28A	n71A	28A	n71A	No
DC_3A-28A_n78A	DC_3A_n78A	CA_3A-28A	n78A	3A	n78A	No
	DC_28A_n78A			28A	n78A	
DC_3A_n28A-n78A	DC_3A_n28A	3A	CA_n28A-n78A	3A	n28A	Yes (NR 2CC)
	DC_3A_n78A			3A	n78A	No
DC_3A_n28A-n79A	DC_3A_n28A	3A	CA_n28A-n79A	3A	n28A	Yes (NR 2CC)
	DC_3A_n79A			3A	n79A	No
DC_3A-40A_n1A	DC_3A_n1A	CA_3A-40A	n1A	3A	n1A	No
	DC_40A_n1A	CA_3A-40A	n1A	40A	n1A	No
DC_3A_n40A-n71A	DC_3A_n40A	3A	CA_n40A-n71A	3A	n40A	Yes (NR 2CC)
	DC_3A_n71A		CA_n40A-n71A	3A	n71A	No
DC_3C_n40A-n71A	DC_3A_n40A	CA_3C	CA_n40A-n71A	3A	n40A	No
	DC_3A_n71A	CA_3C	CA_n40A-n71A	3A	n71A	No
DC_3A-41A_n28A	DC_3A_n28A	CA_3A-41A	n28A	3A	n28A	No
	DC_41A_n28A	CA_3A-41A	n28A	41A	n28A	No
DC_3A-41C_n28A	DC_3A_n28A	CA_3A-41C	n28A	3A	n28A	No
	DC_41A_n28A	CA_3A-41C	n28A	41A	n28A	No
	DC_41C_n28A	CA_3A-41C	n28A	CA_41C	n28A	No
DC_3A-41A_n41A	DC_3A_n41A	CA_3A-41A	n41A	3A	n41A	No
DC_3A-41A_n77A	DC_3A_n77A	CA_3A-41A	n77A	3A	n77A	No
	DC_41A_n77A	CA_3A-41A	n77A	41A	n77A	No
DC_3A-41A_n77(2A)	DC_3A_n77A	CA_3A-41A	CA_n77(2A)	3A	n77A	No
	DC_41A_n77A	CA_3A-41A	CA_n77(2A)	41A	n77A	No
DC_3A-41C_n77A	DC_3A_n77A	CA_3A-41C	n77A	3A	n77A	No
	DC_41A_n77A	CA_3A-41C	n77A	CA_41C	n77A	No

EN-DC configuration	Uplink EN-DC Configuration	E-UTRA downlink configuration	NR downlink configuration	E-UTRA uplink configuration	NR uplink configuration	Applicable for protocol testing (Note 1)
DC_3A-41C_n77(2A)	DC_3A_n77A	CA_3A-41C	CA_n77(2A)	3A	n77A	No
DC_3A-42A_n1A	DC_3A_n1A	CA_3A-42A	n1A	3A	n1A	No
DC_3A-42C_n1A	DC_3A_n1A	CA_3A-42C	n1A	3A	n1A	No
DC_3A-42A_n77A	DC_3A_n77A	CA_3A-42A	n77A	3A	n77A	No
DC_3A-42C_n77A	DC_3A_n77A	CA_3A-42C	n77A	3A	n77A	No
DC_3A-42A_n78A	DC_3A_n78A	CA_3A-42A	n78A	3A	n78A	No
DC_3A-42C_n78A	DC_3A_n78A	CA_3A-42C	n78A	3A	n78A	No
DC_3A-42D_n78A	DC_3A_n78A	CA_3A-42D	n78A	3A	n78A	No
DC_3A-42E_n78A	DC_3A_n78A	CA_3A-42E	n78A	3A	n78A	No
DC_3A-42A_n79A	DC_3A_n79A	CA_3A-42A	n79A	3A	n79A	No
DC_3A-42C_n79A	DC_3A_n79A	CA_3A-42C	n79A	3A	n79A	No
DC_3A-42D_n79A	DC_3A_n79A	CA_3A-42D	n79A	3A	n79A	No
DC_3A-42E_n79A	DC_3A_n79A	CA_3A-42E	n79A	3A	n79A	No
DC_3A_n71A-n77A	DC_3A_n71A	3A	CA_n71A-n77A	3A	n71A	Yes (NR 2CC)
	DC_3A_n77A	3A	CA_n71A-n77A	3A	n77A	No
DC_3C_n71A-n77A	DC_3A_n71A	CA_3C	CA_n71A-n77A	3A	n71A	No
	DC_3A_n77A	CA_3C	CA_n71A-n77A	3A	n77A	No
DC_3A_n78A-n79A	DC_3A_n78A	3A	CA_n78A-n79A	3A	n78A	Yes (NR 2CC)
	DC_3A_n79A	3A	CA_n78A-n79A	3A	n79A	No
DC_3C-8A_n77A	DC_3A_n77A	CA_3C-8A	n77A	3A	n77A	No
	DC_8A_n77A			8A	n77A	
DC_3C-8A_n77(2A)	DC_3A_n77A	CA_3A-8A	CA_n77(2A)	3A	n77A	No
	DC_8A_n77A			8A	n77A	
DC_5A-66A_n2A	DC_5A_n2A	CA_5A-66A	n2A	5A	n2A	No
	DC_66A_n2A	CA_5A-66A	n2A	66A	n2A	No
DC_5A-66A-66A_n2A	DC_5A_n2A	CA_5A-66A-66A	n2A	5A	n2A	No
	DC_66A_n2A	CA_5A-66A-66A	n2A	66A	n2A	No
DC_5A-66A_n66A	DC_5A_n66A	CA_5A-66A	n66A	5A	n66A	No
DC_5A-66A_n77A	DC_5A_n77A	CA_5A-66A	n77A	5A	n77A	No
	DC_66A_n77A			66A	n77A	
DC_5A-66A_n77(2A)	DC_5A_n77A	CA_5A-66A	CA_n77(2A)	5A	n77A	No
	DC_66A_n77A			66A	n77A	
DC_5A-66A-66A_n77A	DC_5A_n77A	CA_5A-66A-66A	CA_n77A	5A	n77A	No
	DC_66A_n77A			66A	n77A	
DC_5A-66A-66A_n77(2A)	DC_5A_n77A	CA_5A-66A-66A	CA_n77(2A)	5A	n77A	No
	DC_66A_n77A	CA_5A-66A-	CA_n77(2A)	66A	n77A	No

EN-DC configuration	Uplink EN-DC Configuration	E-UTRA downlink configuration	NR downlink configuration	E-UTRA uplink configuration	NR uplink configuration	Applicable for protocol testing (Note 1)
		66A				
DC_5A-7A_n78A	DC_5A_n78A	CA_5A-7A	n78A	5A	n78A	No
	DC_7A_n78A			7A	n78A	
DC_7A-8A_n1A	DC_7A_n1A	CA_7A-8A	n1A	7A	n1A	No
	DC_8A_n1A	CA_7A-8A	n1A	8A	n1A	No
DC_7A-8A_n3A	DC_7A_n3A	CA_7A-8A	n3A	7A	n3A	No
	DC_8A_n3A	CA_7A-8A	n3A	8A	n3A	No
DC_7A-20A_n1A	DC_7A_n1A	CA_7A-20A	n1A	7A	n1A	No
	DC_20A_n1A	CA_7A-20A	n1A	20A	n1A	No
DC_7A-20A_n3A	DC_7A_n3A	CA_7A-20A	n3A	7A	n3A	No
	DC_20A_n3A	CA_7A-20A	n3A	20A	n3A	No
DC_7A-20A_n8A	DC_7A_n8A	CA_7A-20A	n8A	7A	n8A	No
	DC_20A_n8A	CA_7A-20A	n8A	20A	n8A	No
DC_7A-20A_n28A	DC_7A_n28A	CA_7A-20A	n28A	7A	n28A	No
	DC_20A_n28A			20A	n28A	
DC_7A-20A_n78A	DC_7A_n78A	CA_7A-20A	n78A	7A	n78A	No
	DC_20A_n78A			20A	n78A	
DC_7A-28A_n3A	DC_7A_n3A	CA_7A-28A	n3A	7A	n3A	No
	DC_28A_n3A	CA_7A-28A	n3A	28A	n3A	No
DC_7A-28A_n5A ²	DC_7A_n5A	CA_7A-28A	n5A	7A	n5A	No
	DC_28A_n5A	CA_7A-28A	n5A	28A	n5A	No
DC_7A_n5A-n78A	DC_7A_n5A	7A	CA_n5A-n78A	7A	n5A	Yes (NR 2CC)
	DC_7A_n78A	7A	CA_n5A-n78A	7A	n78A	No
DC_7A_n28A-n78A	DC_7A_n28A	7A	CA_n28A-n78A	7A	n28A	Yes (NR 2CC)
	DC_7A_n78A			7A	n78A	No
DC_7C_n5A-n78A	DC_7A_n5A	CA_7C	CA_n5A-n78A	7A	n5A	No
DC_7C_n28A-n78A	DC_7A_n78A	CA_7C	CA_n5A-n78A	7A	n78A	No
	DC_7C_n5A	CA_7C	CA_n5A-n78A	CA_7C	n5A	No
	DC_7C_n78A	CA_7C	CA_n5A-n78A	CA_7C	n78A	No
	DC_7A_n28A	CA_7C	CA_n28A-n78A	7A	n28A	No
DC_7C_n28A-n78A	DC_7A_n78A	CA_7C	CA_n28A-n78A	7A	n78A	No
	DC_7C_n28A	CA_7C	CA_n28A-n78A	CA_7C	n28A	No
	DC_7C_n78A	CA_7C	CA_n28A-n78A	CA_7C	n78A	No
	DC_7C_n78A	CA_7C	CA_n28A-n78A	CA_7C	n78A	No
DC_8A-28A_n71A	DC_8A_n71A	CA_8A-28A	n71A	8A	n71A	No
	DC_28A_n71A	CA_8A-28A	n71A	28A	n71A	No
DC_8A_n40A-n71A	DC_8A_n40A	8A	CA_n40A-n71A	8A	n40A	Yes (NR 2CC)
	DC_8A_n71A	8A	CA_n40A-n71A	8A	n71A	No
DC_8A_n71A-n77A	DC_8A_n71A	8A	CA_n71A-n77A	8A	n71A	Yes (NR 2CC)
	DC_8A_n77A	8A	CA_n71A-n77A	8A	n77A	No
DC_13A_n2A-n77A	DC_13A_n2A	13A	CA_n2A-n77A	13A	n2A	Yes (NR 2CC)

EN-DC configuration	Uplink EN-DC Configuration	E-UTRA downlink configuration	NR downlink configuration	E-UTRA uplink configuration	NR uplink configuration	Applicable for protocol testing (Note 1)
	DC_13A_n77A			13A	n77A	No
DC_13A-66A_n2A	DC_13A_n2A	CA_13A-66A	n2A	13A	n2A	No
	DC_66A_n2A	CA_13A-66A	n2A	66A	n2A	No
DC_13A-66A_n77A	DC_13A_n77A	CA_13A-66A	n77A	13A	n77A	No
	DC_66A_n77A			66A	n77A	
DC_14A-66A_n2A	DC_14A_n2A	CA_14A-66A	n2A	14A	n2A	No
	DC_66A_n2A	CA_14A-66A	n2A	66A	n2A	No
DC_14A-66A_n66A	DC_14A_n66A	CA_14A-66A	n66A	14A	n66A	No
	DC_66A_n66A	CA_14A-66A	n66A	66A	n66A	No
DC_14A-66A-66A_n2A	DC_14A_n2A	CA_14A-66A-66A	n2A	14A	n2A	No
	DC_66A_n2A	CA_14A-66A-66A	n2A	66A	n2A	No
DC_14A-66A_n77A	DC_14A_n77A	CA_14A-66A	n77A	14A	n77A	No
	DC_66A_n77A			66A	n77A	
DC_14A-66A-66A_n77A	DC_14A_n77A	CA_14A-66A-66A	n77A	14A	n77A	No
	DC_66A_n77A			66A	n77A	
DC_14A-66A_n77(2A)	DC_14A_n77A	CA_14A-66A	CA_n77(2A)	14A	n77A	No
	DC_66A_n77A			66A	n77A	
DC_14A-66A-66A_n77(2A)	DC_14A_n77A	CA_14A-66A-66A	n77(2A)	14A	n77A	No
	DC_66A_n77A	CA_14A-66A-66A	n77(2A)	66A	n77A	No
DC_18A-41C_n3A	DC_18A_n3A	CA_18A-41C	n3A	18A	n3A	No
	DC_41A_n3A	CA_18A-41C	n3A	41A	n3A	No
	DC_41C_n3A	CA_18A-41C	n3A	CA_41C	n3A	No
DC_18A-41A_n77A	DC_18A_n77A	CA_18A-41A	n77A	18A	n77A	No
	DC_41A_n77A	CA_18A-41A	n77A	41A	n77A	No
DC_18A-41C_n77A	DC_18A_n77A	CA_18A-41C	n77A	18A	n77A	No
	DC_41A_n77A	CA_18A-41C	n77A	41A	n77A	No
	DC_41C_n77A	CA_18A-41C	n77A	CA_41C	n77A	No
DC_18A-41A_n78A	DC_18A_n78A	CA_18A-41A	n78A	18A	n78A	No
	DC_41A_n78A	CA_18A-41A	n78A	41A	n78A	No
DC_18A-41C_n78A	DC_18A_n78A	CA_18A-41C	n78A	18A	n78A	No
	DC_41A_n78A	CA_18A-41C	n78A	41A	n78A	No
	DC_41C_n78A	CA_18A-41C	n78A	CA_41C	n78A	No
DC_19A_n1A-n78A	DC_19A_n1A	19A	CA_n1A-n78A	19A	n1A	Yes (NR 2CC)
	DC_19A_n78A			19A	n78A	No
DC_19A_n1A-n79A	DC_19A_n1A	19A	CA_n1A-n79A	19A	n1A	Yes (NR 2CC)

EN-DC configuration	Uplink EN-DC Configuration	E-UTRA downlink configuration	NR downlink configuration	E-UTRA uplink configuration	NR uplink configuration	Applicable for protocol testing (Note 1)
	DC_19A_n79A			19A	n79A	No
DC_19A-21A_n1A	DC_19A_n1A	CA_19A-21A	n1A	19A	n1A	No
	DC_21A_n1A			21A	n1A	
DC_19A-21A_n77(2A)	DC_19A_n77A	CA_19A-21A	CA_n77(2A)	19A	n77A	No
	DC_21A_n77A			21A	n77A	
DC_19A-21A_n78A	DC_19A_n78A	CA_19A-21A	n78A	19A	n78A	No
	DC_21A_n78A			21A	n78A	
DC_19A-21A_n78(2A)	DC_19A_n78A	CA_19A-21A	CA_n78(2A)	19A	n78A	No
	DC_21A_n78A			21A	n78A	
DC_19A-21A_n79A	DC_19A_n79A	CA_19A-21A	n79A	19A	n79A	No
	DC_21A_n79A			21A	n79A	
DC_19A-42A_n1A	DC_19A_n1A	CA_19A-42A	n1A	19A	n1A	No
DC_19A-42A_n78A	DC_19A_n78A	CA_19A-42A	n78A	19A	n78A	No
DC_19A-42A_n79A	DC_19A_n79A	CA_19A-42A	n79A	19A	n79A	No
DC_19A-42C_n1A	DC_19A_n1A	CA_19A-42C	n1A	19A	n1A	No
DC_19A-42C_n78A	DC_19A_n78A	CA_19A-42C	n78A	19A	n78A	No
DC_19A-42C_n79A	DC_19A_n79A	CA_19A-42C	n79A	19A	n79A	No
DC_19A_n78A-n79A	DC_19A_n78A	19A	CA_n78A-n79A	19A	n78A	Yes (NR 2CC)
	DC_19A_n79A			19A	n79A	No
DC_20A_n28A-n78A	DC_20A_n28A	20A	CA_n28A-n78A	20A	n28A	Yes (NR 2CC)
	DC_20A_n78A			20A	n78A	No
DC_21A_n1A-n78A	DC_21A_n1A	21A	CA_n1A-n78A	21A	n1A	Yes (NR 2CC)
	DC_21A_n78A			21A	n78A	No
DC_21A_n1A-n79A	DC_21A_n1A	21A	CA_n1A-n79A	21A	n1A	Yes (NR 2CC)
	DC_21A_n79A			21A	n79A	No
DC_21A_n28A-n77A	DC_21A_n28A	21A	CA_n28A-n77A	21A	n28A	Yes (NR 2CC)
	DC_21A_n77A			21A	n77A	No
DC_21A_n28A-n78A	DC_21A_n28A	21A	CA_n28A-n78A	21A	n28A	Yes (NR 2CC)
	DC_21A_n78A			21A	n78A	No
DC_21A_n28A-n79A	DC_21A_n28A	21A	CA_n28A-n79A	21A	n28A	Yes (NR 2CC)
	DC_21A_n79A			21A	n79A	No
DC_21A-42A_n1A	DC_21A_n1A	CA_21A-42A	n1A	21A	n1A	No
DC_21A-42C_n1A	DC_21A_n1A	CA_21A-42C	n1A	21A	n1A	No
DC_21A-42A_n78A	DC_21A_n78A	CA_21A-42A	n78A	21A	n78A	No
DC_21A-42C_n78A	DC_21A_n78A	CA_21A-42C	n78A	21A	n78A	No
DC_21A-42A_n79A	DC_21A_n79A	CA_21A-42A	n79A	21A	n79A	No
DC_21A-42C_n79A	DC_21A_n79A	CA_21A-42C	n79A	21A	n79A	No
DC_21A_n78A-n79A	DC_21A_n78A	21A	CA_n78A-n79A	21A	n78A	Yes (NR 2CC)
	DC_21A_n79A			21A	n79A	No
DC_28A_n7A-n78A	DC_28A_n7A	28A	CA_n7A-n78A	28A	n7A	Yes (NR 2CC)

EN-DC configuration	Uplink EN-DC Configuration	E-UTRA downlink configuration	NR downlink configuration	E-UTRA uplink configuration	NR uplink configuration	Applicable for protocol testing (Note 1)
DC_28A_n40A-n71A	DC_28A_n7A	28A	CA_n7A-n78A	28A	n78A	No
	DC_28A_n40A	28A	CA_n40A-n71A	28A	n40A	Yes (NR 2CC)
	DC_28A_n71A	28A	CA_n40A-n71A	28A	n71A	No
DC_28A_n71A-n77A	DC_28A_n71A	28A	CA_n71A-n77A	28A	n71A	Yes (NR 2CC)
	DC_28A_n77A	28A	CA_n71A-n77A	28A	n77A	No
DC_66A_n2A-n77A	DC_66A_n2A	66A	CA_n2A-n77A	66A	n2A	Yes (NR 2CC)
	DC_66A_n77A			66A	n77A	No
DC_66A_n5A-n77A	DC_66A_n5A	66A	CA_n5A-n77A	66A	n5A	Yes (NR 2CC)
	DC_66A_n77A			66A	n77A	No
DC_66A_(n)71AA	DC_66A_n71A	66A	DC_(n)71AA	66A	n71A	No
	DC_(n)71AA			-	DC_(n)71AA	
Note 1: Protocol testing is limited to EN-DC configurations with 1 CC E-UTRA and 1CC or 2CC NR configurations.						
Note 2: The frequency range in band 28 is restricted for this band combination to 703-733 MHz for the UL and 758 – 788 MHz for the DL.						

4.3.1.4.1.4

Inter-band EN-DC configurations within FR1 (four bands)

Table 4.3.1.4.1.4-1: Inter-band EN-DC configurations within FR1 (four bands)

EN-DC configuration	Uplink EN-DC Configuration	E-UTRA downlink configuration	NR downlink configuration	E-UTRA uplink configuration	NR uplink configuration	Applicable for protocol testing (Note 1)
DC_XA-YA-ZA_nWA	DC_XA_nWA	CA_XA-YA-ZA	nWA	XA	nWA	No
	DC_YA_nWA			YA	nWA	
	DC_ZA_nWA			ZA	nWA	
DC_XA-YA-ZA_nW(2A)	DC_XA_nWA	CA_XA-YA-ZA	CA_nW(2A)	XA	nWA	No
	DC_YA_nWA			YA	nWA	
	DC_ZA_nWA			ZA	nWA	
DC_XA-YA-ZC_nWA	DC_XA_nWA	CA_XA-YA-ZC	nWA	XA	nWA	No
	DC_YA_nWA			YA	nWA	
DC_XA-YA-ZC_nW(2A)	DC_XA_nWA	CA_XA-YA-ZC	CA_nW(2A)	XA	nWA	No
	DC_YA_nWA			YA	nWA	
DC_XA-YA-ZD_nWA	DC_XA_nWA	CA_XA-YA-ZD	nWA	XA	nWA	No
	DC_YA_nWA			YA	nWA	
DC_XA-YC-ZA_nWA	DC_XA_nWA	CA_XA-YC-ZA	nWA	XA	nWA	No
	DC_YA_nWA			YA	nWA	
	DC_ZA_nWA			ZA	nWA	
DC_XC-YA-ZA_nWA	DC_XA_nWA	CA_XC-YA-ZA	nWA	XA	nWA	No

EN-DC configuration	Uplink EN-DC Configuration	E-UTRA downlink configuration	NR downlink configuration	E-UTRA uplink configuration	NR uplink configuration	Applicable for protocol testing (Note 1)
	DC_YA_nWA			YA	nWA	
	DC_ZA_nWA			ZA	nWA	
DC_XA-YC-ZA_nW(2A)	DC_XA_nWA	CA_XA-YC-ZA	CA_nW(2A)	XA	nWA	No
	DC_YA_nWA			YA	nWA	
	DC_ZA_nWA			ZA	nWA	
DC_XA-XA-YA-ZA_nWA	DC_XA_nWA	CA_XA-XA-YA-ZA	nWA	XA	nWA	No
	DC_YA_nWA			YA	nWA	
	DC_ZA_nWA			ZA	nWA	
DC_XA-YA-YA-ZA_nWA	DC_XA_nWA	CA_XA-YA-YA-ZA	nWA	XA	nWA	No
	DC_YA_nWA			YA	nWA	
	DC_ZA_nWA			ZA	nWA	
DC_XA-YA-ZA-ZA_nWA	DC_XA_nWA	CA_XA-YA-ZA-ZA	nWA	XA	nWA	No
	DC_YA_nWA			YA	nWA	
	DC_ZA_nWA			ZA	nWA	
DC_XA-YA_nZA-nWA	DC_XA_nZA	CA_XA-YA	CA_nZA-nWA	XA	nZA	No
	DC_XA_nWA			XA	nWA	
	DC_YA_nZA			YA	nZA	
	DC_YA_nWA			YA	nWA	
DC_XA-YC_nZA-nWA	DC_XA_nZA	CA_XA-YC	CA_nZA-nWA	XA	nZA	No
	DC_XA_nWA			XA	nWA	
DC_XA-YA-(n)ZAA	DC_XA_nZA	CA_XA-YA	DC_(n)ZAA	XA	nZA	No
	DC_YA_nZA			YA	nZA	
	DC_(n)ZAA			-	DC_(n)ZAA	
Note 1: Protocol testing is limited to EN-DC configurations with 1 CC E-UTRA and 1CC or 2CC NR configurations.						
Note 2: The specified NR inter-band EN-DC configurations can be found in TS 38.521-3 [16] clause 5.5B.4. The general rule for deciding test configurations applies if no explicit value defined. The general rule is that the inter-band EN-DC configurations are represented by symbolic DC configurations using band X, Y, Z/nZ and nW as the different bands in the DC Configuration. E.g. DC_XA-YA-ZA_nWA could be representing the configuraion DC_1A-3A-7A_n28A by interpreting of X=1, Y=3, Z=7 and nW=n28. Any DC configurations not applying the general rule could be listed separately.						

4.3.1.4.1.5

Inter-band EN-DC configurations within FR1 (five bands)

Table 4.3.1.4.1.5-1: Inter-band EN-DC configurations within FR1 (five bands)

EN-DC configuration	Uplink EN-DC Configuration	E-UTRA downlink configuration	NR downlink configuration	E-UTRA uplink configuration	NR uplink configuration	Applicable for protocol testing (Note 1)

EN-DC configuration	Uplink EN-DC Configuration	E-UTRA downlink configuration	NR downlink configuration	E-UTRA uplink configuration	NR uplink configuration	Applicable for protocol testing (Note 1)
DC_XA-YA-ZA-VA_nWA	DC_XA_nWA	CA_XA-YA-ZA-VA	nWA	XA	nWA	No
	DC_YA_nWA			YA	nWA	
	DC_ZA_nWA			ZA	nWA	
	DC_VA_nWA			VA	nWA	
DC_XA-YA-ZA-VC_nWA	DC_XA_nWA	CA_XA-YA-ZA-VC	nWA	XA	nWA	No
	DC_YA_nWA			YA	nWA	
	DC_ZA_nWA			ZA	nWA	
DC_XA-YC-ZA-VA_nWA	DC_XA_nWA	CA_XA-YC-ZA-VA	nWA	XA	nWA	No
	DC_YA_nWA			YA	nWA	
	DC_ZA_nWA			ZA	nWA	
	DC_VA_nWA			VA	nWA	
DC_XA-YA-ZA_nVA-nWA	DC_XA_nVA	CA_XA-YA-ZA	CA_nVA-nWA	XA	nVA	No
	DC_XA_nWA			XA	nWA	
	DC_YA_nVA			YA	nVA	
	DC_YA_nWA			YA	nWA	
	DC_ZA_nVA			ZA	nVA	
	DC_ZA_nWA			ZA	nWA	
DC_XA-YA-ZC_nVA-nWA	DC_XA_nVA	CA_XA-YA-ZC	CA_nVA-nWA	XA	nVA	No
	DC_XA_nWA			XA	nWA	
	DC_YA_nVA			YA	nVA	
	DC_YA_nWA			YA	nWA	
Note 1: Protocol testing is limited to EN-DC configurations with 1 CC E-UTRA and 1CC or 2CC NR configurations. Note 2: The specified NR inter-band EN-DC configurations can be found in TS 38.521-3 [16] clause 5.5B.4. The general rule for deciding test configurations applies if no explicit value defined. The general rule is that the inter-band EN-DC configurations are represented by symbolic DC configurations using band X, Y, Z, V/nV and nW as the different bands in the DC Configuration. E.g. DC_XA-YA-ZA-VA_nWA could be representing the configuraion DC_1A-3A-7A-20A_n28A by interpreting of X=1, Y=3, Z=7, V=20 and nW=n28. Any DC configurations not applying the general rule could be listed separately.						

4.3.1.4.1.6

Inter-band EN-DC configurations within FR1 (six bands)

Table 4.3.1.4.1.6-1: Inter-band EN-DC configurations within FR1 (six bands)

EN-DC configuration	Uplink EN-DC Configuration	E-UTRA downlink configuration	NR downlink configuration	E-UTRA uplink configuration	NR uplink configuration	Applicable for protocol testing (Note 1)
DC_XA-YA-ZA-UA_nVA-nWA	DC_XA_nVA	CA_XA-YA-ZA-UA	CA_nVA-nWA	XA	nVA	No
	DC_XA_nWA			XA	nWA	

EN-DC configuration	Uplink EN-DC Configuration	E-UTRA downlink configuration	NR downlink configuration	E-UTRA uplink configuration	NR uplink configuration	Applicable for protocol testing (Note 1)
	DC_YA_nVA			YA	nVA	
	DC_YA_nWA			YA	nWA	
	DC_ZA_nVA			ZA	nVA	
	DC_ZA_nWA			ZA	nWA	
	DC_UA_nVA			UA	nVA	
	DC_UA_nWA			UA	nWA	
Note 1:	Protocol testing is limited to EN-DC configurations with 1 CC E-UTRA and 1CC or 2CC NR configurations.					
Note 2:	The specified NR inter-band EN-DC configurations can be found in TS 38.521-3 [16] clause 5.5B.4. The general rule for deciding test configurations applies if no explicit value defined. The general rule is that the inter-band EN-DC configurations are represented by symbolic DC configurations using band X, Y, Z, U, nV and nW as the different bands in the DC Configuration. E.g. DC_XA-YA-ZA-UA_nVA-nWA could be representing the configuraion DC_1A-3A-7A-20A_n28A-n78A by interpreting of X=1, Y=3, Z=7, U=20, nV=n28 and nW=n78. Any DC configurations not applying the general rule could be listed separately.					

4.3.1.4.2 Intra-band contiguous EN-DC configurations within FR1

4.3.1.4.2.1 – 4.3.1.4.2.40 FFS

4.3.1.4.2.41 Intra-band contiguous EN-DC configurations DC_(n)41

4.3.1.4.2.41.1 DC_(n)41AA

Table 4.3.1.4.2.41.1-1: EN-DC combination DC_(n)41AA, intra-band contiguous, SCS 15 kHz, 15 kHz NR raster, NR CC at the band edges

EN-DC channel bandwidth combination	CC	Band width [MHz]	carrierBandwidth [PRBs]	Range		Carrier centre [MHz] Note 2	Carrier centre [ARFCN]	point A [MHz]	absolute FrequencyPointA [ARFCN]	offset ToCarrier [Carrier PRBs]	SS block SCS [kHz]	GSCN	absoluteFrequencySSB [ARFCN]	k_{SSB}	Offset Carrier CORES ET#0 [RBs] Note 3	CORES ET#0 Index (Offset[RBs]) Note 1	offsetToP ointA (SIB1) [PRBs] Note 1
E-UTRA: 10MHz + NR: 20MHz	E-UTRA CC1	10	50	Downlink & Uplink	Low	2521.200	39902	-	-	-	-	-	-	-	-	-	-
					Mid	2603.100	40721	-	-	-	-	-	-	-	-	-	-
					High	2664.900	41339	-	-	-	-	-	-	-	-	-	-
	Channel spacing E-UTRA CC1- NR CC1 = 15 MHz (Note 2)																
	NR CC1	20	106	Downlink & Uplink	Low	2506.200	501240	2496.66	499332	0	15	6246	499710	6	0	0 (0)	0
Mid	2588.100	517620	2560.2		512040	102	6453	516270	6	1		2 (4)	107				
High	2679.900	535980	2579.64		515928	504	6681	534510	2	0		1 (2)	506				
E-UTRA: 10MHz + NR: 40MHz	E-UTRA CC1	10	50	Downlink & Uplink	Low	2541.300	40103	-	-	-	-	-	-	-	-	-	-
					Mid	2613.000	40820	-	-	-	-	-	-	-	-	-	-
					High	2644.800	41138	-	-	-	-	-	-	-	-	-	-
	Channel spacing E-UTRA CC1- NR CC1 = 25.005 MHz (Note 2)																
	NR CC1	40	216	Downlink & Uplink	Low	2516.295	503259	2496.855	499371	0	15	6249	499950	1	2	2 (4)	6
Mid	2587.995	517599	2550.195		510039	102	6426	514110	1	1		0 (0)	103				
High	2669.805	533961	2559.645		511929	504	6633	530670	7	2		2 (4)	510				
E-UTRA: 10MHz + NR: 50MHz	E-UTRA CC1	10	50	Downlink & Uplink	Low	2551.200	40202	-	-	-	-	-	-	-	-	-	-
					Mid	2618.100	40871	-	-	-	-	-	-	-	-	-	-
					High	2634.900	41039	-	-	-	-	-	-	-	-	-	-
	NR CC1	50	270	Downlink & Uplink	Low	2521.200	504240	2496.9	499380	0	15	6249	499950	10	1	2 (4)	5
					Mid	2588.100	517620	2545.44	509088	102		6414	513150	10	0	0 (0)	102
High					2664.900	532980	2549.88	509976	504	6606		528510	10	0	0 (0)	504	
E-UTRA: 20MHz + NR: 10MHz	E-UTRA CC1	20	100	Downlink & Uplink	Low	2516.100	39851	-	-	-	-	-	-	-	-	-	-
					Mid	2598.000	40670	-	-	-	-	-	-	-	-	-	-
					High	2670.000	41390	-	-	-	-	-	-	-	-	-	-
	Channel spacing E-UTRA CC1- NR CC1 = 15 MHz (Note 2)																

	NR CC1	10	52	Downlink & Uplink	Low	2501.100	500220	2496.42	499284	0	15	6246	499710	10	1	0 (0)	1	
					Mid	2583.000	516600	2559.96	511992	102		6450	516030	2	0	0 (0)	102	
					High	2685.000	537000	2589.6	517920	504		6705	536430	2	0	0 (0)	504	
E-UTRA: 20MHz + NR: 20MHz	E-UTRA CC1	20	100	Downlink & Uplink	Low	2526.000	39950	-	-	-	-	-	-	-	-	-	-	
					Mid	2603.100	40721	-	-	-	-	-	-	-	-	-	-	-
					High	2659.800	41288	-	-	-	-	-	-	-	-	-	-	-
	Channel spacing E-UTRA CC1- NR CC1=19.995 MHz (Note 2)																	
	NR CC1	20	106	Downlink & Uplink	Low	2506.005	501201	2496.465	499293	0	15	6246	499710	7	1	0 (0)	1	
Mid					2583.105	516621	2555.205	511041	102	6441		515310	7	2	2 (4)	108		
High					2679.795	535959	2579.535	515907	504	6681		534510	9	0	1 (2)	506		
E-UTRA: 20MHz + NR: 40MHz	E-UTRA CC1	20	100	Downlink & Uplink	Low	2546.100	40151	-	-	-	-	-	-	-	-	-	-	
					Mid	2613.000	40820	-	-	-	-	-	-	-	-	-	-	-
					High	2640.000	41090	-	-	-	-	-	-	-	-	-	-	-
	Channel spacing E-UTRA CC1- NR CC1=30 MHz (Note 2)																	
	NR CC1	40	216	Downlink & Uplink	Low	2516.100	503220	2496.66	499332	0	15	6246	499710	6	0	0 (0)	0	
Mid					2583.000	516600	2545.2	509040	102	6414		513150	2	0	1 (2)	104		
High					2670.000	534000	2559.84	511968	504	6633		530670	6	1	2 (4)	509		
E-UTRA: 20MHz + NR: 50MHz	E-UTRA CC1	20	100	Downlink & Uplink	Low	2556.000	40250	-	-	-	-	-	-	-	-	-	-	
					Mid	2618.100	40871	-	-	-	-	-	-	-	-	-	-	-
					High	2629.800	40988	-	-	-	-	-	-	-	-	-	-	-
	Channel spacing E-UTRA CC1- NR CC1=34.995 MHz (Note 2)																	
	NR CC1	50	270	Downlink & Uplink	Low	2521.005	504201	2496.705	499341	0	15	6246	499710	3	0	0 (0)	0	
Mid					2583.105	516621	2540.445	508089	102	6402		512190	11	1	0 (0)	103		
High					2664.795	532959	2549.775	509955	504	6606		528510	5	1	0 (0)	505		
Note 1:	The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-1 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdccch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.																	
Note 2:	The nominal carrier spacing between the E-UTRA and the NR carriers is set in accordance to TS 38.101-3 [9], clause 5.4B.1.																	

Table 4.3.1.4.2.41.1-1A: EN-DC combination DC_(n)41AA, intra-band contiguous, SCS 15 kHz, 15 kHz NR raster, E-UTRA CC at the band edges

EN-DC channel bandwidth combination	CC	Band width [MHz]	carrierBandwidth [PRBs]	Range		Carrier centre [MHz] Note 2	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequency PointA [ARFCN]	offset ToCarrier [Carrier PRBs]	SS block SCS [kHz]	GSCN	absoluteFrequency SSB [ARFCN]	k_{SSB}	Offset Carrier CORESET#0 [RBs] Note 3	CORESET#0 Index (Offset [RBs]) Note 1	offsetToPointA (SIB1) [PRBs] Note 1
E-UTRA: 20MHz + NR: 40MHz	E-UTRA CC1	20	100	Downlink & Uplink	Low	2506.200	39752	-	-	-	-	-	-	-	-	-	-
					Mid	2613.000	40820	-	-	-	-	-	-	-	-	-	
					High	2679.900	41489	-	-	-	-	-	-	-	-	-	
	NR CC1	40	216	Downlink & Uplink	Channel spacing E-UTRA CC1- NR CC1=30 MHz (Note 2)												
					Low	2536.200	507240	2516.76	503352	0	15	6297	503790	2	0	1 (2)	2
					Mid	2583.000	516600	2545.2	509040	102		6414	513150	2	0	1 (2)	104
					High	2649.900	529980	2539.74	507948	504		6582	526590	10	1	1 (2)	512

- Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-1 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdccch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.
- Note 2: The nominal carrier spacing between the E-UTRA and the NR carriers is set in accordance to TS 38.101-3 [9], clause 5.4B.1.
- Note 3: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs.

Table 4.3.1.4.2.41.1-2: EN-DC combination DC_(n)41AA, intra-band contiguous, SCS 30 kHz, 30 kHz NR raster, NR CC at the band edges

EN-DC channel bandwidth combination	CC	Bandwidth [MHz]	carrierBandwidth [PRBs]	Range		Carrier centre [MHz] Note 2	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequencyPointA [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS [kHz]	GSCN	absoluteFrequencySSB [ARFCN]	k_{SSB}	Offset Carrier CORESET#0 [RBs] Note 3	CORESET#0 Index (Offset [RBs]) Note 1	offsetToPointA (SIB1) [PRBs] Note 1	
E-UTRA: 10MHz + NR: 20MHz	E-UTRA CC1	10	50	Downlink & Uplink	Low	2521.200	39902	-	-	-	-	-	-	-	-	-	-	
					Mid	2603.100	40721	-	-	-	-	-	-	-	-	-	-	
					High	2664.900	41339	-	-	-	-	-	-	-	-	-	-	
	Channel spacing E-UTRA CC1- NR CC1=15 MHz (Note 2)																	
	NR CC1	20	51	Downlink & Uplink	Low	2506.200	501240	2497.02	499404	0	30	6252	500190	22	0	0 (0)	0	
					Mid	2588.100	517620	2542.2	508440	102		6456	516510	2	0	0 (0)	204	
High					2679.900	535980	2489.28	497856	504	6687		534990	18	0	1 (1)	1010		
E-UTRA: 10MHz + NR: 40MHz	E-UTRA CC1	10	50	Downlink & Uplink	Low	2541.000	40100	-	-	-	-	-	-	-	-	-	-	
					Mid	2613.000	40820	-	-	-	-	-	-	-	-	-	-	-
					High	2644.800	41138	-	-	-	-	-	-	-	-	-	-	-
	Channel spacing E-UTRA CC1- NR CC1=24.99 MHz (Note 2)																	
	NR CC1	40	106	Downlink & Uplink	Low	2516.010	503202	2496.93	499386	0	30	6252	500190	4	0	1 (1)	2	
					Mid	2588.010	517602	2532.21	506442	102		6432	514590	4	0	1 (1)	206	
High					2669.790	533958	2469.27	493854	504	6636		530910	16	0	0 (0)	1008		
E-UTRA: 10MHz + NR: 50MHz	E-UTRA CC1	10	50	Downlink & Uplink	Low	2551.200	40202	-	-	-	-	-	-	-	-	-	-	
					Mid	2618.100	40871	-	-	-	-	-	-	-	-	-	-	-
					High	2634.900	41039	-	-	-	-	-	-	-	-	-	-	-
	Channel spacing E-UTRA CC1- NR CC1=30 MHz (Note 2)																	
	NR CC1	50	133	Downlink & Uplink	Low	2521.200	504240	2497.26	499452	0	30	6252	500190	6	0	0 (0)	0	
					Mid	2588.100	517620	2527.44	505488	102		6420	513630	2	0	1 (1)	206	
High					2664.900	532980	2459.52	491904	504	6612		528990	2	0	1 (1)	1010		
E-UTRA: 10MHz + NR: 60MHz	E-UTRA CC1	10	50	Downlink & Uplink	Low	2561.100	40301	-	-	-	-	-	-	-	-	-	-	
					Mid	2622.900	40919	-	-	-	-	-	-	-	-	-	-	-
					High	2624.700	40937	-	-	-	-	-	-	-	-	-	-	-
	Channel spacing E-UTRA CC1- NR CC1=35.01 MHz (Note 2)																	
	NR CC1	60	162	Downlink & Uplink	Low	2526.090	505218	2496.93	499386	0	30	6252	500190	4	0	1 (1)	2	
					Mid	2587.890	517578	2522.01	504402	102		6408	512670	20	0	2 (2)	208	
High					2659.710	531942	2449.11	489822	504	6585		526830	0	0	0 (0)	1008		
E-UTRA:	E-UTRA	10	50	Downlink	Low	2581.200	40502	-	-	-	-	-	-	-	-	-	-	

10MHz + NR: 80MHz	CC1			& Uplink	Mid	2633.100	41021	-	-	-	-	-	-	-	-	-	-
					High	2604.900	40739	-	-	-	-	-	-	-	-	-	-
	Channel spacing E-UTRA CC1- NR CC1=45 MHz (Note 2)																
	NR CC1	80	217	Downlink & Uplink	Low	2536.200	507240	2497.14	499428	0	30	6252	500190	14	0	0 (0)	0
				Mid	2588.100	517620	2512.32	502464	102	6384		510750	2	0	3 (3)	210	
				High	2649.900	529980	2429.4	485880	504	6537		522990	10	0	1 (1)	1010	
E-UTRA: 10MHz + NR: 100MHz	E-UTRA CC1	10	50	Downlink & Uplink	Low	2601.000	40700	-	-	-	-	-	-	-	-	-	-
					Mid	2643.000	41120	-	-	-	-	-	-	-	-	-	-
					High	2584.800	40538	-	-	-	-	-	-	-	-	-	-
	Channel spacing E-UTRA CC1- NR CC1=54.99 MHz (Note 2)																
	NR CC1	100	273	Downlink & Uplink	Low	2546.010	509202	2496.87	499374	0	30	6252	500190	8	0	1 (1)	2
				Mid	2588.010	517602	2502.15	500430	102	6357		508590	8	0	1 (1)	206	
				High	2639.790	527958	2409.21	481842	504	6486		518910	20	0	0 (0)	1008	
E-UTRA: 20MHz + NR: 10MHz	E-UTRA CC1	20	100	Downlink & Uplink	Low	2516.100	39851	-	-	-	-	-	-	-	-	-	-
					Mid	2598.000	40670	-	-	-	-	-	-	-	-	-	-
					High	2670.000	41390	-	-	-	-	-	-	-	-	-	-
	Channel spacing E-UTRA CC1- NR CC1=15 MHz (Note 2)																
	NR CC1	10	24	Downlink & Uplink	Low	2501.100	500220	2496.78	499356	0	30	6252	500190	14	0	1 (1)	2
				Mid	2583.000	516600	2541.96	508392	102	6456		516510	18	0	0 (0)	204	
				High	2685.000	537000	2499.24	499848	504	6711		536910	18	0	0 (0)	1008	
E-UTRA: 20MHz + NR: 20MHz	E-UTRA CC1	20	100	Downlink & Uplink	Low	2526.300	39953	-	-	-	-	-	-	-	-	-	-
					Mid	2603.100	40721	-	-	-	-	-	-	-	-	-	-
					High	2659.800	41288	-	-	-	-	-	-	-	-	-	-
	Channel spacing E-UTRA CC1- NR CC1=20.01 MHz (Note 2)																
	NR CC1	20	51	Downlink & Uplink	Low	2506.290	501258	2497.11	499422	0	30	6252	500190	16	0	0 (0)	0
				Mid	2583.090	516618	2537.19	507438	102	6444		515550	16	0	0 (0)	204	
				High	2679.810	535962	2489.19	497838	504	6687		534990	0	0	2 (2)	1012	
E-UTRA: 20MHz + NR: 40MHz	E-UTRA CC1	20	100	Downlink & Uplink	Low	2546.100	40151	-	-	-	-	-	-	-	-	-	-
					Mid	2613.000	40820	-	-	-	-	-	-	-	-	-	-
					High	2640.000	41090	-	-	-	-	-	-	-	-	-	-
	Channel spacing E-UTRA CC1- NR CC1=30 MHz (Note 2)																
	NR CC1	40	106	Downlink & Uplink	Low	2516.100	503220	2497.02	499404	0	30	6252	500190	22	0	0 (0)	0
				Mid	2583.000	516600	2527.2	505440	102	6420		513630	18	0	1 (1)	206	
				High	2670.000	534000	2469.48	493896	504	6636		530910	2	0	0 (0)	1008	
E-UTRA: 20MHz + NR: 50MHz	E-UTRA CC1	20	100	Downlink & Uplink	Low	2556.300	40253	-	-	-	-	-	-	-	-	-	-
					Mid	2618.100	40871	-	-	-	-	-	-	-	-	-	-
					High	2629.800	40988	-	-	-	-	-	-	-	-	-	-
	Channel spacing E-UTRA CC1- NR CC1=35.01 MHz (Note 2)																
	NR CC1	50	133	Downlink & Uplink	Low	2521.290	504258	2497.35	499470	0	30	6252	500190	0	0	0 (0)	0
				Mid	2583.090	516618	2522.43	504486	102	6408		512670	16	0	1 (1)	206	
				High	2664.810	532962	2459.43	491886	504	6612		528990	8	0	1 (1)	1010	
E-UTRA: 20MHz + NR: 60MHz	E-UTRA CC1	20	100	Downlink & Uplink	Low	2566.200	40352	-	-	-	-	-	-	-	-	-	-
					Mid	2622.900	40919	-	-	-	-	-	-	-	-	-	-
					High	2619.900	40889	-	-	-	-	-	-	-	-	-	-

	Channel spacing E-UTRA CC1- NR CC1=39.99 MHz (Note 2)																
	NR CC1	60	162	Downlink & Uplink	Low	2526.210	505242	2497.05	499410	0	30	6252	500190	20	0	0 (0)	0
					Mid	2582.910	516582	2517.03	503406	102		6393	511470	0	0	0 (0)	204
					High	2659.890	531978	2449.29	489858	504		6588	527070	20	0	2 (2)	1012
E-UTRA: 20MHz + NR: 80MHz	E-UTRA CC1	20	100	Downlink & Uplink	Low	2586.300	40553	-	-	-	-	-	-	-	-	-	-
					Mid	2633.100	41021	-	-	-	-	-	-	-	-	-	-
					High	2599.800	40688	-	-	-	-	-	-	-	-	-	-
	Channel spacing E-UTRA CC1- NR CC1=50.01 MHz (Note 2)																
	NR CC1	80	217	Downlink & Uplink	Low	2536.290	507258	2497.23	499446	0	30	6252	500190	8	0	0 (0)	0
					Mid	2583.090	516618	2507.31	501462	102		6369	509550	8	0	0 (0)	204
					High	2649.810	529962	2429.31	485862	504		6537	522990	16	0	1 (1)	1010
	E-UTRA: 20MHz + NR: 100MHz	E-UTRA CC1	20	100	Downlink & Uplink	Low	2606.100	40751	-	-	-	-	-	-	-	-	-
Mid						2643.000	41120	-	-	-	-	-	-	-	-	-	-
High						2580.000	40490	-	-	-	-	-	-	-	-	-	-
Channel spacing E-UTRA CC1- NR CC1=60 MHz (Note 2)																	
	NR CC1	100	273	Downlink & Uplink	Low	2546.100	509220	2496.96	499392	0	30	6252	500190	2	0	1 (1)	2
					Mid	2583.000	516600	2497.14	499428	102		6345	507630	22	0	1 (1)	206
					High	2640.000	528000	2409.42	481884	504		6486	518910	6	0	0 (0)	1008
	Note 1:	The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-4 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdccch. ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.															
Note 2:	The nominal carrier spacing between the E-UTRA and the NR carriers is set in accordance to TS 38.101-3 [9], clause 5.4B.1.																
Note 3:	The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs.																

Table 4.3.1.4.2.41.1-2A: EN-DC combination DC_(n)41AA, intra-band contiguous, SCS 30 kHz, 30 kHz NR raster, E-UTRA CC at the band edges

EN-DC channel bandwidth combination	CC	Bandwidth [MHz]	carrierBandwidth [PRBs]	Range		Carrier centre [MHz] Note 2	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequencyPointA [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS [kHz]	GSCN	absoluteFrequencySSB [ARFCN]	k_{SSB}	Offset Carrier CORESET#0 [RBs] Note 3	CORESET#0 Index (Offset[RBs]) Note 1	offsetToPointA (SIB1) [PRBs] Note 1	
E-UTRA: 20MHz + NR: 40MHz	E-UTRA CC1	20	100	Downlink & Uplink	Low	2506.200	39752	-	-	-	-	-	-	-	-	-	-	
					Mid	2613.000	40820	-	-	-	-	-	-	-	-	-		
					High	2679.900	41489	-	-	-	-	-	-	-	-	-		
	Channel spacing E-UTRA CC1- NR CC1=30 MHz (Note 2)																	
	NR CC1	40	106	Downlink & Uplink	Low	2536.200	507240	2517.12	503424	0	30	6303	504270	18	0	1 (1)	2	
					Mid	2583.000	516600	2527.2	505440	102		6420	513630	18	0	1 (1)	206	
					High	2649.900	529980	2449.38	489876	504		6588	527070	14	0	2 (2)	1012	
E-UTRA: 20MHz + NR: 60MHz	E-UTRA CC1	20	100	Downlink & Uplink	Low	2506.200	39752	-	-	-	-	-	-	-	-	-	-	
					Mid	2622.900	40919	-	-	-	-	-	-	-	-	-	-	-
					High	2679.900	41489	-	-	-	-	-	-	-	-	-	-	-
	Channel spacing E-UTRA CC1- NR CC1=39.99 MHz (Note 2)																	

	NR CC1	60	162	Downlink & Uplink	Low	2546.190	509238	2517.03	503406	0	30	6303	504270	0	0	2 (2)	4
					Mid	2582.910	516582	2517.03	503406	102		6393	511470	0	0	0 (0)	204
					High	2639.910	527982	2429.31	485862	504		6537	522990	16	0	1 (1)	1010
E-UTRA: 20MHz + NR: 80MHz	E-UTRA CC1	20	100	Downlink & Uplink	Low	2506.200	39752	-	-	-	-	-	-	-	-	-	-
					Mid	2633.100	41021	-	-	-	-	-	-	-	-	-	-
					High	2679.900	41489	-	-	-	-	-	-	-	-	-	-
	Channel spacing E-UTRA CC1- NR CC1=50.01 MHz (Note 2)																
	NR CC1	80	217	Downlink & Uplink	Low	2556.210	511242	2517.15	503430	0	30	6303	504270	16	0	1 (1)	2
Mid	2583.090	516618	2507.31		501462	102	6369	509550	8	0		0 (0)	204				
High	2629.890	525978	2409.39		481878	504	6486	518910	8	0		0 (0)	1008				
E-UTRA: 20MHz + NR: 100MHz	E-UTRA CC1	20	100	Downlink & Uplink	Low	2506.200	39752	-	-	-	-	-	-	-	-	-	-
					Mid	2643.000	41120	-	-	-	-	-	-	-	-	-	-
					High	2679.900	41489	-	-	-	-	-	-	-	-	-	-
	Channel spacing E-UTRA CC1- NR CC1=60 MHz (Note 2)																
	NR CC1	100	273	Downlink & Uplink	Low	2566.200	513240	2517.06	503412	0	30	6303	504270	22	0	1 (1)	2
Mid	2583.000	516600	2497.14		499428	102	6345	507630	22	0		1 (1)	206				
High	2619.900	523980	2389.32		477864	504	6438	515070	18	0		2 (2)	1012				
Note 1:	The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-4 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.																
Note 2:	The nominal carrier spacing between the E-UTRA and the NR carriers is set in accordance to TS 38.101-3 [9], clause 5.4B.1.																
Note 3:	The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter ΔF _{OffsetCORESET-0-Carrier} in Annex C expressed in number of common RBs.																

Table 4.3.1.4.2.41.1-3: EN-DC combination DC_(n)41AA, intra-band contiguous, SCS 60 kHz, 15 kHz NR raster, NR CC at the band edges without CORESET#0

EN-DC channel bandwidth combination	CC	Band width [MHz]	carrierBandwidth [PRBs]	Range		Carrier centre [MHz] Note 1	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequency PointA [ARFCN]	offset ToCarrier [Carrier PRBs]	SS block SCS [kHz]	GSCN	absoluteFrequency SSB [ARFCN]	
E-UTRA: 10MHz + NR: 20MHz	E-UTRA CC1	10	50	Downlink & Uplink	Low	2521.200	39902	-	-	-	-	-	-	
					Mid	2603.100	40721	-	-	-		-	-	
					High	2664.900	41339	-	-	-		-	-	
	Channel spacing E-UTRA CC1- NR CC1=15 MHz (Note 2)													
	NR CC1	20	24	Downlink & Uplink	Low	2506.200	501240	2497.56	499512	0	15	-	499872	
Mid					2588.100	517620	2506.02	501204	102	-		516252		
High					2679.900	535980	2308.38	461676	504	-		534612		
E-UTRA: 10MHz + NR: 40MHz	E-UTRA CC1	10	50	Downlink & Uplink	Low	2541.300	40103	-	-	-	-	-	-	
					Mid	2613.000	40820	-	-	-		-	-	-
					High	2644.800	41138	-	-	-		-	-	-
	Channel spacing E-UTRA CC1- NR CC1=25.005 MHz (Note 2)													

	NR CC1	40	51	Downlink & Uplink	Low	2516.295	503259	2497.935	499587	0	15	-	499947
					Mid	2587.995	517599	2496.195	499239	102		-	514287
					High	2669.805	533961	2288.565	457713	504		-	530649
E-UTRA: 10MHz + NR: 50MHz	E-UTRA CC1	10	50	Downlink & Uplink	Low	2551.200	40202	-	-	-	-	-	-
					Mid	2618.100	40871	-	-	-		-	-
					High	2634.900	41039	-	-	-		-	-
					Channel spacing E-UTRA CC1- NR CC1=30 MHz (Note 2)								
	NR CC1	50	65	Downlink & Uplink	Low	2521.200	504240	2497.8	499560	0	15	-	499920
					Mid	2588.100	517620	2491.26	498252	102		-	513300
					High	2664.900	532980	2278.62	455724	504		-	528660
E-UTRA: 10MHz + NR: 60MHz	E-UTRA CC1	10	50	Downlink & Uplink	Low	2561.100	40301	-	-	-	-	-	-
					Mid	2622.900	40919	-	-	-		-	-
					High	2625.000	40940	-	-	-		-	-
					Channel spacing E-UTRA CC1- NR CC1=34.995 MHz (Note 2)								
	NR CC1	60	79	Downlink & Uplink	Low	2526.105	505221	2497.665	499533	0	15	-	499893
					Mid	2587.905	517581	2486.025	497205	102		-	512253
					High	2659.995	531999	2268.675	453735	504		-	526671
E-UTRA: 10MHz + NR: 80MHz	E-UTRA CC1	10	50	Downlink & Uplink	Low	2581.200	40502	-	-	-	-	-	-
					Mid	2633.100	41021	-	-	-		-	-
					High	2604.900	40739	-	-	-		-	-
					Channel spacing E-UTRA CC1- NR CC1=45 MHz (Note 2)								
	NR CC1	80	107	Downlink & Uplink	Low	2536.200	507240	2497.68	499536	0	15	-	499896
					Mid	2588.100	517620	2476.14	495228	102		-	510276
					High	2649.900	529980	2248.5	449700	504		-	522636
E-UTRA: 10MHz + NR: 100MHz	E-UTRA CC1	10	50	Downlink & Uplink	Low	2601.300	40703	-	-	-	-	-	-
					Mid	2643.000	41120	-	-	-		-	-
					High	2584.800	40538	-	-	-		-	-
					Channel spacing E-UTRA CC1- NR CC1=55.005 MHz (Note 2)								
	NR CC1	100	135	Downlink & Uplink	Low	2546.295	509259	2497.695	499539	0	15	-	499899
					Mid	2587.995	517599	2465.955	493191	102		-	508239
					High	2639.805	527961	2228.325	445665	504		-	518601
E-UTRA: 20MHz + NR: 10MHz	E-UTRA CC1	20	100	Downlink & Uplink	Low	2516.100	39851	-	-	-	-	-	-
					Mid	2598.000	40670	-	-	-		-	-
					High	2670.000	41390	-	-	-		-	-
					Channel spacing E-UTRA CC1- NR CC1=15 MHz (Note 2)								
	NR CC1	10	11	Downlink & Uplink	Low	2501.100	500220	2497.14	499428	0	15	-	499788
					Mid	2583.000	516600	2505.6	501120	102		-	516168
					High	2685.000	537000	2318.16	463632	504		-	536568
E-UTRA: 20MHz + NR: 20MHz	E-UTRA CC1	20	100	Downlink & Uplink	Low	2526.000	39950	-	-	-	-	-	-
					Mid	2603.100	40721	-	-	-		-	-
					High	2659.800	41288	-	-	-		-	-
					Channel spacing E-UTRA CC1- NR CC1=19.995 MHz (Note 2)								
	NR CC1	20	24	Downlink & Uplink	Low	2506.005	501201	2497.365	499473	0	15	-	499833
					Mid	2583.105	516621	2501.025	500205	102		-	515253

				Uplink	High	2679.795	535959	2308.275	461655	504		-	534591
E-UTRA: 20MHz + NR: 40MHz	E-UTRA CC1	20	100	Downlink & Uplink	Low	2546.100	40151	-	-	-	-	-	-
					Mid	2613.000	40820	-	-	-	-	-	
					High	2640.000	41090	-	-	-	-	-	
	Channel spacing E-UTRA CC1- NR CC1=30 MHz (Note 2)												
	NR CC1	40	51	Downlink & Uplink	Low	2516.100	503220	2497.74	499548	0	15	-	499908
					Mid	2583.000	516600	2491.2	498240	102		-	513288
					High	2670.000	534000	2288.76	457752	504		-	530688
E-UTRA: 20MHz + NR: 50MHz	E-UTRA CC1	20	100	Downlink & Uplink	Low	2556.000	40250	-	-	-	-	-	-
					Mid	2618.100	40871	-	-	-	-	-	-
					High	2629.800	40988	-	-	-	-	-	-
	Channel spacing E-UTRA CC1- NR CC1=34.995 MHz (Note 2)												
	NR CC1	50	65	Downlink & Uplink	Low	2521.005	504201	2497.605	499521	0	15	-	499881
					Mid	2583.105	516621	2486.265	497253	102		-	512301
					High	2664.795	532959	2278.515	455703	504		-	528639
E-UTRA: 20MHz + NR: 60MHz	E-UTRA CC1	20	100	Downlink & Uplink	Low	2566.200	40352	-	-	-	-	-	-
					Mid	2622.900	40919	-	-	-	-	-	-
					High	2619.900	40889	-	-	-	-	-	-
	Channel spacing E-UTRA CC1- NR CC1=40.005 MHz (Note 2)												
	NR CC1	60	79	Downlink & Uplink	Low	2526.195	505239	2497.755	499551	0	15	-	499911
					Mid	2582.895	516579	2481.015	496203	102		-	511251
					High	2659.905	531981	2268.585	453717	504		-	526653
E-UTRA: 20MHz + NR: 80MHz	E-UTRA CC1	20	100	Downlink & Uplink	Low	2586.000	40550	-	-	-	-	-	-
					Mid	2633.100	41021	-	-	-	-	-	-
					High	2599.800	40688	-	-	-	-	-	-
	Channel spacing E-UTRA CC1- NR CC1=49.995 MHz (Note 2)												
	NR CC1	80	107	Downlink & Uplink	Low	2536.005	507201	2497.485	499497	0	15	-	499857
					Mid	2583.105	516621	2471.145	494229	102		-	509277
					High	2649.795	529959	2248.395	449679	504		-	522615
E-UTRA: 20MHz + NR: 100MHz	E-UTRA CC1	20	100	Downlink & Uplink	Low	2606.100	40751	-	-	-	-	-	-
					Mid	2643.000	41120	-	-	-	-	-	-
					High	2580.000	40490	-	-	-	-	-	-
	Channel spacing E-UTRA CC1- NR CC1=60 MHz (Note 2)												
	NR CC1	100	135	Downlink & Uplink	Low	2546.100	509220	2497.5	499500	0	15	-	499860
					Mid	2583.000	516600	2460.96	492192	102		-	507240
					High	2640.000	528000	2228.52	445704	504		-	518640
Note 1: The nominal carrier spacing between the E-UTRA and the NR carriers is set in accordance to TS 38.101-3 [9], clause 5.4B1.													
Note 2: FR1 carrier without CORESET#0 is indicated in the MIB by setting k_{SSB} =31, <i>controlResourceSetZero</i> =0 and <i>searchSpaceZero</i> = 0 (TS 38.213 [22], clause 13).													

Table 4.3.1.4.2.41.1-3A: EN-DC combination DC_(n)41AA, intra-band contiguous, SCS 60 kHz, 15 kHz NR raster, E-UTRA CC at the band edges without CORESET#0

EN-DC channel bandwidth combination	CC	Bandwidth [MHz]	carrierBandwidth [PRBs]	Range		Carrier centre [MHz] Note 1	Carrier centre [ARFCN]	point A [MHz]	absoluteF requency PointA [ARFCN]	offset ToCarrier [Carrier PRBs]	SS block SCS [kHz]	GSCN	absoluteF requency SSB [ARFCN]
E-UTRA: 20MHz + NR: 40MHz	E-UTRA CC1	20	100	Downlink & Uplink	Low	2506.200	39752	-	-	-	-	-	-
					Mid	2613.000	40820	-	-	-	-	-	
					High	2679.900	41489	-	-	-	-	-	
	Channel spacing E-UTRA CC1- NR CC1=30 MHz (Note 2)												
	NR CC1	40	51	Downlink & Uplink	Low	2536.200	507240	2517.84	503568	0	15	-	503928
					Mid	2583.000	516600	2491.2	498240	102	-	513288	
					High	2649.900	529980	2268.66	453732	504	-	526668	
E-UTRA: 20MHz + NR: 60MHz	E-UTRA CC1	20	100	Downlink & Uplink	Low	2506.200	39752	-	-	-	-	-	-
					Mid	2622.900	40919	-	-	-	-	-	-
					High	2679.900	41489	-	-	-	-	-	-
	Channel spacing E-UTRA CC1- NR CC1=40.005 MHz (Note 2)												
	NR CC1	60	79	Downlink & Uplink	Low	2546.205	509241	2517.765	503553	0	15	-	503913
					Mid	2582.895	516579	2481.015	496203	102	-	511251	
					High	2639.895	527979	2248.575	449715	504	-	522651	
E-UTRA: 20MHz + NR: 80MHz	E-UTRA CC1	20	100	Downlink & Uplink	Low	2506.200	39752	-	-	-	-	-	-
					Mid	2633.100	41021	-	-	-	-	-	-
					High	2679.900	41489	-	-	-	-	-	-
	Channel spacing E-UTRA CC1- NR CC1=49.995 MHz (Note 2)												
	NR CC1	80	107	Downlink & Uplink	Low	2556.195	511239	2517.675	503535	0	15	-	503895
					Mid	2583.105	516621	2471.145	494229	102	-	509277	
					High	2629.905	525981	2228.505	445701	504	-	518637	
E-UTRA: 20MHz + NR: 100MHz	E-UTRA CC1	20	100	Downlink & Uplink	Low	2506.200	39752	-	-	-	-	-	-
					Mid	2643.000	41120	-	-	-	-	-	-
					High	2679.900	41489	-	-	-	-	-	-
	Channel spacing E-UTRA CC1- NR CC1=60 MHz (Note 2)												
	NR CC1	100	135	Downlink & Uplink	Low	2566.200	513240	2517.6	503520	0	15	-	503880
					Mid	2583.000	516600	2460.96	492192	102	-	507240	
					High	2619.900	523980	2208.42	441684	504	-	514620	
Note 1: The nominal carrier spacing between the E-UTRA and the NR carriers is set in accordance to TS 38.101-3 [9], clause 5.4B1.													
Note 2: FR1 carrier without CORESET#0 is indicated in the MIB by setting $k_{SSB} = 31$, controlResourceSetZero=0 and searchSpaceZero = 0 (TS 38.213 [22], clause 13).													

Table 4.3.1.4.2.41.2-1: EN-DC combination DC_(n)41CA, intra-band contiguous, SCS 15 kHz, 15 kHz NR raster, NR CC at the band edges

EN-DC channel bandwidth combination	CC	Bandwidth [MHz]	carrierBandwidth [PRBs]	Range		Carrier centre [MHz] Note 2	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequencyPointA [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS [kHz]	GSCN	absoluteFrequencySSB [ARFCN]	k_{SSB}	Offset Carrier CORESET#0 [RBs] Note 3	CORESET#0 Index (Offset[RBs]) Note 1	offsetToPointA (SIB1) [PRBs] Note 1		
E-UTRA: 20MHz + 20MHz + NR: 40MHz	E-UTRA CC1	20	100	Downlink & Uplink	Low	2546.100	40151	-	-	-	-	-	-	-	-	-	-		
					Mid	2603.100	40721	-	-	-	-	-	-	-	-	-	-		
					High	2620.2	40892	-	-	-	-	-	-	-	-	-	-		
	Channel spacing E-UTRA CC1- E-UTRA CC2=19.8 MHz (Note 4)																		
	E-UTRA CC2	20	100	Downlink & Uplink	Low	2565.900	40349	-	-	-	-	-	-	-	-	-	-	-	
					Mid	2622.900	40919	-	-	-	-	-	-	-	-	-	-	-	
					High	2640.000	41090	-	-	-	-	-	-	-	-	-	-	-	
	Channel spacing E-UTRA CC2- NR CC1=30 MHz (Note 2)																		
	NR CC1	40	216	Downlink & Uplink	Low	2516.100	503220	2496.66	499332	0	15	6246	499710	6	0	0 (0)	0		
					Mid	2573.100	514620	2535.30	507060	102		6390	511230	10	1	1 (2)	105		
					High	2670.000	534000	2559.84	511968	504		6633	530670	6	1	2 (4)	509		
E-UTRA: 20MHz + 20MHz + NR: 50MHz	E-UTRA CC1	20	100	Downlink & Uplink	Low	2556.000	40250	-	-	-	-	-	-	-	-	-	-		
					Mid	2608.100	40771	-	-	-	-	-	-	-	-	-	-	-	
					High	2610.00	40790	-	-	-	-	-	-	-	-	-	-	-	
	Channel spacing E-UTRA CC1- E-UTRA CC2=19.8 MHz (Note 4)																		
	E-UTRA CC2	20	100	Downlink & Uplink	Low	2575.800	40448	-	-	-	-	-	-	-	-	-	-	-	
					Mid	2627.900	40969	-	-	-	-	-	-	-	-	-	-	-	-
					High	2629.800	40988	-	-	-	-	-	-	-	-	-	-	-	-
	Channel spacing E-UTRA CC2- NR CC1=34.995 MHz (Note 2)																		
	NR CC1	50	270	Downlink & Uplink	Low	2521.005	504201	2496.705	499341	0	15	6246	499710	3	0	0 (0)	0		
					Mid	2573.1	514620	2530.440	506088	102		6738	510270	2	0	2 (4)	106		
					High	2664.795	532959	2549.775	509955	504		6606	528510	5	1	0 (0)	505		
Note 1:	The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-1 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.																		
Note 2:	The nominal carrier spacing between the E-UTRA and the NR carriers is set in accordance to TS 38.101-3 [9], clause 5.4B.1.																		
Note 3:	The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs.																		
Note 4:	The nominal carrier spacing between the E-UTRA carriers is set in accordance to TS 36.101 [48], clause 5.7.1A.																		

Table 4.3.1.4.2.41.2-1A: EN-DC combination DC_(n)41CA, intra-band contiguous, SCS 15 kHz, 15 kHz NR raster, E-UTRA CC at the band edges

EN-DC channel	CC	Bandwidth	carrierBandwidth	Range		Carrier centre	Carrier centre	point A [MHz]	absoluteFrequency	offsetToCarrier	SS block	GSCN	absoluteFrequency	k_{SSB}	Offset Carrier	CORESET#0	offsetToPointA

bandwidth combination		[MHz]	[PRBs]			[MHz Note 2	[ARFCN]		PointA [ARFCN]	rier [Carrier PRBs]	SCS [kHz]		SSB [ARFCN]		CORES ET#0 [RBs] Note 3	Index (Offset [RBs]) Note 1	(SIB1) [PRBs] Note 1
E-UTRA: 20MHz + 20MHz + NR: 40MHz	E-UTRA CC1	20	100	Downlink & Uplink	Low	2506.200	39752	-	-	-	-	-	-	-	-	-	-
					Mid	2603.100	40721	-	-	-	-	-	-	-	-	-	
					High	2659.800	41288	-	-	-	-	-	-	-	-	-	
	Channel spacing E-UTRA CC1- E-UTRA CC2=19.8 MHz (Note 4)																
	E-UTRA CC2	20	100	Downlink & Uplink	Low	2526.000	39950	-	-	-	-	-	-	-	-	-	-
					Mid	2622.900	40919	-	-	-	-	-	-	-	-	-	
					High	2679.600	41486	-	-	-	-	-	-	-	-	-	
	Channel spacing E-UTRA CC2- NR CC1=30 MHz (Note 2)																
	NR CC1	40	216	Downlink & Uplink	Low	2556.000	511200	2536.56	507312	0	15	6348	507870	6	1	2 (4)	5
					Mid	2573.100	514620	2535.3	507060	102		6390	511230	10	1	1 (2)	105
					High	2629.800	525960	2519.64	503928	504		6531	522510	2	0	1 (2)	506
Note 1:	The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-1 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdccch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.																
Note 2:	The nominal carrier spacing between the E-UTRA and the NR carriers is set in accordance to TS 38.101-3 [9], clause 5.4B.1.																
Note 3:	The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs.																
Note 4:	The nominal carrier spacing between the E-UTRA carriers is set in accordance to TS 36.101 [48], clause 5.7.1A.																

Table 4.3.1.4.2.41.2-2: EN-DC combination DC_(n)41CA, intra-band contiguous, SCS 30 kHz, 30 kHz NR raster, NR CC at the band edges

EN-DC channel bandwidth combination	CC	Bandwidth [MHz]	carrierBandwidth [PRBs]	Range		Carrier centre [MHz] Note 2	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequency PointA [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS [kHz]	GSCN	absoluteFrequency SSB [ARFCN]	k_{SSB}	Offset Carrier CORESET#0 [RBs] Note 3	CORESET#0 Index (Offset [RBs]) Note 1	offsetToPointA (SIB1) [PRBs] Note 1	
E-UTRA: 20MHz + 20MHz + NR: 40MHz	E-UTRA CC1	20	100	Downlink & Uplink	Low	2546.100	40151	-	-	-	-	-	-	-	-	-	-	
					Mid	2603.100	40721	-	-	-	-	-	-	-	-	-	-	
					High	2620.200	40892	-	-	-	-	-	-	-	-	-	-	
	Channel spacing E-UTRA CC1- E-UTRA CC2=19.8 MHz (Note 4)																	
	E-UTRA CC2	20	100	Downlink & Uplink	Low	2565.900	40349	-	-	-	-	-	-	-	-	-	-	-
					Mid	2622.900	40919	-	-	-	-	-	-	-	-	-	-	-
					High	2640.000	41090	-	-	-	-	-	-	-	-	-	-	-
	Channel spacing E-UTRA CC2- NR CC1=30 MHz (Note 2)																	
	NR CC1	40	106	Downlink & Uplink	Low	2516.100	503220	2497.02	499404	0	30	6252	500190	22	0	0 (0)	0	
					Mid	2573.100	514620	2517.30	503460	102		6396	511710	14	0	2 (2)	208	
High					2670.000	534000	2469.48	493896	504	6636		530910	2	0	0 (0)	1008		
E-UTRA: 20MHz +	E-UTRA CC1	20	100	Downlink &	Low	2556.300	40253	-	-	-	-	-	-	-	-	-	-	
					Mid	2608.100	40771	-	-	-	-	-	-	-	-	-	-	-

20MHz + NR: 50MHz				Uplink	High	2610.000	40790	-	-	-	-	-	-	-	-	-	-	
	Channel spacing E-UTRA CC1- E-UTRA CC2=19.8 MHz (Note 4)																	
	E-UTRA CC2	20	100	Downlink	Low	2576.100	40451	-	-	-	-	-	-	-	-	-	-	
				&	Mid	2627.900	40969	-	-	-	-	-	-	-	-	-	-	
				Uplink	High	2629.800	40988	-	-	-	-	-	-	-	-	-	-	
Channel spacing E-UTRA CC2- NR CC1=35.01 MHz (Note 2)																		
NR CC1	50	133	Downlink & Uplink	Low	2521.290	504258	2497.35	499470	0	30	6252	500190	0	0	0 (0)	0		
				Mid	2573.100	514620	2512.44	502488	102		6384	510750	18	0	2 (2)	208		
				High	2664.810	532962	2459.43	491886	504		6612	528990	8	0	1 (1)	1010		
E-UTRA: 20MHz + 20MHz + NR: 60MHz	E-UTRA CC1	20	100	Downlink & Uplink	Low	2566.200	40352	-	-	-	-	-	-	-	-	-		
					Mid	2573.100	514620	-	-	-	-	-	-	-	-	-	-	
					High	2600.100	40691	-	-	-	-	-	-	-	-	-	-	
	Channel spacing E-UTRA CC1- E-UTRA CC2=19.8 MHz (Note 4)																	
	E-UTRA CC2	20	100	Downlink & Uplink	Low	2586.000	40550	-	-	-	-	-	-	-	-	-	-	
					Mid	2632.900	41019	-	-	-	-	-	-	-	-	-	-	
					High	2619.900	40889	-	-	-	-	-	-	-	-	-	-	
	Channel spacing E-UTRA CC2- NR CC1=39.99 MHz (Note 2)																	
NR CC1	60	162	Downlink & Uplink	Low	2526.210	505242	2497.05	499410	0	30	6252	500190	20	0	0 (0)	0		
				Mid	2573.100	514620	2507.22	501444	102		6369	509550	14	0	0 (0)	204		
				High	2659.890	531978	2449.29	489858	504		6588	527070	20	0	2 (2)	1012		
E-UTRA: 20MHz + 20MHz + NR: 80MHz	E-UTRA CC1	20	100	Downlink & Uplink	Low	2586.300	40553	-	-	-	-	-	-	-	-	-		
					Mid	2623.100	40921	-	-	-	-	-	-	-	-	-	-	
					High	2580.000	40490	-	-	-	-	-	-	-	-	-	-	
	Channel spacing E-UTRA CC1- E-UTRA CC2=19.8 MHz (Note 4)																	
	E-UTRA CC2	20	100	Downlink & Uplink	Low	2606.100	40751	-	-	-	-	-	-	-	-	-	-	
					&	Mid	2642.900	41119	-	-	-	-	-	-	-	-	-	-
					Uplink	High	2599.800	40688	-	-	-	-	-	-	-	-	-	-
	Channel spacing E-UTRA CC2- NR CC1=50.01 MHz (Note 2)																	
NR CC1	80	217	Downlink & Uplink	Low	2536.290	507258	2497.23	499446	0	30	6252	500190	8	0	0 (0)	0		
				Mid	2573.100	514620	2497.32	499464	102		6345	507630	10	0	1 (1)	206		
				High	2649.810	529962	2429.31	485862	504		6537	522990	16	0	1 (1)	1010		
E-UTRA: 20MHz + 20MHz + NR: 100MHz	E-UTRA CC1	20	100	Downlink & Uplink	Low	2606.100	40751	-	-	-	-	-	-	-	-	-		
					Mid	2633.100	41021	-	-	-	-	-	-	-	-	-	-	
					High	2560.200	40292	-	-	-	-	-	-	-	-	-	-	
	Channel spacing E-UTRA CC1- E-UTRA CC2=19.8 MHz (Note 4)																	
	E-UTRA CC2	20	100	Downlink & Uplink	Low	2625.900	40949	-	-	-	-	-	-	-	-	-	-	
					Mid	2652.900	41219	-	-	-	-	-	-	-	-	-	-	
					High	2580.000	40490	-	-	-	-	-	-	-	-	-	-	
	Channel spacing E-UTRA CC2- NR CC1=60 MHz (Note 2)																	
NR CC1	100	273	Downlink & Uplink	Low	2546.100	509220	2496.96	499392	0	30	6252	500190	2	0	1 (1)	2		
				Mid	2573.100	514620	2487.24	497448	102		6321	505710	18	0	2 (2)	208		
				High	2640.000	528000	2409.42	481884	504		6486	518910	6	0	0 (0)	1008		

- Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-4 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdccch. ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.
- Note 2: The nominal carrier spacing between the E-UTRA and the NR carriers is set in accordance to TS 38.101-3 [9], clause 5.4B.1.
- Note 3: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs.
- Note 4: The nominal carrier spacing between the E-UTRA carriers is set in accordance to TS 36.101 [48], clause 5.7.1A.

Table 4.3.1.4.2.41.2-2A: EN-DC combination DC_(n)41CA, intra-band contiguous, SCS 30 kHz, 30 kHz NR raster, E-UTRA CC at the band edges

EN-DC channel bandwidth combination	CC	Bandwidth [MHz]	carrierBandwidth [PRBs]	Range		Carrier centre [MHz] Note 2	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequencyPointA [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS [kHz]	GSCN	absoluteFrequencySSB [ARFCN]	k_{SSB}	Offset Carrier CORES ET#0 [RBs] Note 3	CORES ET#0 Index (Offset[RBs]) Note 1	offsetToPointA (SIB1) [PRBs] Note 1
E-UTRA: 20MHz + 20MHz + NR: 40MHz	E-UTRA CC1	20	100	Downlink & Uplink	Low	2506.200	39752	-	-	-	-	-	-	-	-	-	-
					Mid	2603.100	40721	-	-	-	-	-	-	-	-	-	-
					High	2659.800	41288	-	-	-	-	-	-	-	-	-	-
	Channel spacing E-UTRA CC1- E-UTRA CC2=19.8 MHz (Note 4)																
	E-UTRA CC2	20	100	Downlink & Uplink	Low	2526.000	39950	-	-	-	-	-	-	-	-	-	-
					Mid	2622.900	40919	-	-	-	-	-	-	-	-	-	-
					High	2679.600	41486	-	-	-	-	-	-	-	-	-	-
	Channel spacing E-UTRA CC2- NR CC1=30 MHz (Note 2)																
	NR CC1	40	106	Downlink & Uplink	Low	2556.000	511200	2536.92	507384	0	30	6351	508110	16	0	0 (0)	0
					Mid	2573.100	514620	2517.3	503460	102		6396	511710	14	0	2 (2)	208
High					2629.800	525960	2429.28	485856	504	6537		522990	16	0	0 (0)	1008	
E-UTRA: 20MHz + 20MHz + NR: 60MHz	E-UTRA CC1	20	100	Downlink & Uplink	Low	2506.500	39755	-	-	-	-	-	-	-	-	-	-
					Mid	2613.100	40821	-	-	-	-	-	-	-	-	-	-
					High	2659.800	41288	-	-	-	-	-	-	-	-	-	-
	Channel spacing E-UTRA CC1- E-UTRA CC2=19.8 MHz (Note 4)																
	E-UTRA CC2	20	100	Downlink & Uplink	Low	2526.300	39953	-	-	-	-	-	-	-	-	-	-
					Mid	2632.900	41019	-	-	-	-	-	-	-	-	-	-
					High	2679.600	41486	-	-	-	-	-	-	-	-	-	-
	Channel spacing E-UTRA CC2- NR CC1=39.99 MHz (Note 2)																
	NR CC1	60	162	Downlink & Uplink	Low	2566.290	513258	2537.13	507426	0	30	6354	508350	20	0	2 (2)	4
					Mid	2573.1	514620	2507.22	501444	102		6369	509550	14	0	0 (0)	204
High					2619.810	523962	2409.21	481842	504	6486		518910	20	0	0 (0)	1008	
E-UTRA: 20MHz + 20MHz + NR: 80MHz	E-UTRA CC1	20	100	Downlink & Uplink	Low	2506.200	39752	-	-	-	-	-	-	-	-	-	-
					Mid	2623.100	40921	-	-	-	-	-	-	-	-	-	-
					High	2659.800	41288	-	-	-	-	-	-	-	-	-	-
	Channel spacing E-UTRA CC1- E-UTRA CC2=19.8 MHz (Note 4)																
E-UTRA	20	100	Downlink	Low	2526.000	39950	-	-	-	-	-	-	-	-	-	-	-

E-UTRA: 20MHz + 20MHz + NR: 100MHz	CC2			& Uplink	Mid	2642.9	41119	-	-	-	-	-	-	-	-	-
					High	2679.600	41486	-	-	-	-	-	-	-	-	-
	Channel spacing E-UTRA CC2- NR CC1=50.01 MHz (Note 2)															
	NR CC1	80	217	Downlink & Uplink	Low	2576.010	515202	2536.95	507390	0	30	6351	508110	0	0	0 (0)
					Mid	2573.1	514620	2497.32	499464	102		6345	576300	10	0	1 (1)
					High	2609.790	521958	2389.29	477858	504		6438	515070	20	0	2 (2)
	E-UTRA CC1	20	100	Downlink & Uplink	Low	2506.200	39752	-	-	-	-	-	-	-	-	-
					Mid	2633.100	41021	-	-	-	-	-	-	-	-	-
					High	2659.800	41288	-	-	-	-	-	-	-	-	-
	Channel spacing E-UTRA CC1- E-UTRA CC2=19.8 MHz (Note 4)															
E-UTRA: 20MHz + 20MHz + NR: 100MHz	E-UTRA CC2	20	100	Downlink & Uplink	Low	2526.000	39950	-	-	-	-	-	-	-	-	-
					Mid	2652.900	41219	-	-	-	-	-	-	-	-	-
					High	2679.600	41486	-	-	-	-	-	-	-	-	-
	Channel spacing E-UTRA CC2- NR CC1=60 MHz (Note 2)															
	NR CC1	100	273	Downlink & Uplink	Low	2586.000	517200	2536.86	507372	0	30	6351	508110	6	0	0 (0)
					Mid	2573.100	514620	2487.24	497448	102		6321	505710	18	0	2 (2)
					High	2599.800	519960	2369.22	473844	504		6387	510990	22	0	1 (1)
	Channel spacing E-UTRA CC1- E-UTRA CC2=19.8 MHz (Note 4)															
	E-UTRA CC2	20	100	Downlink & Uplink	Low	2526.000	39950	-	-	-	-	-	-	-	-	-
					Mid	2652.900	41219	-	-	-	-	-	-	-	-	-
					High	2679.600	41486	-	-	-	-	-	-	-	-	-
Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-4 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdccch. ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.																
Note 2: The nominal carrier spacing between the E-UTRA and the NR carriers is set in accordance to TS 38.101-3 [9], clause 5.4B.1.																
Note 3: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs.																
Note 4: The nominal carrier spacing between the E-UTRA carriers is set in accordance to TS 36.101 [48], clause 5.7.1A.																

Table 4.3.1.4.2.41.2-3: EN-DC combination DC_(n)41CA, intra-band contiguous, SCS 60 kHz, 15 kHz NR raster, NR CC at the band edges without CORESET#0

EN-DC channel bandwidth combination	CC	Band width [MHz]	carrierBandwidth [PRBs]	Range		Carrier centre [MHz] Note 1	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequency PointA [ARFCN]	offset ToCarrier [Carrier PRBs]	SS block SCS [kHz]	GSCN	absoluteFrequency SSB [ARFCN]
E-UTRA: 20MHz + 20MHz + NR: 40MHz	E-UTRA CC1	20	100	Downlink & Uplink	Low	2546.100	40151	-	-	-	-	-	-
					Mid	2603.100	40721	-	-	-	-	-	
					High	2620.200	40892	-	-	-	-	-	
	Channel spacing E-UTRA CC1- E-UTRA CC2=19.8 MHz (Note 3)												
	E-UTRA CC2	20	100	Downlink & Uplink	Low	2565.900	40349						
					Mid	2622.900	40919						
					High	2640.000	41090						
	Channel spacing E-UTRA CC2- NR CC1=30 MHz (Note 2)												
	NR CC1	40	51	Downlink &	Low	2516.100	503220	2497.74	499548	0	15	-	499908
					Mid	2573.100	514620	2481.3	496260	102	-	511308	

				Uplink	High	2670.000	534000	2288.76	457752	504		-	530688
E-UTRA: 20MHz + 20MHz + NR: 50MHz	E-UTRA CC1	20	100	Downlink & Uplink	Low	2556.000	40250	-	-	-	-	-	-
					Mid	2608.100	40771	-	-	-	-	-	-
					High	2610.000	40790	-	-	-	-	-	-
					Channel spacing E-UTRA CC1- E-UTRA CC2=19.8 MHz (Note 3)								
	E-UTRA CC2	20	100	Downlink & Uplink	Low	2575.800	40448						
					Mid	2627.900	40969						
					High	2629.800	40988						
					Channel spacing E-UTRA CC2- NR CC1=34.995 MHz (Note 2)								
	NR CC1	50	65	Downlink & Uplink	Low	2521.005	504201	2497.605	499521	0	15	-	499881
					Mid	2573.100	514620	2476.26	495252	102		-	510300
					High	2664.795	532959	2278.515	455703	504		-	528639
E-UTRA: 20MHz + 20MHz + NR: 60MHz	E-UTRA CC1	20	100	Downlink & Uplink	Low	2566.200	40352	-	-	-	-	-	-
					Mid	2613.100	40821	-	-	-	-	-	-
					High	2600.100	40691	-	-	-	-	-	-
					Channel spacing E-UTRA CC1- E-UTRA CC2=19.8 MHz (Note 3)								
	E-UTRA CC2	20	100	Downlink & Uplink	Low	2586.000	40550	-	-	-	-	-	-
					Mid	2632.9	41019	-	-	-	-	-	-
					High	2619.900	40889	-	-	-	-	-	-
					Channel spacing E-UTRA CC2- NR CC1=40.005 MHz (Note 2)								
	NR CC1	60	79	Downlink & Uplink	Low	2526.195	505239	2497.755	499551	0	15	-	499911
					Mid	2573.1	514620	2471.22	494244	102		-	509292
					High	2659.905	531981	2268.585	453717	504		-	526653
E-UTRA: 20MHz + 20MHz + NR: 80MHz	E-UTRA CC1	20	100	Downlink & Uplink	Low	2586.000	40550	-	-	-	-	-	-
					Mid	2623.100	40921	-	-	-	-	-	-
					High	2580.000	40490	-	-	-	-	-	-
					Channel spacing E-UTRA CC1- E-UTRA CC2=19.8 MHz (Note 3)								
	E-UTRA CC2	20	100	Downlink & Uplink	Low	2605.800	40748	-	-	-	-	-	-
					Mid	2642.900	41119	-	-	-	-	-	-
					High	2599.800	40688	-	-	-	-	-	-
					Channel spacing E-UTRA CC2- NR CC1=49.995 MHz (Note 2)								
	NR CC1	80	107	Downlink & Uplink	Low	2536.005	507201	2497.485	499497	0	15	-	499857
					Mid	2573.1	514620	2461.14	492228	102		-	507276
					High	2649.795	529959	2248.395	449679	504		-	522615
E-UTRA: 20MHz + 20MHz + NR: 100MHz	E-UTRA CC1	20	100	Downlink & Uplink	Low	2606.100	40751	-	-	-	-	-	-
					Mid	2633.100	41021	-	-	-	-	-	-
					High	2560.2	40292	-	-	-	-	-	-
					Channel spacing E-UTRA CC1- E-UTRA CC2=19.8 MHz (Note 3)								
	E-UTRA CC2	20	100	Downlink & Uplink	Low	2625.900	40949	-	-	-	-	-	-
					Mid	2652.900	41219	-	-	-	-	-	-
					High	2580.000	40490	-	-	-	-	-	-
					Channel spacing E-UTRA CC2- NR CC1=60 MHz (Note 2)								
	NR	100	135	Downlink	Low	2546.100	509220	2497.5	499500	0	15	-	499860

	CC1			&	Mid	2573.100	514620	2451.06	490212	102		-	505260
				Uplink	High	2640.000	528000	2228.52	445704	504		-	518640
Note 1: The nominal carrier spacing between the E-UTRA and the NR carriers is set in accordance to TS 38.101-3 [9], clause 5.4B1.													
Note 2: FR1 carrier without CORESET#0 is indicated in the MIB by setting $k_{SSB} = 31$, <i>controlResourceSetZero</i> =0 and <i>searchSpaceZero</i> = 0 (TS 38.213 [22], clause 13).													
Note 3: The nominal carrier spacing between the E-UTRA carriers is set in accordance to TS 36.101 [48], clause 5.7.1A.													

Table 4.3.1.4.2.41.2-3A: EN-DC combination DC_(n)41CA, intra-band contiguous, SCS 60 kHz, 15 kHz NR raster, E-UTRA CC at the band edges without CORESET#0

EN-DC channel bandwidth combination	CC	Band width [MHz]	carrierBandwidth [PRBs]	Range		Carrier centre [MHz] Note 1	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequencyPointA [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS [kHz]	GSCN	absoluteFrequencySSB [ARFCN]
E-UTRA: 20MHz + 20MHz + NR: 40MHz	E-UTRA CC1	20	100	Downlink & Uplink	Low	2506.200	39752	-	-	-	-	-	-
					Mid	2603.100	40721	-	-	-	-	-	
					High	2659.800	41288	-	-	-	-	-	
	Channel spacing E-UTRA CC1- E-UTRA CC2=19.8 MHz (Note 3)												
	E-UTRA CC2	20	100	Downlink & Uplink	Low	2526.000	39950	-	-	-	-	-	-
					Mid	2622.900	40919	-	-	-	-	-	-
					High	2679.600	41486	-	-	-	-	-	-
	Channel spacing E-UTRA CC2- NR CC1=30 MHz (Note 2)												
	NR CC1	40	51	Downlink & Uplink	Low	2556.000	511200	2537.64	507528	0	15	-	507888
					Mid	2573.100	514620	2481.3	496260	102	-	511308	
					High	2629.800	525960	2248.56	449712	504	-	522648	
E-UTRA: 20MHz + 20MHz + NR: 60MHz	E-UTRA CC1	20	100	Downlink & Uplink	Low	2506.200	39752	-	-	-	-	-	-
					Mid	2613.100	40821	-	-	-	-	-	-
					High	2659.800	41288	-	-	-	-	-	-
	Channel spacing E-UTRA CC1- E-UTRA CC2=19.8 MHz (Note 3)												
	E-UTRA CC2	20	100	Downlink & Uplink	Low	2526.000	39950	-	-	-	-	-	-
					Mid	2632.9	41019	-	-	-	-	-	-
					High	2679.600	41486	-	-	-	-	-	-
	Channel spacing E-UTRA CC2- NR CC1=40.005 MHz (Note 2)												
	NR CC1	60	79	Downlink & Uplink	Low	2566.005	513201	2537.565	507513	0	15	-	507873
					Mid	2573.1	514620	2471.22	494244	102	-	510300	
					High	2619.795	523959	2228.475	445695	504	-	518631	
E-UTRA:	E-UTRA	20	100	Downlink	Low	2506.500	39755	-	-	-	-	-	-

20MHz + 20MHz + NR: 80MHz	CC1			& Uplink	Mid	2623.100	40921	-	-	-	-	-	-
					High	2659.800	41288	-	-	-	-	-	-
	Channel spacing E-UTRA CC1- E-UTRA CC2=19.8 MHz (Note 3)												
	E-UTRA CC2	20	100	Downlink & Uplink	Low	2526.300	39953	-	-	-	-	-	-
					Mid	2642.9	41119	-	-	-	-	-	-
					High	2679.600	41486	-	-	-	-	-	-
	Channel spacing E-UTRA CC2- NR CC1=49.995 MHz (Note 2)												
	NR CC1	80	107	Downlink & Uplink	Low	2576.295	515259	2537.775	507555	0	15	-	507915
					Mid	2573.1	514620	2461.14	492228	102		-	507276
					High	2609.805	521961	2208.405	441681	504		-	514617
E-UTRA: 20MHz + 20MHz + NR: 100MHz	E-UTRA CC1	20	100	Downlink & Uplink	Low	2506.200	39752	-	-	-	-	-	-
					Mid	2633.100	41021	-	-	-		-	-
					High	2659.800	41288	-	-	-		-	-
	Channel spacing E-UTRA CC1- E-UTRA CC2=19.8 MHz (Note 3)												
	E-UTRA CC2	20	100	Downlink & Uplink	Low	2526.000	39950	-	-	-	-	-	-
					Mid	2652.900	41219	-	-	-	-	-	-
					High	2679.600	41486	-	-	-	-	-	-
	Channel spacing E-UTRA CC2- NR CC1=60 MHz (Note 2)												
	NR CC1	100	135	Downlink & Uplink	Low	2586.000	517200	2537.4	507480	0	15	-	507840
					Mid	2573.100	514620	2451.06	490212	102		-	505260
High					2599.800	519960	2188.32	437664	504	-		510600	
Note 1: The nominal carrier spacing between the E-UTRA and the NR carriers is set in accordance to TS 38.101-3 [9], clause 5.4B1.													
Note 2: FR1 carrier without CORESET#0 is indicated in the MIB by setting $k_{SSB}=31$, <i>controlResourceSetZero</i> =0 and <i>searchSpaceZero</i> = 0 (TS 38.213 [22], clause 13).													
Note 3: The nominal carrier spacing between the E-UTRA carriers is set in accordance to TS 36.101 [48], clause 5.7.1A.													

4.3.1.4.2.42.to 4.3.1.4.2.70 FFS

4.3.1.4.2.71 Intra-band contiguous EN-DC configurations DC_(n)71

4.3.1.4.2.71.1 DC_(n)71AA

Table 4.3.1.4.2.71.1-1: EN-DC combination DC_(n)71AA, intra-band contiguous, SCS 15 kHz, 100 kHz NR raster, NR CC at the band edges

EN-DC channel bandwidth combination	CC	Band width [MHz]	carrierBandwidth [PRBs]	Range	Carrier centre [MHz] Note 2	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequency PointA [ARFCN]	offset ToCarrier [Carrier]	SS block SCS [kHz]	GSCN	absoluteFrequency SSB [ARFCN]	k_{SSB}	Offset Carrier CORESET#0 [RBs]	CORESET#0 Index (Offset[	offsetToPointA (SIB1) [PRBs] Note 1

										PRBs]					Note 3	RBs)) Note 1	
E-UTRA: 5MHz + NR: 5MHz	E-UTRA CC1	5	25	Downlink	Low	624.500	68661	-	-	-	-	-	-	-	-	-	-
					Mid	637.000	68786	-	-	-	-	-	-	-	-	-	-
					High	644.500	68861	-	-	-	-	-	-	-	-	-	-
				Uplink	Low	670.500	133197	-	-	-	-	-	-	-	-	-	-
					Mid	683.000	133322	-	-	-	-	-	-	-	-	-	-
					High	690.500	133397	-	-	-	-	-	-	-	-	-	-
	NR CC1	5	25	Downlink	Low	619.500	123900	617.25	123450	0	15	1548	123870	8	1	0 (0)	1
					Mid	632.000	126400	611.39	122278	102		1580	126490	0	1	2 (4)	107
					High	649.500	129900	556.53	111306	504		1623	129870	8	1	0 (0)	505
				Uplink	Low	665.500	133100	663.25	132650	0	-	-	-	-	-	-	-
					Mid	678.000	135600	585.03	117006	504		-	-	-	-	-	-
					High	695.500	139100	692.17	138434	6		-	-	-	-	-	-
E-UTRA: 5MHz + NR: 10MHz	E-UTRA CC1	5	25	Downlink	Low	629.500	68711	-	-	-	-	-	-	-	-	-	-
					Mid	639.500	68811	-	-	-	-	-	-	-	-	-	-
					High	639.500	68811	-	-	-	-	-	-	-	-	-	-
				Uplink	Low	675.500	133247	-	-	-	-	-	-	-	-	-	-
					Mid	685.500	133347	-	-	-	-	-	-	-	-	-	-
					High	685.500	133347	-	-	-	-	-	-	-	-	-	-
	NR CC1	10	52	Downlink	Low	622.000	124400	617.32	123464	0	15	1549	123890	10	1	0 (0)	1
					Mid	632.000	126400	608.96	121792	102		1574	126010	2	1	2 (4)	107
					High	647.000	129400	551.6	110320	504		1610	128890	10	1	0 (0)	505 (0)
				Uplink	Low	668.000	133600	663.32	132664	0	-	-	-	-	-	-	-
					Mid	678.000	135600	582.6	116520	504		-	-	-	-	-	-
					High	693.000	138600	687.24	137448	6		-	-	-	-	-	-
E-UTRA: 5MHz + NR: 15MHz	E-UTRA CC1	5	25	Downlink	Low	634.500	68761	-	-	-	-	-	-	-	-	-	-
					Mid	642.000	68836	-	-	-	-	-	-	-	-	-	-
					High	634.500	68761	-	-	-	-	-	-	-	-	-	-
				Uplink	Low	680.500	133297	-	-	-	-	-	-	-	-	-	-
					Mid	688.000	133372	-	-	-	-	-	-	-	-	-	-
					High	680.500	133297	-	-	-	-	-	-	-	-	-	-
	NR CC1	15	79	Downlink	Low	624.500	124900	617.39	123478	0	15	1547	123850	4	0	0	0
					Mid	632.000	126400	606.53	121306	102		1568	125530	4	1	2 (4)	107
					High	644.500	128900	546.67	109334	504		1600	127970	8	1	1 (2)	507 (0)
				Uplink	Low	670.500	134100	663.39	132678	0	-	-	-	-	-	-	-
					Mid	678.000	135600	580.17	116034	504		-	-	-	-	-	-
					High	690.500	138100	682.31	136462	6		-	-	-	-	-	-
E-UTRA: 5MHz + NR: 20MHz	E-UTRA CC1	5	25	Downlink	Low	639.500	68811	-	-	-	-	-	-	-	-	-	-
					Mid	644.500	68861	-	-	-	-	-	-	-	-	-	-
					High	629.500	68711	-	-	-	-	-	-	-	-	-	-
				Uplink	Low	685.500	133347	-	-	-	-	-	-	-	-	-	-
					Mid	690.500	133397	-	-	-	-	-	-	-	-	-	-
					High	675.500	133247	-	-	-	-	-	-	-	-	-	-

	NR CC1	20	106	Downlink	Low	627.000	125400	617.46	123492	0	15	1548	123870	6	0	0	0
					Mid	632.000	126400	604.1	120820	102		1562	125050	6	1	2 (4)	107
					High	642.000	128400	541.74	108348	504		1587	126990	10	1	1 (2)	507
				Uplink	Low	673.000	134600	663.46	132692	0	-	-	-	-	-	-	-
					Mid	678.000	135600	577.74	115548	504		-	-	-	-	-	-
					High	688.000	137600	677.38	135476	6		-	-	-	-	-	-
E-UTRA: 10MHz + NR: 5MHz	E-UTRA CC1	10	50	Downlink	Low	627.000	68686	-	-	-	-	-	-	-	-	-	-
					Mid	637.000	68786	-	-	-	-	-	-	-	-	-	-
					High	642.000	68836	-	-	-	-	-	-	-	-	-	-
				Uplink	Low	673.000	133222	-	-	-	-	-	-	-	-	-	-
					Mid	683.000	133322	-	-	-	-	-	-	-	-	-	-
					High	688.000	133372	-	-	-	-	-	-	-	-	-	-
	NR CC1	5	25	Downlink	Low	619.500	123900	617.25	123450	0	15	1548	123870	8	1	0 (0)	1 (0)
					Mid	629.500	125900	608.89	121778	102		1573	125810	0	0	0	102
					High	649.500	129900	556.53	111306	504		1623	129870	8	1	0 (0)	505
				Uplink	Low	665.500	133100	663.25	132650	0	-	-	-	-	-	-	-
					Mid	675.500	135100	582.53	116506	504		-	-	-	-	-	-
					High	695.500	139100	692.17	138434	6		-	-	-	-	-	-
E-UTRA: 10MHz + NR: 10MHz	E-UTRA CC1	10	50	Downlink	Low	632.000	68736	-	-	-	-	-	-	-	-	-	-
					Mid	639.500	68811	-	-	-	-	-	-	-	-	-	-
					High	637.000	68786	-	-	-	-	-	-	-	-	-	-
				Uplink	Low	678.000	133272	-	-	-	-	-	-	-	-	-	-
					Mid	685.500	133347	-	-	-	-	-	-	-	-	-	-
					High	683.000	133322	-	-	-	-	-	-	-	-	-	-
	NR CC1	10	52	Downlink	Low	622.000	124400	617.32	123464	0	15	1549	123890	10	1	0 (0)	1 (0)
					Mid	629.500	125900	606.46	121292	102		1567	125330	2	0	0	102
					High	647.000	129400	551.6	110320	504		1610	128890	10	1	0 (0)	505
				Uplink	Low	668.000	133600	663.32	132664	0	-	-	-	-	-	-	-
					Mid	675.500	135100	580.1	116020	504		-	-	-	-	-	-
					High	693.000	138600	687.24	137448	6		-	-	-	-	-	-
E-UTRA: 10MHz + NR: 15MHz	E-UTRA CC1	10	50	Downlink	Low	637.000	68786	-	-	-	-	-	-	-	-	-	-
					Mid	642.000	68836	-	-	-	-	-	-	-	-	-	-
					High	632.000	68736	-	-	-	-	-	-	-	-	-	-
				Uplink	Low	683.000	133322	-	-	-	-	-	-	-	-	-	-
					Mid	688.000	133372	-	-	-	-	-	-	-	-	-	-
					High	678.000	133272	-	-	-	-	-	-	-	-	-	-
	NR CC1	15	79	Downlink	Low	624.500	124900	617.39	123478	0	15	1547	123850	4	0	0 (0)	0
					Mid	629.500	125900	604.03	120806	102		1561	124850	4	0	0 (0)	102
					High	644.500	128900	546.67	109334	504		1600	127970	8	1	1 (1)	507
				Uplink	Low	670.500	134100	663.39	132678	0	-	-	-	-	-	-	-
					Mid	675.500	135100	577.67	115534	504		-	-	-	-	-	-
					High	690.500	138100	682.31	136462	6		-	-	-	-	-	-
E-UTRA: 15MHz +	E-UTRA CC1	15	75	Downlink	Low	629.500	68711	-	-	-	-	-	-	-	-	-	-
					Mid	637.000	68786	-	-	-	-	-	-	-	-	-	-

NR: 5MHz	NR CC1	5	25	Uplink	High	639.500	68811	-	-	-	-	-	-	-	-		
					Low	675.500	133247	-	-	-	-	-	-	-	-	-	
					Mid	683.000	133322	-	-	-	-	-	-	-	-	-	
					High	685.500	133347	-	-	-	-	-	-	-	-	-	
				Downlink	Low	619.500	123900	617.25	123450	0	15	1548	123870	8	1	0 (0)	1
					Mid	627.000	125400	606.39	121278	102		1566	125310	0	0	0 (0)	102
					High	649.500	129900	556.53	111306	504		1623	129870	8	1	0 (0)	505
				Uplink	Low	665.500	133100	663.25	132650	0	-	-	-	-	-	-	-
					Mid	673.000	134600	580.03	116006	504		-	-	-	-	-	-
					High	695.500	139100	692.17	138434	6		-	-	-	-	-	-
E-UTRA: 15MHz + NR: 10MHz	E-UTRA CC1	15	75	Downlink	Low	634.500	68761	-	-	-	-	-	-	-	-		
					Mid	639.500	68811	-	-	-	-	-	-	-	-	-	
					High	634.500	68761	-	-	-	-	-	-	-	-	-	
				Uplink	Low	680.500	133297	-	-	-	-	-	-	-	-	-	
					Mid	685.500	133347	-	-	-	-	-	-	-	-	-	
					High	680.500	133297	-	-	-	-	-	-	-	-	-	
	NR CC1	10	52	Downlink	Low	622.000	124400	617.32	123464	0	15	1549	123890	10	1	0 (0)	1
					Mid	627.000	125400	603.96	120792	102		1560	124830	2	0	0 (0)	102
					High	647.000	129400	551.6	110320	504		1610	128890	10	1	0 (0)	505
				Uplink	Low	668.000	133600	663.32	132664	0	-	-	-	-	-	-	-
					Mid	673.000	134600	577.6	115520	504		-	-	-	-	-	-
					High	693.000	138600	687.24	137448	6		-	-	-	-	-	-

Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-2 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdccch, ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.

Note 2: The nominal carrier spacing between the E-UTRA and the NR carriers is set in accordance to TS 38.101-3 [9], clause 5.4B1.

Note 3: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs.

Table 4.3.1.4.2.71.1-1A: EN-DC combination DC_(n)71AA, intra-band contiguous, SCS 15 kHz, 100 kHz NR raster, E-UTRA CC at the band edges

EN-DC channel bandwidth combination	CC	Band width [MHz]	carrierBandwidth [PRBs]	Range		Carrier centre [MHz] Note 2	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequency PointA [ARFCN]	offset ToCarrier [Carrier PRBs]	SS block SCS [kHz]	GSCN	absoluteFrequency SSB [ARFCN]	k_{SSB}	Offset Carrier CORESET#0 [RBs] Note 3	CORESET#0 Index (Offset[RBs]) Note 1	offsetToPointA (SIB1) [PRBs] Note 1
E-UTRA: 5MHz + NR: 5MHz	E-UTRA CC1	5	25	Downlink	Low	619.500	68611	-	-	-	-	-	-	-	-	-	-
					Mid	637.000	68786	-	-	-	-	-	-	-	-	-	-
					High	649.500	68911	-	-	-	-	-	-	-	-	-	-
				Uplink	Low	665.500	133147	-	-	-	-	-	-	-	-	-	-
					Mid	683.000	133322	-	-	-	-	-	-	-	-	-	-
					High	695.500	133447	-	-	-	-	-	-	-	-	-	-
	NR	5	25	Downlink	Low	624.500	124900	622.25	124450	0	15	1559	124810	0	0	0 (0)	0

E-UTRA: 5MHz + NR: 15MHz	E-UTRA CC1	5	25	Downlink	Mid	632.000	126400	611.39	122278	102	-	1580	126490	0	1	2 (4)	112			
					High	644.500	128900	551.53	110306	504		1612	128930	4	1	1 (2)	507			
					Uplink	Low	670.500	134100	668.25	133650		0	-	-	-	-	-	-		
						Mid	678.000	135600	585.03	117006		504	-	-	-	-	-	-		
						High	690.500	138100	687.17	137434		6	-	-	-	-	-	-		
				Uplink	Low	619.500	68611	-	-	-		-	-	-	-	-	-	-		
					Mid	642.000	68836	-	-	-		-	-	-	-	-	-	-		
					High	649.500	68911	-	-	-		-	-	-	-	-	-	-		
					Low	665.500	133147	-	-	-		-	-	-	-	-	-	-		
	NR CC1	15	79	Downlink	Low	629.500	125900	622.39	124478	0	15	1561	124850	4	0	0 (0)	0			
					Mid	632.000	126400	606.53	121306	102		1568	125530	4	1	2 (4)	107			
					High	639.500	127900	541.67	108334	504		1586	126970	8	1	1 (2)	507			
				Uplink	Low	675.500	135100	668.39	133678	0	-	-	-	-	-	-	-			
					Mid	678.000	135600	580.17	116034	504		-	-	-	-	-	-			
					High	685.500	137100	677.31	135462	6		-	-	-	-	-	-			
E-UTRA: 10MHz + NR: 10MHz				E-UTRA CC1	10	50	Downlink	Low	622.000	68636	-	-	-	-	-	-	-	-	-	-
								Mid	639.500	68811	-	-	-		-	-	-	-	-	-
								High	647.000	68886	-	-	-		-	-	-	-	-	-
	Uplink	Low	668.000				133172	-	-	-	-	-	-		-	-	-	-		
		Mid	685.500				133347	-	-	-		-	-		-	-	-	-		
		High	693.000				133422	-	-	-		-	-		-	-	-	-		
	NR CC1	10	52	Downlink	Low	632.000	126400	627.32	125464	0	15	1574	126010	2	1	2 (4)	5			
					Mid	629.500	125900	606.46	121292	102		1567	125330	2	0	0 (0)	102			
					High	637.000	127400	541.6	108320	504		1588	127010	2	1	2 (4)	509			
Uplink	Low	678.000	135600	673.32	134664	0	-	-	-	-	-	-	-							
	Mid	675.500	135100	580.1	116020	504		-	-	-	-	-	-							
	High	683.000	136600	677.24	135448	6		-	-	-	-	-	-							
E-UTRA: 15MHz + NR: 5MHz	E-UTRA CC1	15	75	Downlink	Low	624.500	68661	-	-	-	-	-	-	-	-	-	-			
					Mid	637.000	68786	-	-	-		-	-	-	-	-	-			
					High	644.500	68861	-	-	-		-	-	-	-	-	-			
				Uplink	Low	670.500	133197	-	-	-		-	-	-	-	-	-	-		
					Mid	683.000	133322	-	-	-			-	-	-	-	-	-		
					High	690.500	133397	-	-	-			-	-	-	-	-	-		
	NR CC1	5	25	Downlink	Low	634.500	126900	632.25	126450	0	15	1587	126990	0	1	2 (4)	5			
					Mid	627.000	125400	606.39	121278	102		1566	125310	0	0	0 (0)	102			
					High	634.500	126900	541.53	108306	504		1587	126990	0	1	2 (4)	509			
				Uplink	Low	680.500	136100	678.25	135650	0	-	-	-	-	-	-	-			
					Mid	673.000	134600	580.03	116006	504		-	-	-	-	-	-			
					High	680.500	136100	677.17	135434	6		-	-	-	-	-	-			

Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-2 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.

Note 2: The nominal carrier spacing between the E-UTRA and the NR carriers is set in accordance to TS 38.101-3 [9], clause 5.4B1.

Note 3: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs.

Table 4.3.1.4.2.71.1-2: EN-DC combination DC_(n)71AA, intra-band contiguous, SCS 30 kHz, 100 kHz NR raster, NR CC at the band edge

EN-DC channel bandwidth combination	CC	Bandwidth [MHz]	carrierBandwidth [PRBs]	Range		Carrier centre [MHz] Note 2	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequency PointA [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS [kHz]	GSCN	absoluteFrequency SSB [ARFCN]	k_{SSB}	Offset Carrier CORESET#0 [RBs] Note 3	CORESET#0 Index (Offset [RBs]) Note 1	offsetToP ointA (SIB1) [PRBs] Note 1
E-UTRA: 5MHz + NR: 10MHz	E-UTRA CC1	5	25	Downlink	Low	629.500	68711	-	-	-	-	-	-	-	-	-	-
					Mid	639.500	68811	-	-	-	-	-	-	-	-	-	-
					High	639.500	68811	-	-	-	-	-	-	-	-	-	-
				Uplink	Low	675.500	133247	-	-	-	-	-	-	-	-	-	-
					Mid	685.500	133347	-	-	-	-	-	-	-	-	-	-
					High	685.500	133347	-	-	-	-	-	-	-	-	-	-
	NR CC1	10	24	Downlink	Low	622.000	124400	617.68	123536	0	15	1555	124370	14	0	1 (6)	12
					Mid	632.000	126400	590.96	118192	102		1580	126490	6	0	3 (8)	220
					High	647.000	129400	461.24	92248	504		1616	129370	14	0	1 (6)	1020
				Uplink	Low	668.000	133600	663.68	132736	0	-	-	-	-	-	-	-
					Mid	678.000	135600	492.24	98448	504		-	-	-	-	-	-
					High	693.000	138600	686.52	137304	6		-	-	-	-	-	-
E-UTRA: 5MHz + NR: 15MHz	E-UTRA CC1	5	25	Downlink	Low	634.500	68761	-	-	-	-	-	-	-	-	-	-
					Mid	642.000	68836	-	-	-	-	-	-	-	-	-	-
					High	634.500	68761	-	-	-	-	-	-	-	-	-	-
				Uplink	Low	680.500	133297	-	-	-	-	-	-	-	-	-	-
					Mid	688.000	133372	-	-	-	-	-	-	-	-	-	-
					High	680.500	133297	-	-	-	-	-	-	-	-	-	-
	NR CC1	15	38	Downlink	Low	624.500	124900	617.66	123532	0	15	1553	124330	2	0	1 (6)	12
					Mid	632.000	126400	588.44	117688	102		1571	125770	6	0	0 (5)	214
					High	644.500	128900	456.22	91244	504		1606	128450	18	0	2 (7)	1022
				Uplink	Low	670.500	134100	663.66	132732	0	-	-	-	-	-	-	-
					Mid	678.000	135600	489.72	97944	504		-	-	-	-	-	-
					High	690.500	138100	681.5	136300	6		-	-	-	-	-	-
E-UTRA: 5MHz + NR: 20MHz	E-UTRA CC1	5	25	Downlink	Low	639.500	68811	-	-	-	-	-	-	-	-	-	-
					Mid	644.500	68861	-	-	-	-	-	-	-	-	-	-
					High	629.500	68711	-	-	-	-	-	-	-	-	-	-
				Uplink	Low	685.500	133347	-	-	-	-	-	-	-	-	-	-
					Mid	690.500	133397	-	-	-	-	-	-	-	-	-	-
					High	675.500	133247	-	-	-	-	-	-	-	-	-	-
	NR CC1	20	51	Downlink	Low	627.000	125400	617.82	123564	0	15	1554	124350	22	0	0 (5)	10
					Mid	632.000	126400	586.1	117220	102		1565	125290	2	0	0 (5)	214

E-UTRA: 10MHz + NR: 10MHz	E-UTRA CC1	10	50	Uplink	High	642.000	128400	451.38	90276	504	-	1593	127470	14	0	2 (7)	1022
					Low	673.000	134600	663.82	132764	0		-	-	-	-	-	-
					Mid	678.000	135600	487.38	97476	504		-	-	-	-	-	-
				Downlink	High	688.000	137600	676.66	135332	6	-	-	-	-	-	-	-
					Low	632.000	68736	-	-	-		-	-	-	-	-	-
					Mid	639.500	68811	-	-	-		-	-	-	-	-	-
	NR CC1	10	24	Uplink	High	637.000	68786	-	-	-	-	-	-	-	-	-	-
					Low	678.000	133272	-	-	-		-	-	-	-	-	-
					Mid	685.500	133347	-	-	-		-	-	-	-	-	-
				Downlink	High	683.000	133322	-	-	-	-	-	-	-	-	-	-
					Low	622.000	124400	617.68	123536	0		1555	124370	14	0	1 (6)	12
					Mid	629.500	125900	588.46	117692	102		1573	125810	18	0	0 (5)	214
					High	647.000	129400	461.24	92248	504		1616	129370	14	0	1 (6)	1020
				Uplink	Low	668.000	133600	663.68	132736	0	-	-	-	-	-	-	-
					Mid	675.500	135100	489.74	97948	504		-	-	-	-	-	-
					High	693.000	138600	686.52	137304	6		-	-	-	-	-	-
E-UTRA: 10MHz + NR: 15MHz	E-UTRA CC1	10	50	Downlink	Low	637.000	68786	-	-	-	-	-	-	-	-	-	-
					Mid	642.000	68836	-	-	-		-	-	-	-	-	-
					High	632.000	68736	-	-	-		-	-	-	-	-	-
				Uplink	Low	683.000	133322	-	-	-	-	-	-	-	-	-	-
					Mid	688.000	133372	-	-	-		-	-	-	-	-	-
					High	678.000	133272	-	-	-		-	-	-	-	-	-
	NR CC1	15	38	Downlink	Low	624.500	124900	617.66	123532	0	15	1553	124330	2	0	1 (6)	12
					Mid	629.500	125900	585.94	117188	102		1567	125330	2	0	1 (6)	216
					High	644.500	128900	456.22	91244	504		1606	128450	18	0	2 (7)	1022
				Uplink	Low	670.500	134100	663.66	132732	0	-	-	-	-	-	-	-
					Mid	675.500	135100	487.22	97444	504		-	-	-	-	-	-
					High	690.500	138100	681.5	136300	6		-	-	-	-	-	-
E-UTRA: 15MHz + NR: 10MHz	E-UTRA CC1	15	75	Downlink	Low	634.500	68761	-	-	-	-	-	-	-	-	-	-
					Mid	639.500	68811	-	-	-		-	-	-	-	-	-
					High	634.500	68761	-	-	-		-	-	-	-	-	-
				Uplink	Low	680.500	133297	-	-	-	-	-	-	-	-	-	-
					Mid	685.500	133347	-	-	-		-	-	-	-	-	-
					High	680.500	133297	-	-	-		-	-	-	-	-	-
	NR CC1	10	24	Downlink	Low	622.000	124400	617.68	123536	0	15	1555	124370	14	0	1 (6)	12
					Mid	627.000	125400	585.96	117192	102		1566	125310	18	0	0 (5)	214
					High	647.000	129400	461.24	92248	504		1616	129370	14	0	1 (6)	1020
				Uplink	Low	668.000	133600	663.68	132736	0	-	-	-	-	-	-	-
					Mid	673.000	134600	487.24	97448	504		-	-	-	-	-	-
					High	693.000	138600	686.52	137304	6		-	-	-	-	-	-

Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-2 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdccch. ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.

Note 2: The nominal carrier spacing between the E-UTRA and the NR carriers is set in accordance to TS 38.101-3 [9], clause 5.4B1.

Note 3: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter

$\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs.

Table 4.3.1.4.2.71.1-2A: EN-DC combination DC_(n)71AA, intra-band contiguous, SCS 30 kHz, 100 kHz NR raster, E-UTRA CC at the band edge

EN-DC channel bandwidth combination	CC	Bandwidth [MHz]	carrierBandwidth [PRBs]	Range		Carrier centre [MHz] Note 2	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequency PointA [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS [kHz]	GSCN	absoluteFrequency SSB [ARFCN]	k_{SSB}	Offset Carrier CORESET#0 [RBs] Note 3	CORESET#0 (Offset [RBs]) Index Note 1	offsetToPointA (SIB1) [PRBs] Note 1
E-UTRA: 5MHz + NR: 15MHz	E-UTRA CC1	5	25	Downlink	Low	619.500	68611	-	-	-	-	-	-	-	-	-	-
					Mid	642.000	68836	-	-	-	-	-	-	-	-	-	-
					High	649.500	68911	-	-	-	-	-	-	-	-	-	-
				Uplink	Low	665.500	133147	-	-	-	-	-	-	-	-	-	-
					Mid	688.000	133372	-	-	-	-	-	-	-	-	-	-
					High	695.500	133447	-	-	-	-	-	-	-	-	-	-
	NR CC1	15	38	Downlink	Low	629.500	125900	622.66	124532	0	15	1567	125330	2	0	1 (6)	12
					Mid	632.000	126400	588.44	117688	102		1571	125770	6	0	0 (5)	214
					High	639.500	127900	451.22	90244	504		1592	127450	18	0	2 (7)	1022
				Uplink	Low	675.500	135100	668.66	133732	0	-	-	-	-	-	-	-
					Mid	678.000	135600	489.72	97944	504		-	-	-	-	-	-
					High	685.500	137100	676.5	135300	6		-	-	-	-	-	-

Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-2 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdccch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.

Note 2: The nominal carrier spacing between the E-UTRA and the NR carriers is set in accordance to TS 38.101-3 [9], clause 5.4B1.

4.3.1.4.3 Intra-band non-contiguous EN-DC configurations within FR1

4.3.1.4.3.1 FFS

4.3.1.4.3.2 Intra-band non-contiguous EN-DC configurations DC_2_n2

4.3.1.4.3.2.1 DC_2A_n2A

Table 4.3.1.4.3.2.1-1: Test frequencies for EN-DC combination DC_2A_n2A, Max Wgap

Test Frequency ID	NR channel bandwidth [MHz]	NR SCS [kHz]	NR test frequency range (Note 1)	E-UTRA channel bandwidth [MHz]	E-UTRA frequency range (Note 2)
Low with maxWgap (NR – E-UTRA)	5	15	Low	20	High
	10				
	15				
	20				
	25				
	30				
	35				
	40				
High with maxWgap (E-UTRA - NR)	5		High	20	Low
	10				
	15				
	20				
	25				
	30				
	35				
	40				
Low with maxWgap (NR – E-UTRA)	10	30	Low	20	High
	15				
	20				
	25				
	30				
	35				
	40				
	High with maxWgap (E-UTRA - NR)					10	High	20	Low
15					
20					
25					
30					
35					
40					

Note 1:

The NR test frequencies are specified in clause 4.3.1.1.1.2 for the NR Channel Bandwidth, NR SCS and NR test frequency range as given in the table.

Note 2:

The E-UTRA test frequencies are specified in TS 36.508 [2], clause 4.3.1.1.2 for the E-UTRA channel bandwidth and E-UTRA test frequency range as given in the table.

4.3.1.4.3.3– 4.3.1.4.3.40 FFS

4.3.1.4.3.41 Intra-band non-contiguous EN-DC configurations DC_41_n41

4.3.1.4.3.41.1 DC_41A_n41A

Table 4.3.1.4.3.41.1-1: Test frequencies for EN-DC combination DC_41A_n41A, Max Wgap

Test Frequency ID	NR channel bandwidth [MHz]	NR SCS [kHz]	NR test frequency range (Note 1)	E-UTRA channel bandwidth [MHz]	E-UTRA frequency range (Note 2)	
Low with maxWgap (NR – E-UTRA)	40	30	Low	20	High	
	50					
	60					
	80					
	100					
High with maxWgap (E-UTRA - NR)	40		High	20	Low	
	50					
	60					
	80					
	100					
Low with maxWgap (NR – E-UTRA)	40	60	Low	20	High	
	50					
	60					
	80					
	100					
High with maxWgap (E-UTRA - NR)	40		High	20	Low	
	50					
	60					
	80					
	100					
Note 1: The NR test frequencies are specified in clause 4.3.1.1.1.41 for the NR Channel Bandwidth, NR SCS and NR test frequency range as given in the table.						
Note 2: The E-UTRA test frequencies are specified in TS 36.508 [2], clause 4.3.1.2.9 for the E-UTRA channel bandwidth and E-UTRA test frequency range as given in the table.						

4.3.1.4.3.41.2 DC_41C_n41A

Table 4.3.1.4.3.41.2-1: Test frequencies for EN-DC combination DC_41C_n41A, SCS=30kHz, Max Wgap

Test Frequency ID	NR channel bandwidth [MHz]	NR SCS [kHz]	NR test frequency range (Note 1)	E-UTRA CC Combo / N _{RB_agg} [MHz]	E-UTRA frequency range (Note 2)
Low with maxWgap (NR – E-UTRA)	40	30	Low	20 + 20	High
	50				
	60				
	80				
	100				
High with maxWgap (E-UTRA - NR)	40		High	20 + 20	Low
	50				
	60				
	80				
	100				
Low with maxWgap (NR – E-UTRA)	40	60	Low	20 + 20	High
	50				
	60				
	80				
	100				
High with maxWgap (E-UTRA - NR)	40		High	20 + 20	Low
	50				

	60			
	80			
	100			
Note 1: The NR test frequencies are specified in clause 4.3.1.1.1.41 for the NR Channel Bandwidth, NR SCS and NR test frequency range as given in the table.				
Note 2: The E-UTRA test frequencies are specified in TS 36.508 [2], clause 4.3.1.2.9A for the E-UTRA CC Combo and E-UTRA test frequency range as given in the table.				

4.3.1.4.3.41.3 DC_41D_n41A

Table 4.3.1.4.3.41.3-1: Test frequencies for EN-DC combination DC_41D_n41A, SCS=30kHz, Max Wgap

Test Frequency ID	NR channel bandwidth [MHz]	NR SCS [kHz]	NR test frequency range (Note 1)	E-UTRA CC Combo / NRB_agg [MHz]	E-UTRA frequency range (Note 2)	
Low with maxWgap (NR – E-UTRA)	40	30	Low	20 + 20 + 20	High	
	50					
	60					
	80					
	100					
High with maxWgap (E-UTRA - NR)	40		High	20 + 20 + 20	Low	
	50					
	60					
	80					
	100					
Low with maxWgap (NR – E-UTRA)	40	60	Low	20 + 20 + 20	High	
	50					
	60					
	80					
	100					
High with maxWgap (E-UTRA - NR)	40		High	20 + 20 + 20	Low	
	50					
	60					
	80					
	100					
Note 1: The NR test frequencies are specified in clause 4.3.1.1.1.41 for the NR Channel Bandwidth, NR scs and NR test frequency range as given in the table.						
Note 2: The E-UTRA test frequencies are specified in TS 36.508 [2], clause 4.3.1.2.9A for the E-UTRA CC Combo and E-UTRA test frequency range as given in the table.						

4.3.1.4.3.42– 4.3.1.4.3.65 FFS

4.3.1.4.3.66 Intra-band non-contiguous EN-DC configurations DC_66_n66

4.3.1.4.3.66.1 DC_66A_n66A

Table 4.3.1.4.3.66.1-1: Test frequencies for EN-DC combination DC_66A_n66A, Max Wgap

Test Frequency ID	NR channel bandwidth [MHz]	NR SCS [kHz]	NR test frequency range (Note 1)	E-UTRA channel bandwidth [MHz]	E-UTRA frequency range (Note 2)
Low with maxWgap (NR – E-UTRA)	5	15	Low	20	High
	10				
	15				
	20				
	25				
	30				
	40				

High with maxWgap (E-UTRA - NR)	45	30	High	20	Low
	5				
	10				
	15				
	20				
	25				
	30				
	40				
	45				
Low with maxWgap (NR – E-UTRA)	5	30	Low	20	High
	10				
	15				
	20				
	25				
	30				
	40				
	45				
	High with maxWgap (E-UTRA - NR)					5	30	High	20	Low
10					
15					
20					
25					
30					
40					
45					
Note 1: The NR test frequencies are specified in clause 4.3.1.1.1.66 for the NR Channel Bandwidth, NR SCS and NR test frequency range as given in the table.					
Note 2: The E-UTRA test frequencies are specified in TS 36.508 [2], clause 4.3.1.1.66 for the E-UTRA channel bandwidth and E-UTRA test frequency range as given in the table.					

4.3.1.4a Test frequencies for NE-DC band combinations within FR1

4.3.1.4a.1 Inter-band NE-DC configurations within FR1

4.3.1.4a.1.1 General

For inter-band NE-DC configurations as listed in this clause, the following apply:

For the NR band and NR CA configurations, test frequencies as specified in clause 4.3.1.1 are used.

For the E-UTRA band and E-UTRA CA configurations, test frequencies as specified in TS 36.508 [2], clause 4.3.1 are used.

For the primary NR band in inter-band signalling test cases, the band selected is based on the subset of NR bands supported within the NE-DC configurations specified in Table 4.3.1.4a.1.2-1 for NR FR1.

4.3.1.4a.1.2 Inter-band NE-DC configurations within FR1 (two bands)

Table 4.3.1.4a.1.2-1: Inter-band NE-DC configurations within FR1 (two bands)

NE-DC configuration	Uplink NE-DC Configuration	NR downlink configuration	E-UTRA downlink configuration	NR uplink configuration	E-UTRA uplink configuration	Applicable for protocol testing (Note 1)
DC_n28A_3A	DC_n28A_3A	n28A	3A	n28A	3A	Yes
DC_n28A_3C	DC_n28A_3A	n28A	CA_3C	n28A	3A	No
DC_n28A_39A	DC_n28A_39A	n28A	39A	n28A	39A	Yes
DC_n28A_39C	DC_n28A_39A	n28A	CA_39C	n28A	39A	No

4.3.1.5 Test frequencies for EN-DC band combinations including FR2

4.3.1.5.1 Inter-band EN-DC configurations including FR2

4.3.1.5.1.1 General

For inter-band EN-DC configurations as listed in this clause, the following apply:

For the E-UTRA band and E-UTRA CA configurations, test frequencies as specified in TS 36.508 [2], clause 4.3.1 are used.

For the NR band and NR CA configurations, test frequencies as specified in clause 4.3.1.2 are used.

For the secondary NR band in inter-band signalling test cases, the band selected is based on the subset of NR bands supported within the EN-DC configurations specified in Table 4.3.1.4.1.2-1 for NR FR1 and 4.3.1.5.1.2-1 for NR FR2.

Test configurations for EN-DC band combinations including FR2 in this clause are used by both RF and Signalling testing. General rules for deciding test configurations are applied in Table 4.3.1.5.1.3-1, Table 4.3.1.5.1.4-1 and Table 4.3.1.5.1.5-1 if no explicit test configurations are defined. In such cases, the test configurations are referenced to the general rules which are represented by symbolic DC configurations in the corresponding tables. Any DC configurations not applying the general rules such as special cases for test configurations are listed separately for each configuration. General rules for deciding test configurations are not applied to signalling tests and to EN-DC band combinations with two bands in Table 4.3.1.5.1.2-1.

4.3.1.5.1.2 Inter-band EN-DC configurations including FR2 (two bands)

Table 4.3.1.5.1.2-1: Inter-band EN-DC configurations including FR2 (two bands)

EN-DC configuration	Uplink EN-DC Configuration	E-UTRA downlink configuration	NR downlink configuration	E-UTRA uplink configuration	NR uplink configuration	Applicable for protocol testing (Note 1)
DC_1A_n257A	DC_1A_n257A	1A	n257A	1A	n257A	Yes
DC_1A_n257G	DC_1A_n257A	1A	CA_n257G	1A	n257A	Yes (NR 2CC)
	DC_1A_n257G	1A	CA_n257G	1A	CA_n257G	No
DC_1A_n257H	DC_1A_n257A	1A	CA_n257H	1A	n257A	No
	DC_1A_n257G	1A	CA_n257H	1A	CA_n257G	No
	DC_1A_n257H	1A	CA_n257H	1A	CA_n257H	No
DC_1A_n257I	DC_1A_n257A	1A	CA_n257I	1A	n257A	No
	DC_1A_n257G	1A	CA_n257I	1A	CA_n257G	No
	DC_1A_n257H	1A	CA_n257I	1A	CA_n257H	No
	DC_1A_n257I	1A	CA_n257I	1A	CA_n257I	No
DC_2A_n257A	DC_2A_n257A	2A	n257A	2A	n257A	Yes
DC_2A_n257(2A)	DC_2A_n257A	2A	CA_n257(2A)	2A	n257A	FFS (NR 2CC)
DC_2A_n260A	DC_2A_n260A	2A	n260A	2A	n260A	Yes
DC_2A_n260G	DC_2A_n260A	2A	CA_n260G	2A	n260A	Yes (NR 2CC)
DC_2A_n260H	DC_2A_n260A	2A	CA_n260H	2A	n260A	No
DC_2A_n260I	DC_2A_n260A	2A	CA_n260I	2A	n260A	No
DC_2A_n260J	DC_2A_n260A	2A	CA_n260J	2A	n260A	No
DC_2A_n260K	DC_2A_n260A	2A	CA_n260K	2A	n260A	No
DC_2A_n260L	DC_2A_n260A	2A	CA_n260L	2A	n260A	No
DC_2A_n260M	DC_2A_n260A	2A	CA_n260M	2A	n260A	No
DC_2C_n260A	DC_2A_n260A	CA_2C	n260A	2A	n260A	No
DC_2A_n260(2A)	DC_2A_n260A	2A	CA_n260(2A)	2A	n260A	FFS (NR 2CC)
DC_2A-2A_n260A	DC_2A_n260A	CA_2A-2A	n260A	2A	n260A	No
DC_2A-2A_n260G	DC_2A_n260A	CA_2A-2A	CA_n260G	2A	n260A	No
DC_2A-2A_n260H	DC_2A_n260A	CA_2A-2A	CA_n260H	2A	n260A	No
DC_2A-2A_n260I	DC_2A_n260A	CA_2A-2A	CA_n260I	2A	n260A	No
DC_2A-2A_n260J	DC_2A_n260A	CA_2A-2A	CA_n260J	2A	n260A	No
DC_2A-2A_n260K	DC_2A_n260A	CA_2A-2A	CA_n260K	2A	n260A	No
DC_2A-2A_n260L	DC_2A_n260A	CA_2A-2A	CA_n260L	2A	n260A	No
DC_2A-2A_n260M	DC_2A_n260A	CA_2A-2A	CA_n260M	2A	n260A	No
DC_2A_n261A	DC_2A_n261A	2A	n261A	2A	n261A	Yes
DC_3A_n257A	DC_3A_n257A	3A	n257A	3A	n257A	Yes
DC_3A_n257D	DC_3A_n257A	3A	CA_n257D	3A	n257A	FFS (NR 2CC)
DC_3A_n257G	DC_3A_n257A	3A	CA_n257G	3A	n257A	Yes (NR 2CC)
	DC_3A_n257B	3A	CA_n257G	3A	CA_n257B	No

EN-DC configuration	Uplink EN-DC Configuration	E-UTRA downlink configuration	NR downlink configuration	E-UTRA uplink configuration	NR uplink configuration	Applicable for protocol testing (Note 1)
	DC 3A_n257D	3A	CA_n257G	3A	CA_n257D	No
	DC 3A_n257G	3A	CA_n257G	3A	CA_n257G	No
DC_3A_n257H	DC 3A_n257A	3A	CA_n257H	3A	n257A	No
	DC 3A_n257B	3A	CA_n257H	3A	CA_n257B	No
	DC 3A_n257D	3A	CA_n257H	3A	CA_n257D	No
	DC 3A_n257G	3A	CA_n257H	3A	CA_n257G	No
	DC 3A_n257H	3A	CA_n257H	3A	CA_n257H	No
	DC 3A_n257I	3A	CA_n257I	3A	n257A	No
DC_3A_n257I	DC 3A_n257A	3A	CA_n257I	3A	CA_n257B	No
	DC 3A_n257B	3A	CA_n257I	3A	CA_n257D	No
	DC 3A_n257D	3A	CA_n257I	3A	CA_n257G	No
	DC 3A_n257G	3A	CA_n257I	3A	CA_n257H	No
	DC 3A_n257H	3A	CA_n257I	3A	CA_n257I	No
	DC 3A_n257I	3A	CA_n257I	3A	CA_n257I	No
DC 5A_n257A	DC 5A_n257A	5A	n257A	5A	n257A	Yes
DC 5A_n260A	DC 5A_n260A	5A	n260A	5A	n260A	Yes
DC 5A_n260B	DC 5A_n260A	5A	CA_n260B	5A	n260A	FFS (NR 2CC)
DC 5A_n260C	DC 5A_n260A	5A	CA_n260C	5A	n260A	No
DC 5A_n260D	DC 5A_n260A	5A	CA_n260D	5A	n260A	FFS (NR 2CC)
DC 5A_n260E	DC 5A_n260A	5A	CA_n260E	5A	n260A	No
DC 5A_n260F	DC 5A_n260A	5A	CA_n260F	5A	n260A	No
DC 5A_n260G	DC 5A_n260A	5A	CA_n260G	5A	n260A	Yes (NR 2CC)
DC 5A_n260H	DC 5A_n260A	5A	CA_n260H	5A	n260A	No
DC 5A_n260I	DC 5A_n260A	5A	CA_n260I	5A	n260A	No
DC 5A_n260J	DC 5A_n260A	5A	CA_n260J	5A	n260A	No
DC 5A_n260K	DC 5A_n260A	5A	CA_n260K	5A	n260A	No
DC 5A_n260L	DC 5A_n260A	5A	CA_n260L	5A	n260A	No
DC 5A_n260M	DC 5A_n260A	5A	CA_n260M	5A	n260A	No
DC 5A_n260O	DC 5A_n260A	5A	CA_n260O	5A	n260A	FFS (NR 2CC)
DC_5B_n260A	DC 5A_n260A	CA_5B	n260A	5A	n260A	No
	DC 5B_n260A	CA_5B	n260A	CA_5B	n260A	No
DC 5A_n260(2A)	DC 5A_n260A	5A	CA_n260(2A)	5A	n260A	FFS (NR 2CC)
DC 5A_n260(3A)	DC 5A_n260A	5A	CA_n260(3A)	5A	n260A	No
DC 5A_n260(4A)	DC 5A_n260A	5A	n260(4A)	5A	n260A	No
DC 5A_n260(A-I)	DC 5A_n260A	5A	CA_n260(A-I)	5A	n260A	No
DC 5A_n260(G-I)	DC 5A_n260A	5A	CA_n260(G-I)	5A	n260A	No
DC 5A-5A_n260A	DC 5A_n260A	CA_5A-5A	n260A	5A	n260A	No
DC 5A_n261A	DC 5A_n261A	5A	n261A	5A	n261A	Yes
DC 5A_n261B	DC 5A_n261A	5A	CA_n261B	5A	n261A	FFS (NR 2CC)
DC 5A_n261C	DC 5A_n261A	5A	CA_n261C	5A	n261A	No
DC_5A_n261D	DC 5A_n261A	5A	CA_n261D	5A	n261A	FFS (NR 2CC)

EN-DC configuration	Uplink EN-DC Configuration	E-UTRA downlink configuration	NR downlink configuration	E-UTRA uplink configuration	NR uplink configuration	Applicable for protocol testing (Note 1)
DC_5A_n261E	DC_5A_n261A	5A	CA_n261E	5A	n261A	No
DC_5A_n261F	DC_5A_n261A	5A	CA_n261F	5A	n261A	No
DC_5A_n261G	DC_5A_n261A	5A	CA_n261G	5A	n261A	Yes (NR 2CC)
DC_5A_n261H	DC_5A_n261A	5A	CA_n261H	5A	n261A	No
DC_5A_n261I	DC_5A_n261A	5A	CA_n261I	5A	n261A	No
DC_5A_n261J	DC_5A_n261A	5A	CA_n261J	5A	n261A	No
DC_5A_n261K	DC_5A_n261A	5A	CA_n261K	5A	n261A	No
DC_5A_n261L	DC_5A_n261A	5A	CA_n261L	5A	n261A	No
DC_5A_n261M	DC_5A_n261A	5A	CA_n261M	5A	n261A	No
DC_5A_n261O	DC_5A_n261A	5A	CA_n261O	5A	n261A	FFS (NR 2CC)
DC_5A_n261P	DC_5A_n261A	5A	CA_n261P	5A	n261A	No
DC_5A_n261Q	DC_5A_n261A	5A	CA_n261Q	5A	n261A	No
DC_5A_n261(2A)	DC_5A_n261A	5A	CA_n261(2A)	5A	n261A	Yes (NR 2CC)
DC_5A_n261(3A)	DC_5A_n261A	5A	CA_n261(3A)	5A	n261A	No
DC_5A_n261(4A)	DC_5A_n261A	5A	CA_n261(4A)	5A	n261A	No
DC_5A_n261(D-G)	DC_5A_n261A	5A	CA_n261(D-G)	5A	n261A	No
DC_5A_n261(D-H)	DC_5A_n261A	5A	CA_n261(D-H)	5A	n261A	No
DC_5A_n261(D-I)	DC_5A_n261A	5A	CA_n261(D-I)	5A	n261A	No
DC_5A_n261(D-O)	DC_5A_n261A	5A	CA_n261(D-O)	5A	n261A	No
DC_5A_n261(D-P)	DC_5A_n261A	5A	CA_n261(D-P)	5A	n261A	No
DC_5A_n261(D-Q)	DC_5A_n261A	5A	CA_n261(D-Q)	5A	n261A	No
DC_5A_n261(E-O)	DC_5A_n261A	5A	CA_n261(E-O)	5A	n261A	No
DC_5A_n261(E-P)	DC_5A_n261A	5A	CA_n261(E-P)	5A	n261A	No
DC_5A_n261(E-Q)	DC_5A_n261A	5A	CA_n261(E-Q)	5A	n261A	No
DC_7A_n257A	DC_7A_n257A	7A	n257A	7A	n257A	Yes
DC_7A-7A_n257A	DC_7A_n257A	CA_7A-7A	n257A	7A	n257A	No
DC_8A_n257A	DC_8A_n257A	8A	n257A	8A	n257A	Yes
DC_8A_n257D	DC_8A_n257A	8A	CA_n257D	8A	n257A	FFS (NR 2CC)
DC_8A_n257E	DC_8A_n257A	8A	CA_n257E	8A	n257A	No
DC_8A_n257F	DC_8A_n257A	8A	CA_n257F	8A	n257A	No
DC_8A_n257G	DC_8A_n257A	8A	CA_n257G	8A	n257A	Yes (NR 2CC)
DC_8A_n257H	DC_8A_n257A	8A	CA_n257H	8A	n257A	No
DC_8A_n257I	DC_8A_n257A	8A	CA_n257I	8A	n257A	No
DC_8A_n257J	DC_8A_n257A	8A	CA_n257J	8A	n257A	No
DC_8A_n257K	DC_8A_n257A	8A	CA_n257K	8A	n257A	No
DC_8A_n257L	DC_8A_n257A	8A	CA_n257L	8A	n257A	No
DC_8A_n257M	DC_8A_n257A	8A	CA_n257M	8A	n257A	No
DC_8A_n258A	DC_8A_n258A	8A	n258A	8A	n258A	Yes
DC_11A_n257A	DC_11A_n257A	11A	n257A	11A	n257A	Yes
DC_12A_n260A	DC_12A_n260A	12A	n260A	12A	n260A	Yes

EN-DC configuration	Uplink EN-DC Configuration	E-UTRA downlink configuration	NR downlink configuration	E-UTRA uplink configuration	NR uplink configuration	Applicable for protocol testing (Note 1)
DC_12A_n260G	DC_12A_n260A	12A	CA_n260G	12A	n260A	Yes (NR 2CC)
DC_12A_n260H	DC_12A_n260A	12A	CA_n260H	12A	n260A	No
DC_12A_n260I	DC_12A_n260A	12A	CA_n260I	12A	n260A	No
DC_12A_n260J	DC_12A_n260A	12A	CA_n260J	12A	n260A	No
DC_12A_n260K	DC_12A_n260A	12A	CA_n260K	12A	n260A	No
DC_12A_n260L	DC_12A_n260A	12A	CA_n260L	12A	n260A	No
DC_12A_n260M	DC_12A_n260A	12A	CA_n260M	12A	n260A	No
DC_13A_n257A	DC_13A_n257A	13A	n257A	13A	n257A	Yes
DC_13A_n260A	DC_13A_n260A	13A	n260A	13A	n260A	Yes
DC_13A_n261A	DC_13A_n261A	13A	n261A	13A	n261A	Yes
DC_14A_n260A	DC_14A_n260A	14A	n260A	14A	n260A	Yes
DC_14A_n260G	DC_14A_n260A	14A	CA_n260G	14A	n260A	Yes (NR 2CC)
	DC_14A_n260G	14A	CA_n260G	14A	CA_n260G	No
DC_14A_n260H	DC_14A_n260A	14A	CA_n260H	14A	n260A	No
	DC_14A_n260G	14A	CA_n260H	14A	CA_n260G	No
	DC_14A_n260H	14A	CA_n260H	14A	CA_n260H	No
DC_14A_n260I	DC_14A_n260A	14A	CA_n260I	14A	n260A	No
	DC_14A_n260G	14A	CA_n260I	14A	CA_n260G	No
	DC_14A_n260H	14A	CA_n260I	14A	CA_n260H	No
	DC_14A_n260I	14A	CA_n260I	14A	CA_n260I	No
DC_18A_n257A	DC_18A_n257A	18A	n257A	18A	n257A	Yes
DC_18A_n257G	DC_18A_n257A	18A	CA_n257G	18A	n257A	Yes (NR 2CC)
	DC_18A_n257G	18A	CA_n257G	18A	CA_n257G	No
DC_18A_n257I	DC_18A_n257I	18A	CA_n257I	18A	CA_n257I	No
DC_19A_n257A	DC_19A_n257A	19A	n257A	19A	n257A	Yes
DC_19A_n257D	DC_19A_n257A	19A	CA_n257D	19A	n257A	FFS (NR 2CC)
DC_19A_n257G	DC_19A_n257A	19A	CA_n257G	19A	n257A	Yes (NR 2CC)
	DC_19A_n257G	19A	CA_n257G	19A	CA_n257G	No
DC_19A_n257H	DC_19A_n257A	19A	CA_n257H	19A	n257A	No
	DC_19A_n257G	19A	CA_n257H	19A	CA_n257G	No
	DC_19A_n257H	19A	CA_n257H	19A	CA_n257H	No
DC_19A_n257I	DC_19A_n257A	19A	CA_n257I	19A	n257A	No
	DC_19A_n257G	19A	CA_n257I	19A	CA_n257G	No
	DC_19A_n257H	19A	CA_n257I	19A	CA_n257H	No
	DC_19A_n257I	19A	CA_n257I	19A	CA_n257I	No
DC_20A_n257A	DC_20A_n257A	20A	n257A	20A	n257A	Yes
DC_21A_n257A	DC_21A_n257A	21A	n257A	21A	n257A	Yes
DC_21A_n257D	DC_21A_n257A	21A	CA_n257D	21A	n257A	FFS (NR 2CC)
DC_21A_n257G	DC_21A_n257A	21A	CA_n257G	21A	n257A	Yes (NR 2CC)
	DC_21A_n257G	21A	CA_n257G	21A	CA_n257G	No

EN-DC configuration	Uplink EN-DC Configuration	E-UTRA downlink configuration	NR downlink configuration	E-UTRA uplink configuration	NR uplink configuration	Applicable for protocol testing (Note 1)
DC_21A_n257H	DC_21A_n257A	21A	CA_n257H	21A	n257A	No
	DC_21A_n257G	21A	CA_n257H	21A	CA_n257G	No
	DC_21A_n257H	21A	CA_n257H	21A	CA_n257H	No
DC_21A_n257I	DC_21A_n257A	21A	CA_n257I	21A	n257A	No
	DC_21A_n257G	21A	CA_n257I	21A	CA_n257G	No
	DC_21A_n257H	21A	CA_n257I	21A	CA_n257H	No
	DC_21A_n257I	21A	CA_n257I	21A	CA_n257I	No
DC_28A_n257A	DC_28A_n257A	28A	n257A	28A	n257A	Yes
DC_30A_n260A	DC_30A_n260A	30A	n260A	30A	n260A	Yes
DC_30A_n260G	DC_30A_n260A	30A	CA_n260G	30A	n260A	Yes (NR 2CC)
DC_30A_n260H	DC_30A_n260A	30A	CA_n260H	30A	n260A	No
DC_30A_n260I	DC_30A_n260A	30A	CA_n260I	30A	n260A	No
DC_30A_n260J	DC_30A_n260A	30A	CA_n260J	30A	n260A	No
DC_30A_n260K	DC_30A_n260A	30A	CA_n260K	30A	n260A	No
DC_30A_n260L	DC_30A_n260A	30A	CA_n260L	30A	n260A	No
DC_30A_n260M	DC_30A_n260A	30A	CA_n260M	30A	n260A	No
DC_41A_n257A	DC_41A_n257A	41A	n257A	41A	n257A	Yes
DC_42A_n257A	DC_42A_n257A	42A	n257A	42A	n257A	Yes
DC_42C_n257A	DC_42A_n257A	CA_42C	n257A	42A	n257A	No
	DC_42C_n257A	CA_42C	n257A	CA_42C	n257A	No
DC_42A_n257D	DC_42A_n257A	42A	CA_n257D	42A	n257A	FFS (NR 2CC)
DC_42C_n257D	DC_42A_n257A	CA_42C	CA_n257D	42A	n257A	No
	DC_42C_n257A	CA_42C	CA_n257D	CA_42C	n257A	No
DC_42D_n257A	DC_42A_n257A	CA_42D	n257A	42A	n257A	No
	DC_42C_n257A	CA_42D	n257A	CA_42C	n257A	No
DC_42E_n257A	DC_42A_n257A	CA_42E	n257A	42A	n257A	No
	DC_42C_n257A	CA_42E	n257A	CA_42C	n257A	No
DC_48A_n260A	DC_48A_n260A	48A	n260A	48A	n260A	Yes
DC_48C_n260A	DC_48A_n260A	CA_48C	n260A	48A	n260A	No
	DC_48C_n260A	CA_48C	n260A	CA_48C	n260A	No
DC_66A_n257A	DC_66A_n257A	66A	n257A	66A	n257A	Yes
DC_66A_n257(2A)	DC_66A_n257A	66A	CA_n257(2A)	66A	n257A	FFS (NR 2CC)
DC_66A-66A_n257A	DC_66A_n257A	CA_66A-66A	n257A	66A	n257A	No
DC_66A_n260A	DC_66A_n260A	66A	n260A	66A	n260A	Yes
DC_66A_n260D	DC_66A_n260A	66A	CA_n260D	66A	n260A	FFS (NR 2CC)
DC_66A_n260E	DC_66A_n260A	66A	CA_n260E	66A	n260A	No
DC_66A_n260F	DC_66A_n260A	66A	CA_n260F	66A	n260A	No
DC_66A_n260G	DC_66A_n260A	66A	CA_n260G	66A	n260A	Yes (NR 2CC)
DC_66A_n260H	DC_66A_n260A	66A	CA_n260H	66A	n260A	No
DC_66A_n260I	DC_66A_n260A	66A	CA_n260I	66A	n260A	No

EN-DC configuration	Uplink EN-DC Configuration	E-UTRA downlink configuration	NR downlink configuration	E-UTRA uplink configuration	NR uplink configuration	Applicable for protocol testing (Note 1)
DC_66A_n260J	DC_66A_n260A	66A	CA_n260J	66A	n260A	No
DC_66A_n260K	DC_66A_n260A	66A	CA_n260K	66A	n260A	No
DC_66A_n260L	DC_66A_n260A	66A	CA_n260L	66A	n260A	No
DC_66A_n260M	DC_66A_n260A	66A	CA_n260M	66A	n260A	No
DC_66A_n260O	DC_66A_n260A	66A	CA_n260O	66A	n260A	FFS (NR 2CC)
DC_66A_n260(2A)	DC_66A_n260A	66A	CA_n260(2A)	66A	n260A	FFS (NR 2CC)
DC_66A_n260(3A)	DC_66A_n260A	66A	CA_n260(3A)	66A	n260A	No
DC_66A_n260(4A)	DC_66A_n260A	66A	CA_n260(4A)	66A	n260A	No
DC_66A_n260(A-I)	DC_66A_n260A	66A	CA_n260(A-I)	66A	n260A	No
DC_66A_n260(G-I)	DC_66A_n260A	66A	CA_n260(G-I)	66A	n260A	No
DC_66A-66A_n260A	DC_66A_n260A	CA_66A-66A	n260A	66A	n260A	No
DC_66A-66A_n260G	DC_66A_n260A	CA_66A-66A	CA_n260G	66A	n260A	No
DC_66A-66A_n260H	DC_66A_n260A	CA_66A-66A	CA_n260H	66A	n260A	No
DC_66A-66A_n260I	DC_66A_n260A	CA_66A-66A	CA_n260I	66A	n260A	No
DC_66A-66A_n260J	DC_66A_n260A	CA_66A-66A	CA_n260J	66A	n260A	No
DC_66A-66A_n260K	DC_66A_n260A	CA_66A-66A	CA_n260K	66A	n260A	No
DC_66A-66A_n260L	DC_66A_n260A	CA_66A-66A	CA_n260L	66A	n260A	No
DC_66A-66A_n260M	DC_66A_n260A	CA_66A-66A	CA_n260M	66A	n260A	No
DC_66A_n261A	DC_66A_n261A	66A	n261A	66A	n261A	Yes
DC_66A_n261D	DC_66A_n261A	66A	CA_n261D	66A	n261A	FFS (NR 2CC)
DC_66A_n261E	DC_66A_n261A	66A	CA_n261E	66A	n261A	No
DC_66A_n261F	DC_66A_n261A	66A	CA_n261F	66A	n261A	No
DC_66A_n261G	DC_66A_n261A	66A	CA_n261G	66A	n261A	Yes (NR 2CC)
DC_66A_n261H	DC_66A_n261A	66A	CA_n261H	66A	n261A	No
DC_66A_n261I	DC_66A_n261A	66A	CA_n261I	66A	n261A	No
DC_66A_n261J	DC_66A_n261A	66A	CA_n261J	66A	n261A	No
DC_66A_n261K	DC_66A_n261A	66A	CA_n261K	66A	n261A	No
DC_66A_n261L	DC_66A_n261A	66A	CA_n261L	66A	n261A	No
DC_66A_n261M	DC_66A_n261A	66A	CA_n261M	66A	n261A	No
DC_66A_n261O	DC_66A_n261A	66A	CA_n261O	66A	n261A	FFS (NR 2CC)
DC_66A_n261P	DC_66A_n261A	66A	CA_n261P	66A	n261A	No
DC_66A_n261Q	DC_66A_n261A	66A	CA_n261Q	66A	n261A	No
DC_66A_n261(2A)	DC_66A_n261A	66A	CA_n261(2A)	66A	n261A	Yes (NR 2CC)
DC_66A_n261(3A)	DC_66A_n261A	66A	CA_n261(3A)	66A	n261A	No
DC_66A_n261(4A)	DC_66A_n261A	66A	CA_n261(4A)	66A	n261A	No
DC_66A_n261(D-G)	DC_66A_n261A	66A	CA_n261(D-G)	66A	n261A	No
DC_66A_n261(D-H)	DC_66A_n261A	66A	CA_n261(D-H)	66A	n261A	No
DC_66A_n261(D-I)	DC_66A_n261A	66A	CA_n261(D-I)	66A	n261A	No
DC_66A_n261(D-O)	DC_66A_n261A	66A	CA_n261(D-O)	66A	n261A	No
DC_66A_n261(D-P)	DC_66A_n261A	66A	CA_n261(D-P)	66A	n261A	No

EN-DC configuration	Uplink EN-DC Configuration	E-UTRA downlink configuration	NR downlink configuration	E-UTRA uplink configuration	NR uplink configuration	Applicable for protocol testing (Note 1)
DC_66A_n261(D-Q)	DC_66A_n261A	66A	CA_n261(D-Q)	66A	n261A	No
DC_66A_n261(E-O)	DC_66A_n261A	66A	CA_n261(E-O)	66A	n261A	No
DC_66A_n261(E-P)	DC_66A_n261A	66A	CA_n261(E-P)	66A	n261A	No
DC_66A_n261(E-Q)	DC_66A_n261A	66A	CA_n261(E-Q)	66A	n261A	No
Note 1: Protocol testing is limited to EN-DC configurations with 1 CC E-UTRA and 1CC or 2CC NR configurations.						

4.3.1.5.1.3 Inter-band EN-DC configurations including FR2 (three bands)

Table 4.3.1.5.1.3-1: Inter-band EN-DC configurations including FR2 (three bands)

EN-DC configuration	Uplink EN-DC Configuration	E-UTRA downlink configuration	NR downlink configuration	E-UTRA uplink configuration	NR uplink configuration	Applicable for protocol testing (Note 1)

	DC_YA_nZA			YA	nZA	
DC_XA-YA_nZG	DC_XA_nZA	CA_XA-YA	CA_nZG	XA	nZA	No
	DC_XA_nZG			XA	CA_nZG	
	DC_YA_nZA			YA	nZA	
	DC_YA_nZG			YA	CA_nZG	
DC_XA-YA_nZH	DC_XA_nZA	CA_XA-YA	CA_nZH	XA	nZA	No
	DC_XA_nZG			XA	CA_nZG	
	DC_XA_nZH			XA	CA_nZH	
	DC_YA_nZA			YA	nZA	
	DC_YA_nZG			YA	CA_nZG	
	DC_YA_nZH			YA	CA_nZH	
DC_XA-YA_nZI	DC_XA_nZA	CA_XA-YA	CA_nZI	XA	nZA	No
	DC_XA_nZG			XA	CA_nZG	
	DC_XA_nZH			XA	CA_nZH	
	DC_XA_nZI			XA	CA_nZI	
	DC_YA_nZA			YA	nZA	
	DC_YA_nZG			YA	CA_nZG	
	DC_YA_nZH			YA	CA_nZH	
	DC_YA_nZI			YA	CA_nZI	
DC_XA-YC_nZA	DC_XA_nZA	CA_XA-YC	nZA	XA	nZA	No
	DC_YA_nZA			YA	nZA	
DC_XA-YD_nZA	DC_XA_nZA	CA_XA-YD	nZA	XA	nZA	No
	DC_YA_nZA			YA	nZA	
DC_XA-YE_nZA	DC_XA_nZA	CA_XA-YE	nZA	XA	nZA	No
	DC_YA_nZA			YA	nZA	
DC_XA-XA-YA_nZA	DC_XA_nZA	CA_XA-XA-YA	nZA	XA	nZA	No
	DC_YA_nZA			YA	nZA	
DC_XA-XA-YA_nZG	DC_XA_nZA	CA_XA-XA-YA	CA_nZG	XA	nZA	No
	DC_XA_nZG			XA	CA_nZG	
	DC_YA_nZA			YA	nZA	
	DC_YA_nZG			YA	CA_nZG	
DC_XA-XA-YA_nZH	DC_XA_nZA	CA_XA-XA-YA	CA_nZH	XA	nZA	No
	DC_XA_nZG			XA	CA_nZG	
	DC_XA_nZH			XA	CA_nZH	
	DC_YA_nZA			YA	nZA	
	DC_YA_nZG			YA	CA_nZG	
	DC_YA_nZH			YA	CA_nZH	
DC_XA-XA-YA_nZI	DC_XA_nZA	CA_XA-XA-YA	CA_nZI	XA	nZA	No
	DC_XA_nZG			XA	CA_nZG	
	DC_XA_nZH			XA	CA_nZH	
	DC_XA_nZI			XA	CA_nZI	
	DC_YA_nZA			YA	nZA	
	DC_YA_nZG			YA	CA_nZG	
	DC_YA_nZH			YA	CA_nZH	
	DC_YA_nZI			YA	CA_nZI	
DC_XA-YA-YA_nZA	DC_XA_nZA	CA_XA-YA-YA	nZA	XA	nZA	No
	DC_YA_nZA			YA	nZA	
DC_XA-YA-YA_nZG	DC_XA_nZA	CA_XA-YA-YA	CA_nZG	XA	nZA	No
	DC_XA_nZG			XA	CA_nZG	
	DC_YA_nZA			YA	nZA	
	DC_YA_nZG			YA	CA_nZG	
DC_XA-YA-YA_nZH	DC_XA_nZA	CA_XA-YA-YA	CA_nZH	XA	nZA	No
	DC_YA_nZG			YA	CA_nZG	

DC_1A-3A_n257G	DC_1A_n257A	CA_1A-3A	CA_n257G	1A	n257A	No
	DC_1A_n257D	CA_1A-3A	CA_n257G	1A	CA_n257D	No
	DC_3A_n257A	CA_1A-3A	CA_n257G	3A	n257A	No
	DC_3A_n257D	CA_1A-3A	CA_n257G	3A	CA_n257D	No
	DC_3A_n257G	CA_1A-3A	CA_n257G	3A	CA_n257G	No
DC_1A-3A_n257H	DC_1A_n257A	CA_1A-3A	CA_n257H	1A	n257A	No
	DC_1A_n257D	CA_1A-3A	CA_n257H	1A	CA_n257D	No
	DC_3A_n257A	CA_1A-3A	CA_n257H	3A	n257A	No
	DC_3A_n257D	CA_1A-3A	CA_n257H	3A	CA_n257D	No
	DC_3A_n257G	CA_1A-3A	CA_n257H	3A	CA_n257G	No
	DC_3A_n257H	CA_1A-3A	CA_n257H	3A	CA_n257H	No
DC_1A-3A_n257I	DC_1A_n257A	CA_1A-3A	CA_n257I	1A	n257A	No
	DC_1A_n257D	CA_1A-3A	CA_n257I	1A	CA_n257D	No
	DC_3A_n257A	CA_1A-3A	CA_n257I	3A	n257A	No
	DC_3A_n257D	CA_1A-3A	CA_n257I	3A	CA_n257D	No
	DC_3A_n257G	CA_1A-3A	CA_n257I	3A	CA_n257G	No
	DC_3A_n257H	CA_1A-3A	CA_n257I	3A	CA_n257H	No
	DC_3A_n257I	CA_1A-3A	CA_n257I	3A	CA_n257I	No
DC_1A-19A_n257G	DC_1A_n257A	CA_1A-19A	CA_n257G	1A	n257A	No
	DC_1A_n257D	CA_1A-19A	CA_n257G	1A	CA_n257D	No
	DC_1A_n257G	CA_1A-19A	CA_n257G	1A	CA_n257G	No
	DC_19A_n257A	CA_1A-19A	CA_n257G	19A	n257A	No
	DC_19A_n257D	CA_1A-19A	CA_n257G	19A	CA_n257D	No
DC_1A-19A_n257H	DC_1A_n257A	CA_1A-19A	CA_n257H	1A	n257A	No
	DC_1A_n257D	CA_1A-19A	CA_n257H	1A	CA_n257D	No
	DC_1A_n257G	CA_1A-19A	CA_n257H	1A	CA_n257G	No
	DC_1A_n257H	CA_1A-19A	CA_n257H	1A	CA_n257H	No
	DC_19A_n257A	CA_1A-19A	CA_n257H	19A	n257A	No
	DC_19A_n257D	CA_1A-19A	CA_n257H	19A	CA_n257D	No
DC_1A-19A_n257I	DC_1A_n257A	CA_1A-19A	CA_n257I	1A	n257A	No
	DC_1A_n257D	CA_1A-19A	CA_n257I	1A	CA_n257D	No
	DC_1A_n257G	CA_1A-19A	CA_n257I	1A	CA_n257G	No
	DC_1A_n257H	CA_1A-19A	CA_n257I	1A	CA_n257H	No
	DC_1A_n257I	CA_1A-19A	CA_n257I	1A	CA_n257I	No
	DC_19A_n257A	CA_1A-19A	CA_n257I	19A	n257A	No
	DC_19A_n257D	CA_1A-19A	CA_n257I	19A	CA_n257D	No
DC_1A-42A_n257G	DC_1A_n257A	CA_1A-42A	CA_n257G	1A	n257A	No
	DC_1A_n257D	CA_1A-42A	CA_n257G	1A	CA_n257D	No
	DC_1A_n257A	CA_1A-42A	CA_n257G	1A	n257A	No
	DC_1A_n257G	CA_1A-42A	CA_n257G	1A	CA_n257G	No
	DC_42A_n257A	CA_1A-42A	CA_n257G	42A	n257A	No
DC_1A-42A_n257H	DC_42A_n257D	CA_1A-42A	CA_n257G	42A	CA_n257D	No
	DC_1A_n257A	CA_1A-42A	CA_n257H	1A	n257A	No
	DC_1A_n257D	CA_1A-42A	CA_n257H	1A	CA_n257D	No

		DC 1A n257A	CA 1A-42A	CA n257H	1A	n257A	No
		DC 1A n257G	CA 1A-42A	CA n257H	1A	CA n257G	No
		DC 1A n257H	CA 1A-42A	CA n257H	1A	CA n257H	No
		DC 42A n257A	CA 1A-42A	CA n257H	42A	n257A	No
DC_1A-42A_n257I		DC 42A n257D	CA 1A-42A	CA n257H	42A	CA n257D	No
		DC 1A n257A	CA 1A-42A	CA n257I	1A	n257A	No
		DC 1A n257D	CA 1A-42A	CA n257I	1A	CA n257D	No
		DC 1A n257A	CA 1A-42A	CA n257I	1A	n257A	No
		DC 1A n257G	CA 1A-42A	CA n257I	1A	CA n257G	No
		DC 1A n257H	CA 1A-42A	CA n257I	1A	CA n257H	No
		DC 1A n257I	CA 1A-42A	CA n257I	1A	CA n257I	No
		DC 42A n257A	CA 1A-42A	CA n257I	42A	n257A	No
DC_1A-42E_n257G		DC 42A n257D	CA 1A-42A	CA n257I	42A	CA n257D	No
		DC 1A n257A	CA 1A-42E	CA n257G	1A	n257A	No
		DC 1A n257D	CA 1A-42E	CA n257G	1A	CA n257D	No
		DC 1A n257A	CA 1A-42E	CA n257G	1A	n257A	No
		DC 1A n257G	CA 1A-42E	CA n257G	1A	CA n257G	No
		DC 42A n257A	CA 1A-42E	CA n257G	42A	n257A	No
DC_1A-42E_n257H		DC 42A n257D	CA 1A-42E	CA n257G	42A	CA n257D	No
		DC 1A n257A	CA 1A-42E	CA n257H	1A	n257A	No
		DC 1A n257D	CA 1A-42E	CA n257H	1A	CA n257D	No
		DC 1A n257A	CA 1A-42E	CA n257H	1A	n257A	No
		DC 1A n257G	CA 1A-42E	CA n257H	1A	CA n257G	No
		DC 1A n257H	CA 1A-42E	CA n257H	1A	CA n257H	No
		DC 42A n257A	CA 1A-42E	CA n257H	42A	n257A	No
		DC 42A n257D	CA 1A-42E	CA n257H	42A	CA n257D	No
DC_1A-42E_n257I		DC 1A n257A	CA 1A-42E	CA n257I	1A	n257A	No
		DC 1A n257D	CA 1A-42E	CA n257I	1A	CA n257D	No
		DC 1A n257A	CA 1A-42E	CA n257I	1A	n257A	No
		DC 1A n257G	CA 1A-42E	CA n257I	1A	CA n257G	No
		DC 1A n257H	CA 1A-42E	CA n257I	1A	CA n257H	No
		DC 1A n257I	CA 1A-42E	CA n257I	1A	CA n257I	No
		DC 42A n257A	CA 1A-42E	CA n257I	42A	n257A	No
		DC 42A n257D	CA 1A-42E	CA n257I	42A	CA n257D	No
DC_3A-19A_n257G		DC 3A n257A	CA 3A-19A	CA n257G	3A	n257A	No
		DC 3A n257D	CA 3A-19A	CA n257G	3A	CA n257D	No
		DC 3A n257G	CA 3A-19A	CA n257G	3A	CA n257G	No
		DC 19A n257A	CA 3A-19A	CA n257G	19A	n257A	No
		DC 19A n257D	CA 3A-19A	CA n257G	19A	CA n257D	No
DC_3A-19A_n257H		DC 3A n257A	CA 3A-19A	CA n257H	3A	n257A	No
		DC 3A n257D	CA 3A-19A	CA n257H	3A	CA n257D	No
		DC 3A n257G	CA 3A-19A	CA n257H	3A	CA n257G	No
		DC 3A n257H	CA 3A-19A	CA n257H	3A	CA n257H	No
		DC 19A n257A	CA 3A-19A	CA n257H	19A	n257A	No

DC_3A-19A_n257I	DC_19A_n257D	CA_3A-19A	CA_n257H	19A	CA_n257D	No
	DC_3A_n257A	CA_3A-19A	CA_n257I	3A	n257A	No
	DC_3A_n257D	CA_3A-19A	CA_n257I	3A	CA_n257D	No
	DC_3A_n257G	CA_3A-19A	CA_n257I	3A	CA_n257G	No
	DC_3A_n257H	CA_3A-19A	CA_n257I	3A	CA_n257H	No
	DC_3A_n257I	CA_3A-19A	CA_n257I	3A	CA_n257I	No
	DC_19A_n257A	CA_3A-19A	CA_n257I	19A	n257A	No
DC_3A-42A_n257G	DC_19A_n257D	CA_3A-19A	CA_n257I	19A	CA_n257D	No
	DC_3A_n257A	CA_3A-42A	CA_n257G	3A	n257A	No
	DC_3A_n257D	CA_3A-42A	CA_n257G	3A	CA_n257D	No
	DC_3A_n257G	CA_3A-42A	CA_n257G	3A	CA_n257G	No
	DC_42A_n257A	CA_3A-42A	CA_n257G	42A	n257A	No
DC_3A-42A_n257H	DC_42A_n257D	CA_3A-42A	CA_n257G	42A	CA_n257D	No
	DC_3A_n257A	CA_3A-42A	CA_n257H	3A	n257A	No
	DC_3A_n257D	CA_3A-42A	CA_n257H	3A	CA_n257D	No
	DC_3A_n257G	CA_3A-42A	CA_n257H	3A	CA_n257G	No
	DC_3A_n257H	CA_3A-42A	CA_n257H	3A	CA_n257H	No
	DC_42A_n257A	CA_3A-42A	CA_n257H	42A	n257A	No
DC_3A-42A_n257I	DC_42A_n257D	CA_3A-42A	CA_n257H	42A	CA_n257D	No
	DC_3A_n257A	CA_3A-42A	CA_n257I	3A	n257A	No
	DC_3A_n257D	CA_3A-42A	CA_n257I	3A	CA_n257D	No
	DC_3A_n257G	CA_3A-42A	CA_n257I	3A	CA_n257G	No
	DC_3A_n257H	CA_3A-42A	CA_n257I	3A	CA_n257H	No
	DC_3A_n257I	CA_3A-42A	CA_n257I	3A	CA_n257I	No
	DC_42A_n257A	CA_3A-42A	CA_n257I	42A	n257A	No
DC_3A-42C_n257G	DC_42A_n257D	CA_3A-42A	CA_n257I	42A	CA_n257D	No
	DC_3A_n257A	CA_3A-42C	CA_n257G	3A	n257A	No
	DC_3A_n257D	CA_3A-42C	CA_n257G	3A	CA_n257D	No
	DC_3A_n257G	CA_3A-42C	CA_n257G	3A	CA_n257G	No
	DC_42A_n257A	CA_3A-42C	CA_n257G	42A	n257A	No
DC_3A-42C_n257H	DC_42A_n257D	CA_3A-42C	CA_n257G	42A	CA_n257D	No
	DC_3A_n257A	CA_3A-42C	CA_n257H	3A	n257A	No
	DC_3A_n257D	CA_3A-42C	CA_n257H	3A	CA_n257D	No
	DC_3A_n257G	CA_3A-42C	CA_n257H	3A	CA_n257G	No
	DC_3A_n257H	CA_3A-42C	CA_n257H	3A	CA_n257H	No
	DC_42A_n257A	CA_3A-42C	CA_n257H	42A	n257A	No
DC_3A-42C_n257I	DC_42A_n257D	CA_3A-42C	CA_n257H	42A	CA_n257D	No
	DC_3A_n257A	CA_3A-42C	CA_n257I	3A	n257A	No
	DC_3A_n257D	CA_3A-42C	CA_n257I	3A	CA_n257D	No
	DC_3A_n257G	CA_3A-42C	CA_n257I	3A	CA_n257G	No
	DC_3A_n257H	CA_3A-42C	CA_n257I	3A	CA_n257H	No
	DC_3A_n257I	CA_3A-42C	CA_n257I	3A	CA_n257I	No
	DC_42A_n257A	CA_3A-42C	CA_n257I	42A	n257A	No
	DC_42A_n257D	CA_3A-42C	CA_n257I	42A	CA_n257D	No

DC_3A-42D_n257G	DC_3A_n257A	CA_3A-42D	CA_n257G	3A	n257A	No
	DC_3A_n257D	CA_3A-42D	CA_n257G	3A	CA_n257D	No
	DC_3A_n257G	CA_3A-42D	CA_n257G	3A	CA_n257G	No
	DC_42A_n257A	CA_3A-42D	CA_n257G	42A	n257A	No
	DC_42A_n257D	CA_3A-42D	CA_n257G	42A	CA_n257D	No
DC_3A-42D_n257H	DC_3A_n257A	CA_3A-42D	CA_n257H	3A	n257A	No
	DC_3A_n257D	CA_3A-42D	CA_n257H	3A	CA_n257D	No
	DC_3A_n257G	CA_3A-42D	CA_n257H	3A	CA_n257G	No
	DC_3A_n257H	CA_3A-42D	CA_n257H	3A	CA_n257H	No
	DC_42A_n257A	CA_3A-42D	CA_n257H	42A	n257A	No
	DC_42A_n257D	CA_3A-42D	CA_n257H	42A	CA_n257D	No
DC_3A-42D_n257I	DC_3A_n257A	CA_3A-42D	CA_n257I	3A	n257A	No
	DC_3A_n257D	CA_3A-42D	CA_n257I	3A	CA_n257D	No
	DC_3A_n257G	CA_3A-42D	CA_n257I	3A	CA_n257G	No
	DC_3A_n257H	CA_3A-42D	CA_n257I	3A	CA_n257H	No
	DC_3A_n257I	CA_3A-42D	CA_n257I	3A	CA_n257I	No
	DC_42A_n257A	CA_3A-42D	CA_n257I	42A	n257A	No
	DC_42A_n257D	CA_3A-42D	CA_n257I	42A	CA_n257D	No
DC_3A-42E_n257G	DC_3A_n257A	CA_3A-42E	CA_n257G	3A	n257A	No
	DC_3A_n257D	CA_3A-42E	CA_n257G	3A	CA_n257D	No
	DC_3A_n257G	CA_3A-42E	CA_n257G	3A	CA_n257G	No
	DC_42A_n257A	CA_3A-42E	CA_n257G	42A	n257A	No
	DC_42A_n257D	CA_3A-42E	CA_n257G	42A	CA_n257D	No
DC_3A-42E_n257H	DC_3A_n257A	CA_3A-42E	CA_n257H	3A	n257A	No
	DC_3A_n257D	CA_3A-42E	CA_n257H	3A	CA_n257D	No
	DC_3A_n257G	CA_3A-42E	CA_n257H	3A	CA_n257G	No
	DC_3A_n257H	CA_3A-42E	CA_n257H	3A	CA_n257H	No
	DC_42A_n257A	CA_3A-42E	CA_n257H	42A	n257A	No
	DC_42A_n257D	CA_3A-42E	CA_n257H	42A	CA_n257D	No
DC_3A-42E_n257I	DC_3A_n257A	CA_3A-42E	CA_n257I	3A	n257A	No
	DC_3A_n257D	CA_3A-42E	CA_n257I	3A	CA_n257D	No
	DC_3A_n257G	CA_3A-42E	CA_n257I	3A	CA_n257G	No
	DC_3A_n257H	CA_3A-42E	CA_n257I	3A	CA_n257H	No
	DC_3A_n257I	CA_3A-42E	CA_n257I	3A	CA_n257I	No
	DC_42A_n257A	CA_3A-42E	CA_n257I	42A	n257A	No
	DC_42A_n257D	CA_3A-42E	CA_n257I	42A	CA_n257D	No
DC_19A-21A_n257G	DC_19A_n257A	CA_19A-21A	CA_n257G	19A	n257A	No
	DC_19A_n257D	CA_19A-21A	CA_n257G	19A	CA_n257D	No
	DC_21A_n257A	CA_19A-21A	CA_n257G	21A	n257A	No
	DC_21A_n257D	CA_19A-21A	CA_n257G	21A	CA_n257D	No
	DC_21A_n257G	CA_19A-21A	CA_n257G	21A	CA_n257G	No
DC_19A-21A_n257H	DC_19A_n257A	CA_19A-21A	CA_n257H	19A	n257A	No
	DC_19A_n257D	CA_19A-21A	CA_n257H	19A	CA_n257D	No
	DC_21A_n257A	CA_19A-21A	CA_n257H	21A	n257A	No

		DC 21A n257D	CA 19A-21A	CA n257H	21A	CA n257D	No
		DC 21A n257G	CA 19A-21A	CA n257H	21A	CA n257G	No
		DC 21A n257H	CA 19A-21A	CA n257H	21A	CA n257H	No
		DC 21A n257I	CA 19A-21A	CA n257I	21A	CA n257I	No
DC_19A-21A_n257I		DC 19A n257A	CA 19A-21A	CA n257I	19A	n257A	No
		DC 19A n257D	CA 19A-21A	CA n257I	19A	CA n257D	No
		DC 21A n257A	CA 19A-21A	CA n257I	21A	n257A	No
		DC 21A n257D	CA 19A-21A	CA n257I	21A	CA n257D	No
		DC 21A n257G	CA 19A-21A	CA n257I	21A	CA n257G	No
		DC 21A n257H	CA 19A-21A	CA n257I	21A	CA n257H	No
		DC 21A n257I	CA 19A-21A	CA n257I	21A	CA n257I	No
		DC 19A n257A	CA 19A-42A	CA n257G	19A	n257A	No
DC_19A-42A_n257G		DC 19A n257D	CA 19A-42A	CA n257G	19A	CA n257D	No
		DC 19A n257G	CA 19A-42A	CA n257G	19A	CA n257G	No
		DC 42A n257A	CA 19A-42A	CA n257G	42A	n257A	No
		DC 42A n257D	CA 19A-42A	CA n257G	42A	CA n257D	No
		DC 42A n257G	CA 19A-42A	CA n257G	42A	CA n257G	No
		DC 19A n257A	CA 19A-42A	CA n257H	19A	n257A	No
		DC 19A n257D	CA 19A-42A	CA n257H	19A	CA n257D	No
		DC 19A n257G	CA 19A-42A	CA n257H	19A	CA n257G	No
DC_19A-42A_n257H		DC 19A n257H	CA 19A-42A	CA n257H	19A	CA n257H	No
		DC 42A n257A	CA 19A-42A	CA n257H	42A	n257A	No
		DC 42A n257D	CA 19A-42A	CA n257H	42A	CA n257D	No
		DC 42A n257G	CA 19A-42A	CA n257H	42A	CA n257G	No
		DC 42A n257H	CA 19A-42A	CA n257H	42A	CA n257H	No
		DC 19A n257A	CA 19A-42A	CA n257I	19A	n257A	No
		DC 19A n257D	CA 19A-42A	CA n257I	19A	CA n257D	No
		DC 19A n257G	CA 19A-42A	CA n257I	19A	CA n257G	No
DC_19A-42A_n257I		DC 19A n257H	CA 19A-42A	CA n257I	19A	CA n257H	No
		DC 42A n257A	CA 19A-42A	CA n257I	42A	n257A	No
		DC 42A n257D	CA 19A-42A	CA n257I	42A	CA n257D	No
		DC 42A n257G	CA 19A-42A	CA n257I	42A	CA n257G	No
		DC 42A n257H	CA 19A-42A	CA n257I	42A	CA n257H	No
		DC 42A n257I	CA 19A-42A	CA n257I	42A	CA n257I	No
		DC 19A n257A	CA 19A-42C	CA n257G	19A	n257A	No
		DC 19A n257D	CA 19A-42C	CA n257G	19A	CA n257D	No
DC_19A-42C_n257G		DC 19A n257G	CA 19A-42C	CA n257G	19A	CA n257G	No
		DC 42A n257A	CA 19A-42C	CA n257G	42A	n257A	No
		DC 42A n257D	CA 19A-42C	CA n257G	42A	CA n257D	No
		DC 42A n257G	CA 19A-42C	CA n257G	42A	CA n257G	No
		DC 19A n257A	CA 19A-42C	CA n257H	19A	n257A	No
		DC 19A n257D	CA 19A-42C	CA n257H	19A	CA n257D	No
		DC 19A n257G	CA 19A-42C	CA n257H	19A	CA n257G	No
		DC 19A n257H	CA 19A-42C	CA n257H	19A	CA n257H	No

		DC 42A n257A	CA 19A-42C	CA n257H	42A	n257A	No
		DC 42A n257D	CA 19A-42C	CA n257H	42A	CA n257D	No
		DC 42A n257G	CA 19A-42C	CA n257H	42A	CA n257G	No
		DC 42A n257H	CA 19A-42C	CA n257H	42A	CA n257H	No
	DC_19A-42C_n257I	DC 19A n257A	CA 19A-42C	CA n257I	19A	n257A	No
		DC 19A n257D	CA 19A-42C	CA n257I	19A	CA n257D	No
		DC 19A n257G	CA 19A-42C	CA n257I	19A	CA n257G	No
		DC 19A n257H	CA 19A-42C	CA n257I	19A	CA n257H	No
		DC 19A n257I	CA 19A-42C	CA n257I	19A	CA n257I	No
		DC 42A n257A	CA 19A-42C	CA n257I	42A	n257A	No
		DC 42A n257D	CA 19A-42C	CA n257I	42A	CA n257D	No
		DC 42A n257G	CA 19A-42C	CA n257I	42A	CA n257G	No
		DC 42A n257H	CA 19A-42C	CA n257I	42A	CA n257H	No
		DC 42A n257I	CA 19A-42C	CA n257I	42A	CA n257I	No
	DC_21A-42A_n257G	DC 21A n257A	CA 21A-42A	CA n257G	21A	n257A	No
		DC 21A n257D	CA 21A-42A	CA n257G	21A	CA n257D	No
		DC 42A n257A	CA 21A-42A	CA n257G	42A	n257A	No
		DC 42A n257D	CA 21A-42A	CA n257G	42A	CA n257D	No
		DC 21A n257G	CA 21A-42A	CA n257G	21A	CA n257G	No
	DC_21A-42A_n257H	DC 21A n257A	CA 21A-42A	CA n257H	21A	n257A	No
		DC 21A n257D	CA 21A-42A	CA n257H	21A	CA n257D	No
		DC 42A n257A	CA 21A-42A	CA n257H	42A	n257A	No
		DC 42A n257D	CA 21A-42A	CA n257H	42A	CA n257D	No
		DC 21A n257G	CA 21A-42A	CA n257H	21A	CA n257G	No
		DC 21A n257H	CA 21A-42A	CA n257H	21A	CA n257H	No
	DC_21A-42A_n257I	DC 21A n257A	CA 21A-42A	CA n257I	21A	n257A	No
		DC 21A n257D	CA 21A-42A	CA n257I	21A	CA n257D	No
		DC 42A n257A	CA 21A-42A	CA n257I	42A	n257A	No
		DC 42A n257D	CA 21A-42A	CA n257I	42A	CA n257D	No
		DC 21A n257G	CA 21A-42A	CA n257I	21A	CA n257G	No
		DC 21A n257H	CA 21A-42A	CA n257I	21A	CA n257H	No
		DC 21A n257I	CA 21A-42A	CA n257I	21A	CA n257I	No
	DC_21A-42C_n257G	DC 21A n257A	CA 21A-42C	CA n257G	21A	n257A	No
		DC 21A n257D	CA 21A-42C	CA n257G	21A	CA n257D	No
		DC 42A n257A	CA 21A-42C	CA n257G	42A	n257A	No
		DC 42A n257D	CA 21A-42C	CA n257G	42A	CA n257D	No
		DC 21A n257G	CA 21A-42C	CA n257G	21A	CA n257G	No
	DC_21A-42C_n257H	DC 21A n257A	CA 21A-42C	CA n257H	21A	n257A	No
		DC 21A n257D	CA 21A-42C	CA n257H	21A	CA n257D	No
		DC 42A n257A	CA 21A-42C	CA n257H	42A	n257A	No
		DC 42A n257D	CA 21A-42C	CA n257H	42A	CA n257D	No
		DC 21A n257G	CA 21A-42C	CA n257H	21A	CA n257G	No
		DC 21A n257H	CA 21A-42C	CA n257H	21A	CA n257H	No
	DC_21A-42C_n257I	DC 21A n257A	CA 21A-42C	CA n257I	21A	n257A	No

	DC 21A n257D	CA 21A-42C	CA n257I	21A	CA n257D	No
	DC 42A n257A	CA 21A-42C	CA n257I	42A	n257A	No
	DC 42A n257D	CA 21A-42C	CA n257I	42A	CA n257D	No
	DC 21A n257G	CA 21A-42C	CA n257I	21A	CA n257G	No
	DC 21A n257H	CA 21A-42C	CA n257I	21A	CA n257H	No
	DC 21A n257I	CA 21A-42C	CA n257I	21A	CA n257I	No
Note 1: Protocol testing is limited to EN-DC configurations with 1 CC E-UTRA and 1CC or 2CC NR configurations. Note 2: The specified NR inter-band EN-DC configurations including FR2 can be found in TS 38.521-3 [16] clause 5.5B.5. The general rule for deciding test configurations applies if no explicit value defined. The general rule is that the inter-band EN-DC configurations including FR2 are represented by symbolic DC configurations using band X, Y and nZ as the different bands in the DC Configuration. E.g. DC_XA-YA_nZG could be representing the configuraion DC_1A-21A_n257G by interpreting of X=1, Y=21 and nZ=n257. Any DC configurations not applying the general rule could be listed separately.						

4.3.1.5.1.4

Inter-band EN-DC configurations including FR2 (four bands)

Table 4.3.1.5.1.4-1: Inter-band EN-DC configurations including FR2 (four bands)

EN-DC Configuration	Uplink EN-DC configuration	E-UTRA downlink configuration	NR downlink configuration	E-UTRA uplink configuration	NR uplink configuration	Applicable for protocol testing (Note 1)
DC_XA-YA-ZA_nWA	DC_XA_nWA	CA_XA-YA-ZA	nWA	XA	nWA	No
	DC_YA_nWA			YA	nWA	
	DC_ZA_nWA			ZA	nWA	
DC_XA-YA-ZA_nWG	DC_XA_nWA	CA_XA-YA-ZA	CA_nWG	XA	nWA	No
	DC_XA_nWG			XA	CA_nWG	
	DC_YA_nWA			YA	nWA	
	DC_YA_nWG			YA	CA_nWG	
	DC_ZA_nWA			ZA	nWA	
	DC_ZA_nWG			ZA	CA_nWG	
DC_XA-YA-ZA_nWH	DC_XA_nWA	CA_XA-YA-ZA	CA_nWH	XA	nWA	No
	DC_XA_nWG			XA	CA_nWG	
	DC_XA_nWH			XA	CA_nWH	
	DC_YA_nWA			YA	nWA	
	DC_YA_nWG			YA	CA_nWG	
	DC_YA_nWH			YA	CA_nWH	
	DC_ZA_nWA			ZA	nWA	
	DC_ZA_nWG			ZA	CA_nWG	
	DC_ZA_nWH			ZA	CA_nWH	
DC_XA-YA-ZA_nWI	DC_XA_nWA	CA_XA-YA-ZA	CA_nWI	XA	nWA	No
	DC_XA_nWG			XA	CA_nWG	
	DC_XA_nWH			XA	CA_nWH	
	DC_XA_nWI			XA	CA_nWI	
	DC_YA_nWA			YA	nWA	
	DC_YA_nWG			YA	CA_nWG	
	DC_YA_nWH			YA	CA_nWH	
	DC_YA_nWI			YA	CA_nWI	
	DC_ZA_nWA			ZA	nWA	
	DC_ZA_nWG			ZA	CA_nWG	
	DC_ZA_nWH			ZA	CA_nWH	
	DC_ZA_nWI			ZA	CA_nWI	
DC_XA-YA-ZC_nWA	DC_XA_nWA	CA_XA-YA-ZC	nWA	XA	nWA	No
	DC_YA_nWA			YA	nWA	
	DC_ZA_nWA			ZA	nWA	
DC_XA-YA-ZC_nWG	DC_XA_nWA	CA_XA-YA-ZC	CA_nWG	XA	nWA	No
	DC_XA_nWG			XA	CA_nWG	
	DC_YA_nWA			YA	nWA	
	DC_YA_nWG			YA	CA_nWG	
	DC_ZA_nWA			ZA	nWA	
DC_XA-YA-ZC_nWH	DC_XA_nWA	CA_XA-YA-ZC	CA_nWH	XA	nWA	No
	DC_XA_nWG			XA	CA_nWG	
	DC_XA_nWH			XA	CA_nWH	
	DC_YA_nWA			YA	nWA	
	DC_YA_nWG			YA	CA_nWG	
	DC_YA_nWH			YA	CA_nWH	
	DC_ZA_nWA			ZA	nWA	
DC_XA-YA-ZC_nWI	DC_XA_nWA	CA_XA-YA-ZC	CA_nWI	XA	nWA	No
	DC_XA_nWG			XA	CA_nWG	
	DC_XA_nWH			XA	CA_nWH	
	DC_XA_nWI			XA	CA_nWI	
	DC_YA_nWA			YA	nWA	
	DC_YA_nWG			YA	CA_nWG	

EN-DC Configuration	Uplink EN-DC configuration	E-UTRA downlink configuration	NR downlink configuration	E-UTRA uplink configuration	NR uplink configuration	Applicable for protocol testing (Note 1)
	DC_YA_nWH			YA	CA_nWH	
	DC_YA_nWI			YA	CA_nWI	
	DC_ZA_nWA			ZA	nWA	
DC_XA-YA-ZD_nWA	DC_XA_nWA	CA_XA-YA-ZD	nWA	XA	nWA	No
	DC_YA_nWA			YA	nWA	
	DC_ZA_nWA			ZA	nWA	
DC_XA-YA-ZD_nWG	DC_XA_nWA	CA_XA-YA-ZD	CA_nWG	XA	nWA	No
	DC_XA_nWG			XA	CA_nWG	
	DC_YA_nWA			YA	nWA	
	DC_YA_nWG			YA	CA_nWG	
DC_XA-YA-ZD_nWH	DC_XA_nWA	CA_XA-YA-ZD	CA_nWH	XA	nWA	No
	DC_XA_nWG			XA	CA_nWG	
	DC_XA_nWH			XA	CA_nWH	
	DC_YA_nWA			YA	nWA	
	DC_YA_nWG			YA	CA_nWG	
	DC_YA_nWH			YA	CA_nWH	
DC_XA-YA-ZD_nWI	DC_XA_nWA	CA_XA-YA-ZD	CA_nWI	XA	nWA	No
	DC_XA_nWG			XA	CA_nWG	
	DC_XA_nWH			XA	CA_nWH	
	DC_XA_nWI			XA	CA_nWI	
	DC_YA_nWA			YA	nWA	
	DC_YA_nWG			YA	CA_nWG	
	DC_YA_nWH			YA	CA_nWH	
	DC_YA_nWI			YA	CA_nWI	
DC_XA-YA-ZA-ZA_nWA	DC_XA_nWA	CA_XA-YA-ZA-ZA	nWA	XA	nWA	No
	DC_YA_nWA			YA	nWA	
	DC_ZA_nWA			ZA	nWA	
DC_XA-YA-ZA-ZA_nWG	DC_XA_nWA	CA_XA-YA-ZA-ZA	CA_nWG	XA	nWA	No
	DC_XA_nWG			XA	CA_nWG	
	DC_YA_nWA			YA	nWA	
	DC_YA_nWG			YA	CA_nWG	
	DC_ZA_nWA			ZA	nWA	
	DC_ZA_nWG			ZA	CA_nWG	
DC_XA-YA-ZA-ZA_nWH	DC_XA_nWA	CA_XA-YA-ZA-ZA	CA_nWH	XA	nWA	No
	DC_XA_nWG			XA	CA_nWG	
	DC_XA_nWH			XA	CA_nWH	
	DC_YA_nWA			YA	nWA	
	DC_YA_nWG			YA	CA_nWG	
	DC_YA_nWH			YA	CA_nWH	
	DC_ZA_nWA			ZA	nWA	
	DC_ZA_nWG			ZA	CA_nWG	
DC_XA-YA-ZA-ZA_nWI	DC_XA_nWA	CA_XA-YA-ZA-ZA	CA_nWI	XA	nWA	No
	DC_XA_nWG			XA	CA_nWG	
	DC_XA_nWH			XA	CA_nWH	
	DC_XA_nWI			XA	CA_nWI	
	DC_YA_nWA			YA	nWA	
	DC_YA_nWG			YA	CA_nWG	
	DC_YA_nWH			YA	CA_nWH	
	DC_YA_nWI			YA	CA_nWI	
	DC_ZA_nWA			ZA	nWA	
	DC_ZA_nWG			ZA	CA_nWG	
	DC_ZA_nWH			ZA	CA_nWH	
DC_XA-XA-YA-	DC_XA_nWA	CA_XA-XA-YA-ZA	nWA	XA	nWA	No
	DC_XA_nWA			XA	nWA	

EN-DC Configuration	Uplink EN-DC configuration	E-UTRA downlink configuration	NR downlink configuration	E-UTRA uplink configuration	NR uplink configuration	Applicable for protocol testing (Note 1)
ZA_nWA						
	DC_YA_nWA			YA	nWA	
	DC_ZA_nWA			ZA	nWA	
DC_XA-XA-YA-ZA_nWG	DC_XA_nWA	CA_XA-XA-YA-ZA	CA_nWG	XA	nWA	No
	DC_XA_nWG			XA	CA_nWG	
	DC_YA_nWA			YA	nWA	
	DC_YA_nWG			YA	CA_nWG	
	DC_ZA_nWA			ZA	nWA	
	DC_ZA_nWG			ZA	CA_nWG	
DC_XA-XA-YA-ZA_nWH	DC_XA_nWA	CA_XA-XA-YA-ZA	CA_nWH	XA	nWA	No
	DC_XA_nWG			XA	CA_nWG	
	DC_XA_nWH			XA	CA_nWH	
	DC_YA_nWA			YA	nWA	
	DC_YA_nWG			YA	CA_nWG	
	DC_YA_nWH			YA	CA_nWH	
	DC_ZA_nWA			ZA	nWA	
	DC_ZA_nWG			ZA	CA_nWG	
	DC_ZA_nWH			ZA	CA_nWH	
DC_XA-XA-YA-ZA_nWI	DC_XA_nWA	CA_XA-XA-YA-ZA	CA_nWI	XA	nWA	No
	DC_XA_nWG			XA	CA_nWG	
	DC_XA_nWH			XA	CA_nWH	
	DC_XA_nWI			XA	CA_nWI	
	DC_YA_nWA			YA	nWA	
	DC_YA_nWG			YA	CA_nWG	
	DC_YA_nWH			YA	CA_nWH	
	DC_YA_nWI			YA	CA_nWI	
	DC_ZA_nWA			ZA	nWA	
	DC_ZA_nWG			ZA	CA_nWG	
	DC_ZA_nWH			ZA	CA_nWH	
	DC_ZA_nWI			ZA	CA_nWI	
DC_1A-21A-42A_n257G	DC_1A_n257A	CA_1A-21A-42A	CA_n257G	1A	n257A	No
	DC_1A_n257G	CA_1A-21A-42A	CA_n257G	1A	CA_n257G	No
	DC_21A_n257A	CA_1A-21A-42A	CA_n257G	21A	n257A	No
	DC_21A_n257G	CA_1A-21A-42A	CA_n257G	21A	CA_n257G	No
	DC_42A_n257A	CA_1A-21A-42A	CA_n257G	42A	n257A	No
	DC_42A_n257D	CA_1A-21A-42A	CA_n257G	42A	CA_n257D	No
DC_1A-21A-42A_n257H	DC_1A_n257A	CA_1A-21A-42A	CA_n257H	1A	n257A	No
	DC_1A_n257G	CA_1A-21A-42A	CA_n257H	1A	CA_n257G	No
	DC_1A_n257H	CA_1A-21A-42A	CA_n257H	1A	CA_n257H	No
	DC_21A_n257A	CA_1A-21A-42A	CA_n257H	21A	n257A	No
	DC_21A_n257G	CA_1A-21A-42A	CA_n257H	21A	CA_n257G	No
	DC_21A_n257H	CA_1A-21A-42A	CA_n257H	21A	CA_n257H	No
	DC_42A_n257A	CA_1A-21A-42A	CA_n257H	42A	n257A	No
	DC_42A_n257D	CA_1A-21A-42A	CA_n257H	42A	CA_n257D	No
DC_1A-21A-42A_n257I	DC_1A_n257A	CA_1A-21A-42A	CA_n257I	1A	n257A	No
	DC_1A_n257G	CA_1A-21A-42A	CA_n257I	1A	CA_n257G	No
	DC_1A_n257H	CA_1A-21A-42A	CA_n257I	1A	CA_n257H	No
	DC_1A_n257I	CA_1A-21A-42A	CA_n257I	1A	CA_n257I	No
	DC_21A_n257A	CA_1A-21A-42A	CA_n257I	21A	n257A	No
	DC_21A_n257G	CA_1A-21A-42A	CA_n257I	21A	CA_n257G	No
	DC_21A_n257H	CA_1A-21A-42A	CA_n257I	21A	CA_n257H	No
	DC_21A_n257I	CA_1A-21A-42A	CA_n257I	21A	CA_n257I	No
	DC_42A_n257A	CA_1A-21A-42A	CA_n257I	42A	n257A	No
	DC_42A_n257D	CA_1A-21A-42A	CA_n257I	42A	CA_n257D	No
DC_1A-21A-42C_n257G	DC_1A_n257A	CA_1A-21A-42C	CA_n257G	1A	n257A	No

EN-DC Configuration	Uplink EN-DC configuration	E-UTRA downlink configuration	NR downlink configuration	E-UTRA uplink configuration	NR uplink configuration	Applicable for protocol testing (Note 1)
	DC_1A_n257G	CA_1A-21A-42C	CA_n257G	1A	CA_n257G	No
	DC_21A_n257A	CA_1A-21A-42C	CA_n257G	21A	n257A	No
	DC_21A_n257G	CA_1A-21A-42C	CA_n257G	21A	CA_n257G	No
	DC_42A_n257A	CA_1A-21A-42C	CA_n257G	42A	n257A	No
	DC_42A_n257D	CA_1A-21A-42C	CA_n257G	42A	CA_n257D	No
DC_1A-21A-42C_n257H	DC_1A_n257A	CA_1A-21A-42C	CA_n257H	1A	n257A	No
	DC_1A_n257G	CA_1A-21A-42C	CA_n257H	1A	CA_n257G	No
	DC_1A_n257H	CA_1A-21A-42C	CA_n257H	1A	CA_n257H	No
	DC_21A_n257A	CA_1A-21A-42C	CA_n257H	21A	n257A	No
	DC_21A_n257G	CA_1A-21A-42C	CA_n257H	21A	CA_n257G	No
	DC_21A_n257H	CA_1A-21A-42C	CA_n257H	21A	CA_n257H	No
	DC_42A_n257A	CA_1A-21A-42C	CA_n257H	42A	n257A	No
	DC_42A_n257D	CA_1A-21A-42C	CA_n257H	42A	CA_n257D	No
DC_1A-21A-42C_n257I	DC_1A_n257A	CA_1A-21A-42C	CA_n257I	1A	n257A	No
	DC_1A_n257G	CA_1A-21A-42C	CA_n257I	1A	CA_n257G	No
	DC_1A_n257H	CA_1A-21A-42C	CA_n257I	1A	CA_n257H	No
	DC_1A_n257I	CA_1A-21A-42C	CA_n257I	1A	CA_n257I	No
	DC_21A_n257A	CA_1A-21A-42C	CA_n257I	21A	n257A	No
	DC_21A_n257G	CA_1A-21A-42C	CA_n257I	21A	CA_n257G	No
	DC_21A_n257H	CA_1A-21A-42C	CA_n257I	21A	CA_n257H	No
	DC_21A_n257I	CA_1A-21A-42C	CA_n257I	21A	CA_n257I	No
	DC_42A_n257A	CA_1A-21A-42C	CA_n257I	42A	n257A	No
	DC_42A_n257D	CA_1A-21A-42C	CA_n257I	42A	CA_n257D	No
DC_3A-19A-42A_n257G	DC_3A_n257A	CA_3A-19A-42A	CA_n257G	3A	n257A	No
	DC_3A_n257D	CA_3A-19A-42A	CA_n257G	3A	CA_n257D	No
	DC_3A_n257G	CA_3A-19A-42A	CA_n257G	3A	CA_n257G	No
	DC_19A_n257A	CA_3A-19A-42A	CA_n257G	19A	n257A	No
	DC_19A_n257D	CA_3A-19A-42A	CA_n257G	19A	CA_n257D	No
	DC_19A_n257G	CA_3A-19A-42A	CA_n257G	19A	CA_n257G	No
	DC_42A_n257A	CA_3A-19A-42A	CA_n257G	42A	n257A	No
	DC_42A_n257D	CA_3A-19A-42A	CA_n257G	42A	CA_n257D	No
	DC_42A_n257G	CA_3A-19A-42A	CA_n257G	42A	CA_n257G	No
DC_3A-19A-42A_n257H	DC_3A_n257A	CA_3A-19A-42A	CA_n257H	3A	n257A	No
	DC_3A_n257D	CA_3A-19A-42A	CA_n257H	3A	CA_n257D	No
	DC_3A_n257G	CA_3A-19A-42A	CA_n257H	3A	CA_n257G	No
	DC_3A_n257H	CA_3A-19A-42A	CA_n257H	3A	CA_n257H	No
	DC_19A_n257A	CA_3A-19A-42A	CA_n257H	19A	n257A	No
	DC_19A_n257D	CA_3A-19A-42A	CA_n257H	19A	CA_n257D	No
	DC_19A_n257G	CA_3A-19A-42A	CA_n257H	19A	CA_n257G	No
	DC_19A_n257H	CA_3A-19A-42A	CA_n257H	19A	CA_n257H	No
	DC_42A_n257A	CA_3A-19A-42A	CA_n257H	42A	n257A	No
	DC_42A_n257D	CA_3A-19A-42A	CA_n257H	42A	CA_n257D	No
	DC_42A_n257G	CA_3A-19A-42A	CA_n257H	42A	CA_n257G	No
	DC_42A_n257H	CA_3A-19A-42A	CA_n257H	42A	CA_n257H	No
DC_3A-19A-42A_n257I	DC_3A_n257A	CA_3A-19A-42A	CA_n257I	3A	n257A	No
	DC_3A_n257D	CA_3A-19A-42A	CA_n257I	3A	CA_n257D	No
	DC_3A_n257G	CA_3A-19A-42A	CA_n257I	3A	CA_n257G	No
	DC_3A_n257H	CA_3A-19A-42A	CA_n257I	3A	CA_n257H	No
	DC_3A_n257I	CA_3A-19A-42A	CA_n257I	3A	CA_n257I	No
	DC_19A_n257A	CA_3A-19A-42A	CA_n257I	19A	n257A	No
	DC_19A_n257D	CA_3A-19A-42A	CA_n257I	19A	CA_n257D	No
	DC_19A_n257G	CA_3A-19A-42A	CA_n257I	19A	CA_n257G	No
	DC_19A_n257H	CA_3A-19A-42A	CA_n257I	19A	CA_n257H	No
	DC_19A_n257I	CA_3A-19A-42A	CA_n257I	19A	CA_n257I	No
	DC_42A_n257A	CA_3A-19A-42A	CA_n257I	42A	n257A	No
	DC_42A_n257D	CA_3A-19A-42A	CA_n257I	42A	CA_n257D	No
	DC_42A_n257G	CA_3A-19A-42A	CA_n257I	42A	CA_n257G	No

EN-DC Configuration	Uplink EN-DC configuration	E-UTRA downlink configuration	NR downlink configuration	E-UTRA uplink configuration	NR uplink configuration	Applicable for protocol testing (Note 1)
	DC_42A_n257H	CA_3A-19A-42A	CA_n257I	42A	CA_n257H	No
	DC_42A_n257I	CA_3A-19A-42A	CA_n257I	42A	CA_n257I	No
DC_3A-19A-42C_n257G	DC_3A_n257A	CA_3A-19A-42C	CA_n257G	3A	n257A	No
	DC_3A_n257D	CA_3A-19A-42C	CA_n257G	3A	CA_n257D	No
	DC_3A_n257G	CA_3A-19A-42C	CA_n257G	3A	CA_n257G	No
	DC_19A_n257A	CA_3A-19A-42C	CA_n257G	19A	n257A	No
	DC_19A_n257D	CA_3A-19A-42C	CA_n257G	19A	CA_n257D	No
	DC_19A_n257G	CA_3A-19A-42C	CA_n257G	19A	CA_n257G	No
	DC_42A_n257A	CA_3A-19A-42C	CA_n257G	42A	n257A	No
	DC_42A_n257D	CA_3A-19A-42C	CA_n257G	42A	CA_n257D	No
DC_3A-19A-42C_n257H	DC_3A_n257A	CA_3A-19A-42C	CA_n257H	3A	n257A	No
	DC_3A_n257D	CA_3A-19A-42C	CA_n257H	3A	CA_n257D	No
	DC_3A_n257G	CA_3A-19A-42C	CA_n257H	3A	CA_n257G	No
	DC_3A_n257H	CA_3A-19A-42C	CA_n257H	3A	CA_n257H	No
	DC_19A_n257A	CA_3A-19A-42C	CA_n257H	19A	n257A	No
	DC_19A_n257D	CA_3A-19A-42C	CA_n257H	19A	CA_n257D	No
	DC_19A_n257G	CA_3A-19A-42C	CA_n257H	19A	CA_n257G	No
	DC_19A_n257H	CA_3A-19A-42C	CA_n257H	19A	CA_n257H	No
	DC_42A_n257A	CA_3A-19A-42C	CA_n257H	42A	n257A	No
	DC_42A_n257D	CA_3A-19A-42C	CA_n257H	42A	CA_n257D	No
	DC_42A_n257G	CA_3A-19A-42C	CA_n257H	42A	CA_n257G	No
	DC_42A_n257H	CA_3A-19A-42C	CA_n257H	42A	CA_n257H	No
DC_3A-19A-42C_n257I	DC_3A_n257A	CA_3A-19A-42C	CA_n257I	3A	n257A	No
	DC_3A_n257D	CA_3A-19A-42C	CA_n257I	3A	CA_n257D	No
	DC_3A_n257G	CA_3A-19A-42C	CA_n257I	3A	CA_n257G	No
	DC_3A_n257H	CA_3A-19A-42C	CA_n257I	3A	CA_n257H	No
	DC_3A_n257I	CA_3A-19A-42C	CA_n257I	3A	CA_n257I	No
	DC_19A_n257A	CA_3A-19A-42C	CA_n257I	19A	n257A	No
	DC_19A_n257D	CA_3A-19A-42C	CA_n257I	19A	CA_n257D	No
	DC_19A_n257G	CA_3A-19A-42C	CA_n257I	19A	CA_n257G	No
	DC_19A_n257H	CA_3A-19A-42C	CA_n257I	19A	CA_n257H	No
	DC_19A_n257I	CA_3A-19A-42C	CA_n257I	19A	CA_n257I	No
	DC_42A_n257A	CA_3A-19A-42C	CA_n257I	42A	n257A	No
	DC_42A_n257D	CA_3A-19A-42C	CA_n257I	42A	CA_n257D	No
	DC_42A_n257G	CA_3A-19A-42C	CA_n257I	42A	CA_n257G	No
	DC_42A_n257H	CA_3A-19A-42C	CA_n257I	42A	CA_n257H	No
DC_3A-21A-42A_n257G	DC_3A_n257A	CA_3A-21A-42A	CA_n257G	3A	n257A	No
	DC_3A_n257D	CA_3A-21A-42A	CA_n257G	3A	CA_n257D	No
	DC_3A_n257G	CA_3A-21A-42A	CA_n257G	3A	CA_n257G	No
	DC_21A_n257A	CA_3A-21A-42A	CA_n257G	21A	n257A	No
	DC_21A_n257D	CA_3A-21A-42A	CA_n257G	21A	CA_n257D	No
	DC_21A_n257G	CA_3A-21A-42A	CA_n257G	21A	CA_n257G	No
	DC_42A_n257A	CA_3A-21A-42A	CA_n257G	42A	n257A	No
	DC_42A_n257D	CA_3A-21A-42A	CA_n257G	42A	CA_n257D	No
DC_3A-21A-42A_n257H	DC_3A_n257A	CA_3A-21A-42A	CA_n257H	3A	n257A	No
	DC_3A_n257D	CA_3A-21A-42A	CA_n257H	3A	CA_n257D	No
	DC_3A_n257G	CA_3A-21A-42A	CA_n257H	3A	CA_n257G	No
	DC_3A_n257H	CA_3A-21A-42A	CA_n257H	3A	CA_n257H	No
	DC_21A_n257A	CA_3A-21A-42A	CA_n257H	21A	n257A	No
	DC_21A_n257D	CA_3A-21A-42A	CA_n257H	21A	CA_n257D	No
	DC_21A_n257G	CA_3A-21A-42A	CA_n257H	21A	CA_n257G	No
	DC_21A_n257H	CA_3A-21A-42A	CA_n257H	21A	CA_n257H	No
	DC_42A_n257A	CA_3A-21A-42A	CA_n257H	42A	n257A	No
	DC_42A_n257D	CA_3A-21A-42A	CA_n257H	42A	CA_n257D	No

EN-DC Configuration	Uplink EN-DC configuration	E-UTRA downlink configuration	NR downlink configuration	E-UTRA uplink configuration	NR uplink configuration	Applicable for protocol testing (Note 1)
	DC_42A_n257G	CA_3A-21A-42A	CA_n257H	42A	CA_n257G	No
	DC_42A_n257H	CA_3A-21A-42A	CA_n257H	42A	CA_n257H	No
DC_3A-21A-42A_n257I	DC_3A_n257A	CA_3A-21A-42A	CA_n257I	3A	n257A	No
	DC_3A_n257D	CA_3A-21A-42A	CA_n257I	3A	CA_n257D	No
	DC_3A_n257G	CA_3A-21A-42A	CA_n257I	3A	CA_n257G	No
	DC_3A_n257H	CA_3A-21A-42A	CA_n257I	3A	CA_n257H	No
	DC_3A_n257I	CA_3A-21A-42A	CA_n257I	3A	CA_n257I	No
	DC_21A_n257A	CA_3A-21A-42A	CA_n257I	21A	n257A	No
	DC_21A_n257D	CA_3A-21A-42A	CA_n257I	21A	CA_n257D	No
	DC_21A_n257G	CA_3A-21A-42A	CA_n257I	21A	CA_n257G	No
	DC_21A_n257H	CA_3A-21A-42A	CA_n257I	21A	CA_n257H	No
	DC_21A_n257I	CA_3A-21A-42A	CA_n257I	21A	CA_n257I	No
	DC_42A_n257A	CA_3A-21A-42A	CA_n257I	42A	n257A	No
	DC_42A_n257D	CA_3A-21A-42A	CA_n257I	42A	CA_n257D	No
	DC_42A_n257G	CA_3A-21A-42A	CA_n257I	42A	CA_n257G	No
	DC_42A_n257H	CA_3A-21A-42A	CA_n257I	42A	CA_n257H	No
	DC_42A_n257I	CA_3A-21A-42A	CA_n257I	42A	CA_n257I	No
DC_3A-21A-42C_n257G	DC_3A_n257A	CA_3A-21A-42C	CA_n257G	3A	n257A	No
	DC_3A_n257D	CA_3A-21A-42C	CA_n257G	3A	CA_n257D	No
	DC_3A_n257G	CA_3A-21A-42C	CA_n257G	3A	CA_n257G	No
	DC_21A_n257A	CA_3A-21A-42C	CA_n257G	21A	n257A	No
	DC_21A_n257D	CA_3A-21A-42C	CA_n257G	21A	CA_n257D	No
	DC_21A_n257G	CA_3A-21A-42C	CA_n257G	21A	CA_n257G	No
	DC_42A_n257A	CA_3A-21A-42C	CA_n257G	42A	n257A	No
	DC_42A_n257D	CA_3A-21A-42C	CA_n257G	42A	CA_n257D	No
DC_3A-21A-42C_n257H	DC_3A_n257A	CA_3A-21A-42C	CA_n257H	3A	n257A	No
	DC_3A_n257D	CA_3A-21A-42C	CA_n257H	3A	CA_n257D	No
	DC_3A_n257G	CA_3A-21A-42C	CA_n257H	3A	CA_n257G	No
	DC_3A_n257H	CA_3A-21A-42C	CA_n257H	3A	CA_n257H	No
	DC_21A_n257A	CA_3A-21A-42C	CA_n257H	21A	n257A	No
	DC_21A_n257D	CA_3A-21A-42C	CA_n257H	21A	CA_n257D	No
	DC_21A_n257G	CA_3A-21A-42C	CA_n257H	21A	CA_n257G	No
	DC_21A_n257H	CA_3A-21A-42C	CA_n257H	21A	CA_n257H	No
	DC_42A_n257A	CA_3A-21A-42C	CA_n257H	42A	n257A	No
	DC_42A_n257D	CA_3A-21A-42C	CA_n257H	42A	CA_n257D	No
	DC_42A_n257G	CA_3A-21A-42C	CA_n257H	42A	CA_n257G	No
	DC_42A_n257H	CA_3A-21A-42C	CA_n257H	42A	CA_n257H	No
DC_3A-21A-42C_n257I	DC_3A_n257A	CA_3A-21A-42C	CA_n257I	3A	n257A	No
	DC_3A_n257D	CA_3A-21A-42C	CA_n257I	3A	CA_n257D	No
	DC_3A_n257G	CA_3A-21A-42C	CA_n257I	3A	CA_n257G	No
	DC_3A_n257H	CA_3A-21A-42C	CA_n257I	3A	CA_n257H	No
	DC_3A_n257I	CA_3A-21A-42C	CA_n257I	3A	CA_n257I	No
	DC_21A_n257A	CA_3A-21A-42C	CA_n257I	21A	n257A	No
	DC_21A_n257D	CA_3A-21A-42C	CA_n257I	21A	CA_n257D	No
	DC_21A_n257G	CA_3A-21A-42C	CA_n257I	21A	CA_n257G	No
	DC_21A_n257H	CA_3A-21A-42C	CA_n257I	21A	CA_n257H	No
	DC_21A_n257I	CA_3A-21A-42C	CA_n257I	21A	CA_n257I	No
	DC_42A_n257A	CA_3A-21A-42C	CA_n257I	42A	n257A	No
	DC_42A_n257D	CA_3A-21A-42C	CA_n257I	42A	CA_n257D	No
	DC_42A_n257G	CA_3A-21A-42C	CA_n257I	42A	CA_n257G	No
DC_19A-21A-42A_n257G	DC_19A_n257A	CA_19A-21A-42A	CA_n257G	19A	n257A	No
	DC_19A_n257D	CA_19A-21A-42A	CA_n257G	19A	CA_n257D	No
	DC_19A_n257G	CA_19A-21A-42A	CA_n257G	19A	CA_n257G	No
	DC_21A_n257A	CA_19A-21A-42A	CA_n257G	21A	n257A	No

EN-DC Configuration	Uplink EN-DC configuration	E-UTRA downlink configuration	NR downlink configuration	E-UTRA uplink configuration	NR uplink configuration	Applicable for protocol testing (Note 1)
	DC_21A_n257D	CA_19A-21A-42A	CA_n257G	21A	CA_n257D	No
	DC_21A_n257G	CA_19A-21A-42A	CA_n257G	21A	CA_n257G	No
	DC_42A_n257A	CA_19A-21A-42A	CA_n257G	42A	n257A	No
	DC_42A_n257D	CA_19A-21A-42A	CA_n257G	42A	CA_n257D	No
	DC_42A_n257G	CA_19A-21A-42A	CA_n257G	42A	CA_n257G	No
DC_19A-21A-42A_n257H	DC_19A_n257A	CA_19A-21A-42A	CA_n257H	19A	n257A	No
	DC_19A_n257D	CA_19A-21A-42A	CA_n257H	19A	CA_n257D	No
	DC_19A_n257G	CA_19A-21A-42A	CA_n257H	19A	CA_n257G	No
	DC_19A_n257H	CA_19A-21A-42A	CA_n257H	19A	CA_n257H	No
	DC_21A_n257A	CA_19A-21A-42A	CA_n257H	21A	n257A	No
	DC_21A_n257D	CA_19A-21A-42A	CA_n257H	21A	CA_n257D	No
	DC_21A_n257G	CA_19A-21A-42A	CA_n257H	21A	CA_n257G	No
	DC_21A_n257H	CA_19A-21A-42A	CA_n257H	21A	CA_n257H	No
	DC_42A_n257A	CA_19A-21A-42A	CA_n257H	42A	n257A	No
	DC_42A_n257D	CA_19A-21A-42A	CA_n257H	42A	CA_n257D	No
	DC_42A_n257G	CA_19A-21A-42A	CA_n257H	42A	CA_n257G	No
	DC_42A_n257H	CA_19A-21A-42A	CA_n257H	42A	CA_n257H	No
	DC_42A_n257I	CA_19A-21A-42A	CA_n257I	19A	n257A	No
DC_19A-21A-42A_n257I	DC_19A_n257A	CA_19A-21A-42A	CA_n257I	19A	CA_n257D	No
	DC_19A_n257G	CA_19A-21A-42A	CA_n257I	19A	CA_n257G	No
	DC_19A_n257H	CA_19A-21A-42A	CA_n257I	19A	CA_n257H	No
	DC_19A_n257I	CA_19A-21A-42A	CA_n257I	19A	CA_n257I	No
	DC_21A_n257A	CA_19A-21A-42A	CA_n257I	21A	n257A	No
	DC_21A_n257D	CA_19A-21A-42A	CA_n257I	21A	CA_n257D	No
	DC_21A_n257G	CA_19A-21A-42A	CA_n257I	21A	CA_n257G	No
	DC_21A_n257H	CA_19A-21A-42A	CA_n257I	21A	CA_n257H	No
	DC_21A_n257I	CA_19A-21A-42A	CA_n257I	21A	CA_n257I	No
	DC_42A_n257A	CA_19A-21A-42A	CA_n257I	42A	n257A	No
	DC_42A_n257D	CA_19A-21A-42A	CA_n257I	42A	CA_n257D	No
	DC_42A_n257G	CA_19A-21A-42A	CA_n257I	42A	CA_n257G	No
	DC_42A_n257H	CA_19A-21A-42A	CA_n257I	42A	CA_n257H	No
	DC_42A_n257I	CA_19A-21A-42A	CA_n257I	42A	CA_n257I	No
DC_19A-21A-42C_n257G	DC_19A_n257A	CA_19A-21A-42C	CA_n257G	19A	n257A	No
	DC_19A_n257D	CA_19A-21A-42C	CA_n257G	19A	CA_n257D	No
	DC_19A_n257G	CA_19A-21A-42C	CA_n257G	19A	CA_n257G	No
	DC_21A_n257A	CA_19A-21A-42C	CA_n257G	21A	n257A	No
	DC_21A_n257D	CA_19A-21A-42C	CA_n257G	21A	CA_n257D	No
	DC_21A_n257G	CA_19A-21A-42C	CA_n257G	21A	CA_n257G	No
	DC_42A_n257A	CA_19A-21A-42C	CA_n257G	42A	n257A	No
	DC_42A_n257D	CA_19A-21A-42C	CA_n257G	42A	CA_n257D	No
DC_19A-21A-42C_n257H	DC_19A_n257G	CA_19A-21A-42C	CA_n257G	42A	CA_n257G	No
	DC_19A_n257A	CA_19A-21A-42C	CA_n257H	19A	n257A	No
	DC_19A_n257D	CA_19A-21A-42C	CA_n257H	19A	CA_n257D	No
	DC_19A_n257G	CA_19A-21A-42C	CA_n257H	19A	CA_n257G	No
	DC_19A_n257H	CA_19A-21A-42C	CA_n257H	19A	CA_n257H	No
	DC_21A_n257A	CA_19A-21A-42C	CA_n257H	21A	n257A	No
	DC_21A_n257D	CA_19A-21A-42C	CA_n257H	21A	CA_n257D	No
	DC_21A_n257G	CA_19A-21A-42C	CA_n257H	21A	CA_n257G	No
	DC_21A_n257H	CA_19A-21A-42C	CA_n257H	21A	CA_n257H	No
	DC_42A_n257A	CA_19A-21A-42C	CA_n257H	42A	n257A	No
	DC_42A_n257D	CA_19A-21A-42C	CA_n257H	42A	CA_n257D	No
	DC_42A_n257G	CA_19A-21A-42C	CA_n257H	42A	CA_n257G	No
	DC_42A_n257H	CA_19A-21A-42C	CA_n257H	42A	CA_n257H	No
DC_19A-21A-42C_n257I	DC_19A_n257A	CA_19A-21A-42C	CA_n257I	19A	n257A	No
	DC_19A_n257D	CA_19A-21A-42C	CA_n257I	19A	CA_n257D	No
	DC_19A_n257G	CA_19A-21A-42C	CA_n257I	19A	CA_n257G	No
	DC_19A_n257H	CA_19A-21A-42C	CA_n257I	19A	CA_n257H	No

EN-DC Configuration	Uplink EN-DC configuration	E-UTRA downlink configuration	NR downlink configuration	E-UTRA uplink configuration	NR uplink configuration	Applicable for protocol testing (Note 1)
	DC 19A_n257I	CA 19A-21A-42C	CA_n257I	19A	CA_n257I	No
	DC 21A_n257A	CA 19A-21A-42C	CA_n257I	21A	n257A	No
	DC 21A_n257D	CA 19A-21A-42C	CA_n257I	21A	CA_n257D	No
	DC 21A_n257G	CA 19A-21A-42C	CA_n257I	21A	CA_n257G	No
	DC 21A_n257H	CA 19A-21A-42C	CA_n257I	21A	CA_n257H	No
	DC 21A_n257I	CA 19A-21A-42C	CA_n257I	21A	CA_n257I	No
	DC 42A_n257A	CA 19A-21A-42C	CA_n257I	42A	n257A	No
	DC 42A_n257D	CA 19A-21A-42C	CA_n257I	42A	CA_n257D	No
	DC 42A_n257G	CA 19A-21A-42C	CA_n257I	42A	CA_n257G	No
	DC 42A_n257H	CA 19A-21A-42C	CA_n257I	42A	CA_n257H	No
	DC 42A_n257I	CA 19A-21A-42C	CA_n257I	42A	CA_n257I	No
Note 1:	Protocol testing is limited to EN-DC configurations with 1 CC E-UTRA and 1CC or 2CC NR configurations.					
Note 2:	The specified NR inter-band EN-DC configurations including FR2 can be found in TS 38.521-3 [16] clause 5.5B.5. The general rule for deciding test configurations applies if no explicit value defined. The general rule is that the inter-band EN-DC configurations including FR2 are represented by symbolic DC configurations using band X, Y, Z and nW as the different bands in the DC Configuration. E.g. DC_XA-YA-ZA_nWG could be representing the configuraion DC_2A-14A-30A_n260G by interpreting of X=2, Y=14, Z=30 and nW=n260. Any DC configurations not applying the general rule could be listed separately.					

4.3.1.5.1.5 Inter-band EN-DC configurations including FR2 (five bands)

Table 4.3.1.5.1.5-1: Inter-band EN-DC configurations including FR2 (five bands)

EN-DC Configuration	Uplink EN-DC configuration	E-UTRA downlink configuration	NR downlink configuration	E-UTRA uplink configuration	NR uplink configuration	Applicable for protocol testing (Note 1)
DC_XA-YA-ZA-VA_nWA	DC_XA_nWA	CA_XA-YA-ZA-VA	nWA	XA	nWA	No
	DC_YA_nWA			YA	nWA	
	DC_ZA_nWA			ZA	nWA	
	DC_VA_nWA			VA	nWA	
DC_XA-YA-ZA-VA_nWG	DC_XA_nWA	CA_XA-YA-ZA-VA	CA_nWG	XA	nWA	No
	DC_XA_nWG			XA	CA_nWG	
	DC_YA_nWA			YA	nWA	
	DC_YA_nWG			YA	CA_nWG	
	DC_ZA_nWA			ZA	nWA	
	DC_ZA_nWG			ZA	CA_nWG	
	DC_VA_nWA			VA	nWA	
	DC_VA_nWG			VA	CA_nWG	
DC_XA-YA-ZA-VA_nWH	DC_XA_nWA	CA_XA-YA-ZA-VA	CA_nWH	XA	nWA	No
	DC_XA_nWG			XA	CA_nWG	
	DC_XA_nWH			XA	CA_nWH	
	DC_YA_nWA			YA	nWA	
	DC_YA_nWG			YA	CA_nWG	
	DC_YA_nWH			YA	CA_nWH	
	DC_ZA_nWA			ZA	nWA	
	DC_ZA_nWG			ZA	CA_nWG	
	DC_ZA_nWH			ZA	CA_nWH	
	DC_VA_nWA			VA	nWA	
	DC_VA_nWG			VA	CA_nWG	
	DC_VA_nWH			VA	CA_nWH	
DC_XA-YA-ZA-VA_nWI	DC_XA_nWA	CA_XA-YA-ZA-VA	CA_nWI	XA	nWA	No
	DC_XA_nWG			XA	CA_nWG	
	DC_XA_nWH			XA	CA_nWH	
	DC_XA_nWI			XA	CA_nWI	
	DC_YA_nWA			YA	nWA	
	DC_YA_nWG			YA	CA_nWG	
	DC_YA_nWH			YA	CA_nWH	
	DC_YA_nWI			YA	CA_nWI	
	DC_ZA_nWA			ZA	nWA	

EN-DC Configuration	Uplink EN-DC configuration	E-UTRA downlink configuration	NR downlink configuration	E-UTRA uplink configuration	NR uplink configuration	Applicable for protocol testing (Note 1)
	DC_ZA_nWG			ZA	CA_nWG	
	DC_ZA_nWH			ZA	CA_nWH	
	DC_ZA_nWI			ZA	CA_nWI	
	DC_VA_nWA			VA	nWA	
	DC_VA_nWG			VA	CA_nWG	
	DC_VA_nWH			VA	CA_nWH	
	DC_VA_nWI			VA	CA_nWI	
	DC_VA_nWI			VA	CA_nWI	
DC_XA-YA-ZA-VC_nWA	DC_XA_nWA	CA_XA-YA-ZA-VC	nWA	XA	nWA	No
	DC_YA_nWA			YA	nWA	
	DC_ZA_nWA			ZA	nWA	
	DC_VA_nWA			VA	nWA	
DC_XA-YA-ZA-VC_nWG	DC_XA_nWA	CA_XA-YA-ZA-VC	CA_nWG	XA	nWA	No
	DC_XA_nWG			XA	CA_nWG	
	DC_YA_nWA			YA	nWA	
	DC_YA_nWG			YA	CA_nWG	
	DC_ZA_nWA			ZA	nWA	
	DC_ZA_nWG			ZA	CA_nWG	
	DC_VA_nWA			VA	nWA	
	DC_VA_nWG			VA	CA_nWG	
DC_XA-YA-ZA-VC_nWH	DC_XA_nWA	CA_XA-YA-ZA-VC	CA_nWH	XA	nWA	No
	DC_XA_nWG			XA	CA_nWG	
	DC_XA_nWH			XA	CA_nWH	
	DC_YA_nWA			YA	nWA	
	DC_YA_nWG			YA	CA_nWG	
	DC_YA_nWH			YA	CA_nWH	
	DC_ZA_nWA			ZA	nWA	
	DC_ZA_nWG			ZA	CA_nWG	
	DC_ZA_nWH			ZA	CA_nWH	
	DC_VA_nWA			VA	nWA	
	DC_VA_nWG			VA	CA_nWG	
	DC_VA_nWH			VA	CA_nWH	
DC_XA-YA-ZA-VC_nWI	DC_XA_nWA	CA_XA-YA-ZA-VC	CA_nWI	XA	nWA	No
	DC_XA_nWG			XA	CA_nWG	
	DC_XA_nWH			XA	CA_nWH	
	DC_XA_nWI			XA	CA_nWI	
	DC_YA_nWA			YA	nWA	

EN-DC Configuration	Uplink EN-DC configuration	E-UTRA downlink configuration	NR downlink configuration	E-UTRA uplink configuration	NR uplink configuration	Applicable for protocol testing (Note 1)
	DC_YA_nWG			YA	CA_nWG	
	DC_YA_nWH			YA	CA_nWH	
	DC_YA_nWI			YA	CA_nWI	
	DC_ZA_nWA			ZA	nWA	
	DC_ZA_nWG			ZA	CA_nWG	
	DC_ZA_nWH			ZA	CA_nWH	
	DC_ZA_nWI			ZA	CA_nWI	
	DC_VA_nWA			VA	nWA	
	DC_VA_nWG			VA	CA_nWG	
	DC_VA_nWH			VA	CA_nWH	
	DC_VA_nWI			VA	CA_nWI	
Note 1: Protocol testing is limited to EN-DC configurations with 1 CC E-UTRA and 1CC or 2CC NR configurations. Note 2: The specified NR inter-band EN-DC configurations including FR2 can be found in TS 38.521-3 [16] clause 5.5B.5. The general rule for deciding test configurations applies if no explicit value defined. The general rule is that the inter-band EN-DC configurations including FR2 are represented by symbolic DC configurations using band X, Y, Z, V and nW as the different bands in the DC Configuration. E.g. DC_XA-YA-ZA-VA_nWG could be representing the configuraion DC_2A-14A-30A-n66A_n260G by interpreting of X=2, Y=14, Z=30, V=66 and nW=n260. Any DC configurations not applying the general rule could be listed separately.						

4.3.1.5.1.6 Inter-band EN-DC configurations including FR2 (six bands)

Table 4.3.1.5.1.6-1: Inter-band EN-DC configurations including FR2 (six bands)

EN-DC Configuration	Uplink EN-DC configuration	E-UTRA downlink configuration	NR downlink configuration	E-UTRA uplink configuration	NR uplink configuration	Applicable for protocol testing (Note 1)
FFS	FFS	FFS	FFS	FFS	FFS	FFS

4.3.1.6 Test frequencies for EN-DC band combinations including FR1 and FR2

4.3.1.6.1 Inter-band EN-DC configurations including FR1 and FR2

4.3.1.6.1.1 General

For inter-band EN-DC configurations as listed in this clause, the following apply:

For the E-UTRA band and E-UTRA CA configurations, test frequencies as specified in TS 36.508 [2], clause 4.3.1 are used.

For the NR band and NR CA configurations, test frequencies as specified in clause 4.3.1 for FR1 and 4.3.2 for FR2 are used.

4.3.1.6.1.2 Inter-band EN-DC configurations including FR1 and FR2 (three bands)

Table 4.3.1.6.1.2-1: Inter-band EN-DC including FR1 and FR2 (three bands)

EN-DC Configuration	Uplink EN-DC configuration	E-UTRA downlink configuration	NR downlink configuration	E-UTRA uplink configuration	NR uplink configuration	Applicable for protocol testing (Note 1)
DC_1A_n78A-n257A	DC_1A_n78A	1A	CA_n78A-n257A	1A	n78A	Yes (NR 2CC)
	DC_1A_n257A			1A	n257A	No
	DC_1A_n78A-n257A			1A	CA_n78A-n257A	Yes (NR 2CC)
DC_1A_n79A-n257A	DC_1A_n79A	1A	CA_n79A-n257A	1A	n79A	Yes (NR 2CC)
	DC_1A_n257A			1A	n257A	No
	DC_1A_n79A-n257A			1A	CA_n79A-n257A	Yes (NR 2CC)
DC_3A_n78A-n257A	DC_3A_n78A	3A	CA_n78A-n257A	3A	n78A	Yes (NR 2CC)
	DC_3A_n257A			3A	n257A	No
	DC_3A_n78A-n257A			3A	CA_n78A-n257A	Yes (NR 2CC)
DC_3A_n79A-n257A	DC_3A_n79A	3A	CA_n79A-n257A	3A	n79A	Yes (NR 2CC)
	DC_3A_n257A			3A	n257A	No
	DC_3A_n79A-n257A			3A	CA_n79A-n257A	Yes (NR 2CC)
DC_19A_n78A-n257A	DC_19A_n78A	19A	CA_n78A-n257A	19A	n78A	Yes (NR 2CC)
	DC_19A_n257A			19A	n257A	No
	DC_19A_n78A-n257A			19A	CA_n78A-n257A	Yes (NR 2CC)
DC_19A_n79A-n257A	DC_19A_n79A	19A	CA_n79A-n257A	19A	n79A	Yes (NR 2CC)
	DC_19A_n257A			19A	n257A	No
	DC_19A_n79A-n257A			19A	CA_n79A-n257A	Yes (NR 2CC)

Note 1: Protocol testing is limited to EN-DC configurations with 1 CC E-UTRA and 1CC or 2CC NR configurations.

4.3.1.6.1.3 Inter-band EN-DC configurations including FR1 and FR2 (four bands)

Table 4.3.1.6.1.3-1: Inter-band EN-DC including FR1 and FR2 (four bands)

EN-DC Configuration	Uplink EN-DC configuration	E-UTRA downlink configuration	NR downlink configuration	E-UTRA uplink configuration	NR uplink configuration	Applicable for protocol testing (Note 1)
DC_1A-3A_n78A-n257A	DC_1A_n78A	CA_1A-3A	CA_n78A-n257A	1A	n78A	No
	DC_1A_n257A			1A	n257A	
	DC_3A_n78A			3A	n78A	
	DC_3A_n257A			3A	n257A	
DC_1A-3A_n78A-n257G	DC_1A_n78A	CA_1A-3A	CA_n78A-n257G	1A	n78A	No
	DC_1A_n257A	CA_1A-3A	CA_n78A-n257G	1A	n257A	No
	DC_1A_n257D	CA_1A-3A	CA_n78A-n257G	1A	CA_n257D	No
	DC_1A_n257G	CA_1A-3A	CA_n78A-n257G	1A	CA_n257G	No
	DC_3A_n78A	CA_1A-3A	CA_n78A-n257G	3A	n78A	No
	DC_3A_n257A	CA_1A-3A	CA_n78A-n257G	3A	n257A	No
	DC_3A_n257D	CA_1A-3A	CA_n78A-n257G	3A	CA_n257D	No
	DC_3A_n257G	CA_1A-3A	CA_n78A-n257G	3A	CA_n257G	No
DC_1A-3A_n78A-n257H	DC_1A_n78A	CA_1A-3A	CA_n78A-n257H	1A	n78A	No
	DC_1A_n257A	CA_1A-3A	CA_n78A-n257H	1A	n257A	No
	DC_1A_n257D	CA_1A-3A	CA_n78A-n257H	1A	CA_n257D	No
	DC_1A_n257G	CA_1A-3A	CA_n78A-n257H	1A	CA_n257G	No
	DC_1A_n257H	CA_1A-3A	CA_n78A-n257H	1A	CA_n257H	No
	DC_3A_n78A	CA_1A-3A	CA_n78A-n257H	3A	n78A	No
	DC_3A_n257A	CA_1A-3A	CA_n78A-n257H	3A	n257A	No
	DC_3A_n257D	CA_1A-3A	CA_n78A-n257H	3A	CA_n257D	No
	DC_3A_n257G	CA_1A-3A	CA_n78A-n257H	3A	CA_n257G	No
	DC_3A_n257H	CA_1A-3A	CA_n78A-n257H	3A	CA_n257H	No
DC_1A-3A_n78A-n257I	DC_1A_n78A	CA_1A-3A	CA_n78A-n257I	1A	n78A	No
	DC_1A_n257A	CA_1A-3A	CA_n78A-n257I	1A	n257A	No
	DC_1A_n257D	CA_1A-3A	CA_n78A-n257I	1A	CA_n257D	No
	DC_1A_n257G	CA_1A-3A	CA_n78A-n257I	1A	CA_n257G	No
	DC_1A_n257H	CA_1A-3A	CA_n78A-n257I	1A	CA_n257H	No
	DC_1A_n257I	CA_1A-3A	CA_n78A-n257I	1A	CA_n257I	No
	DC_3A_n78A	CA_1A-3A	CA_n78A-n257I	3A	n78A	No
	DC_3A_n257A	CA_1A-3A	CA_n78A-n257I	3A	n257A	No
	DC_3A_n257D	CA_1A-3A	CA_n78A-n257I	3A	CA_n257D	No
	DC_3A_n257G	CA_1A-3A	CA_n78A-n257I	3A	CA_n257G	No
	DC_3A_n257H	CA_1A-3A	CA_n78A-n257I	3A	CA_n257H	No
	DC_3A_n257I	CA_1A-3A	CA_n78A-n257I	3A	CA_n257I	No

Note 1: Protocol testing is limited to EN-DC configurations with 1 CC E-UTRA and 1CC or 2CC NR configurations.

4.3.1.6.1.4 Inter-band EN-DC configurations including FR1 and FR2 (five bands)

Table 4.3.1.6.1.4-1: Inter-band EN-DC including FR1 and FR2 (five bands)

EN-DC Configuration	Uplink EN-DC configuration	E-UTRA downlink configuration	NR downlink configuration	E-UTRA uplink configuration	NR uplink configuration	Applicable for protocol testing (Note 1)
FFS	FFS	FFS	FFS	FFS	FFS	FFS
Note 1: Protocol testing is limited to EN-DC configurations with 1 CC E-UTRA and 1CC or 2CC NR configurations.						

4.3.1.6.1.5 Inter-band EN-DC configurations including FR1 and FR2 (six bands)

Table 4.3.1.6.1.5-1: Inter-band EN-DC including FR1 and FR2 (six bands)

EN-DC Configuration	Uplink EN-DC configuration	E-UTRA downlink configuration	NR downlink configuration	E-UTRA uplink configuration	NR uplink configuration	Applicable for protocol testing (Note 1)
FFS	FFS	FFS	FFS	FFS	FFS	FFS
Note 1: Protocol testing is limited to EN-DC configurations with 1 CC E-UTRA and 1CC or 2CC NR configurations.						

4.3.1.7 Test frequencies for Non-3GPP Access

4.3.1.7.1 WLAN Test frequencies

The same WLAN test frequencies as in TS 36.508 [2] clause 4.3.1.6 applies.

4.3.1.7.2 Bluetooth Test frequencies

The same Bluetooth test frequencies as in TS 36.508 [2] clause 4.3.1.7 applies.

4.3.1.8 Test frequencies for NR Sidelink operating bands

4.3.1.8.1 Test frequencies for NR Sidelink operating bands in FR1

4.3.1.8.1.1 Reference test frequencies for NR Sidelink operating band n38

FFS

4.3.1.8.1.2 Reference test frequencies for NR Sidelink operating band n47

Table 4.3.1.8.1.2-1: Test frequencies for NR operating band n47 and SCS 15 kHz

CBW [MHz]	carrierBand width [PRBs]	Range	Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	sl-absolute Frequency Point A [ARFCN]	offsetToCarrier [Carrier PRBs]	frequencyInfoSL [ARFCN]	sl-absoluteFrequencySSB [ARFCN] (NOTE)		
									S-SSB Low	S-SSB Mid	S-SSB High
10	52	Low	5860.005	790667	5855.325	790355	0	790355	790421	790673	790913
		Mid	5889.99	792666	5794.59	786306	504	792354	792420	792672	792912
		High	5919.99	794666	5914.23	794282	6	794354	794420	794672	794912
20	106	Low	5865	791000	5855.46	790364	0	790364	790430	791006	791570
		Mid	5889.99	792666	5789.73	785982	504	792030	792096	792672	793236
		High	5914.995	794333	5904.375	793625	6	793697	793763	794339	794903
30	160	Low	5870.01	791334	5855.61	790374	0	790374	790440	791340	792228
		Mid	5889.99	792666	5784.87	785658	504	791706	791772	792672	793560
		High	5910	794000	5894.52	792968	6	793040	793106	794006	794894
40	216	Low	5875.005	791667	5855.565	790371	0	790371	790437	791673	792897
		Mid	5889.99	792666	5779.83	785322	504	791370	791436	792672	793896
		High	5904.99	793666	5884.47	792298	6	792370	792436	793672	794896

NOTE: S-SSB Mid is the default S-SSB frequency unless explicitly indicated.

Table 4.3.1.8.1.2-2: Test frequencies for NR operating band n47 and SCS 30 kHz

CBW [MHz]	carrierBand width [PRBs]	Range	Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	sl-absolute Frequency Point A [ARFCN]	offsetToCarrier [Carrier PRBs]	frequencyInfoSL [ARFCN]	sl-absoluteFrequencySSB [ARFCN] (NOTE)		
									S-SSB Low	S-SSB Mid	S-SSB High
10	24	Low	5860.005	790667	5855.685	790379	0	790379	790511	790679	790823
		Mid	5889.99	792666	5704.23	780282	504	792378	792510	792678	792822
		High	5919.99	794666	5913.51	794234	6	794378	794510	794678	794822
20	51	Low	5865	791000	5855.82	790388	0	790388	790520	791000	791480
		Mid	5889.99	792666	5699.37	779958	504	792054	792186	792666	793146
		High	5914.995	794333	5903.655	793577	6	793721	793853	794333	794813
30	78	Low	5870.01	791334	5855.97	790398	0	790398	790530	791346	792138
		Mid	5889.9	792666	5694.51	779634	504	791730	791862	792678	793470
		High	5910	794000	5893.8	792920	6	793064	793196	794012	794804
40	106	Low	5875.005	791667	5855.925	790395	0	790395	790527	791679	792807
		Mid	5889.99	792666	5689.47	779298	504	791394	791526	792678	793806

		High	5904.99	793666	5883.75	792250	6	792394	792526	793678	794806
NOTE: S-SSB Mid is the default S-SSB frequency unless explicitly indicated.											

Table 4.3.1.8.1.2-3: Test frequencies for NR operating band n47 and SCS 60 kHz

CBW [MHz]	carrierBand width [PRBs]	Range	Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	sl- absolute Frequen- cyPoint A [ARFCN]	offsetT oCarrie- r [Carrier PRBs]	frequen- cyInfoS L [ARFCN]	sl-absoluteFrequencySSB [ARFCN] (NOTE)		
									S-SSB Low	S-SSB Mid	S-SSB High
10	11	Low	5860.005	790667	5856.045	790403	0	790403	790667	790667	790667
		Mid	5889.99	792666	5523.15	768210	504	792402	792666	792666	792666
		High	5919.99	794666	5911.71	794114	6	794402	794666	794666	794666
20	24	Low	5865	791000	5856.36	790424	0	790424	790688	791024	791312
		Mid	5889.99	792666	5518.47	767898	504	792090	792354	792690	792978
		High	5914.995	794333	5902.035	793469	6	793757	794021	794357	794645
30	38	Low	5870.01	791334	5856.33	790422	0	790422	790686	791358	791982
		Mid	5889.99	792666	5513.43	767562	504	791754	792018	792690	793314
		High	5910	794000	5892	792800	6	793088	793352	794024	794648
40	51	Low	5875.005	791667	5856.645	790443	0	790443	790707	791667	792627
		Mid	5889.99	792666	5508.75	767250	504	791442	791706	792666	793626
		High	5904.99	793666	5882.31	792154	6	792442	792706	793666	794626
NOTE: S-SSB Mid is the default S-SSB frequency unless explicitly indicated.											

4.3.1.8.1.3

Reference test frequencies for NR Sidelink operating band n79

Table 4.3.1.8.1.3-1: Test frequencies for NR operating band n79 and SCS 15 kHz

CBW [MHz]	carrierBand width [PRBs]	Range	Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	sl- absolute Frequen- cyPoint A [ARFCN]	offsetT oCarrie- r [Carrier PRBs]	frequen- cyInfoS L [ARFCN]	sl-absoluteFrequencySSB [ARFCN] (NOTE)		
									S-SSB Low	S-SSB Mid	S-SSB High
10	52	Low	4405.005	693667	4400.325	693355	0	693355	693421	693673	693913
		Mid	4699.995	713333	4695.315	713021	504	713021	713087	713339	713579
		High	4995	733000	4990.32	732688	6	732688	732754	733006	733246
20	106	Low	4410	694000	4400.46	693364	0	693364	693430	694006	694570
		Mid	4699.995	713333	4690.455	712697	504	712697	712763	713339	713903
		High	4989.99	732666	4980.45	732030	6	732030	732096	732672	733236
30	160	Low	4415.01	694334	4400.61	693374	0	693374	693440	694340	695228
		Mid	4699.995	713333	4685.595	712373	504	712373	712439	713339	714227
		High	4984.995	732333	4970.595	731373	6	731373	731439	732339	733227
40	216	Low	4420.005	694667	4400.565	693371	0	693371	693437	694673	695897
		Mid	4699.995	713333	4680.555	712037	504	712037	712103	713339	714563
		High	4980	732000	4960.56	730704	6	730704	730770	732006	733230
NOTE: S-SSB Mid is the default S-SSB frequency unless explicitly indicated.											

Table 4.3.1.8.1.3-2: Test frequencies for NR operating band n79 and SCS 30 kHz

CBW [MHz]	carrierBand width [PRBs]	Range	Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	sl-absolute Frequency Point A [ARFCN]	offsetT oCarrier [Carrier PRBs]	frequencyInfoS L [ARFCN]	sl-absoluteFrequencySSB [ARFCN] (NOTE)		
									S-SSB Low	S-SSB Mid	S-SSB High
10	24	Low	4405.005	693667	4400.685	693379	0	693379	693511	693679	693823
		Mid	4699.995	713333	4514.235	700949	504	713045	713177	713345	713489
		High	4995	733000	4988.52	732568	6	732712	732844	733012	733156
20	51	Low	4410	694000	4400.82	693388	0	693388	693520	694000	694480
		Mid	4699.995	713333	4509.375	700625	504	712721	712853	713333	713813

30	78	High	4989.99	732666	4978.65	731910	6	732054	732186	732666	733146
		Low	4415.01	694334	4400.97	693398	0	693398	693530	694346	695138
		Mid	4699.995	713333	4504.515	700301	504	712397	712529	713345	714137
40	106	High	4984.995	732333	4968.795	731253	6	731397	731529	732345	733137
		Low	4420.005	694667	4400.925	693395	0	693395	693527	694679	695807
		Mid	4699.995	713333	4499.475	699965	504	712061	712193	713345	714473
		High	4980	732000	4958.76	730584	6	730728	730860	732012	733140

NOTE: S-SSB Mid is the default S-SSB frequency unless explicitly indicated.

Table 4.3.1.8.1.3-3: Test frequencies for NR operating band n79 and SCS 60 kHz

CBW [MHz]	carrierBand width [PRBs]	Range	Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	sl-absoluteFrequencyPoint A [ARFCN]	offsetToCarrier [Carrier PRBs]	frequencyInfoS L [ARFCN]	sl-absoluteFrequencySSB [ARFCN] (NOTE)		
									S-SSB Low	S-SSB Mid	S-SSB High
10	11	Low	4405.005	693667	4401.045	693403	0	693403	693667	693667	693667
		Mid	4699.995	713333	4333.155	688877	504	713069	713333	713333	713333
		High	4995	733000	4986.72	732448	6	732736	733000	733000	733000
20	24	Low	4410	694000	4401.36	693424	0	693424	693688	694024	694312
		Mid	4699.995	713333	4328.475	688565	504	712757	713021	713357	713645
		High	4989.99	732666	4977.03	731802	6	732090	732354	732690	732978
30	38	Low	4415.01	694334	4401.33	693422	0	693422	693686	694358	694982
		Mid	4699.995	713333	4323.435	688229	504	712421	712685	713357	713981
		High	4984.995	732333	4966.995	731133	6	731421	731685	732357	732981
40	51	Low	4420.005	694667	4401.645	693443	0	693443	693707	694667	695627
		Mid	4699.995	713333	4318.755	687917	504	712109	712373	713333	714293
		High	4980	732000	4957.32	730488	6	730776	731040	732000	732960

NOTE: S-SSB Mid is the default S-SSB frequency unless explicitly indicated.

4.3.1.8.2 Test frequencies for concurrent NR sidelink operation

4.3.1.8.2.1 Reference test frequencies for Inter-band concurrent NR sidelink configurations

For inter-band concurrent NR sidelink configurations as listed in this clause, the following apply:

For the NR Uu band, test frequencies as specified in clause 4.3.1.1 for FR1 are used.

For the NR PC5 band, test frequencies as specified in clause 4.3.1.8.1 for FR1 are used.

Table 4.3.1.8.2.1-1: Test frequencies for Inter-band concurrent NR sidelink operating bands

Inter-band concurrent NR sidelink configuration	Operating band for NR uplink	Operating band for NR downlink	Operating band for NR sidelink	Applicable for protocol testing
V2X_n71-n47	n71	n71	n47	Yes

4.3.1.8.2.2 Reference test frequencies for Intra-band concurrent NR sidelink configurations

4.3.1.8.2.2.1 V2X Intra-band concurrent combination n79

4.3.1.8.2.2.1.1 V2X_n79B

Table 4.3.1.8.2.2.1.1-1: V2X Intra-band concurrent operation V2X_n79B, SCS 15 kHz (NR CC)

CBW [MHz]	carrierBandwidth [PRB]	Range	Carrier centre [MHz]	Carrier centre [ARF]	point A [MHz]	absoluteFrequencyPointA	offsetToCarrier [Carrier]	SS block SCS [kHz]	GSCN	absoluteFrequencySSB	k_{SSB}	Offset Carrier COR	CORESET#0 Index	offsetToPointA (SIB1) [PRB]

	Bs]				CN]		[ARF CN]	PRBs]	]		[ARF CN]		ESE T#0 [RBs] Note 2	(Offs et [RBs]) Note 1	s] Note 1
40	216	Downli nk& Uplink	Low	4420. 02	69466 8	4400. 58	69337 2	0	30	8480	69417 6	0	43	0 (4)	47
			Hig h	4980	73200 0	4869. 84	72465 6	504		8864	73104 0	0	4	0 (4)	512
50	270	Downli nk& Uplink	Low	4425	69500 0	4400. 7	69338 0	0	30	8480	69417 6	4	42	0 (4)	46
			Hig h	4974. 99	73166 6	4859. 97	72399 8	504		8864	73104 0	10	58	0 (4)	566
Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-5 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.															
Note 2: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter ΔF _{OffsetCORESET-0-Carrier} in Annex C expressed in number of common RBs.															
Note 3: The High range frequency can't cover the two RBs at the right edge of band due to the limit of GSCN range in TS 38.101-1 table 5.4.3.3-1.															
Note 4: This frequency is obtained applying certain exceptions over general rules defined in annex C.3.2.															

Table 4.3.1.8.2.2.1.1-2: V2X Intra-band concurrent operation V2X_n79B, SCS 15 kHz (SL CC)

CBW [MHz]	carrierBand width [PRBs]	Range	Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	sl- absolute Frequen cyPoint A [ARFCN]	offsetT oCarrie r [Carrier PRBs]	frequen cyInfoS L [ARFCN]	sl-absoluteFrequencySSB [ARFCN] (NOTE)		
									S-SSB Low	S-SSB Mid	S-SSB High
10	52	Low	4445.01	696334	4440.33	696022	0	696022	696088	696340	696580
		High	4995	733000	4990.32	732688	6	732688	732754	733006	733246
40	216	Low	4470	698000	4450.56	696704	0	696704	696770	698006	699230
		High	4980	732000	4960.56	730704	6	730704	730770	732006	733230
NOTE: S-SSB Mid is the default S-SSB frequency unless explicitly indicated.											

Table 4.3.1.8.2.2.1.1-3: V2X Intra-band concurrent operation V2X_n79B, SCS 30 kHz (NR CC)

CB W [MH z]	carri erBa ndwi dth [PR Bs]	Range		Carrie r centr e [MHz]	Carrie r centr e [ARF CN]	point A [MHz]	absol uteFr equen cyPoi ntA [ARF CN]	offset ToCar rier [Carri er PRBs]	SS bloc k SCS [kHz]	GSC N	absol uteFr equen cySS B [ARF CN]	k_{SSB}	Offs et Carrie r COR ESE T#0 [RBs] Note 2	COR ESE T#0 Inde x (Offs et [RBs]) Note 1	offset ToPoi ntA (SIB1) [PRB s] Note 1
40	106	Downli nk& Uplink	Low	4420. 02	69466 8	4400. 94	69339 6	0	30	8480	69417 6	12	18	1 (4)	44
			Hig h	4980	73200 0	4779. 48	71863 2	504		8864	73104 0	0	3	0 (0)	1014
100	273	Downli nk& Uplink	Low	4450. 02	69666 8	4400. 88	69339 2	0	30	8480	69417 6	16	18	1 (4)	44
			Hig h	4950	73000 0	4719. 42	71462 8	504		8832	72796 8	20	37	1 (4)	1090
Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-5 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2. Note 2: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and															

	the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs.
Note 3:	The High range frequency can't cover the two RBs at the right edge of band due to the limit of GSCN range in TS 38.101-1 table 5.4.3.3-1.
Note 4:	This frequency is obtained applying certain exceptions over general rules defined in annex C.3.2.

Table 4.3.1.8.2.1.1-4: V2X Intra-band concurrent operation V2X_n79B, SCS 30 kHz (SL CC)

CBW [MHz]	carrierBand width [PRBs]	Range	Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	sl-absolute Frequency Point A [ARFCN]	offsetToCarrier [Carrier PRBs]	frequencyInfoSL [ARFCN]	sl-absoluteFrequencySSB [ARFCN] (NOTE)		
									S-SSB Low	S-SSB Mid	S-SSB High
10	52	Low	4445.01	696334	4440.69	696046	0	696046	696178	696346	696490
		High	4995	733000	4988.52	732568	6	732712	732844	733012	733156
40	216	Low	4520.01	701334	4500.93	700062	0	700062	700194	701346	702474
		High	4980	732000	4958.76	730584	6	730728	730860	732012	733140

NOTE: S-SSB Mid is the default S-SSB frequency unless explicitly indicated.

4.3.1.9 Test frequencies for NR NTN operating bands

4.3.1.9.1 NR NTN operating bands

4.3.1.9.1.1 Reference test frequencies for NR NTN operating band n256

Table 4.3.1.9.1.1-1: Test frequencies for NR operating band n256 and SCS 15 kHz

CB W [MHz]	carrierBand width [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequencyPointA [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS [kHz]	GSCN	absoluteFrequencySSB [ARFCN]	k_{SSB}	Offset Carrier CORESET#0 [RBs] Note 2	CORESET#0 Index (Offset [RBs]) Note 1	offsetToPointA (SIB1) [PRBs] Note 1
5	25	Downlink	Low	2172.5	434500	2170.25	434050	0	15	5429	434410	0	0	0(0)	0
			Mid	2185	437000	2164.39	432878	102		5464	437090	0	1	2(4)	107
			High	2197.5	439500	2104.53	420906	504		5493	439470	8	1	0(0)	505
		Uplink	Low	1982.5	396500	1980.25	396050	0	-	-	-	-	-	-	-
			Mid	1995	399000	1902.03	380406	504		-	-	-	-	-	-
			High	2007.5	401500	2004.17	400834	6		-	-	-	-	-	-
10	52	Downlink	Low	2175	435000	2170.32	434064	0	15	5430	434430	2	0	0(0)	0
			Mid	2185	437000	2161.96	432392	102		5458	436610	2	1	2(4)	107
			High	2195	439000	2099.6	419920	504		5480	438490	10	1	0(0)	505
		Uplink	Low	1985	397000	1980.32	396064	0	-	-	-	-	-	-	-
			Mid	1995	399000	1899.6	379920	504		-	-	-	-	-	-
			High	2005	401000	1999.24	399848	6		-	-	-	-	-	-

15	79	Downlink	Low	2177.5	435500	2170.39	434078	0	15	5431	434450	4	0	0(0)	0
			Mid	2185.0	437000	2159.53	431906	102		5452	436130	4	1	2(4)	107
			High	2192.5	438500	2094.67	418934	504		5470	437570	8	1	1(2)	507
		Uplink	Low	1987.5	397500	1980.39	396078	0	-	-	-	-	-	-	-
			Mid	1995	399000	1897.17	379434	504		-	-	-	-	-	-
			High	2002.5	400500	1994.31	398862	6		-	-	-	-	-	-
20	106	Downlink	Low	2180	436000	2170.46	434092	0	15	5432	434650	6	1	2(4)	5
			Mid	2185	437000	2157.1	431420	102		5446	435650	6	1	2(4)	107
			High	2190	438000	2089.74	417948	504		5457	436590	10	1	1(2)	507
		Uplink	Low	1990	398000	1980.46	396092	0	-	-	-	-	-	-	-
			Mid	1995	399000	1894.74	378948	504		-	-	-	-	-	-
			High	2000	400000	1989.38	397876	6		-	-	-	-	-	-
Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-1 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.															
Note 2: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs.															

Table 4.3.1.9.1.1-2: Test frequencies for NR operating band n256 and SCS 30 kHz

CB W [MHz]	carrierBandwidth [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequencyPointA [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS [kHz]	GSCN	absoluteFrequencySSB [ARFCN]	k_{SSE}	Offset Carrier CORESET#0 [RBs] Note 2	CORESET#0 Index (Offset [RBs]) Note 1	offsetToPointA (SIB1) [PRBs] Note 1
10	24	Downlink	Low	2175	435000	2170.68	434136	0	15	5436	434910	18	0	0(5)	10
			Mid	2185	437000	2143.96	428792	102		5464	437090	6	0	3(8)	220
			High	2195	439000	2009.24	401848	504		5486	438970	14	0	1(6)	1020
		Uplink	Low	1985	397000	1980.68	396136	0	-	-	-	-	-	-	-
			Mid	1995	399000	1809.24	361848	504		-	-	-	-	-	-
			High	2005	401000	1998.52	399704	6		-	-	-	-	-	-
15	38	Downlink	Low	2177.5	435500	2170.66	434132	0	15	5437	434930	2	0	1(6)	12
			Mid	2185	437000	2141.44	428288	102		5455	436370	6	0	0(5)	214
			High	2192.5	438500	2004.22	400844	504		5476	438050	18	0	2(7)	1022
		Uplink	Low	1987.5	397500	1980.66	396132	0	-	-	-	-	-	-	-
			Mid	1995	399000	1806	36134	504		-	-	-	-	-	-

					0	72	4								
			High	2002.5	400500	1993.5	398700	6		-	-	-	-	-	-
20	51	Downlink	Low	2180	436000	2170.82	434164	0	15	5435	434890	2	0	0(5)	10
			Mid	2185	437000	2139.1	427820	102		5449	435890	2	0	0(5)	214
			High	2190	438000	1999.38	399876	504		5463	437070	14	0	2(7)	1022
		Uplink	Low	1990	398000	1980.82	396164	0	-	-	-	-	-	-	-
			Mid	1995	399000	1804.38	427820	504		-	-	-	-	-	-
			High	2000	400000	1988.66	397732	6		-	-	-	-	-	-

Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-2 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.

Note 2: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs.

Table 4.3.1.9.1.1-3: Test frequencies for NR operating band n256 and SCS 60 kHz

CBW [MHz]	carrierBandwidth [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFC N]	point A [MHz]	absoluteFrequencyPointA [ARFC N]	offsetToCarrier [PRBs]	SS block SCS [kHz]	GSCN	absoluteFrequencySSB [ARFC N]
10	11	Downlink	Low	2175	435000	2171.04	434208	0	15	-	434568
			Mid	2185	437000	2107.6	421520	102		-	436568
			High	2195	439000	1828.16	365632	504		-	438568
		Uplink	Low	1985	397000	1981.04	396208	0	-	-	-
			Mid	1995	399000	1628.16	325632	504		-	-
			High	2005	401000	1996.72	399344	6		-	-
15	18	Downlink	Low	2177.5	435500	2171.02	434204	0	15	-	434564
			Mid	2185	437000	2105.08	421016	102		-	436064
			High	2192.5	438500	1823.14	364628	504		-	437564
		Uplink	Low	1987.5	397500	1981.02	396204	0	-	-	-
			Mid	1995	399000	1625.64	325128	504		-	-
			High	2002.5	400500	1991.7	398340	6		-	-
20	24	Downlink	Low	2180	436000	2171.36	434272	0	15	-	434632
			Mid	2185	437000	2102.92	420584	102		-	435632
			High	2190	438000	1818.48	363696	504		-	436632
		Uplink	Low	1990	398000	1981.36	396272	0	-	-	-
			Mid	1995	399000	1623.48	324696	504		-	-
			High	2000	400000	1987.04	397408	6		-	-

Note: FR1 carrier without CORESET#0 is indicated in the MIB by setting $k_{\text{SSB}}=31$, controlResourceSetZero=0 and searchSpaceZero = 0 (TS 38.213 [22], clause 13).

4.3.1.9.1.1a Reference test frequencies for NR NTN operating band n256 with flexible Tx-Rx separation

Table 4.3.1.9.1.1a-1: Test frequencies for NR operating band n256 and SCS 15 kHz with flexible Tx-Rx separation

CBW	carrierBandwidth	Range	Carrier	Carrier	point A	absoluteFrequency	offsetToCarrier	SS block	GSCN	absoluteFrequency	k_{SSB}	Offset	CORESET	offsetToPointA

[MHz] [z]	ndwidth [PRBs]			centre [MHz]	centre [ARF CN]	[MHz]	equencyPointA [ARF CN]	rier [Carrier PRBs]	k SCS [kHz]		equencySSB [ARF CN]		Carrier CORESET#0 [RBs] Note 2	T#0 Index (Offset [RBs]) Note 1	ntA (SIB1) [PRBs] Note 1
5	25	Downlink	Low	2172.5	434500	2170.25	434050	0	15	5429	434410	0	0	0(0)	0
			Mid	2185	437000	2164.39	432878	102		5464	437090	0	1	2(4)	107
			High	2197.5	439500	2104.53	420906	504		5493	439470	8	1	0(0)	505
		Uplink	Low	2007.5	401500	2005.25	401050	0	-	-	-	-	-	-	-
			Mid	1996	399200	1903.03	380606	504		-	-	-	-	-	-
			High	1982.5	396500	1979.17	395834	6		-	-	-	-	-	-
20	106	Downlink	Low	2180	436000	2170.46	434092	0	15	5432	434650	6	1	2(4)	5
			Mid	2185	437000	2157.1	431420	102		5446	435650	6	1	2(4)	107
			High	2190	438000	2089.74	417948	504		5457	436590	10	1	1(2)	507
		Uplink	Low	2000	400000	1990.46	398092	0	-	-	-	-	-	-	-
			Mid	1996	399200	1895.74	379148	504		-	-	-	-	-	-
			High	1990	398000	1979.38	395876	6		-	-	-	-	-	-
Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-1 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.															
Note 2: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs.															

Table 4.3.1.9.1.1a-2: Test frequencies for NR operating band n256 and SCS 30 kHz with flexible Tx-Rx separation

CBW [MHz]	carrierBandwidth [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequencyPointA [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS [kHz]	GSCN	absoluteFrequencySSB [ARFCN]	k_{SSB}	Offset Carrier CORESET#0 [RBs] Note 2	CORESET#0 Index (Offset [RBs]) Note 1	offsetToPointA (SIB1) [PRBs] Note 1
20	51	Downlink	Low	2180	436000	2170.82	434164	0	15	5435	434890	2	0	0(5)	10
			Mid	2185	437000	2139.1	427820	102		5449	435890	2	0	0(5)	214
			High	2190	438000	1999.38	399876	504		5463	437070	14	0	2(7)	1022
		Uplink	Low	2000	398000	1990.82	398164	0	-	-	-	-	-	-	-
			Mid	1996	399200	1805.38	361076	504		-	-	-	-	-	-
			High	1990	400000	1978.	39573	6		-	-	-	-	-	-

			h		0	66	2							
Note 1:	The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-2 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.													
Note 2:	The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs.													

Table 4.3.1.9.1.1a-3: Test frequencies for NR operating band n256 and SCS 60 kHz with flexible Tx-Rx separation

CBW [MHz]	carrierBandwidth [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFC N]	point A [MHz]	absoluteFrequencyPointA [ARFC N]	offsetToCarrier [PRBs]	SS block SCS [kHz]	GSCN	absoluteFrequencySSB [ARFC N]
20	24	Downlink	Low	2180	436000	2171.36	434272	0	15	-	434632
			Mid	2185	437000	2102.92	420584	102		-	435632
			High	2190	438000	1818.48	363696	504		-	436632
		Uplink	Low	2000	400000	1991.36	434272	0	-	-	-
			Mid	1996	399200	1624.48	324896	504		-	-
			High	1990	398000	1977.04	395408	6		-	-
Note: FR1 carrier without CORESET#0 is indicated in the MIB by setting k_{SSB} =31, <i>controlResourceSetZero</i> =0 and <i>searchSpaceZero</i> = 0 (TS 38.213 [22], clause 13).											

4.3.1.9.1.2

Reference test frequencies for NR NTN operating band n255

Table 4.3.1.9.1.2-1: Test frequencies for NR operating band n255 with SCS 15 kHz and SSB SCS 15 kHz

CBW [MHz]	carrierBandwidth [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequencyPointA [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS [kHz]	GSCN	absoluteFrequencySSB [ARFCN]	k_{SSB}	Offset Carrier CORESET#0 [RBs]	CORESET#0 Index (Offset [RBs])	offsetToPointA (SIB1) [PRBs]
5	25	Downlink	Low	1527.5	30550	1525.25	30505	0	15	3818	30553	4	1	1(2)	3
			Mid	1542	30840	1521.39	30427	102		3855	30843	4	1	1(2)	105
			High	1556.5	31130	1463.53	29270	504		3892	31133	4	1	1(2)	507
		Uplink	Low	1629	32580	1626.75	32535	0	-	-	-	-	-	-	-
			Mid	1643.5	32870	1550.53	31010	504		-	-	-	-	-	-
			High	1658	33160	1654.67	33093	6		-	-	-	-	-	-
10	52	Downlink	Low	1530	30600	1525.32	30506	0	15	3819	30555	6	1	1(2)	3
			Mid	1542	30840	1518.96	30379	102		3849	30795	6	1	1(2)	105
			High	1554	31080	1458.6	29172	504		3879	31035	6	1	1(2)	507
		Uplink	Low	1631.5	32630	1626.82	32536	0	-	-	-	-	-	-	-

15	79	Downlink	Mid	1643.5	328700	1548.1	309620	504	15	-	-	-	-	-	-
			High	1655.5	331100	1649.74	329948	6		-	-	-	-	-	-
			Low	1532.5	306500	1525.39	305078	0		3820	305570	8	1	1(2)	3
		Uplink	Mid	1542	308400	1516.53	303306	102	-	3843	307470	8	1	1(2)	105
			High	1551.5	310300	1453.67	290734	504		3866	309370	8	1	1(2)	507
			Low	1634	326800	1626.89	325378	0		-	-	-	-	-	-
		Uplink	Mid	1643.5	328700	1545.67	309134	504		-	-	-	-	-	-
			High	1653	330600	1644.81	328962	6		-	-	-	-	-	-
			Low	1535	307000	1525.46	305092	0	15	3818	305530	2	0	1(2)	2
20	106	Downlink	Mid	1542	308400	1514.1	302820	102		3837	306990	10	1	1(2)	105
			High	1549	309800	1448.74	289748	504		3856	308450	6	1	2(4)	509
		Uplink	Low	1636.5	327300	1626.96	325392	0	-	-	-	-	-	-	-
			Mid	1643.5	328700	1543.24	308648	504		-	-	-	-	-	-
			High	1650.5	330100	1639.88	327976	6		-	-	-	-	-	-

Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-1 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.

Note 2: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs.

Table 4.3.1.9.1.2-2: Test frequencies for NR operating band n255 with SCS 30 kHz and SSB SCS 15 kHz

CB W [MHz]	carrierBandwidth [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequencyPointA [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS [kHz]	GSCN	absoluteFrequencySSB [ARFCN]	k_{SSB}	Offset Carrier CORESET#0 [RBs] Note 2	CORESET#0 Index (Offset [RBs]) Note 1	offsetToPointA (SIB1) [PRBs] Note 1
10	24	Downlink	Low	1530	306000	1525.68	305136	0	15	3825	306030	10	0	2(7)	14
			Mid	1542	308400	1500.96	300192	102		3855	308430	10	0	2(7)	218
			High	1554	310800	1368.24	273648	504		3885	310830	10	0	2(7)	1022
		Uplink	Low	1631.5	326300	1627.18	325436	0	-	-	-	-	-	-	-
			Mid	1643.5	328700	1457.74	291548	504		-	-	-	-	-	-
			High	1655.5	331100	1649.02	329804	6		-	-	-	-	-	-
15	38	Downlink	Low	1532.5	306500	1525.66	305132	0	15	3826	306050	18	0	2(7)	14
			Mid	1542	308400	1498.44	299688	102		3849	307950	18	0	2(7)	218

			High	1551.5	31030	1363.22	27264	504		3872	30985	18	0	2(7)	1022
		Uplink	Low	1634	32680	1627.16	32543	0	-	-	-	-	-	-	-
			Mid	1643.5	32870	1455.22	29104	504		-	-	-	-	-	-
			High	1653	33060	1644	32880	6		-	-	-	-	-	-
20	51	Downlink	Low	1535	30700	1525.82	30516	0	15	3824	30601	18	0	1(6)	12
			Mid	1542	30840	1496.1	29922	102		3843	30747	14	0	2(7)	218
			High	1549	30980	1358.38	27167	504		3859	30869	2	0	0(5)	1018
		Uplink	Low	1636.5	32730	1627.32	32546	0	-	-	-	-	-	-	-
			Mid	1643.5	32870	1452.88	29057	504		-	-	-	-	-	-
			High	1650.5	33010	1639.16	32783	6		-	-	-	-	-	-

Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-2 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.

Note 2: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs.

Table 4.3.1.9.1.2-3: Test frequencies for NR operating band n255 with SCS 60 kHz and SSB SCS 15 kHz

CBW [MHz]	carrierBandwidth [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequencyPointA [ARFCN]	offsetToCarrier [PRBs]	SS block SCS [kHz]	GSCN	absoluteFrequencySSB [ARFCN]
10	11	Downlink	Low	1530	306000	1526.04	305208	0	15	-	305568
			Mid	1542	308400	1464.6	292920	102		-	307968
			High	1554	310800	1187.16	237432	504		-	310368
		Uplink	Low	1631.5	326300	1627.54	325508	0	-	-	-
			Mid	1643.5	328700	1276.66	255332	504		-	-
			High	1655.5	331100	1647.22	329444	6		-	-
15	18	Downlink	Low	1532.5	306500	1526.02	305204	0	15	-	305564
			Mid	1542	308400	1462.08	292416	102		-	307464
			High	1551.5	310300	1182.14	236428	504		-	309364
		Uplink	Low	1634	326800	1627.52	325504	0	-	-	-
			Mid	1643.5	328700	1274.14	254828	504		-	-
			High	1653	330600	1642.2	328440	6		-	-
20	24	Downlink	Low	1535	307000	1526.36	305272	0	15	-	305632
			Mid	1542	308400	1459.92	291984	102		-	307032
			High	1549	309800	1177.48	235496	504		-	308432
		Uplink	Low	1636.5	327300	1627.86	325572	0	-	-	-
			Mid	1643.5	328700	1271.98	254396	504		-	-
			High	1650.5	330100	1637.54	327508	6		-	-

Note: FR1 carrier without CORESET#0 is indicated in the MIB by setting $k_{\text{SSB}}=31$, *controlResourceSetZero*=0 and *searchSpaceZero* = 0 (TS 38.213 [22], clause 13).

4.3.1.9.1.2a Reference test frequencies for NR NTN operating band n255 with flexible Tx-Rx separation

Table 4.3.1.9.1.2a-1: Test frequencies for NR operating band n255 with SCS 15 kHz and SSB SCS 15 kHz with flexible Tx-Rx separation

CB W [MHz]	carrierBandwidth [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARF CN]	point A [MHz]	absoluteFrequencyPointA [ARF CN]	offsetToCarrier [Carrier PRBs]	SS block SCS [kHz]	GSC N	absoluteFrequencySSB [ARF CN]	k_{SSB}	Offset Carrier CORESET#0 [RBs] Note 2	CORESET#0 Index (Offset [RBs]) Note 1	offsetToPointA (SIB1) [PRBs] Note 1
5	25	Downlink	Low	1556.5	311300	1554.25	310850	0	15	3892	311330	4	1	1(2)	3
			Mid	1542	308400	1521.39	304278	102		3855	308430	4	1	1(2)	105
			High	1527.5	305500	1434.53	286906	504		3818	305530	4	1	1(2)	507
		Uplink	Low	1629	325800	1626.75	325350	0	-	-	-	-	-	-	-
			Mid	1642	328500	1549.53	304278	504		-	-	-	-	-	-
			High	1658	331600	1654.67	330934	6		-	-	-	-	-	-
20	106	Downlink	Low	1549	309800	1539.46	307892	0	15	3856	308450	6	1	2(4)	5
			Mid	1542	308400	1514.1	302820	102		3837	306990	10	1	1(2)	105
			High	1535	307000	1434.74	286948	504		3818	305530	2	0	1(2)	506
		Uplink	Low	1636.5	327300	1626.96	325392	0	-	-	-	-	-	-	-
			Mid	1642	328500	1542.24	302820	504		-	-	-	-	-	-
			High	1650.5	330100	1639.88	327976	6		-	-	-	-	-	-
Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-1 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.															
Note 2: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs.															

Table 4.3.1.9.1.2a-2: Test frequencies for NR operating band n255 with SCS 30 kHz and SSB SCS 15 kHz with flexible Tx-Rx separation

CB W [MHz]	carrier Bandwidth [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARF CN]	point A [MHz]	absolute Frequency Point A [ARF CN]	offset To Carrier [Carrier PRBs]	SS block SCS [kHz]	GSC N	absolute Frequency SSB [ARF CN]	k_{SSB}	Offset Carrier CORESET#0 [RBs] Note 2	CORESET#0 Index (Offset [RBs]) Note 1	offset To Point A (SIB1) [PRBs] Note 1
20	106	Downlink	Low	1549	309800	1539.82	307964	0	15	3859	308690	2	0	0(5)	10
			Mid	1542	308400	1496.	29922	102		3843	30747	14	0	2(7)	218

				0	1	0			0					
		High	1535	30700	1344.38	26887.6	504		3824	30601.0	18	0	1(6)	1020
	Uplink	Low	1636.5	32730	1627.32	32546.4	0	-	-	-	-	-	-	-
		Mid	1642.5	32850	1451.88	29922.0	504		-	-	-	-	-	-
		High	1650.5	33010	1639.16	32783.2	6		-	-	-	-	-	-

Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-2 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.

Note 2: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs.

Table 4.3.1.9.1.2a-3: Test frequencies for NR operating band n255 with SCS 60 kHz and SSB SCS 15 kHz with flexible Tx-Rx separation

CBW [MHz]	carrierBandwidth [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFC N]	point A [MHz]	absoluteFrequencyPointA [ARFC N]	offsetToCarrier [PRBs]	SS block SCS [kHz]	GSCN	absoluteFrequencySSB [ARFC N]
20	24	Downlink	Low	1549	309800	1540.36	308072	0	15	-	308432
			Mid	1542	308400	1459.92	291984	102		-	307032
			High	1535	307000	1163.48	232696	504		-	305632
		Uplink	Low	1636.5	327300	1627.86	325572	0	-	-	-
			Mid	1642.5	328500	1270.98	254196	504		-	-
			High	1650.5	330100	1637.54	327508	6		-	-
Note: FR1 carrier without CORESET#0 is indicated in the MIB by setting $k_{\text{SSB}}=31$, <i>controlResourceSetZero</i> =0 and <i>searchSpaceZero</i> = 0 (TS 38.213 [22], clause 13).											

4.3.1.9.1.3

Reference test frequencies for NR NTN operating band n254

Table 4.3.1.9.1.3-1: Test frequencies for NR operating band n254 with SCS 15 kHz and SSB SCS 15 kHz

UL/DL Bandwidth combination [MHz]	carrierBandwidth [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequencyPointA [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS [kHz]	GSCN	absoluteFrequencySSB [ARFCN]	k_{SSB}	Offset Carrier CORESET#0 [RBs] Note 2	CORESET#0 Index (Offset [RBs]) Note 1	offsetToPointA (SIB1) [PRBs] Note 1
5/5	25	Downlink	Low	2486	497200	2483.75	496750	0	15	6215	497290	0	1	2 (4)	5
			Mid	2491.8	498360	2471.19	494238	102	6228	498270	0	0	0 (0)	102	
			High	2497.5	499500	2404.53	480906	504	6243	499470	8	1	0 (0)	505	
		Uplink	Low	1612.5	322500	1610.25	322050	0	-	-	-	-	-	-	-
			Mid	1618.3	323660	1525.33	305066	504	-	-	-	-	-	-	-
			High	1624	32480	1620.	32413	6	-	-	-	-	-	-	-

5/10	52	Downlink	h		0	67	4		15						
			Low	2488.5	497700	2483.82	496764	0		6216	497310	2	1	2 (4)	5
			Mid	2491.8	498360	2468.76	493752	102		6222	497790	2	0	0 (0)	102
	25	Uplink	High	2495	499000	2399.6	479920	504	-	6230	498490	10	1	0 (0)	505
			Low	1612.5	322500	1610.25	322050	0		-	-	-	-	-	-
			Mid	1615.8	323160	1522.83	304566	504		-	-	-	-	-	-
5/15	79	Downlink	Low	2491	498200	2483.89	496778	0	15	6217	497330	4	1	2 (4)	5
			Mid	2491.8	498360	2466.33	493266	102		6216	497310	4	0	0 (0)	102
			High	2492.5	498500	2394.67	478934	504		6220	497570	8	1	1 (2)	507
	25	Uplink	Low	1612.5	322500	1610.25	322050	0	-	-	-	-	-	-	-
			Mid	1613.3	322660	1520.33	304066	504		-	-	-	-	-	-
			High	1614	322800	1610.67	322134	6		-	-	-	-	-	-
10/10	52	Downlink	Low	2488.5	497700	2483.82	496764	0	15	6216	497310	2	1	2 (4)	5
			Mid	2491.8	498360	2468.76	493752	102		6222	497790	2	0	0 (0)	102
			High	2495	499000	2399.6	479920	504		6230	498490	10	1	0 (0)	505
		Uplink	Low	1615	323000	1610.32	322064	0	-	-	-	-	-	-	-
			Mid	1618.3	323660	1522.9	304580	504		-	-	-	-	-	-
			High	1621.5	324300	1615.74	323148	6		-	-	-	-	-	-
10/15	79	Downlink	Low	2491	498200	2483.89	496778	0	15	6217	497330	4	1	2 (4)	5
			Mid	2491.8	498360	2466.33	493266	102		6216	497310	4	0	0 (0)	102
			High	2492.5	498500	2394.67	478934	504		6220	497570	8	1	1 (2)	507
	52	Uplink	Low	1615	323000	1610.32	322064	0	-	-	-	-	-	-	-
			Mid	1615.8	323160	1520.4	304080	504		-	-	-	-	-	-
			High	1616.5	323300	1610.74	322148	6		-	-	-	-	-	-
15/15	79	Downlink	Low	2491	498200	2483.89	496778	0	15	6217	497330	4	1	2 (4)	5
			Mid	2491.8	498360	2466.33	493266	102		6216	497310	4	0	0 (0)	102
			High	2492.5	498500	2394.67	478934	504		6220	497570	8	1	1 (2)	507
		Uplink	Low	1617.5	323500	1610.39	322078	0	-	-	-	-	-	-	-
			Mid	1618.3	323660	1520.47	304094	504		-	-	-	-	-	-
			High	1619	323800	1610.81	322162	6		-	-	-	-	-	-

Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-1 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.

Note 2: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C

expressed in number of common RBs.

Table 4.3.1.9.1.3-2: Test frequencies for NR operating band n254 with SCS 30 kHz and SSB SCS 15 kHz

UL/DL Bandwidth combination [MHz]	carrierBandwidth [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequencyPointA [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS [kHz]	GSCN	absoluteFrequencySSB [ARFCN]	k_{SSB}	Offset Carrier CORESET#0 [RBs] Note 2	CORESET#0 Index (Offset [RBs]) Note 1	offsetToPointA (SIB1) [PRBs] Note 1	
10/10	24	Downlink	Low	2488.5	49770	2484.18	496836	0	15	6222	497790	6	0	3 (8)	16	
			Mid	2491.8	498360	2450.76	490152	102		6228	498270	18	0	0 (5)	214	
			High	2495	499000	2309.24	461848	504		6236	498970	14	0	1 (6)	1020	
		Uplink	Low	1615	323000	1610.68	322136	0	-	-	-	-	-	-	-	
			Mid	1618.3	323660	1432.54	286508	504		-	-	-	-	-	-	
			High	1621.5	324300	1615.02	323004	6		-	-	-	-	-	-	
10/15	38	Downlink	Low	2491	498200	2484.16	496832	0	15	6220	497570	6	0	0 (5)	10	
			Mid	2491.8	498360	2448.24	489648	102		6222	497790	2	0	1 (6)	216	
			High	2492.5	498500	2304.22	460844	504		6226	498050	18	0	2 (7)	1022	
		24	Uplink	Low	1615	323000	1610.68	322136	0	-	-	-	-	-	-	-
				Mid	1615.8	323160	1430.04	286008	504		-	-	-	-	-	-
				High	1616.5	323300	1610.02	322004	6		-	-	-	-	-	-
15/15	38	Downlink	Low	2491	498200	2484.16	496832	0	15	6220	497570	6	0	0 (5)	10	
			Mid	2491.8	498360	2448.24	489648	102		6222	497790	2	0	1 (6)	216	
			High	2492.5	498500	2304.22	460844	504		6226	498050	18	0	2 (7)	1022	
		Uplink	Low	1617.5	323500	1610.66	322132	0	-	-	-	-	-	-	-	
			Mid	1618.3	323660	1430.02	286004	504		-	-	-	-	-	-	
			High	1619	323800	1610	322000	6		-	-	-	-	-	-	
Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-2 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.																
Note 2: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs.																

Table 4.3.1.9.1.3-3: Test frequencies for NR operating band n254 with SCS 60 kHz and SSB SCS 15 kHz without CORESET#0

CBW [MHz]	carrierBandwidth	Range	Carrier	Carrier centre	point A [MHz]	absoluteFrequency	offsetToCarrier	SS block	GSCN	absoluteFrequency

	[PRBs]			centre [MHz]	[ARFC N]		encyPo intA [ARFC N]	r [PRBs]	SCS [kHz]		encySS B [ARFC N]
10	11	Downlin k	Low	2488.5	497700	2484.54	496908	0	15	-	497268
			Mid	2491.8	498360	2414.4	482880	102		-	497928
			High	2495	499000	2128.16	425632	504		-	498568
		Uplink	Low	1615	323000	1611.04	322208	0	-	-	-
			Mid	1618.3	323660	1251.46	250292	504		-	-
			High	1621.5	324300	1613.22	322644	6		-	-
15	18	Downlin k	Low	2491	498200	2484.52	496904	0	15	-	497264
			Mid	2491.8	498360	2411.88	482376	102		-	497424
			High	2492.5	498500	2123.14	424628	504		-	497564
		Uplink	Low	1617.5	323500	1611.02	322204	0	-	-	-
			Mid	1618.3	323660	1248.94	249788	504		-	-
			High	1619	323800	1608.2	321640	6		-	-
Note: FR1 carrier without CORESET#0 is indicated in the MIB by setting k_{SSB} =31, <i>controlResourceSetZero</i> =0 and <i>searchSpaceZero</i> = 0 (TS 38.213 [22], clause 13).											

4.3.1.9.1.4

Reference test frequencies for NR NTN operating band n253

Table 4.3.1.9.1.4-1: Test frequencies for NR operating band n253 with SCS 15 kHz and SSB SCS 15 kHz

UL/ DL Bandwidth combination [MHz]	carrierBandwidth [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequency PointA [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS [kHz]	GSC N	absoluteFrequency SSB [ARFCN]	k_{SSB}	Offset Carrier CORESET#0 [RBs] Note 2	CORESET#0 Index (Offset [RBs]) Note 1	offsetToPointA (SIB1) [PRBs] Note 1
5/5	25	Downlink	Low	1520.5	304100	1518.25	303650	0	15	3802	304130	4	1	1(2)	3
			Mid	1521.5	304300	1500.89	300178	102		3803	304330	4	1	1(2)	105
			High	1522.5	304500	1429.53	285906	504		3807	304590	0	1	2(4)	509
		Uplink	Low	1670.5	334100	1668.25	333650	0	-	-	-	-	-	-	-
			Mid	1671.5	334300	1578.53	315706	504		-	-	-	-	-	-
			High	1672.5	334500	1669.17	333834	6		-	-	-	-	-	-
Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-1 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.															
Note 2: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs.															

4.3.1.9.1.5

Reference test frequencies for NR NTN operating band n252

Table 4.3.1.9.1.5-1: Test frequencies for NR operating band n252 with SCS 15 kHz and SSB SCS 15 kHz

UL/ DL Bandwidth combination [MHz]	carrierBandwidth [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARF CN]	point A [MHz]	absoluteFrequencyPointA [ARF CN]	offsetToCarrier [Carrier PRBs]	SS block SCS [kHz]	GSC N	absoluteFrequencySSB [ARF CN]	k_{SSB}	Offset Carrier CORESET#0 [RBs] Note 2	CORESET#0 Index (Offset [RBs]) Note 1	offsetToPointA (SIB1) [PRBs] Note 1
5/5	25	Downlink	Low	2182.5	436500	2180.25	436050	0	15	5457	436590	0	1	2 (4)	5
			Mid	2190	438000	2169.39	433878	102			438030	4	1	1 (2)	105
			High	2197.5	439500	2104.53	420906	504			439470	8	1	0 (0)	505
		Uplink	Low	2002.5	400500	2000.25	400050	0	-	-	-	-	-	-	-
			Mid	2010	402000	1917.03	383406	504		-	-	-	-	-	-
			High	2017.5	403500	2014.17	402834	6		-	-	-	-	-	-
5/10	52	Downlink	Low	2185	437000	2180.32	436064	0	15	5458	436610	2	1	2 (4)	5
			Mid	2190	438000	2166.93	433392	102			437550	6	1	1 (2)	105
			High	2195	439000	2099.6	419920	504			438490	10	1	0 (0)	505
	25	Uplink	Low	2005	401000	2002.75	400550	0	-	-	-	-	-	-	-
			Mid	2010	402000	1971.03	383406	504		-	-	-	-	-	-
			High	2015	403000	2011.67	402334	6		-	-	-	-	-	-
5/15	79	Downlink	Low	2187.5	437500	2180.39	436078	0	15	5456	436570	8	1	1 (2)	3
			Mid	2190	438000	2164.53	432906	102			437070	8	1	1 (2)	105
			High	2192.5	438500	2094.67	418934	504			437570	8	1	1 (2)	507
	25	Uplink	Low	2007.5	401500	2005.25	401050	0	-	-	-	-	-	-	-
			Mid	2010	402000	1917.03	383406	504		-	-	-	-	-	-
			High	2012.5	402500	2009.17	401834	6		-	-	-	-	-	-
5/20	106	Downlink	Low	2190	438000	2180.46	436092	0	15	5457	436590	10	1	1 (2)	3
			Mid												
			High												
	25	Uplink	Low	2010	402000	2007.75	401550	0	-	-	-	-	-	-	-
			Mid												
			High												
10/10	52	Downlink	Low	2185	437000	2180.32	436064	0	15	5458	436610	2	1	2 (4)	5
			Mid	2190	438000	2166.96	433392	102			437550	6	1	1 (2)	105
			High	2195	439000	2099.6	419920	504			438490	10	1	0 (0)	505

			h		0	6	0				0				
		Uplink	Low	2005	40100	2000.	40006	0	-	-	-	-	-	-	-
			Mid	2010	40200	1914.	38292	504		-	-	-	-	-	-
			Hig h	2015	40300	2009.	40184	6		-	-	-	-	-	-
10/1	79	Downli nk	Low	2187.	43750	2180.	43607	0	15	5456	43657	8	1	1 (2)	3
5			Mid	2190	43800	2164.	43290	102		5463	43707	8	1	1 (2)	105
			Hig h	2192.	43850	2094.	41893	504		5470	43757	8	1	1 (2)	507
	52	Uplink	Low	2007.	40150	2002.	40056	0	-	-	-	-	-	-	-
			Mid	2010	40200	1914.	38292	504		-	-	-	-	-	-
			Hig h	2012.	40250	2006.	40134	6		-	-	-	-	-	-
10/2	106	Downli nk	Low	2190	43800	2180.	43609	0	15	5457	43659	10	1	1 (2)	3
0			Mid		0	46	2				0				
			Hig h												
	52	Uplink	Low	2010	40200	2005.	40106	0	-	-	-	-	-	-	-
			Mid		0	32	4								
			Hig h												
15/1	79	Downli nk	Low	2187.	43750	2180.	43607	0	15	5456	43657	8	1	1 (2)	3
5			Mid	2190	43800	2164.	43290	102		5463	43707	8	1	1 (2)	105
			Hig h	2192.	43850	2094.	41893	504		5470	43757	8	1	1 (2)	507
		Uplink	Low	2007.	40150	2000.	40007	0	-	-	-	-	-	-	-
			Mid	2010	40200	1912.	38243	504		-	-	-	-	-	-
			Hig h	2012.	40250	2004.	40086	6		-	-	-	-	-	-
15/2	106	Downli nk	Low	2190	43800	2180.	43609	0	15	5457	43659	10	1	1 (2)	3
0			Mid		0	46	2				0				
			Hig h												
	79	Uplink	Low	2010	40200	2002.	40057	0	-	-	-	-	-	-	-
			Mid		0	89	8								
			Hig h												
20/2	106	Downli nk	Low	2190	43800	2180.	43609	0	15	5457	43659	10	1	1 (2)	3
0			Mid		0	46	2				0				
			Hig h												
		Uplink	Low	2010	40200	2000.	40009	0	-	-	-	-	-	-	-
			Mid		0	46	2								
			Hig h												

Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-1 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.

Note 2: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C

Note 3: expressed in number of common RBs.
5/20 MHz, 10/20 MHz, 15/20 MHz and 20/20 MHz UL/DL Bandwidth combination is tested with Low range test frequency only. Low range test frequency shall be used instead of Mid range and High range test frequencies.

Table 4.3.1.9.1.5-2: Test frequencies for NR operating band n252 with SCS 30 kHz and SSB SCS 15 kHz

UL/DL Bandwidth combination [MHz]	carrier Bandwidth [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absolute Frequency Point A [ARFCN]	offset To Carrier [Carrier PRBs]	SS block SCS [kHz]	GSCN	absolute Frequency SSB [ARFCN]	k_{SSB}	Offset Carrier CORESET#0 [RBs]	CORESET#0 Index (Offset [RBs])	offset To Point A (SIB1) [PRBs]
10/10	24	Downlink	Low	2185	43700	2180.68	436136	0	15	5464	437090	6	0	3 (8)	16
			Mid	2190	43800	2148.96	429792	102		5475	438030	10	0	2 (7)	218
			High	2195	43900	2009.24	401848	504		5486	438970	14	0	1 (6)	1020
		Uplink	Low	2005	40100	2000.68	400136	0	-	-	-	-	-	-	-
			Mid	2010	40200	1824.24	364848	504		-	-	-	-	-	-
			High	2015	40300	2008.52	401704	6		-	-	-	-	-	-
		Downlink	Low	2187.5	43750	2180.66	436132	0	15	5462	437050	18	0	2 (7)	14
			Mid	2190	43800	2146.44	429288	102		5469	437550	18	0	2 (7)	218
			High	2192.5	43850	2004.22	400844	504		5476	438050	18	0	2 (7)	1022
10/15	24	Uplink	Low	2007.5	40150	2003.18	400636	0	-	-	-	-	-	-	-
			Mid	2010	40200	1824.24	364848	504		-	-	-	-	-	-
			High	2012.5	40250	2006.02	401204	6		-	-	-	-	-	-
		Downlink	Low	2190	43800	2180.82	436164	0	15	5463	437070	14	0	2 (7)	14
			Mid												
			High												
10/20	24	Uplink	Low	2010	40200	2005.68	401136	0	-	-	-	-	-	-	-
			Mid												
			High												
		Downlink	Low	2187.5	43750	2180.66	436132	0	15	5462	437050	18	0	2 (7)	14
			Mid	2190	43800	2146.44	429288	102		5469	437550	18	0	2 (7)	18
			High	2192.5	43850	2004.22	400844	504		5476	438050	18	0	2 (7)	1022
15/15	38	Uplink	Low	2007.5	40150	2000.66	400132	0	-	-	-	-	-	-	-
			Mid	2010	40200	1821.72	364344	504		-	-	-	-	-	-
			High	2012.5	40250	2003.5	400700	6		-	-	-	-	-	-
		Downlink	Low	2187.5	43750	2180.66	436132	0	15	5462	437050	18	0	2 (7)	14
			Mid	2190	43800	2146.44	429288	102		5469	437550	18	0	2 (7)	18
			High	2192.5	43850	2004.22	400844	504		5476	438050	18	0	2 (7)	1022
15/2	51	Downlink	Low	2190	43800	2180.82	43609	0	15	5457	43659	10	1	1 (2)	3

0	38	Uplink	Mid	2010	402000	2002.89	400578	0	-	-	-	-	-	-	-
			High												
			Low												
			Mid												
20/20	51	Downlink	Low	2190	438000	2180.46	436092	0	15	5457	436590	10	1	1 (2)	3
			Mid												
			High												
			Low												
		Uplink	Low	2010	402000	2000.46	400092	0	-	-	-	-	-	-	-
			Mid												
			High												
			Low												

Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-1 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.

Note 2: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs.

Note 3: 10/20 MHz, 15/20 MHz and 20/20 MHz UL/DL Bandwidth combination is tested with Low range test frequency only. Low range test frequency shall be used instead of Mid range and High range test frequencies.

Table 4.3.1.9.1.5-3: Test frequencies for NR operating band n252 with SCS 60 kHz and SSB SCS 15 kHz without CORESET#0

CBW [MHz]	carrierBandwidth [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequencyPointA [ARFCN]	offsetToCarrier [PRBs]	SS block SCS [kHz]	GSCN	absoluteFrequencySSB [ARFCN]
10	11	Downlink	Low	2185	437000	2181.04	436208	0	15	-	436568
			Mid	2190	438000	2112.6	422520	102		-	437568
			High	2195	439000	1828.16	365632	504		-	438568
		Uplink	Low	2005	401000	2001.04	400208	0	-	-	-
			Mid	2010	402000	1643.16	328632	504		-	-
			High	2015	403000	2006.72	401344	6		-	-
15	18	Downlink	Low	2187.5	437500	2181.02	436204	0	15	-	436564
			Mid	2190	438000	2110.08	422016	102		-	437064
			High	2192.5	438500	1823.14	364628	504		-	437564
		Uplink	Low	2007.5	401500	2001.02	400204	0	-	-	-
			Mid	2010	402000	1640.64	328128	504		-	-
			High	2012.5	402500	2001.7	400340	6		-	-
20	24	Downlink	Low	2190	438000	2181.36	436272	0	15	-	436632
			Mid								
			High								
		Uplink	Low	2010	402000	2001.36	400272	0	-	-	-
			Mid								

Note 1: FR1 carrier without CORESET#0 is indicated in the MIB by setting $k_{\text{SSB}}=31$, controlResourceSetZero=0 and searchSpaceZero = 0 (TS 38.213 [22], clause 13).

Note 2: 20/20 MHz UL/DL Bandwidth combination is tested with Low range test frequency only. Low range test frequency shall be used instead of Mid range and High range test frequencies.

4.3.1.9.1.6

Reference test frequencies for NR NTN operating band n251

Table 4.3.1.9.1.6-1: Test frequencies for NR operating band n251 with SCS 15 kHz and SSB SCS 15 kHz

UL/ DL Bandwidth combination [MHz]	carrier Bandwidth [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absolute Frequency Point A [ARFCN]	offset To Carrier [Carrier PRBs]	SS block SCS [kHz]	GSC N	absolute Frequency SSB [ARFCN]	k_{SSB}	Offset Carrier CORESET#0 [RBs] Note 2	CORESET#0 Index (Offset [RBs]) Note 1	offset To Point A (SIB1) [PRBs] Note 1	
5/5	25	Downlink	Low	1520.5	304100	1518.25	303650	0	15	3802	304130	4	1	1(2)	3	
			Mid	1535.0	307000	1514.39	302878	102		3836	306970	8	1	0(0)	103	
			High	1549.5	309900	1456.53	291306	504		3873	309870	8	1	0(0)	505	
		Uplink	Low	1629.0	325800	1626.75	325350	0	-	-	-	-	-	-	-	
			Mid	1643.5	328700	1550.53	310106	504		-	-	-	-	-	-	
			High	1658.0	331600	1654.67	330934	6		-	-	-	-	-	-	
5/10	52	Downlink	Low	1523.0	304600	1518.32	303664	0	15	3800	304090	10	1	0(0)	1	
			Mid	1537.5	307500	1514.46	302892	102		3837	306990	10	1	0(0)	103	
			High	1552.0	310400	1456.6	291320	504		3874	309890	10	1	0(0)	505	
		25	Uplink	Low	1629.0	325800	1626.75	325350	0	-	-	-	-	-	-	-
				Mid	1643.5	328700	1550.53	310106	504		-	-	-	-	-	-
				High	1658.0	331600	1654.67	330934	6		-	-	-	-	-	-
5/15	79	Downlink	Low	1525.5	305100	1518.39	303678	0	15	3801	304110	0	0	1(2)	2	
			Mid	1540.0	308000	1514.53	302906	102		3838	307010	0	0	1(2)	104	
			High	1554.5	310900	1456.67	291334	504		3872	309850	4	0	0(0)	504	
		25	Uplink	Low	1629.0	325800	1626.75	325350	0	-	-	-	-	-	-	-
				Mid	1643.5	328700	1550.53	310106	504		-	-	-	-	-	-
				High	1658.0	331600	1654.67	330934	6		-	-	-	-	-	-
5/20	106	Downlink	Low	1528.0	305600	1518.46	303692	0	15	3802	304130	2	0	1(2)	2	
			Mid	1542.5	308500	1514.6	302920	102		3836	306970	6	0	0(0)	102	
			High	1557.0	311400	1456.74	291348	504		3873	309870	6	0	0(0)	504	
	25	Uplink	Low	1629.0	325800	1626.75	325350	0	-	-	-	-	-	-	-	

				0	0	75	0								
			Mid	1643.5	328700	1550.53	310106	504		-	-	-	-	-	-
			High	1658.0	331600	1654.67	330934	6		-	-	-	-	-	-
10/10	52	Downlink	Low	1523.0	304600	1518.32	303664	0	15	3800	304090	10	1	0(0)	1
			Mid	1535.0	307000	1511.96	302392	102		3830	306490	10	1	0(0)	103
			High	1547.0	309400	1451.6	290320	504		3860	308890	10	1	0(0)	505
		Uplink	Low	1631.5	326300	1626.82	325364	0	-	-	-	-	-	-	-
			Mid	1643.5	328700	1548.1	309620	504		-	-	-	-	-	-
			High	1655.5	331100	1649.74	329948	6		-	-	-	-	-	-
10/15	79	Downlink	Low	1525.5	305100	1518.39	303678	0	15	3801	304110	0	0	1(2)	2
			Mid	1537.5	307500	1512.03	302406	102		3831	306510	0	0	1(2)	104
			High	1549.5	309900	1451.67	290334	504		3861	308910	0	0	1(2)	506
	52	Uplink	Low	1631.5	326300	1626.82	325364	0	-	-	-	-	-	-	-
			Mid	1643.5	328700	1548.1	309620	504		-	-	-	-	-	-
			High	1655.5	331100	1649.74	329948	6		-	-	-	-	-	-
10/20	106	Downlink	Low	1528.0	305600	1518.46	303692	0	15	3802	304130	2	0	1(2)	2
			Mid	1540.0	308000	1512.1	302420	102		3832	306530	2	0	1(2)	104
			High	1552.0	310400	1451.74	290348	504		3862	308930	2	0	1(2)	506
	52	Uplink	Low	1631.5	326300	1626.82	325364	0	-	-	-	-	-	-	-
			Mid	1643.5	328700	1548.1	309620	504		-	-	-	-	-	-
			High	1655.5	331100	1649.74	329948	6		-	-	-	-	-	-
15/15	79	Downlink	Low	1525.5	305100	1518.39	303678	0	15	3801	304110	0	0	1(2)	2
			Mid	1535.0	307000	1509.53	301906	102		3824	306010	0	0	1(2)	104
			High	1544.5	308900	1446.67	289334	504		3850	307970	8	1	1(2)	507
		Uplink	Low	1634.0	326800	1626.89	325378	0	-	-	-	-	-	-	-
			Mid	1643.5	328700	1545.67	309134	504		-	-	-	-	-	-
			High	1653.0	330600	1644.81	328962	6		-	-	-	-	-	-
15/20	106	Downlink	Low	1528.0	305600	1518.46	303692	0	15	3802	304130	2	0	1(2)	2
			Mid	1537.5	307500	1509.6	301920	102		3825	306030	2	0	1(2)	104

			Hig h	1547. 0	30940 0	1446. 74	28934 8	504		3848	30793 0	2	0	1(2)	506
	79	Uplink	Low	1634. 0	32680 0	1626. 89	32537 8	0	-	-	-	-	-	-	-
			Mid	1643. 5	32870 0	1545. 67	30913 4	504		-	-	-	-	-	-
			Hig h	1653. 0	33060 0	1644. 81	32896 2	6		-	-	-	-	-	-
20/2 0	106	Downli nk	Low	1528. 0	30560 0	1518. 46	30369 2	0	15	3802	30413 0	2	0	1(2)	2
			Mid	1535. 0	30700 0	1507. 1	30142 0	102		3818	30553 0	2	0	1(2)	104
			Hig h	1542. 0	30840 0	1441. 74	28834 8	504		3837	30699 0	10	1	1(2)	507
		Uplink	Low	1636. 5	32730 0	1626. 96	32539 2	0	-	-	-	-	-	-	-
			Mid	1643. 5	32870 0	1543. 24	30864 8	504		-	-	-	-	-	-
			Hig h	1650. 5	33010 0	1639. 88	32797 6	6		-	-	-	-	-	-
Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-1 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2. Note 2: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs.															

Table 4.3.1.9.1.6-2: Test frequencies for NR operating band n251 with SCS 30 kHz and SSB SCS 15 kHz

UL/ DL Bandwidth combination [MHz]	carrierBandwidth [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARF CN]	point A [MHz]	absoluteFrequencyPointA [ARF CN]	offsetToCarrier [Carrier PRBs]	SS block SCS [kHz]	GSC N	absoluteFrequencySSB [ARF CN]	k_{SSE}	Offset Carrier CORESET#0 [RBs] Note 2	CORESET#0 Index (Offset [RBs]) Note 1	offsetToPointA (SIB1) [PRBs] Note 1
10/10	24	Downlink	Low	1523.0	304600	1518.68	303736	0	15	3806	304570	14	0	1(6)	12
			Mid	1535.0	307000	1493.96	298792	102		3836	306970	14	0	1(6)	114
			High	1547.0	309400	1361.24	272248	504		3866	309370	14	0	1(6)	516
		Uplink	Low	1631.5	326300	1627.18	325436	0	-	-	-	-	-	-	-
			Mid	1643.5	328700	1457.74	291548	504		-	-	-	-	-	-
			High	1655.5	331100	1649.02	329804	6		-	-	-	-	-	-
10/15	38	Downlink	Low	1525.5	305100	1518.66	303732	0	15	3807	304590	22	0	1(6)	12
			Mid	1537.5	307500	1493.94	298788	102		3837	306990	22	0	1(6)	114
			High	1549.	30990	1361.	27224	504		3867	30939	22	0	1(6)	516

				5	0	22	4				0				
	24	Uplink	Low	1631.5	326300	1627.18	325436	0	-	-	-	-	-	-	-
			Mid	1643.5	328700	1457.74	291548	504		-	-	-	-	-	-
			High	1655.5	331100	1649.02	329804	6		-	-	-	-	-	-
10/20	51	Downlink	Low	1528.0	305600	1518.82	303764	0	15	3808	304610	18	0	1(6)	12
			Mid	1540.0	308000	1494.1	298820	102		3838	307010	18	0	1(6)	114
			High	1552.0	310400	1361.38	272276	504		3868	309410	18	0	1(6)	516
	24	Uplink	Low	1631.5	326300	1627.18	325436	0	-	-	-	-	-	-	-
			Mid	1643.5	328700	1457.74	291548	504		-	-	-	-	-	-
			High	1655.5	331100	1649.02	329804	6		-	-	-	-	-	-
15/15	38	Downlink	Low	1525.5	305100	1518.66	303732	0	15	3807	304590	22	0	1(6)	12
			Mid	1535.0	307000	1491.44	298288	102		3830	306490	22	0	1(6)	114
			High	1544.5	308900	1356.22	271244	504		3856	308450	18	0	2(7)	518
		Uplink	Low	1634.0	326800	1627.16	325432	0	-	-	-	-	-	-	-
			Mid	1643.5	328700	1455.22	291044	504		-	-	-	-	-	-
			High	1653.0	330600	1644	328800	6		-	-	-	-	-	-
15/20	51	Downlink	Low	1528.0	305600	1518.82	303764	0	15	3808	304610	18	0	1(6)	12
			Mid	1537.5	307500	1491.6	298320	102		3831	306510	18	0	1(6)	114
			High	1547.0	309400	1356.38	271276	504		3854	308410	18	0	1(6)	516
	38	Uplink	Low	1634.0	326800	1627.16	325432	0	-	-	-	-	-	-	-
			Mid	1643.5	328700	1455.22	291044	504		-	-	-	-	-	-
			High	1653.0	330600	1644	328800	6		-	-	-	-	-	-
20/20	51	Downlink	Low	1528.0	305600	1518.82	303764	0	15	3808	304610	18	0	1(6)	12
			Mid	1535.0	307000	1489.1	297820	102		3824	306010	18	0	1(6)	114
			High	1542.0	308400	1351.38	270276	504		3843	307470	14	0	2(7)	518
		Uplink	Low	1636.5	327300	1627.32	325464	0	-	-	-	-	-	-	-
			Mid	1643.5	328700	1452.88	290576	504		-	-	-	-	-	-
			High	1650.5	330100	1639.16	327832	6		-	-	-	-	-	-

Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-1 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The

offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.

Note 2: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs.

Table 4.3.1.9.1.6-3: Test frequencies for NR operating band n251 with SCS 60 kHz and SSB SCS 15 kHz without CORESET#0

UL/DL Bandwidth combination [MHz]	carrierBandwidth [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequencyPointA [ARFCN]	offsetToCarrier [PRBs]	SS block SCS [kHz]	GSCN	absoluteFrequencySSB [ARFCN]
10/10	11	Downlink	Low	1523.0	304600	1519.04	303808	0	15	-	304168
			Mid	1535.0	307000	1457.6	291520	102		-	306568
			High	1547.0	309400	1180.16	236032	504		-	308968
		Uplink	Low	1631.5	326300	1627.54	325508	0	-	-	-
			Mid	1643.5	328700	1276.66	255332	504		-	-
			High	1655.5	331100	1647.22	329444	6		-	-
10/15	18	Downlink	Low	1525.5	305100	1519.02	303804	0	15	-	304164
			Mid	1537.5	307500	1457.58	291516	102		-	306564
			High	1549.5	309900	1180.14	236028	504		-	308964
	11	Uplink	Low	1631.5	326300	1627.54	325508	0	-	-	-
			Mid	1643.5	328700	1276.66	255332	504		-	-
			High	1655.5	331100	1647.22	329444	6		-	-
10/20	24	Downlink	Low	1528.0	305600	1519.36	303872	0	15	-	304232
			Mid	1540.0	308000	1457.92	291584	102		-	306632
			High	1552.0	310400	1180.48	236096	504		-	309032
	11	Uplink	Low	1631.5	326300	1627.54	325508	0	-	-	-
			Mid	1643.5	328700	1276.66	255332	504		-	-
			High	1655.5	331100	1647.22	329444	6		-	-
15/15	18	Downlink	Low	1525.5	305100	1519.02	303804	0	15	-	304164
			Mid	1535.0	307000	1455.08	291016	102		-	306064
			High	1544.5	308900	1175.14	235028	504		-	307964
		Uplink	Low	1634.0	326800	1627.52	325504	0	-	-	-
			Mid	1643.5	328700	1274.14	254828	504		-	-
			High	1653.0	330600	1642.2	328440	6		-	-
15/20	24	Downlink	Low	1528.0	305600	1519.36	303872	0	15	-	304232
			Mid	1537.5	307500	1455.42	291084	102		-	306132
			High	1547.0	309400	1175.48	235096	504		-	308032
	18	Uplink	Low	1634.0	326800	1627.52	325504	0	-	-	-
			Mid	1643.5	328700	1274.14	254828	504		-	-
			High	1653.0	330600	1642.2	328440	6		-	-
20/20	24	Downlink	Low	1528.0	305600	1519.36	303872	0	15	-	304232
			Mid	1535.0	307000	1452.92	290584	102		-	305632
			High	1542.0	308400	1170.48	234096	504		-	307032
		Uplink	Low	1636.5	327300	1627.86	325572	0	-	-	-
			Mid	1643.5	328700	1271.98	254396	504		-	-
			High	1650.5	330100	1637.54	327508	6		-	-

Note: FR1 carrier without CORESET#0 is indicated in the MIB by setting $k_{\text{SSB}}=31$, *controlResourceSetZero*=0 and *searchSpaceZero* = 0 (TS 38.213 [22], clause 13).

4.3.1.9.1.7

Reference test frequencies for NR NTN operating band n250

Table 4.3.1.9.1.7-1: Test frequencies for NR operating band n250 with SCS 15 kHz and SSB SCS 15 kHz

UL/ DL Bandwidth combination [MHz]	carrierBandwidth [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequencyPointA [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS [kHz]	GSC N	absoluteFrequencySSB [ARFCN]	k_{SSB}	Offset Carrier CORESET#0 [RBs] Note 2	CORESET#0 Index (Offset [RBs]) Note 1	offsetToPointA (SIB1) [PRBs] Note 1
5/5	25	Downlink	Low	1520.5	304100	1518.25	303650	0	15	3802	304130	4	1	1(2)	3
			Mid	1521.5	304300	1500.89	300178	102		3803	304330	4	1	1(2)	105
			High	1522.5	304500	1429.53	285906	504		3807	304590	0	1	2(4)	509
		Uplink	Low	1670.5	334100	1668.25	333650	0	-	-	-	-	-	-	-
			Mid	1671.5	334300	1578.53	315706	504		-	-	-	-	-	-
			High	1672.5	334500	1669.17	333834	6		-	-	-	-	-	-
5/10	52	Downlink	Low	1523.0	304600	1518.32	303664	0	15	3800	304090	10	1	0(0)	0
			Mid	1524.0	304800	1500.96	300192	102		3804	304350	6	1	1(2)	105
			High	1525.0	305000	1429.6	285920	504		3808	304610	2	1	2(4)	509
	25	Uplink	Low	1670.5	334100	1668.25	333650	0	-	-	-	-	-	-	-
			Mid	1671.5	334300	1578.53	315706	504		-	-	-	-	-	-
			High	1672.5	334500	1669.17	333834	6		-	-	-	-	-	-
5/15	79	Downlink	Low	1525.0	305100	1518.39	303678	0	15	3801	304110	0	0	1(2)	2
			Mid	1526.0	305300	1501.03	300206	102		3805	304370	8	1	1(2)	105
			High	1527.0	305500	1429.67	285934	504		3806	304570	8	1	1(2)	507
	25	Uplink	Low	1670.5	334100	1668.25	333650	0	-	-	-	-	-	-	-
			Mid	1671.5	334300	1578.53	315706	504		-	-	-	-	-	-
			High	1672.5	334500	1669.17	333834	6		-	-	-	-	-	-
5/20	106	Downlink	Low	1528.0	305600	1518.46	303692	0	15	3802	304130	2	0	1(2)	2
			Mid	1529.0	305800	1501.1	300220	102		3803	304330	2	0	1(2)	104
			High	1530.0	306000	1429.74	285948	504		3807	304590	10	1	1(2)	507
	25	Uplink	Low	1670.5	334100	1668.25	333650	0	-	-	-	-	-	-	-
			Mid	1671.5	334300	1578.53	315706	504		-	-	-	-	-	-
			High	1672.5	334500	1669.17	333834	6		-	-	-	-	-	-

Note 1:	The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-1 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.
Note 2:	The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs.

4.3.2 Radio conditions

4.3.2.1 FR1, normal propagation condition for connected

The downlink connection between the System Simulator and the UE is without Additive White Gaussian Noise, and has no fading or multipath effects.

The uplink connection between the UE and System Simulator is without Additive White Gaussian Noise, and has no fading or multipath effects.

4.3.2.2 FR2, condition for OTA

FFS

4.3.3 Physical channel allocations

4.3.3.1 E-UTRA

The same physical channel allocations as in TS 36.508 [2] clause 4.3.3 applies.

4.3.3.2 NR

4.3.3.2.1 Antennas

For FR1 testing, if the UE has two or four Rx antennas, the same downlink signal is applied to each antenna. All UE Rx antennas shall be connected unless otherwise stated in the test case.

4.3.3.2.2 Downlink physical channels and physical signals

Table 4.3.3.2.2-1: Power allocation for OFDM symbols and reference signals

Parameter	Unit	Value
SSS transmit power	W	Test specific (Note 1)
EPRE ratio of PSS to SSS	dB	0
EPRE ratio of PBCH DMRS to SSS	dB	0
EPRE ratio of PBCH to PBCH DMRS	dB	0
EPRE ratio of PDCCH DMRS to SSS	dB	0
EPRE ratio of PDCCH to PDCCH DMRS	dB	0
EPRE ratio of PDSCH DMRS to SSS	dB	0
EPRE ratio of PDSCH to PDSCH DMRS	dB	0
EPRE ratio of PTRS to PDSCH	dB	0
EPRE ratio of CSI-RS to SSS	dB	0
EPRE ratio of PRS to SSS	dB	0

Note 1: For signalling test cases the power allocation according to clause 6.2.1.2 applies.

4.3.3.2.3 Mapping of downlink physical channels and signals to physical resources

Parameters for mapping of downlink physical channels and signals are specified as follows.

Normal Cyclic Prefix

N_{ID}^{cell} , Physical layer cell identity = 0 is used as the default physical layer cell identity

For Signalling testing, the same subcarrier spacing (SCS) is used for carrier and SS blocks; the tables in clause 6.2.3.1 specify which SCS to use for a particular NR band. In general, SCS=15kHz is used for FR1 FDD, SCS=15kHz or SCS=30kHz is used for FR1 TDD and SCS=120kHz is used for FR2.

For Signalling testing, the default channel bandwidth is specified in clause 6.2.3.1 for each NR band.

For Signalling testing, single SS Tx antenna is used, in FR1, unless specified otherwise in the test case.

For RF testing, the mapping of DL physical channels to resource element is defined in Annex C of TS 38.101-1 [7] and TS 38.101-2 [8] and TS 38.101-3 [9].

4.3.4 Signal levels

4.3.4.1 Signal levels for conducted testing

4.3.4.1.1 Downlink signal levels

For E-UTRA cell in EN-DC with FR1 NR, the downlink power setting specified in Table 4.3.4.1-1 of TS 36.508[2] are used unless otherwise specified in a test case.

4.3.4.2 Signal levels for OTA testing

As defined in clause 5.2.1.2 for RF tests.

As defined in clause 6.2.1.2 for Signalling tests.

As defined in clause 7.2.1.2 for RRM tests.

4.3.5 Standard test signals

4.3.6 Physical layer parameters

4.3.6.1 Downlink physical layer parameters

4.3.6.1.1 Physical layer parameters for scheduling of PUSCH

4.3.6.1.1.1 Physical layer parameters for DCI format 0_0

DCI format 0_0 is used for the scheduling of PUSCH in one cell.

Default physical layer parameters for DCI format 0_0 are specified in table 4.3.6.1.1.1-1.

Table 4.3.6.1.1.1-1: Physical layer parameters for DCI format 0_0

Parameter	Value	Value in binary	Condition
Identifier for DCI formats	Indicating an UL DCI format	"0"	
Frequency domain resource assignment	Dependent on test parameters	-	
Time domain resource assignment	Indicating the first entry of PUSCH-TimeDomainResourceAllocationList to be used	"0000"	
Frequency hopping flag	w/o hopping	"0"	
Modulation and coding scheme	Dependent on test parameters		
New data indicator	Set for every data transmission/retransmission according to the rules specified in TS 38.321	-	

Redundancy version	Dependent on test parameters	-	
HARQ process number	Dependent on test parameters	-	
TPC command for scheduled PUSCH	0 dB (accumulated TPC) as per Table 7.1.1-1 in TS 38.213	"01"	
ChannelAccess-CPext	2 as per Table 7.3.1.1.1-4A in TS 38.212	"10"	SharedSpectrum AND pc_ul_Semi_StaticChAccess_r16
	3 as per Table 7.3.1.1.1-4 in TS 38.212	"11"	SharedSpectrum AND pc_ul_DynamicChAccess_r16 AND (NOT pc_ul_Semi_StaticChAccess_r16)
	Not present (0 bit)	-	
UL/SUL indicator	Not present (0 bit for UEs not configured with SUL in the cell)	-	

Condition	Explanation
SharedSpectrum	Operation with shared spectrum channel access

4.3.6.1.1.2 Physical layer parameters for DCI format 0_1

DCI format 0_1 is used for the scheduling of PUSCH in one cell.

Default physical layer parameters for DCI format 0_1 are specified in table 4.3.6.1.1.2-1.

Table 4.3.6.1.1.2-1: Physical layer parameters for DCI format 0_1

Parameter	Value	Value in binary	Condition
Carrier indicator	Not present	-	
UL/SUL indicator	Not present (0 bit for UEs not configured with SUL in the cell)	-	
	1	1	SUL
Identifier for DCI formats	Indicating an UL DCI format	"0"	
Bandwidth part indicator	Not present (indicating active BWP, not present in case of only one <i>BWP-Id</i> as per Table 4.6.3-8)	-	
Frequency domain resource assignment	Dependent on test parameters	-	
Time domain resource assignment	Indicating the first entry of PUSCH-TimeDomainResourceAllocationList to be used	"0000"	
Frequency hopping flag	Not present	-	
Modulation and coding scheme	Dependent on test parameters	-	
New data indicator	Set for every data transmission / retransmission according to the rules specified in TS 38.321 [20]	-	
Redundancy version	Dependent on test parameters	-	
Transform precoder indicator	1 bit. A value of "1" indicates that transform precoder is disabled, i.e. CP-OFDM waveform is used.	"1"	DWS
	Not present	-	
HARQ process number	Dependent on test parameters	-	
1 st downlink assignment index	Dependent on test parameters		
2 nd downlink assignment index	Not present (0 bit if one HARQ-ACK sub-codebook)	-	
3 rd downlink assignment index	Not present	-	
TPC command for scheduled PUSCH	0 dB (accumulated TPC) as per Table 7.1.1-1 in TS 38.213 [22]	"01"	
Second TPC command for scheduled PUSCH	Not present	-	
SRS resource set indicator	Not present	-	
SRS resource indicator	Not present	-	
Second SRS resource indicator	Not present	-	

Precoding information and number of layers	Not present (0 bits for 1 antenna port and if the higher layer parameter txConfig = Codebook as per clause 7.3.1.1.2 TS 38.212 [27])	-	
	2	"10"	2TX_UL_MIMO or ULFPTx_Mode1
	11	"1011"	4TX_UL_MIMO or (ULFPTx_Mode1_4Tx and 2L_UL_MIMO)
	4	"100"	ULFPTx_Mode1_4Tx and 1L_UL_MIMO
	Dependent on UE reported full power PMI and higher layer parameter codebookSubset	4 or 5 bit as per Table 7.3.1.1.2-3 in TS 38.212	ULFPTx_Mode2_4Tx and 1L_UL_MIMO
	Dependent on UE reported full power PMI	1 bit as per Table 7.3.1.1.2-5 in TS 38.212	ULFPTx_Mode2
	Dependent on UE reported full power PMI	4 bit as per Table 7.3.1.1.2-2 in TS 38.212	ULFPTx_Mode2_4Tx and 2L_UL_MIMO
	0 or 1	1 bit	ULFPTx_ModeFull
Second Precoding information	Not present	-	
Antenna ports	Port 0 (NOTE 2)	"000"	
		"00"	TRANSFORM_PRECODER_ENABLED
SRS request	No aperiodic SRS resource set triggered as per Table 7.3.1.1.2-24 in TS 38.212 (no SUL configured)	"00"	
SRS offset indicator	Not present	-	
CSI request	Not present	-	
CBG transmission information	Not present	-	
PTRS-DMRS association	DMRS port 0	"00"	PTRS_UL_CONFIG
	Not present	-	
Second PTRS-DMRS association	Not present	-	
beta_offset indicator	Not present (0 bit if the higher layer parameter dynamic in uci-on-PUSCH is not configured)	-	
DMRS sequence initialization	$n_{\text{SCID}} = 0$ (ScramblingID0 is not present as per Table 4.6.3-50)	"0"	
	Not present	-	TRANSFORM_PRECODER_ENABLED
UL-SCH indicator	Dependent on test parameters 1 bit. A value of "1" indicates UL-SCH shall be transmitted on the PUSCH and a value of "0" indicates UL-SCH shall not be transmitted on the PUSCH.	-	
ChannelAccess-CPext-CAPC	Not present (0 bit)	-	
	2 as per Table 7.3.1.1.1-4A in TS 38.212	"10"	SharedSpectrum AND pc_ul_Semi_StaticChAccess_r16
Open-loop power control parameter set indication	Not present	-	
Priority indicator	Not present	-	
Invalid symbol pattern indicator	Not present	-	
Minimum applicable scheduling offset indicator	Not present	-	
SCell dormancy indication	Not present	-	
Sidelink assignment index	Dependent on test parameters 2 bits		SL_Mode1

PDCCH monitoring adaptation indication	1 bit if the UE is configured by searchSpaceGroupIDList-r17 with search space set(s) with group index 0 and search space set(s) with group index 1, and if the UE is not configured by searchSpaceGroupIDList-r17 with any search space set with group index 2;	"0"	SSSG AND pc_sssg_Switching_1BitInd_r17 AND NOT pc_sssg_Switching_2BitInd_r17
	2 bits if the UE is configured by searchSpaceGroupIDList-r17 with search space set(s) with group index 0, search space set(s) with group index 1 and search space set(s) with group index 2;	"00"	SSSG AND pc_sssg_Switching_2BitInd_r17
	Not present (0 bit)	-	
Measurement gap cancellation	Not present	-	

NOTE 1: codebookSubset = nonCoherent, 2 layers, TPMI = 0 as specified in TS 38.212 [27] Table 7.3.1.1.2-4

NOTE 2: Bitsize depends on transform precoder being enabled/disabled (PUSCH_Config, Table 4.6.3-118) and on dmrs-Type and maxLength (DMRS-UplinkConfig, Table 4.6.3-51); 3 bits (transform precoder disabled) or 2 bits (transform precoder enabled) for DMRS type 1 and len1

Condition	Explanation
2TX_UL_MIMO	UL-MIMO test cases with 2 Tx antenna ports
4TX_UL_MIMO	UL-MIMO test cases with 4 Tx antenna ports
PTRS_UL_CONFIG	When PTRS Uplink is configured
TRANSFORM_PRECODER_ENABLED	Transform precoding is enabled (PUSCH_Config, Table 4.6.3-118)
SUL	On the SUL carrier when supplementary carrier is configured
ULFPTx_Mode1	UL-MIMO test cases with UEs supporting UL full power transmission Mode-1 and 2 Tx antenna ports
ULFPTx_Mode2	UL-MIMO test cases with UEs supporting UL full power transmission Mode-2 and 2 Tx antenna ports
ULFPTx_ModeFull	UL-MIMO test cases with UEs supporting UL full power transmission Mode-full power and 2 Tx antenna ports
SL_Mode1	For SL mode 1 transmission test cases.
SharedSpectrum	Operation with shared spectrum channel access
2L_UL_MIMO	UL-MIMO test cases with 2 layers
1L_UL_MIMO	UL-MIMO test cases with 1 layer
ULFPTx_Mode1_4Tx	UL-MIMO test cases with UEs supporting UL full power transmission Mode-1 and 4 Tx antenna ports
ULFPTx_Mode2_4Tx	UL-MIMO test cases with UEs supporting UL full power transmission Mode-2 and 4 Tx antenna ports
DWS	When dynamic waveform switching is enabled for DCI format 0_1
SSSG	Test cases configured with searchSpaceGroupIDList-r17

4.3.6.1.1.3 Physical layer parameters for DCI format 0_2

DCI format 0_2 is used for the scheduling of PUSCH in one cell.

Default physical layer parameters for DCI format 0_2 are specified in table 4.3.6.1.1.3-1.

Table 4.3.6.1.1.3-1: Physical layer parameters for DCI format 0_2

Parameter	Value	Value in binary	Condition
Identifier for DCI formats	Indicating an UL DCI format	"0"	
Carrier indicator	Not present	-	
UL/SUL indicator	Not present (0 bit for UEs not configured with SUL in the cell)	-	
Bandwidth part indicator	Not present (indicating active BWP, not present in case of only one <i>BWP-Id</i> as per Table 4.6.3-8)	-	
Frequency domain resource assignment	Dependent on test parameters	-	
Time domain resource assignment	Indicating the first entry of PUSCH-TimeDomainResourceAllocationList to be used	"0000"	

Frequency hopping flag	Not present (0 bit if the higher layer parameter frequencyHoppingDCI-0-2 is not configured)	-	
Modulation and coding scheme	Dependent on test parameters	-	
New data indicator	Set for every data transmission / retransmission according to the rules specified in TS 38.321 [20]	-	
Redundancy version	Dependent on test parameters	-	
HARQ process number	Dependent on test parameters	-	
Transform precoder indicator	1 bit. A value of "1" indicates that transform precoder is disabled, i.e. CP-OFDM waveform is used. Not present	"1" -	DWS
Downlink assignment index	Not present (0 bit if the higher layer parameter downlinkAssignmentIndexDCI-0-2 is not configured)		
TPC command for scheduled PUSCH	0 dB (accumulated TPC) as per Table 7.1.1-1 in TS 38.213 [22]	"01"	
SRS resource indicator	Not present	-	
Precoding information and number of layers	Not present (0 bits for 1 antenna port and if the higher layer parameter txConfig = Codebook as per clause 7.3.1.1.2 TS 38.212 [27])	-	
Antenna ports	Not present (0 bit if higher layer parameter antennaPortsFieldPresenceDCI-0-2 is not configured)	-	
SRS request	Not present (0 bit if the higher layer parameter srs-RequestDCI-0-2 is not configured)	-	
CSI request	Not present	-	
PTRS-DMRS association	DMRS port 0 Not present	"00" -	PTRS_UL_CONFIG
beta_offset indicator	Not present (0 bit if the higher layer parameter betaOffsets = semiStatic)	-	
DMRS sequence initialization	Not present (0 bit if the higher layer parameter dmrs-SequenceInitializationDCI-0-2 is not configured or if transform precoder is enabled)	-	
UL-SCH indicator	Dependent on test parameters 1 bit. A value of "1" indicates UL-SCH shall be transmitted on the PUSCH and a value of "0" indicates UL-SCH shall not be transmitted on the PUSCH.	-	
Open-loop power control parameter set indication	Not present (0 bit if the higher layer parameter p0-PUSCH-SetList is not configured)	-	
Priority indicator	Not present (0 bit if higher layer parameter priorityIndicatorDCI-0-2 is not configured)	-	
Invalid symbol pattern indicator	Not present (0 bit if higher layer parameter invalidSymbolPatternIndicatorDCI-0-2 is not configured)	-	
NOTE 1: codebookSubset = nonCoherent, 2 layers, TPMI = 0 as specified in TS 38.212 [27] Table 7.3.1.1.2-4			
NOTE 2: Bitsize depends on transform precoder being enabled/disabled (PUSCH_Config, Table 4.6.3-118) and on dmrs-Type and maxLength (DMRS-UplinkConfig, Table 4.6.3-51); 3 bits (transform precoder disabled) or 2 bits (transform precoder enabled) for DMRS type 1 and len1			

Condition	Explanation
PTRS_UL_CONFIG	When PTRS Uplink is configured
TRANSFORM_PRECODER_ENABLED	Transform precoding is enabled (PUSCH_Config, Table 4.6.3-118)
DWS	When dynamic waveform switching is enabled for DCI format 0_2

4.3.6.1.1.4 Physical layer parameters for DCI format 0_3

DCI format 0_3 is used for the scheduling of one PUSCH in one cell, or multiple PUSCHs in multiple cells with one PUSCH per cell.

Default physical layer parameters for DCI format 0_3 are specified in table 4.3.6.1.1.4-1.

Table 4.3.6.1.1.4-1: Physical layer parameters for DCI format 0_3

Parameter	Value	Value in binary	Condition
Identifier for DCI formats	Indicating an UL DCI format	"0"	
Scheduled cell set indicator	Not present (0 bits, one entry is configured in <i>MC-DCI-SetofCellsToAddModList</i> as per Table 4.6.3-167)	-	
Scheduled cells indicator	Not present (0 bits, <i>scheduledCellComboListDCI-1-3</i> is not configured)	-	FDRA
	The size is dependent on the number of entries configured in <i>scheduledCellComboListDCI-1-3</i> The value is dependent on test parameters.	-	CellInd
Bandwidth part indicator	Not present (indicating active BWP, not present in case of only one <i>BWP-Id</i> as per Table 4.6.3-8)	-	
Frequency domain resource assignment	Dependent on test parameters	-	
Time domain resource assignment	The first entry configured in <i>tdra-FieldIndexListDCI-0-3</i>	"00"	
Frequency hopping flag	Not present (0 bit, <i>frequencyHopping</i> is not configured for any cell configured by higher layer parameter <i>scheduledCellListDCI-0-3</i> in the scheduled cell set)	-	
Modulation and coding scheme	Dependent on test parameters	-	
New data indicator	Set for every data transmission / retransmission according to the rules specified in TS 38.321 [20]	-	
Redundancy version	Dependent on test parameters	-	
HARQ process number	Dependent on test parameters	-	
1 st downlink assignment index	Dependent on test parameters		
2 nd downlink assignment index	Not present (0 bit if one HARQ-ACK sub-codebook)	-	
TPC command for scheduled PUSCH	0 dB (accumulated TPC) as per Table 7.1.1-1 in TS 38.213 [22]	"01"	
		"0101"	UL_CELL2
SRS resource indicator	Not present	-	
Precoding information and number of layers	Not present (0 bits for 1 antenna port and if the higher layer parameter <i>txConfig</i> = <i>Codebook</i> as per clause 7.3.1.1.4 TS 38.212 [27])	-	
Antenna ports	DMRS port 0 (NOTE 1)	"000"	
		"000000"	UL_CELL2
		"00"	TRANSFORM_PRECODER_ENABLED
		"0000"	UL_CELL2 AND TRANSFORM_PRECODER_ENABLED
SRS request	Not present (0bit, there is one entry in the higher layer parameter <i>srs-RequestListDCI-0-3-r18</i>)	-	
SRS offset indicator	Not present (0 bit, <i>srs-OffsetListDCI-0-3</i> is not configured)		
CSI request	Not present	-	
PTRS-DMRS association	DMRS port 0	"00"	PTRS_UL_CONFIG

		"0000"	PTRS_UL_CONFIG AND UL_CELL2
	Not present	-	
beta_offset indicator	Not present (0 bit, <i>betaOffsets</i> = <i>semiStatic</i> is configured in <i>uci-OnPUSCH-ListDCI-0-3</i> for all the cells configured by higher layer parameter <i>scheduledCellListDCI-0-3</i> in the scheduled cell set)	-	
DMRS sequence initialization	$n_{\text{SCID}} = 0$ (ScramblingID0 is not present as per Table 4.6.3-50)	"0"	
	Not present (0 bit, if transform precoder is enabled in all the cell configured by higher layer parameter <i>ScheduledCellListDCI-0-3</i> in the scheduled cell set)	-	TRANSFORM_PRECODER_ENABLED
UL-SCH indicator	Dependent on test parameters 1 bit. A value of "1" indicates UL-SCH shall be transmitted on the PUSCH and a value of "0" indicates UL-SCH shall not be transmitted on the PUSCH.	-	
ChannelAccess-CPext-CAPC	Not present		
Open-loop power control parameter set indication	Not present (0 bit, if the higher layer parameter <i>p0-PUSCH-SetList</i> is not configured)	-	
Priority indicator	Not present (0 bit, <i>priorityIndicatorDCI-0-3</i> is not configured)	-	
Minimum applicable scheduling offset indicator	Not present (0 bit, <i>minimumSchedulingOffsetK0DCI-0-3</i> is not configured)	-	
SCell dormancy indication	Not present (0 bit, <i>dormancyDCI-0-3</i> is not configured)		
PDCCH monitoring adaptation indication	Not present (0 bit, <i>pdccchMonAdaptDCI-0-3</i> is not enabled)		
NOTE 1: Bitsize depends on transform precoder being enabled/disabled (PUSCH_Config, Table 4.6.3-118) and on dmrs-Type and maxLength (DMRS-UplinkConfig, Table 4.6.3-51); 3 bits (transform precoder disabled) or 2 bits (transform precoder enabled) for DMRS type 1 and len1			

Condition	Explanation
PTRS_UL_CONFIG	When PTRS Uplink is configured
TRANSFORM_PRECODER_ENABLED	Transform precoding is enabled (PUSCH_Config, Table 4.6.3-118)
UL_CELL2	$N_{\text{Cell}}=2$. N_{Cell} is defined in 38.212[27] clause 7.3.1.1.4.
CellInd	The co-scheduled cell indication scheme based on Scheduled cells indicator filed of DCI format 0_3.
FDRA	The co-scheduled cell indication scheme based on FDRA filed of DCI format 0_3.

4.3.6.1.2 Physical layer parameters for scheduling of PDSCH

4.3.6.1.2.1 Physical layer parameters for DCI format 1_0

DCI format 1_0 is used for the scheduling of PDSCH in one cell.

Default physical layer parameters for DCI format 1_0 are specified in table 4.3.6.1.2.1-1 to 4.3.6.1.2.1-4.

Table 4.3.6.1.2.1-1: Physical layer parameters for DCI format 1_0

Parameter	Value	Value in binary	Condition
Identifier for DCI formats	Indicating a DL DCI format	"1"	
Frequency domain resource assignment	Dependent on test parameters	-	
Time domain resource assignment	Indicating the first entry of PDSCH-TimeDomainResourceAllocationList to be used	"0000"	
VRB-to-PRB mapping	Non-interleaved	"0"	
Modulation and coding scheme	Dependent on test parameters	-	

New data indicator	Set for every data transmission/retransmission according to the rules specified in TS 38.321	-	
Redundancy version	Dependent on test parameters	-	
HARQ process number	Dependent on test parameters	-	
Downlink assignment index	Dependent on test parameters	-	
TPC command for scheduled PUCCH	0 dB (accumulated TPC) as per Table 7.2.1-1 in TS 38.213	"01"	
PUCCH resource indicator	$PUCCH\text{-}ResourceId[7] = 6$ in $pucch\text{-}ResourceSetID[1]$ or $PUCCH\text{-}ResourceId[7] = 14$ in $pucch\text{-}ResourceSetID[2]$ as defined in Table 4.6.3-112 (Mapping as per Table 9.2.3-2 in TS 38.213)	"110"	
PDSCH-to-HARQ_feedback timing indicator	K_1 slots as specified in 9.2.3 in TS 38.213 $\mu=0$ (SCS=15kHz): $K_1=7$ $\mu=1$ (SCS=30kHz): $K_1=5$ $\mu=3$ (SCS=120kHz): $K_1=8$	'110'B '100'B '111'B	
ChannelAccess-CPext	2 as per Table 7.3.1.1.1-4A in TS 38.212	"10"	SharedSpectrum AND pc_ul_Semi_StaticChAccess_r16
	Not present (0 bit)	-	
	3 as per Table 7.3.1.1.1-4 in TS 38.212	"11"	SharedSpectrum AND pc_ul_DynamicChAccess_r16 AND (NOT pc_ul_Semi_StaticChAccess_r16)

Condition	Explanation
SharedSpectrum	Operation with shared spectrum channel access

Table 4.3.6.1.2.1-2: Physical layer parameters for DCI format 1_0 for paging

Parameter	Value	Value in binary
Short Messages Indicator	Only scheduling information for Paging is present in the DCI	"01"
Short Messages	Reserved	-
Frequency domain resource assignment	Dependent on test parameters	-
Time domain resource assignment	Indicating the first entry of PDSCH-TimeDomainResourceAllocationList to be used	"0000"
VRB-to-PRB mapping	Non-interleaved	"0"
Modulation and coding scheme	Dependent on test parameters	-
TB scaling	Scaling factor $S=1$ as defined in Table 5.1.3.2-2 in TS 38.214)	"00"
Reserved bits	Reserved 6 bits	-

Table 4.3.6.1.2.1-3: Physical layer parameters for DCI format 1_0 for SI

Parameter	Value	Value in binary	Condition
Frequency domain resource assignment	Dependent on test parameters	-	-
Time domain resource assignment	Indicating the first entry of Table 5.1.2.1.1-2 in TS 38.214 [21] to be used	"0000"	SIB1
	Indicating the first entry of PDSCH-TimeDomainResourceAllocationList to be used	"0000"	SI
VRB-to-PRB mapping	Non-interleaved	"0"	-
Modulation and coding scheme	Dependent on test parameters	-	-
Redundancy version	Dependent on test parameters	-	-
System information indicator	SIB1	"0"	SIB1

	SI message	"1"	SI
Reserved bits	Reserved 15 bits	-	-

Condition	Explanation
SIB1	Used for DCI format 1_0 for SIB1
SI	Used for DCI format 1_0 for SI

Table 4.3.6.1.2.1-4: Physical layer parameters for DCI format 1_0 for random access

Parameter	Value	Value in binary
Frequency domain resource assignment	Dependent on test parameters	-
Time domain resource assignment	Indicating the first entry of PDSCH-TimeDomainResourceAllocationList to be used	"0000"
VRB-to-PRB mapping	Non-interleaved	"0"
Modulation and coding scheme	Dependent on test parameters	-
Redundancy version	Dependent on test parameters	-
TB scaling	Scaling factor S=[1] as defined in Table 5.1.3.2-2 in TS 38.214)	"00"
Reserved bits	Reserved 16 bits	-

4.3.6.1.2.2 Physical layer parameters for DCI format 1_1

DCI format 1_1 is used for the scheduling of PDSCH in one cell.

Default physical layer parameters for DCI format 1_1 are specified in table 4.3.6.1.2.2-1.

Table 4.3.6.1.2.2-1: Physical layer parameters for DCI format 1_1

Parameter	Value	Value in binary	Condition
Carrier indicator	Not present	-	
Identifier for DCI formats	Indicating a DL DCI format	"1"	
Bandwidth part indicator	Not present	-	
Frequency domain resource assignment	Dependent on test parameters	-	
Time domain resource assignment	Indicating the first entry of PDSCH-TimeDomainResourceAllocationList to be used	"0000"	
VRB-to-PRB mapping	Not present (0 bits, <i>vrB-ToPRB-Interleaver</i> = Not present as per Table 4.6.3-100)	-	
PRB bundling size indicator	Not present (semi-static PRB_bundling)	-	
Rate matching indicator	Not present	-	
ZP CSI-RS trigger	Not present	-	
Modulation and coding scheme (TB1)	Dependent on test parameters	-	
New data indicator (TB1)	Set for every data transmission/retransmission according to the rules specified in TS 38.321 [20]	-	
Redundancy version (TB1)	Dependent on test parameters	-	
Modulation and coding scheme (TB2)	Dependent on test parameters	-	
New data indicator (TB2)	Set for every data transmission/retransmission according to the rules specified in TS 38.321 [20]	-	
Redundancy version (TB2)	Dependent on test parameters	-	
HARQ process number	Dependent on test parameters	-	
Downlink assignment index	Dependent on test parameters	-	
TPC command for scheduled PUCCH	0 dB (accumulated TPC) as per Table 7.2.1-1 in TS 38.213 [22]	"01"	
Second TPC command for scheduled PUCCH	Not present	-	

PUCCH resource indicator	<i>PUCCH-ResourceId</i> [7] = 6 in <i>pucch-ResourceSetID</i> [1] or <i>PUCCH-ResourceId</i> [7] = 14 in <i>pucch-ResourceSetID</i> [2] as defined in Table 4.6.3-112 (Mapping as per Table 9.2.3-2 in TS 38.213 [22])	"110"	
PDSCH-to-HARQ_feedback timing indicator	corresponding to K1 slots as per Table 9.2.3-1 in TS 38.213 [22] and dl-DataToUL-ACK in Table 4.6.3-112 $\mu=0$ (SCS=15kHz): K1=7 $\mu=1$ (SCS=30kHz): K1=5 $\mu=3$ (SCS=120kHz): K1=8	"101" "011" "110"	
	corresponding to K1 slots as per Table 9.2.3-1 in TS 38.213 [22] and dl-DataToUL-ACK in Table 4.6.3-112 For 60KHz SCS K1 = 4 if $\text{mod}(i,5) = 0$ K1 = 3 if $\text{mod}(i,5) = 1$ K1 = 7 if $\text{mod}(i,5) = 2$ where i is slot index per frame; i = {0,...,39} For 120KHz SCS K1 = 4 if $\text{mod}(i,5) = 0$ K1 = 3 if $\text{mod}(i,5) = 1$ K1 = 7 if $\text{mod}(i,5) = 2$ where i is slot index per frame; i = {0,...,79}		RF_FR2_DL
	corresponding to K1 slots as per Table 9.2.3-1 in TS 38.213 [22] and dl-DataToUL-ACK in Table 4.6.3-112 For TDD K1 = 4 if $\text{mod}(i,5) = 0$ K1 = 3 if $\text{mod}(i,5) = 1$ K1 = 2 if $\text{mod}(i,5) = 2$ where i is slot index per frame; i = {0,...,9} For FDD K1 = 2		RF_FR1_15kHz
	For TDD corresponding to K1 slots as per Table 9.2.3-1 in TS 38.213 [22] and dl-DataToUL-ACK in Table 4.6.3-112 K1 = 8 if $\text{mod}(i,10) = 0$ K1 = 7 if $\text{mod}(i,10) = 1$ K1 = 6 if $\text{mod}(i,10) = 2$ K1 = 5 if $\text{mod}(i,10) = 3$ K1 = 4 if $\text{mod}(i,10) = 4$ K1 = 3 if $\text{mod}(i,10) = 5$ K1 = 2 if $\text{mod}(i,10) = 6$ where i is slot index per frame; i = {0,...,19} For FDD K1 = 2		RF_FR1_30kHz

	corresponding to K1 slots as per Table 9.2.3-1 in TS 38.213 [22] and dl-DataToUL-ACK in Table 4.6.3-112 For TDD K1 = 13 if mod(i,20) = 2 K1 = 12 if mod(i,20) = 3 K1 = 11 if mod(i,20) = 4 K1 = 10 if mod(i,20) = 5 K1 = 9 if mod(i,20) = 6 K1 = 8 if mod(i,20) = 7 K1 = 7 if mod(i,20) = 8 K1 = 6 if mod(i,20) = 9 K1 = 6 if mod(i,20) = 10 K1 = 6 if mod(i,20) = 11 K1 = 6 if mod(i,20) = 12 K1 = 6 if mod(i,20) = 13 where i is slot index per frame; i = {0,...,39} For FDD K1 = 2		RF_FR1_60kHz
One-shot HARQ-ACK request	Not present	-	
Enhanced Type 3 codebook indicator	Not present	-	
PDSCH group index	Not present	-	
New feedback indicator	Not present	-	
Number of requested PDSCH group(s)	Not present	-	
HARQ-ACK retransmission indicator	Not present	-	
Antenna port(s)	DMRS port 0 as per Table 7.3.1.2.2-1 in TS 38.212 [27] (<i>dmrs-Type</i> = DMRS type 1 and <i>maxLength</i> = len1 as per Table 4.6.3-50)	"0000"	
		"0011"	RF
Transmission configuration indication	Not present (0 bits, <i>tci-PresentInDCI</i> = Not present as per Table 4.6.3-28)	-	
TCI selection	Not present	-	
SRS request	No aperiodic SRS resource set triggered as per Table 7.3.1.1.2-24 in TS 38.212 [27] (no SUL configured)	"00"	
SRS offset indicator	Not present	-	
CBG transmission information	Not present	-	
CBG flushing out information	Not present	-	
DMRS sequence initialization	fix length of 1 bit; '0'B for DMRS-DownlinkConfig.scramblingID0 (or physCellId if scramblingID0 is not present); see Table 4.6.3-50	"0"	
Priority indicator	Not present	-	
ChannelAccess-CPext	2 as per Table 7.3.1.1.1-4A in TS 38.212	"10"	SharedSpectrum AND pc_ul_Semi_StaticChAccess_r16
	Not present (0 bit)	-	
Minimum applicable scheduling offset indicator	Not present	-	
SCell dormancy indication	Not present	-	
PDCCH monitoring adaptation indication	1 bit if the UE is configured by searchSpaceGroupIDList-r17 with search space set(s) with group index 0 and search space set(s) with group index 1, and if the UE is not configured by searchSpaceGroupIDList-r17 with any search space set with group index 2;	"0"	SSSG AND pc_sssg_Switching_1BitInd_r17 AND NOT pc_sssg_Switching_2BitInd_r17
	2 bits if the UE is configured by searchSpaceGroupIDList-r17 with search space set(s) with group index 0, search space set(s) with group index 1 and search space set(s) with group index 2;	"00"	SSSG AND pc_sssg_Switching_2BitInd_r17
	Not present (0 bit)	-	
PUCCH Cell indicator	Not present	-	
Co-scheduled UE information	Not present	-	
TPC command for SRS	Not present	-	

Measurement gap cancellation	Not present	-	

Condition	Explanation
RF_FR1_15kHz	RF testing in TS 38.521-x for FR1. SCS is set to 15kHz.
RF_FR1_30kHz	RF testing in TS 38.521-x for FR1. SCS is set to 30kHz.
RF_FR1_60kHz	RF testing in TS 38.521-x for FR1. SCS is set to 60kHz.
RF_FR2_DL	RF testing in TS 38.521-x for FR2. SCS is set to 60kHz or 120kHz
RF	RF testing in TS 38.521-x for FR1 and FR2.
SharedSpectrum	Operation with shared spectrum channel access
SSSG	Test cases configured with searchSpaceGroupIDList-r17

4.3.6.1.2.3 Physical layer parameters for DCI format 1_2

DCI format 1_2 is used for the scheduling of PDSCH in one cell.

Default physical layer parameters for DCI format 1_2 are specified in table 4.3.6.1.2.3-1.

Table 4.3.6.1.2.3-1: Physical layer parameters for DCI format 1_2

Parameter	Value	Value in binary	Condition
Identifier for DCI formats	Indicating a DL DCI format	"1"	
Carrier indicator	Not present		
Bandwidth part indicator	Not present	-	
Frequency domain resource assignment	Dependent on test parameters	-	
Time domain resource assignment	Indicating the first entry of PDSCH-TimeDomainResourceAllocationList to be used	"0000"	
VRB-to-PRB mapping	Not present (0 bits, <i>vrB-ToPRB-InterleaverDCI-1-2</i> = Not present as per Table 4.6.3-100)	-	
PRB bundling size indicator	Not present (semi-static PRB_bundling)	-	
Rate matching indicator	Not present	-	
ZP CSI-RS trigger	Not present	-	
Modulation and coding scheme	Dependent on test parameters	-	
New data indicator	Set for every data transmission/retransmission according to the rules specified in TS 38.321 [20]	-	
Redundancy version	Dependent on test parameters	-	
HARQ process number	Dependent on test parameters	-	
Downlink assignment index	Dependent on test parameters	-	
TPC command for scheduled PUCCH	0 dB (accumulated TPC) as per Table 7.2.1-1 in TS 38.213 [22]	"01"	
PUCCH resource indicator	<i>PUCCH-ResourceID[7]</i> = 6 in <i>pucch-ResourceSetID[1]</i> or <i>PUCCH-ResourceID[7]</i> = 14 in <i>pucch-ResourceSetID[2]</i> as defined in Table 4.6.3-112 (Mapping as per Table 9.2.3-2 in TS 38.213 [22])	"110"	
PDSCH-to-HARQ_feedback timing indicator	corresponding to K1 slots as per Table 9.2.3-1 in TS 38.213 [22] and <i>dl-DataToUL-ACK</i> in Table 4.6.3-112 $\mu=0$ (SCS=15kHz): K1=7 $\mu=1$ (SCS=30kHz): K1=5 $\mu=3$ (SCS=120kHz): K1=8	"101" "011" "110"	
Antenna port(s)	Not present (0 bit if higher layer parameter <i>antennaPortsFieldPresenceDCI-1-2</i> is not configured)	-	
Transmission configuration indication	Not present (0 bits, <i>tcI-PresentInDCI</i> = Not present as per Table 4.6.3-28)	-	

SRS request	Not present (0 bit if higher layer parameter <i>srs-RequestDCI-1-2</i> is not configured)	-	
DMRS sequence initialization	Not present (0 bit if higher layer parameter <i>dmrs-SequenceInitializationDCI-1-2</i> is not configured)	-	
Priority indicator	Not present (0 bit if higher layer parameter <i>priorityIndicatorDCI-1-2</i> is not configured)	-	

4.3.6.1.2.4 Physical layer parameters for DCI format 1_3

DCI format 1_3 is used for the scheduling of one PDSCH in one cell, or multiple PDSCHs in multiple cells with one PDSCH per cell.

Default physical layer parameters for DCI format 1_3 are specified in table 4.3.6.1.2.4-1.

Table 4.3.6.1.2.4-1: Physical layer parameters for DCI format 1_3

Parameter	Value	Value in binary	Condition
Identifier for DCI formats	Indicating a DL DCI format	"1"	
Scheduled cell set indicator	Not present (0 bits, one entry is configured in <i>MC-DCI-SetofCellsToAddModList</i> as per Table 4.6.3-167)	-	
Scheduled cells indicator	Not present (0 bits, <i>scheduledCellComboListDCI-1-3</i> is not configured)	-	FDRA
	The size is dependent on the number of entries configured in <i>scheduledCellComboListDCI-1-3</i> The value is dependent on test parameters.	-	CellInd
Bandwidth part indicator	Not present	-	
Frequency domain resource assignment	Dependent on test parameters	-	
Time domain resource assignment	The first entry configured in <i>tdra-FieldIndexListDCI-1-3</i>	"00"	
VRB-to-PRB mapping	Not present (0 bits, <i>vrB-ToPRB-Interleaver</i> = Not present as per Table 4.6.3-100)	-	
PRB bundling size indicator	Not present (semi-static PRB bundling)	-	
Rate matching indicator	Not present (0 bits, <i>rateMatchListDCI-1-3</i> is not configured)	-	
ZP CSI-RS trigger	Not present (0 bits, <i>zp-CSI-RSListDCI-1-3</i> is not configured)	-	
Modulation and coding scheme (TB1)	Dependent on test parameters	-	
New data indicator (TB1)	Set for every data transmission/retransmission according to the rules specified in TS 38.321 [20]	-	
Redundancy version (TB1)	Dependent on test parameters	-	
Modulation and coding scheme (TB2)	Dependent on test parameters	-	
New data indicator (TB2)	Set for every data transmission/retransmission according to the rules specified in TS 38.321 [20]	-	
Redundancy version (TB2)	Dependent on test parameters	-	
HARQ process number	Dependent on test parameters	-	
Downlink assignment index	Dependent on test parameters	-	
TPC command for scheduled PUCCH	0 dB (accumulated TPC) as per Table 7.2.1-1 in TS 38.213 [22]	"01"	

PUCCH resource indicator	<i>PUCCH-ResourceId</i> [7] = 6 in <i>pucch-ResourceSetID</i> [1] or <i>PUCCH-ResourceId</i> [7] = 14 in <i>pucch-ResourceSetID</i> [2] as defined in Table 4.6.3-112 (Mapping as per Table 9.2.3-2 in TS 38.213 [22])	"110"	
PDSCH-to-HARQ_feedback timing indicator	corresponding to K1 slots as per Table 9.2.3-1 in TS 38.213 [22] and <i>dl-DataToUL-ACK</i> in Table 4.6.3-112 $\mu=0$ (SCS=15kHz): K1=7 $\mu=1$ (SCS=30kHz): K1=5 $\mu=3$ (SCS=120kHz): K1=8	"101" "011" "110"	
One-shot HARQ-ACK request	Not present (0bit, <i>pdsch-HARQ-ACK-OneShotFeedbackDCI-1-3</i> and <i>pdsch-HARQ-ACK-enhType3DCI-1-3</i> are not configured)	-	
Enhanced Type 3 codebook indicator	Not present (0bit, <i>pdsch-HARQ-ACK-enhType3DCIfieldDCI-1-3</i> is not configured)	-	
HARQ-ACK retransmission indicator	Not present (0bit, <i>pdsch-HARQ-ACK-retxDCI-1-3</i> is not configured)	-	
Antenna port(s)	DMRS port 0 as per Table 7.3.1.2.2-1 in TS 38.212 [27] (<i>dmrs-Type</i> = DMRS type 1 and <i>maxLength</i> = len1 as per Table 4.6.3-50)	"0000"	
		"0000 0000"	DL_CELL2
Transmission configuration indication	Not present (0bit, <i>tcI-PresentInDCI</i> is not enabled)	-	
SRS request	Not present (0bit, there is one entry in the higher layer parameter <i>srs-RequestListDCI-1-3-r18</i>)	-	
SRS offset indicator	Not present (0bit, <i>srs-OffsetListDCI-1-3</i> is not configured)	-	
DMRS sequence initialization	fix length of 1 bit; '0'B for DMRS-DownlinkConfig.scramblingID0 (or <i>physCellId</i> if <i>scramblingID0</i> is not present); see Table 4.6.3-50	"0"	
Priority indicator	Not present (0bit, <i>priorityIndicatorDCI-1-3</i> is not configured)	-	
ChannelAccess-CPext	Not present (0bit, <i>channelAccessMode-r16</i> = "semiStatic" is not provided)	-	
Minimum applicable scheduling offset indicator	Not present (0bit, <i>minimumSchedulingOffsetK0DCI-1-3</i> is not configured)	-	
SCell dormancy indication	Not present (0bit, <i>dormancyDCI-1-3</i> is not configured)	-	
PDCCH monitoring adaptation indication	Not present (0bit, <i>pdccchMonAdaptDCI-1-3</i> is not enabled)	-	
PUCCH Cell indicator	Not present (0bit, <i>pucch-sSCellDynDCI-1-3</i> is not configured)	-	
NOTE 1:  is defined in 38.212 clause 7.3.1.2.4.			

Condition	Explanation
CellInd	The co-scheduled cell indication scheme based on Scheduled cells indicator field of DCI format 1_3.
FDRA	The co-scheduled cell indication scheme based on FDRA field of DCI format 1_3.
DL_CELL2	 =2.  is defined in 38.212 [27] clause 7.3.1.2.4.

4.3.6.1.3 Void

4.3.6.1.4 Physical layer parameters for scheduling of PSCCH/PSSCH

4.3.6.1.4.1 Physical layer parameters for DCI format 3_0

DCI format 3_0 is used to schedule PSCCH/PSSCH transmission on NR sidelink.

Default physical layer parameters for DCI format 3_0 are specified in Table 4.3.6.1.4.1-1.

Table 4.3.6.1.4.1-1: Physical layer parameters for DCI format 3_0

Parameter	Value	Value in binary	Condition
Resource pool index	Not present	-	
Time gap	Indicating the first entry of sl-DCI-ToSL-Trans to be used	"000"B	
HARQ process number	Dependent on test parameters	-	
New data indicator	Set for every data transmission/retransmission according to the rules specified in TS 38.321[20]	-	
Lowest index of the subchannel allocation to the initial transmission	Dependent on test parameters	-	
Frequency resource assignment	Dependent on test parameters	-	
Time resource assignment	only one PSCCH/PSSCH occasion is scheduled per grant	"00000"B	
PSFCH-to-HARQ feedback timing indicator	Indicating the first entry of sl-PSFCH-ToPUCCH to be used	"000"B	
PUCCH resource indicator	Indicating the first entry of sl-PUCCH-Config to be used	"000"B	
Configuration index	Not present	-	SL-RNTI
	Indicating the first entry of sl-ConfiguredGrantConfigList to be used	"000"	SL-CS-RNTI
Counter sidelink assignment index	PDCCH monitoring occasions in which DCI format 3_0 scheduling PSSCH transmissions with corresponding PSFCH reception occasions is present, denoted as Y, satisfies $(Y-1) \bmod 4 \neq 0$, as specified in 38.213 Table 16.5.2.1-1	"00"	

Condition	Explanation
SL-RNTI	UE is configured to monitor DCI format 3_0 with CRC scrambled by SL-RNTI, i.e. dynamic sidelink grant
SL-CS-RNTI	UE is configured to monitor DCI format 3_0 with CRC scrambled by SL-CS-RNTI, i.e. configured sidelink grant

4.3.6.1.4.2 Physical layer parameters for DCI format 3_1

DCI format 3_1 is used to schedule PSCCH/PSSCH transmission on E-UTRA V2X sidelink.

FFS

4.3.6.1.5 Physical layer parameters for scheduling of MBS

4.3.6.1.5.1 Physical layer parameters for DCI format 4_0

DCI format 4_0 is used for the scheduling of PDSCH for broadcast in DL cell.

Default physical layer parameters for DCI format 4_0 are specified in Table 4.3.6.1.5.1-1.

Table 4.3.6.1.5.1-1: Physical layer parameters for DCI format 4_0

Parameter	Value	Value in binary	Condition
Frequency domain resource assignment	Dependent on test parameters	-	
Time domain resource assignment	Indicating the second entry of PDSCH-TimeDomainResourceAllocationList to be used. PDSCH-TimeDomainResourceAllocationList is provided in the pdsch-ConfigMTCH in Table 4.6.7-8.	"0001"	G-RNTI
	Indicating the first entry of PDSCH-TimeDomainResourceAllocationList to be used in Table 4.6.3-103	"0000"	MCCH-RNTI
VRB-to-PRB mapping	Non-interleaved	"0"	
Modulation and coding scheme	Dependent on test parameters	-	
Redundancy version	Dependent on test parameters	-	
MCCH change notification	MSB indicates no new MBS service(s) start. LSB indicates no modification of MCCH information other than the change caused by start of new MBS service(s).	"00"	MCCH-RNTI
	Reserved 2 bits	-	G-RNTI
Reserved bits	Reserved 14 bits		

Condition	Explanation
MCCH-RNTI	UE is configured to monitor DCI format 4_0 with CRC scrambled by MCCH-RNTI
G-RNTI	UE is configured to monitor DCI format 4_0 with CRC scrambled by G-RNTI for MTCH

4.3.6.1.5.2 Physical layer parameters for DCI format 4_1

DCI format 4_1 is used for the scheduling of PDSCH for multicast in DL cell.

Default physical layer parameters for DCI format 4_1 are specified in Table 4.3.6.1.5.2-1.

Table 4.3.6.1.5.2-1: Physical layer parameters for DCI format 4_1

Parameter	Value	Value in binary
Frequency domain resource assignment	Dependent on test parameters	-
Time domain resource assignment	Indicating the first entry of PDSCH-TimeDomainResourceAllocationList to be used	"0000"
VRB-to-PRB mapping	Non-interleaved	"0"
Modulation and coding scheme	Dependent on test parameters	-
New data indicator	Set for every data transmission/retransmission according to the rules specified in TS 38.321	-
Redundancy version	Dependent on test parameters	-
HARQ process number	Dependent on test parameters	-
Downlink assignment index	Dependent on test parameters	-
PUCCH resource indicator	<i>PUCCH-ResourceId</i> [7] = 6 in <i>pucch-ResourceSetID</i> [1] or <i>PUCCH-ResourceId</i> [7] = 14 in <i>pucch-ResourceSetID</i> [2] as defined in Table 4.6.3-112 (Mapping as per Table 9.2.3-2 in TS 38.213)	"110"
PDSCH-to-HARQ_feedback timing indicator	K_1 slots, <i>dl-DataToUL-ACK-MulticastDciFormat4-1</i> is not provided, as specified in 9.2.3 in TS 38.213 $\mu=0$ (SCS=15kHz): $K_1=7$	'110'B

	$\mu=1$ (SCS=30kHz): $K_1=5$ $\mu=3$ (SCS=120kHz): $K_1=8$	'100'B '111'B
Reserved bits	Reserved 3 bits	-

4.3.6.1.5.3 Physical layer parameters for DCI format 4_2

DCI format 4_2 is used for the scheduling of PDSCH in DL cell.

Default physical layer parameters for DCI format 4_2 are specified in Table 4.3.6.1.5.3-1.

Table 4.3.6.1.5.3-1: Physical layer parameters for DCI format 4_2

Parameter	Value	Value in binary
Frequency domain resource assignment	Dependent on test parameters	-
Time domain resource assignment	Indicating the first entry of PDSCH-TimeDomainResourceAllocationList to be used	"0000"
VRB-to-PRB mapping	Not present (0 bit, <i>vrB-ToPRB-Interleaver</i> in <i>pdsch-ConfigMulticast</i> is not configured)	-
PRB bundling size indicator	Not present (static PRB bundling)	-
Rate matching indicator	Not present	-
ZP CSI-RS trigger	Not present	-
Modulation and coding scheme (TB1)	Dependent on test parameters	-
New data indicator (TB1)	Set for every data transmission/retransmission according to the rules specified in TS 38.321 [20]	-
Redundancy version (TB1)	Dependent on test parameters	-
Modulation and coding scheme (TB2)	Dependent on test parameters	-
New data indicator (TB2)	Set for every data transmission/retransmission according to the rules specified in TS 38.321 [20]	-
Redundancy version (TB2)	Dependent on test parameters	-
HARQ process number	Dependent on test parameters	-
Downlink assignment index	Dependent on test parameters	-
PUCCH resource indicator	<i>PUCCH-ResourceId</i> [7] = 6 in <i>pucch-ResourceSetID</i> [1] or <i>PUCCH-ResourceId</i> [7] = 14 in <i>pucch-ResourceSetID</i> [2] as defined in Table 4.6.3-112 (Mapping as per Table 9.2.3-2 in TS 38.213 [22])	"110"
PDSCH-to-HARQ_feedback timing indicator	corresponding to K_1 slots as per Table 9.2.3-1 in TS 38.213 [22] and <i>dl-DataToUL-ACK</i> in Table 4.6.3-112 $\mu=0$ (SCS=15kHz): $K_1=7$ $\mu=1$ (SCS=30kHz): $K_1=5$ $\mu=3$ (SCS=120kHz): $K_1=8$	"101" "011" "110"
Antenna port(s)	DMRS port 0 as per Table 7.3.1.2.2-1 in TS 38.212 [27] (<i>dmrs-Type</i> = DMRS type 1 and <i>maxLength</i> = <i>len1</i> as per Table 4.6.3-50)	"0000"
Transmission configuration indication	Not present (0 bit, <i>tci-PresentInDCI</i> in <i>PDCCH-ConfigMulticast</i> is not enabled as per Table 4.6.3-28)	-
DMRS sequence initialization	Fix length of 1 bit (<i>nSCID</i> =0 and <i>N_m</i> ⁰ is configured to <i>physCellId</i> as <i>scramblingID0</i> is not present in Table 4.6.3-50)	"0"
Priority indicator	Not present (0 bit, <i>priorityIndicatorDCI-4-2-r17</i> is not configured in <i>PDSCH-ConfigMulticast</i> as per Table 4.6.3-100)	-
Enabling/disabling HARQ-ACK feedback indication	Not present (0 bit, <i>harq-FeedbackEnablerMulticast</i> does not indicate <i>dci-enable</i> as per Table 4.6.3-68)	-

NOTE: The size of DCI format 4_2 is configurable by higher layer parameter *sizeDCI-4-2* from 20 bits and up to 140 bits.

4.3.6.2 Sidelink physical layer parameters

4.3.6.2.1 Physical layer parameters for scheduling of PSSCH on PSCCH

4.3.6.2.1.1 Physical layer parameters for SCI format 1-A

SCI format 1-A is used to schedule PSSCH transmission.

Default physical layer parameters for SCI format 1-A are specified in Table 4.3.6.2.1.1-1.

Table 4.3.6.2.1.1-1: Physical layer parameters for SCI format 1-A

Parameter	Value	Value in binary	Condition
Priority	Dependent on test parameters	-	
Frequency resource assignment	Dependent on test parameters	-	
Time domain resource assignment	only one PSCCH/PSSCH occasion is scheduled per grant	"00000"B	
Resource reservation period	Not present	-	
DMRS pattern	Indicating the first entry of sl-PSSCH-DMRS-TimePatternList-r16 to be used	"0"B	
2 nd -stage SCI format	SCI format 2-A	"00"B	
	SCI format 2-B	"01"B	DISTANCE-BASED HARQ
	SCI format 2-D	"11"B	SLPP
Beta_offset indicator	Indicating the first entry of sl-BetaOffsets2ndSCI to be used	"00"B	
Number of DMRS port	Single port p = 1000 is used	"0"B	
	Two ports p = 1000 and 1001 are used	"1"B	SL MIMO
Modulation and coding scheme	Dependent on test parameters	-	
Additional MCS table indicator	Not present	-	
PSFCH overhead indication	"1"B if $\text{mod}(i, n_{\text{PSFCH}}) = 0$ "0"B if $\text{mod}(i, n_{\text{PSFCH}}) \neq 0$ where i is the logical slot index belong to resource pool per 1024 frame as specified in 38.214 [21] clause 8.	-	$n_{\text{PSFCH}} = 2$ OR $n_{\text{PSFCH}} = 4$ (Note 1)
	Not present		
Reserved	Number of reserved bits is given by sl-NumReservedBits-r16	"00"	
Note 1: n_{PSFCH} is the PSFCH period (in slots) provided by sl-PSFCH-Period-r16. $n_{\text{PSFCH}} = 0$ if sl-PSFCH-Period-r16 is not configured.			

Condition	Explanation
DISTANCE-BASED HARQ	For distance-based HARQ test
SL MIMO	For SL MIMO test
SLPP	For SLPP test cases

4.3.6.2.1.2 Physical layer parameters for SCI format 1-B

SCI format 1-B is used for the scheduling of SL PRS for a dedicated SL PRS resource pool.

Default physical layer parameters for SCI format 1-B are specified in Table 4.3.6.2.1.2-1.

Table 4.3.6.2.1.2-1: Physical layer parameters for SCI format 1-B

Parameter	Value	Value in binary	Condition
Priority	Dependent on test parameters	-	
Source ID	Dependent on test parameters	-	
Destination ID	Dependent on test parameters	-	
Cast type indicator	Unicast	"10"B	
Resource reservation period	Not present (0 bit, there is one entry in the higher layer parameter sl-PRS-ResourceReservePeriodList)	-	
Time resource assignment	only one PSCCH/PSSCH occasion is scheduled per grant	"00000"B	
Resource ID indication	Not present (0 bit, there is one entry in the higher layer parameter sl-PRS-ResourcesDedicatedSL-PRS-RP)	-	
SL PRS request	Not present (0 bit, sl-SCI-basedSL-PRS-TxTriggerSCI1-B is not configured)	-	
Reserved	Not present	-	

4.3.6.2.2 Physical layer parameters for scheduling on PSSCH

4.3.6.2.2.1 Physical layer parameters for SCI format 2-A

SCI format 2-A is used to provide HARQ information, to provide Source/Destination L1 ID or to trigger CSI reporting.

Default physical layer parameters for SCI format 2-A are specified in Table 4.3.6.2.2.1-1.

Table 4.3.6.2.2.1-1: Physical layer parameters for SCI format 2-A

Parameter	Value	Value in binary	Condition
HARQ process number	Dependent on test parameters		
New data indicator	Set for every data transmission/retransmission according to the rules specified in TS 38.321	-	
Redundancy version	Dependent on test parameters	-	
Source ID	Dependent on test parameters	-	
Destination ID	Dependent on test parameters	-	
HARQ feedback enabled/disabled indicator	HARQ feedback is enabled	"1"B	
	HARQ feedback is disabled	"0"B	SLPP
	broadcast	"00"B	BROADCAST
	groupcast with ACK/NACK HARQ	"01"B	GROUPCAST_ACK_NACK
	unicast	"10"B	UNICAST
Cast type indicator	groupcast with NACK-only HARQ	"11"B	GROUPCAST_NACK_ONLY
CSI request	Not ask for SL CSI report	"0"B	
	Ask for SL CSI report	"1"B	SL_CSI

Condition	Explanation
BROADCAST	For broadcast SL communication test
GROUPCAST_ACK_NACK	For groupcast SL communication with ACK/NACK HARQ feedback test
GROUPCAST_NACK_ONLY	For groupcast SL communication with NACK-only HARQ feedback test
UNICAST	For unicast SL communication test
SL_CSI	For SL CSI reporting test
SLPP	For SLPP test cases

4.3.6.2.2.2 Physical layer parameters for SCI format 2-B

SCI format 2-B is used to provide HARQ information, Source/Destination L1 ID or distance-based HARQ related parameters.

Default physical layer parameters for SCI format 2-B are specified in Table 4.3.6.2.2.2-1.

Table 4.3.6.2.2.2-1: Physical layer parameters for SCI format 2-B

Parameter	Value	Value in binary
HARQ process number	Dependent on test parameters	-
New data indicator	Set for every data transmission/retransmission according to the rules specified in TS 38.321	-
Redundancy version	Dependent on test parameters	-
Source ID	Dependent on test parameters	-
Destination ID	Dependent on test parameters	-
HARQ feedback enabled/disabled indicator	HARQ feedback enabled	"1"B
Zone ID	Dependent on test parameters	-
Communication range requirement	Indicating the first entry of sl-ZoneConfigMCR-List to be used	"0000"B

4.3.6.2.2.3 Physical layer parameters for SCI format 2-D

SCI format 2-D is used for the decoding of PSSCH and the scheduling of SL PRS for a shared SL PRS resource pool.

Default physical layer parameters for SCI format 2-D are specified in Table 4.3.6.2.2.3-1.

Table 4.3.6.2.2.3-1: Physical layer parameters for SCI format 2-D

Parameter	Value	Value in binary
SL PRS resource ID	Not present (0 bit, there is one entry in the higher layer parameter sl-PRS-ResourcesSharedSL-PRS-RP)	-
SL PRS request	Not present (0 bits, sl-SCI-basedSL-PRS-TxTriggerSCI2-D is not configured)	-
Embedded SCI format	SCI format 2-A	"00"B
Embedded SCI format payload	Set to the associated payload of the SCI format 2-A as defined in Table 4.3.6.2.2.1-1 with SLPP condition	-

4.4 Reference system configurations

The reference system configurations specified in this sub clause apply to all test cases unless otherwise specified.

4.4.1 Simulated network scenarios

The simulated network scenarios will simulate UE operation in either standalone NR, standalone E-UTRA or in non-standalone NR and E-UTRA networks. For non-standalone case either the NR or the E-UTRA radio access acts as the master anchor node. For both standalone and non-standalone cases, the simulated networks may be single mode networks (FDD or TDD) or dual mode networks (FDD+TDD). For the standalone NR case the simulated networks may also be inter-RAT networks ((FDD or TDD) + (E-UTRA FDD or E-UTRA TDD or UTRA FDD)).

Simulated network scenarios to be tested are listed in this sub clause.

NOTE 1: The number of cells specified does not necessarily correspond to the maximum number of resources to be configured simultaneously in test equipment. Please refer to clause 6.1 for such information.

NOTE 2: For NAS test cases see sub clause 6.3.2.

4.4.1.1 Standalone cell network scenarios

4.4.1.1.1 Standalone E-UTRA single cell and multi cell network scenarios

For standalone E-UTRA FDD or TDD single cell environment see TS 36.508 [2], clause 4.4.1.1.

For standalone E-UTRA FDD or TDD multi cell network scenarios see TS 36.508 [2], clause 4.4.1.2.

4.4.1.1.2 Standalone NR single cell network scenarios

For standalone NR FDD or TDD single cell environment, NR Cell 1 is used.

4.4.1.1.3 Standalone NR single mode multi cell network scenarios

For standalone NR FDD or TDD intra-frequency multi cell environment, NR Cell 1, NR Cell 2 and NR Cell 4 are used.

For standalone NR FDD or TDD inter-frequency multi cell environment, NR Cell 1, NR Cell 3 and NR Cell 6 are used.

For standalone NR FDD or TDD inter-band cell environment, NR Cell 1 and NR Cell 10 are used.

For standalone NR FDD or TDD multi tracking area intra-frequency multi cell environment, NR Cell 1 and NR Cell 11 are used.

For standalone NR FDD or TDD multi tracking area inter-frequency multi cell environment, NR Cell 1 and NR Cell 23 are used.

For standalone NR FDD or TDD multi PLMN inter-frequency multi cell environment, NR Cell 1, NR Cell 12, NR Cell 13 and NR Cell 14 are used.

4.4.1.1.4 Standalone NR dual mode multi cell network scenarios

For standalone NR FDD and TDD multi cell environment, NR Cell 1, NR Cell 10 and NR Cell 31 are used.

For standalone NR FDD and TDD multi PLMN multi cell environment, NR Cell 1, NR Cell 28, NR Cell 29 and NR Cell 30 are used.

In addition, standalone NR single mode multi cell network scenarios defined in clause 4.4.1.1.3 are combined with the dual mode scenarios defined in this clause when additional intra or inter-frequency cells are used.

4.4.1.1.5 Standalone NR 3GPP Inter-RAT network scenarios

For standalone NR FDD or TDD single cell with E-UTRA FDD, E-UTRA TDD or UTRA FDD single cell inter-RAT environment:

- NR Cell 1 is used for the NR cell; and
- Cell 1, as specified in TS 36.508 [2] clause 4.4.1.1, is used for the E-UTRA cell; or
- Cell 5, as specified in TS 36.508 [2] clause 4.4.2, is used for the UTRA cell.

For standalone NR FDD or TDD single cell with E-UTRA FDD or E-UTRA TDD multi cell inter-RAT environment:

- NR Cell 1 is used for the NR cell; and
- Cell 1, Cell 2 and Cell 4, as specified in TS 36.508 [2] clause 4.4.1.2, is used for the E-UTRA cell; and

4.4.1.2 Non-standalone cell network scenarios

4.4.1.2.1 Non-standalone E-UTRA single cell and NR single cell network scenarios

For non-standalone NR FDD or TDD single cell and E-UTRA FDD or TDD single cell environment:

- Cell 1, as specified in TS 36.508 [2] clause 4.4.1.1, is used for the E-UTRA cell; and

- NR Cell 1 is used for the NR cell.

4.4.1.2.2 Non-standalone E-UTRA single cell and NR single mode multi cell network scenarios

For non-standalone E-UTRA single cell and FDD or TDD NR intra-frequency single mode multi cell environment:

- Cell 1, as specified in TS 36.508 [2] clause 4.4.1.1, is used for the E-UTRA cell; and
- NR Cell 1, NR Cell 2 and NR Cell 4 are used for NR cells.

For non-standalone E-UTRA single cell and FDD or TDD NR inter-frequency single mode multi cell environment:

- Cell 1, as specified in TS 36.508 [2] clause 4.4.1.1, is used for the E-UTRA cell; and
- NR Cell 1, NR Cell 3 and NR Cell 6 are used for the NR cells.

For non-standalone E-UTRA single cell and FDD or TDD NR inter-band single mode multi cell environment:

- Cell 1, as specified in TS 36.508 [2] clause 4.4.1.1, is used for the E-UTRA cell; and
- NR Cell 1 and NR Cell 10 are used for the NR cells.

4.4.1.2.3 Non-standalone E-UTRA single mode multi cell and NR single mode multi cell network scenarios

For non-standalone E-UTRA intra-frequency single mode multi cell and FDD or TDD NR intra-frequency single mode multi cell environment:

- E-UTRA Cell 1, Cell 2 and Cell 4, as specified in TS 36.508 [2] clause 4.4.1.2, is used for the E-UTRA cell; and
- NR Cell 1, NR Cell 2 and NR Cell 4 are used for NR cells.

For non-standalone FDD or TDD E-UTRA intra-frequency single mode multi cell and FDD or TDD NR inter-frequency single mode multi cell environment:

- E-UTRA Cell 1, Cell 2 and Cell 4, as specified in TS 36.508 [2] clause 4.4.1.2, is used for the E-UTRA cell; and
- NR Cell 1, NR Cell 3 and NR Cell 6 are used for the NR cells.

For non-standalone FDD or TDD E-UTRA inter-frequency single mode multi cell and FDD or TDD NR inter-frequency single mode multi cell environment:

- E-UTRA Cell 1, Cell 3 and Cell 6, as specified in TS 36.508 [2] clause 4.4.1.2, is used for the E-UTRA cell; and
- NR Cell 1, NR Cell 3 and NR Cell 6 are used for the NR cells.

For non-standalone single E-UTRA cell and FDD or TDD NR inter-band single mode multi cell environment:

- E-UTRA Cell 1, Cell 2 and Cell 4, as specified in TS 36.508 [2] clause 4.4.1.2, is used for the E-UTRA cell; and
- NR Cell 1 and NR Cell 10 are used for the NR cells.

4.4.1.2.4 Non-standalone E-UTRA single cell and NR dual mode multi cell network scenarios

Editor's note: It is FFS if the NR dual mode multi cell environment needs to include multiple E-UTRA cells in addition to the multiple NR cells.

For non-standalone single E-UTRA cell and FDD and TDD NR dual mode multi cell environment:

- Cell 1, as specified in TS 36.508 [2] clause 4.4.1.1, is used for the E-UTRA cell; and
- NR Cell 1, NR Cell 10 and NR Cell 31 are used for the NR cells.

In addition, standalone NR single mode multi cell network scenarios defined in clause 4.4.1.2.2 are combined with the dual mode scenarios defined in this clause when additional intra or inter-frequency NR cells are used.

4.4.1.3 Non-3GPP Access network scenarios

4.4.1.3.1 WLAN network scenario

For non-3GPP access over WLAN single cell environment Cell 27, Cell 27a and Cell 27b as specified in TS 36.508 [2] clauses 4.4.2 and 4.4.8 with condition 'IMSoWLAN' is used.

4.4.1.3.2 Bluetooth network scenario

For non-3GPP access over Bluetooth single cell environment Cell 40 and Cell 41, as specified in TS 36.508 [2] clauses 4.4.2.

4.4.2 Simulated cells

NOTE 1: For NAS test cases see clause 6.3.2.

NOTE 2: Test frequency and range defined in table 4.4.2-1 do not apply to TS 38.521-1, TS 38.521-2 and TS 38.521-3 test cases.

Test frequencies and simulated NR cells are defined in table 4.4.2-1. Test frequencies and simulated E-UTRA and UTRA cells are defined in TS 36.508 [2] table 4.4.2-1.

For NR cells, NRf1 is the default test frequency. For UTRA cells, f8 as specified in TS 36.508 [2] table 4.2.2-1 is the default test frequency. For E-UTRA cells, f1 as specified in TS 36.508 [2] table 4.2.2-1 is the default test frequency.

Default parameters for simulated NR cells are specified in table 4.4.2-2 and table 4.4.2-3.

Default parameters for simulated E-UTRA cells are specified in TS 36.508 [2] table 4.4.2-1A and table 4.4.2-2.

Default parameters for simulated UTRA cells are specified in TS 36.508 [2] clause 4.4.4.

Common parameters for NR simulated cells are specified in clauses 4.4.3.

Other cell specific parameters are specified in TS 36.508 [2] clause 4.4.3 to 4.4.7.

Table 4.4.2-1: Definition of test frequencies and simulated NR cells

Test frequency	RAT	Operating band	Range	Simulated NR cells
NRf1	NR	Operating band under test	Mid (Note 1, Note 3)	NR Cell 1, NR Cell 2, NR Cell 4, NR Cell 11, NR Cell 489
NRf2	NR	Operating band under test	High (Note 1, Note 3)	NR Cell 3, NR Cell 12, NR Cell 23
NRf3	NR	Operating band under test	Low (Note 1, Note 3)	NR Cell 6, NR Cell 13
NRf4	NR	Operating band under test	(Note 1)	NR Cell 14
NRf5	NR	Operating band for inter-band cells	Mid (Note 1)	NR Cell 10, NR Cell 30, NR Cell 31
NRf6	NR	Operating band for inter-band cells	High (Note 1)	NR Cell 28, NR Cell 29
NRf7	NR	Operating band for inter-band cells	Low (Note 1)	
NRf8	NR	Operating band for SDL cell	Mid (Note 1)	NR Cell 32
NRf9	NR	Operating band for SUL cell	Mid (Note 1)	NR Cell 33
NRf10	NR	Operating band for inter-band cells	Mid (Note bb)	NR Cell 500

Note 1:	For signalling test, see clause 6.2.3.
Note 2:	Void.
Note 3:	For RRM test with NR intra-band non-contiguous CA, the test frequencies for the set of non-contiguous component carriers are specified in clauses 4.3.1.1.5 for FR1 and in clause 4.3.1.2.4 for FR2 without regard to range. Thus "Low", "Mid" and "High" information in this table does not apply. Unless otherwise stated, test point with maximum Wgap is chosen.
Note 4:	For signalling test with NR inter-band CA three bands only, the test band is different from the Operating band for NRf1 and the Operating band for NRf5.
Note 5:	For RRM test with NR intra-band contiguous CA, the test frequencies for the secondary component carrier should follow the primary carrier, as specified in clauses 4.3.1.1.3 for FR1 and in clause 7.2.3.4 for FR2 without regard to range. Thus "Low", "Mid" and "High" information in this table does not apply for the secondary component carrier.

Table 4.4.2-2: Default NR parameters for simulated NR cells

cell ID	NR Cell Identifier		Physical layer cell identity	Physical layer cell identity for SIG	PRACH-rootSequenceIndex FDD	PRACH-rootSequenceIndex TDD	SSB-Index ^{2,3}
	gNB Identifier	Cell Identity			$L_{RA}=139$ Note 1	$L_{RA}=139$ Note 1	
NR Cell 1	'00 0000 0000 0000 0000 0000 0001'B	'00 0000 0000'B	0	42	0	0	1
NR Cell 2	'00 0000 0000 0000 0000 0000 0001'B	'00 0000 0010'B	2	50	32	32	0
NR Cell 3	'00 0000 0000 0000 0000 0000 0010'B	'00 0000 0011'B	3	58	0	0	1
NR Cell 4	'00 0000 0000 0000 0000 0000 0011'B	'00 0000 0100'B	4	46	64	64	1
NR Cell 6	'00 0000 0000 0000 0000 0000 0100'B	'00 0000 0110'B	6	18	0	0	1
NR Cell 10	'00 0000 0000 0000 0000 0000 0101'B	'00 0000 1010'B	10	10	0	0	1
NR Cell 11	'00 0000 0000 0000 0000 0000 0110'B	'00 0000 1011'B	11	54	96	96	0
NR Cell 12	'00 0000 0000 0000 0000 0000 0010'B	'00 0000 1100'B	12	62	32	32	0
NR Cell 13	'00 0000 0000 0000 0000 0000 0100'B	'00 0000 1101'B	13	22	32	32	0
NR Cell 14	'00 0000 0000 0000 0000 0000 0111'B	'00 0000 1110'B	14	14	0	0	1
NR Cell 23	'00 0000 0000 0000 0000 0000 0110'B	'00 0001 0111'B	23	66	64	64	1
NR	'00 0000	'00 0001	28	46	0	0	1

Cell 28	0000 0000 0000 0000 0010'B	1100'B					
NR Cell 29	'00 0000 0000 0000 0000 0000 0100'B	'00 0001 1101'B	29	34	32	32	0
NR Cell 30	'00 0000 0000 0000 0000 0000 0111'B	'00 0001 1110'B	30	26	32	32	0
NR Cell 31	'00 0000 0000 0000 0000 0000 0110'B	'00 0001 1111'B	31	38	64	64	1
NR Cell 32	'00 0000 0000 0000 0000 0001'B	'00 0010 0000'B	32	N/A	-	-	1
NR Cell 33	'00 0000 0000 0000 0000 0001'B	'00 0010 0001'B	33	N/A	-	-	-
NR Cell 489	'00 0000 0000 0000 0000 0000 0001'B	'01 1110 1001'B	489	N/A	128	128	0
NR Cell 500	'00 0000 0000 0000 0000 0000 1000'B	'00 0000 0111'B	500	N/A	0	0	1
Note 1: To avoid collision of the preambles between intra-frequency cells, with the default <i>zeroCorrelationZoneConfig</i> value set to 15, the <i>PRACH-rootSequenceIndex</i> values have been separated by 32 root sequences per intra-frequency cell. Note 2: This SSB-Index does not apply for RRM test cases in TS 38.533 [18]. RRM test cases shall use the SSB index defined in A.3 of TS 38.533 [18]. Note 3: For signalling test, simultaneous co-existence of active NR cells defined on the same frequency and same SSB-Index is not recommended due to the same timing used for intra-frequency NR cells in TS 38.523-3 [23].							

Table 4.4.2-3: Default NAS parameters for simulated NR cells

cell ID	Tracking Area			TA# list (Note 1)	5G-GUTI (Note 2)			5G-TMSI	
	TA#	PLMN			TAC	AMF Identifier			
		MCC	MNC			AMF region ID	AMF Set ID		AMF Pointer
NR Cell 1	TAI-1	(Note 3)		1	TAI-1	254	1	Arbitrarily selected according to TS 23.003 [26] clause 2.10	
NR Cell 2	TAI-1	(Note 3)		1	TAI-1	254	1		
NR Cell 3	TAI-1	(Note 3)		1	TAI-1	254	1		
NR Cell 4	TAI-1	(Note 3)		1	TAI-1	254	1		
NR Cell 6	TAI-1	(Note 3)		1	TAI-1	254	1		
NR Cell 10	TAI-1	(Note 3)		1	TAI-1	254	1		
NR Cell 11	TAI-2	(Note 3)		2	TAI-2	254	1		
NR Cell 23	TAI-2	(Note 3)		2	TAI-2	254	1		
NR Cell 12, NR Cell 28	TAI-3	002	11	1	TAI-3	253	1		
NR Cell 13, NR Cell 29	TAI-4	003	21	1	TAI-4	252	1		
NR Cell 14, NR Cell 30	TAI-5	004	31	1	TAI-5	251	1		
NR Cell 31	TAI-2	(Note 3)		2	TAI-2	254	1		
NR Cell 489	TAI-1	(Note 3)		1	TAI-1	254	1		
NR Cell 500	TAI-1	(Note 3)		1	TAI-1	254	1		
Note 1: The value(s) in the column TA# list indicates TAI(s) included in the response messages of the registration procedure (REGISTRATION ACCEPT) when the UE performs the registration procedure on a									

Note 2:	corresponding cell. The value in the column 5G-GUTI indicates 5G-GUTI included in the response messages of the registration procedure (REGISTRATION ACCEPT) when the UE performs the registration procedure on a corresponding cell.
Note 3:	Set to the same Mobile Country Code and Mobile Network Code stored in EF _{IMSI} on the test USIM card (subclause 4.9.3).

Table 4.4.2-4: Default parameters for simulated SNPN cells

cell ID	Network Identifier (NID)	
	Assignment mode (Note 1)	NID value
NR Cell 1	1	1
NR Cell 2	1	2
NR Cell 3	1	3
NR Cell 4	1	4
NR Cell 6	1	6
NR Cell 10	1	10
NR Cell 11	1	11
NR Cell 12	1	12
NR Cell 13	1	13
NR Cell 14	1	14
NR Cell 23	1	23
NR Cell 28	1	28
NR Cell 29	1	29
NR Cell 30	1	30
NR Cell 31	1	31
NR Cell 32	1	32
NR Cell 33	1	33
NR Cell 489	1	489
NR Cell 500	1	500
Note 1: As per TS 23.003 [26] clause 12.7.1, Network Identifier comprises of Assignment mode (one hexadecimal digit) and NID value (10 hexadecimal digits). Self-assignment NIDs are chosen by setting the assignment mode to value 1.		

4.4.3 Common parameters for simulated NR cells

The parameters specified in this sub clause apply to the simulated NR cells in standalone NR and non-standalone network scenarios unless otherwise specified.

The common parameters for the simulated E-UTRA cells for standalone E-UTRA and non-standalone network scenarios are specified in TS 36.508 [2] clause 4.4.3 unless otherwise specified.

4.4.3.1 Common configurations of system information blocks

4.4.3.1.1 Combinations of system information blocks for E-UTRA standalone, EN-DC and NGEN-DC

The combination of system information blocks for standalone E-UTRA, EN-DC and NGEN-DC network scenarios are specified in TS 36.508 [2] clause 4.4.3.1.

For EN-DC and NGEN-DC network scenarios the SS shall in addition to broadcasting the E-UTRA system information blocks also broadcast the NR MIB on the NR cell(s).

4.4.3.1.2 Combinations of system information blocks for NR standalone and NE-DC

The combination of system information blocks required by a test case depends on the test case scenario. In this clause, several combinations of system information blocks are defined.

Regardless of the combination of system information blocks indicated as being used by a test case, the SS shall broadcast only the NR MIB on the NR Cell(s) configured on an SDL band and on NR SCell(s) configured on a band having no uplink frequency specified.

For NE-DC network scenario the SS shall in addition to broadcasting the NR system information blocks also broadcast the E-UTRA system information combination 1 on the E-UTRA cell(s) as specified in TS 36.508 [2].

Combination NR-1 is the default combination which applies to the following test case scenarios:

- NR FDD single cell scenario except RRM test case scenarios
- NR TDD single cell scenario except RRM test case scenarios
- NR FDD inter-band DC component carriers cell scenario
- NR TDD inter-band DC component carriers cell scenario
- NR FDD and NR TDD inter-band DC component carriers cell scenario

Combination NR-2 applies to the following test case scenarios:

- NR FDD intra-frequency multi cell scenario
- NR TDD intra-frequency multi cell scenario
- NR FDD and NR TDD dual mode multi cell roaming scenario
- NR FDD single cell RRM test case scenario
- NR TDD single cell RRM test case scenario

Combination NR-3 applies to the following test case scenarios:

- NR FDD intra-frequency multi cell scenario with neighbouring cell related information
- NR TDD intra-frequency multi cell scenario with neighbouring cell related information

Combination NR-4 applies to the following test case scenarios:

- NR FDD inter-frequency multi cell scenario
- NR TDD inter-frequency multi cell scenario
- NR FDD inter-band multi cell scenario
- NR TDD inter-band multi cell scenario
- NR FDD and NR TDD dual mode multi cell non-roaming scenario
- NR FDD intra-band carrier aggregation component carriers cell scenario
- NR FDD inter-band carrier aggregation component carriers cell scenario
- NR TDD intra-band carrier aggregation component carriers cell scenario
- NR FDD and NR TDD inter-band carrier aggregation component carriers cell scenario

Combination NR-5 applies to the following test case scenarios:

- NR FDD intra-band carrier aggregation component carriers cell scenario + NR FDD intra-frequency neighbour.
- NR FDD inter-band carrier aggregation component carriers cell scenario+ NR FDD intra-frequency neighbour.
- NR TDD intra-band carrier aggregation component carriers cell scenario+ NR FDD intra-frequency neighbour.
- NR FDD and NR TDD inter-band carrier aggregation component carriers cell scenario+ NR FDD intra-frequency neighbour.

Combination NR-6 applies to the following test case scenarios:

- 3GPP inter-RAT NR FDD + E-UTRA FDD multi cell scenario
- 3GPP inter-RAT NR TDD + E-UTRA TDD multi cell scenario

- 3GPP inter-RAT NR TDD + E-UTRA FDD multi cell scenario

Combination NR-7 applies to the following test case scenarios:

- NR FDD inter-frequency + 3GPP inter-RAT E-UTRA multi-cell scenario
- NR TDD inter-frequency + 3GPP inter-RAT E-UTRA multi-cell scenario

Combination NR-8 applies to the following test case scenarios:

- NR FDD ETWS single cell scenario
- NR TDD ETWS single cell scenario

Combination NR-9 applies to the following test case scenarios:

- 3GPP NR FDD + CMAS single cell scenario
- 3GPP NR TDD + CMAS single cell scenario

Combination NR-10 applies to the following test case scenarios:

- 3GPP NR FDD + ETWS primary notification single cell scenario
- 3GPP NR TDD + ETWS primary notification single cell scenario

Combination NR-11 applies to the following test case scenarios:

- 3GPP NR FDD + ETWS secondary notification single cell scenario
- 3GPP NR TDD + ETWS secondary notification single cell scenario

Combination NR-12 applies to the following test case scenarios:

- 3GPP NR FDD + SNPN only single cell scenario
- 3GPP NR TDD + SNPN only single cell scenario

Combination NR-13 applies to the following test case scenarios:

- 3GPP NR FDD + CAG cell multi cell scenario
- 3GPP NR TDD + CAG cell multi cell scenario

Combination NR-14 applies to the following test case scenarios:

- 3GPP NR FDD single cell scenario + NR sidelink communication with or without network scheduling.
- 3GPP NR TDD single cell scenario + NR sidelink communication with or without network scheduling.
- 3GPP NR FDD intra-frequency multi cell scenario + NR sidelink communication with or without network scheduling.
- 3GPP NR TDD intra-frequency multi cell scenario + NR sidelink communication with or without network scheduling.
- 3GPP NR FDD inter-frequency multi cell scenario + NR sidelink communication with or without network scheduling.
- 3GPP NR TDD inter-frequency multi cell scenario + NR sidelink communication with or without network scheduling.
- 3GPP NR FDD inter-band multi cell scenario + NR sidelink communication with or without network scheduling.
- 3GPP NR TDD inter-band multi cell scenario + NR sidelink communication with or without network scheduling.

Combination NR-15 applies to the following test case scenarios:

- 3GPP NR FDD single cell scenario + positioning test case which require posSIBs.
- 3GPP NR TDD single cell scenario + positioning test case which require posSIBs.

Combination NR-16 applies to the following test case scenarios:

- 3GPP NR FDD intra-frequency multi cell scenario + positioning test case which require posSIBs.
- 3GPP NR TDD intra-frequency multi cell scenario + positioning test case which require posSIBs.

Combination NR-17 applies to the following test case scenarios:

- 3GPP NR FDD inter-frequency multi cell scenario + positioning test case which require posSIBs.
- 3GPP NR TDD inter-frequency multi cell scenario + positioning test case which require posSIBs.

Combination NR-18 applies to the following test case scenarios:

- 3GPP NR FDD inter-frequency multi cell scenario + idle/inactive measurements.
- 3GPP NR TDD inter-frequency multi cell scenario + idle/inactive measurements.

Combination NR-19 applies to the following test case scenarios:

- 3GPP NR FDD + Extended field in SI scenario
- 3GPP NR TDD + Extended field in SI scenario

Combination NR-20 applies to the following test case scenarios:

- 3GPP NR FDD single cell scenario + MBS data.
- 3GPP NR TDD single cell scenario + MBS data.
- 3GPP NR FDD intra-frequency multi cell scenario + MBS data.
- 3GPP NR TDD intra-frequency multi cell scenario + MBS data.

Combination NR-21 applies to the following test case scenarios:

- 3GPP NR FDD intra-frequency multi cell scenario + MBS Service Continuity.
- 3GPP NR TDD intra-frequency multi cell scenario + MBS Service Continuity.

Combination NR-22 applies to the following test case scenarios:

- 3GPP NR FDD intra-frequency multi cell scenario + MBS data + MBS Service Continuity.
- 3GPP NR TDD intra-frequency multi cell scenario + MBS data + MBS Service Continuity.

Combination NR-23 applies to the following test case scenarios:

- 3GPP NR FDD inter-frequency multi cell scenario + MBS data
- 3GPP NR TDD inter-frequency multi cell scenario + MBS data.

Combination NR-24 applies to the following test case scenarios:

- 3GPP NR FDD inter-frequency multi cell scenario + MBS Service Continuity.
- 3GPP NR TDD inter-frequency multi cell scenario + MBS Service Continuity.

Combination NR-25 applies to the following test case scenarios:

- 3GPP NR FDD inter-frequency multi cell scenario + MBS data + MBS Service Continuity.
- 3GPP NR TDD inter-frequency multi cell scenario + MBS data + MBS Service Continuity.

Combination NR-26 applies to the following test case scenarios:

- 3GPP NR FDD + eNPN single cell scenario
- 3GPP NR TDD + eNPN single cell scenario

Combination NR-27 applies to the following test case scenarios:

- 3GPP NR FDD + eNPN multi cell scenario
- 3GPP NR TDD + eNPN multi cell scenario

Combination NR-28 is void

Combination NR-29 applies to the following test case scenarios:

- 3GPP NR FDD single NTN cell scenario
- 3GPP NR FDD intra-frequency multi NTN cell scenario

Combination NR-30 applies to the following test case scenarios:

- 3GPP NR FDD inter-frequency multi cell scenario + slice-based cell reselection in idle/inactive state
- 3GPP NR TDD inter-frequency multi cell scenario + slice-based cell reselection in idle/inactive state

Combination NR-31 applies to the following test case scenarios:

- 3GPP NR FDD single cell scenario + NR sidelink communication.
- 3GPP NR TDD single cell scenario + NR sidelink communication.

Combination NR-32 applies to the following test case scenarios:

- 3GPP NR FDD inter-frequency multi NTN cell scenario

Combination NR-33 is void.

Combination NR-34 applies to the following test case scenarios:

- 3GPP NR FDD single ATG cell scenario
- 3GPP NR TDD single ATG cell scenario
- 3GPP NR FDD intra-frequency multi ATG cell scenario
- 3GPP NR TDD intra-frequency multi ATG cell scenario

Combination NR-35 applies to the following test case scenarios:

- 3GPP NR FDD single NTN cell + 3GPP NR Inter-frequency TN cell scenario

Combination NR-36 applies to the following test case scenarios:

- 3GPP NR FDD single cell scenario + sidelink positioning test case
- 3GPP NR TDD single cell scenario + sidelink positioning test case

Combination NR-37 applies to the following test case scenarios:

- 3GPP NR FDD single cell scenario + MBS data + MBS multicast reception in RRC_INACTIVE
- 3GPP NR TDD single cell scenario + MBS data + MBS multicast reception in RRC_INACTIVE
- 3GPP NR FDD intra-frequency multi cell scenario + MBS data + MBS multicast reception in RRC_INACTIVE
- 3GPP NR TDD intra-frequency multi cell scenario + MBS data + MBS multicast reception in RRC_INACTIVE

Combination NR-38 applies to the following test case scenarios:

- 3GPP NR FDD Intra-frequency multi NTN cell scenario + UTC

Combination NR-39 applies to the following test case scenarios:

- 3GPP NR FDD Inter-frequency multi NTN cell scenario + UTC

Combination NR-40 applies to the following test case scenarios:

- 3GPP NR FDD intra-frequency multi NTN cell scenario with neighbouring cell related information

Table 4.4.3.1.2-1: Combinations of system information blocks, first set

System information block type	Combination No.												
	NR-1	NR-2	NR-3	NR-4	NR-5	NR-6	NR-7	NR-8	NR-9	NR-10	NR-11	NR-12	NR-13
SIB1	X	X	X	X	X	X	X	X	X	X	X	X	X
SIB2		X	X	X	X	X	X						X
SIB3			X		X								
SIB4				X	X		X						
SIB5						X	X						
SIB6								X		X			
SIB7								X			X		
SIB8									X				
SIB9													
SIB10												X	X
SIB11													
SIB12													
SIB13													
SIB14													
SIB16													
SIB18													
SIB19													
SIB20													
SIB21													
SIB22													
SIB23													
SIB24													
SIB25													
posSIBs													

Table 4.4.3.1.2-2: Combinations of system information blocks, second set

System information block type	Combination No.												
	NR-14	NR-15	NR-16	NR-17	NR-18	NR-19	NR-20	NR-21	NR-22	NR-23	NR-24	NR-25	NR-26
SIB1	X	X	X	X	X	X	X	X	X	X	X	X	X
SIB2	X		X	X		X	X	X	X	X	X	X	
SIB3													
SIB4	X			X	X					X	X	X	
SIB5													
SIB6													
SIB7													
SIB8													
SIB9													
SIB10													X
SIB11					X	X							
SIB12	X												
SIB13													
SIB14													
SIB16													
SIB18													X
SIB19													
SIB20							X		X	X		X	

SIB21								X	X		X	X	
SIB22													
SIB23													
SIB24													
SIB25													
posSIBs		X	X	X									

Table 4.4.3.1.2-3: Combinations of system information blocks, third set

Combination No.													
System information block type	NR-27	Void	NR-29	NR-30	NR-31	NR-32	Void	NR-34	NR-35	NR-36	NR-37	NR-38	NR-39
SIB1	X		X	X	X	X		X	X	X	X	X	X
SIB2	X		X	X		X		X	X		X	X	X
SIB3													
SIB4				X		X			X				X
SIB5													
SIB6													
SIB7													
SIB8													
SIB9												X	X
SIB10	X												
SIB11													
SIB12					X					X			
SIB13													
SIB14													
SIB16				X									
SIB18	X												
SIB19			X			X			X			X	X
SIB20													
SIB21													
SIB22								X					
SIB23										X			
SIB24											X		
SIB25									X				
posSIBs													

Table 4.4.3.1.2-4: Combinations of system information blocks, fourth set

Combination No.													
System information block type	NR-40												
SIB1	X												
SIB2	X												
SIB3	X												
SIB4													
SIB5													
SIB6													
SIB7													
SIB8													
SIB9													
SIB10													
SIB11													
SIB12													
SIB13													
SIB14													
SIB16													
SIB18													
SIB19	X												
SIB20													
SIB21													

SIB22													
SIB23													
SIB24													
SIB25													
posSIBs													

4.4.3.1.3 Scheduling of system information blocks

The scheduling configurations for combinations of system information blocks are defined in the following tables. There is no scheduling information for combination NR-1.

Table 4.4.3.1.3-1: Scheduling for combination NR-2

Scheduling Information No.	Periodicity [radio frames]	Mapping of system information blocks
1	32	SIB2

Table 4.4.3.1.3-2: Scheduling for combination NR-3

Scheduling Information No.	Periodicity [radio frames]	Mapping of system information blocks
1	32	SIB2
2	64	SIB3

Table 4.4.3.1.3-3: Scheduling for combination NR-4

Scheduling Information No.	Periodicity [radio frames]	Mapping of system information blocks
1	32	SIB2
2	64	SIB4

Table 4.4.3.1.3-4: Scheduling for combination NR-5

Scheduling Information No.	Periodicity [radio frames]	Mapping of system information blocks
1	32	SIB2
2	64	SIB3
3	64	SIB4

Table 4.4.3.1.3-5: Scheduling for combination NR-6

Scheduling Information No.	Periodicity [radio frames]	Mapping of system information blocks
1	32	SIB2
2	64	SIB5

Table 4.4.3.1.3-6: Scheduling for combination NR-7

Scheduling Information No.	Periodicity [radio frames]	Mapping of system information blocks
1	32	SIB2
2	64	SIB4, SIB5

Table 4.4.3.1.3-7: Scheduling for combination NR-8

Scheduling Information No.	Periodicity [radio frames]	Mapping of system information blocks

1	32	SIB6
2	32	SIB7

Table 4.4.3.1.3-8: Scheduling for combination NR-9

Scheduling Information No.	Periodicity [radio frames]	Mapping of system information blocks
1	32	SIB8

Table 4.4.3.1.3-9: Scheduling for combination NR-10

Scheduling Information No.	Periodicity [radio frames]	Mapping of system information blocks
	32	SIB6

Table 4.4.3.1.3-10: Scheduling for combination NR-11

Scheduling Information No.	Periodicity [radio frames]	Mapping of system information blocks
1	32	SIB7

Table 4.4.3.1.3-11: Scheduling for combination NR-12

Scheduling Information No.	Periodicity [radio frames]	Mapping of system information blocks
1	64	SIB10

Table 4.4.3.1.3-12: Scheduling for combination NR-13

Scheduling Information No.	Periodicity [radio frames]	Mapping of system information blocks
1	32	SIB2
2	64	SIB10

Table 4.4.3.1.3-13: Scheduling for combination NR-14

Scheduling Information No.	Periodicity [radio frames]	Mapping of system information blocks
1	32	SIB2
2	64	SIB4
3	64	SIB12

Table 4.4.3.1.3-14: Scheduling for combination NR-15

Scheduling Information No.	Periodicity [radio frames]	Mapping of system information blocks
1	32	posSibType1-1, posSibType1-2, posSibType1-3 (Note 1)
	32	posSibType4-1 (Note 2)
	32	posSibType5-1 (Note 3)
	32	posSibType1-5, posSibType1-6, posSibType1-7 (Note 5)
	32	posSibType1-8 (Note 6)
2..N+1	32	posSibType2-1, posSibType2-3, posSibType2-6, posSibType2-7, posSibType2-8, posSibType2-9 (Note 4)
	32	posSibType2-12, posSibType2-13

		(Note 7)
	32	posSibType2-17, posSibType2-18, posSibType2-19, posSibType2-20, posSibType2-21, posSibType2-22, posSibType2-23 (Note 8)
Note 1:	Content of SI message 1 when UE supports GNSS as defined in TS 37.571-2 [20] Table 8.1-1: Sub-test 25.	
Note 2:	Content of SI message 1 when UE supports Sensor as defined in TS 37.571-2 [20] Table 8.1-1: Sub-test 24.	
Note 3:	Content of SI message 1 when UE supports MBS as defined in TS 37.571-2 [20] Table 8.1-1: Sub-test 23.	
Note 4:	Content of SI messages 2..N, only present when UE supports GNSS as defined in TS 37.571-2 [20] Table 8.1-1: Sub-test 25. If UE supports N GNSS systems, N SIs are broadcasted, one SI per each GNSS system.	
Note 5:	Content of SI message 1 when UE supports RTK corrections	
Note 6:	Content of SI message 1 when UE supports SSR corrections	
Note 7:	Content of SI messages 2..N, only present when UE supports RTK corrections. . If UE supports N GNSS systems, N SIs are broadcasted, one SI per each GNSS system. The posSibType2-13 must only be present when GLONASS is supported.	
Note 8:	Content of SI messages 2..N, only present when UE supports SSR corrections. If UE supports N GNSS systems, N SIs are broadcasted, one SI per each GNSS system.	

Table 4.4.3.1.3-15: Scheduling for combination NR-16

Scheduling Information No.	Periodicity [radio frames]	Mapping of system information blocks
1	32	SIB2
2	32	posSibType6-1

Table 4.4.3.1.3-16: Scheduling for combination NR-17

Scheduling Information No.	Periodicity [radio frames]	Mapping of system information blocks
1	32	SIB2
2	64	SIB4
3	32	posSibType6-1

Table 4.4.3.1.3-17: Scheduling for combination NR-18

Scheduling Information No.	Periodicity [radio frames]	Mapping of system information blocks
1	64	SIB4
2	64	SIB11

Table 4.4.3.1.3-18: Scheduling for combination NR-19

Scheduling Information No.	Periodicity [radio frames]	Mapping of system information blocks
1	32	SIB2, SIB11

Table 4.4.3.1.3-19: Void**Table 4.4.3.1.3-20: Scheduling for combination NR-20**

Scheduling Information No.	Periodicity [radio frames]	Mapping of system information blocks
1	32	SIB2

2	64	SIB20

Table 4.4.3.1.3-21: Scheduling for combination NR-21

Scheduling Information No.	Periodicity [radio frames]	Mapping of system information blocks
1	32	SIB2
2	64	SIB21

Table 4.4.3.1.3-22: Scheduling for combination NR-22

Scheduling Information No.	Periodicity [radio frames]	Mapping of system information blocks
1	32	SIB2
2	64	SIB20
3	64	SIB21

Table 4.4.3.1.3-23: Scheduling for combination NR-23

Scheduling Information No.	Periodicity [radio frames]	Mapping of system information blocks
1	32	SIB2
2	64	SIB4
3	64	SIB20

Table 4.4.3.1.3-24: Scheduling for combination NR-24

Scheduling Information No.	Periodicity [radio frames]	Mapping of system information blocks
1	32	SIB2
2	64	SIB4
3	64	SIB21

Table 4.4.3.1.3-25: Scheduling for combination NR-25

Scheduling Information No.	Periodicity [radio frames]	Mapping of system information blocks
1	32	SIB2
2	64	SIB4
3	64	SIB20
4	64	SIB21

Table 4.4.3.1.3-26: Scheduling for combination NR-26

Scheduling Information No.	Periodicity [radio frames]	Mapping of system information blocks
1	64	SIB10, SIB18

Table 4.4.3.1.3-27: Scheduling for combination NR-27

Scheduling Information No.	Periodicity [radio frames]	Mapping of system information blocks
1	32	SIB2
2	64	SIB10, SIB18

Table 4.4.3.1.3-28: Void

Table 4.4.3.1.3-29: Scheduling for combination NR-29

Scheduling Information No.	Periodicity [radio frames]	Mapping of system information blocks
1	32	SIB2
2	64	SIB19

Table 4.4.3.1.3-30: Scheduling for combination NR-30

Scheduling Information No.	Periodicity [radio frames]	Mapping of system information blocks
1	32	SIB2
2	64	SIB4
3	64	SIB16

Table 4.4.3.1.3-31: Scheduling for combination NR-31

Scheduling Information No.	Periodicity [radio frames]	Mapping of system information blocks
1	64	SIB12

Table 4.4.3.1.3-32: Scheduling for combination NR-32

Scheduling Information No.	Periodicity [radio frames]	Mapping of system information blocks
1	32	SIB2
2	64	SIB4
3	64	SIB19

Table 4.4.3.1.3-33: Void

Table 4.4.3.1.3-34: Scheduling for combination NR-34

Scheduling Information No.	Periodicity [radio frames]	Mapping of system information blocks
1	32	SIB2
2	64	SIB22

Table 4.4.3.1.3-35: Scheduling for combination NR-35

Scheduling Information No.	Periodicity [radio frames]	Mapping of system information blocks
1	32	SIB2
2	64	SIB4
3	64	SIB19
4	64	SIB25

Table 4.4.3.1.3-36: Scheduling for combination NR-36

Scheduling Information No.	Periodicity [radio frames]	Mapping of system information blocks
1	64	SIB12
2	64	SIB23

Table 4.4.3.1.3-37: Scheduling for combination NR-37

Scheduling Information No.	Periodicity [radio frames]	Mapping of system information blocks
1	32	SIB2
2	64	SIB24

Table 4.4.3.1.3-38: Scheduling for combination NR-38

Scheduling Information No.	Periodicity [radio frames]	Mapping of system information blocks
1	32	SIB2
2	64	SIB9
3	64	SIB19

Table 4.4.3.1.3-39: Scheduling for combination NR-39

Scheduling Information No.	Periodicity [radio frames]	Mapping of system information blocks
1	32	SIB2
2	64	SIB4
3	64	SIB9
4	64	SIB19

Table 4.4.3.1.3-40: Scheduling for combination NR-40

Scheduling Information No.	Periodicity [radio frames]	Mapping of system information blocks
1	32	SIB2
2	64	SIB3
3	64	SIB19

4.4A Test states

4.4A.1 General

The purpose of the test states is to get the UE into specific 5GC and RRC protocol states in the initial condition of test cases. Each test state is identified by a test state ID. The syntax used for test state IDs is described in sub-clause 4.4A.4. The list of defined test states and the associated UE 5GC and RRC/N3AN protocol states are specified in sub-clause 4.4A.2.

A test case may request that one or more test functions and/or configurations are activated/configured by the SS as part of the procedure used for the requested test state. The test case requests the additional test functions and/or configurations by specifying one or more test state parameters. The list of defined test state parameters is specified in sub-clause 4.4A.3.

4.4A.2 Test states and associated 5GC and RRC protocol states

Table 4.4A.2-0: 5GC and RRC/N3AN protocol states for UE Switched Off

5GS state ID	Connectivity	RRC/N3AN state	5GMM modes	5GMM sublayer	5GSM sublayer	Comments
0-A	-	-	-	-	-	UE switched off. No change to PLMN stored

						in the USIM
0N-B	NR	-	-	-	-	UE switched off with the PLMN under test stored in the USIM
0E-B	E-UTRA	-	-	-	-	
0W-B	WLAN	-	-	-	-	

Table 4.4A.2-1: 5GC and RRC/N3AN protocol states for IDLE

5GS state ID	Connectivity	RRC/N3AN state	5GMM modes	5GMM sublayer	5GSM sublayer
1N-A	NR	NR RRC_IDLE	5GMM-IDLE	5GMM-REGISTERED	PDU SESSION INACTIVE
					PDU SESSION ACTIVE
1E-A	E-UTRA	EUTRA RRC_IDLE	5GMM-IDLE	5GMM-REGISTERED	PDU SESSION INACTIVE
					PDU SESSION ACTIVE
1W-A	WLAN	Ipsec_SA_Released	5GMM-IDLE	5GMM-REGISTERED	PDU SESSION INACTIVE
					PDU SESSION ACTIVE
1N-B	NR	NR RRC_IDLE	5GMM-IDLE	5GMM-REGISTERED	PDU SESSION INACTIVE
					PDU SESSION ACTIVE

Table 4.4A.2-2: 5GC and RRC protocol states for INACTIVE

5GS state ID	Connectivity	RRC state	5GMM modes	5GMM sublayer	5GSM sublayer
2N-A	NR	NR RRC_INACTIVE	5GMM-CONNECTED	5GMM-REGISTERED	PDU SESSION INACTIVE
					PDU SESSION ACTIVE
2E-A	E-UTRA	EUTRA RRC_INACTIVE	5GMM-CONNECTED	5GMM-REGISTERED	PDU SESSION INACTIVE
					PDU SESSION ACTIVE

Table 4.4A.2-3: 5GC and RRC/N3AN protocol states for CONNECTED

5GS state ID	Connectivity	RRC/N3AN state	5GMM modes	5GMM sublayer	5GSM sublayer
3N-A	NR	NR RRC_CONNECTED	5GMM-CONNECTED	5GMM-REGISTERED	PDU SESSION INACTIVE
					PDU SESSION ACTIVE
3E-A	E-UTRA	EUTRA RRC_CONNECTED	5GMM-CONNECTED	5GMM-REGISTERED	PDU SESSION INACTIVE
					PDU SESSION ACTIVE
3W-A	WLAN	Ipsec_SA_Established	5GMM-CONNECTED	5GMM-REGISTERED	PDU SESSION INACTIVE
					PDU SESSION ACTIVE
3N-B	NR	NR RRC_CONNECTED	5GMM-CONNECTED	5GMM-REGISTERED	PDU SESSION INACTIVE
					PDU SESSION ACTIVE

Table 4.4A.2-4: 5GC and RRC/N3AN protocol states for Out of Coverage

5GS state ID	Connectivity	RRC/N3AN state	5GMM modes	5GMM sublayer	5GSM sublayer
4-A	-	-	-	-	-
4N-A	NR	NR RRC_CONNECTED	5GMM-CONNECTED	5GMM-REGISTERED	PDU SESSION INACTIVE
					PDU SESSION ACTIVE

4.4A.3 Test state parameters

Table 4.4A.3-1 lists the test functions and configurations that a test case can request to be activated/configured. A test case requests a test function or configuration to be used in the preamble by including the test state parameter text in the preamble statement of the test case in *italics*.

Note: The test state parameters are currently limited to test functions required by standalone NR. Additional test state parameters will be added in future as needed. E.g. for EN-DC, NE-DC and NGEN-DC there will be a need for parameters for bearer type (MCG and SCG, MCG and split or MCG only).

Table 4.4A.3-1: Test state parameters

Test state parameter	Description
<i>UE test loop mode <X> prepared</i>	If included the UE test mode is activated in the preamble indicating that UE test loop mode <X> will be activated in the test case test procedure, where <X> is A, B, C or E. (Note 1, Note 2, Note 3, Note 4, Note 5)
<i>UE test loop mode <X> active</i>	If included the UE Test Mode and UE test loop mode <X> will be activated in the preamble, where <X> is A, B, C or E. (Note 1, Note 2, Note 3, Note 4, Note 5)
Note 1: See TS 38.509 [11], clause 5.2.2 for details of UE test mode. Note 2: See TS 38.509 [11], clause 5.3.4.1 for details of UE test loop mode A. Note 3: See TS 38.509 [11], clause 5.3.4.2.2 for details of UE test loop mode B. Note 4: See TS 38.509 [11], clause 5.3.4.3 for details of UE test loop mode E. Note 5: See TS 38.509 [11], clause 5.3.4.2A for details of UE test loop mode C.	

4.4A.4 Test state ID syntax

A test state ID is defined as:

<RRC state><Connectivity>-<Variant>

, where <RRC state>, <Connectivity> and <Variant> are defined in Table 4.4A.2-1.

Table 4.4A.4-1: Test state fields

Test state field	Value	Description
<RRC state>	0	Indicates that the requested test state will end up in SWITCHED_OFF state.
	1	Indicates that the requested test state will end up in RRC_IDLE/Ipsec_SA_Released state.
	2	Indicates that the requested test state will end up in RRC_INACTIVE state.
	3	Indicates that the requested test state will end up in RRC_CONNECTED/Ipsec_SA_Established state.
<Connectivity>	4	Indicates that the requested test state will end up in Out of Coverage state.
	E	E-UTRA is used as the initial access.
	N	NR is used as the initial access.
<Variant>	W	Untrusted non-3GPP Access over WLAN is used as the initial access
	A	A, B, C etc. used to represent different variants within a <RRC state><Connectivity> group of test states.

4.4A.5 Mapping of test state IDs and test parameters to generic procedures, generic procedure parameters and specific message conditions

Depending on the test case preamble requested test state ID and test parameters the SS shall:

- 1> use the applicable generic procedure as specified in Table 4.4A.5-1 using the:
 - 2> applicable generic procedure parameters as specified in Table 4.4A.5-1 and Table 4.4A.5-2; and
 - 2> applicable message conditions as specified in Table 4.4A.5-2.

Table 4.4A.5-1: Test state ID mapping to generic procedures and Connectivity generic procedure parameter

Test state ID			Generic Procedure		
RRC state field	Connectivity field	Variant field	Name	Generic procedure parameter (Note 1)	Clause
0	-	A	SWITCHED_OFF		4.5.5
0	N	B	SWITCHED_OFF	Connectivity=NR	4.5.5
0	E	B	SWITCHED_OFF	Connectivity=E-UTRA	4.5.5
0	W	B	SWITCHED_OFF	Connectivity=WLAN	4.5.5
1	N	A	RRC_IDLE	Connectivity=NR	4.5.2
1	E	A	RRC_IDLE	Connectivity=E-UTRA	4.5.2
1	W	A	Ipsec_SA_Released	Connectivity=WLAN	4.5.2
1	N	B	RRC_IDLE_with_SL	Connectivity=NR, Sidelink=On	4.5.2
2	N	A	RRC_INACTIVE	Connectivity=NR	4.5.3
2	E	A	RRC_INACTIVE	Connectivity=E-UTRA	4.5.3
3	N	A	RRC_CONNECTED	Connectivity=NR	4.5.4
3	E	A	RRC_CONNECTED	Connectivity=E-UTRA	4.5.4
3	W	A	Ipsec_SA_Established	Connectivity=WLAN	4.5.4
3	N	B	RRC_CONNECTED_with_SL	Connectivity=NR, Sidelink=On	4.5.4
4	-	A	Out_of_Coverage	Sidelink=On	4.5.7

Note 1: In addition to the Connectivity parameter specified in this table the applicable additional generic procedure parameters and conditions as stated in Table 4.4A.5-2 shall be used

Table 4.4A.5-2: Additional generic procedure parameters and message conditions

Test state parameter	Additional generic procedure parameter(s)	Specific message conditions	
		Message	Condition
<i>UE test loop mode A prepared</i>	Test Mode=On	Note 1	Note 1
<i>UE test loop mode B prepared</i>	Test Mode=On	ACTIVATE UE TEST MODE (see subclause 4.7A.1)	UE test loop mode B
<i>UE test loop mode E prepared</i>	Test Mode=On	ACTIVATE UE TEST MODE (ee subclause 4.7A.1)	UE test loop mode E
<i>UE test loop mode A active</i>	Test Loop Function=On	Note 1	Note 1
<i>UE test loop mode B active</i>	Test Loop Function=On	ACTIVATE UE TEST MODE (see subclause 4.7A.1)	UE test loop mode B
		CLOSE UE TEST LOOP (see subclause 4.7A.2)	UE test loop mode B
<i>UE test loop mode E active</i>	Test Loop Function=On	ACTIVATE UE TEST MODE (see subclause 4.7A.1)	UE test loop mode E
		CLOSE UE TEST LOOP (see subclause 4.7A.2)	UE test loop mode E

Note 1: For test state parameters *UE test loop mode A prepared* and *UE test loop mode A active* there is no specific message conditions needed as the default UE test loop mode in the messages ACTIVATE UE TEST MODE and

CLOSE UE TEST LOOP is UE test loop mode A.

4.5 Generic procedures

4.5.1 General

The generic procedures are used by test cases to get UE under test into SWITCHED_OFF, RRC_IDLE/Ipsec SA not established, RRC_INACTIVE, RRC_CONNECTED/Ipsec SA or Out of Coverage established state.

A test case controls the SS by specifying the required RRC state and a set of generic procedure parameters applicable for the intended testing.

The connectivity values *EN-DC* and *E-UTRA/EPC* are both a UE connected to the EPC. The connectivity values *E-UTRA/5GC*, *NR*, *NGEN-DC*, *NE-DC* and *NR-DC* are all a UE connected to the 5GC.

NOTE: The following connectivity values are not available to use in the current version of this specification: *E-UTRA/5GC* and *NGEN-DC*.

Table 4.5.1-1: Generic procedure parameters

Parameter	Values	Description	Parameter condition
Connectivity	<i>E-UTRA/5GC</i>	E-UTRA connected to 5GC	Mandatory. For value <i>NR</i> see note 1.
	<i>NR</i>	NR connected to 5GC	
	<i>EN-DC</i>	E-UTRA-NR Dual Connectivity with E-UTRA connected to EPC	
	<i>NGEN-DC</i>	E-UTRA-NR Dual Connectivity with E-UTRA connected to 5GC	
	<i>NE-DC</i>	NR E-UTRA Dual Connectivity	
	<i>NR-DC</i>	NR-NR Dual Connectivity	
	<i>WLAN</i>	Un trusted non 3GPP access over WLAN	
	<i>E-UTRA/EPC</i>	E-UTRA connected to EPC	
Bearers	<i>MCG(s) and SCG</i>	MCG and SCG	Mandatory when Connectivity is set to <i>EN-DC</i> , <i>NGEN-DC</i> , <i>NE-DC</i> and <i>NR-DC</i> and when the generic procedures are used by test cases to get UE under test into RRC_CONNECTED state. s=1 if MULTI_PDN= FALSE and s=2 if MULTI_PDN=TRUE. N/A otherwise.
	<i>MCG(s) and split</i>	MCG and split	
Test Mode	<i>On</i>	UE test mode active as specified in TS 38.509 [11], clause 5.2.2. (Note 2)	Optional
Test Loop Function	<i>On</i>	UE test mode active with one of the UE test loop modes activated as specified in TS 38.509 [11], clauses 5.2.2 and 5.3.2.	Optional
Connected without release	<i>On</i>	Enter RRC_Connected with Ipsec_SA_Established and without any release.	Optional N/A for <i>NR-DC</i> .
Interworking without N26 interface supported	<i>On</i>	The NWK sets the REGISTRATION ACCEPT message, IE 5GS network feature support, IWK N26 (octet 3, bit 7) = 1	Optional, Depends on test case scenario. Default message content for REGISTRATION ACCEPT is set to Interworking without N26 interface NOT supported
Unrestricted nr PDN	<i>On</i>	Allow unrestricted numbers of PDNs.	Optional for Connectivity <i>E-UTRA/EPC</i> . N/A otherwise.
Sidelink	<i>On</i>	NR sidelink	Optional
Cast type	<i>Unicast</i>	To establish unicast sidelink	Optional

		and PC5-RRC connection.	
GNSS Sync	<i>On</i>	To use GNSS as the synchronization reference source.	Optional
SL MIMO	<i>On</i>	To transmit PSSCH with 2 spatial layers, i.e. SL MIMO	Optional
Note 1: The TS 38.331 [6] abbreviation for NR connected to 5GC is NR/5GC.			
Note 2: IF Test Mode = <i>On</i> for a NR signaling test case, test operator may pre-configure UE to disable IMS and/or set it to Data Centric.			

4.5.2 RRC_IDLE

4.5.2.1 Initiation

The SS shall:

- 1> if connectivity is *EN-DC*:
 - 2> use 1 E-UTRA cell and 1 NR cell, default parameters;
 - 2> if connected without release is not present:
 - 3> perform according to the table 4.5.2.2-1: E-UTRA RRC_IDLE;
- 1> if connectivity is *E-UTRA/EPC*:
 - 2> use 1 E-UTRA cell, default parameters;
 - 2> if unrestricted nr PDN is not present:
 - 3> perform according to the table 4.5.2.2-1: E-UTRA RRC_IDLE;
 - 2> else:
 - 3> perform according to the table 4.5.2.2-5: E-UTRA RRC_IDLE Unrestricted nr PDN;
- 1> if connectivity is *NR*:
 - 2> use 1 NR cell, default parameters;
 - 2> if sidelink is *On*
 - 3> use 1 NR-SS-UE;
 - 3> if GNSS Sync is *On*
 - 4> use 1 GNSS simulator.
 - 2> perform according to the table 4.5.2.2-2: NR RRC_IDLE;
- 1> if connectivity is *WLAN*:
 - 2> use 1 WLAN cell, default parameters;
 - 2> if connected without release is not present:
 - 3> perform according to the table 4.5.2.2-3: WLAN Ipsec_SA_Released;
 - 2> else:
 - 3> Not defined;
- 1> if connectivity is *NR-DC*:
 - 2> use 2 NR cells, default parameters;

2> perform according to the table 4.5.2.2-2: NR RRC_IDLE.

1> if connectivity is *NE-DC*:

2> use 1 E-UTRA cell and 1 NR cell, default parameters;

2> perform according to the table 4.5.2.2-2: NR RRC_IDLE.

4.5.2.2 Procedures

Table 4.5.2.2-1: E-UTRA RRC_IDLE

St	Procedure	Message Sequence		TP	Verdict
		U - S	Message		
1-9a2	Same as TS 36.508 [2] table 4.5.2.3-1, steps 1-9a2.	-	-	-	-
-	EXCEPTION: Steps 10a1 to 10b8 describe behaviour which depends on procedure parameters; the "lower case letter" identifies a step sequence that take place if a procedure parameter has a particular value.	-	-	-	-
10a1-10a10	IF Test Mode = On OR Test Loop Function = On THEN steps 10-19 as defined in TS 36.508 [2] table 4.5.2A.3-1, are performed. The ACTIVATE TEST MODE is using the associated condition for the test loop.	-	-	-	-
10b1-10b8	ELSE steps 10-17 as defined in TS 36.508 [2], table 4.5.2.3-1 are performed.	-	-	-	-

Table 4.5.2.2-2: NR RRC_IDLE

St	Procedure	Message Sequence		TP	Verdict
		U - S	Message		
1	-	<--	NR RRC: SYSTEM INFORMATION (BCCH)	-	-
2	The UE transmits an <i>RRCSetupRequest</i> message.	-->	NR RRC: <i>RRCSetupRequest</i>	-	-
3	The SS transmits an <i>RRCSetup</i> message.	<--	NR RRC: <i>RRCSetup</i>	-	-
4	The UE transmits an <i>RRCSetupComplete</i> message and a REGISTRATION REQUEST message.	-->	NR RRC: <i>RRCSetupComplete</i> 5GMM: REGISTRATION REQUEST	-	-
5	The SS transmits a <i>DLInformationTransfer</i> message and an AUTHENTICATION REQUEST message.	<--	NR RRC: <i>DLInformationTransfer</i> 5GMM: AUTHENTICATION REQUEST	-	-
6	The UE transmits an <i>ULInformationTransfer</i> message and an AUTHENTICATION RESPONSE message.	-->	NR RRC: <i>ULInformationTransfer</i> 5GMM: AUTHENTICATION RESPONSE	-	-
7	Void	-	-	-	-
8	The SS transmits a <i>DLInformationTransfer</i> message and a SECURITY MODE COMMAND message.	<--	NR RRC: <i>DLInformationTransfer</i> 5GMM: SECURITY MODE COMMAND	-	-
9	The UE transmits an <i>ULInformationTransfer</i> message and a SECURITY MODE COMPLETE message.	-->	NR RRC: <i>ULInformationTransfer</i> 5GMM: SECURITY MODE COMPLETE	-	-
-	EXCEPTION: Step 9Aa1 to 9Aa2 describes behaviour that depends on the UE capability; the "lower case letter" identifies a step sequence that takes place if a capability is supported and the procedure parameter Interworking without N26 interface supported is not present.	-	-	-	-
9Aa1	IF UE_S1_SUPPORTED the SS transmits a <i>DLInformationTransfer</i> message and a SECURITY MODE COMMAND message.	<--	NR RRC: <i>DLInformationTransfer</i> 5GMM: SECURITY MODE COMMAND	-	-
9Aa2	The UE transmits an <i>ULInformationTransfer</i>	-->	NR RRC: <i>ULInformationTransfer</i>	-	-

	message and a SECURITY MODE COMPLETE message.		5GMM: SECURITY MODE COMPLETE		
-	EXCEPTION: Steps 9a1 to 9a2 describe the SS sequence depending on procedure parameters; the "lower case letter" identifies a step sequence that takes place if a procedure parameter has a particular value	-	-	-	-
9a1	IF Test Mode = On OR Test Loop Function = On, the SS transmits an ACTIVATE TEST MODE message to activate UE radio bearer test mode procedure. The ACTIVATE TEST MODE message is using the associated condition for the test loop.	<--	RRC: <i>DLInformationTransfer</i> TC: ACTIVATE TEST MODE	-	-
9a2	The UE transmits an ACTIVATE TEST MODE COMPLETE message.	-->	RRC: <i>ULInformationTransfer</i> TC: ACTIVATE TEST MODE COMPLETE	-	-
10	The SS transmits a <i>SecurityModeCommand</i> message.	<--	NR RRC: <i>SecurityModeCommand</i>	-	-
11	The UE transmits a <i>SecurityModeComplete</i> message.	-->	NR RRC: <i>SecurityModeComplete</i>	-	-
12	The SS transmits a <i>UECapabilityEnquiry</i> message.	<--	NR RRC: <i>UECapabilityEnquiry</i>	-	-
13	The UE transmits a <i>UECapabilityInformation</i> message.	-->	NR RRC: <i>UECapabilityInformation</i>	-	-
14	The SS transmits a <i>DLInformationTransfer</i> message and a REGISTRATION ACCEPT message.	<--	NR RRC: <i>DLInformationTransfer</i> 5GMM: REGISTRATION ACCEPT	-	-
15	The UE transmits an <i>ULInformationTransfer</i> message and a REGISTRATION COMPLETE message.	-->	NR RRC: <i>ULInformationTransfer</i> 5GMM: REGISTRATION COMPLETE	-	-
16	Void	-	-	-	-
17	Void	-	-	-	-
18	Void	-	-	-	-
-	EXCEPTION: Step 19a1 describes behaviour depending on UE implementation; the "lower case letter" identifies a step sequence that takes place if the UE performs a specific action.	-	-	-	-
19a1	IF pc_noOf_PDUsSameConnection > 0 THEN the generic procedure for UE-requested PDU session establishment, specified in subclause 4.5A.2, takes place performing establishment of UE-requested PDU session(s) with ExpectedNumberOfNewPDUSessions = pc_noOf_PDUsSameConnection.	-	-	-	-
19Aa 1 – 19Aa 2	Void	-	-	-	-
-	EXCEPTION: Steps 19Ba1 to 19Ba2 describe behaviour depending on UE implementation; the "lower case letter" identifies a step sequence that takes place if the UE performs a specific action.	-	-	-	-
19Ba 1	IF pc_noOf_PDUsSameConnection = 0 OR pc_noOf_PDUsNewConnection > 0 THEN the SS transmits an <i>RRCRelease</i> message.	<--	NR RRC: <i>RRCRelease</i>	-	-
19Ba 2	Table 4.5.2.2-4 is performed to establish PDU session(s) on the new connection with ExpectedNumberOfNewPDUSessions = pc_noOf_PDUsNewConnection.	-	-	-	-
-	EXCEPTION: Steps 19Ca1 to 19Ca2 describe behaviour which depends on the SS sequence depending on procedure parameters; the "lower case letter" identifies a step sequence that takes place if a procedure parameter has a particular value.	-	-	-	-
19Ca	IF <i>connected without release</i> is On AND Test	<--	NR RRC: <i>DLInformationTransfer</i>	-	-

1	Loop Function= <i>On</i> THEN the SS transmits a CLOSE UE TEST LOOP message to enter the UE test loop mode. The CLOSE UE TEST LOOP is using the associated condition for the test loop.		TC: CLOSE UE TEST LOOP		
19Ca 2	The UE transmits a CLOSE UE TEST LOOP COMPLETE message to confirm that loopback entities for the radio bearer(s) have been created and loop back is activated.	-->	NR RRC: <i>ULInformationTransfer</i> TC: CLOSE UE TEST LOOP COMPLETE	-	-
-	EXCEPTION: Step 20a1 depends on the SS sequence depending on procedure parameters; the "lower case letter" identifies a step sequence that takes place if a procedure parameter has a particular value.	-	-	-	-
20a1	IF <i>connected without release</i> is not present THEN, the SS transmits an <i>RRCRelease</i> message.	<--	NR RRC: <i>RRCRelease</i>	-	-
-	EXCEPTION: Step 20Aa1 depends on the SS sequence depending on procedure parameters; the "lower case letter" identifies a step sequence that takes place if a procedure parameter has a particular value.	-	-	-	-
20Aa 1	IF GNSS Sync = <i>On</i> THEN trigger UE to reset or clear the current UTC time that has been calculated from GNSS. NOTE: The UTC time can be reset or clear on the UE using AT command (+CUTCRCR).	-	-	-	-
-	EXCEPTION: Step 21a1 and 21b1 depend on the SS sequence depending on procedure parameters; the "lower case letter" identifies a step sequence that takes place if a procedure parameter has a particular value.	-	-	-	-
21a1	IF Sidelink = <i>On</i> AND Cast type = <i>Unicast</i> AND UE initiated unicast mode NR sidelink communication THEN generic procedure specified in subclause 4.9.22 is performed to establish unicast mode sidelink communication between the UE and the NR-SS-UE.				
21b1	ELSE IF Sidelink = <i>On</i> AND Cast type = <i>Unicast</i> AND NR-SS-UE initiated unicast mode NR sidelink communication THEN generic procedure specified in subclause 4.9.23 is performed to establish unicast mode sidelink communication between the UE and the NR-SS-UE.				
22a1	Void	-	-		

Table 4.5.2.2-3: WLAN Ipsec_SA_Released

St	Procedure	Message Sequence		TP	Verdict
		U - S	Message		
1	The UE associates with the WLAN AP and obtains the local IP address.	-	-	-	-
2	The UE performs a dynamic selection of N3IWF using DNS query	-	-	-	-
-	Exception: The UE establishes an IPsec tunnel in parallel to 5GC registration steps 3 to 7 as per the IKEv2 protocol as defined in TS 23.502 [33] clause 4.12.2.2 figure 4.12.2.2-1.	-	-	-	-
3	The UE transmits a REGISTRATION REQUEST message.	-->	5GMM: REGISTRATION REQUEST	-	-
4	The SS transmits an AUTHENTICATION REQUEST message including EAP-Request/AKA'-Challenge or 5G AKA Challenge.	<--	5GMM: AUTHENTICATION REQUEST	-	-
5	The UE transmits an AUTHENTICATION	-->	5GMM: AUTHENTICATION	-	-

	RESPONSE message including EAP-Response/AKA'-Challenge or 5G AKA Response.		RESPONSE		
6	The SS transmits a SECURITY MODE COMMAND message including EAP-Success if EAP-AKA' used.	<--	5GMM: SECURITY MODE COMMAND	-	-
7	The UE transmits a SECURITY MODE COMPLETE message.	-->	5GMM: SECURITY MODE COMPLETE	-	-
-	EXCEPTION: Steps 7Aa1 to 7Aa2 describe the SS sequence depending on procedure parameters; the "lower case letter" identifies a step sequence that takes place if a procedure parameter has a particular value	-	-	-	-
7Aa1	IF Test Mode = <i>On</i> OR Test Loop Function = <i>On</i> , the SS transmits an ACTIVATE TEST MODE message to activate UE test mode procedure. The ACTIVATE TEST MODE message is using the associated condition for the test loop.	<--	TC: ACTIVATE TEST MODE	-	-
7Aa2	The UE transmits an ACTIVATE TEST MODE COMPLETE message.	-->	TC: ACTIVATE TEST MODE COMPLETE	-	-
8	The SS transmits a REGISTRATION ACCEPT message.	<--	5GMM: REGISTRATION ACCEPT	-	-
9	The UE transmits a REGISTRATION COMPLETE message.	-->	5GMM: REGISTRATION COMPLETE	-	-
10	The generic procedure for UE-requested PDU session establishment, specified in subclause 4.5A.2A, takes place performing establishment of UE-requested PDU session.	-	-	-	-
-	EXCEPTION: Steps 10Aa1 to 10Aa2 describe behaviour which depends on the SS sequence depending on procedure parameters; the "lower case letter" identifies a step sequence that takes place if a procedure parameter has a particular value.	-	-	-	-
10Aa1	IF Test Loop Function= <i>On</i> THEN the SS transmits a CLOSE UE TEST LOOP message to enter the UE test loop mode. The CLOSE UE TEST LOOP is using the associated condition for the test loop.	<--	TC: CLOSE UE TEST LOOP	-	-
10Aa2	The UE transmits a CLOSE UE TEST LOOP COMPLETE message to confirm that loopback entities have been created and loop back is activated.	-->	TC: CLOSE UE TEST LOOP COMPLETE	-	-
-	EXCEPTION: Step 11a1 depends on the SS sequence depending on procedure parameters; the "lower case letter" identifies a step sequence that take place if a procedure parameter has a particular value.	-	-	-	-
11a1	IF <i>connected without release</i> is not present THEN generic procedure for SS-requested IPsec Secure tunnel disconnection, specified in subclause 4.5A.5, takes place performing disconnection of security association.	-	-	-	-

Note: The current procedure assumes UE establishes a single PDU session or a MA PDU session over Non 3GPP Access.

Table 4.5.2.2-4: NR RRC_IDLE Extension

St	Procedure	Message Sequence		TP	Verdict
		U - S	Message		
-	EXCEPTION: Step 0Aa1 describes behaviour depending on UE implementation; the "lower case letter" identifies a step sequence that takes place if the UE performs a specific action.	-	-	-	-
0Aa1	IF <i>pc_noOf_PDU</i> sNewConnection = 0 AND				

	pc_noOf_PDUsSameConnection = 0 THEN trigger the UE to perform a PDU session establishment via AT or MMI command, and update ExpectedNumberOfNewPDUSessions = 1. NOTE: For the DNN name in the AT command, check the default PDU type from the value of the ICS parameter pc_APN_Default_Configuration and take the value of the corresponding ICS parameter. If it is set to 'none' then use pc_APN_ID_Internet.				
0B	Wait for 10 sec to allow the UE to start PDU session establishment. IF it does THEN stop the 10 sec timer and continue from step 2 onwards. IF it does not and the 10 sec timer expires THEN go to step 0Ca1.	-	-	-	-
-	EXCEPTION: Step 0Ca1 depends on the UE behaviour; the "lower case letter" identifies a step sequence that takes place if the UE does not respond.	-	-	-	-
0Ca1	10 second timer expires	-	-	-	F
1a1-1b1	Void	-	-	-	-
2-6	Steps 2-6 from Table 4.5.4.2-3 are performed.	-	-	-	-
-	EXCEPTION: Steps 7a1 to 7b2 describe behaviour depending on UE implementation; the "lower case letter" identifies a step sequence that takes place if the UE performs a specific action.	-	-	-	-
7a1	IF pc_noOf_PDUsSameConnection = 0 THEN the SS transmits a SERVICE ACCEPT message.	<--	NR RRC: <i>DLInformationTransfer</i> 5GMM: SERVICE ACCEPT	-	-
7b1	ELSE the SS transmits an RRCReconfiguration message and a SERVICE ACCEPT message to establish SRB2 and DRB(s). The RRCReconfiguration message is configured using RRCReconfiguration-SRB2-DRB(n, m) where n and m are the number of DRB(s) configured with RLC-AM and RLC-UM respectively.	<--	NR RRC: RRCReconfiguration 5GMM: SERVICE ACCEPT	-	-
7b2	The UE transmits an RRCReconfigurationComplete message.	-->	NR RRC: RRCReconfigurationComplete	-	-
8	The generic procedure for UE-requested PDU session establishment, specified in subclause 4.5A.2, takes place performing establishment of ExpectedNumberOfNewPDUSessions of PDU session(s)	-	-	-	-

Table 4.5.2.2-5: E-UTRA RRC_IDLE Unrestricted nr PDN

St	Procedure	Message Sequence		TP	Verdict
		U - S	Message		
1-9a2	Steps 1 to 9a2 of the generic procedure for UE Registration (State 2) as specified in TS 36.508 [2], table 4.5.2.3-1 take place.	-	-	-	-
-	EXCEPTION: Steps 10a1 to 10b8 describe behaviour which depends on procedure parameters; the "lower case letter" identifies a step sequence that takes place if a procedure parameter has a particular value.	-	-	-	-
10a1-10a8	IF Test Mode = On OR Test Loop Function = On THEN steps 10-17 of the generic procedure for UE Registration, UE Test Mode Activated (State 2A) as specified in TS 36.508 [2] table	-	-	-	-

	4.5.2A.3-1, take place. The ACTIVATE TEST MODE is using the associated condition for the test loop.				
10b1-10b6	ELSE steps 10-15 as defined in TS 36.508 [2], table 4.5.2.3-1 take place.	-	-	-	-
-	EXCEPTION: IF the 'IP address allocation' for the APN for which the PDN connection is established is set to "Yes" in Table 4.8.4-1 THEN, in parallel to the event described in step 10A below the generic procedure for IP address allocation in the U-plane specified in TS 36.508 [2], subclause 4.5A.1 takes place performing IP address allocation in the U-plane if requested by the UE.	-	-	-	-
-	EXCEPTION: IF the 'IMS registration' for the APN for which the PDN connection is established is set to "Yes" in Table 4.8.4-1, THEN in parallel to the event described in step 10A below the generic procedure for IMS signalling in the U-plane specified in TS 36.508 [2], clause 4.5A.3 takes place.	-	-	-	-
10A	This message includes the ATTACH COMPLETE message. The ACTIVATE DEFAULT EPS BEARER CONTEXT ACCEPT message is piggybacked in ATTACH COMPLETE.	-->	RRC: <i>ULInformationTransfer</i> NAS: ATTACH COMPLETE NAS: ACTIVATE DEFAULT EPS BEARER CONTEXT ACCEPT	-	-
11	The Generic Procedure to establish multiple additional PDN connections as specified in subclause 4.5A.2B takes place, ExpectedNumberOfNewPDNConnections=pc_noOf_PDNsSameConnection.	-	-	-	-
-	EXCEPTION: Steps 11Aa1 to 11Aa2 describe behaviour which depends on the SS sequence depending on procedure parameters; the "lower case letter" identifies a step sequence that take place if a procedure parameter has a particular value.	-	-	-	-
11Aa1	IF pc_noOf_PDNsNewConnection > 0 THEN, the SS transmits an <i>RRCConnectionRelease</i> message to release RRC connection	<--	RRC: <i>RRCConnectionRelease</i>	-	-
11Aa2	Table 4.5.2.2-6 is performed to establish multiple additional PDN connection(s) on the new connection with ExpectedNumberOfNewPDNConnections=pc_noOf_PDNsNewConnection.	-	-	-	-
-	EXCEPTION: Steps 11Ba1 to 11Ba2 describe behaviour which depends on the SS sequence depending on procedure parameters; the "lower case letter" identifies a step sequence that takes place if a procedure parameter has a particular value.	-	-	-	-
11Ba1	IF connected without release is On AND Test Loop Function=On AND pc_noOf_PDUssNewConnection =0 THEN the SS transmits a CLOSE UE TEST LOOP message to enter the UE test loop mode. The CLOSE UE TEST LOOP is using the associated condition for the test loop.	<--	RRC: <i>DLInformationTransfer</i> TC: CLOSE UE TEST LOOP	-	-
11Ba2	The UE transmits a CLOSE UE TEST LOOP COMPLETE message to confirm that loopback entities for the radio bearer(s) have been created and loop back is activated.	-->	RRC: <i>ULInformationTransfer</i> TC: CLOSE UE TEST LOOP COMPLETE	-	-
-	EXCEPTION: Step 12a1 depends on procedure parameters; the "lower case letter" identifies a step sequence that takes place if a procedure parameter has a particular value.	-	-	-	-
12a1	IF <i>connected without release</i> is not present THEN, the SS transmits an	<--	RRC: <i>RRCConnectionRelease</i>	-	-

	<i>RRConnectionRelease</i> message to release RRC connection and move to E-UTRA RRC_IDLE (State 2).				

Table 4.5.2.2-6: E-UTRA RRC_IDLE Unrestricted nr PDN Extension

St	Procedure	Message Sequence		TP	Verdict
		U - S	Message		
0	Wait for 10 sec to allow the UE to start PDN connection establishment automatically. IF it does THEN stop the 10 sec timer and continue with the steps from step 2 onwards. IF it does not and the 10 sec timer expires THEN go to step 1.	-	-	-	-
-	EXCEPTION: Step 1a1 depends on the UE behaviour; the "lower case letter" identifies a step sequence that takes place if the UE does not respond	-	-	-	-
1a1	10 second timer expires	-	-	-	F
1b1	Void	-	-	-	-
2-6	Steps 3 to 7 of the generic procedure specified in TS 36.508 [2], table 4.5.3.3-1 take place.	-	-	-	-
7	The Generic Procedure to establish multiple additional PDN connections as specified in subclause 4.5A.2B takes place, ExpectedNumberOfNewPDNConnections=pc_n oOf_PDNsNewConnection.	-	-	-	-

4.5.2.3 Specific message contents

All specific message contents shall be according clause 4.6 and 4.7 and TS 36.508 [2] clause 4.6 and 4.7 with the following exception(s).

Table 4.5.2.3-1: SECURITY MODE COMMAND (Step 9Aa1, Table 4.5.2.2-2)

Derivation path: Table 4.7.1-25 with condition UE_S1_SUPPORTED

Table 4.5.2.3-2: SERVICE REQUEST (Step 4, Table 4.5.2.2-4)

Derivation Path: Table 4.7.1-16.			
Information Element	Value/remark	Comment	Condition
Service type	'0000'B	signalling	

Table 4.5.2.3-3: Message PDN CONNECTIVITY REQUEST (step 4, Table 4.5.2.2-5)

Derivation path: TS 36.508 [2], Table 4.7.3-20.			
Information Element	Value/Remark	Comment	Condition
Access point name	Not present or One of the provided APN(s) in the Table 4.8.4-1	If present, the SS shall initialise the APN_Default=False If not present NOTE 2	
NOTE 1: Unless explicitly specified otherwise, the SS uses the Access point name value to address the entry of Table 4.8.4-1 to be used for the subsequent signalling of the PDN connectivity establishment and verifying specific UE behaviour e.g. depending on the type of the APN the UE may perform some actions.			
NOTE 2: The SS uses pc_APN_Default_Configuration to address the entry of Table 4.8.4-1 to be used for the subsequent signalling of the PDN connectivity establishment.			

Table 4.5.2.3-4: Message ESM INFORMATION RESPONSE (step 9a2, Table 4.5.2.2-5)

Derivation path: TS 36.508 [2], Table 4.7.3-14.			
Information Element	Value/Remark	Comment	Condition
Access point name	Not present or One of the provided APN(s) in the Table 4.8.4-1	If present, the SS shall initialise the APN_Default=False If not present NOTE 2	
NOTE 1: Unless explicitly specified otherwise, the SS uses the Access point name value to address the entry of Table 4.8.4-1 to be used for the subsequent signalling of the PDN connectivity establishment and verifying specific UE behaviour e.g. depending on the type of the APN the UE may perform some actions.			
NOTE 2: The SS uses pc_APN_Default_Configuration to address the entry of Table 4.8.4-1 to be used for the subsequent signalling of the PDN connectivity establishment.			

Table 4.5.2.3-5: Message ACTIVATE DEFAULT EPS BEARER CONTEXT REQUEST (Steps 10a5, 10b7, Table 4.5.2.2-5)

Derivation path: TS 36.508 [2], Table 4.7.3-6 with CONDITION Interworking with 5GS.			
Information Element	Value/Remark	Comment	Condition
EPS QoS	The EPC default bearer context of the entry in Table 4.8.4-1 which has been determined at step 1		
Access point name	IF the UE provided an Access point name in step 1 THEN the SS returns this name; OTHERWISE the SS includes the DNN/APN ID value of the entry in Table 4.8.4-1 which has been determined at step 1.		
Container ID n+3	'001C'H		
Length of container ID n+3 contents			
Container ID n+3 contents	5GC QoS rule of the entry in Table 4.8.4-1 which has been determined at step 1		
Container ID n+4	'001F'H		
Length of container ID n+4 contents			
Container ID n+4 contents	As per the relevant QoS rule (Container ID n+3)		

4.5.3 RRC_INACTIVE

4.5.3.1 Initiation

The SS shall:

- 1> if connectivity is *NR*
- 2> use 1 NR cell, default parameters;
- 2> perform according to the table 4.5.3.2-1: NR RRC_INACTIVE;

4.5.3.2 Procedures

Table 4.5.3.2-1: NR RRC_INACTIVE

St	Procedure	Message Sequence		TP	Verdict
		U - S	Message		

1-19 Ab9	Void	-	-	-	-
19B- 19TC a2	Steps 1 to 19Ca2 of the NR RRC Idle procedure specified in table 4.5.2.2-2 take place	-	-	-	-
20	The SS transmits an RRCRelease message with suspend.	<--	NR RRC: <i>RRCRelease</i>	-	-

4.5.4 RRC_CONNECTED

4.5.4.1 Initiation

The SS shall:

- 1> perform according to clause 4.5.2 RRC_IDLE;
- 1> if connectivity is *EN-DC*:
 - 2> use 1 E-UTRA cell and 1 NR cell, default parameters;
 - 2> if connected without release is *On*:
 - 3> perform according to the table 4.5.4.2-2: RF E-UTRA RRC_CONNECTED;
 - 2> else:
 - 3> perform according to the table 4.5.4.2-1: E-UTRA RRC_CONNECTED;
- 1> if connectivity is *E-UTRA/EPC*:
 - 2> use 1 E-UTRA cell, default parameters;
 - 2> perform according to the table 4.5.4.2-1: E-UTRA RRC_CONNECTED;
- 1> if connectivity is *NR*:
 - 2> use 1 NR cell, default parameters;
 - 2> if sidelink is *On*
 - 3> use 1 NR-SS-UE;
 - 3> if GNSS Sync is *On*
 - 4> use 1 GNSS simulator.
 - 2> if connected without release is not present:
 - 3> perform according to the table 4.5.4.2-3: NR RRC_CONNECTED;
- 1> if connectivity is *WLAN*:
 - 2> use 1 WLAN cell, default parameters;
 - 2> if connected without release is not present:
 - 3> perform according to the table 4.5.4.2-4: WLAN IPsec_SA_Established;
 - 2> else:
 - 3> Not defined;
- 1> if connectivity is *NR-DC*:
 - 2> use 2 NR cells, default parameters;

2> perform according to the table 4.5.4.2-5: NR-DC RRC_CONNECTED;

1> if connectivity is *NE-DC*:

2> use 1 E-UTRA cell and 1 NR cell, default parameters;

2> perform according to the table 4.5.4.2-6: NE-DC RRC_CONNECTED;

4.5.4.2 Procedures

Table 4.5.4.2-1: E-UTRA RRC_CONNECTED

St	Procedure	Message Sequence		TP	Verdict
		U - S	Message		
1-6	Same as TS 36.508 [2] Table 4.5.3.3-1, steps 2-7.	-	-	-	-
7	Same as TS 36.508 [2] Table 4.5.3.3-1, step 8. The <i>RRConnectionReconfiguration</i> is using condition EN-DC_SRB2-DRB for connectivity <i>EN-DC</i> and bearers <i>MCG(s) and SCG</i> or connectivity <i>E-UTRA/EPC</i> . The <i>RRConnectionReconfiguration</i> is using an associated condition <i>MCG_and_SCG</i> for bearers <i>MCG(s) and SCG</i> or condition <i>MCG_and_split</i> for bearers <i>MCG(s) and split</i> . For connectivity <i>E-UTRA/EPC</i> there's no associated condition.	<--	<i>RRC</i> : <i>RRConnectionReconfiguration</i> <i>NAS</i> : ACTIVATE DEDICATED EPS BEARER CONTEXT REQUEST	-	-
-	EXCEPTION: IF <i>MCG(s) and SCG</i> or <i>MCG(s) and split</i> . In parallel to steps 8-9 the UE performs a C-RNTI based Contention Based Random Access (CBRA) procedure on the NR cell.	-	-	-	-
8-9 a1	Same as TS 36.508 [2] Table 4.5.3.3-1, steps 9-10a1	-	-	-	-
10a1-10a2	IF Test Loop Function= <i>On</i> , same as TS 36.508 [2] Table 4.5.4.3-1, steps 1-2. The CLOSE UE TEST LOOP is using the associated condition for the test loop.	-	-	-	-

Table 4.5.4.2-2: RF E-UTRA RRC_CONNECTED

St	Procedure	Message Sequence		TP	Verdict
		U - S	Message		
1-9	Same as Table 4.5.2.2-1, steps 1-9.	-	-	-	-
10a1-10a2	IF Test Mode = <i>On</i> OR Test Loop Function = <i>On</i> THEN same as TS 36.508 [2] table 4.5.2A.3-1, steps 10-11. The ACTIVATE TEST MODE is using the associated condition for the test loop.	-	-	-	-
-	EXCEPTION: Steps 11a1 to 11b7 describe the SS sequence depending on procedure parameters; the "lower case letter" identifies a step sequence that take place if a procedure parameter has a particular value.	-	-	-	-
11a1-11a7	IF Test Mode = <i>On</i> OR Test Loop Function = <i>On</i> THEN same as TS 36.508 [2] Table 4.5.2A.3-1, steps 12-18.	-	-	-	-
11b1-11b7	ELSE, same as TS 36.508 [2] Table 4.5.2.3-1, steps 10-16.	-	-	-	-
12	The SS transmits an <i>RRConnectionReconfiguration</i> for connectivity <i>EN-DC</i> and bearers <i>MCG(s) and SCG</i> . The <i>RRConnectionReconfiguration</i> is using an associated condition <i>MCG_and_SCG</i> for bearers <i>MCG(s) and SCG</i> or condition	<--	<i>RRC</i> : <i>RRConnectionReconfiguration</i> <i>NAS</i> : ACTIVATE DEDICATED EPS BEARER CONTEXT REQUEST	-	-

	MCG and split for bearers <i>MCG(s) and split</i> .				
-	EXCEPTION: In parallel to steps 13-14 the UE performs a C-RNTI based Contention Based Random Access (CBRA) procedure on the NR cell.	-	-	-	-
-	EXCEPTION: the steps 13 and 14 happen in any order.	-	-	-	-
13	The UE transmits an <i>RRCCONNECTIONRECONFIGURATIONCOMPLETE</i>	-->	RRC: <i>RRCCONNECTIONRECONFIGURATIONCOMPLETE</i>		
14	The UE transmits an ACTIVATE DEDICATED EPS BEARER CONTEXT ACCEPT message	-->	RRC: <i>ULInformationTransfer</i> NAS: ACTIVATE DEDICATED EPS BEARER CONTEXT ACCEPT		
15a1-15a2	IF Test Loop Function=On, same as TS 36.508 [2] table 4.5.4.3-1, steps 1-2. The CLOSE UE TEST LOOP is using the associated condition for the test loop.	-	-	-	-

Table 4.5.4.2-3: NR RRC_CONNECTED

St	Procedure	Message Sequence		TP	Verdict
		U - S	Message		
1	The SS transmits a <i>Paging</i> message.	<--	NR RRC: <i>Paging</i>	-	-
2	The UE transmits an <i>RRCSSETUPREQUEST</i> message.	-->	NR RRC: <i>RRCSSETUPREQUEST</i>	-	-
3	The SS transmits an <i>RRCSSETUP</i> message.	<--	NR RRC: <i>RRCSSETUP</i>	-	-
4	The UE transmits an <i>RRCSSETUPCOMPLETE</i> message and a SERVICE REQUEST message.	-->	NR RRC: <i>RRCSSETUPCOMPLETE</i> 5GMM: SERVICE REQUEST	-	-
5	The SS transmits a <i>SecurityModeCommand</i> message.	<--	NR RRC: <i>SecurityModeCommand</i>	-	-
6	The UE transmits a <i>SecurityModeComplete</i> message.	-->	NR RRC: <i>SecurityModeComplete</i>	-	-
7	The SS transmits an <i>RRCRECONFIGURATION</i> message and a SERVICE ACCEPT message to establish SRB2 and DRB(s). The <i>RRCRECONFIGURATION</i> message is configured using <i>RRCRECONFIGURATION-SRB2-DRB(n, m)</i> where n and m are the number of DRB(s) configured with RLC-AM and RLC-UM respectively.	<--	NR RRC: <i>RRCRECONFIGURATION</i> 5GMM: SERVICE ACCEPT	-	-
8	The UE transmits an <i>RRCRECONFIGURATIONCOMPLETE</i> message.	-->	NR RRC: <i>RRCRECONFIGURATIONCOMPLETE</i>	-	-
-	EXCEPTION: Steps 9a1 to 9a2 describe behaviour which depends on the SS sequence depending on procedure parameters; the "lower case letter" identifies a step sequence that take place if a procedure parameter has a particular value.	-	-	-	-
9a1	IF Test Loop Function=On, the SS transmits a CLOSE UE TEST LOOP message to enter the UE test loop mode. The CLOSE UE TEST LOOP is using the associated condition for the test loop.	<--	NR RRC: <i>DLInformationTransfer</i> TC: CLOSE UE TEST LOOP	-	-
9a2	The UE transmits a CLOSE UE TEST LOOP COMPLETE message to confirm that loopback entities for the radio bearer(s) have been created and loop back is activated.	-->	NR RRC: <i>ULInformationTransfer</i> TC: CLOSE UE TEST LOOP COMPLETE	-	-

Table 4.5.4.2-4: WLAN IPsec_SA_Established

St	Procedure	Message Sequence		TP	Verdict
		U - S	Message		
1	Trigger UE to initiate IPsec SA.	-	-	-	-
2	The generic procedure for UE-requested IPsec Secure tunnel establishment, specified in	-	-	-	-

	clause 4.5A.6, takes place performing establishment of security association and one child security association.				

Table 4.5.4.2-5: NR-DC RRC_CONNECTED

St	Procedure	Message Sequence		TP	Verdict
		U - S	Message		
1-8	Same as Table 4.5.4.2-3, steps 1-8.	-	-	-	-
8A	The SS transmits an <i>RRCReconfiguration</i> message and a PDU SESSION MODIFICATION COMMAND to add a new SCG DRB or a new split DRB	<--	NR RRC: <i>RRCReconfiguration</i> 5GMM: DL NAS TRANSPORT 5GSM: PDU SESSION MODIFICATION COMMAND	-	-
-	EXCEPTION: In parallel to steps 8B and 8C the UE performs a C-RNTI based Contention Based Random Access (CBRA) procedure on the PSCell.	-	-	-	-
-	EXCEPTION: Depending upon UE implementation, step 8B and 8C can occur in any order	-	-	-	-
8B	The UE transmits an <i>RRCReconfigurationComplete</i> message including nr-SCG-Response.	-->	NR RRC: <i>RRCReconfigurationComplete</i>	-	-
8C	The UE transmits a <i>ULInformationTransfer</i> message and an PDU SESSION MODIFICATION COMPLETE message.	-->	NR RRC: <i>ULInformationTransfer</i> 5GMM: UL NAS TRANSPORT 5GSM: PDU SESSION MODIFICATION COMPLETE	-	-
-	EXCEPTION: Steps 9a1 to 9a2 describe behaviour which depends on the SS sequence depending on procedure parameters; the "lower case letter" identifies a step sequence that take place if a procedure parameter has a particular value.	-	-	-	-
9a1	IF Test Loop Function=On, the SS transmits a CLOSE UE TEST LOOP message to enter the UE test loop mode. The CLOSE UE TEST LOOP is using the associated condition for the test loop.	<--	NR RRC: <i>DLInformationTransfer</i> TC: CLOSE UE TEST LOOP	-	-
9a2	The UE transmits a CLOSE UE TEST LOOP COMPLETE message to confirm that loopback entities for the radio bearer(s) have been created and loop back is activated.	-->	NR RRC: <i>ULInformationTransfer</i> TC: CLOSE UE TEST LOOP COMPLETE	-	-

Table 4.5.4.2-6: NE-DC RRC_CONNECTED

St	Procedure	Message Sequence		TP	Verdict
		U - S	Message		
1-8	Same as Table 4.5.4.2-3, steps 1-8.	-	-	-	-
8A	The SS transmits an <i>RRCReconfiguration</i> message and a PDU SESSION MODIFICATION COMMAND to add a new SCG DRB or a new split DRB	<--	NR RRC: <i>RRCReconfiguration</i> 5GMM: DL NAS TRANSPORT 5GSM: PDU SESSION MODIFICATION COMMAND	-	-
-	EXCEPTION: In parallel to steps 8B and 8C the UE performs a C-RNTI based Contention Free Random Access (CFRA) procedure on the PSCell.	-	-	-	-
8B	The UE transmits an <i>RRCReconfigurationComplete</i> message including eutra-SCG-Response.	-->	NR RRC: <i>RRCReconfigurationComplete</i>	-	-
8C	The UE transmits a <i>ULInformationTransfer</i> message and an PDU SESSION MODIFICATION COMPLETE message.	-->	NR RRC: <i>ULInformationTransfer</i> 5GMM: UL NAS TRANSPORT 5GSM: PDU SESSION MODIFICATION COMPLETE	-	-
-	EXCEPTION: Steps 9a1 to 9a2 describe behaviour which depends on the SS sequence	-	-	-	-

	depending on procedure parameters; the "lower case letter" identifies a step sequence that take place if a procedure parameter has a particular value.				
9a1	IF Test Loop Function=On, the SS transmits a CLOSE UE TEST LOOP message to enter the UE test loop mode. The CLOSE UE TEST LOOP is using the associated condition for the test loop.	<--	NR RRC: <i>DLInformationTransfer</i> TC: CLOSE UE TEST LOOP	-	-
9a2	The UE transmits a CLOSE UE TEST LOOP COMPLETE message to confirm that loopback entities for the radio bearer(s) have been created and loop back is activated.	-->	NR RRC: <i>ULInformationTransfer</i> TC: CLOSE UE TEST LOOP COMPLETE	-	-

4.5.4.3 Specific message contents

All specific message contents shall be according clause 4.6 and 4.7 and TS 36.508 [2] clause 4.6 and 4.7 with the exceptions below.

Table 4.5.4.3-0: RRCConnectionReconfiguration (step 7, Table 4.5.4.2-1)

Derivation Path: TS 36.508 [2] Table 4.6.1-8			
Information Element	Value/remark	Comment	Condition
RRCConnectionReconfiguration ::= SEQUENCE {			
criticalExtensions CHOICE {			
c1 CHOICE {			
rrcConnectionReconfiguration-r8 SEQUENCE {			
dedicatedInfoNASList	Not present	no NAS message	
dedicatedInfoNASList SEQUENCE (SIZE(1..maxDRB)) OF	1 entry		MCG_and_S CG OR MCG_and_s plit
dedicatedInfoNAS [1]	OCTET STRING including ACTIVATE DEDICATED EPS BEARER CONTEXT REQUEST	according to table 4.5.4.3-1	
}			
}			
}			
}			

Table 4.5.4.3-1: ACTIVATE DEDICATED EPS BEARER CONTEXT REQUEST (step 7, Table 4.5.4.2-1)

Derivation path: TS 36.508 [2] Table 4.7.3-3			
Information Element	Value/Remark	Comment	Condition
Linked EPS bearer identity	12		
EPS QoS	According to reference dedicated EPS bearer context #6 - in TS 36.508 [2] table 6.6.2-1A		
TFT	According to reference dedicated EPS bearer context #6 - in TS 36.508 [2] table 6.6.2-1A		
Negotiated QoS	According to reference dedicated EPS bearer context #6 - in TS 36.508 [2] table 6.6.2-1A		
Negotiated LLC SAPI	According to reference dedicated EPS bearer context #6 - in TS 36.508 [2] table 6.6.2-1A		
Radio priority	According to reference dedicated EPS bearer		

	context #6 - in TS 36.508 [2] table 6.6.2-1A		
Protocol configuration options	According to reference dedicated EPS bearer context #6 - in TS 36.508 [2] table 6.6.2-1A		
Extended protocol configuration options	According to reference dedicated EPS bearer context #6 - in TS 36.508 [2] table 6.6.2-1A		

Table 4.5.4.3-1A: RRCConnectionReconfiguration (step 12, Table 4.5.4.2-2)

Derivation Path: TS 36.508 [2] Table 4.6.1-8			
Information Element	Value/remark	Comment	Condition
RRCConnectionReconfiguration ::= SEQUENCE {			
criticalExtensions CHOICE {			
c1 CHOICE {			
rrcConnectionReconfiguration-r8 SEQUENCE {			
dedicatedInfoNASList SEQUENCE (SIZE(1..maxDRB)) OF	1 entry		
dedicatedInfoNAS [1]	OCTET STRING including ACTIVATE DEDICATED EPS BEARER CONTEXT REQUEST	according to table 4.5.4.3-1B	
}			
}			
}			
}			

Table 4.5.4.3-1B: Message ACTIVATE DEDICATED EPS BEARER CONTEXT REQUEST (step 12, Table 4.5.4.2-2)

Derivation path: TS 36.508 [2] Table 4.7.3-3			
Information Element	Value/Remark	Comment	Condition
Linked EPS bearer identity	5		
EPS QoS	According to reference dedicated EPS bearer context #6 - in TS 36.508 [2] table 6.6.2-1A		
TFT	According to reference dedicated EPS bearer context #6 - in TS 36.508 [2] table 6.6.2-1A		
Negotiated QoS	According to reference dedicated EPS bearer context #6 - in TS 36.508 [2] table 6.6.2-1A		
Negotiated LLC SAPI	According to reference dedicated EPS bearer context #6 - in TS 36.508 [2] table 6.6.2-1A		
Radio priority	According to reference dedicated EPS bearer context #6 - in TS 36.508 [2] table 6.6.2-1A		
Protocol configuration options	According to reference dedicated EPS bearer context #6 - in TS 36.508 [2] table 6.6.2-1A		
Extended protocol configuration options	According to reference dedicated EPS bearer context #6 - in TS 36.508 [2] table 6.6.2-1A		

Table 4.5.4.3-2: RRCReconfiguration (step 7, Table 4.5.4.2-3)

Derivation Path: table 4.8.1-1B

Table 4.5.4.3-3: Void**Table 4.5.4.3-4: PDU SESSION MODIFICATION COMMAND (step 8A, Table 4.5.4.2-5 and Table 4.5.4.2-6)**

Derivation Path: Table 4.7.2-9.			
Information Element	Value/remark	Comment	Condition
PDU session ID	The same as the PDU session ID in PDU SESSION ESTABLISHMENT REQUEST associated with the Internet PDU session if available or with the first PDU session		
Authorized QoS rules	One entry		
QoS rule [1]	Reference QoS rule #5 as defined in Table 4.8.2.1-5.	QFI=5	
Authorized QoS flow descriptions	One entry		
QoS flow [1]	Reference QoS flow #5 as defined in Table 4.8.2.3-5.	QFI=5	

Table 4.5.4.3-5: RRCReconfiguration (step 8A, Table 4.5.4.2-5)

Derivation Path: table 4.8.1-1CA

Table 4.5.4.3-6: RRCReconfigurationComplete (step 8B, Table 4.5.4.2-5)

Derivation Path: table 4.6.1-14 with condition NR-DC

Table 4.5.4.3-7: RRCReconfiguration (step 8A, Table 4.5.4.2-6)

Derivation Path: table 4.8.1-1CB

Table 4.5.4.3-8: RRCReconfigurationComplete (step 8B, Table 4.5.4.2-6)

Derivation Path: table 4.6.1-14 with condition NE-DC

4.5.5 SWITCHED_OFF

4.5.5.1 Initiation

The SS shall:

- 1> if Test State ID=0-A:
- 2> Do nothing;
- 1> else if Test State ID=0N-B:

- 2> use 1 NR cell, default parameters;
- 2> perform the procedure according to the table 4.5.5.2-1: NR SWITCHED_OFF_0_B;
- 1> else if Test State ID=0E-B:
 - 2> FFS

NOTE: The procedure for State 0N-B is used as default.

4.5.5.2 Procedures

Table 4.5.5.2-1: NR SWITCHED_OFF_0N_B

St	Procedure	Message Sequence		TP	Verdict
		U - S	Message		
1-20	Same as table 4.5.2.2-2, steps 1-20.	-	-	-	-
21a1-21b1	Same as table 4.9.6.1-1, steps 1a1-1b1	-	-	-	-

4.5.5.3 Specific message contents

All specific message contents shall be according clause 4.6 and 4.7.

NOTE: The procedure refers to default messages content. If a test case requires specific parameters to be set during the procedure e.g. list with ePLMNs or/and TAIs is stored, new or not 5G-GUTI, etc. then, this needs to be specified in the test case, which uses the procedure.

4.5.6 Void

4.5.7 Out of Coverage

4.5.7.1 Initiation

The SS shall:

- 1> If sidelink is *On*
 - 2> use neither NR cell nor E-UTRA cell;
 - 2> use 1 GNSS simulator;
 - 2> use 1 NR-SS-UE;
 - 2> perform the procedure according to the table 4.5.7.2-1: Out of Coverage (NR sidelink).

4.5.7.2 Procedures

Table 4.5.7.2-1: Out of Coverage (NR sidelink)

St	Procedure	Message Sequence		TP	Verdict
		U - S	Message		
-	EXCEPTION: Steps 1a1 describe the SS sequence depending on procedure parameters; the "lower case letter" identifies a step sequence that take place if a procedure parameter has a particular value.	-	-	-	-
1a1	IF Test Mode = <i>On</i> OR Test Loop Function = <i>On</i> THEN the SS triggers UE to activate UE test mode E. NOTE: The activation of UE test mode may be	-	-	-	-

	performed by MMI or AT command (+CATM).				
1A	Trigger UE to reset or clear the current UTC time that has been calculated from GNSS. NOTE: The UTC time can be reset or clear on the UE using AT command (+CUTCRC).	-	-	-	-
-	EXCEPTION: Steps 2a1 and 2b1 describe the SS sequence depending on procedure parameters; the "lower case letter" identifies a step sequence that take place if a procedure parameter has a particular value.	-	-	-	-
2a1	IF Cast type = <i>Unicast</i> AND UE initiated unicast mode NR sidelink communication THEN generic procedure specified in subclause 4.9.22 is performed to establish unicast mode sidelink communication between the UE and the NR-SS-UE.				
2b1	ELSE IF Cast type = <i>Unicast</i> AND NR-SS-UE initiated unicast mode NR sidelink communication THEN generic procedure specified in subclause 4.9.23 is performed to establish unicast mode sidelink communication between the UE and the NR-SS-UE.				
-	EXCEPTION: Steps 3a1 and 3b1 describe the SS sequence depending on procedure parameters; the "lower case letter" identifies a step sequence that take place if a procedure parameter has a particular value.	-	-	-	-
3a1	IF Test Loop Function = <i>On</i> AND the NR-SS-UE is configured as transmitting UE THEN the SS triggers UE to close UE test loop mode E (Receive Mode). NOTE: Closing of UE test loop mode E may be performed by MMI or AT command (+CCUTLE).				
3b1	IF Test Loop Function = <i>On</i> AND NR-SS-UE is configured as receiving UE AND SL MIMO ≠ <i>On</i> THEN the SS triggers UE to close UE test loop mode E (Transmit Mode). NOTE: Closing of UE test loop mode E may be performed by MMI or AT command (+CCUTLE).				
3c1	IF Test Loop Function = <i>On</i> AND NR-SS-UE is configured as receiving UE AND SL MIMO = <i>On</i> THEN the SS triggers UE to close UE test loop mode E (Transmit Mode with SL-MIMO). NOTE: Closing of UE test loop mode E may be performed by MMI or AT command (+CCUTLE).				
4	Void	-	-		

4.5.7.3 Specific message contents

All specific message contents shall be according subclause 4.7B with the exceptions below.

Table 4.5.7.3-1: +CATM (Step 1a1, Table 4.5.7.2-1)

Derivation Path: +CATM specified in subclause 4.7B with condition Activation

Table 4.5.7.3-2: +CCUTLE (Step 3a1, Table 4.5.7.2-1)

Derivation Path: Table 4.7B-1 with condition Close and Receive

Table 4.5.7.3-3: +CCUTLE (Step 3b1, Table 4.5.7.2-1)

Derivation Path: Table 4.7B-1 with condition Close and Transmit

Table 4.5.7.3-4: +CCUTLE (Step 3c1, Table 4.5.7.2-1)

Derivation Path: Table 4.7B-1 with condition Close, Transmit and SL_MIMO

4.5.8 Void

4.5A Auxiliary procedures

4.5A.1 General

4.5A.2 UE-requested PDU session establishment procedure

4.5A.2.1 Scope

The purpose of this procedure is to establish UE-requested PDU session(s).

Table 4.5A.2.1-1: Conditions and other parameters

Condition	Explanation
ExpectedNumberOfNewPDUSessions	Usage: Parameter determining procedure sequence. A value for this parameter shall be provided when the procedure is called. Unless the test requires specific number of PDU sessions to be established the value should be either pc_noOf_PDUsSameConnection or pc_noOf_PDUsNewConnection ([23]). Meaning: The number of PDU sessions which are expected to happen. Depends on the UE configuration and/or the context in which the procedure is used.
K	Usage: Parameter determining procedure sequence. Meaning: The number of PDU SESSION ESTABLISHMENT REQUEST messages already processed including the one that is currently being processed.
L	Usage: Parameter determining procedure sequence. Meaning: The number of PDU SESSION ESTABLISHMENT REQUEST messages being received so far.
N	Usage: Parameter determining procedure sequence. The parameter is initialised with the value of ExpectedNumberOfNewPDUSessions Meaning: Loop (step sequence repetition) control.
IMS_PDU	Usage: Condition determining specific message contents. Meaning: PDU session establishment for IMS. Whether a PDU session is for IMS is determined by the DNN/APN type of the entry in Table 4.8.4-1 which itself has been determined by the DNN IE in the UL NAS TRANSPORT message which carried the corresponding PDU SESSION ESTABLISHMENT REQUEST or by pc_APN_Default_Configuration if the DNN IE was not present

4.5A.2.2 Procedure description

4.5A.2.2.1 Initial conditions

The UE is in RRC_CONNECTED state.

4.5A.2.2.2 Procedure sequence

Table 4.5A.2.2.2-1: PDU session establishment procedure

St	Procedure	Message Sequence		Verdict
		U - S	Message	
0	Set K = 0, L = 0, N = ExpectedNumberOfNewPDUSessions	-	-	-
1	The procedure specified in Table 4.5A.2.2.2-2 takes place.	-	-	-
2	Set K = K + 1	-	-	-
-	EXCEPTION: In parallel to the events described in steps 3-6a1 below the events specified in Table 4.5A.2.2.2-2 may take place.	-	-	-
3	The SS transmits an <i>RRCReconfiguration</i> message and an PDU SESSION ESTABLISHMENT ACCEPT	<--	NR RRC: <i>RRCReconfiguration</i> 5GMM: DL NAS TRANSPORT 5GSM: PDU SESSION ESTABLISHMENT ACCEPT	-
4	The UE transmits an <i>RRCReconfigurationComplete</i> message.	-->	NR RRC: <i>RRCReconfigurationComplete</i>	-
-	EXCEPTION: Step 5a1 describes behaviour depending UE implementation; the "lower case letter" identifies a step sequence that take place if the UE performs a specific action.	-	-	-
5a1	IF the 'IP address allocation' for the DNN for which the PDU session is established is set to "Yes" in Table 4.8.4-1 THEN, the generic procedure for IP address allocation in the user plane, specified in subclause 4.5A.3, takes place performing IP address allocation in the user plane.	-	-	-
-	EXCEPTION: Step 6a1 describes behaviour depending UE implementation; the "lower case letter" identifies a step sequence that take place if the UE performs a specific action.	-	-	-
6a1	IF the 'IMS registration' for the DNN for which the PDU session is established is set to "Yes" in Table 4.8.4-1, THEN the generic procedure for IMS signalling in the U-plane specified in subclause 4.5A.4 takes place.	-	-	-
-	EXCEPTION: Steps 7a1 to 7b2 describe behaviour depending UE implementation; the "lower case letter" identifies a step sequence that take place if the UE performs a specific action.	-	-	-
7a1	IF L > K (NOTE 1) THEN repeat from step 2	-	-	-
7b1	ELSE IF K < N (NOTE 2) THEN repeat from step 1.	-	-	-
NOTE 1: One (or more) further PDU SESSION ESTABLISHMENT REQUEST message has been received in parallel.				
NOTE 2: Less PDU SESSION ESTABLISHMENT REQUEST messages than expected have been received and processed so far -> further request are expected from the UE.				

Table 4.5A.2.2.2-2: Reception of PDU SESSION ESTABLISHMENT REQUEST message

St	Procedure	Message Sequence		Verdict
		U - S	Message	
1	Start Wait_Timer = 8 sec. NOTE: 8s were chosen to cater for T3540 being set to 10s.	-	-	-
-	EXCEPTION: Steps 2a1 to 2b1 describe behaviour depending UE implementation; the "lower case letter" identifies a step sequence that take place if the UE performs a specific action.	-	-	-
2a1	The UE transmits an <i>ULInformationTransfer</i> message and a PDU SESSION ESTABLISHMENT REQUEST	-->	NR RRC: <i>ULInformationTransfer</i> 5GMM: UL NAS TRANSPORT 5GSM: PDU SESSION ESTABLISHMENT REQUEST	-
2a2	Stop Wait_Timer.	-	-	-

2a3	Set L = L +1.	-	-	-
2a4	Check: Does the L>N? (NOTE 1)	-	-	F
2b1	Check: Does Wait_Timer expire? (NOTE 2)	-	-	F
NOTE 1: The SS shall raise a fail verdict when there are more PDU SESSION ESTABLISHMENT REQUEST messages than expected and terminate the test. The reason for such a behaviour can be e.g. wrongly set Ixit with which the ExpectedNumberOfNewPDNConnections was initiated,				
NOTE 2: Unless this is specified explicitly otherwise e.g. in a test procedure which calls the procedure specified in the present table, the SS shall raise a fail verdict when there are less PDN CONNECTIVITY REQUEST messages than expected received at this point and terminate the test. The reason for such a behaviour can be e.g. wrongly set PICS with which the ExpectedNumberOfNewPDUSessions was initiated.				

4.5A.2.2.3 Specific message contents

All specific message contents shall be according clause 4.6 and 4.7 with the exceptions below.

Table 4.5A.2.2.3-1: RRCReconfiguration (step 3, Table 4.5A.2.2.2-1)

Derivation Path: Table 4.6.1-13 and condition NR if SRB2 is not yet established			
Information Element	Value/remark	Comment	Condition
RRCReconfiguration ::= SEQUENCE {			
criticalExtensions CHOICE {			
rrcReconfiguration ::= SEQUENCE {			
radioBearerConfig	RadioBearerConfig with conditions SRB2 and DRB2		NOT IMS_PDU
nonCriticalExtension SEQUENCE {			
masterCellGroup	CellGroupConfig with condition SRB2 DRB2		NOT IMS_PDU
dedicatedNAS-MessageList SEQUENCE (SIZE(1..maxDRB)) OF DedicatedNAS-Message {}	DedicatedNAS-Message		
}			
}			
}			
}			

Table 4.5A.2.2.3-2: RRCReconfiguration (step 3, Table 4.5A.2.2.2-1)

Derivation Path: Table 4.6.1-13 and condition NR if SRB2 is already established			
Information Element	Value/remark	Comment	Condition
RRCReconfiguration ::= SEQUENCE {			
criticalExtensions CHOICE {			
rrcReconfiguration ::= SEQUENCE {			
radioBearerConfig	RadioBearerConfig with condition DRBn	n is chosen as the next available number higher or equal to 2	
	RadioBearerConfig with condition DRB1		IMS_PDU
nonCriticalExtension SEQUENCE {			
masterCellGroup	CellGroupConfig with condition DRBn	n is set to the same value as for the radioBearerConfig IE above	
	CellGroupConfig with condition DRB1		IMS_PDU
dedicatedNAS-MessageList SEQUENCE (SIZE(1..maxDRB)) OF DedicatedNAS-Message {}	DedicatedNAS-Message		
}			
}			
}			
}			

4.5A.2A UE-requested PDU session establishment procedure over Non 3GPP Access

4.5A.2A.1 Scope

The purpose of this procedure is to establish UE-requested PDU session.

4.5A.2A.2 Procedure description

4.5A.2A.2.1 Initial conditions

The UE has established an IPsec security association

4.5A.2A.2.2 Procedure sequence

Table 4.5A.2A.2.2-1: PDU session establishment procedure over Non 3GPP Access

St	Procedure	Message Sequence	
		U – S	Message
1	The UE transmits a PDU SESSION ESTABLISHMENT REQUEST	-->	5GMM: UL NAS TRANSPORT 5GSM: PDU SESSION ESTABLISHMENT REQUEST
2	The SS establishes an IPsec child security association according to the IKEv2 specification in RFC 7296 [34]		
3	The SS transmits an PDU SESSION ESTABLISHMENT ACCEPT	<--	5GMM: DL NAS TRANSPORT 5GSM: PDU SESSION ESTABLISHMENT ACCEPT

Note 1: The current procedure assumes UE establishes a single PDU session over Non 3GPP Access.

4.5A.2A.3 Specific message contents

None

4.5A.2B Procedure to establish multiple additional PDN connections in S1

4.5A.2B.1 Scope

The present procedure is intended for test scenarios where it is desirable, due to the tested requirements (e.g. intersystem change between S1 and N1 mode), to allow the UE to set up as many as it may want, and in any order, PDN connections after the first PDN connection is established during the ATTACH to EPS procedure (i.e. when the UE is operating in S1 mode).

Table 4.5A.2B.1-1: Conditions and other parameters

Condition	Explanation
ExpectedNumberOfNewPDNConnections	Usage: Parameter determining procedure sequence. A value for this parameter shall be provided when the procedure is called. Unless the test requires specific number of PDN connections to be established the value should be either pc_noOf_PDNsSameConnection or pc_noOf_PDNsNewConnection ([19]). Meaning: The number of PDN connections which are expected to happen. Depends on the UE configuration and/or the context in which the procedure is used.
K	Usage: Parameter determining procedure sequence. Meaning: The number of PDN CONNECTIVITY REQUEST messages already processed including the one that is currently being processed.
L	Usage: Parameter determining procedure sequence. Meaning: The number of PDN CONNECTIVITY REQUEST messages being received so far.

N	Usage: Parameter determining procedure sequence. The parameter is initialised with the value of ExpectedNumberOfNewPDNConnections Meaning: Loop (step sequence repetition) control.

4.5A.2B.2 Procedure description

4.5A.2B.2.1 Initial conditions

System Simulator:

- 1 cell, default parameters.
- The procedure shall be performed under ideal radio conditions as defined in clause 5.

User Equipment:

- The UE is in Registered, RRC_CONNECTED state (State 2).

The default system information messages are used.

4.5A.2B.2.2 Procedure sequence

Table 4.5A.2B.2.2-1: Establishment of additional PDN connectivity

St	Procedure	Message Sequence		Verdict
		U - S	Message	
0	Set K = 0, L = 0, N = ExpectedNumberOfNewPDNConnections	-	-	-
1	The procedure specified in Table 4.5A.2B.2.2-2 takes place.	-	-	-
2	Set K = K + 1.	-	-	-
-	EXCEPTION: In parallel to the events described in steps 3-6a1 below the events specified in Table 4.5A.2B.2.2-2 may take place.	-	-	-
3-4	Step 2-3 as defined in TS 36.508 [2], Table 4.5A.16.3-1, Generic Test Procedure to establish additional PDN connectivity take place.	-	-	-
-	EXCEPTION: IF the 'IP address allocation' for the APN for which the PDN connection is established is set to "Yes" in Table 4.8.4-1 THEN, in parallel to the event described in step 5 below the generic procedure for IP address allocation in the U-plane specified in TS 36.508 [2], subclause 4.5A.1 takes place performing IP address allocation in the U-plane if requested by the UE.	-	-	-
-	EXCEPTION: IF the 'IMS registration' for the APN for which the PDN connection is established is set to "Yes" in Table 4.8.4-1, THEN in parallel to the event described in step 5 below the generic procedure for IMS signalling in the U-plane specified in TS 36.508 [2], clause 4.5A.3 takes place.	-	-	-
5	Step 4 as defined in TS 36.508 [2], Table 4.5A.16.3-1, Generic Test Procedure to establish additional PDN connectivity takes place.	-	-	-
-	EXCEPTION: Steps 6a1 to 6b1 describe behaviour depending UE implementation; the "lower case letter" identifies a step sequence that take place if the UE performs a specific action.	-	-	-
6a1	IF L > K (NOTE 1) THEN repeat from step 2.	-	-	-
6b1	ELSE IF K < N (NOTE 2) THEN repeat from step 1.	-	-	-
NOTE 1: One (or more) further PDN CONNECTIVITY REQUEST message has been received in parallel.				
NOTE 2: Less PDN CONNECTIVITY REQUEST messages than expected have been received and processed so far and consequently further requests are expected from the UE.				

Table 4.5A.2B.2.2-2: Reception of PDN CONNECTIVITY REQUEST message

St	Procedure	Message Sequence		Verdict
		U - S	Message	
1	Start Wait_Timer = 10 sec. NOTE: 10 sec is an arbitrary value.	-	-	-
-	EXCEPTION: Steps 2a1 to 2b1 describe behaviour depending UE implementation; the "lower case letter" identifies a step sequence that take place if the UE performs a specific action.	-	-	-
2a1	Step 1 as defined in Table 4.5A.16.3-1, specified in TS 36.508 [2], subclause 4.5A.16 Generic Test Procedure to establish additional PDN connectivity takes place. The UE transmits a PDN CONNECTIVITY REQUEST message to request an additional PDN.	-->	PDN CONNECTIVITY REQUEST	-
2a2	Stop Wait_Timer.	-	-	-
2a3	Set L = L +1.	-	-	-
2a4	Check: Does the L>N? (NOTE 1)	-	-	F
2b1	Check: Does Wait_Timer expire? (NOTE 2)	-	-	F
NOTE 1: The SS shall raise a fail verdict when there are more PDN CONNECTIVITY REQUEST messages received than expected (L>N) and terminate the test. The reason for such a behaviour can be e.g. wrongly set PICS with which the ExpectedNumberOfNewPDNConnections was initiated, NOTE 2: Unless this is specified explicitly otherwise, e.g. in a test procedure which calls the procedure specified in the present table, the SS shall raise a fail verdict when there are less PDN CONNECTIVITY REQUEST messages than expected received at this point (note that when this procedure is called from the main behaviour K < N). The reason for such a behaviour can be e.g. wrongly set PICS with which the ExpectedNumberOfNewPDNConnections was initiated.				

4.5A.2B.3 Specific message contents

All specific message contents shall be referred to TS 36.508 [2] subclauses 4.6 and 4.7 with the exceptions specified below.

Table 4.5A.2B.3-1: Message PDN CONNECTIVITY REQUEST (step 2a1, Table 4.5A.2B.2.2-2)

Derivation path: TS 36.508 [2], Table 4.7.3-20.			
Information Element	Value/Remark	Comment	Condition
Access point name	Not present or One of the provided APN(s) in the Table 4.8.4-1	If present, the SS shall initialise the APN_Default=False If not present NOTE 2	
NOTE 1: Unless explicitly specified otherwise, the SS uses the Access point name value to address the entry of Table 4.8.4-1 to be used for the subsequent signalling of the PDN connectivity establishment and verifying specific UE behaviour e.g. depending on the type of the APN the UE may perform some actions. NOTE 2: The SS uses pc_APN_Default_Configuration to address the entry of Table 4.8.4-1 to be used for the subsequent signalling of the PDN connectivity establishment.			

Table 4.5A.2B.3-2: Message ACTIVATE DEFAULT EPS BEARER CONTEXT REQUEST (step 3, Table 4.5A.2B.2.2-1; Step 2, Table 4.5A.16.3-1 TS 36.508 [2])

Derivation path: TS 36.508 [2], Table 4.7.3-6 with CONDITION Interworking_with_5GS.			
Information Element	Value/Remark	Comment	Condition
EPS QoS	The EPC default bearer context of the entry in Table 4.8.4-1 which has been determined at step 1		
Access point name	IF the UE provided an Access point name in step 1 THEN the SS returns		

	this name; OTHERWISE the SS includes the DNN/APN ID value of the entry in Table 4.8.4-1 which has been determined at step 1.		
Container ID n+3	'001C'H		
Length of container ID n+3 contents			
Container ID n+3 contents	5GC QoS rule of the entry in Table 4.8.4-1 which has been determined at step 1		
Container ID n+4	'001F'H		
Length of container ID n+4 contents			
Container ID n+4 contents	As per the relevant QoS rule (Container ID n+3)		

4.5A.2C Procedure for UE-requested PDU session modification after the first S1 to N1 mode change / Single-registration mode with N26

4.5A.2C.1 Scope

The purpose of this procedure is to handle UE-requested PDU session modification after the first S1 to N1 mode change in the scenario of Single-registration mode, 'Interworking without N26 interface not supported'.

Table 4.5A.2C.1-1: Conditions and other parameters

Condition	Explanation
ExpectedNumberOfPDUSessionModifications	Usage: Parameter determining procedure sequence. A value for this parameter shall be provided when the procedure is called. Unless the test requires specific number of PDU modifications to take place the value should be set to <code>pc_noOf_PDNsSameConnection + pc_noOf_PDNsNewConnection + 1</code> ([19]). Meaning: The number of PDU sessions which are expected to happen. Depends on the UE configuration and/or the context in which the procedure is used.
K	Usage: Parameter determining procedure sequence. Meaning: The number of PDN SESSION MODIFICATION REQUEST messages already processed including the one that is currently being processed.
L	Usage: Parameter determining procedure sequence. Meaning: The number of PDN SESSION MODIFICATION REQUEST being received so far.
N	Usage: Parameter determining procedure sequence. The parameter is initialised with the value of ExpectedNumberOfPDUSessionModifications Meaning: Loop (step sequence repetition) control.

4.5A.2C.2 Procedure description

4.5A.2C.2.1 Initial conditions

The UE is in RRC_CONNECTED state.

4.5A.2C.2.2 Procedure sequence

Table 4.5A.2C.2.2-1: Procedure for UE-requested PDU session modification after the first S1 to N1 mode change

St	Procedure	Message Sequence		Verdict
		U - S	Message	
0	Set K = 0, L = 0, N = (ExpectedNumberOfPDUSessionModifications).	-	-	-
1	The procedure specified in Table 4.5A.2C.2.2-2 takes	-	-	-

	place.			
2	Set $K = K + 1$.	-	-	-
-	EXCEPTION: In parallel to the events described in steps 3-5a1 below the events specified in Table 4.5A.2C.2.2-2 may take place.	-	-	-
3	The SS transmits a <i>RRCReconfiguration</i> message and a PDU SESSION MODIFICATION COMMAND.	<--	NR RRC: <i>RRCReconfiguration</i> 5GMM: DL NAS TRANSPORT 5GSM: PDU SESSION MODIFICATION COMMAND	-
-	EXCEPTION: Depending upon UE implementation, step 4 and 4A can occur in any order	-	-	-
4	The UE transmits a <i>RRCReconfigurationComplete</i> message.	-->	NR RRC: <i>RRCReconfigurationComplete</i>	-
4A	The UE transmits a PDU SESSION MODIFICATION COMPLETE message.	-->	5GMM: UL NAS TRANSPORT 5GSM: PDU SESSION MODIFICATION COMPLETE	
-	EXCEPTION: Steps 5a1 to 5b1 describe behaviour depending UE implementation; the "lower case letter" identifies a step sequence that take place if the UE performs a specific action.	-	-	-
5a1	IF $L > K$ (NOTE 1) THEN repeat from step 2.	-	-	-
5b1	ELSE IF $K < N$ (NOTE 2) THEN repeat from step 1.	-	-	-
NOTE 1: One (or more) further PDU SESSION MODIFICATION REQUEST message has been received in parallel. NOTE 2: Less PDU SESSION MODIFICATION REQUEST messages than expected have been received and processed so far -> Further request are expected from the UE.				

Table 4.5A.2C.2.2-2: Reception of PDU SESSION MODIFICATION REQUEST message

St	Procedure	Message Sequence		Verdict
		U - S	Message	
1	Start Wait_Timer = 8 sec. NOTE: 8s were chosen to cater for T3540 being set to 10s.	-	-	-
-	EXCEPTION: Steps 2a1 to 2b1 describe behaviour depending UE implementation; the "lower case letter" identifies a step sequence that take place if the UE performs a specific action.	-	-	-
2a1	The UE transmits an <i>ULInformationTransfer</i> message and a PDU SESSION MODIFICATION REQUEST with PDU session ID which has been associated with a default EPS bearer set up during the UE operation in S1.	-->	NR RRC: <i>ULInformationTransfer</i> 5GSM: PDU SESSION MODIFICATION REQUEST	-
2a2	Stop Wait_Timer.	-	-	-
2a3	Set $L = L + 1$.	-	-	-
2a4	Check: Does the $L > N$? (NOTE 1)	-	-	F
2b1	Check: Does Wait_Timer expire? (NOTE 2)	-	-	F
NOTE 1: The SS shall raise a fail verdict when there are more PDU SESSION MODIFICATION REQUEST messages received than expected and terminate the test. The reason for such a behaviour can be e.g. wrongly set PICS with which the ExpectedNumberOfNewPDNConnections was initiated. NOTE 2: Unless this is specified explicitly otherwise e.g. in a test procedure which calls the procedure specified in the present table, the SS shall raise a fail verdict when there are less PDU SESSION MODIFICATION REQUEST messages than expected received at this point and terminate the test. The reason for such a behaviour can be e.g. wrongly set PICS with which the ExpectedNumberOfNewPDUSessions was initiated,				

4.5A.2C.2.3 Specific message contents

All specific message contents shall be according clause 4.6 and 4.7 with the below exceptions:

Table 4.5A.2C.2.3-1: UL NAS TRANSPORT (Step 1, Table 4.5A.2C.2.2-2)

Derivation Path: Table 4.7.1-10.

Information Element	Value/remark	Comment	Condition
Request type	'101'B	"modification request"	

Table 4.5A.2C.2.3-2: PDU SESSION MODIFICATION REQUEST (Step 1, Table 4.5A.2C.2.2-2)

Derivation Path: Table 4.7.2-7.			
Information Element	Value/remark	Comment	Condition
PDU session ID	The PDU session ID associated with the default EPS bearer of the PDN connection which is being transferred into PDU session and for which the UE needs to indicate its capabilities via the modification procedure. (NOTE 1)		
5GSM capability	Present. Contents not checked.		
Integrity protection maximum data rate	Present. Contents not checked.		
NOTE 1: The PDU session ID was provided in the ACTIVATE DEFAULT EPS BEARER CONTEXT ACCEPT when the UE attached in S1. If the UE provides here an unknown PDU session ID then the SS shall set an Inconclusive verdict.			

Table 4.5A.2C.2.3-3: RRCReconfiguration (step 3, Table 4.5A.2C.2.2-1)

Derivation Path: Table 4.6.1-13 and condition NR if SRB2 is not yet established			
Information Element	Value/remark	Comment	Condition
RRCReconfiguration ::= SEQUENCE {			
criticalExtensions CHOICE {			
rrcReconfiguration ::= SEQUENCE {			
radioBearerConfig	RadioBearerConfig with conditions SRB2 and DRB2		NOT IMS_PDU
nonCriticalExtension SEQUENCE {			
masterCellGroup	CellGroupConfig with condition SRB2_DRB2		NOT IMS_PDU
}			
}			
}			
}			

Table 4.5A.2C.2.3-4: RRCReconfiguration (step 3, 4.5A.2C.2.2-1)

Derivation Path: Table 4.6.1-13 and condition NR if SRB2 is already established			
Information Element	Value/remark	Comment	Condition
RRCReconfiguration ::= SEQUENCE {			
criticalExtensions CHOICE {			
rrcReconfiguration ::= SEQUENCE {			
radioBearerConfig	RadioBearerConfig with condition DRBn	n is chosen as the next available number higher or equal to 2	
	RadioBearerConfig with condition DRB1		IMS_PDU
nonCriticalExtension SEQUENCE {			
masterCellGroup	CellGroupConfig with condition DRBn	n is set to the same value as for the radioBearerConfig IE above	
	CellGroupConfig with condition DRB1		IMS_PDU
}			
}			
}			
}			

4.5A.3 Procedure for IP address allocation in the user plane

4.5A.3.1 Scope

The purpose of this procedure is to allow the successful completion of IP address allocation if it is initiated by the UE therefore the result from the execution of the Procedure for IP address allocation in the user plane shall not lead to assignment of a verdict.

Depending on the UE configuration there may be unpredictable delay in the start of the procedure. A guarding time of 1.2 sec is suggested within which the procedure is expected to start. If the timer expires then the test procedure, from which the Procedure for IP address allocation in the user plane is called, shall advance to the next specified step.

4.5A.3.2 Procedure description

4.5A.3.2.1 Initial conditions

N/A

4.5A.3.2.2 Procedure sequence

Table 4.5A.3.2.2-1: Procedure for IP address allocation in the user plane

Step	Procedure	Message Sequence	
		U - S	Message
-	EXCEPTION: Step 1 below and Step 1 in Table 4.5A.3.2.2-2 describe behaviour that depends on the contents of the latest PDU SESSION ESTABLISHMENT REQUEST message sent by the UE prior to this procedure.	-	-
-	EXCEPTION: In parallel to the event described in step 1 below the step specified in Table 4.5A.3.2.2-2 may take place.	-	-
1	If the "PDU session type" in the latest PDU SESSION ESTABLISHMENT REQUEST message prior to this procedure was 'IPv4' or 'IPv4v6' then, IPv4 address allocation by DHCPv4 may occur on the user plane bearer established for the QoS flow of the default QoS rule.	-	-

Table 4.5A.3.2.2-2: Procedure for IP address allocation in the user plane, parallel behaviour

Step	Procedure	Message Sequence	
		U - S	Message
1	If the "PDU session type" in the latest PDU SESSION ESTABLISHMENT REQUEST message prior to this procedure was 'IPv6' or 'IPv4v6' then stateless address auto configuration occurs on the user plane bearer established for the QoS flow of the default QoS rule.	-	-

4.5A.3.2.3 Specific message contents

None

4.5A.4 Procedure for IMS signalling

4.5A.4.1 Scope

The purpose of this procedure is to allow the successful completion of IMS signalling.

The procedure is applicable for UEs with IMS support (TS 38.508-2 A.4.4-1/2).

4.5A.4.2 Procedure description

4.5A.4.2.1 Initial conditions

N/A

4.5A.4.2.2 Procedure sequence

Table 4.5A.4.2.2-1: Procedure for IMS signalling

Step	Procedure	Message Sequence	
		U - S	Message
-	EXCEPTION: Steps 1a1 to 1a2b1 describe a transaction that depends on the UE capability	-	-
1a1	IF pc_IMS_5GS then the SS starts timer Timer_1 = 10 s (Note 1)	-	-
-	EXCEPTION: Steps 1a2a1 to 1a2b1 describe a transaction that depends on the UE implementation	-	-
1a2a1	Registration procedure according TS 34.229-5 [47] subclause A.2 (steps 1-8).	-	-
1a2a8	Note: SS cancels timer Timer_1 at step 1a2a1	-	-
1a2b1	Timer_1 expires	-	-
Note 1: Depending on the UE configuration there may be unpredictable delay in the start of the procedure. A guarding time of [10] sec is suggested within which the procedure is expected to start. If the timer expires then the test procedure, from which the Procedure for IMS signalling U-plane is called, shall advance to the next specified step			

4.5A.4.2.3 Specific message contents

As specified in the Specific Message Contents of TS 34.229-5 [47], annex A.2 with condition A34 set to false for the SIP REGISTER requests at steps 1 and 3.

4.5A.5 IPsec Tunnel Disconnection in 5GC / WLAN

4.5A.5.1 Scope

The purpose of this procedure is to disconnect an Ipsec tunnel.

4.5A.5.2 Procedure description

4.5A.5.2.1 Initial conditions

The UE has established an IPsec security association

4.5A.5.2.2 Procedure sequence

Table 4.5A.5.2.2-1: IPsec Tunnel Disconnection in 5GC / WLAN

St	Procedure	Message Sequence	
		U - S	Message
1	The SS initiated disconnection from the existing IPsec	-	-

	tunnel as defined in TS 24.502 [35] clause 7.4.2		
NOTE: It is assumed that the WLAN AP association remains throughout the procedure.			

4.5A.5.3 Specific message contents

None

4.5A.6 IPsec Tunnel Establishment in 5GC / WLAN

4.5A.6.1 Scope

The purpose of this procedure is to establish an Ipsec tunnel and NAS signalling connection.

4.5A.6.2 Procedure description

4.5A.6.2.1 Initial conditions

The UE has Registered to 5GC with a PDU session established and IPsec security association is released

4.5A.6.2.2 Procedure sequence

Table 4.5A.6.2.2-1: IPsec Tunnel Establishment in 5GC / WLAN

St	Procedure	Message Sequence	
		U – S	Message
-	Exception: In parallel to steps 1 to 2, the UE initiates an IPsec security association and one child security association as defined in TS 24.502 [35] clause 7.3.2	-	-
1	The UE transmits a SERVICE REQUEST message.	-->	5GMM: SERVICE REQUEST
2	The SS transmits a SERVICE Accept message.	<--	5GMM: SERVICE ACCEPT
Note 1: The current procedure assumes UE establishes a single PDU session over Non 3GPP Access.			

4.5A.6.3 Specific message contents

Table 4.5A.6.3-1: SERVICE REQUEST (step 1, Table 4.5A.6.2.2-1)

Derivation Path: Table 4.7.1-16			
Information Element	Value/remark	Comment	Condition
Service type			
Service type value	'0000'B	signalling	

4.5B Common test environment for Vertical UEs

4.5B.1 SNPN-only UEs

This clause defines the test environment which applies to all test cases listed in TS 38.523-2 [19], clause 4.3 and executed for SNPN-only UEs (TS 38.508-2 [10] A.4.1-5/3), unless otherwise specified.

- Each configured NR Cell is an SNPN cell, i.e., condition 'SNPN' (Standalone NPN cell) applies in the default message contents.
- The SIB1 of each NR Cell includes the NPN-Identity-r16 set to snpn-r16 with the PLMN of the cell and the nid-List-r16 IE configured with only one entry of NID with Assignment mode = 1 and NID value = 0.
- UE's "list of subscriber data" is pre-configured with the list of all PLMNs and NID value = 0.

NOTE: PLMNs are specified in Table 4.4.2-3 or clause 6.3.2 unless specified otherwise in the test case.

4.5B.2 RedCap UEs

This clause defines the test environment which applies to all test cases executed against RedCap UEs, unless otherwise specified.

- The test channel bandwidth is reduced, to a maximum of 20MHz for FR1 and 100MHz for FR2.
- The following ASN.1 types are configured with condition `pc_supportOfRedCap_r17 = TRUE`:
 - *SIB1* in Table 4.6.1-28,
 - *SIB4* in Table 4.6.2-3,
 - *RLC-Config* in Table 4.6.3-149, and
 - *PDCCP-Config* in Table 4.6.3-99.
- In case of HD-FDD mode, the following ASN.1 type is configured with condition `pc_halfDuplexFDD_TypeA_RedCap_r17 = TRUE`:
 - *SIB1* in Table 4.6.1-28.

4.5B.3 NR NTN UEs

This clause defines the test environment which applies to all test cases executed against NR NTN UEs operating in NTN specific bands, unless otherwise specified.

- Each configured NR Cell is an NTN cell.
- Test uses system information Combination NR-29 for single cell and multicell scenarios.
- The following RRC message is configured with condition NTN.
 - SIB1* in Table 4.6.1-28.
- The following ASN.1 type is configured with conditions GSO or NGSO depending on the NTN scenario under test.
 - SIB19* in Table 4.6.2-18C.

4.5B.4 eRedCap UEs

This clause defines the test environment which applies to all test cases executed against eRedCap UEs, unless otherwise specified.

- The test channel bandwidth is reduced, to a maximum of 20MHz for FR1.
- The following ASN.1 types are configured with condition `pc_supportOfERedCap_r18 = TRUE`:
 - *SIB1* in Table 4.6.1-28,
 - *SIB4* in Table 4.6.2-3,
 - *RLC-Config* in Table 4.6.3-149, and
 - *PDCCP-Config* in Table 4.6.3-99.
- In case of HD-FDD mode, the following ASN.1 type is configured with condition `pc_halfDuplexFDD_TypeA_RedCap_r17 = TRUE`:
 - *SIB1* in Table 4.6.1-28.

4.5B.5 ATG UEs

This clause defines the test environment which applies to all test cases executed against ATG UEs, unless otherwise specified.

- Each configured NR Cell is an ATG cell.
- Test uses system information Combination NR-34 for single cell and multicell scenarios.
- *SIB1* with condition ATG in Table 4.6.1-28.
- *SIB22* in Table 4.6.2-21.

4.5C UE Position Requirements for NTN testing

4.5C.1 General

This clause defines the UE positioning requirements which apply for all NR NTN cases.

- UE's positioning engine (e.g., standalone GNSS receiver) shall be enabled to allow it to acquire the position. UE position during the test is stationary unless it is explicitly stated as a requirement for the test. Below position shall be used to pre-configure UE position:
 - Latitude: 25.08439333
 - Longitude: 121.56076999
 - Altitude: 0

4.5D UE position requirements for ATG testing

4.5D.1 General

This clause defines the UE positioning requirements which apply for all ATG cases.

- UE's positioning engine (e.g., standalone GNSS receiver) shall be enabled to allow it to acquire the position. UE position during the test is stationary. Below position shall be used to pre-configure UE position:
 - Latitude: 24.08439333
 - Longitude: 121.56076999
 - Altitude: 10000

4.6 Default NG-RAN RRC message and information elements contents

4.6.0 General

4.6.0.1 Global conditions

Groups of RRC and 5GMM conditions including always one and only one condition set to true per table, unless explicitly stated.

Table 4.6.0.1-1: Signalling, RF/RRM/Performance

Condition	Explanation
SIG	Used for signalling test cases
RF	Used for RF/Performance test cases
RRM	Used for RRM test cases

Table 4.6.0.1-2: NR operating bands

Condition	Explanation
FR1	410 MHz – 7125 MHz
FR2	24250 MHz – 52600 MHz

Table 4.6.0.1-3: FDD/TDD

Condition	Explanation
FDD	Frequency Division Duplex
TDD	Time Division Duplex

Table 4.6.0.1-4: Subcarrier spacing

Condition	Explanation
SCS15	15kHz
SCS30	30kHz
SCS60	60kHz
SCS120	120kHz
SCS240	240kHz

Table 4.6.0.1-5: SST

Condition	Explanation
SST_eMBB	Slice suitable for the handling of 5G enhanced Mobile Broadband.
SST_URLLC	Slice suitable for the handling of ultra- reliable low latency communications.
SST_MIoT	Slice suitable for the handling of massive IoT.
SST_V2X	Slice suitable for the handling of V2X services.
NOTE: For the conditions in this table, one or more conditions are set to true.	

Table 4.6.0.1-6: Channel bandwidth

Condition	Explanation
BW3	3mhz
BW5	5mhz
BW10	10mhz
BW15	15mhz
BW20	20mhz

BW25	25mhz
BW30	30mhz
BW35	35mhz
BW40	40mhz
BW45	45mhz
BW50	50mhz
BW60	60mhz
BW70	70mhz
BW80	80mhz
BW90	90mhz
BW100	100mhz
BW200	200mhz
BW400	400mhz

4.6.0.2 ASN.1 extension groups

The tables in the subclauses of clause 4.6 specify the default message contents of RRC messages based on the ASN.1 message definitions of TS 38.331 [6] clause 6.

The ASN.1 of TS 38.331 [6] uses extension groups (also called extension addition groups), with an extension group being defined as a set of non-critical extension fields grouped together using double brackets [[]] (also called version brackets).

In general, the default message contents do not need to contain all extension groups. The following rules apply for each table in the subclauses of clause 4.6:

1. An extension group is contained in the default message contents when at least one of its fields needs to be specified a value. In this case all fields of the extension group shall be specified in the default message contents.
2. A specific message content (e.g., TS 38.523-1 [12]) of a test case may add extension group(s) in which case all fields of the extension group(s) shall be added.
3. When an extension group is not specified in a message content then all its fields are considered as being 'Not present' in downlink and 'Not checked' in uplink.
4. It is up to test implementation (e.g., TS 38.523-3 [23]) whether the fields of extension groups not being specified by the test specifications are explicitly set according to rule 3 or whether they are handled implicitly (e.g., by compilers or other tools).

4.6.0.3 Interpretation of IE presence and values

For Uplink RRC messages, the following terms and their meanings shall be used to determine how to test specific ASN.1 IEs:

- "Not present": test cases fail if IE is present.
- "Present but contents not checked": test cases fail if IE is not present. No requirements regarding contents of the IE.
- "Not checked":
 - Optional IE: IE may or may not be present. No requirements regarding contents of the IE.
 - Mandatory IE: IE shall be present. No requirements regarding contents of the IE.
- "If present: <specific values>": IE may or may not be present. If present, its contents shall be as specified.
- "<specific values>": test cases fail if IE is not present. Its contents shall be as specified.

4.6.1 Contents of RRC messages

– CounterCheck

Table 4.6.1-1: CounterCheck

Derivation Path: TS 38.331 [6], clause 6.2.2			
Information Element	Value/remark	Comment	Condition
CounterCheck ::= SEQUENCE {			
rrc-TransactionIdentifier	RRC-TransactionIdentifier		
criticalExtensions CHOICE {			
counterCheck SEQUENCE {			
drb-CountMSB-InfoList SEQUENCE (SIZE (1..maxDRB)) OF DRB-CountMSB-Info {	1 entry		
DRB-CountMSB-Info[1] SEQUENCE {		entry 1	
drb-Identity	DRB-Identity		
countMSB-Uplink	0		
countMSB-Downlink	0		
}			
}			
lateNonCriticalExtension	Not present		
nonCriticalExtension	Not present		
}			
}			
}			

– CounterCheckResponse

Table 4.6.1-2: CounterCheckResponse

Derivation Path: TS 38.331 [6], clause 6.2.2			
Information Element	Value/remark	Comment	Condition
CounterCheckResponse ::= SEQUENCE {			
rrc-TransactionIdentifier	RRC-TransactionIdentifier		
criticalExtensions CHOICE {			
counterCheckResponse SEQUENCE {			
drb-CountInfoList SEQUENCE (SIZE (0..maxDRB)) OF DRB-CountInfo {	1 entry		
DRB-CountInfo[1] SEQUENCE {		entry 1	
drb-Identity	DRB-Identity		
count-Uplink	Not checked		
count-Downlink	Not checked		
}			
}			
lateNonCriticalExtension	Not checked		
nonCriticalExtension	Not checked		
}			
}			
}			

– DedicatedSIBRequest

Table 4.6.1-2A: DedicatedSIBRequest

Derivation Path: TS 38.331 [6], clause 6.2.2			
Information Element	Value/remark	Comment	Condition
DedicatedSIBRequest-r16 ::= SEQUENCE {			
criticalExtensions CHOICE {			
dedicatedSIBRequest-r16 SEQUENCE {			

onDemandSIB-RequestList-r16 SEQUENCE {			
requestedSIB-List-r16	Not checked		
requestedPosSIB-List-r16	Not checked		
}			
lateNonCriticalExtension	Not checked		
nonCriticalExtension	Not checked		
}			
}			
}			

– *DL DedicatedMessageSegment*

Table 4.6.1-2B: DL DedicatedMessageSegment

Derivation Path: TS 38.331 [6], clause 6.2.2			
Information Element	Value/remark	Comment	Condition
DL DedicatedMessageSegment-r16 ::= SEQUENCE {			
criticalExtensions CHOICE {			
dl DedicatedMessageSegment-r16 SEQUENCE {			
segmentNumber-r16	0		firstSegment
	1		lastSegment
rrc-MessageSegmentContainer-r16	Set according to specific message content	OCTET STRING including segmented RRCReconfiguration or RRCResume message	
rrc-MessageSegmentType-r16	notLastSegment		firstSegment
	lastSegment		lastSegment
lateNonCriticalExtension	Not present		
nonCriticalExtension	Not present		
}			
}			
}			

Condition	Explanation
firstSegment	The first segment of the RRCReconfiguration or RRCResume message
lastSegment	The last segment of the RRCReconfiguration or RRCResume message

– *DL InformationTransfer*

Table 4.6.1-3: DL InformationTransfer

Derivation Path: TS 38.331 [6], clause 6.2.2			
Information Element	Value/remark	Comment	Condition
DL InformationTransfer ::= SEQUENCE {			
rrc-TransactionIdentifier	RRC-TransactionIdentifier		
criticalExtensions CHOICE {			
dl InformationTransfer SEQUENCE {			
dedicatedNAS-Message	DedicatedNAS-Message		
lateNonCriticalExtension	Not present		
nonCriticalExtension	Not present		
nonCriticalExtension SEQUENCE {			TSC
referenceTimeInfo-r16	ReferenceTimeInfo		
nonCriticalExtension	Not present		
}			
}			
}			

}			
}			

Condition	Explanation
TSC	For test cases requiring TSC (Time Sensitive Communication) functions enabled.

– *DLInformationTransferMRDC*

Table 4.6.1-3A: DLInformationTransferMRDC

Derivation Path: TS 38.331 [6], clause 6.2.2			
Information Element	Value/remark	Comment	Condition
DLInformationTransferMRDC-r16 ::= SEQUENCE {			
FFS			
}			

– *FailureInformation*

Table 4.6.1-4: FailureInformation

Derivation Path: TS 38.331 [6], clause 6.2.2			
Information Element	Value/remark	Comment	Condition
FailureInformation ::= SEQUENCE {			
criticalExtensions CHOICE {			
failureInformation SEQUENCE {			
failureInfoRLC-Bearer SEQUENCE {			
cellGroupId	Not checked		
logicalChannelIdentity	Not checked		
failureType	Not checked		
}			
lateNonCriticalExtension	Not checked		
nonCriticalExtension	Not checked		
nonCriticalExtension SEQUENCE {			DAPS_HOF
failureInfoDAPS-r16 SEQUENCE {			
failureType-r16	daps-failure	Indicate handover failure type is DAPS handover failure	
}			
nonCriticalExtension	Not checked		
}			
}			
}			
}			

Condition	Explanation
DAPS_HOF	DAPS handover failure

– *IABOtherInformation*

Table 4.6.1-4A: IABOtherInformation

Derivation Path: TS 38.331 [6], clause 6.2.2			
Information Element	Value/remark	Comment	Condition
IABOtherInformation-r16 ::= SEQUENCE {			
FFS			
}			

– *IndirectPathFailureInformation*

Table 4.6.1-4B: IndirectPathFailureInformation

Derivation Path: TS 38.331 [6], clause 6.2.2			
Information Element	Value/remark	Comment	Condition
IndirectPathFailureInformation-r18 ::= SEQUENCE {			
FFS			
}			

– *LocationMeasurementIndication*

Table 4.6.1-5: LocationMeasurementIndication

Derivation Path: TS 38.331 [6], clause 6.2.2			
Information Element	Value/remark	Comment	Condition
LocationMeasurementIndication ::= SEQUENCE {			
criticalExtensions CHOICE {			
locationMeasurementIndication SEQUENCE {			
measurementIndication CHOICE {			
setup	LocationMeasurementInfo		
}			
lateNonCriticalExtension	Not checked		
nonCriticalExtension	Not checked		
}			
}			
}			

– *LoggedMeasurementConfiguration*

Table 4.6.1-5AA: LoggedMeasurementConfiguration (Thres1)

Derivation Path: TS 38.331 [6], clause 6.2.2			
Information Element	Value/remark	Comment	Condition
LoggedMeasurementConfiguration-r16 ::= SEQUENCE {			
criticalExtensions CHOICE {			
loggedMeasurementConfiguration-r16 SEQUENCE {			
traceReference-r16 SEQUENCE {			
plmn-Identity-r16	plmn-Identity in USIM	MCC/MNC=MCC/MNC in USIM	
traceId-r16	'0EF'H	OCTET STRING (SIZE (3))	
}			
traceRecordingSessionRef-r16	'1A'H	OCTET STRING (SIZE (2))	
tce-Id-r16	'5'H	OCTET STRING (SIZE (1))	
absoluteTimeInfo-r16	Set to value corresponding to the absolute time when the message is sent	BIT STRING (SIZE (48))	
areaConfiguration-r16	Not present		
plmn-IdentityList-r16	Not present		
bt-NameList-r16	Not present		
wlan-NameList-r16	Not present		
sensor-NameList-r16	Not present		
loggingDuration-r16	min120		

reportType CHOICE {			
periodical SEQUENCE {			PERIODICAL
loggingInterval-r16	ms2560	2.56s	
}			
eventTriggered SEQUENCE {			EVENT
eventType-r16 CHOICE {			
outOfCoverage	NULL		OUT-OF-COVERAGE
eventL1 SEQUENCE {			EVENTL1
l1-Threshold CHOICE {			
rsrp	Thres1	Thres is an entry value into a mapping table in TS 38.133 [13].	
}			
hysteresis	0		
timeToTrigger	ms100	0.1s	
}			
}			
loggingInterval-r16	ms2560	2.56s	
}			
}			
lateNonCriticalExtension	Not present		
nonCriticalExtension	Not present		
nonCriticalExtension SEQUENCE {			LOG-MEAS-R17
sigLoggedMeasType-r17	Not present		
	true		SigLogMDT
earlyMeasIndication-r17	Not present		
	true		EarlyMeas
areaConfiguration-v1700	Not present		
nonCriticalExtension	Not present		
}			
}			
}			
}			

Condition	Explanation
PERIODICAL	Configuration of LoggedPeriodicalReport
EVENT	Configuration of LoggedEventTrigger
OUT-OF-COVERAGE	Configuration of outOfCoverage
EVENTL1	Configuration of eventL1
LOG-MEAS-R17	Configuration of LoggedMeasurement in R17
SigLogMDT	Signalling based logged measurements
EarlyMeas	Log measurements on early measurement

– *MBSBroadcastConfiguration*

Table 4.6.1-5ABA: MBSBroadcastConfiguration

Derivation Path: TS 38.331 [6], clause 6.2.2			
Information Element	Value/remark	Comment	Condition
MBSBroadcastConfiguration-r17 ::= SEQUENCE {			
criticalExtensions CHOICE {			
mbsBroadcastConfiguration-r17 SEQUENCE {			
mbs-SessionInfoList-r17	MBS-SessionInfoList		
mbs-NeighbourCellList-r17	Not present		
drx-ConfigPTM-List-r17	Not present		
drx-ConfigPTM-List-r17 SEQUENCE (SIZE (1..maxNrofDRX-ConfigPTM-r17)) OF DRX-ConfigPTM-r17 {	1 entry		DRX_MBS_Broadcast
DRX-ConfigPTM-r17[1]	DRX-ConfigPTM	entry 1	

}			
pdsch-ConfigMTCH-r17	PDSCH-ConfigBroadcast with condition MTCH		
mtch-SSB-MappingWindowList-r17	Not present		
lateNonCriticalExtension	Not present		
nonCriticalExtension	Not present		
}			
}			
}			

Condition	Explanation
DRX_MBS_Broadcast	DRX is used for MBS Broadcast test

– *MBSInterestIndication*

Table 4.6.1-5ABB: MBSInterestIndication

Derivation Path: TS 38.331 [6], clause 6.2.2			
Information Element	Value/remark	Comment	Condition
MBSInterestIndication-r17 ::= SEQUENCE {			
criticalExtensions CHOICE {			
mbsInterestIndication-r17 SEQUENCE {			
mbs-FreqList-r17[n] SEQUENCE (SIZE (1..maxFreqMBS-r17)) OF ARFCN-ValueNR	The number of entries is set according to specific message content.		
mbs-Priority-r17	Not checked		
mbs-ServiceList-r17	Not checked		
lateNonCriticalExtension	Not checked		
nonCriticalExtension	Not checked		
nonCriticalExtension SEQUENCE {			MBS_Broadcast_nonServingCell
mbs-NonServingInfoList-r18	Not checked		
nonCriticalExtension	Not checked		
}			
}			
}			
}			

Condition	Explanation
MBS_Broadcast_nonServingCell	MBS broadcast reception on the non-serving cell

– *MBSMulticastConfiguration*

Table 4.6.1-5ABC: MBSMulticastConfiguration

Derivation Path: TS 38.331 [6], clause 6.2.2			
Information Element	Value/remark	Comment	Condition
MBSMulticastConfiguration-r18 ::= SEQUENCE {			
criticalExtensions CHOICE {			
mbsMulticastConfiguration-r18 SEQUENCE {			
mbs-SessionInfoListMulticast-r18	MBS-SessionInfoListMulticast		
mbs-NeighbourCellList-r18	Not present		
drx-ConfigPTM-List-r18	Not present		
pdsch-ConfigMTCH-r18	Not present		
mtch-SSB-MappingWindowList-r18	Not present		
thresholdMBS-List-r18 SEQUENCE (SIZE (1..maxNrofThresholdMBS-r18)) OF ThresholdMBS-r18 {	1 entry		
ThresholdMBS-r18[1] SEQUENCE {		entry 1	

rsrp-r18	51		
rsrq-r18	Not present		
}			
}			
lateNonCriticalExtension	Not present		
nonCriticalExtension	Not present		
}			
}			
}			

– *MCGFailureInformation*

Table 4.6.1-5AB: MCGFailureInformation

Derivation Path: TS 38.331 [6], clause 6.2.2			
Information Element	Value/remark	Comment	Condition
MCGFailureInformation-r16 ::= SEQUENCE {			
FFS			
}			

– *MeasurementReport*

Table 4.6.1-5A: MeasurementReport

Derivation Path: TS 38.331 [6], clause 6.2.2			
Information Element	Value/remark	Comment	Condition
MeasurementReport ::= SEQUENCE {			
criticalExtensions CHOICE {			
measurementReport SEQUENCE {			
measResults	MeasResults		
lateNonCriticalExtension	Not checked		
nonCriticalExtension	Not checked		
}			
}			
}			

– *MeasurementReportAppLayer*

Table 4.6.1-5B: MeasurementReportAppLayer

Derivation Path: TS 38.331 [6], clause 6.2.2			
Information Element	Value/remark	Comment	Condition
MeasurementReportAppLayer-r17 ::= SEQUENCE {			
criticalExtensions CHOICE {			
measurementReportAppLayer-r17 SEQUENCE {			
measurementReportAppLayerList-r17 SEQUENCE (SIZE (1..maxNrofAppLayerMeas-r17)) OF MeasReportAppLayer-r17 {	1 entry		
MeasReportAppLayer-r17 [1] SEQUENCE {		entry 1	
measConfigAppLayerId-r17	MeasConfigAppLayerId-r17		
measReportAppLayerContainer-r17	Present but contents not checked	OCTET STRING	
appLayerSessionStatus-r17	Not checked		
ran-VisibleMeasurements-r17	Not checked		
}			
}			
lateNonCriticalExtension	Not checked		
nonCriticalExtension	Not checked		
}			

}			
}			

– *MIB*

Table 4.6.1-6: MIB

Derivation Path: TS 38.331 [6], clause 6.2.2			
Information Element	Value/remark	Comment	Condition
MIB ::= SEQUENCE {			
systemFrameNumber	A valid value as defined in TS 38.331 [6]		
subCarrierSpacingCommon	scs15or60	For signalling test cases see clause 6.2.3, otherwise see clause 4.3.1.	SCS15or60
	scs30or120	For signalling test cases see clause 6.2.3, otherwise see clause 4.3.1.	SCS30or120
ssb-subcarrierOffset	Set to the integer value of the 4 LSB of kSSB defined for the frequency of the cell	For signalling test cases see clause 6.2.3, otherwise see clause 4.3.1.	
	15	Note 1	NCD-SSB
dmrs-TypeA-Position	pos2		
pdccch-ConfigSIB1	PDCCH-ConfigSIB1		
	PDCCH-ConfigSIB1 with condition NCD-SSB		NCD-SSB
cellBarred	notBarred		
intraFreqReselection	allowed		
spare	0		
}			
Note 1: For FR1, kSSB = 31 (1 MSB of kSSB is 1 and 4 LSB of kSSB is 15). 1 MSB of kSSB is in the PBCH payload specified in TS 38.211 clause 7.4.3.1. For FR2, kSSB = 15.			

Condition	Explanation
SCS15or60	SCS is 15kHz or 60kHz
SCS30or120	SCS is 30kHz or 120kHz.
NCD-SSB	MIB for NCD-SSB

– *MobilityFromNRCommand*

Table 4.6.1-8: MobilityFromNRCommand

Derivation Path: TS 38.331 [6], clause 6.2.2			
Information Element	Value/remark	Comment	Condition
MobilityFromNRCommand ::= SEQUENCE {			
rrc-TransactionIdentifier	RRC-TransactionIdentifier		
criticalExtensions CHOICE {			
mobilityFromNRCommand SEQUENCE {			
targetRAT-Type	eutra		
	utra-fdd-v1610		HO-TO-UTRA_FDD
targetRAT-MessageContainer	OCTET STRING including the RRCConnectionReconfiguration message according TS 36.508 [2], table 4.6.1-8 with condition HO-TO-EUTRA		

	OCTET STRING including the Handover TO UTRAN message specified in TS 36.508 [2] Table 4.7B.1-1 with condition UTRA FDD PS RB		HO-TO-UTRA_FDD
nas-SecurityParamFromNR	The 8 LSB of the downlink NAS COUNT		HO-TO-UTRA_FDD
	The 4 LSB of the downlink NAS COUNT		
lateNonCriticalExtension	Not present		
nonCriticalExtension	Not present		
}			
}			
}			

Condition	Explanation
HO-TO-UTRA_FDD	For Handover from NR to UTRA FDD

– *Paging*

Table 4.6.1-9: Paging

Derivation Path: TS 38.331 [6], clause 6.2.2			
Information Element	Value/remark	Comment	Condition
Paging ::= SEQUENCE {			
pagingRecordList SEQUENCE (SIZE(1..maxNrofPageRec)) OF PagingRecord {	1 entry		
PagingRecord[1] SEQUENCE {		entry 1	
ue-Identity CHOICE {			
ng-5G-S-TMSI	NG-5G-S-TMSI		
fullI-RNTI	I-RNTI-Value		NR_RRC_RESUME
}			
accessType	Not present		
}			
}			
lateNonCriticalExtension	Not present		
nonCriticalExtension	Not present		
nonCriticalExtension SEQUENCE {			TMGI, MT_SDT, MBS_Multicast_Inactive
}			
pagingRecordList-v1700	Not present		
pagingGroupList-r17 SEQUENCE (SIZE(1..maxNrofPageGroup-r17)) OF TMGI-r17 {	1 entry		
TMGI-r17[1]	TMGI-r17	entry 1	
}			
nonCriticalExtension	Not present		
nonCriticalExtension SEQUENCE {			MT_SDT, MBS_Multicast_Inactive
}			
PagingRecordList-v1800	Not present		MBS_Multicast_Inactive
PagingRecordList-v1800 SEQUENCE (SIZE(1..maxNrofPageRec)) OF PagingRecord-v1800 {	1 entry		MT_SDT
PagingRecord-v1800[1] SEQUENCE {		entry 1	
mt-SDT	true		
}			
}			
pagingGroupList-v1800	Not present		MT_SDT

pagingGroupList-v1800 SEQUENCE (SIZE(1..maxNrofPageGroup-r17)) OF GroupPaging-r18 {	1 entry		MBS_Multicast_Inactive
GroupPaging-r18[1] SEQUENCE {		entry 1	
inactiveReceptionAllowed-r18	true		
}			
}			
nonCriticalExtension	Not present		
}			
}			
}			

Condition	Explanation
NR_RRC_RESUME	To page a UE in RRC_INACTIVE state to request RRC connection resumption
TMGI	TMGI is used as paging identity
MT_SDT	MT-SDT is used as Mobile Terminated SDT indication
MBS_Multicast_Inactive	Used for MBS Multicast reception when UE in RRC_INACTIVE state

– RRCReestablishment

Table 4.6.1-10: RRCReestablishment

Derivation Path: TS 38.331 [6], clause 6.2.2			
Information Element	Value/remark	Comment	Condition
RRCReestablishment ::= SEQUENCE {			
rrc-TransactionIdentifier	RRC-TransactionIdentifier		
criticalExtensions CHOICE {			
rrcReestablishment SEQUENCE {			
nextHopChainingCount	NextHopChainingCount		
lateNonCriticalExtension	Not present		
nonCriticalExtension	Not present		
nonCriticalExtension SEQUENCE {			L2RemoteUE
sl-L2RemoteUE-Config-r17 CHOICE {			
setup	SL-L2RemoteUE-Config-r17		
}			
nonCriticalExtension	Not present		
}			
}			
}			
}			

Condition	Explanation
L2RemoteUE	For L2 U2N Remote UE test cases.

– RRCReestablishmentComplete

Table 4.6.1-11: RRCReestablishmentComplete

Derivation Path: TS 38.331 [6], clause 6.2.2			
Information Element	Value/remark	Comment	Condition
RRCReestablishmentComplete ::= SEQUENCE {			
rrc-TransactionIdentifier	RRC-TransactionIdentifier		
criticalExtensions CHOICE {			
rrcReestablishmentComplete SEQUENCE {			

lateNonCriticalExtension	Not checked		
nonCriticalExtension	Not checked		
}			
}			
}			

– *RRCReestablishmentRequest*

Table 4.6.1-12: RRCReestablishmentRequest

Derivation Path: TS 38.331 [6], clause 6.2.2			
Information Element	Value/remark	Comment	Condition
RRCReestablishmentRequest ::= SEQUENCE {			
ue-Identity SEQUENCE {			
c-RNTI	RNTI-Value		
physCellId	PhysCellId	The physical cell identity of the PCell the UE was connected to prior to the failure	
shortMAC-I	ShortMAC-I		
}			
reestablishmentCause	Not checked		
spare	Not checked		
}			

– *RRCReconfiguration*

Table 4.6.1-13: RRCReconfiguration

Derivation Path: TS 38.331 [6], clause 6.2.2			
Information Element	Value/remark	Comment	Condition
RRCReconfiguration ::= SEQUENCE {			
rrc-TransactionIdentifier	RRC-TransactionIdentifier		
criticalExtensions CHOICE {			
rrcReconfiguration SEQUENCE {			
radioBearerConfig	Not present		
	RadioBearerConfig with conditions SRB2 and DRB1		NR, NR-DC
	RadioBearerConfig with conditions SRB2 and REEST		REEST
secondaryCellGroup	CellGroupConfig	OCTET STRING (CONTAINING CellGroupConfig)	EN-DC
	CellGroupConfig with condition NR-DC_SCG	OCTET STRING (CONTAINING CellGroupConfig)	NR-DC_SCG
	CellGroupConfig with conditions EN-DC and PSCell_change	OCTET STRING (CONTAINING CellGroupConfig)	EN-DC_HO
	CellGroupConfig with condition MEAS	OCTET STRING (CONTAINING CellGroupConfig)	EN-DC_MEAS
	CellGroupConfig with condition SCell_add	OCTET STRING (CONTAINING CellGroupConfig)	EN-DC_SCell_add
	Not present		
measConfig	Not present		

	MeasConfig	Measurements configuration	NR_MEAS, EN-DC_MEAS, IRAT_MEAS
lateNonCriticalExtension	Not present		
nonCriticalExtension	Not present		
nonCriticalExtension SEQUENCE {			NR, SCell_add, NR_MEAS, NR-DC, SIDELINK, DAPS_HO_ReleaseSource, CHO, CPA, CPC, REEST, L2RelayUE, L2RemoteUE, SHRT304, SHRT310, SHRT312, SHRRLF, Deactivated SCG, QoE
masterCellGroup	CellGroupConfig with condition SRB2_DRB1	OCTET STRING (CONTAINING CellGroupConfig)	NR, NR-DC
	CellGroupConfig with condition SCell_add	OCTET STRING (CONTAINING CellGroupConfig)	SCell_add
	CellGroupConfig with condition MEAS	OCTET STRING (CONTAINING CellGroupConfig)	NR_MEAS
	CellGroupConfig with condition REEST	OCTET STRING (CONTAINING CellGroupConfig)	REEST
	CellGroupConfig with condition L2RelayUE and uuRelaySRB0_SRB1	OCTET STRING (CONTAINING CellGroupConfig)	L2RelayUE and uuRelaySRB0_SRB1
	CellGroupConfig with condition L2RelayUE and uuRelaySRB2_DRB1	OCTET STRING (CONTAINING CellGroupConfig)	L2RelayUE and uuRelaySRB2_DRB1
	CellGroupConfig with condition LTM_CSI	OCTET STRING (CONTAINING CellGroupConfig)	LTM_CSI
fullConfig	Not present		
dedicatedNAS-MessageList	Not present		
dedicatedNAS-MessageList SEQUENCE (SIZE(1..maxDRB)) OF DedicatedNAS-Message {	1 entry		NR
DedicatedNAS-Message[1]	DedicatedNAS-Message	entry 1 A sequence of OCTET STRING(s) containing one or more DedicatedNAS-Message(s)	
}			
masterKeyUpdate	Not present		
masterKeyUpdate SEQUENCE {			MasterKeyChange
keySetChangeIndicator	true		
nextHopChainingCount	NextHopChainingCount		
nas-Container	Not present		

	OCTET STRING including the 10 Octets value generated according to TS 24.501 [28] clause 9.11.2.9		Inter_Sys_H O
}			
dedicatedSIB1-Delivery	Not present		
dedicatedSystemInformationDelivery	Not present		
otherConfig	Not present		
nonCriticalExtension	Not present		
nonCriticalExtension SEQUENCE {			NR-DC, SIDELINK, DAPS_HO_ReleaseSource, CHO, CPA, CPC, NE-DC, L2RelayUE, L2RemoteUE, SHRT304, SHRT310, SHRT312, SHRRLF, Deactivated SCG, QoE
otherConfig-v1540	Not present		
nonCriticalExtension SEQUENCE {			
mrdc-SecondaryCellGroupConfig	Not present		
mrdc-SecondaryCellGroupConfig CHOICE {			NR-DC, NE-DC
setup SEQUENCE {			
mrdc-ReleaseAndAdd	Not present		
mrdc-SecondaryCellGroup CHOICE {			
nr-SCG	RRCReconfiguration with condition NR-DC_SCG	OCTET STRING (CONTAINING RRCReconfiguration)	NR-DC
eutra-SCG	RRCCConnectionReconfiguration according TS 36.508 [2], table 4.6.1-8 with condition NE-DC	OCTET STRING (CONTAINING RRCCConnectionReconfiguration)	NE-DC
}			
}			
}			
radioBearerConfig2	Not present		NE-DC
	RadioBearerConfig with condition DRBn and SecondaryKeys	OCTET STRING (CONTAINING RadioBearerConfig)	NR-DC
sk-Counter	SK-Counter		
nonCriticalExtension	Not present		
nonCriticalExtension SEQUENCE {			SIDELINK, DAPS_HO_ReleaseSource, CHO, CPA, CPC, L2RelayUE, L2RemoteUE, SHRT304, SHRT310, SHRT312, SHRRLF, Deactivated SCG, QoE
otherConfig-v1610	Not present		

bap-Config-r16	Not present		
iab-IP-AddressConfigurationList-r16	Not present		
conditionalReconfiguration-r16	Not present		
	ConditionalReconfiguration		CHO, CPA, CPC
daps-SourceRelease-r16	Not present		
	true		DAPS_HO_ReleaseSource
t316-r16	Not present		
needForGapsConfigNR-r16	Not present		
onDemandSIB-Request-r16	Not present		
dedicatedPosSysInfoDelivery-r16	Not present		
sl-ConfigDedicatedNR-r16	Not present		
sl-ConfigDedicatedNR-r16 CHOICE {			SIDELINK, (L2RelayUE or L2RemoteUE) and (PC5RelaySRB1 or PC5RelaySRB2_DRB1)
setup	SL-ConfigDedicatedNR-r16		SIDELINK
	SL-ConfigDedicatedNR-r16 with condition PC5RelaySRB1		PC5RelaySRB1
	SL-ConfigDedicatedNR-r16 with condition PC5RelaySRB2_DRB1		PC5RelaySRB2_DRB1
}			
sl-ConfigDedicatedEUTRA-Info-r16	Not present		
smtc-r16	Not present		
nonCriticalExtension	Not present		
nonCriticalExtension SEQUENCE {			L2RelayUE, L2RemoteUE, SHRT304, SHRT310, SHRT312, SHRRLF, Deactivated SCG, QoE
otherConfig-v1700	Not present		
otherConfig-v1700 SEQUENCE{			SHRT304, SHRT310, SHRT312, SHRRLF
ul-GapFR2-PreferenceConfig-r17	Not present		
musim-GapAssistanceConfig-r17	Not present		
musim-LeaveAssistanceConfig-r1	Not present		
successHO-Config-r17	Not present		
successHO-Config-r17 CHOICE {			SHRT304, SHRT310, SHRT312, SHRRLF
setup SEQUENCE {			
thresholdPercentageT304-r17	Not present		
	p40		SHRT304
thresholdPercentageT310-r17	Not present		
	p40		SHRT310
thresholdPercentageT312-r17	Not present		
	p20		SHRT312
sourceDAPS-FailureReporting-r17	Not present		
	true		SHRRLF
}			

	}			
	maxBW-PreferenceConfigFR2-2-r17	Not present		
r17	maxMIMO-LayerPreferenceConfigFR2-2-	Not present		
r17	minSchedulingOffsetPreferenceConfigExt-	Not present		
	rlm-RelaxationReportingConfig-r17	Not present		
	bfd-RelaxationReportingConfig-r17	Not present		
	scg-DeactivationPreferenceConfig-r17	Not present		
	rrm-MeasRelaxationReportingConfig-r17	Not present		
	propDelayDiffReportConfig-r17	Not present		
	}			
	sl-L2RelayUE-Config-r17	Not present		
	sl-L2RelayUE-Config-r17 CHOICE {			
	setup	SL-L2RelayUE-Config with condition SRB0 and SRB1		L2RelayUE and uuRelaySR B0_SRB1
		SL-L2RelayUE-Config with condition SRB2 and DRB1		L2RelayUE and uuRelaySR B2_DRB1
	release	NULL		L2RelayUE_ Release
	}			
	sl-L2RemoteUE-Config-r17	Not present		
	sl-L2RemoteUE-Config-r17 CHOICE {			L2RemoteU E
	setup	SL-L2RemoteUE-Config with condition SRB2 and DRB1 and FirstRRCReconfig		
	release	NULL		L2RemoteU E Release
	}			
	dedicatedPagingDelivery-r17	Not present		
	needForGapNCSG-ConfigNR-r17	Not present		
	needForGapNCSG-ConfigEUTRA-r17	Not present		
	musim-GapConfig-r17	Not present		
	ul-GapFR2-Config-r17	Not present		
	ul-GapFR2-Config-r17 CHOICE {			NR-FR2- Uplink-Gaps
	setup	UL-GapFR2-Config-r17		
	}			
	scg-State-r17	Not present deactivated		Deactivated SCG
	appLayerMeasConfig-r17	Not present AppLayerMeasConfig-r17		QoE
	ue-TxTEG-RequestUL-TDOA-Config-r17	Not present		
	nonCriticalExtension	Not present		
	nonCriticalExtension SEQUENCE {			LTM,UAV
	needForInterruptionConfigNR-r18	Not present		
	aerial-Config-r18	Not present		
	aerial-Config-r18 CHOICE {			UAV
	setup	aerial-Config		
	}			
	sl-IndirectPathAddChange-r18	Not present		
	n3c-IndirectPathAddChange-r18	Not present		
	n3c-IndirectPathConfigRelay-r18	Not present		
	otherConfig-v1800	Not present		
	srs-PosResourceSetAggBW- CombinationList-r18	Not present		
	ltm-Config-r18	Not present		
	ltm-Config-r18 CHOICE {			LTM
	setup	LTM-Config		

}			
nonCriticalExtension	Not present		
}			
}			
}			
}			
}			
}			
}			
}			
}			

Condition	Explanation
EN-DC	E-UTRA-NR Dual Connectivity with E-UTRA connected to EPC
EN-DC_MEAS	An EN-DC measurement is configured
IRAT_MEAS	An IRAT measurement is configured in the NR PCell
NR_MEAS	A NR measurement is configured
NR	NR connected to 5GC
NR-DC	NR-NR Dual Connectivity is configured
NR-DC_SCG	Add SCG side configuration (NR-DC)
EN-DC_HO	NR PSCell change (EN-DC)
SCell_add	Add SCell
EN-DC_SCell_add	Add SCell (EN-DC)
MasterKeyChange	MasterKeyUpdate when performing ReconfigurationWithSync and indicating a change of the AS security algorithms associated to the master key
Inter_Sys_HO	Used during inter-system handover to NR procedure
REEST	The first RRCReconfiguration message after successful completion of the RRC re-establishment procedure
SIDELINK	For NR sidelink dedicated configuration
DAPS_HO_ReleaseSource	The source cell part of DAPS operation is to be stopped and the source cell part of DAPS configuration is to be released.
CHO	Conditional handover
CPA	Conditional PSCell addition
CPC	Conditional PSCell change
NE-DC	NR E-UTRA Dual Connectivity
L2RelayUE	Setup L2 U2N Relay UE configuration
L2RelayUE_Release	Release L2 U2N Relay UE configuration
L2RemoteUE	Setup L2 U2N Remote UE configuration
L2RemoteUE_Release	Release L2 U2N Remote UE configuration
NR-FR2-Uplink-Gaps	Configure Uplink Gaps for NR FR2
SHRT304	Report the successful handover information to the network for the elapsed time of the timer T304 over the threshold
SHRT310	Report the successful handover information to the network for the elapsed time of the timer T310 over the threshold
SHRT312	Report the successful handover information to the network the ror elapsed time of the timer T312 over the threshold
SHRRLF	Report the successful handover information to the network for radio link failure
DeactivatedSCG	Indicate that SCG is in deactivated state
QoE	Configure Quality of Experience measurement
LTM	L1/L2-triggered mobility
LTM_CSI	CSI configuration for LTM
uuRelaySRB0_SRB1	Establish uu RelayRLC Channel for SRB0 and SRB1
uuRelaySRB2_DRB1	Establish uu RelayRLC Channel for SRB2 and DRB1
PC5RelaySRB1	Establish PC5 RelayRLC Channel for SRB1
PC5RelaySRB2_DRB1	Establish PC5 RelayRLC Channel for SRB2 and DRB1
UAV	Uncrewed Aerial Vehicles Configurations

– *RRCReconfigurationComplete*

Table 4.6.1-14: RRCReconfigurationComplete

Derivation Path: TS 38.331 [6], clause 6.2.2			
Information Element	Value/remark	Comment	Condition
RRCReconfigurationComplete ::= SEQUENCE {			
rrc-TransactionIdentifier	Not checked		
	RRC-TransactionIdentifier		L2RelayUE
criticalExtensions CHOICE {			
rrcReconfigurationComplete SEQUENCE {			
lateNonCriticalExtension	Not checked		
	Not present		L2RelayUE
nonCriticalExtension	Not checked		
	Not present		L2RelayUE
nonCriticalExtension SEQUENCE {			NR-DC, NE-DC
uplinkTxDirectCurrentList	Not checked		
nonCriticalExtension SEQUENCE {			
scg-Response CHOICE {			
nr-SCG-Response	RRCReconfigurationComplete	OCTET STRING (CONTAINING RRCReconfigurationComplete)	NR-DC
eutra-SCG-Response	RRCConnectionReconfigurationComplete	OCTET STRING	NE-DC
}			
nonCriticalExtension	Not checked		
nonCriticalExtension SEQUENCE {			CPA
nonCriticalExtension SEQUENCE {			
nonCriticalExtension SEQUENCE {			
selectedCondRRCReconfig-r17	CondReconfigId-r16		
}			
}			
}			
}			
}			
nonCriticalExtension	Not checked		
	Not present		L2RelayUE
}			
}			

Condition	Explanation
NR-DC	Used in NR-DC configuration
NE-DC	NR E-UTRA Dual Connectivity is configured
L2RelayUE	For L2 U2N Relay UE test cases
CPA	Conditional PSCell addition

– *RRCReject*

Table 4.6.1-15: RRCReject

Derivation Path: TS 38.331 [6], clause 6.2.2			
Information Element	Value/remark	Comment	Condition
RRCReject ::= SEQUENCE {			
criticalExtensions CHOICE {			
rrcReject SEQUENCE {			
waitTime	1		
lateNonCriticalExtension	Not present		
nonCriticalExtension	Not present		
}			

}			
}			

– *RRCRelease*

Table 4.6.1-16: RRCRelease

Derivation Path: TS 38.331 [6], clause 6.2.2			
Information Element	Value/remark	Comment	Condition
RRCRelease ::= SEQUENCE {			
rrc-TransactionIdentifier	RRC-TransactionIdentifier		
criticalExtensions CHOICE {			
rrcRelease SEQUENCE {			
redirectionCarrierInfo	Not present		
cellReselectionPriorities	Not present		
suspendConfig	Not present		
suspendConfig SEQUENCE {			NR_RRC_I NACTIVE
fullI-RNTI	I-RNTI-Value		
shortI-RNTI	ShortI-RNTI-Value		
ran-PagingCycle	rf32		
ran-NotificationAreaInfo CHOICE {			
cellList SEQUENCE (SIZE (1..maxPLMNIdentities)) OF PLMN-RAN-AreaCell {	1 entry		
PLMN-RAN-AreaCellList[1] SEQUENCE {		entry 1	
plmn-Identity	Not present		
ran-AreaCells SEQUENCE (SIZE (1..32)) OF CellIdentity {	1 entry		
CellIdentity[1]	CellIdentity	entry 1 Cellidentity for the used cell.	
}			
}			
}			
}			
t380	Not present		
nextHopChainingCount	NextHopChainingCount		
sl-UEIdentityRemote-r17	Not present		
sl-UEIdentityRemote-r17	RNTI-Value		L2RemoteU E
sdt-Config-r17	Not present		
sdt-Config-r17 CHOICE {			SDT, MT_SDT
setup SEQUENCE {			
sdt-DRB-List-r17 SEQUENCE (SIZE (0..maxDRB)) OF DRB-Identity {	1 entry		
DRB-Identity	DRB-Identity using condition DRB1		
}			
sdt-SRB2-Indication-r17	Not present		
	allowed		pc_srb_SDT _r17
sdt-MAC-PHY-CG-Config-r17 CHOICE {			
setup SEQUENCE {			
cg-SDT-ConfigLCH-RestrictionToAddModList-r17 SEQUENCE (SIZE(1..maxLC-ID)) OF CG-SDT-Config-LCH-restriction-r17 {	1 entry		
logicalChannelIdentity-r17	LogicalChannelIdentity with condition DRB1		
configuredGrantType1Allowed-r17	true		
allowedCG-List-r17	Not present		
}			

cg-SDT-ConfigLCH-RestrictionToReleaseList-r17	Not present		
cg-SDT-ConfigInitialBWP-NUL-r17	Not present		
cg-SDT-ConfigInitialBWP-SUL-r17	Not present		
cg-SDT-ConfigInitialBWP-DL-r17	Not present		
cg-SDT-TimeAlignmentTimer-r17	ms750		
cg-SDT-RSRP-ThresholdSSB-r17	66		
cg-SDT-TA-ValidationConfig-r17	Not present		
cg-SDT-CS-RNTI-r17	Not present		
cg-SDT-ConfigLCH-RestrictionToAddModListExt-v1800	Not present		
cg-SDT-ConfigLCH-RestrictionToAddModListExt-v1800 SEQUENCE (SIZE(1..maxLC-ID)) OF CG-SDT-ConfigLCH-Restriction-v1800 {	1 entry		MT_SDT AND pc_cg-SDT-PeriodicityExt-r18
cg-MT-SDT-MaxDurationToNext-CG-Occasion-r18 [1]	FFS	Entry 1	
}			
cg-MT-SDT-MaxDurationToNextCG-Occasion-r18	Not present		
}			
sdt-DRB-ContinueROHC-r17	Not present		
}			
srs-PosRRC-Inactive-r17	Not present		
ran-ExtendedPagingCycle-r17	Not present		
multicastConfigInactive-r18	Not present		
multicastConfigInactive-r18 CHOICE {			MBS_Multicast_Inactive
setup SEQUENCE {			
inactivePTM-Config-r18	MBSMulticastConfiguration		
inactiveMCCH-Config-r18	SystemInformation	Only SIB24	
}			
}			
}			
deprioritisationReq	Not present		
lateNonCriticalExtension	Not present		
nonCriticalExtension	Not present		
}			
}			
}			

Condition	Explanation
NR_RRC_INACTIVE	NR RRC state RRC_INACTIVE
SDT	For SDT test cases
L2RemoteUE	For L2 U2N Remote UE test cases.
MT-SDT	For MT-SDT test cases
e	Used for MBS Multicast reception when UE in RRC_INACTIVE state

– *RRCResume*

Table 4.6.1-17: RRCResume

Derivation Path: TS 38.331 [6], clause 6.2.2			
Information Element	Value/remark	Comment	Condition
RRCResume ::= SEQUENCE {			
rrc-TransactionIdentifier	RRC-TransactionIdentifier		
criticalExtensions CHOICE {			
rrcResume SEQUENCE {			

radioBearerConfig	RadioBearerConfig with condition RESUME		
masterCellGroup	CellGroupConfig with condition RESUME	OCTET STRING (CONTAINING CellGroupConfig)	
measConfig	Not present		
fullConfig	Not present		
lateNonCriticalExtension	Not present		
nonCriticalExtension	Not present		
nonCriticalExtension SEQUENCE {			L2RemoteUE
radioBearerConfig2	Not present		
sk-Counter	Not present		
nonCriticalExtension SEQUENCE {			
idleModeMeasurementReq-r16	Not present		
restoreMCG-SCells-r16	Not present		
restoreSCG-r16	Not present		
mrdc-SecondaryCellGroup-r16	Not present		
needForGapsConfigNR-r16	Not present		
nonCriticalExtension SEQUENCE {			
sl-ConfigDedicatedNR-r17	Not present		
sl-L2RemoteUE-Config-r17 CHOICE {			
setup	SL-L2RemoteUE-Config-r17		
}			
needForGapNCSG-ConfigNR-r17	Not present		
needForGapNCSG-ConfigEUTRA-r17	Not present		
scg-State-r17	Not present		
appLayerMeasConfig-r17	Not present		
nonCriticalExtension	Not present		
}			
}			
}			
}			
}			

Condition	Explanation
L2RemoteUE	For L2 U2N Remote UE test cases.

– *RRCResumeComplete*

Table 4.6.1-18: RRCResumeComplete

Derivation Path: TS 38.331 [6], clause 6.2.2			
Information Element	Value/remark	Comment	Condition
RRCResumeComplete ::= SEQUENCE {			
rrc-TransactionIdentifier	RRC-TransactionIdentifier		
criticalExtensions CHOICE {			
rrcResumeComplete SEQUENCE {			
dedicatedNAS-Message	Not checked		
selectedPLMN-Identity	Not checked		
uplinkTxDirectCurrentList	Not checked		
lateNonCriticalExtension	Not checked		
nonCriticalExtension	Not checked		
}			
}			
}			

– *RRCResumeRequest*

Table 4.6.1-19: RRCResumeRequest

Derivation Path: TS 38.331 [6], clause 6.2.2			
Information Element	Value/remark	Comment	Condition
RRCResumeRequest ::= SEQUENCE {			
rrcResumeRequest SEQUENCE {			
resumIdentity	ShortI-RNTI-Value		
resumeMAC-I	Not checked		
resumeCause	ResumeCause		
spare	Not checked		
}			
}			

– *RRCResumeRequest1*

Table 4.6.1-20: RRCResumeRequest1

Derivation Path: TS 38.331 [6], clause 6.2.2			
Information Element	Value/remark	Comment	Condition
RRCResumeRequest1 ::= SEQUENCE {			
rrcResumeRequest1 SEQUENCE {			
resumIdentity	I-RNTI-Value		
resumeMAC-I	Not checked		
resumeCause	ResumeCause		
spare	Not checked		
}			
}			

– *RRCSetup*

Table 4.6.1-21: RRCSetup

Derivation Path: TS 38.331 [6], clause 6.2.2			
Information Element	Value/remark	Comment	Condition
RRCSetup ::= SEQUENCE {			
rrc-TransactionIdentifier	RRC-TransactionIdentifier		
criticalExtensions CHOICE {			
rrcSetup SEQUENCE {			
radioBearerConfig	RadioBearerConfig with condition SRB1		
masterCellGroup	CellGroupConfig with condition SRB1	OCTET STRING (CONTAINING CellGroupConfig)	
lateNonCriticalExtension	Not present		
nonCriticalExtension	Not present		
nonCriticalExtension SEQUENCE {			L2RemoteUE
sl-ConfigDedicatedNR-r17	Not present		
sl-L2RemoteUE-Config-r17	SL-L2RemoteUE-Config with condition SRB1		
nonCriticalExtension	Not present		
}			
}			
}			

Condition	Explanation
L2RemoteUE	For L2 U2N Remote UE test cases.

– *RRCSetupComplete*

Table 4.6.1-22: *RRCSetupComplete*

Derivation Path: TS 38.331 [6], clause 6.2.2			
Information Element	Value/remark	Comment	Condition
RRCSetupComplete ::= SEQUENCE {			
rrc-TransactionIdentifier	RRC-TransactionIdentifier		
criticalExtensions CHOICE {			
rrcSetupComplete SEQUENCE {			
selectedPLMN-Identity	Not checked		
	1		L2RelayUE
registeredAMF	Not checked		
	Not present		L2RelayUE
guami-Type	Not checked		
	Not present		L2RelayUE
s-nssai-List	Not checked		
	Not present		L2RelayUE
dedicatedNAS-Message	DedicatedNAS-Message		
ng-5G-S-TMSI-Value	Not checked		
	Not present		L2RelayUE
lateNonCriticalExtension	Not checked		
	Not present		L2RelayUE
nonCriticalExtension	Not checked		
	Not present		L2RelayUE
}			
}			
}			

Condition	Explanation
L2RelayUE	For L2 U2N Relay UE test cases.

– *RRCSetupRequest*

Table 4.6.1-23: *RRCSetupRequest*

Derivation Path: TS 38.331 [6], clause 6.2.2			
Information Element	Value/remark	Comment	Condition
RRCSetupRequest ::= SEQUENCE {			
rrcSetupRequest SEQUENCE {			
ue-Identity CHOICE {			
randomValue	Not checked		
	'00010100100000010001 1100001011000001010' B		L2RelayUE
}			
establishmentCause	Not checked		
	mo-Signalling		L2RelayUE
spare	Not checked		
	'0'B		L2RelayUE
}			
}			

Condition	Explanation
L2RelayUE	For L2 U2N Relay UE test cases.

– *RRCSysInfoRequest***Table 4.6.1-24: *RRCSysInfoRequest***

Derivation Path: TS 38.331 [6], clause 6.2.2			
Information Element	Value/remark	Comment	Condition
RRCSysInfoRequest ::= SEQUENCE {			
criticalExtensions CHOICE {			
rrcSysInfoRequest SEQUENCE {			
requested-SI-List	Not checked		
spare	Not checked		
}			
}			
}			

– *SCGFailureInformation***Table 4.6.1-24A: *SCGFailureInformation***

Derivation Path: TS 38.331 [6], clause 6.2.2			
Information Element	Value/remark	Comment	Condition
SCGFailureInformation ::= SEQUENCE {			
criticalExtensions CHOICE {			
scgFailureInformation SEQUENCE {			
failureReportSCG	Not checked		
nonCriticalExtension	Not checked		
}			
}			
}			

– *SCGFailureInformationEUTRA***Table 4.6.1-24B: *SCGFailureInformationEUTRA***

Derivation Path: TS 38.331 [6], clause 6.2.2			
Information Element	Value/remark	Comment	Condition
SCGFailureInformationEUTRA ::= SEQUENCE {			
criticalExtensions CHOICE {			
scgFailureInformationEUTRA SEQUENCE {			
failureReportSCG-EUTRA	Not checked		
nonCriticalExtension	Not checked		
}			
}			
}			

– *SecurityModeCommand***Table 4.6.1-25: *SecurityModeCommand***

Derivation Path: TS 38.331 [6], clause 6.2.2			
Information Element	Value/remark	Comment	Condition
SecurityModeCommand ::= SEQUENCE {			
rrc-TransactionIdentifier	RRC-TransactionIdentifier		
criticalExtensions CHOICE {			
securityModeCommand SEQUENCE {			
securityConfigSMC SEQUENCE {			
securityAlgorithmConfig	SecurityAlgorithmConfig		
}			
lateNonCriticalExtension	Not present		

nonCriticalExtension	Not present		
}			
}			
}			

– *SecurityModeComplete*

Table 4.6.1-26: SecurityModeComplete

Derivation Path: TS 38.331 [6], clause 6.2.2			
Information Element	Value/remark	Comment	Condition
SecurityModeComplete ::= SEQUENCE {			
rrc-TransactionIdentifier	RRC-TransactionIdentifier		
criticalExtensions CHOICE {			
securityModeComplete SEQUENCE {			
lateNonCriticalExtension	Not checked		
	Not present		L2RelayUE
nonCriticalExtension	Not checked		
	Not present		L2RelayUE
}			
}			
}			
}			

Condition	Explanation
L2RelayUE	For L2 U2N Relay UE test cases

– *SecurityModeFailure*

Table 4.6.1-27: SecurityModeFailure

Derivation Path: TS 38.331 [6], clause 6.2.2			
Information Element	Value/remark	Comment	Condition
SecurityModeFailure ::= SEQUENCE {			
rrc-TransactionIdentifier	RRC-TransactionIdentifier		
criticalExtensions CHOICE {			
securityModeFailure SEQUENCE {			
lateNonCriticalExtension	Not checked		
nonCriticalExtension	Not checked		
}			
}			
}			
}			

– *SIB1*

Table 4.6.1-28: SIB1

Derivation Path: TS 38.331 [6], clause 6.2.2			
Information Element	Value/remark	Comment	Condition
SIB1 ::= SEQUENCE {			
cellSelectionInfo SEQUENCE {			
q-RxLevMin	-70	-140 dBm	RF OR RRM
	-55	-110 dBm	SIG AND FR1
	ROUND((-110+Delta(NRfs))/2)	-110+Delta(NRfs)	SIG AND FR2
q-RxLevMinOffset	Not present		
q-RxLevMinSUL	Not Present		

	-70	-140 dBm	SUL AND (RF OR RRM)
	-55	-110 dBm	SUL AND SIG
q-QualMin	-20	-20dB	QBASED
	Not present		
q-QualMinOffset	Not present		
}			
cellAccessRelatedInfo	CellAccessRelatedInfo		
connEstFailureControl	ConnEstFailureControl		
si-SchedulingInfo	Not present		NR_1
	SI-SchedulingInfo		
servingCellConfigCommon	ServingCellConfigCommonSIB		
	ServingCellConfigCommonSIB with condition PEI		PEI
	ServingCellConfigCommonSIB with condition SDT		SDT
	ServingCellConfigCommonSIB with condition MBS_Multicast_Inactive		MBS_Multicast_Inactive
ims-EmergencySupport	Not present		
	true	Indicates the cell supports IMS emergency bearer services for UEs in limited service mode.	SIG
eCallOverIMS-Support	Not present		
	true	Support of eCall over IMS services	eCallOverIMSforNR
ue-TimersAndConstants	UE-TimersAndConstants		
uac-BarringInfo	Not present		
useFullResumeID	Not present		
lateNonCriticalExtension	Not present		
nonCriticalExtension	Not present		
nonCriticalExtension SEQUENCE {			EMR_EUTRA, EMR_NR, posSIB, pc_supportOfRedCap_r17, SDT, MT_SDT, ATG, MUSIM r18, pc_supportOfRedCap_r18, SI_Msg1Repetition
idleModeMeasurementsEUTRA-r16	Not present		
	true		EMR_EUTRA
idleModeMeasurementsNR-r16	Not present		
	true		EMR_NR
posSI-SchedulingInfo-r16	PosSI-SchedulingInfo-r16		
	PosSI-SchedulingInfo-r16		posSIB
nonCriticalExtension SEQUENCE {			
uac-BarringInfo-v1630	Not present		
nonCriticalExtension SEQUENCE {			
hsdn-Cell-r17	Not present		
uac-BarringInfo-v1700	Not present		
sdt-ConfigCommon-r17	Not present		

sdt-ConfigCommon-r17 SEQUENCE {			SDT
sdt-RSRP-Threshold-r17	66		
sdt-LogicalChannelSR-DelayTimer-r17	Not present		
sdt-DataVolumeThreshold-r17	byte1000		
t319a-r17	ms1000		
}			
redCap-ConfigCommon-r17	Not present		
redCap-ConfigCommon-r17 SEQUENCE {			pc_halfDuplexFDD_TypeA_RedCap_r17 AND FDD
halfDuplexRedCapAllowed-r17	true		
cellBarredRedCap-r17	Not present		
}			
featurePriorities-r17	Not present		
si-SchedulingInfo-v1700	Not present		
	SI-SchedulingInfo-v1700		SIBs_r17
hyperSFN-r17	Not present		
eDRX-AllowedIdle-r17	Not present		
eDRX-AllowedInactive-r17	Not present		
intraFreqReselectionRedCap-r17	Not present		
	allowed		pc_supportOfRedCap_r17
cellBarredNTN-r17	Not present		
	notBarred		NTN
nonCriticalExtension	Not present		
nonCriticalExtension SEQUENCE {			MUSIM_r18, MT-SDT, SI_Msg1Repetition, ATG, pc_supportOfERedCap_r18
si-SchedulingInfo-v1740	Not present		
nonCriticalExtension SEQUENCE {			
ncr-Support-r18	Not present		
mt-SDT-ConfigCommonSIB-r18	Not present		
mt-SDT-ConfigCommonSIB-r18 SEQUENCE {			MT-SDT
mt-SDT-RSRP-Threshold-r18	FFS		
sdt-LogicalChannelSR-DelayTimer-r18	FFS		
t319a-r18	FFS		
}			
}			
musim-CapRestrictionAllowed-r18	Not present		
	true		MUSIM_r18
featurePriorities-v1800	Not present		
si-SchedulingInfo-v1800	Not present		
	SI-SchedulingInfo-v1800		SI_Msg1Repetition
cellBarredATG-r18	Not present		
	notBarred		ATG
cellBarredNES-r18	Not present		
mobileIAB-Cell-r18	Not present		
eDRX-AllowedInactive-r18	Not present		
intraFreqReselection-eRedCap-r18	Not present		
	allowed		pc_supportOfERedCap_r18
nonServingCellMII-r18	Not present		
sdt-BeamFailureRecoveryProhibitTimer-r18	Not present		
eRedCap-ConfigCommon-r18	Not present		
cellBarredFixedVSAT-r18	Not present		
cellBarredMobileVSAT-r18	Not present		

reselectionMeasurementsNR-r18	Not present		
cellBarred2RxXR-r18	Not present		
intraFreqReselection2RxXR-r18	Not present		
barringExemptEmergencyCall-r18	Not present		
n3c-Support-r18	Not present		
nonCriticalExtension	Not present		
}			
}			
}			
}			
}			
NOTE 1: Delta(NRfs) is derived based on calibration procedure defined in the clause 6.1.3.3. NRfs is NR frequency on which SIB1 is broadcasted.			
NOTE 2: ROUND is rounded off to the nearest integer. As an example, '1 to 1.49' set to '1' while '1.5 to 2' to '2' and '-2.0 to 1.5' set to '-2' while '-1.49 to -1' set to '-1'.			

Condition	Explanation
SUL	For test cases using SUL frequency for the serving cell, Qrxlevmin is obtained from q-RxLevMinSUL.
QBASED	This condition applies to Quality based signalling test cases.
NR_1	System information combination NR-1 according table 4.4.3.1.2-1 is applied.
SIG	Used for signalling test cases.
eCalloverIMSforNR	Used for eCall over IMS test cases (TS 38.523-1[12], TS 34.229-5[47])
posSIB	For test cases using posSIBs in system information.
EMR_EUTRA	For E-UTRA idle/inactive measurement test cases.
EMR_NR	For NR idle/inactive measurement test cases.
SDT	For SDT test cases
NTN	For NTN test cases
PEI	Paging Early Indication is configured in the cell.
SIBs_r17	For test cases using sibTypes defined in SIB-TypeInfo-v1700.
MT-SDT	For MT-SDT test cases
ATG	For ATG test cases
MUSIM_r18	For Rel-18 MUSIM test cases
SI_Msg1Repetition	For test cases using SI request with Msg1 repetition.
MBS Multicast Inactive	Used for MBS Multicast reception when UE in RRC INACTIVE state

SidelinkUEInformationNR

Table 4.6.1-28A: SidelinkUEInformationNR

Derivation Path: TS 38.331 [6], clause 6.2.2			
Information Element	Value/remark	Comment	Condition
SidelinkUEInformationNR-r16 ::= SEQUENCE {			
criticalExtensions CHOICE {			
sidelinkUEInformationNR-r16 SEQUENCE {			
sl-RxInterestedFreqList-r16	Not present		
sl-RxInterestedFreqList-r16 SEQUENCE (SIZE (1..maxNrofFreqSL-r16)) OF INTEGER {	1 entry		SIDELINK_RX
INTEGER[1]	1	entry 1	
}			
sl-TxResourceReqList-r16	Not present		
sl-TxResourceReqList-r16 SEQUENCE (SIZE (1..maxNrofSL-Dest-r16)) OF SL-TxResourceReq-r16 {	1 entry		SIDELINK_TX
SL-TxResourceReq-r16[1] SEQUENCE {		entry 1	
sl-DestinationIdentity-r16	SL-DestinationIdentity-r16		
sl-CastType-r16	unicast		
sl-RLC-ModeIndicationList-r16	Not present		

sl-QoS-InfoList-r16 SEQUENCE (SIZE (1..maxNrofSL-QFIsPerDest-r16)) OF SL-QoS-Info-r16 {	1 entry		
SL-QoS-Info-r16[1] SEQUENCE {		entry 1	
sl-QoS-FlowIdentity-r16	SL-QoS-FlowIdentity-r16		
sl-QoS-Profile-r16	SL-QoS-Profile-r16		
}			
}			
sl-TypeTxSyncList-r16 SEQUENCE (SIZE (1..maxNrofFreqSL-r16)) OF SL-TypeTxSync-r16 {	1 entry		
SL-TypeTxSync-r16[1]	SL-TypeTxSync-r16	entry 1	
}			
sl-TxInterestedFreqList-r16 SEQUENCE (SIZE (1..maxNrofFreqSL-r16)) OF INTEGER {	1 entry		
INTEGER[1]	1	entry 1	
}			
sl-CapabilityInformationSidelink-r16[1]	Not present		
}			
sl-FailureList-r16	Not present		
lateNonCriticalExtension	Not present		
nonCriticalExtension	Not present		
nonCriticalExtension SEQUENCE {			L2RelayUE
sl-TxResourceReqList-v1700	Not checked		
sl-RxDRX-ReportList-v1700	Not checked		
sl-RxInterestedGC-BC-DestList-r17	Not checked		
sl-RxInterestedFreqListDisc-r17	Not checked		
sl-TxResourceReqListDisc-r17	Not checked		
sl-TxResourceReqListCommRelay-r17 SEQUENCE (SIZE (1..maxNrofSL-Dest-r16)) OF SL-TxResourceReqCommRelayInfo-r17 {			
SL-TxResourceReqCommRelayInfo-r17 [1] SEQUENCE {		entry 1	
sl-RelayDRXConfig-r17	Not checked		
sl-TxResourceReqCommRelay-r17 CHOICE {			
sl-TxResourceReqL2U2N-Relay-r17 SEQUENCE {			
sl-DestinationIdentityL2U2N-r17	SL-DestinationIdentity-r16		
sl-TxInterestedFreqListL2U2N-r17 SEQUENCE (SIZE (1..maxNrofFreqSL-r16)) OF INTEGER {			
INTEGER[1]	1		
}			
}			
}			
sl-TypeTxSyncListL2U2N-r17 SEQUENCE (SIZE (1..maxNrofFreqSL-r16)) OF SL-TypeTxSync-r16 {			
SL-TypeTxSync-r16[1]	SL-TypeTxSync-r16	entry 1	
}			
sl-LocalID-Request-r17	true		
sl-PagingIdentityRemoteUE-r17 SEQUENCE {			
ng-5G-S-TMSI-r17	NG-5G-S-TMSI		
fullI-RNTI-r17	Not checked		
}			
sl-CapabilityInformationSidelink-r17	OCTET STRING containing UECapabilityInformation Sidelink specified in Table 4.6.1A-7 with condition RX		
}			
}			
}			
}			
ue-Type-r17	relayUE		

sl-SourceIdentityRemoteUE-r17	Not checked		
nonCriticalExtension	Not present		
}			
}			
}			
}			

Condition	Explanation
SIDELINK_TX	Used when UE indicates its interest on sidelink transmission.
SIDELINK_RX	Used when UE indicates its interest on sidelink reception.
L2RelayUE	For L2 U2N Relay UE test cases.

– *SystemInformation*

Table 4.6.1-29: SystemInformation

Derivation Path: TS 38.331 [6], clause 6.2.2			
Information Element	Value/remark	Comment	Condition
SystemInformation ::= SEQUENCE {			
criticalExtensions CHOICE {			
systemInformation SEQUENCE {			
sib-TypeAndInfo SEQUENCE (SIZE (1..maxSIB))	n entries	See subclause 4.4.3.1.3 for number of entries and SIB types.	
OF CHOICE {			
CHOICE [n]	A reference to a valid system information block	entry n. E.g, SIB2.	
}			
lateNonCriticalExtension	Not present		
nonCriticalExtension	Not present		
}			
criticalExtensionsFuture-r16 CHOICE {			posSIB
posSystemInformation-r16	PosSystemInformation-r16-IEs		
}			
}			
}			

Condition	Explanation
posSIB	For test cases using posSIBs in system information.

– *UEAssistanceInformation*

Table 4.6.1-30: UEAssistanceInformation

Derivation Path: TS 38.331 [6], clause 6.2.2			
Information Element	Value/remark	Comment	Condition
UEAssistanceInformation ::= SEQUENCE {			
criticalExtensions CHOICE {			
ueAssistanceInformation SEQUENCE {			
delayBudgetReport CHOICE {			
type1	Not checked		
}			
lateNonCriticalExtension	Not checked		
nonCriticalExtension	Not checked		
nonCriticalExtension SEQUENCE {			SIDELINK
overheatingAssistance	Not checked		
nonCriticalExtension SEQUENCE {			
idc-Assistance-r16	Not checked		
drx-Preference-r16	Not checked		

maxBW-Preference-r16	Not checked		
maxCC-Preference-r16	Not checked		
maxMIMO-LayerPreference-r16	Not checked		
minSchedulingOffsetPreference-r16	Not checked		
releasePreference-r16	Not checked		
sl-UE-AssistanceInformationNR-r16	Not checked		
sl-UE-AssistanceInformationNR-r16 SEQUENCE (SIZE (1..maxNrofTrafficPattern-r16)) OF SL-TrafficPatternInfo-r16 {	1 entry		SIDELINK
SL-TrafficPatternInfo-r16[1] SEQUENCE {		entry 1	
trafficPeriodicity-r16	FFS		
timingOffset-r16	FFS		
messageSize-r16	FFS		
sl-QoS-FlowIdentity-r16	SL-QoS-FlowIdentity-r16		
}			
}			
referenceTimeInfoPreference-r16	Not checked		
nonCriticalExtension	Not checked		
nonCriticalExtension SEQUENCE {			SDT
ul-GapFR2-Preference-r17	Not checked		
musim-Assistance-r17	Not checked		
overheatingAssistance-r17	Not checked		
maxBW-PreferenceFR2-2-r17	Not checked		
maxMIMO-LayerPreferenceFR2-2-r17	Not checked		
minSchedulingOffsetPreferenceExt-r17	Not checked		
rlm-MeasRelaxationState-r17	Not checked		
bfd-MeasRelaxationState-r17	Not checked		
nonSDT-DataIndication-r17 SEQUENCE {			SDT
resumeCause-r17	mo-Data		
}			
scg-DeactivationPreference	Not checked		
uplinkData-r17	Not checked		
rrm-MeasRelaxationFulfilment-r17	Not checked		
propagationDelayDifference-r17	Not checked		
nonCriticalExtension	Not checked		
}			
}			
}			
}			
}			
}			

Condition	Explanation
SIDELINK	For NR sidelink dedicated configuration
SDT	For SDT test cases

– *UECapabilityEnquiry*

Table 4.6.1-31: UECapabilityEnquiry

Derivation Path: TS 38.331 [6], clause 6.2.2			
Information Element	Value/remark	Comment	Condition
UECapabilityEnquiry ::= SEQUENCE {			
rrc-TransactionIdentifier	RRC-TransactionIdentifier		
criticalExtensions CHOICE {			
ueCapabilityEnquiry SEQUENCE {			
ue-CapabilityRAT-RequestList	UE-CapabilityRAT-RequestList		
lateNonCriticalExtension	Not present		
ue-CapabilityEnquiryExt	Not present		
	OCTET STRING Containing		NR-DC

	UECapabilityEnquiry-v1560-IEs		
}			
}			
}			

Condition	Explanation
NR-DC	Used in NR-DC test cases

– *UECapabilityInformation*

Table 4.6.1-32: UECapabilityInformation

Derivation Path: TS 38.331 [6], clause 6.2.2			
Information Element	Value/remark	Comment	Condition
UECapabilityInformation ::= SEQUENCE {			
rrc-TransactionIdentifier	RRC-TransactionIdentifier		
criticalExtensions CHOICE {			
ueCapabilityInformation SEQUENCE {			
ue-CapabilityRAT-ContainerList	UE-CapabilityRAT-ContainerList		
lateNonCriticalExtension	Not checked		
nonCriticalExtension	Not checked		
}			
}			
}			

– *UEInformationRequest*

Table 4.6.1-32A: UEInformationRequest

Derivation Path: TS 38.331 [6], clause 6.2.2			
Information Element	Value/remark	Comment	Condition
UEInformationRequest-r16 ::= SEQUENCE {			
rrc-TransactionIdentifier	RRC-TransactionIdentifier		
criticalExtensions CHOICE {			
ueInformationRequest-r16 SEQUENCE {			
idleModeMeasurementReq-r16	Not present		
	true		IDLE
logMeasReportReq-r16	Not present		
	true		LOG
connEstFailReportReq-r16	true		
ra-ReportReq-r16	Not present		
	true		RA
r1f-ReportReq-r16	Not present		
	true		RLF
mobilityHistoryReportReq-r16	Not present		
	true		HISTORY
lateNonCriticalExtension	Not present		
nonCriticalExtension	Not present		
nonCriticalExtension SEQUENCE {			SHR, CL
successHO-ReportReq-r17	Not present		
	true		SHR
coarseLocationRequest-r17	Not present		
	true		CL
nonCriticalExtension	Not present		
}			
}			
}			

}			

Condition	Explanation
IDLE	Idle/inactive measurement information reporting
LOG	Logged measurement information reporting
RA	Random access procedure information reporting
RLF	Radio link failure information reporting
HISTORY	Mobility history information reporting
SHR	Successful handover information reporting
CL	Coarse location information reporting

– *UEInformationResponse*

Table 4.6.1-32B: UEInformationResponse

Derivation Path: TS 38.331 [6], clause 6.2.2			
Information Element	Value/remark	Comment	Condition
UEInformationResponse-r16 ::= SEQUENCE {			
rrc-TransactionIdentifier	RRC-TransactionIdentifier		
criticalExtensions CHOICE {			
ueInformationResponse-r16 SEQUENCE {			
measResultIdleEUTRA-r16	Not checked		
measResultIdleNR-r16	Not checked		
logMeasReport-r16	Not checked		
connEstFailReport-r16	Not checked		
ra-ReportList-r16	Not checked		
rlf-Report-r16	Not checked		
mobilityHistoryReport-r16	Not checked		
lateNonCriticalExtension	Not checked		
nonCriticalExtension	Not checked		
}			
}			
}			

– *UEPositioningAssistanceInfo*

Table 4.6.1-32CA: UEPositioningAssistanceInfo

Derivation Path: TS 38.331 [6], clause 6.2.2			
Information Element	Value/remark	Comment	Condition
UEPositioningAssistanceInfo-r17 ::= SEQUENCE {			
FFS			
}			

– *ULDedicatedMessageSegment*

Table 4.6.1-32C: ULDedicatedMessageSegment

Derivation Path: TS 38.331 [6], clause 6.2.2			
Information Element	Value/remark	Comment	Condition
ULDedicatedMessageSegment-r16 ::= SEQUENCE {			
criticalExtensions CHOICE {			
ulDedicatedMessageSegment-r16 SEQUENCE {			
segmentNumber-r16	Any allowed value between 0 to 15		
rrc-MessageSegmentContainer-r16	Not Checked	OCTET STRING including segmented	

		UECapabilityInformation message	
rrc-MessageSegmentType-r16	Not Checked		
lateNonCriticalExtension	Not checked		
nonCriticalExtension	Not checked		
}			
}			
}			

– *ULInformationTransfer*

Table 4.6.1-33: *ULInformationTransfer*

Derivation Path: TS 38.331 [6], clause 6.2.2			
Information Element	Value/remark	Comment	Condition
ULInformationTransfer ::= SEQUENCE {			
criticalExtensions CHOICE {			
ulInformationTransfer SEQUENCE {			
dedicatedNAS-Message	DedicatedNAS-Message		
lateNonCriticalExtension	Not checked		
nonCriticalExtension	Not checked		
}			
}			
}			

– *ULInformationTransferIRAT*

Table 4.6.1-33A: *ULInformationTransferIRAT*

Derivation Path: TS 38.331 [6], clause 6.2.2			
Information Element	Value/remark	Comment	Condition
ULInformationTransferIRAT-r16 ::= SEQUENCE {			
FFS			
}			

– *ULInformationTransferMRDC*

Table 4.6.1-34: *ULInformationTransferMRDC*

Derivation Path: TS 38.331 [6], clause 6.2.2			
Information Element	Value/remark	Comment	Condition
ULInformationTransferMRDC ::= SEQUENCE {			
criticalExtensions CHOICE {			
c1 CHOICE {			
ulInformationTransferMRDC SEQUENCE {			
ul-DCCH-MessageNR	Not checked		
ul-DCCH-MessageEUTRA	Not checked		
lateNonCriticalExtension	Not checked		
nonCriticalExtension	Not checked		
}			
}			
}			
}			

4.6.1A Contents of PC5 RRC messages

– *MasterInformationBlockSidelink*

Table 4.6.1A-1: *MasterInformationBlockSidelink*

Derivation Path: TS 38.331 [6], clause 6.6.2			
Information Element	Value/remark	Comment	Condition
MasterInformationBlockSidelink ::= SEQUENCE {			
sl-TDD-Config-r16	111111111111		
inCoverage-r16	true		RX AND (GNSS_SYNC OR NB_SYNC)
	false		RX AND (UE_SYNC OR INTERNAL_SYNC)
	Not Checked		TX
directFrameNumber-r16	DFN of the radio frame in which the S-SSB containing this message is transmitted		
slotIndex-r16	slot index of the slot in which the S-SSB containing this message is transmitted		
reservedBits-r16	00		
}			

Condition	Explanation
GNSS_SYNC	GNSS is used as the synchronization reference source
NB_SYNC	gNB or eNB is used as the synchronization reference source
UE_SYNC	SyncRef UE is used as the synchronization reference source
INTERNAL_SYNC	Internal clock is used as the synchronization reference source
TX	UE transmits and NR-SS-UE receives.
RX	UE receives and NR-SS-UE transmits.

– *MeasurementReportSidelink*

Table 4.6.1A-2: *MeasurementReportSidelink*

Derivation Path: TS 38.331 [6], clause 6.6.2			
Information Element	Value/remark	Comment	Condition
MeasurementReportSidelink ::= SEQUENCE {			
criticalExtensions CHOICE {			
measurementReportSidelink-r16 SEQUENCE {			
sl-measResults-r16 SEQUENCE {			
sl-MeasId-r16	1		
sl-MeasResult-r16 SEQUENCE {			
sl-ResultDMRS-r16 SEQUENCE {			
sl-RSRP-r16	(0..127)		TX
	71	actual value is (71-156) = -85dBm	RX
}			
}			
}			
lateNonCriticalExtension	Not checked		TX

	Not present		RX
nonCriticalExtension	Not checked		TX
	Not present		RX
}			
}			
}			

Condition	Explanation
TX	UE transmits and NR-SS-UE receives.
RX	UE receives and NR-SS-UE transmits.

RemoteUEInformationSidelink

Table 4.6.1A-2A: RemoteUEInformationSidelink

Derivation Path: TS 38.331 [6], clause 6.6.2			
Information Element	Value/remark	Comment	Condition
RemoteUEInformationSidelink-r17 ::= SEQUENCE {			
criticalExtensions CHOICE {			
remoteUEInformationSidelink-r17 SEQUENCE {			
sl-RequestedSIB-List-r17	Not present		
sl-RequestedSIB-List-r17 CHOICE {			RequestedSIB_Setup, RequestedSIB_Release
setup	Set according to parameter given in test case		RequestedSIB_Setup
release	NULL		RequestedSIB_Release
}			
sl-PagingInfo-RemoteUE-r17	Not present		
sl-PagingInfo-RemoteUE-r17 CHOICE {			Paging_Setup, Paging_Release
setup SEQUENCE {			Paging_Setup
sl-PagingIdentityRemoteUE-r17 ::= SEQUENCE {			
ng-5G-S-TMSI-r17	NG-5G-S-TMSI		
fullI-RNTI-r17	I-RNTI-Value		NR_RRC_RESUME
}			
sl-PagingCycleRemoteUE-r17	Not present		
}			
release	NULL		Paging_Release
}			
lateNonCriticalExtension	Not present		
nonCriticalExtension	Not present		
}			
}			
}			

Condition	Explanation
RequestedSIB_Setup	To request SIB(s)
RequestedSIB_Release	To release SIB(s) request
Paging_Setup	To provide paging related information
Paging_Release	To release paging related information
NR_RRC_RESUME	To page a UE in RRC_INACTIVE state to request RRC connection resumption

– NotificationMessageSidelink

Table 4.6.1A-2B: NotificationMessageSidelink

Derivation Path: TS 38.331 [6], clause 6.6.2			
Information Element	Value/remark	Comment	Condition
NotificationMessageSidelink-r17 ::= SEQUENCE {			
criticalExtensions CHOICE {			
notificationMessageSidelink-r17 SEQUENCE {			
indicationType-r17	relayUE-Uu-RLF		Uu_RLF
	relayUE-HO		HO
	relayUE-CellReselection		CellReselection
	relayUE-Uu-RRC-Failure		Uu_RRC_Failure
lateNonCriticalExtension	Not present		
nonCriticalExtension	Not present		
}			
}			
}			

Condition	Explanation
Uu_RLF	Relay UE initiates transmission of the NotificationMessageSidelink message due to Uu RLF
HO	Relay UE initiates transmission of the NotificationMessageSidelink message due to reconfiguration with sync
CellReselection	Relay UE initiates transmission of the NotificationMessageSidelink message due to cell reselection
Uu_RRC_Failure	Relay UE initiates transmission of the NotificationMessageSidelink message due to Uu RRC connection establishment/Resume failure

– RRCReconfigurationSidelink

Table 4.6.1A-3: RRCReconfigurationSidelink

Derivation Path: TS 38.331 [6], clause 6.6.2			
Information Element	Value/remark	Comment	Condition
RRCReconfigurationSidelink ::= SEQUENCE {			
rrc-TransactionIdentifier-r16	RRC-TransactionIdentifier		RX
	(0..3)		TX
criticalExtensions CHOICE {			
rrcReconfigurationSidelink-r16 SEQUENCE {			
slrb-ConfigToAddModList-r16	Not present		
slrb-ConfigToAddModList-r16 SEQUENCE (SIZE (1..maxNrofSLRB-r16)) OF SLRB-Config-r16 {	1 entry		SL_DRB
SLRB-Config-r16[1] SEQUENCE {		entry 1	
slrb-PC5-ConfigIndex-r16	Not checked		TX
	1		RX
sl-SDAP-ConfigPC5-r16	Set according to parameter given in test case		TX
sl-SDAP-ConfigPC5-r16 SEQUENCE {			RX
sl-MappedQoS-FlowsToAddList-r16 SEQUENCE (SIZE (1.. maxNrofSL-QFIsPerDest-r16)) OF SL-PQFI-r16 {	1 entry		
SL-PQFI-r16[1]	1	entry 1	
}			
sl-MappedQoS-FlowsToReleaseList-r16	Not present		
sl-SDAP-Header-r16	absent		
}			

sl-PDCP-ConfigPC5-r16	Set according to parameter given in test case		TX
sl-PDCP-ConfigPC5-r16 SEQUENCE {			RX
sl-PDCP-SN-Size-r16	len12bits		
sl-OutOfOrderDelivery-r16	Not present		
}			
sl-RLC-ConfigPC5-r16	Set according to parameter given in test case		TX
sl-RLC-ConfigPC5-r16 CHOICE {			RX
sl-AM-RLC-r16 SEQUENCE {			
sl-SN-FieldLengthAM-r16	size12		
}			
}			
sl-MAC-LogicalChannelConfigPC5-r16	Set according to parameter given in test case		TX
sl-MAC-LogicalChannelConfigPC5-r16 SEQUENCE {			RX
sl-LogicalChannelIdentity-r16	LogicalChannelIdentity with condition DRB1		
}			
}			
}			
slrb-ConfigToReleaseList-r16	Not present		
sl-MeasConfig-r16	Not present		
sl-MeasConfig-r16 CHOICE {			SL_MEAS
setup	Set according to parameter given in test case		TX
setup SEQUENCE {			RX
sl-MeasObjectToRemoveList-r16	Not present		
sl-MeasObjectToAddModList-r16	SL-MeasObjectList-		
sl-ReportConfigToRemoveList-r16	Not present		
sl-ReportConfigToAddModList-r16	SL-ReportConfigList		
sl-MeasIdToRemoveList-r16	Not present		
sl-MeasIdToAddModList-r16	SL-MeasIdList		
sl-QuantityConfig-r16	SL-QuantityConfig		
}			
}			
sl-CSI-RS-Config-r16	Not present		
sl-CSI-RS-Config-r16 CHOICE {			SL_CSI
setup	Set according to parameter given in test case		TX
setup SEQUENCE {			RX
sl-CSI-RS-FreqAllocation-r16 CHOICE {			
sl-OneAntennaPort-r16	000000000001		
}			
sl-CSI-RS-FirstSymbol-r16	6		
}			
}			
sl-ResetConfig-r16	Not present		
sl-LatencyBoundCSI-Report-r16	Not present		
	160		SL_CSI
lateNonCriticalExtension	Not checked		TX
	Not present		RX
nonCriticalExtension	Not checked		TX and not (L2RelayUE or L2RemoteUE or SL_DRX)
	Not present		RX and not (L2RelayUE

			or L2RemoteUE or SL_DRX)
nonCriticalExtension SEQUENCE {			L2RelayUE, L2RemoteUE, SL_DRX
sl-DRX-ConfigUC-PC5-r17	Not checked		TX and not SL_DRX
	Not present		RX and not SL_DRX
sl-DRX-ConfigUC-PC5-r17 CHOICE {			SL_DRX
setup	SL-DRX-ConfigUC		
}			
sl-LatencyBoundIUC-Report-r17	Not checked		TX
	Not present		RX
sl-RLC-ChannelToReleaseListPC5-r17	Not checked		TX
	Not present		RX
sl-RLC-ChannelToAddModListPC5-r17	Not checked		TX
sl-RLC-ChannelToAddModListPC5-r17 SEQUENCE (SIZE (1..maxSL-LCID-r16)) OF SL- RLC-ChannelConfigPC5-r17 {	2 entries		RX
SL-RLC-ChannelConfigPC5-r17[1]	SL-RLC- ChannelConfigPC5 with condition PC5RelaySRB2	entry 1	
SL-RLC-ChannelConfigPC5-r17[2]	SL-RLC- ChannelConfigPC5 with condition PC5RelayDRB1	entry 2	
}			
nonCriticalExtension	Not checked		TX and not SL_CA
	Not present		RX and not SL_CA
nonCriticalExtension SEQUENCE {			SL_CA
sl-SFN-DFN-Offset-r18	Not checked		TX
	Not present		RX
sl-CarrierToAddModList-r18 SEQUENCE (SIZE (1..maxNrofFreqSL-1-r18)) OF SL-CarrierConfig-r18 {	1 entry		
SL-CarrierConfig-r18[1] SEQUENCE {		entry 1	
sl-CarrierId-r18	1		
sl-OffsetToCarrier-r18	Not checked		TX
	offsetToCarrier as defined for the SL NRf1 frequency		RX
subcarrierSpacing-r18	Not checked		TX
	SubcarrierSpacing		RX
carrierBandwidth-r18	Not checked		TX
	carrierBandwidth as defined for the SL NRf1 frequency		RX
sl-AbsoluteFrequencyPointA-r18	Not checked		TX
	ARFCN-ValueNR with condition SL_PointA		RX
}			
}			
sl-CarrierToReleaseList-r18	Not present		
sl-RLC-BearerToAddModList-r18	Not checked		TX
	Not present		RX
sl-RLC-BearerToReleaseList-r18	Not checked		TX
	Not present		RX
sl-LocalID-PairList-r18	Not checked		TX
	Not present		RX
nonCriticalExtension	Not checked		TX
	Not present		RX

}			
}			
}			
}			
}			

Condition	Explanation
SL_DRB	To provide peer UE SL DRB related configuration via PC5 RRC
SL_MEAS	To provide peer UE SL RSRP measurement and reporting related configuration via PC5 RRC
SL_CSI	To provide peer UE SL CSI reporting related configuration via PC5 RRC
TX	UE transmits and NR-SS-UE receives.
RX	UE receives and NR-SS-UE transmits.
SL_DRX	To configure sidelink DRX configuration
SL_CA	To configure sidelink CA configuration

– *SL-RLC-ChannelConfigPC5*

Table 4.6.1A-3A: SL-RLC-ChannelConfigPC5

Derivation Path: TS 38.331 [6], clause 6.6.2			
Information Element	Value/remark	Comment	Condition
SL-RLC-ChannelConfigPC5-r17 ::= SEQUENCE {			
sl-RLC-ChannelID-PC5-r17	Not checked		TX
sl-RLC-ChannelID-PC5-r17	SL-RLC-ChannelID with condition PC5RelaySRBn		RX and PC5RelayS RBn
	SL-RLC-ChannelID with condition PC5RelayDRBn		RX and PC5RelayD RBn
sl-RLC-ConfigPC5-r17	Not checked		TX
sl-RLC-ConfigPC5-r17 CHOICE {			RX
sl-AM-RLC-r16 SEQUENCE {			
sl-SN-FieldLengthAM-r16	size12		
}			
}			
sl-MAC-LogicalChannelConfigPC5-r17	Not checked		TX
sl-MAC-LogicalChannelConfigPC5-r17 SEQUENCE {			RX
sl-LogicalChannelIdentity-r16	LogicalChannelIdentity with condition PC5RelaySRBn		PC5RelayS RBn
	LogicalChannelIdentity with condition PC5RelayDRBn		PC5RelayD RBn
}			
}			

Condition	Explanation
PC5RelaySRBn	Establishment of PC5 RelayRLC Channel for SRBn; n=1..3
PC5RelayDRBn	Establishment of PC5 RelayRLC Channel for DRBn; n=1..16

– *RRCReconfigurationCompleteSidelink*

Table 4.6.1A-4: RRCReconfigurationCompleteSidelink

Derivation Path: TS 38.331 [6], clause 6.6.2			
Information Element	Value/remark	Comment	Condition
RRCReconfigurationCompleteSidelink ::= SEQUENCE {			

rrc-TransactionIdentifier-r16	RRC-TransactionIdentifier		TX
	Set to the same value as the rrc-TransactionIdentifier-r16 field in corresponding RRCConfigurationSidelink message		RX
criticalExtensions CHOICE {			
rrcReconfigurationCompleteSidelink-r16 SEQUENCE {			
lateNonCriticalExtension	Not checked		TX
	Not present		RX
nonCriticalExtension	Not checked		TX
	Not present		RX
}			
}			
}			

Condition	Explanation
TX	UE transmits and NR-SS-UE receives.
RX	UE receives and NR-SS-UE transmits.

– *RRCReconfigurationFailureSidelink*

Table 4.6.1A-5: RRCReconfigurationFailureSidelink

Derivation Path: TS 38.331 [6], clause 6.6.2			
Information Element	Value/remark	Comment	Condition
RRCReconfigurationFailureSidelink ::= SEQUENCE {			
rrc-TransactionIdentifier-r16	RRC-TransactionIdentifier		TX
	Set to the same value as the rrc-TransactionIdentifier-r16 field in corresponding RRCConfigurationSidelink message		RX
criticalExtensions CHOICE {			
rrcReconfigurationFailureSidelink-r16 SEQUENCE {			
lateNonCriticalExtension	Not checked		TX
	Not present		RX
nonCriticalExtension	Not checked		TX
	Not present		RX
}			
}			
}			

Condition	Explanation
TX	UE transmits and NR-SS-UE receives.
RX	UE receives and NR-SS-UE transmits.

– *UECapabilityEnquirySidelink*

Table 4.6.1A-6: UECapabilityEnquirySidelink

Derivation Path: TS 38.331 [6], clause 6.6.2			
Information Element	Value/remark	Comment	Condition
UECapabilityEnquirySidelink ::= SEQUENCE {			

rrc-TransactionIdentifier-r16	RRC-TransactionIdentifier (0..3)		RX
criticalExtensions CHOICE {			
ueCapabilityEnquirySidelink-r16 SEQUENCE {			
frequencyBandListFilterSidelink-r16	Not checked		TX
frequencyBandListFilterSidelink-r16 SEQUENCE (SIZE (1..maxBandsMRDC)) OF FreqBandInformation {	1 entry		RX
FreqBandInformation[1] CHOICE {		entry 1	
bandInformationNR SEQUENCE {			
bandNR	FreqBandIndicatorNR of the PC5 operating band		
maxBandwidthRequestedDL	Not present		
maxBandwidthRequestedUL	Not present		
maxCarriersRequestedDL	Not present		
maxCarriersRequestedUL	Not present		
}			
}			
}			
ue-CapabilityInformationSidelink-r16	Not present Not checked OCTET STRING containing UECapabilityInformationS idelink specified in Table 4.6.1A-7 with condition RX		TWO_WAY_ ENQUIRY AND TX TWO_WAY_ ENQUIRY AND RX
lateNonCriticalExtension	Not checked Not present		TX RX
nonCriticalExtension	Not checked Not present		TX RX
}			
}			
}			

Condition	Explanation
TWO_WAY_ENQUIRY	For two-way SL UE capability enquiry procedure
TX	UE transmits and NR-SS-UE receives.
RX	UE receives and NR-SS-UE transmits.

– UECapabilityInformationSidelink

Table 4.6.1A-7: UECapabilityInformationSidelink

Derivation Path: TS 38.331 [6], clause 6.6.2			
Information Element	Value/remark	Comment	Condition
UECapabilityInformationSidelink ::= SEQUENCE {			
rrc-TransactionIdentifier-r16	RRC-TransactionIdentifier Set to the same value as the rrc-TransactionIdentifier-r16 field in corresponding UECapabilityEnquirySidel ink message		TX RX
criticalExtensions CHOICE {			
ueCapabilityInformationSidelink-r16 SEQUENCE {			
accessStratumReleaseSidelink-r16	rel16		
pdcp-ParametersSidelink-r16	Not checked		TX
pdcp-ParametersSidelink-r16 SEQUENCE {			RX

outOfOrderDeliverySidelink-r16	supported		
}			
rlc-ParametersSidelink-r16	Not checked		TX
rlc-ParametersSidelink-r16 SEQUENCE {			RX
am-WithLongSN-Sidelink-r16	supported		
um-WithLongSN-Sidelink-r16	supported		
}			
supportedBandCombinationListSidelinkNR-r16	Not checked		TX
supportedBandCombinationListSidelinkNR-r16 SEQUENCE (SIZE (1..maxBandComb)) OF BandCombinationParametersSidelinkNR-r16 {	1 entry		RX
BandCombinationParametersSidelinkNR-r16[1] SEQUENCE (SIZE (1..maxSimultaneousBands)) OF BandParametersSidelink-r16 {	1 entry	entry 1	
BandParametersSidelink-r16[1] SEQUENCE {		entry 1	
freqBandSidelink-r16	first FreqBandIndicatorNR contained in frequencyBandListFilterS idelink-r16 of corresponding UECapabilityEnquirySide link message		
}			
}			
}			
supportedBandListSidelink-r16	Not checked		TX
supportedBandListSidelink-r16 SEQUENCE (SIZE (1..maxBands)) OF BandSidelinkPC5-r16 {	1 entry		RX
BandSidelinkPC5-r16[1] SEQUENCE {		entry 1	
freqBandSidelink-r16	first FreqBandIndicatorNR contained in frequencyBandListFilterS idelink-r16 of corresponding UECapabilityEnquirySide link message		
sl-Reception-r16 SEQUENCE {			
harq-RxProcessSidelink-r16	n16		
pscch-RxSidelink-r16	value1		
scs-CP-PatternRxSidelink-r16 CHOICE {			
fr1-r16 SEQUENCE {			
scs-15kHz-r16	0101011000000000		
scs-30kHz-r16	0101011000000000		
scs-60kHz-r16	0101011000000000		
}			
}			
extendedCP-RxSidelink-r16	supported		
}			
sl-Tx-256QAM-r16	supported		
lowSE-64QAM-MCS-TableSidelink-r16	supported		
csi-ReportSidelink-r16 SEQUENCE {			
csi-RS-PortsSidelink-r16	p2		
}			
rankTwoReception-r16	supported		
sl-openLoopPC-RSRP-ReportSidelink-r16	supported		
sl-Rx-256QAM-r16	supported		
}			
}			
appliedFreqBandListFilter-r16	Not checked		TX
	Set to the same value as the frequencyBandListFilterSi delink-r16 of corresponding		RX

	UECapabilityEnquirySidelink message		
lateNonCriticalExtension	Not checked		TX
	Not present		RX
nonCriticalExtension	Not checked		TX
	Not present		RX
}			
}			
}			

Condition	Explanation
TX	UE transmits and NR-SS-UE receives.
RX	UE receives and NR-SS-UE transmits.

– *uuMessageTransferSidelink*

Table 4.6.1A-8: uuMessageTransferSidelink

Derivation Path: TS 38.331 [6], clause 6.2.2			
Information Element	Value/remark	Comment	Condition
uuMessageTransferSidelink ::= SEQUENCE {			
criticalExtensions CHOICE {			
uuMessageTransferSidelink-r17 SEQUENCE {			
sl-PagingDelivery-r17	Not present		
	OCTET STRING containing PagingRecord specified in Table 4.6.1-9		Paging
sl-SIB1-Delivery-r17	Not present		
	OCTET STRING containing SIB1 specified in Table 4.6.1-28		SIB1
sl-SystemInformationDelivery-r17	Not present		
	OCTET STRING containing SystemInformation specified in Table 4.6.1-29		SystemInformation
lateNonCriticalExtension	Not present		
nonCriticalExtension	Not present		
}			
}			
}			

Condition	Explanation
Paging	PagingRecord relevant to the L2 U2N Remote UE is transferred
SIB1	SIB1 relevant to the L2 U2N Remote UE is transferred
SystemInformation	SIBs relevant to the L2 U2N Remote UE is transferred

– *UEAssistanceInformationSidelink*

Table 4.6.1A-9: UEAssistanceInformationSidelink

Derivation Path: TS 38.331 [6], clause 6.2.2			
Information Element	Value/remark	Comment	Condition
UEAssistanceInformationSidelink-r17 ::= SEQUENCE {			
criticalExtensions CHOICE {			

ueAssistanceInformationSidelink-r17 SEQUENCE {			
sl-PreferredDRX-ConfigList-r17 SEQUENCE (SIZE (1..maxNrofSL-RxInfoSet-r17)) OF SL-DRX- ConfigUC-SemiStatic-r17 {	1 entry		
SL-DRX-ConfigUC-SemiStatic-r17[1]	Not checked	entry 1	TX
	SL-DRX-ConfigUC- SemiStatic	entry 1	RX
}			
lateNonCriticalExtension	Not checked		TX
	Not present		RX
nonCriticalExtension	Not checked		TX
	Not present		RX
}			
}			
}			

Condition	Explanation
TX	UE transmits and NR-SS-UE receives.
RX	UE receives and NR-SS-UE transmits.

4.6.2 System information blocks

– SIB2

Table 4.6.2-1: SIB2

Derivation Path: TS 38.331 [6], clause 6.3.1			
Information Element	Value/remark	Comment	Condition
SIB2 ::= SEQUENCE {			
cellReselectionInfoCommon SEQUENCE {			
nrofSS-BlocksToAverage	2		
absThreshSS-BlocksConsolidation SEQUENCE {			
thresholdRSRP	RSRP-Range	Table 4.6.3-152	
thresholdRSRQ	Not present		
thresholdSINR	Not present		
}			
rangeToBestCell	dB0		
q-Hyst	dB0	To reduce interference between intra-frequency multiple cells	
speedStateReselectionPars	Not present		
}			
cellReselectionServingFreqInfo SEQUENCE {			
s-NonIntraSearchP	Not present		
s-NonIntraSearchQ	Not present		
threshServingLowP	0	Actual value of threshold = field value * 2 [dB]	
threshServingLowQ	Not present		
	3	3dB	QBASED
cellReselectionPriority	4	A middle value in the range has been selected	
cellReselectionSubPriority	Not present		
}			
intraFreqCellReselectionInfo SEQUENCE {			
q-RxLevMin	-70	-140dBm	
	-55	-110dBm	SIG
q-RxLevMinSUL	Not Present		
	-70	-140dBm	SUL

	-55	-110dBm	SUL AND SIG
q-QualMin	Not present		
	-20	-20dB	QBASED
s-IntraSearchP	31	Actual value of threshold = field value * 2 [dB]	
s-IntraSearchQ	Not present		
t-ReselectionNR	0		
frequencyBandList	Not present		
frequencyBandListSUL	Not present		
p-Max	Not present		
smtc	SSB-MTC	Table 4.6.3-185	
ss-RSSI-Measurement	Not present		
ssb-ToMeasure	SSB-ToMeasure		
deriveSSB-IndexFromCell	false		FDD
	true		TDD
t-ReselectionNR-SF	Not present		
smtc2-LP-r16	Not present		
ssb-PositionQCL-Common-r16	Not present		
	n2		SharedSpec trum
}			
relaxedMeasurement-r16	Not present		
}			

Condition	Explanation
SUL	For test cases using SUL frequency for the serving cell, Qrxlevmin is obtained from <i>q-RxLevMin-sul</i> .
QBASED	This condition applies to Quality based signalling test cases.
SharedSpectrum	Operation with shared spectrum channel access

SIB3

Table 4.6.2-2: SIB3

Derivation Path: TS 38.331 [6], clause 6.3.1			
Information Element	Value/remark	Comment	Condition
SIB3 ::= SEQUENCE {			
intraFreqNeighCellList	Not present	Not required unless Qoffset configuration is tested. When Qoffset configuration is tested, see table 6.3.1.1-1	
intraFreqExcludedCellList	Not present	Not required unless list of exclude-listed intra-frequency neighbouring cells is tested. When exclude-listed cell list configuration is tested, see table 6.3.1.1-1	
lateNonCriticalExtension	Not present		
}			

SIB4

Table 4.6.2-3: SIB4

Derivation Path: TS 38.331 [6], clause 6.3.1			
Information Element	Value/remark	Comment	Condition
SIB4 ::= SEQUENCE {			
interFreqCarrierFreqList SEQUENCE (SIZE (1..maxFreq)) OF InterFreqCarrierFreqInfo {	The same number of entries as the configured inter-freq carriers defined in table 6.3.1.2-1	<i>n</i> denotes the index of the entry	
InterFreqCarrierFreqInfo[n] SEQUENCE {		entry <i>n</i>	
dl-CarrierFreq	Downlink NR SSB ARFCN. See table 6.3.1.2-1		
	250		BW3
frequencyBandList	MultiFrequencyBandList NR-SIB		
	MultiFrequencyBandList NR-SIB with condition LessThan5MHz		BW3
frequencyBandListSUL	Not present		
nrofSS-BlocksToAverage	2		
absThreshSS-BlocksConsolidation SEQUENCE {			
thresholdRSRP	RSRP-Range	Table 4.6.3-152	
thresholdRSRQ	Not present		
thresholdSINR	Not present		
}			
smtc	SSB-MTC	Table 4.6.3-185	
ssbSubcarrierSpacing	SubcarrierSpacing	Table 4.6.3-188	
ssb-ToMeasure	SSB-ToMeasure		
deriveSSB-IndexFromCell	false		FDD
	true		TDD
ss-RSSI-Measurement	Not present		
q-RxLevMin	-70	-140dBm	
	-55	-110dBm	SIG and FR1
	ROUND((-110+Delta(NRfn))/2)	NOTE1 and NOTE2.	SIG and FR2
q-RxLevMinSUL	-70	-140dBm, For RF/RRM test cases	SUL
	Not present		
	-55	-110dBm	SUL and SIG
q-QualMin	Not present		
	-20	-20dB	QBASED
p-Max	Not present		
t-ReselectionNR	0		
t-ReselectionNR-SF	Not present	Not required unless speed-dependent cell re-selection is tested.	
threshX-HighP	2	4dB, this value should be higher than threshServingLow of the serving cell to avoid ping-pong with lower priority cells.	
threshX-LowP	1	2dB	
threshX-Q	Not present		
threshX-Q SEQUENCE {			QBASED

threshX-HighQ	5	5dB	
threshX-LowQ	5	5dB	
}			
cellReselectionPriority	4	The same priority as the one used for serving cell in SIB 2.	
cellReselectionSubPriority	Not present	The same subpriority as the one used for serving cell in SIB 2.	
q-OffsetFreq	$\text{dBXY with XY} = (\text{FLOOR}((\text{Delta}(\text{NRfn}) - \text{Delta}(\text{NRfs}))/2)) * 2$ (NOTE 3)	This value is type of Q-OffsetRange in TS 38.331 [6] which must be even value when its absolute value is larger than dB5.	FR2 AND NOT AbsoluteValue_Within_dB5
	$\text{dBXY with XY} = \text{Delta}(\text{NRfn}) - \text{Delta}(\text{NRfs})$		FR2 AND AbsoluteValue_Within_dB5
	dB0		
interFreqNeighCellList	Not present	Not required unless Qoffset configuration is tested.	
interFreqExcludedCellList	Not present	Not required unless Excluded cell list configuration is tested.	
}			
}			
lateNonCriticalExtension	Not present		
InterFreqCarrierFreqList-v1700	Not present		
InterFreqCarrierFreqList-v1700 SEQUENCE (SIZE (1..maxFreq)) OF InterFreqCarrierFreqInfo-v1700 {	The same number of entries as the configured inter-freq carriers defined in table 6.3.1.2-1	n denotes the index of the entry	pc_supportOfRedCap_r17
InterFreqCarrierFreqInfo-v1700[n] SEQUENCE {		entry n	
interFreqNeighHSDN-CellList-r17	Not present		
highSpeedMeasInterFreq-r17	Not present		
redCapAccessAllowed-r17	true		
ssb-PositionQCL-Common-r17	Not present		
interFreqNeighCellList-v1710	Not present		
}			
}			
InterFreqCarrierFreqList-v1800	Not present		
InterFreqCarrierFreqList-v1800 SEQUENCE (SIZE (1..maxFreq)) OF InterFreqCarrierFreqInfo-v1800 {	The same number of entries as the configured inter-freq carriers defined in table 6.3.1.2-1	n denotes the index of the entry	pc_supportOfRedCap_r18
InterFreqCarrierFreqInfo-v1800[n] SEQUENCE {		entry n	
dl-CarrierFreq-r18	Not present		
frequencyBandList-r18	Not present		
frequencyBandListAerial-r18	Not present		
mobilelAB-CellList-r18	Not present		
mobilelAB-Freq-r18	Not present		
eRedCapAccessAllowed-r18	true		
tn-ArealdList-r18	Not present		
accessAllowed2RxXR-r18	Not present		
}			
}			
InterFreqCarrierFreqList-v1800 SEQUENCE (SIZE (1..maxFreq)) OF InterFreqCarrierFreqInfo-v1800 {	The same number of entries as the configured	n denotes the index of the entry	BW3

	inter-freq carriers defined in table 6.3.1.2-1		
InterFreqCarrierFreqInfo-v1800[n] SEQUENCE {		entry n	
dl-CarrierFreq-r18	Downlink NR SSB ARFCN. See table 6.3.1.2-1		
frequencyBandList-r18	MultiFrequencyBandList NR-SIB		
frequencyBandListAerial-r18	Not present		
mobileIAB-CellList-r18	Not present		
mobileIAB-Freq-r18	Not present		
eRedCapAccessAllowed-r18	Not present		
tn-ArealdList-r18	Not present		
accessAllowed2RxXR-r18	Not present		
}			
}			
}			
NOTE 1: Delta(NRfn) and Delta(NRfs) is derived based on calibration procedure defined in the clause 6.1.3.3. NRfn and NRfs are NR frequencies in dl-CarrierFreq[n] and serving cell frequency on which SIB4 is broadcasted.			
NOTE 2: ROUND is rounded off to the nearest integer. As an example, '1 to 1.49' set to '1' while '1.5 to 2' to '2' and '-2.0 to 1.5' set to '-2' while '-1.49 to -1' set to '-1'.			
NOTE 3: FLOOR is rounded off to the smaller integer. As an example, '1.0 to 1.99' set to 1, '-1.01 to -2.00' set to -2.			

Condition	Explanation
SUL	For test cases using SUL frequency for the serving cell, $Q_{rxLevMin-sul}$ is obtained from $q-RxLevMin-sul$.
QBASED	This condition applies to Quality based signalling test cases.
AbsoluteValue_Within_dB5	$-5dB \leq (\Delta(NRfn) - \Delta(NRfs)) \leq 5dB$.

SIB5

Table 4.6.2-4: SIB5

Derivation Path: TS 38.331 [6], clause 6.3.1			
Information Element	Value/remark	Comment	Condition
SIB5 ::= SEQUENCE {			
carrierFreqListEUTRA SEQUENCE (SIZE (1..maxEUTRA-Carrier)) OF CarrierFreqEUTRA {	The same number of entries as the configured E-UTRA carriers. For Signalling test cases, see table 6.3.1.3-1.	n denotes the index of the entry	
CarrierFreqEUTRA[n] SEQUENCE {		entry n	
carrierFreq	Downlink E-UTRA ARFCN under test. For Signalling test cases, see table 6.3.1.3-1.		
eutra-multiBandInfoList	Not present		
eutra-FreqNeighCellList	Not present	Not required unless EUTRA Qoffset configuration is tested.	
eutra-ExcludedCellList	Not present	Not required unless Excluded cell list configuration is tested.	
allowedMeasBandwidth	EUTRA-AllowedMeasBandwidth	The value of EUTRA-AllowedMeasBandwidth in Table 4.6.5-1.	
presenceAntennaPort1	FALSE		

	TRUE	At least two cell-specific antenna ports are used in all neighbouring cells.	All neighCells with port1
cellReselectionPriority	3		
cellReselectionSubPriority	Not Present		
threshX-High	2 (4 dB)		
threshX-Low	1 (2 dB)		
q-RxLevMin	-70 (-140 dBm)	For RF/RRM test cases	
	-55(-110dBm)	For signalling test cases	
q-QualMin	-20 (-20dB)		
p-MaxEUTRA	23		
threshX-Q	Not present		
threshX-Q SEQUENCE {			QBASED
threshX-HighQ	9 (9dB)		
threshX-LowQ	9 (9dB)		
}			
}			
}			
t-ReselectionEUTRA	0		
t-ReselectionEUTRA-SF	Not present	Not required unless speed-dependent cell re-selection is tested.	
lateNonCriticalExtension	Not present		
}			

Condition	Explanation
QBASED	This condition applies to Quality based cell (re)selection signalling test cases.
All neighCells with port1	Used for all neighbouring cells with at least two cell-specific antenna ports

SIB6

Table 4.6.2-5: SIB6

Derivation Path: TS 38.331 [6], clause 6.3.1			
Information Element	Value/remark	Comment	Condition
SIB6 ::= SEQUENCE {			
messageIdentifier	'0001 0001 0000 0010'B	ETWS message identifier for earthquake and tsunami message (see TS 23.041 [25])	
serialNumber	'0011 0000 0000 0000'B	Note 1	
warningType	'0000 0101 1000 0000'B	Note 2	
lateNonCriticalExtension	Not present		
}			
Note 1: Geographical Scope (Octet 1 bit 7 ~ 6) set to 'Cell wide', Emergency User Alert (Octet 1 bit 5) set to 'Activate emergency user alert', Popup (Octet 1 bit 4) set to 'Activate popup', Update Number (Octet 2 bits 3~0) for each update, incremented by one, See TS 23.041 [25]. Note 2: Warning Type Value (Octet 1 bit 7 ~ 1) set to 'Earthquake and Tsunami', Emergency User Alert (Octet 1 bit 0) set to 'Activate emergency user alert', Popup (Octet 2 bit 7) set to 'Activate Popup', see TS 23.041 [25], Padding (Octet 2 bit 6 ~ 0) set to '000 0000'B.			

SIB7

Table 4.6.2-6: SIB7 (1st Segment)

Derivation Path: TS 38.331 [6], clause 6.3.1			
Information Element	Value/remark	Comment	Condition
SIB7 ::= SEQUENCE {			
messageIdentifier	'0001 0001 0000 0010'B	ETWS message identifier for earthquake and tsunami message (see TS 23.041 [25])	
serialNumber	'0011 0000 0000 0000'B	Note 1	
warningMessageSegmentType	notLastSegment		
warningMessageSegmentNumber	0		
warningMessageSegment	Octetstring of N	Where $N \geq 1$ and less than 1246 (see TS 23.041 [25])	
dataCodingScheme	Bitstring (8) ID of the alphabet/coding and the applied language	see TS 23.041 [25]	Segment 1
lateNonCriticalExtension	Not present		
}			
Note 1: Geographical Scope (Octet 1 bit 7 ~ 6) set to 'Cell wide', Emergency User Alert (Octet 1 bit 5) set to 'Activate emergency user alert', Popup (Octet 1 bit 4) set to 'Activate popup', Update Number (Octet 2 bits 3~0) for each update, incremented by one, See TS 23.041 [25].			

Condition	Explanation
Segment1	The field is mandatory present in the first segment of SIB7, otherwise it is not present.

Table 4.6.2-7: SIB7 (2nd Segment)

Derivation Path: TS 38.331 [6], clause 6.3.1			
Information Element	Value/remark	Comment	Condition
SIB7 ::= SEQUENCE {			
messageIdentifier	'0001 0001 0000 0010'B	ETWS message identifier for earthquake and tsunami message (see TS 23.041 [25])	
serialNumber	'0011 0000 0000 0000'B	Note 1	
warningMessageSegmentType	notLastSegment		
warningMessageSegmentNumber	1		
warningMessageSegment	Octetstring of N	Where $N \geq 1$ and less than 1246 (see TS 23.041 [25])	
dataCodingScheme	Not present		
lateNonCriticalExtension	Not present		
}			
Note 1: Geographical Scope (Octet 1 bit 7 ~ 6) set to 'Cell wide', Emergency User Alert (Octet 1 bit 5) set to 'Activate emergency user alert', Popup (Octet 1 bit 4) set to 'Activate popup', Update Number (Octet 2 bits 3~0) for each update, incremented by one, See TS 23.041 [25].			

Table 4.6.2-8: SIB7 (3rd Segment)

Derivation Path: TS 38.331 [6], clause 6.3.1

Information Element	Value/remark	Comment	Condition
SIB7 ::= SEQUENCE {			
messageIdentifier	'0001 0001 0000 0010'B	ETWS message identifier for earthquake and tsunami message (see TS 23.041 [25])	
serialNumber	'0011 0000 0000 0000'B	Note 1	
warningMessageSegmentType	LastSegment		
warningMessageSegmentNumber	2		
warningMessageSegment	Octetstring of N	Where N ≥ 1 and less than 1246 (see TS 23.041 [25])	
dataCodingScheme	Not present		
lateNonCriticalExtension	Not present		
}			
Note 1: Geographical Scope (Octet 1 bit 7 ~ 6) set to 'Cell wide', Emergency User Alert (Octet 1 bit 5) set to 'Activate emergency user alert', Popup (Octet 1 bit 4) set to 'Activate popup', Update Number (Octet 2 bits 3~0) for each update, incremented by one, See TS 23.041 [25].			

SIB8

Table 4.6.2-9: SIB8 (1st Segment)

Derivation Path: TS 38.331 [6], clause 6.3.1			
Information Element	Value/remark	Comment	Condition
SIB8 ::= SEQUENCE {			
messageIdentifier	'0001 0001 0001 0010'B	CMAS CBS Message Identifier for CMAS Presidential Level Alerts (see TS 23.041 [25])	
serialNumber	'0011 0000 0000 0000'B	Note 1	
warningMessageSegmentType	notLastSegment		
warningMessageSegmentNumber	0		
warningMessageSegment	Octetstring of N	Where N ≥ 1 and less than 1246 (see TS 23.041 [25])	
dataCodingScheme	Bitstring (8) ID of the alphabet/coding and the applied language	see TS 23.041 [25]	Segment 1
warningAreaCoordinatesSegment	Not present		
lateNonCriticalExtension	Not present		
}			
Note 1: Geographical Scope (Octet 1 bit 7 ~ 6) set to 'Cell wide', Emergency User Alert (Octet 1 bit 5) set to 'Activate emergency user alert', Popup (Octet 1 bit 4) set to 'Activate popup', Update Number (Octet 2 bits 3~0) for each update, incremented by one, See TS 23.041 [25].			

Condition	Explanation
Segment1	The field is mandatory present in the first segment of SIB8, otherwise it is not present.

Table 4.6.2-10: SIB8 (2nd Segment)

Derivation Path: TS 38.331 [6], clause 6.3.1			
Information Element	Value/remark	Comment	Condition
SIB8 ::= SEQUENCE {			

messageIdentifier	'0001 0001 0001 0010'B	CMAS CBS Message Identifier for CMAS Presidential Level Alerts (see TS 23.041 [25])	
serialNumber	'0011 0000 0000 0000'B	Note 1	
warningMessageSegmentType	notLastSegment		
warningMessageSegmentNumber	1		
warningMessageSegment	Octetstring of N	Where $N \geq 1$ and less than 1246 (see TS 23.041 [25])	
dataCodingScheme	Not present		
warningAreaCoordinatesSegment	Not present		
lateNonCriticalExtension	Not present		
}			
Note 1: Geographical Scope (Octet 1 bit 7 ~ 6) set to 'Cell wide', Emergency User Alert (Octet 1 bit 5) set to 'Activate emergency user alert', Popup (Octet 1 bit 4) set to 'Activate popup', Update Number (Octet 2 bits 3~0) for each update, incremented by one, See TS 23.041 [25].			

Table 4.6.2-11: SIB8 (3rd Segment)

Derivation Path: TS 38.331 [6], clause 6.3.1			
Information Element	Value/remark	Comment	Condition
SIB8 ::= SEQUENCE {			
messageIdentifier	'0001 0001 0001 0010'B	CMAS CBS Message Identifier for CMAS Presidential Level Alerts (see TS 23.041 [25])	
serialNumber	'0011 0000 0000 0000'B	Note 1	
warningMessageSegmentType	LastSegment		
warningMessageSegmentNumber	2		
warningMessageSegment	Octetstring of N	Where $N \geq 1$ and less than 1246 (see TS 23.041 [25])	
dataCodingScheme	Not present		
warningAreaCoordinatesSegment	Not present		
lateNonCriticalExtension	Not present		
}			
Note 1: Geographical Scope (Octet 1 bit 7 ~ 6) set to 'Cell wide', Emergency User Alert (Octet 1 bit 5) set to 'Activate emergency user alert', Popup (Octet 1 bit 4) set to 'Activate popup', Update Number (Octet 2 bits 3~0) for each update, incremented by one, See TS 23.041 [25].			

SIB9

Table 4.6.2-11A: SIB9

Derivation Path: TS 38.331 [6], clause 6.3.1			
Information Element	Value/remark	Comment	Condition
SIB9 ::= SEQUENCE {			
timeInfo ::= SEQUENCE {			
timeInfoUTC	Set according to specific message contents		
dayLightSavingTime	Not present		
leapSeconds	Not present		
localTimeOffset	Not present		
}			
lateNonCriticalExtension	Not present		

referenceTimeInfo-r16	Not present		
	ReferenceTimeInfo		TSC
}			

Condition	Explanation
TSC	For test cases requiring TSC (Time Sensitive Communication) functions enabled.

SIB10

Table 4.6.2-12: SIB10

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
SIB10-r16 ::= SEQUENCE {			
hrnn-List-r16 SEQUENCE (SIZE (1..maxNPN-r16))			
OF HRNN-r16 {			
HRNN-r16[1] SEQUENCE {		1 entry	
hrnn-r16	"3gppTest"	charstring "3gppTest" converted to OCTETSTRING	
}			
}			
lateNonCriticalExtension	Not present		
}			

SIB11

Table 4.6.2-13: SIB11

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
SIB11-r16 ::= SEQUENCE {			
measIdleConfigSIB-r16	MeasIdleConfigSIB-r16		
lateNonCriticalExtension	Not present		
}			

SIB12

Table 4.6.2-14: SIB12

Derivation Path: TS 38.331 [6], clause 6.3.1			
Information Element	Value/remark	Comment	Condition
SIB12-r16 ::= SEQUENCE {			
segmentNumber-r16	index of the segment contained in segmentContainer-r16		
segmentType-r16	notLastSegment		NOT_LAST SEG
	lastSegment		LAST_SEG
segmentContainer-r16	OCTET STRING (CONTAINING SIB12-IEs or segment of SIB12-IEs)	Note 1	
}			
Note 1: Size of the SIB12-IEs-r16 or segment of SIB12-IEs-r16 contained in segmentContainer-r16 shall not exceed the maximum TBS size of the SI. For signalling test cases, the size is defined in TS 38.523-3[23] clause 7.3.3.2.			

Condition	Explanation

NOT_LAST_SEG	Used when SIB12-IEs is segmented and the segment contained in segmentContainer-r16 is not the last segment
LAST_SEG	Used when SIB12-IEs is not segmented, or SIB12-IEs is segmented and the segment contained in segmentContainer-r16 is the last segment

Table 4.6.2-14A: SIB12-IEs

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
SIB12-IEs-r16 ::= SEQUENCE {			
sl-ConfigCommonNR-r16 SEQUENCE {			
sl-FreqInfoList-r16 SEQUENCE (SIZE (1..maxNrofFreqSL-r16)) OF SL-FreqConfigCommon-r16 {	1 entry		
SL-FreqConfigCommon-r16[1]	SL-FreqConfigCommon	entry 1	
	SL-FreqConfigCommon with condition SL_CA	entry 1	SL_CA
}			
sl-UE-SelectedConfig-r16	SL-UE-SelectedConfig		
sl-NR-AnchorCarrierFreqList-r16	Not present		
sl-EUTRA-AnchorCarrierFreqList-r16	Not present		
sl-RadioBearerConfigList-r16 SEQUENCE (SIZE (1..maxNrofSLRB-r16)) OF SL-RadioBearerConfig-r16 {	1 entry		
SL-RadioBearerConfig-r16[1]	SL-RadioBearerConfig	entry 1	
}			
sl-RLC-BearerConfigList-r16 SEQUENCE (SIZE (1..maxSL-LCID-r16)) OF SL-RLC-BearerConfig-r16 {	1 entry		
SL-RLC-BearerConfig-r16[1]	SL-RLC-BearerConfig	entry 1	
}			
sl-MeasConfigCommon-r16	SL-MeasConfigCommon		
sl-CSI-Acquisition-r16	Not present		
sl-OffsetDFN-r16	Not present		
t400-r16	ms1000		
sl-MaxNumConsecutiveDTX-r16	Not present		
sl-SSB-PriorityNR-r16	1		
}			
lateNonCriticalExtension	Not present		
sl-DRX-ConfigCommonGC-BC-r17	Not present		
	SL-DRX-ConfigGC-BC with condition SL_DRX_Default		SL_DRX
sl-DiscConfigCommon-r17	Not present		
sl-DiscConfigCommon-r17 SEQUENCE {			L2RemoteUE, L2RelayUE
sl-RelayUE-ConfigCommon-r17	SL-RelayUE-Config		
sl-RemoteUE-ConfigCommon-r17	SL-RemoteUE-Config		
}			
sl-L2U2N-Relay-r17	Not present		
sl-L2U2N-Relay-r17	enabled		L2RemoteUE, L2RelayUE
sl-NonRelayDiscovery-r17	Not present		
sl-L3U2N-RelayDiscovery-r17	Not present		
sl-TimersAndConstantsRemoteUE-r17	Not present		
sl-FreqInfoListSizeExt-v1800	Not present		
sl-FreqInfoListSizeExt-v1800 SEQUENCE (SIZE (1..maxNrofFreqSL-1-r18)) OF SL-FreqConfigCommon-r16 {	1 entry		SL_CA
SL-FreqConfigCommon-r16[1]	SL-FreqConfigCommon with condition SL_CA	entry 1	
}			
sl-RLC-BearerConfigListSizeExt-v1800	Not present		
sl-SyncFreqList-r18	Not present		

sl-SyncTxMultiFreq-r18	Not present		
sl-MaxTransPowerCA-r18	Not present		
sl-DiscConfigCommon-v1800	Not present		
sl-L2-U2U-Relay-r18	Not present		
sl-L3-U2U-RelayDiscovery-r18	Not present		
t400-U2U-r18	Not present		
}			

Condition	Explanation
L2RemoteUE	For L2 U2N Remote UE test cases.
L2RelayUE	For L2 U2N Relay UE test cases.
SL_DRX	To configure sidelink DRX related parameters.
SL_CA	To configure sidelink CA configuration

– **SIB13**

Table 4.6.2-15: SIB13

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
SIB13-r16 ::= SEQUENCE {			
FFS			
}			

– **SIB14**

Table 4.6.2-16: SIB14

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
SIB14-r16 ::= SEQUENCE {			
FFS			
}			

– **SIB15**

Table 4.6.2-17: SIB15

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
SIB15-r17 ::= SEQUENCE {			
FFS			
}			

– **SIB16**

Table 4.6.2-18: SIB16

Derivation Path: TS 38.331 [6], clause 6.3.1			
Information Element	Value/remark	Comment	Condition
SIB16-r17 ::= SEQUENCE {			
freqPriorityListSlicing-r17	FreqPriorityListSlicing-r17		
lateNonCriticalExtension	Not present		
}			

– *SIB17*

Table 4.6.2-18AA: *Void*Table 4.6.2-18A: *SIB17*

Derivation Path: TS 38.331 [6], clause 6.3.1			
Information Element	Value/remark	Comment	Condition
SIB17-r17 ::= SEQUENCE {			
segmentNumber-r17	0		
segmentType-r17	lastSegment		
segmentContainer-r17	OCTET STRING (CONTAINING SIB17- IEs)	SIB17-IEs	
}			

Table 4.6.2-18BA: *SIB17-IEs*

Derivation Path: TS 38.331 [6], clause 6.3.1			
Information Element	Value/remark	Comment	Condition
SIB17-IEs-r17 ::= SEQUENCE {			
trs-ResourceSetConfig-r17 SEQUENCE (SIZE (1..maxNrofTRS-ResourceSets-r17)) OF TRS- ResourceSet-r17 {	1 entry		
TRS-ResourceSet-r17 [1] SEQUENCE {		Entry 1	
powerControlOffsetSS-r17	db-3		
scramblingID-Info-r17 CHOICE {			
scramblingIDforCommon-r17	0		
}			
firstOFDMSymbolInTimeDomain-r17	4		
startingRB-r17	0		
nrofRBs-r17	24		
ssb-Index-r17	0		
periodicityAndOffset-r17 CHOICE {			
slots20	10		
}			
frequencyDomainAllocation-r17	'0000'B		
indBitID-r17	0		
nrofResources-r17	n4		
}			
}			
validityDuration-r17	Not Present		
lateNonCriticalExtension	Not Present		
}			

– *SIB17bis*

Table 4.6.2-18BB: *SIB17bis*

Derivation Path: TS 38.331 [6], clause 6.3.1			
Information Element	Value/remark	Comment	Condition
SIB17bis-r18 ::= SEQUENCE {			
FFS			
}			

– *SIB18*

Table 4.6.2-18B: *SIB18*

Derivation Path: TS 38.331 [6], clause 6.3.1			
Information Element	Value/remark	Comment	Condition
SIB18-r17 ::= SEQUENCE {			
gin-ElementList-r17 SEQUENCE (SIZE (1..maxGIN-r17)) OF GIN-Element-r17 {	1 entry		
GIN-Element-r17[1] SEQUENCE {		entry 1	
plmn-Identity-r17	PLMN-Identity		
nid-List-r17 SEQUENCE (SIZE (1..maxGIN-r17)) OF NID-r16 {	1 entry		
NID-r16[1]	See table 4.4.2-4	entry 1; NID is coded as a BITSTRING based on Table 4.4.2-4	
}			
}			
}			
gins-PerSNPN-List-r17	Not present	Not present if there is only a single SNPN in <i>snpn-AccessInfoList</i> in SIB1	
lateNonCriticalExtension	Not present		
}			

– *SIB19*

Table 4.6.2-18C: *SIB19*

Derivation Path: TS 38.331 [6], clause 6.3.1			
Information Element	Value/remark	Comment	Condition
SIB19-r17 ::= SEQUENCE {			
ntn-Config-r17	NTN-Config with condition GSO		GSO
	NTN-Config with condition NGSO		NGSO
t-Service-r17	Not Present		
referenceLocation-r17	Not present		
distanceThresh-r17	Not present		
ntn-NeighCellConfigList-r17	Not present		
lateNonCriticalExtension	Not present		
ntn-NeighCellConfigListExt-v1720	Not present		
movingReferenceLocation-r18	Not present		
	'2273BA566355'H		NTNenh
ntnCovEnh-r18	Not present		
ntnCovEnh-r18 SEQUENCE {			NTNenh
numberOfMsg4HARQ-ACK-Repetitions-r18	'1100'B		
rsrp-ThresholdMsg4HARQ-ACK-r18	Not present		
}			
satSwitchWithReSync-r18	Not present		
}			

Condition	Explanation
GSO	Geosynchronous Orbit scenario
NGSO	Non-geosynchronous Orbit scenario
NTNenh	For NTN enhancement test cases

– *SIB20*

Table 4.6.2-19: *SIB20*

Derivation Path: TS 38.331 [6], clause 6.3.1			
Information Element	Value/remark	Comment	Condition
SIB20-r17 ::= SEQUENCE {			
mcch-Config-r17 SEQUENCE {			
mcch-RepetitionPeriodAndOffset-r17 CHOICE {			
rf2-r17	0		
}			
mcch-WindowStartSlot-r17	2		
mcch-WindowDuration-r17	sl8		
mcch-ModificationPeriod-r17	rf8		
}			
cfr-ConfigMCCH-MTCH-r17	Not present		
lateNonCriticalExtension	Not present		
}			

– *SIB21*

Table 4.6.2-20: *SIB21*

Derivation Path: TS 38.331 [6], clause 6.3.1			
Information Element	Value/remark	Comment	Condition
SIB21-r17 ::= SEQUENCE {			
mbs-FSAI-IntraFreq-r17 SEQUENCE (SIZE (1..maxFSAI-MBS-r17)) OF MBS-FSAI-r17 {	1 entry		
MBS-FSAI-r17[1]	'000000'H	entry 1 OCTET STRING (SIZE (3))	
}			
mbs-FSAI-InterFreqList-r17	Not present		
mbs-FSAI-InterFreqList-r17 SEQUENCE (SIZE (1..maxFreq)) OF MBS-FSAI-InterFreq-r17 {	1 entry		MBS_interFreq
MBS-FSAI-InterFreq-r17[1] SEQUENCE {		entry 1	
dl-CarrierFreq-r17	ARFCN-ValueNR with condition DL_SSB		
mbs-FSAI-List-r17 SEQUENCE (SIZE (1..maxFSAI-MBS-r17)) OF MBS-FSAI-r17 {	1 entry		
MBS-FSAI-r17[1]	'000001'H	entry 1 OCTET STRING (SIZE (3))	
}			
}			
}			
}			
lateNonCriticalExtension	Not present		
}			

Condition	Explanation
MBS_interFreq	SIB21 transmitted for a MBS inter-frequency cell environment (MBS service provided on multiple frequencies within a band).

– *SIB22*

Table 4.6.2-21: *SIB22*

Derivation Path: TS 38.331 [6], clause 6.3.1			
Information Element	Value/remark	Comment	Condition
SIB22-r18 ::= SEQUENCE {			
atg-Config-r18	ATG-Config		

hs-ATG-cellReselectionSet-r18	Not present		
atg-NeighCellConfigList-r18	Not present		
lateNonCriticalExtension	Not present		
}			

SIB23

Table 4.6.2-22: SIB23

Derivation Path: TS 38.331 [6], clause 6.3.1			
Information Element	Value/remark	Comment	Condition
SIB23-r18 ::= SEQUENCE {			
segmentNumber-r18	0		
segmentType-r18	lastSegment		
segmentContainer-r18	OCTET STRING (CONTAINING SIB23-IEs)	SIB23-IEs	
}			

Table 4.6.2-22A: SIB23-IEs

Derivation Path: TS 38.331 [6], clause 6.3.1			
Information Element	Value/remark	Comment	Condition
SIB23-IEs-r18 ::= SEQUENCE {			
sl-PosConfigCommonNR-r18 SEQUENCE {			
sl-PosFreqInfoList-r18 SEQUENCE (SIZE (1..maxNrofFreqSL-r16)) OF SL-FreqConfigCommon-r16 {	1 entry		
SL-FreqConfigCommon-r16[1]	SL-FreqConfigCommon	entry 1	
}			
sl-PosUE-SelectedConfig-r18	SL-UE-SelectedConfig		
sl-PosNR-AnchorCarrierFreqList-r18	Not present		
sl-PosMeasConfigCommon-r18	SL-MeasConfigCommon		
sl-PosOffsetDFN-r18	Not present		
sl-PosSSB-PriorityNR-r18	1		
}			
lateNonCriticalExtension	Not present		
}			

SIB24

Table 4.6.2-23: SIB24

Derivation Path: TS 38.331 [6], clause 6.3.1			
Information Element	Value/remark	Comment	Condition
SIB24-r18 ::= SEQUENCE {			
multicastMCCH-Config-r18 SEQUENCE {			
mcch-RepetitionPeriodAndOffset-r17 CHOICE {			
rf2-r17	0		
}			
mcch-WindowStartSlot-r17	2		
mcch-WindowDuration-r17	sl8		
mcch-ModificationPeriod-r17	rf8		
}			
cfr-ConfigMCCH-MTCH-r18	Not present		
lateNonCriticalExtension	Not present		
}			

*SIB25***Table 4.6.2-24: SIB25**

Derivation Path: TS 38.331 [6], clause 6.3.1			
Information Element	Value/remark	Comment	Condition
SIB25-r18 ::= SEQUENCE {			
coverageAreaInfoList-r18 SEQUENCE (SIZE (1..maxTN-AreaInfo-r18)) OF CoverageAreaInfo-r18 {			
CoverageAreaInfo-r18 [1] SEQUENCE {		entry 1	
tn-AreaId-r18	TN-AreaId		
tn-ReferenceLocation-r18	ReferenceLocation with condition RefLocation_1		
tn-DistanceRadius-r18	5000	5000 meters	
}			
}			
lateNonCriticalExtension	Not present		
}			

*SIB26***Table 4.6.2-25: SIB26**

Derivation Path: TS 38.331 [6], clause 6.3.1			
Information Element	Value/remark	Comment	Condition
SIB26-r19 ::= SEQUENCE {			
FFS			
}			

*SIB27***Table 4.6.2-26: SIB27**

Derivation Path: TS 38.331 [6], clause 6.3.1			
Information Element	Value/remark	Comment	Condition
SIB27-r19 ::= SEQUENCE {			
FFS			
}			

*SIB28***Table 4.6.2-27: SIB28**

Derivation Path: TS 38.331 [6], clause 6.3.1			
Information Element	Value/remark	Comment	Condition
SIB28-r19		Value not yet assigned.	

4.6.2A Positioning System information blocks*PosSystemInformation-r16-IEs***Table 4.6.2a-1: PosSystemInformation-r16-IEs**

Derivation Path: TS 38.331 [6], clause 6.3.1a			
Information Element	Value/remark	Comment	Condition
PosSystemInformation-r16-IEs ::= SEQUENCE {			

posSIB-TypeAndInfo-r16 SEQUENCE (SIZE (1..maxSIB)) OF CHOICE {	n entries	The number of entries depends on the sub-test, as specified in TS 37.571-2 [40]	
CHOICE [n]	SIBpos-r16	entry n	
}			
lateNonCriticalExtension	Not present		
nonCriticalExtension	Not present		
}			

– *PosSI-SchedulingInfo*

Table 4.6.2a-2: PosSI-SchedulingInfo

Derivation Path: TS 38.331 [6], clause 6.3.1a			
Information Element	Value/remark	Comment	Condition
PosSI-SchedulingInfo-r16 ::= SEQUENCE {			
posSchedulingInfoList-r16 SEQUENCE (SIZE (1..maxSI-Message)) OF PosSchedulingInfo-r16 {	n entries	The size of PosSchedulingInfo-r16 is depending on the sub-tests, as specified in TS 37.571-2 [40]	
PosSchedulingInfo-r16[n] SEQUENCE {		entry n	
offsetToSI-Used-r16	Not present		
posSI-Periodicity-r16	rf32		
posSI-BroadcastStatus-r16	broadcasting		
posSIB-MappingInfo-r16 SEQUENCE (SIZE (1..maxSIB)) OF PosSIB-Type-r16 {	n entries	The number of entries depends on the sub-test, as specified in TS 37.571-2 [40]	
PosSIB-Type-r16[n]		entry n	
}			
}			
}			
posSI-RequestConfig-r16	Not present		
posSI-RequestConfigSUL-r16	Not present		
}			

– *SIBpos*

Table 4.6.2a-3: SIBpos

Derivation Path: TS 38.331 [6], clause 6.3.1a			
Information Element	Value/remark	Comment	Condition
SIBpos-r16 ::= SEQUENCE {			
assistanceDataSIB-Element-r16	OCTET STRING containing AssistanceDataSIBElement as specified in TS 37.571-2 [40]		
lateNonCriticalExtension	Not present		
}			

4.6.3 Radio resource control information elements

– *AdditionalPCIIIndex*

Table 4.6.3-0A: *AdditionalPCIIIndex*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
AdditionalPCIIIndex-r17	1		

– *AdditionalSpectrumEmission*

Table 4.6.3-1: *AdditionalSpectrumEmission*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
AdditionalSpectrumEmission	0		

– *AdvancedReceiver-MU-MIMO*

Table 4.6.3-1A: *AdvancedReceiver-MU-MIMO*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
AdvancedReceiver-MU-MIMO-r18 ::= SEQUENCE {			
FFS			
}			

– *Aerial-Config*

Table 4.6.3-1B: *Aerial-Config*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
Aerial-Config-r18 ::= SEQUENCE {			
flightPathUpdateThrConfig-r18 SEQUENCE {			
flightPathUpdateDistanceThr-r18 CHOICE {			
setup	1	5 meters	
}			
flightPathUpdateTimeThr-r18 CHOICE {			
setup	0	0 Seconds	
}			
}			

– *Alpha*

Table 4.6.3-2: *Alpha*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
Alpha	0	Value in meters	

– *Altitude*

Table 4.6.3-2A: *Altitude*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
Altitude-r18	2	Value in Meters	

– *AMF-Identifier*

Table 4.6.3-3: *AMF-Identifier*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
AMF-Identifier		Value not yet assigned.	

– *ApplicabilitySetConfigId*

Table 4.6.3-3A: *ApplicabilitySetConfigId*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
ApplicabilitySetConfigId-r19		Value not yet assigned.	

– *ApplicabilityReportList*

Table 4.6.3-3B: *ApplicabilityReportList*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
ApplicabilityReportList-r19 ::= SEQUENCE (SIZE (1..maxNrofServingCells) OF ApplicabilityReport-r19 {	1 entry		
ApplicabilityReport-r19[1] SEQUENCE {		entry 1	
FFS			
}			
}			

– *ARFCN-ValueEUTRA*

Table 4.6.3-4: *ARFCN-ValueEUTRA*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
ARFCN-ValueEUTRA	The ARFCN value for the E-UTRA carrier frequency.	For signalling test cases see subclause 6.2.3. Otherwise, see subclause 4.3.1.	

– *ARFCN-ValueNR*

Table 4.6.3-5: *ARFCN-ValueNR*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition

ARFCN-ValueNR	absoluteFrequencySSB as defined for the frequency of the cell	For signalling test cases see subclause 6.2.3. Otherwise, see subclause 4.3.1.	DL_SSB
	absoluteFrequencyPoint A as defined for the DL frequency of the cell	For signalling test cases see subclause 6.2.3. Otherwise, see subclause 4.3.1.	DL_PointA
	absoluteFrequencyPoint A as defined for the UL frequency of the cell	For signalling test cases see subclause 6.2.3. Otherwise, see subclause 4.3.1.	UL_PointA
	sl-absoluteFrequencySSB as defined for the SL NRf1 carrier	For signalling test cases see subclause 6.2.3.7. Otherwise, see subclause 4.3.1.8.	SL_SSB
	sl-AbsoluteFrequencyPoint A as defined for the SL NRf1 carrier	For signalling test cases see subclause 6.2.3.7. Otherwise, see subclause 4.3.1.8.	SL_PointA
	FrequencyInfoSL as defined for the SL NRf1 carrier	For signalling test cases see subclause 6.2.3.7. Otherwise, see subclause 4.3.1.8.	SL_MeasFrequencyInfo

Condition	Explanation
DL_SSB	IE absoluteFrequencySSB for downlink
SL_SSB	IE sl-absoluteFrequencySSB for sidelink
DL_PointA	IE absoluteFrequencyPointA for downlink
UL_PointA	IE absoluteFrequencyPointA for uplink
SL_PointA	IE sl-absoluteFrequencyPointA for sidelink
SL_MeasFrequencyInfo	IE frequencyInfoSL for sidelink

– ARFCN-ValueUTRA-FDD

Table 4.6.3-5A: ARFCN-ValueUTRA-FDD

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
ARFCN-ValueUTRA-FDD-r16		Value not yet assigned.	

– AssociatedId

Table 4.6.3-5BAA: AssociatedId

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
AssociatedId-r19		Value not yet assigned.	

– ATG-Config

Table 4.6.3-5BA: ATG-Config

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
ATG-Config-r18 ::= SEQUENCE {			
atg-gNB-Location-r18	ReferenceLocation with condition RefLocation_1		
heightgNB-r18	25		
cellSpecificKoffset-r18	1		
ta-ReportATG-r18	enabled		
}			

– AvailabilityCombinationsPerCell

Table 4.6.3-5B: AvailabilityCombinationsPerCell

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
AvailabilityCombinationsPerCell-r16 ::= SEQUENCE {			
FFS			
}			

– AvailabilityIndicator

Table 4.6.3-5C: AvailabilityIndicator

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
AvailabilityIndicator-r16 ::= SEQUENCE {			
FFS			
}			

– BAP-Routing-ID

Table 4.6.3-5D: BAP-Routing-ID

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
BAP-Routing-ID-r16 ::= SEQUENCE {			
FFS			
}			

– BeamFailureRecoveryConfig

Table 4.6.3-6: BeamFailureRecoveryConfig

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
BeamFailureRecoveryConfig SEQUENCE {			
rootSequenceIndex-BFR	Set according to the PRACH-rootSequenceIndex given in Table 4.4.2-2		
rach-ConfigBFR	RACH-ConfigGeneric		
rsrp-ThresholdSSB	57	Actual value = 100 dBm	

candidateBeamRSList SEQUENCE (SIZE(1..maxNrofCandidateBeams)) OF PRACH- ResourceDedicatedBFR {	1 entry		
PRACH-ResourceDedicatedBFR[1] CHOICE {		entry 1	
ssb SEQUENCE {			SSB
ssb	SSB-Index for BFR		
ra-PreambleIndex	56		
}			
}			
csi-rs[1] SEQUENCE {			CSI-RS
csi-rs	NZP-CSI-RS-ResourceId for BFR		
ra-OccasionList	Not present	The RA occasion associated with the SSB that is QCLed with this CSI-RS is used	
ra-PreambleIndex	Not present	The preamble index associated with the SSB that is QCLed with CSI-RS is used	
}			
}			
ssb-perRACH-Occasion	one		
ra-ssb-OccasionMaskIndex	0		
recoverySearchSpaceId	searchSpaceId for BFR search space	The CORESET associated with the BFR search space can not be associated with another search space according to 38.331 [6]	
ra-Prioritization	RA-Prioritization		
beamFailureRecoveryTimer	ms200		
msg1-SubcarrierSpacing	SubcarrierSpacing		
}			

Condition	Explanation
SSB	SSB is used as reference signal for BFR
CSI-RS	CSI-RS is used as reference signal for BFR

– *BeamFailureRecoveryRSConfig*

Table 4.6.3-6AA: BeamFailureRecoveryRSConfig

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
BeamFailureRecoveryRSConfig-r16 ::= SEQUENCE {			
FFS			
}			

Table 4.6.3-6AB: Void

– *BetaOffsets*

Table 4.6.3-6A: BetaOffsets

Derivation Path: TS 38.331 [6], clause 6.3.2

Information Element	Value/remark	Comment	Condition
BetaOffsets ::= SEQUENCE {			
betaOffsetACK-Index1	9		
betaOffsetACK-Index2	9		
betaOffsetACK-Index3	9		
betaOffsetCSI-Part1-Index1	6		
betaOffsetCSI-Part1-Index2	6		
betaOffsetCSI-Part2-Index1	6		
betaOffsetCSI-Part2-Index2	6		
}			

– *BetaOffsetsCrossPri*

Table 4.6.3-6BA: *BetaOffsetsCrossPri*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
BetaOffsetsCrossPri-r17	FFS		

– *BH-RLC-ChannelConfig*

Table 4.6.3-6B: *BH-RLC-ChannelConfig*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
BH-RLC-ChannelConfig-r16 ::= SEQUENCE {			
FFS			
}			

– *BH-LogicalChannelIdentity*

Table 4.6.3-6C: *BH-LogicalChannelIdentity*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
BH-LogicalChannelIdentity-r16 ::= CHOICE {			
FFS			
}			

– *BH-LogicalChannelIdentity-Ext*

Table 4.6.3-6D: *BH-LogicalChannelIdentity-Ext*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
BH-LogicalChannelIdentity-Ext-r16		Value not yet assigned.	

– *BH-RLC-ChannelID*

Table 4.6.3-6E: *BH-RLC-ChannelID*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
BH-RLC-ChannelID-r16		Value not yet assigned.	

– *BSR-Config*

Table 4.6.3-7: *BSR-Config*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
BSR-Config ::= SEQUENCE {			
periodicBSR-Timer	sf1		
retxBSR-Timer	sf80		
logicalChannelSR-DelayTimer	Not present		
}			

– *BWP*

Table 4.6.3-8: *BWP*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
BWP ::= SEQUENCE {			
locationAndBandwidth	Set to value of locationAndBandwidth in Table 4.3.1.0D-1 for the bandwidth and subcarrier spacing under test		FR1
	Set to value of locationAndBandwidth in Table 4.3.1.0D-2 for the bandwidth and subcarrier spacing under test		FR2
subcarrierSpacing	SubcarrierSpacing		
cyclicPrefix	Not present		
}			

– *BWP-Downlink*

Table 4.6.3-9: *BWP-Downlink*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
BWP-Downlink ::= SEQUENCE {			
bwp-Id	BWP-Id with condition BWP-Id1		
bwp-Common	BWP-DownlinkCommon with condition BWP-Id1		
bwp-Dedicated	BWP-DownlinkDedicated		
}			

– *BWP-DownlinkCommon*

Table 4.6.3-10: *BWP-DownlinkCommon*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
BWP-DownlinkCommon ::= SEQUENCE {			
genericParameters	BWP		
pdcch-ConfigCommon CHOICE {			
setup	PDCCH-ConfigCommon		
	PDCCH-ConfigCommon with condition SCell_add		SCell_add

	PDCCH-ConfigCommon with condition InitialBWP_SIB		InitialBWP_SIB
	PDCCH-ConfigCommon with condition BWP-Id1		BWP-Id1
	PDCCH-ConfigCommon with condition PEI		PEI
	PDCCH-ConfigCommon with condition SDT		SDT
	PDCCH-ConfigCommon with condition MBS_Broadcast		MBS_Broadcast
	PDCCH-ConfigCommon with condition MBS_Multicast_Inactive		MBS_Multicast_Inactive
}			
pdsch-ConfigCommon CHOICE {			
setup	PDSCH-ConfigCommon		
}			
}			

Condition	Explanation
InitialBWP_SIB	Configured via DownlinkConfigCommonSIB
BWP-Id1	Additional BWP 1
PEI	Paging Early Indication is configured in the cell.
SCell_add	Add SCell
SDT	For SDT test cases
MBS_Broadcast	NR Cell provide MBS Broadcast service
MBS_Multicast_Inactive	Used for MBS Multicast reception when UE in RRC_INACTIVE state

– *BWP-DownlinkDedicated*

Table 4.6.3-11: BWP-DownlinkDedicated

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
BWP-DownlinkDedicated ::= SEQUENCE {			
pdcch-Config CHOICE {			
setup	PDCCH-Config		
}			
pdsch-Config CHOICE {			
setu	PDSCH-Config		
}			
sps-Config	Not present		
radioLinkMonitoringConfig	Not present		SCell_add
radioLinkMonitoringConfig CHOICE {			
setup	RadioLinkMonitoringConfig		
}			
sps-ConfigToAddModList-r16	Not present		
sps-ConfigToReleaseList-r16	Not present		
sps-ConfigDeactivationStateList-r16	Not present		
beamFailureRecoverySCellConfig-r16	Not present		
sl-PDCCH-Config-r16	Not present		
sl-PDCCH-Config-r16 CHOICE {			SIDELINK
setup	PDCCH-Config with condition SLSS		
}			
sl-V2X-PDCCH-Config-r16	Not present		
preConfGapStatus-r17	Not present		
beamFailureRecoverySpCellConfig-r17	Not present		
harq-FeedbackEnablingforSPSActive-r17	Not present		
cfr-ConfigMulticast-r17	Not present		

cfr-ConfigMulticast-r17 CHOICE {			MBS_Multicast
setup	CFR-ConfigMulticast		
}			
dl-PPW-PreConfigToAddModList-r17	Not present		
dl-PPW-PreConfigToReleaseList-r17	Not present		
nonCellDefiningSSB-r17	Not present		
servingCellMO-r17	Not present		
}			

Condition	Explanation
SIDELINK	Used for sidelink communication
SCell_add	Add SCell
MBS_Multicast	Used for MBS Multicast reception

– *BWP-Id*

Table 4.6.3-12: BWP-Id

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
BWP-Id	0	Initial BWP	
	1		BWP-Id1

Condition	Explanation
BWP-Id1	Additional BWP 1

– *BWP-Uplink*

Table 4.6.3-13: BWP-Uplink

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
BWP-Uplink ::= SEQUENCE {			
bwp-Id	BWP-Id with condition BWP-Id1		
bwp-Common	BWP-UplinkCommon		
bwp-Dedicated	BWP-UplinkDedicated		
}			

– *BWP-UplinkCommon*

Table 4.6.3-14: BWP-UplinkCommon

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
BWP-UplinkCommon ::= SEQUENCE {			
genericParameters	BWP		
rach-ConfigCommon CHOICE {			
setup	RACH-ConfigCommon		
}			
rach-ConfigCommon	Not present		SUL_SUL AND (RF OR RRM), RF AND SCell_add
pusch-ConfigCommon CHOICE {			
setup	PUSCH-ConfigCommon		

}			
pucch-ConfigCommon CHOICE {			
setup	PUCCH-ConfigCommon		
}			
pucch-ConfigCommon	Not present		RF AND SCell_add
enableRA-PrioritizationForSlicing-r17	Not present		
	true		Slice_RACH
additionalRACH-ConfigList-r17	Not present		
rsrp-ThresholdMsg3-r17	Not present		
numberOfMsg3-RepetitionsList-r17	Not present		
mcs-Msg3-Repetitions-r17	Not present		
}			

Condition	Explanation
SUL SUL	On the SUL carrier when supplementary carrier is configured
SCell_add	Add SCell
Slice_RACH	Slice specific RACH configuration

– *BWP-UplinkDedicated*

Table 4.6.3-15: BWP-UplinkDedicated

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
BWP-UplinkDedicated ::= SEQUENCE {			
pucch-Config CHOICE {			
setup	PUCCH-Config		
release	NULL		SUL_NUL AND PucchOnNul
}			
pucch-Config	Not present		SUL_NUL AND NoPucchOn Nul,(RF OR SIG) AND SCell_add
pusch-Config	Not present		RESUME, SUL_NUL AND NoPuschOn Nul AND pc_dynamic Switch_SUL =False
pusch-Config CHOICE {			
setup	PUSCH-Config		
release	NULL		SUL_NUL AND PuschOnNul AND pc_dynamic Switch_SUL =False
}			
configuredGrantConfig	Not present		
	ConfiguredGrantConfig		CG_Config
srs-Config	Not present		Short_DCI
	SRS-Config		
beamFailureRecoveryConfig	Not present		
sl-PUCCH-Config-r16	Not present		
sl-PUCCH-Config-r16 CHOICE {			SIDELINK

setup	PUCCH-Config		
}			
cp-ExtensionC2-r16	Not present		
cp-ExtensionC3-r16	Not present		
useInterlacePUCCH-PUSCH-r16	Not present		
pucch-ConfigurationList-r16	Not present		
lbt-FailureRecoveryConfig-r16	Not present		
lbt-FailureRecoveryConfig-r16 CHOICE {			SharedSpec trum
setup	LBT- FailureRecoveryConfig		
}			
configuredGrantConfigToAddModList-r16	Not present		
configuredGrantConfigToReleaseList-r16	Not present		
configuredGrantConfigType2DeactivationStateList- r16	Not present		
}			

Condition	Explanation
Short_DCI	Used in test scenarios requiring DCI formats 0-0 and 1-0 on USS
SUL_NUL	On the NUL carrier when supplementary carrier is configured
RESUME	Used in RRCResume Message
SIDELINK	Used for sidelink communication
SCell_add	Add SCell
SharedSpectrum	Operation with shared spectrum channel access
CG_Config	Configured Grant Configuration
PucchOnNul	PUCCH-Config has been configured previously on the NUL carrier before supplementary carrier is configured
NoPucchOnNul	PUCCH-Config has not been configured previously on the NUL carrier before supplementary carrier is configured
PuschOnNul	PUSCH-Config has been configured previously on the NUL carrier before supplementary carrier is configured
NoPuschOnNul	PUSCH-Config has not been configured previously on the NUL carrier before supplementary carrier is configured

– *CandidateBeamRS*

Table 4.6.3-15A: CandidateBeamRS

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
CandidateBeamRS-r16 ::= SEQUENCE {			
FFS			
}			

– *CandidateTCI-State*

Table 4.6.3-15B: CandidateTCI-State

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
CandidateTCI-State-r18 ::= SEQUENCE {			
tci-StateId-r18	TCI-StateId		
qcl-Type1-r18	LTM-QCL-Info		
qcl-Type2-r18	Not present		
	LTM-QCL-Info		Type 2
pathlossReferenceRS-Id-r18	PathlossReferenceRS-Id		Joint
	Not present		
tag-Id-ptr-r18	Not present		
ul-PowerControl-r18	Not present		
}			

Condition	Explanation
Type 2	QCL type 2 information for the TCI state
Joint	LTM candidate configuration is configured with ltm-DL-OrJointTCI-StateToAddModList for joint TCI states for UL and DL operation

– *CandidateTCI-UL-State*

Table 4.6.3-15C: CandidateTCI-UL-State

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
CandidateTCI-UL-State-r18 ::= SEQUENCE {			
tci-UL-StateId-r18	TCI-UL-StateId		
referenceSignal-r18 CHOICE {			
ssb-Index	SSB-Index		
}			
pathlossReferenceRS-Id-r18	PathlossReferenceRS-Id		
tag-Id-ptr-r18	Not present		
ul-PowerControl-r18	Not present		
}			

– *CellAccessRelatedInfo*

Table 4.6.3-16: CellAccessRelatedInfo

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
CellAccessRelatedInfo ::= SEQUENCE {			
plmn-IdentityInfoList	PLMN-IdentityInfoList		
cellReservedForOtherUse	Not present		
	true		SNPN, CAG
cellReservedForFutureUse-r16	Not present		
nnp-IdentityInfoList-r16	Not present		
	NPN-IdentityInfoList-r16		SNPN, CAG
snnp-AccessInfoList-r17	Not present		
snnp-AccessInfoList-r17 SEQUENCE (SIZE (1..maxNPN-r16)) OF SNPN-AccessInfo-r17 {	1 entry		eNPN
SNPN-AccessInfo-r17[1] SEQUENCE {		entry 1	
extCH-Supported-r17	true		
extCH-WithoutConfigAllowed-r17	true		
onboardingEnabled-r17	true		
imsEmergencySupportForSNPN-r17	true		
}			
}			
}			

Condition	Explanation
SNPN	Standalone NPN cell
CAG	PNI-NPN
eNPN	Rel-17 enhanced NPN cell

– *CellAccessRelatedInfo-EUTRA-5GC*

Table 4.6.3-17: CellAccessRelatedInfo-EUTRA-5GC

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition

CellAccessRelatedInfo-EUTRA-5GC ::= SEQUENCE			
{			
FFS			
}			

– *CellAccessRelatedInfo-EUTRA-EPC*

Table 4.6.3-18: CellAccessRelatedInfo-EUTRA-EPC

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
CellAccessRelatedInfo-EUTRA-EPC ::= SEQUENCE			
{			
FFS			
}			

– *CellDTXDRX-Config*

Table 4.6.3-18A: CellDTX-DRX-Config

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
CellDTX-DRX-Config-r18 ::= SEQUENCE {			
FFS			
}			

– *CellGroupConfig*

Table 4.6.3-19: CellGroupConfig

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
CellGroupConfig ::= SEQUENCE {			
cellGroupId	CellGroupId		
	CellGroupId condition		NR-
	NR-DC_SCG		DC_SCG
rlc-BearerToAddModList SEQUENCE	1 entry		EN-DC
(SIZE(1..maxLCH)) OF RLC-BearerConfig {			
RLC-BearerConfig[1]	RLC-BearerConfig with	entry 1	
	conditions AM and DRB2		
	RLC-BearerConfig with		PSCell_cha
	conditions AM and DRB2		nge
	and Re-establish_RLC		
}			
rlc-BearerToAddModList SEQUENCE	1 entry		SRB1
(SIZE(1..maxLCH)) OF RLC-BearerConfig {			
RLC-BearerConfig[1]	RLC-BearerConfig with	entry 1	
	condition SRB1		
}			
rlc-BearerToAddModList SEQUENCE	2 entries		SRB2_DRB
(SIZE(1..maxLCH)) OF RLC-BearerConfig {			1
RLC-BearerConfig[1]	RLC-BearerConfig with	entry 1	
	condition SRB2		
RLC-BearerConfig[2]	RLC-BearerConfig with	entry 2	
	conditions AM and DRB1		
}			
rlc-BearerToAddModList SEQUENCE	2 entries		SRB2_DRB
(SIZE(1..maxLCH)) OF RLC-BearerConfig {			2
RLC-BearerConfig[1]	RLC-BearerConfig with	entry 1	
	condition SRB2		

RLC-BearerConfig[2]	RLC-BearerConfig with conditions AM and DRB2	entry 2	
}			
rlc-BearerToAddModList SEQUENCE (SIZE(1..maxLCH)) OF RLC-BearerConfig {	1 entry		DRBn, NR-DC_SCG
RLC-BearerConfig[1]	RLC-BearerConfig with conditions AM and DRBn	entry 1 DRBn is allocated according to internal TTCN mapping	
}			
rlc-BearerToAddModList SEQUENCE (SIZE(1..maxLCH)) OF RLC-BearerConfig {	3 entries		PCell_change
RLC-BearerConfig[1]	RLC-BearerConfig with conditions SRB1 and Re-establish_RLC	entry 1	
RLC-BearerConfig[2]	RLC-BearerConfig with conditions SRB2 and Re-establish_RLC	entry 2	
RLC-BearerConfig[3]	RLC-BearerConfig with conditions AM, DRB1 and Re-establish_RLC	entry 3	
}			
rlc-BearerToAddModList SEQUENCE (SIZE(1..maxLCH)) OF RLC-BearerConfig {	1+n entries	n is the number of DRBs established before RRC resume	RESUME
RLC-BearerConfig[1]	RLC-BearerConfig with condition SRB2 and RESUME	entry 1	
RLC-BearerConfig[k+1, k=1..n]	RLC-BearerConfig with condition DRBk and RESUME	entry [k+1, k=1..n]	
}			
rlc-BearerToAddModList SEQUENCE (SIZE(1..maxLCH)) OF RLC-BearerConfig {	2+n entries	n is the number of DRBs established before RRC re-establishment	REEST
RLC-BearerConfig[1]	RLC-BearerConfig with condition SRB1	entry 1	
RLC-BearerConfig[2]	RLC-BearerConfig with condition SRB2 and Re-establish_RLC	entry 2	
RLC-BearerConfig[k+2, k=1..n]	RLC-BearerConfig with condition DRBk and Re-establish_RLC	entry [k+2, k=1..n]	
}			
rlc-BearerToAddModList SEQUENCE (SIZE(1..maxLCH)) OF RLC-BearerConfig {	1 entry		MRBm AND (AM_PTP OR UM_bi_PTP OR UM_PTP OR UM_PTM)
RLC-BearerConfig[1]	RLC-BearerConfig with conditions AM and PTP	entry 1	AM_PTP
	RLC-BearerConfig with conditions UM and PTP		UM_bi_PTP
	RLC-BearerConfig with conditions UM_DLonly and PTP		UM_PTP
	RLC-BearerConfig with conditions UM_DLonly and PTM		UM_PTM
}			

rlc-BearerToAddModList SEQUENCE (SIZE(1..maxLCH)) OF RLC-BearerConfig {	2 entries		MRBm_DR Bn AND (AM_PTP OR UM_bi_PTP OR UM_PTP OR UM_PTM)
RLC-BearerConfig[1]	RLC-BearerConfig with conditions AM and PTP and MRBm	entry 1	AM_PTP
	RLC-BearerConfig with conditions UM and PTP and MRBm		UM_bi_PTP
	RLC-BearerConfig with conditions UM_DLonly and PTP and MRBm		UM_PTP
	RLC-BearerConfig with conditions UM_DLonly and PTM and MRBm		UM_PTM
RLC-BearerConfig[2]	RLC-BearerConfig with conditions AM and DRBn	entry 2 DRBn is allocated according to internal TTCN mapping	
}			
rlc-BearerToAddModList SEQUENCE (SIZE(1..maxLCH)) OF RLC-BearerConfig {	2 entries		MRBm AND (AMPTP_U MPTM OR UMPTP_UM PTM)
RLC-BearerConfig[1]	RLC-BearerConfig with conditions AM and PTP and MRBm	entry 1	AMPTP_UM PTM
	RLC-BearerConfig with conditions UM_DLonly and PTP and MRBm		UMPTP_UM PTM
RLC-BearerConfig[2]	RLC-BearerConfig with conditions UM_DLonly and PTM and MRBm	entry 2	AMPTP_UM PTM, UMPTP_UM PTM
}			
rlc-BearerToAddModList SEQUENCE (SIZE(1..maxLCH)) OF RLC-BearerConfig {	3 entries		MRBm_DR Bn AND (AMPTP_U MPTM OR UMPTP_UM PTM)
RLC-BearerConfig[1]	RLC-BearerConfig with conditions AM and PTP and MRBm	entry 1	AMPTP_UM PTM
	RLC-BearerConfig with conditions UM_DLonly and PTP and MRBm		UMPTP_UM PTM
RLC-BearerConfig[2]	RLC-BearerConfig with conditions UM_DLonly and PTM and MRBm	entry 2	AMPTP_UM PTM, UMPTP_UM PTM
RLC-BearerConfig[3]	RLC-BearerConfig with conditions AM and DRBn	entry 3 DRBn is allocated according to internal TTCN mapping	
}			
rlc-BearerToAddModList	Not present		
rlc-BearerToReleaseList	Not present		

mac-CellGroupConfig	MAC-CellGroupConfig		
	MAC-CellGroupConfig with condition MBS_Multicast		AMPTP_UM PTM, UMPTP_UM PTM, UM_PT
	Not present		SRB2_DRB 1, MEAS, SRB2_DRB 2, SCell_add
physicalCellGroupConfig	PhysicalCellGroupConfig		
	Not present		SRB2_DRB 1, MEAS, SRB2_DRB 2, SCell_add, MRBm, MRBm_DR Bn
spCellConfig	Not present		SRB2_DRB 1, SRB2_DRB 2, SCell_add, AM_PTP, UM_bi_PTP, UM_PTP
spCellConfig SEQUENCE {			
servCellIndex	Not present		
	ServCellIndex		EN-DC, EN-DC AND MEAS
	ServCellIndex with condition NR-DC_SCG		NR-DC_SCG
reconfigurationWithSync	Not present		
reconfigurationWithSync SEQUENCE {			EN-DC, PCell_change, PSCell_change, NR-DC_SCG
spCellConfigCommon	ServingCellConfigCommon		
newUE-Identity	RNTI-Value		
	RNTI-Value with condition NR-DC_SCG		NR-DC_SCG
t304	ms1000		
rach-ConfigDedicated	Not present		
rach-ConfigDedicated CHOICE {			CFRA
uplink	RACH-ConfigDedicated		
supplementaryUplink	RACH-ConfigDedicated		SUL AND SIG
}			
}			
rlf-TimersAndConstants CHOICE {			
setup	RLF-TimersAndConstants		
}			
rlf-TimersAndConstants	Not present		MEAS, RESUME
rlmInSyncOutOfSyncThreshold	Not present		
spCellConfigDedicated	ServingCellConfig		EN-DC, SRB1, PCell_change, PSCell_cha

			nge, NR-DC_SCG, REEST
	Not present		
	ServingCellConfig with condition MEAS		MEAS
	ServingCellConfig with condition RESUME		RESUME
	ServingCellConfig with condition MBS_Multicast		AMPTP_UM PTM, UMPTP_UM PTM, UM_PT
	ServingCellConfig with condition LTM_CSI MEAS		LTM_CSI
lowMobilityEvaluationConnected-r17	Not present		
goodServingCellEvaluationRLM-r17	Not present		
goodServingCellEvaluationBFD-r17	Not present		
deactivatedSCG-Config-r17	Not present		
deactivatedSCG-Config-r17 CHOICE {			RLM_BFD_PSCell
setup SEQUENCE {			
bfd-and-RLM-r17	true		
}			
}			
}			
sCellToAddModList	Not present		
sCellToAddModList SEQUENCE (SIZE (1..maxNrofSCells)) OF SCellConfig {	1 entry		SCell_add
SCellConfig[1] SEQUENCE {		entry 1	
sCellIndex	SCellIndex		
sCellConfigCommon	ServingCellConfigCommon with condition No_UL and SCell_add		
	ServingCellConfigCommon with condition SCell_add		RF AND UL_CA
sCellConfigDedicated	ServingCellConfig with condition No_UL and SCell_add		
	ServingCellConfig with condition SCell_add		RF AND UL_CA
}			
}			
sCellToReleaseList	Not present		
f1c-TransferPathNRDC-r17	Not present		
uplinkTxSwitching-2T-Mode-r17	Not present		
uplinkTxSwitching-DualUL-TxState-r17	Not present		
uu-RelayRLC-ChannelToAddModList-r17	Not present		
uu-RelayRLC-ChannelToAddModList-r17 SEQUENCE (SIZE (1.. maxUu-RelayRLC-ChannelID-r17)) OF Uu-RelayRLC-ChannelConfig-r17{	2 entries		L2RelayUE and uuRelaySRB0_SRB1
Uu-RelayRLC-ChannelConfig-r17[1]	Uu-RelayRLC-ChannelConfig with condition uuRelaySRB0	entry 1	
Uu-RelayRLC-ChannelConfig-r17[2]	Uu-RelayRLC-ChannelConfig with condition uuRelaySRB1	entry 2	
}			
uu-RelayRLC-ChannelToAddModList-r17 SEQUENCE (SIZE (1.. maxUu-RelayRLC-ChannelID-r17)) OF Uu-RelayRLC-ChannelConfig-r17{	2 entries		L2RelayUE and uuRelaySRB2_DRB1

Uu-RelayRLC-ChannelConfig-r17[1]	Uu-RelayRLC-ChannelConfig with condition uuRelay SRB2	entry 1	
Uu-RelayRLC-ChannelConfig-r17[2]	Uu-RelayRLC-ChannelConfig with condition uuRelay DRB1	entry 2	
}			
uu-RelayRLC-ChannelToReleaseList-r17	Not present		
uu-RelayRLC-ChannelToReleaseList-r17 SEQUENCE (SIZE(1..maxUu-RelayRLC-ChannelID-r17)) OF Uu-RelayRLC-ChannelID-r17{	1 entry		L2RelayUE_ Release
Uu-RelayRLC-ChannelID-r17	Uu-RelayRLC-ChannelID	entry 1	
}			
simultaneousU-TCI-UpdateList1-r17	Not present		
simultaneousU-TCI-UpdateList2-r17	Not present		
simultaneousU-TCI-UpdateList3-r17	Not present		
simultaneousU-TCI-UpdateList4-r17	Not present		
rlc-BearerToReleaseListExt-r17	Not present		
iab-ResourceConfigToAddModList-r17	Not present		
iab-ResourceConfigToReleaseList-r17	Not present		
ncr-FwdConfig-r18	Not present		
autonomousDenialParameters-r18	Not present		
nonCollocatedTypeMRDC-r18	Not present		
nonCollocatedTypeNR-CA-r18	Not present		
uplinkTxSwitchingMoreBands-r18	Not present		
}			

Condition	Explanation
EN-DC	E-UTRA-NR Dual Connectivity with E-UTRA connected to EPC
CFRA	This condition applies when CFRA is configured
SUL	Supplementary Uplink
SRB1	Establishment of SRB1
SRB2_DRB1	Establishment of SRB2 and DRB1
SRB2_DRB2	Establishment of SRB2 and DRB2
DRBn	Establishment of DRBn
PCell_change	Intra-NR PCell change (NR)
PSCell_change	NR PSCell change (EN-DC)
SCell_add	Add SCell
MEAS	A NR or EN-DC measurement is configured
NR-DC_SCG	Add SCG (NR-DC)
RESUME	Used in RRCResume Message
REEST	The first RRCReconfiguration message after successful completion of the RRC re-establishment procedure.
UL_CA	Uplink CA
MRBm	Establishment of MRBm
MRBm_DRBn	Establishment of MRBm and DRBn
AM_PTP	Multicast MRB with RLC-AM entity configuration for receiving PTP transmission
UM_bi_PTP	Multicast MRB with bidirectional RLC-UM configuration for receiving PTP transmission
UM_PTP	Multicast MRB with DL only RLC-UM configuration for receiving PTP transmission
UM_PTM	Multicast MRB with DL only RLC-UM entity for receiving PTM transmission
AMPTP_UMPTM	Multicast MRB with two RLC entities, one RLC-AM entity for receiving PTP transmission and the other DL only RLC-UM entity for receiving PTM transmission
UMPTP_UMPTM	Multicast MRB with two RLC-UM entities, one DL only RLC-UM entity for receiving PTP transmission and the other DL only RLC-UM entity for receiving PTM transmission
L2RelayUE	Setup L2 U2N Relay UE configuration
L2RelayUE_Release	Release L2 U2N Relay UE configuration
uuRelaySRB0_SRB1	Establish uu RelayRLC Channel for SRB0 and SRB1
uuRelaySRB2_DRB1	Establish uu RelayRLC Channel for SRB2 and DRB1
RLM_BFD_PSCell	Perform RLM and BFD on the PSCell when the SCG is deactivated

LTM_CSI	CSI configuration for LTM

– *CellGroupId*

Table 4.6.3-20: *CellGroupId*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
CellGroupId	0		
	1		EN-DC, NR-DC_SCG

Condition	Explanation
EN-DC	E-UTRA-NR Dual Connectivity with E-UTRA connected to EPC
NR-DC_SCG	Add SCG (NR-DC)

– *CellIdentity*

Table 4.6.3-21: *CellIdentity*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
CellIdentity	Set to NR Cell Identifier defined in table 4.4.2-2	BIT STRING (SIZE (36))	

– *CellReselectionPriority*

Table 4.6.3-22: *CellReselectionPriority*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
CellReselectionPriority	4		
	5		Priority_5

Condition	Explanation
Priority_5	Priority 5

– *CellReselectionSubPriority*

Table 4.6.3-23: *CellReselectionSubPriority*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
CellReselectionSubPriority		Value not yet assigned.	

– *CFR-ConfigMulticast*

Table 4.6.3-23AA: *CFR-ConfigMulticast*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
CFR-ConfigMulticast-r17 ::= SEQUENCE {			
locationAndBandwidthMulticast-r17	Not present		

pdcch-ConfigMulticast-r17	PDCCH-Config with condition MSS		
pdsch-ConfigMulticast-r17	PDSCH-Config with condition MBS_Multicast		
sps-ConfigMulticastToAddModList-r17	Not present		
sps-ConfigMulticastToReleaseList-r17	Not present		
}			

– *CGI-InfoEUTRA*

Table 4.6.3-23A: *CGI-InfoEUTRA*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
CGI-InfoEUTRA	FFS		

– *CGI-InfoEUTRALogging*

Table 4.6.3-23B: *CGI-InfoEUTRALogging*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
CGI-InfoEUTRALogging ::= SEQUENCE {			
FFS			
}			

– *CGI-InfoNR*

Table 4.6.3-24: *CGI-InfoNR*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
CGI-InfoNR	FFS		

– *ChannelAccessConfig*

Table 4.6.3-24AA: *ChannelAccessConfig*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
ChannelAccessConfig-r16 ::= SEQUENCE {			
energyDetectionConfig-r16 CHOICE {			
maxEnergyDetectionThreshold-r16	-85		
}			
ul-toDL-COT-SharingED-Threshold-r16	-85		pc_ul_DynamicChAccess_r16 AND (NOT pc_ul_Semi_StaticChAccess_r16)
	Not present		pc_ul_Semi_StaticChAccess_r16
absenceOfAnyOtherTechnology-r16	true		
}			

– *CGI-Info-Logging*

Table 4.6.3-24A: CGI-Info-Logging

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
CGI-Info-Logging-r16 ::= SEQUENCE {			
FFS			
}			

– *Cho-WithCandidateSCGInfo*

Table 4.6.3-24BA: Cho-WithCandidateSCGInfo

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
Cho-WithCandidateSCGInfo-r19 ::= SEQUENCE {			
FFS			
}			

– *CLI-RSSI-MeasResource*

Table 4.6.3-24BB: CLI-RSSI-MeasResource

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
CLI-RSSI-MeasResource-r19 ::= SEQUENCE {			
FFS			
}			

– *CLI-RSSI-MeasResourceId*

Table 4.6.3-24BC: CLI-RSSI-MeasResourceId

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
CLI-RSSI-MeasResourceId-r19		Value not yet assigned.	

– *CLI-RSSI-MeasResourceSet*

Table 4.6.3-24BD: CLI-RSSI-MeasResourceSet

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
CLI-RSSI-MeasResourceSet-r19 ::= SEQUENCE {			
FFS			
}			

– *CLI-RSSI-MeasResourceSetId*

Table 4.6.3-24BE: CLI-RSSI-MeasResourceSetId

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition

CLI-RSSI-MeasResourceSetId-r19		Value not yet assigned.	

– *CLI-RSSI-Range*

Table 4.6.3-24B: CLI-RSSI-Range

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
CLI-RSSI-Range-r16		Value not yet assigned.	

– *ClockQualityMetrics*

Table 4.6.3-24C: ClockQualityMetrics

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
ClockQualityMetrics-r18 ::= SEQUENCE {			
FFS			
}			

– *CodebookConfig*

Table 4.6.3-25: CodebookConfig

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
CodebookConfig ::= SEQUENCE {			
codebookType CHOICE {			
type1 SEQUENCE {			
subType CHOICE {			
type1-SinglePanel SEQUENCE {			
nrOfAntennaPorts CHOICE {			
two SEQUENCE {			2TX
twoTX-CodebookSubsetRestriction	111111		
}			
moreThanTwo SEQUENCE {			
n1-n2 CHOICE {			
two-one-Type1-SinglePanel-Restriction	11111111		FR2
four-one-Type1-SinglePanel-Restriction	11111111 11111111		FR1
}			
type1-SinglePanel-codebookSubsetRestriction-i2	Not present		
}			
}			
type1-SinglePanel-ri-Restriction	11111111		
}			
}			
codebookMode	1		
}			
}			
}			

Condition	Explanation
2TX	2 Tx CSI-RS configuration.

– *CommonLocationInfo*

Table 4.6.3-25A: CommonLocationInfo

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
CommonLocationInfo-r16 ::= SEQUENCE {			
gnss-TOD-msec-r16	Not checked	OCTET STRING	
locationTimestamp-r16	Not checked	OCTET STRING	
locationCoordinate-r16	Not checked	OCTET STRING	
locationError-r16	Not checked	OCTET STRING	
locationSource-r16	Not checked	OCTET STRING	
velocityEstimate-r16	Not checked	OCTET STRING	
}			

– *CondReconfigId*

Table 4.6.3-25B: CondReconfigId

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
CondReconfigId-r16	1		

– *CondReconfigToAddModList*

Table 4.6.3-25C: CondReconfigToAddModList

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
CondReconfigToAddModList-r16 ::= SEQUENCE (SIZE (1.. maxNrofCondCells-r16)) OF CondReconfigToAddMod-r16 {	1 entry		
CondReconfigToAddMod-r16[1] SEQUENCE {		entry 1	
condReconfigId-r16	CondReconfigId-r16		
condExecutionCond-r16 SEQUENCE (SIZE (1..2)) OF MeasId {	1 entry		
MeasId[1]	1	identify a measurement configuration	
}			
condRRCReconfig-r16	RRCReconfiguration-HO	Table 4.8.1-1A	
	RRCReconfiguration-CPA	Table 4.8.1-1AB	CPA
condExecutionCondSCG-r17	Not present		
condExecutionCondPSCell-r18	Not present		
subsequentCondReconfig-r18	Not present		
	SubsequentCondReconfig		SCPAC
securityCellSetId-r18	Not present		
	1		CPAC
scpac-ConfigComplete-r18	Not present		
	true		SCPAC
}			
}			

Condition	Explanation
CPA	Conditional PSCell addition
CPAC	Conditional PSCell Addition or Change
SCPAC	Subsequent Conditional PSCell Addition or Change

– *ConditionalReconfiguration*

Table 4.6.3-25D: ConditionalReconfiguration

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
ConditionalReconfiguration-r16 ::= SEQUENCE {			
attemptCondReconfig-r16	true		
condReconfigToRemoveList-r16	Not present		
condReconfigToAddModList-r16	CondReconfigToAddModList		
scpac-ReferenceConfiguration-r18	Not present		
scpac-ReferenceConfiguration-r18 CHOICE {			SCPAC
setup	ReferenceConfiguration		
}			
servingSecurityCellSetId-r18	Not present		
	1		CPAC
sk-CounterConfiguration-r18	Not present		
sk-CounterConfiguration-r18 SEQUENCE {			SCPAC
sk-CounterConfigToReleaseList-r18	Not present		
sk-CounterConfigToAddModList-r18 SEQUENCE (SIZE (1..maxSecurityCellSet-r18)) OF SK-CounterConfig-r18 {	1 entry		
SK-CounterConfig-r18[1] SEQUENCE {		entry 1	
securityCellSetId-r18	1		
sk-CounterList-r18 SEQUENCE (SIZE (1..maxSK-Counter-r18)) OF SK-Counter {	1 entry		
SK-Counter[1]	SK-Counter	entry 1	
}			
}			
}			
}			
}			

Condition	Explanation
CPAC	Conditional PSCell Addition or Change
SCPAC	Subsequent Conditional PSCell Addition or Change

– *ConfiguredGrantConfig*

Table 4.6.3-26: ConfiguredGrantConfig

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
ConfiguredGrantConfig ::= SEQUENCE {			
frequencyHopping	Not present		
cg-DMRS-Configuration	DMRS-UplinkConfig		
mcs-Table	Not present		
mcs-TableTransformPrecoder	Not present		
uci-OnPUSCH	Not present		
resourceAllocation	resourceAllocationType1		
rbg-Size	Not present		
powerControlLoopToUse	n0		
p0-PUSCH-Alpha	0		
transformPrecoder	Not present		
nrofHARQ-Processes	16		
repK	n1		
repK-RV	Not present		
periodicity	Sym40x14	40ms	SCS15
	Sym80x14	40ms	SCS30
	Sym160x14	40ms	SCS60
	Sym320x14	40ms	SCS120
configuredGrantTimer	Not present		

rrc-ConfiguredUplinkGrant	Not present		
rrc-ConfiguredUplinkGrant SEQUENCE {			CG_Config_Type1
timeDomainOffset	9		
timeDomainAllocation	0		
frequencyDomainAllocation	BIT STRING (SIZE(18))	Equals to NBWPsiz * (NBWPsiz – LRB + 1) + (NBWPsiz -1 - RBstart), where LRB = 24 PRB, RBstart = 0, NBWPsiz is the size [PRBs] of the carrier bandwidth and contained in clause 6.2.3.1	
	BIT STRING (SIZE(18))	Equal to NBWPsiz * (LRB-1) + RBstart), where LRB = 24 PRB, RBstart = 0, NBWPsiz is the size [PRBs] of the carrier bandwidth and contained in clause 6.2.3.1	
antennaPort	2		
dmrs-SeqInitialization	Not present		
precodingAndNumberOfLayers	1		
srs-ResourceIndicator	Not present		
mcsAndTBS	1		
frequencyHoppingOffset	Not present		
pathlossReferenceIndex	0		
pathlossReferenceIndex2-r17	Not present		
srs-ResourceIndicator2-r17	Not present		
precodingAndNumberOfLayers2-r17	Not present		
timeDomainAllocation-v1710	Not present		
timeDomainOffset-r17	Not present		
cg-SDT-Configuration-r17	Not present		
cg-SDT-Configuration-r17 SEQUENCE {			pc_cg_SDT_r17
cg-SDT-RetransmissionTimer	Not present		
sdt-SSB-Subset-r17	Not present	If this field is absent, UE assumes the SSB set includes all actually transmitted SSBs configured by SIB1.	
sdt-SSB-PerCG-PUSCH-r17	one		
sdt-P0-PUSCH-r17	0		
sdt-Alpha-r17	alpha08		
sdt-DMRS-Ports-r17 CHOICE {			
dmrsType1-r17	'10000000'B	Port0	
}			
sdt-NrofDMRS-Sequences-r17	1		
}			
srs-ResourceSetId-r18	Not present		
cg-LTM-Configuration-r18	Not present		
cg-LTM-Configuration-r18 SEQUENCE {			LTM
cg-RRC-RetransmissionTimer-r18	2		
cg-RRC-RSRP-ThresholdSSB-r18	RSRP-Range		
rrc-SSB-Subset-r18 CHOICE {			

1.88GHz<FREQ<=3GHz	Frequency range > 1.88GHz and <= 3GHz
FREQ>3GHz	Frequency range > 3GHz
SSB#N	Cell configured with SSB-Index set to N as defined in Table 4.4.2-2

– *ConfiguredGrantConfigIndex*

Table 4.6.3-26A: ConfiguredGrantConfigIndex

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
ConfiguredGrantConfigIndex-r16		Value not yet assigned.	

– *ConfiguredGrantConfigIndexMAC*

Table 4.6.3-26B: ConfiguredGrantConfigIndexMAC

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
ConfiguredGrantConfigIndexMAC-r16		Value not yet assigned.	

– *ConnEstFailureControl*

Table 4.6.3-27: ConnEstFailureControl

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
ConnEstFailureControl ::= SEQUENCE {			
connEstFailCount	n1		
connEstFailOffsetValidity	s30		
connEstFailOffset	1		
}			

– *ControlResourceSet*

Table 4.6.3-28: ControlResourceSet

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
ControlResourceSet ::= SEQUENCE {			
controlResourceSetId	ControlResourceSetId		
frequencyDomainResources	11110000 00000000 00000000 00000000 00000000 000000	CORESET to use the least significant 24 RBs of the BWP	BW3
	11000000 00000000 00000000 00000000 00000000 000000	CORESET to use the least significant 12 RBs of the BWP	
duration	2	SearchSpace duration of 2 symbols	
cce-REG-MappingType CHOICE {			
nonInterleaved	null		
}			
precoderGranularity	sameAsREG-bundle		
tci-StatesPDCCH-ToAddList	Not present		
tci-StatesPDCCH-ToReleaseList	Not present		

tci-PresentInDCI	Not present		
pdcch-DMRS-ScramblingID	Not present		
}			

– *ControlResourceSetId*

Table 4.6.3-29: ControlResourceSetId

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
ControlResourceSetId	1		
	0		Common0

Condition	Explanation
Common0	CommonCORESET#0

– *ControlResourceSetZero*

Table 4.6.3-30: ControlResourceSetZero

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
ControlResourceSetZero	Set to CORESET#0 Index as defined for the frequency of the cell	For signalling test cases see subclause 6.2.3. Otherwise, see subclause 4.3.1.	
	0		NCD-SSB

Condition	Explanation
NCD-SSB	MIB for NCD-SSB

– *CQI-Table*

Table 4.6.3-30A: CQI-Table

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
CQI-Table	table1		
	table2		256QAM

Condition	Explanation
256QAM	Test cases using 256QAM for PDSCH

– *CrossCarrierSchedulingConfig*

Table 4.6.3-31: CrossCarrierSchedulingConfig

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
CrossCarrierSchedulingConfig ::= SEQUENCE {			
FFS			
}			

– *CSI-AperiodicTriggerStateList*

Table 4.6.3-32: CSI-AperiodicTriggerStateList

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
CSI-AperiodicTriggerStateList ::= SEQUENCE (SIZE (1..maxNrOfCSI-AperiodicTriggers)) OF CSI-AperiodicTriggerState {	1 entry		
CSI-AperiodicTriggerState[1] SEQUENCE {		entry 1	
associatedReportConfigInfoList SEQUENCE (SIZE(1..maxNrOfReportConfigPerAperiodicTrigger)) OF CSI-AssociatedReportConfigInfo {	1 entry		
CSI-AssociatedReportConfigInfo[1] SEQUENCE {		entry 1	
reportConfigId	CSI-ReportConfigId		
resourcesForChannel CHOICE {			
nzp-CSI-RS SEQUENCE {			
resourceSet	8		FR1
	16		FR2
qcl-info SEQUENCE (SIZE(1..maxNrOfAP-CSI-RS-ResourcesPerSet)) OF TCI-StateId {	1 entry		
TCI-StateId[1]	TCI-StateId	entry 1	
}			
}			
}			
csi-IM-ResourcesforInterference	8		FR1
	16		FR2
nzp-CSI-RS-ResourcesforInterference	8		FR1
	16		FR2
}			
}			
lrm-AssociatedReportConfigInfo-r18	Not present		
	LTM-CSI-ReportConfigId		LTM
}			
}			

Condition	Explanation
LTM	L1/L2-triggered mobility

– *CSI-FrequencyOccupation*

Table 4.6.3-33: CSI-FrequencyOccupation

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
CSI-FrequencyOccupation ::= SEQUENCE {			
startingRB	0		
nrofRBs	160		FR1 AND BW60
	216		FR1 AND BW80
	108		FR1 AND BW40
	52		FR1 AND BW10
	276		FR1 AND BW100
	64		FR2 AND BW100
	52		TRS

	40		TRS AND ((FR1 AND BW15 AND SCS30) OR (FR1 AND BW30 AND SCS60))
	32		TRS AND ((FR1 AND BW25 AND SCS60) OR (FR2 AND BW50 AND SCS120))
	28		TRS AND FR1 AND BW5 AND SCS15
	24		TRS AND ((FR1 AND BW5 AND SCS30) OR (FR1 AND BW10 AND SCS30) OR (FR1 AND BW10 AND SCS60) OR (FR1 AND BW15 AND SCS60) OR (FR1 AND BW20 AND SCS60) OR (FR1 AND BW3 AND SCS15))
	64		
}			

Condition	Explanation
TRS	Tracking-Reference Signal

– CSI-IM-Resource

Table 4.6.3-34: CSI-IM-Resource

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
CSI-IM-Resource ::= SEQUENCE {			
csi-IM-ResourceId	CSI-IM-ResourceId		
csi-IM-ResourceElementPattern CHOICE {			
pattern1 SEQUENCE {			
subcarrierLocation-p1	s4		
symbolLocation-p1	3		FR1
	4		FR2
}			
}			
freqBand	CSI-FrequencyOccupation		
periodicityAndOffset	Not present		
}			

– *CSI-IM-ResourceId***Table 4.6.3-35: CSI-IM-ResourceId**

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
CSI-IM-ResourceId	7		FR1
	31		FR2

– *CSI-IM-ResourceSet***Table 4.6.3-36: CSI-IM-ResourceSet**

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
CSI-IM-ResourceSet ::= SEQUENCE {			
csi-IM-ResourceSetId	CSI-IM-ResourceSetId		
csi-IM-Resources SEQUENCE (SIZE(1..maxNrofCSI-IM-ResourcesPerSet)) OF CSI- IM-ResourceId {	1 entry		
CSI-IM-ResourceId[1]	CSI-IM-ResourceId	entry 1	
}			
}			

– *CSI-IM-ResourceSetId***Table 4.6.3-37: CSI-IM-ResourceSetId**

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
CSI-IM-ResourceSetId	0		

– *CSI-LoggedMeasurementConfig***Table 4.6.3-37A: CSI-LoggedMeasurementConfig**

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
CSI-LoggedMeasurementConfig-r19 ::= SEQUENCE {			
FFS			
}			

– *CSI-LoggedMeasurementConfigId***Table 4.6.3-37B: CSI-LoggedMeasurementConfigId**

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
CSI-LoggedMeasurementConfigId-r19	FFS		

– *CSI-MeasConfig***Table 4.6.3-38: CSI-MeasConfig**

Derivation Path: TS 38.331 [6], clause 6.3.2			

Information Element	Value/remark	Comment	Condition
CSI-MeasConfig ::= SEQUENCE {			
nzp-CSI-RS-ResourceToAddModList SEQUENCE (SIZE (1..maxNrofNzp-CSI-RS-Resources)) OF Nzp-CSI-RS-Resource {	1 entry		
Nzp-CSI-RS-Resource[1]	Nzp-CSI-RS-Resource	entry 1	
}			
nzp-CSI-RS-ResourceToReleaseList	Not present		
nzp-CSI-RS-ResourceSetToAddModList SEQUENCE (SIZE (1..maxNrofNzp-CSI-RS-ResourceSets)) OF Nzp-CSI-RS-ResourceSetId {	1 entry		
Nzp-CSI-RS-ResourceSet[1]	Nzp-CSI-RS-ResourceSet	entry 1	
}			
nzp-CSI-RS-ResourceSetToReleaseList	Not present		
csi-IM-ResourceToAddModList SEQUENCE (SIZE (1..maxNrofCSI-IM-Resources)) OF CSI-IM-Resource {	1 entry		
CSI-IM-Resource[1]	CSI-IM-Resource	entry 1	
}			
csi-IM-ResourceToReleaseList	Not present		
csi-IM-ResourceSetToAddModList SEQUENCE (SIZE (1..maxNrofCSI-SSB-ResourceSets)) OF CSI-SSB-ResourceSet {	1 entry		
CSI-IM-ResourceSet[1]	CSI-IM-ResourceSet	entry 1	
}			
csi-IM-ResourceSetToReleaseList	Not present		
csi-SSB-ResourceSetToAddModList SEQUENCE (SIZE (1..maxNrofCSI-SSB-ResourceSets)) OF CSI-SSB-ResourceSet {	1 entry		
CSI-SSB-ResourceSet[1]	CSI-SSB-ResourceSet	entry 1	
}			
csi-SSB-ResourceSetToReleaseList	Not present		
csi-ResourceConfigToAddModList SEQUENCE (SIZE (1..maxNrofCSI-ResourceConfigurations)) OF CSI-ResourceConfig {	1 entry		
CSI-ResourceConfig[1]	CSI-ResourceConfig	entry 1	
}			
csi-ResourceConfigToReleaseList	Not present		
csi-ReportConfigToAddModList SEQUENCE (SIZE (1..maxNrofCSI-ReportConfigurations)) OF CSI-ReportConfig {	1 entry		
CSI-ReportConfig[1]	CSI-ReportConfig	entry 1	
}			
csi-ReportConfigToReleaseList	Not present		
reportTriggerSize	0		
aperiodicTriggerStateList CHOICE {			
setup	CSI-AperiodicTriggerStateList		
}			
semiPersistentOnPUSCH-TriggerStateList	Not present		
reportTriggerSizeDCI-0-2-r16	Not present		
sCellActivationRS-ConfigToAddModList-r17	Not present		
sCellActivationRS-ConfigToReleaseList-r17	Not present		
lTM-CSI-ReportConfigToAddModList-r18	Not present		
lTM-CSI-ReportConfigToAddModList-r18 SEQUENCE (SIZE (1..maxNrofLTM-CSI-ReportConfigurations-r18)) OF LTM-CSI-ReportConfig-r18 {	1 entry		LTM
LTM-CSI-ReportConfig-r18[1]	LTM-CSI-ReportConfig	entry 1	
}			
lTM-CSI-ReportConfigToReleaseList-r18	Not present		
}			

Condition	Explanation

LTM	L1/L2-triggered mobility

– *CSI-ReportConfig*

Table 4.6.3-39: *CSI-ReportConfig*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
CSI-ReportConfig ::= SEQUENCE {			
reportConfigId	CSI-ReportConfigId		
carrier	ServCellIndex		
resourcesForChannelMeasurement	CSI-ResourceConfigId		
csi-IM-ResourcesForInterference	CSI-ResourceConfigId		
nzp-CSI-RS-ResourcesForInterference	CSI-ResourceConfigId		
reportConfigType CHOICE {			
aperiodic SEQUENCE {			
reportSlotOffsetList SEQUENCE (SIZE (1..maxNrofUL-Allocations)) OF INTEGER {	1 entry		
INTEGER[1]	14	entry 1	
}			
}			
reportQuantity CHOICE {			
cri-RI-PMI-CQI	NULL,		FR1
cri-RI-LI-PMI-CQI	NULL		FR2
}			
reportFreqConfiguration SEQUENCE {			
cqi-FormatIndicator	widebandCQI		
pmi-FormatIndicator	widebandPMI		
csi-ReportingBand	Not present		
}			
timeRestrictionForChannelMeasurements	notConfigured		
timeRestrictionForInterferenceMeasurements	notConfigured		
codebookConfig	CodebookConfig		
dummy	Not present		
groupBasedBeamReporting CHOICE {			
disabled SEQUENCE {			
nrofReportedRS	n1		
}			
}			
cqi-Table	table1	64QAM	
	table2		256QAM
subbandSize	value2		
non-PMI-PortIndication	Not present		
}			

Condition	Explanation
256QAM	Test cases using 256QAM for PDSCH

– *CSI-ReportConfigId*

Table 4.6.3-40: *CSI-ReportConfigId*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
CSI-ReportConfigId	0		

Table 4.6.3-40A: *Void*

– *CSI-ReportPeriodicityAndOffset*

Table 4.6.3-40BA: CSI-ReportPeriodicityAndOffset

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
CSI-ReportPeriodicityAndOffset ::= CHOICE {			
slots80	10		FR1
slots320	40		FR2
}			

– *CSI-ReportSubConfigId*

Table 4.6.3-40B: CSI-ReportSubConfigId

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
CSI-ReportSubConfigId-r18	FFS		

– *CSI-ReportSubConfigTriggerList*

Table 4.6.3-40C: CSI-ReportSubConfigTriggerList

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
CSI-ReportSubConfigTriggerList-r18	FFS		

Table 4.6.3-40D: Void

– *CSI-ResourceConfig*

Table 4.6.3-41: CSI-ResourceConfig

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
CSI-ResourceConfig ::= SEQUENCE {			
csi-ResourceConfigId	CSI-ResourceConfigId		
csi-RS-ResourceSetList CHOICE {			
nzp-CSI-RS-SSB SEQUENCE {			
nzp-CSI-RS-ResourceSetList SEQUENCE (SIZE (1..maxNrofNZP-CSI-RS-ResourceSetsPerConfig))	2 entries		
OF NZP-CSI-RS-ResourceSetId {			
NZP-CSI-RS-ResourceSetId[1]	0	entry 1	
NZP-CSI-RS-ResourceSetId[2]	1	entry 2	
}			
csi-SSB-ResourceSetList	Not present		
}			
}			
bwp-Id	BWP-Id		
resourceType	periodic		
}			

– *CSI-ResourceConfigId*

Table 4.6.3-42: CSI-ResourceConfigId

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
CSI-ResourceConfigId	0		

– *CSI-ResourcePeriodicityAndOffset*

Table 4.6.3-43: CSI-ResourcePeriodicityAndOffset

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
CSI-ResourcePeriodicityAndOffset ::= CHOICE {			
slots80	10		FR1
slots320	40		FR2
}			

– *CSI-RS-ResourceConfigMobility*

Table 4.6.3-44: CSI-RS-ResourceConfigMobility

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
CSI-RS-ResourceConfigMobility ::= SEQUENCE {			
subcarrierSpacing	SubcarrierSpacing		
csi-RS-CellList-Mobility	FFS		
}			

– *CSI-RS-ResourceMapping*

Table 4.6.3-45: CSI-RS-ResourceMapping

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
CSI-RS-ResourceMapping ::= SEQUENCE {			
frequencyDomainAllocation CHOICE {			
row1	1000		(FR1 AND TRS) OR (FR2 AND TRS)
row4	010		FR2
other	011110		FR1
}			
nrofPorts	p8		FR1
	p4		FR2
	p1		(FR1 AND TRS) OR (FR2 AND TRS)
firstOFDMSymbolInTimeDomain	3		FR1
	13		FR2
	4		(FR1 AND TRS) OR (FR2 AND TRS)
firstOFDMSymbolInTimeDomain2	Not present		
cdm-Type	fd-CDM2		
	noCDM		TRS

density CHOICE {			
one	NULL		
three	NULL		TRS
}			
freqBand	CSI-FrequencyOccupation		
}			

Condition	Explanation
TRS	Tracking-Reference Signal is configured.

– *CSI-SemiPersistentOnPUSCH-TriggerStateList*

Table 4.6.3-46: CSI-SemiPersistentOnPUSCH-TriggerStateList

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
CSI-SemiPersistentOnPUSCH-TriggerStateList ::= SEQUENCE (SIZE (1..maxNrOfSemiPersistentPUSCH-Triggers)) OF CSI-SemiPersistentOnPUSCH-TriggerState {	1 entry		
CSI-SemiPersistentOnPUSCH-TriggerState[1] SEQUENCE {		entry 1	
associatedReportConfigInfo	CSI-ReportConfigId		
sp-CSI-MultiplexingMode-r17	Not present		
csi-ReportSubConfigTriggerList-r18	Not present		
ltm-AssociatedReportConfigInfo-r18	LTM-CSI-ReportConfigId		
}			
}			

– *CSI-SSB-ResourceSet*

Table 4.6.3-47: CSI-SSB-ResourceSet

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
CSI-SSB-ResourceSet ::= SEQUENCE {			
csi-SSB-ResourceSetId	CSI-SSB-ResourceSetId		
csi-SSB-ResourceList SEQUENCE (SIZE (1..maxNrofCSI-SSB-ResourcePerSet)) OF SSB-Index {	1 entry		
SSB-Index[1]	SSB-Index	entry 1	
}			
}			

– *CSI-SSB-ResourceSetId*

Table 4.6.3-48: CSI-SSB-ResourceSetId

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
CSI-SSB-ResourceSetId	0		

Table 4.6.3-48A:Void

– *DataCollectionCandidateConfigId*

Table 4.6.3-48B: *DataCollectionCandidateConfigId*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
DataCollectionCandidateConfigId-r19	FFS		

– *DedicatedNAS-Message*

Table 4.6.3-49: *DedicatedNAS-Message*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
DedicatedNAS-Message	Set according to specific message content		

– *DL-PPW-PreConfig*

Table 4.6.3-49A: *DL-PPW-PreConfig*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
DL-PPW-PreConfig-r17 ::= SEQUENCE {			
FFS			
}			

– *DMRS-BundlingPUCCH-Config*

Table 4.6.3-49B: *DMRS-BundlingPUCCH-Config*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
DMRS-BundlingPUCCH-Config-r17 ::= SEQUENCE {			
FFS			
}			

– *DMRS-BundlingPUSCH-Config*

Table 4.6.3-49C: *DMRS-BundlingPUSCH-Config*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
DMRS-BundlingPUSCH-Config-r17 ::= SEQUENCE {			
FFS			
}			

– *DMRS-DownlinkConfig*

Table 4.6.3-50: *DMRS-DownlinkConfig*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
DMRS-DownlinkConfig ::= SEQUENCE {			

dmrs-Type	Not present	DMRS type 1	
dmrs-AdditionalPosition	pos1		FR1
	pos0		FR2
maxLength	Not present	len1	
scramblingID0	Not present		
scramblingID1	Not present		
phaseTrackingRS	Not present		FR1
phaseTrackingRS CHOICE {			FR2
setup	PTRS-DownlinkConfig		
}			
}			

– DMRS-UplinkConfig

Table 4.6.3-51: DMRS-UplinkConfig

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
DMRS-UplinkConfig ::= SEQUENCE {			
dmrs-Type	Not present	DMRS type 1	
dmrs-AdditionalPosition	pos1		FR1
	pos0		FR2
phaseTrackingRS	Not present		
phaseTrackingRS CHOICE {			PTRS_UL_CONFIG
setup	PTRS-UplinkConfig		
}			
maxLength	Not present	len1	
transformPrecodingDisabled SEQUENCE {			
scramblingID0	Not present		
scramblingID1	Not present		
}			
transformPrecodingEnabled	Not present		
}			

Condition	Explanation
PTRS_UL_CONFIG	When PTRS Uplink is configured

– DownlinkConfigCommon

Table 4.6.3-52: DownlinkConfigCommon

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
DownlinkConfigCommon ::= SEQUENCE {			
frequencyInfoDL	FrequencyInfoDL		
initialDownlinkBWP	BWP-DownlinkCommon		
	BWP-DownlinkCommon with condition SCell_add		SCell_add
}			

Condition	Explanation
SCell_add	Add SCell

– *DownlinkConfigCommonSIB*

Table 4.6.3-53: DownlinkConfigCommonSIB

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
DownlinkConfigCommonSIB ::= SEQUENCE {			
frequencyInfoDL	FrequencyInfoDL-SIB		
initialDownlinkBWP	BWP-DownlinkCommon with condition InitialBWP_SIB		
	BWP-DownlinkCommon with condition PEI		PEI
	BWP-DownlinkCommon with condition SDT		SDT
	BWP-DownlinkCommon with condition MBS_Broadcast		MBS_Broadcast
	BWP-DownlinkCommon with condition MBS_Multicast_Inactive		MBS_Multicast_Inactive
bcch-Config SEQUENCE {			
modificationPeriodCoeff	n4		
}			
pcch-Config SEQUENCE {			
defaultPagingCycle	rf128		
nAndPagingFrameOffset CHOICE {			
halfT	0		
}			
ns	one		
	two		PEI
firstPDCCH-MonitoringOccasionOfPO	Not present		
nrofPDCCH-MonitoringOccasionPerSSB-InPO-r16	Not present		
}			
pei-Config-r17	Not present		
pei-Config-r17 SEQUENCE {			PEI
po-NumPerPEI-r17	po2		
payloadSizeDCI-2-7-r17	22		
pei-FrameOffset-r17	3		
subgroupConfig-r17 SEQUENCE {			
subgroupsNumPerPO-r17	2		
subgroupsNumForUEID-r17	2		
}			
lastUsedCellOnly-r17	Not present		
}			
initialDownlinkBWP-RedCap-r17	Not present		
}			

Condition	Explanation
PEI	Paging Early Indication is configured in the cell.
SDT	For SDT test cases.
MBS_Broadcast	NR Cell provide MBS Broadcast service
MBS_Multicast_Inactive	Used for MBS Multicast reception when UE in RRC_INACTIVE state

– *DownlinkPreemption*

Table 4.6.3-54: DownlinkPreemption

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
DownlinkPreemption ::= SEQUENCE {			
FFS			
}			

– *DRB-Identity*

Table 4.6.3-55: *DRB-Identity*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
DRB-Identity	n		DRBn

Condition	Explanation
DRBn	DRB-Identity n

– *DRX-Config*

Table 4.6.3-56: *DRX-Config*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
DRX-Config ::= SEQUENCE {			
drx-onDurationTimer CHOICE {			
milliseconds	ms6		
}			
drx-InactivityTimer	ms1280		
drx-HARQ-RTT-TimerDL	56		
drx-HARQ-RTT-TimerUL	56		
drx-RetransmissionTimerDL	sl16		FR1
	sl64		FR2
drx-RetransmissionTimerUL	sl16		FR1
	sl64		FR2
drx-LongCycleStartOffset CHOICE {			
ms10240	0		
}			
shortDRX	not present		
drx-SlotOffset	0		
}			

– *DRX-ConfigSecondaryGroup*

Table 4.6.3-56A: *DRX-ConfigSecondaryGroup*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
DRX-ConfigSecondaryGroup-r16 ::= SEQUENCE {			
FFS			
}			

– *DRX-ConfigSL*

Table 4.6.3-56B: *DRX-ConfigSL*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
RX-ConfigSL-r17 ::= SEQUENCE {			
FFS			
}			

– *EarlyUL-SyncConfig*

Table 4.6.3-56CA: EarlyUL-SyncConfig

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
EarlyUL-SyncConfig-r18 ::= SEQUENCE {			
frequencyInfoUL-r18	FrequencyInfoUL		
rach-ConfigGeneric-r18	RACH-ConfigGeneric		
bwp-GenericParameters-r18	BWP		
ssb-PerRACH-Occasion-r18	one		
prach-RootSequenceIndex-r18 CHOICE {			
l839	Set according to table 4.4.2-2		FR1
l139	Set according to table 4.4.2-2		FR2
}			
ltm-PRACH-SubcarrierSpacing-r18	SubcarrierSpacing		FR2
	Not present		FR1
n-TimingAdvanceOffset-r18	n25600		
ltm-tdd-UL-DL-ConfigurationCommon-r18	Not present		FDD
	TDD-UL-DL-ConfigCommon		TDD
ltm-restrictedSetConfig-r18	unrestrictedSet		
}			

– *EphemerisInfo*

Table 4.6.3-56C: EphemerisInfo

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
EphemerisInfo-r17 ::= CHOICE {			
positionVelocity-r17 SEQUENCE {			GSO
positionX-r17	Set to the value defined in Table 6.3.4.1-1 according to the cell type.		
positionY-r17	Set to the value defined in Table 6.3.4.1-1 according to the cell type.		
positionZ-r17	0		
velocityVX-r17	0		
velocityVY-r17	0		
velocityVZ-r17	0		
}			
positionVelocity-r17 SEQUENCE {			NGSO
positionX-r17	Set to the value defined in Table 6.3.4.2-1 according to the cell type.		
positionY-r17	Set to the value defined in Table 6.3.4.2-1 according to the cell type.		
positionZ-r17	Set to the value defined in Table 6.3.4.2-1 according to the cell type.		
velocityVX-r17	Set to the value defined in Table 6.3.4.2-1 according to the cell type.		
velocityVY-r17	Set to the value defined in Table 6.3.4.2-1 according to the cell type.		
velocityVZ-r17	Set to the value defined in Table 6.3.4.2-1 according to the cell type.		

}			
}			

Condition	Explanation
GSO	Geosynchronous Orbit scenario
NGSO	Non-geosynchronous Orbit scenario

– *EpochTime*

Table 4.6.3-56DAA: EpochTime

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
EpochTime-r17 ::= SEQUENCE {			
FFS			
}			

– *EUTRA-C-RNTI*

Table 4.6.3-56DA: EUTRA-C-RNTI

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
EUTRA-C-RNTI	FFS		

– *FeatureCombination*

Table 4.6.3-56D: FeatureCombination

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
FeatureCombination-r17 ::= SEQUENCE {			
redCap-r17	Not present		
smallData-r17	Not present		
nsag-r17	Not present		
nsag-r17 SEQUENCE (SIZE (1..maxSliceInfo-r17)) OF NSAG-ID-r17{	n entries	n is the number of NSAG values associated with the preambles indicated in FeatureCombinationPreambles	Slice_RACH
NSAG-ID-r17[k, k=1..n]	Set to the corresponding NSAG value used in the test case	entry [k, k=1..n]	
}			
msg3-Repetitions-r17	Not present		
	true		MSG3_REP
msg1-Repetitions-r18	Not present		
	true		MSG1_REP
eRedCap-r18	Not present		
spare2	Not present		
spare1	Not present		
}			

Condition	Explanation
Slice_RACH	Slice specific RACH configuration
MSG1_REP	Msg.1 repetition configuration
MSG3_REP	Msg.3 repetition configuration

FeatureCombinationPreambles

Table 4.6.3-56E: FeatureCombinationPreambles

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
FeatureCombinationPreambles-r17 ::= SEQUENCE {			
featureCombination-r17	FeatureCombination		
	FeatureCombination with condition MSG1_REP		MSG1_REP
	FeatureCombination with condition MSG3_REP		MSG3_REP
startPreambleForThisPartition-r17	8		FR1
	4		FR2
numberOfPreamblesPerSSB-ForThisPartition-r17	8		FR1
	4		FR2
ssb-SharedRO-MaskIndex-r17	Not present		
groupBconfigured-r17	Not present		
separateMsgA-PUSCH-Config-r17	Not present		
msgA-RSRP-Threshold-r17	Not present		
rsrp-ThresholdSSB-r17	RSRP-Range		
deltaPreamble-r17	Not present		
msg1-RepetitionNum-r18	n2		MSG1_REP
	Not present		
msg1-RepetitionTimeOffsetROGroup-r18	n16		MSG1_REP
	Not present		
}			

Condition	Explanation
MSG1_REP	For Msg1 repetition tests
MSG3_REP	For Msg3 repetition tests

FilterCoefficient

Table 4.6.3-57: FilterCoefficient

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
FilterCoefficient	fc4		

FreqBandIndicatorNR

Table 4.6.3-58: FreqBandIndicatorNR

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
FreqBandIndicatorNR	Operating band of the frequency as specified in Table 4.4.2-1		
	Secondary band under test		CA-InterBand, NR-DC-SecondaryB and

Condition	Explanation
CA-InterBand	Used in CA interBand test cases
NR-DC-SecondaryBand	Used in NR-DC test cases

– *FreqPriorityListDedicatedSlicing*

Table 4.6.3-58AA: *FreqPriorityListDedicatedSlicing*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
FreqPriorityDedicatedSlicing-r17 ::= SEQUENCE {			
FFS			
}			

– *FreqPriorityListSlicing*

Table 4.6.3-58A: *FreqPriorityListSlicing*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
FreqPriorityListSlicing-r17 ::= SEQUENCE (SIZE (1..maxFreqPlus1)) OF FreqPrioritySlicing-r17 {	2 entries		
FreqPrioritySlicing-r17[1] SEQUENCE {		entry 1	
dl-ImplicitCarrierFreq-r17	1		
sliceInfoList-r17 SEQUENCE (SIZE (1..maxSliceInfo-r17)) OF SliceInfo-r17 {	1 entry		
SliceInfo-r17[1] SEQUENCE {		entry 1	
nsag-IdentityInfo-r17	NSAG-IdentityInfo		
nsag-CellReselectionPriority-r17	CellReselectionPriority		
nsag-CellReselectionSubPriority-r17	Not present		
sliceCellListNR-r17	Not present		
}			
}			
FreqPrioritySlicing-r17[2] SEQUENCE {		entry 2	
dl-ImplicitCarrierFreq-r17	2		
sliceInfoList-r17 SEQUENCE (SIZE (1..maxSliceInfo-r17)) OF SliceInfo-r17 {	1 entry		
SliceInfo-r17[1] SEQUENCE {		entry 1	
nsag-IdentityInfo-r17	NSAG-IdentityInfo		
nsag-CellReselectionPriority-r17	CellReselectionPriority with condition Priority_5		
nsag-CellReselectionSubPriority-r17	Not present		
sliceCellListNR-r17	Not present		
}			
}			
}			
}			

– *FrequencyInfoDL*

Table 4.6.3-59: *FrequencyInfoDL*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
FrequencyInfoDL ::= SEQUENCE {			
absoluteFrequencySSB	ARFCN-ValueNR with condition DL_SSB		
frequencyBandList	MultiFrequencyBandList NR		
absoluteFrequencyPointA	ARFCN-ValueNR with condition DL_PointA		

scs-SpecificCarrierList SEQUENCE (SIZE (1..maxSCSs)) OF SCS-SpecificCarrier {	1 entry		
SCS-SpecificCarrier[1]	SCS-SpecificCarrier with condition DL_PointA	entry 1	
}			
}			

– *FrequencyInfoDL-SIB*

Table 4.6.3-60: *FrequencyInfoDL-SIB*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
FrequencyInfoDL-SIB ::= SEQUENCE {			
frequencyBandList	MultiFrequencyBandList NR-SIB		
offsetToPointA	For signalling test cases see subclause 6.2.3. Otherwise, see subclause 4.3.1.		
scs-SpecificCarrierList SEQUENCE (SIZE (1..maxSCSs)) OF SCS-SpecificCarrier {	1 entry		
SCS-SpecificCarrier[1]	SCS-SpecificCarrier with condition DL_PointA	entry 1	
}			
}			

– *FrequencyInfoUL*

Table 4.6.3-61: *FrequencyInfoUL*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
FrequencyInfoUL ::= SEQUENCE {			
frequencyBandList	MultiFrequencyBandList NR		FDD
	Not present		TDD
absoluteFrequencyPointA	ARFCN-ValueNR with condition UL_PointA		FDD
	Not present		TDD
scs-SpecificCarriers SEQUENCE (SIZE (1..maxSCSs)) OF SCS-SpecificCarrier {	1 entry		
SCS-SpecificCarrier1	SCS-SpecificCarrier with condition UL_PointA	entry 1	
}			
additionalSpectrumEmission	AdditionalSpectrumEmission		
p-Max	P-Max		
frequencyShift7p5khz	Not present		
	true		DSS
}			

Condition	Explanation
DSS	Dynamic Spectrum Sharing

– *FrequencyInfoUL-SIB*

Table 4.6.3-62: *FrequencyInfoUL-SIB*

Derivation Path: TS 38.331 [6], clause 6.3.2

Information Element	Value/remark	Comment	Condition
FrequencyInfoUL-SIB ::= SEQUENCE {			
frequencyBandList	MultiFrequencyBandList NR-SIB		FDD
	Not present		TDD
absoluteFrequencyPointA	ARFCN-ValueNR with condition UL_PointA		FDD
	Not present		TDD
scs-SpecificCarrierList SEQUENCE (SIZE (1..maxSCSs)) OF SCS-SpecificCarrier {	1 entry		
SCS-SpecificCarrier[1]	SCS-SpecificCarrier with condition UL_PointA	entry 1	
}			
p-Max	P-Max		
frequencyShift7p5khz	Not present		
	true		DSS
}			

– *GapOccasionRatio*

Table 4.6.3-62AAA: GapOccasionRatio

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
GapOccasionRatio-r19	FFS		

– *GapPriority*

Table 4.6.3-62AA: GapPriority

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
GapPriority-r17	FFS		

– *HighSpeedConfig*

Table 4.6.3-62A: HighSpeedConfig-r16

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
HighSpeedConfig-r16 ::= SEQUENCE {			
highSpeedMeasFlag-r16	Not present		
highSpeedDemodFlag-r16	Not present		
}			

Table 4.6.3-62B: HighSpeedConfig-v1700

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
HighSpeedConfig-v1700 ::= SEQUENCE {			
highSpeedMeasCA-Scell-r17	Not present		
highSpeedMeasInterFreq-r17	Not present		
highSpeedDemodCA-Scell-r17	Not present		
}			

Table 4.6.3-62C: HighSpeedConfigFR2

Derivation Path: TS 38.331 [6], clause 6.3.2			

Information Element	Value/remark	Comment	Condition
HighSpeedConfigFR2-r17 ::= SEQUENCE {			
highSpeedMeasFlagFR2-r17	set2		
highSpeedDeploymentTypeFR2-r17	bidirectional		
highSpeedLargeOneStepUL-TimingFR2-r17	true		
}			

– *Hysteresis*

Table 4.6.3-63: Hysteresis

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
Hysteresis	4		

– *HysteresisAltitude*

Table 4.6.3-63AAA: HysteresisAltitude

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
HysteresisAltitude-r18	0	Value in meters	

– *HysteresisLocation*

Table 4.6.3-63AA: HysteresisLocation

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
HysteresisLocation-r17	FFS		

– *InvalidSymbolPattern*

Table 4.6.3-63A: InvalidSymbolPattern

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
InvalidSymbolPattern-r16 ::= SEQUENCE {			
FFS			
}			

– *I-RNTI-Value*

Table 4.6.3-64: I-RNTI-Value

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
I-RNTI-Value	SS arbitrarily selects a value between '00 0000 0001'H and 'FF FFFF FFFF'H.	BIT STRING (SIZE(40))	

– *LBT-FailureRecoveryConfig*

Table 4.6.3-64A: LBT-FailureRecoveryConfig

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
LBT-FailureRecoveryConfig-r16 ::= SEQUENCE {			
lbt-FailureInstanceMaxCount-r16	n4		
lbt-FailureDetectionTimer-r16	ms80		
}			

– *LocationInfo*

Table 4.6.3-64B: LocationInfo

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
LocationInfo-r16 ::= SEQUENCE {			
commonLocationInfo-r16	CommonLocationInfo-r16		MDT_Location Info
bt-LocationInfo-r16	LogMeasResultListBT-r16		MDT_BT
wlan-LocationInfo-r16	LogMeasResultListWLAN-r16		MDT_WLAN
sensor-LocationInfo-r16	Sensor-LocationInfo-r16		MDT_Sensor
}			

Condition	Explanation
MDT_LocationInfo	Used for CommonLocationInfo included in MDT (Minimized Driving Test)
MDT_BT	Used for Bluetooth measurement in MDT (Minimized Driving Test) services
MDT_WLAN	Used for WLAN measurement in MDT (Minimized Driving Test) services
MDT_Sensor	Used for Sensor measurement in MDT (Minimized Driving Test) services

– *LocationMeasurementInfo*

Table 4.6.3-65: LocationMeasurementInfo

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
LocationMeasurementInfo ::= CHOICE {			
eutra-RSTD SEQUENCE (SIZE (1..maxInterRAT-RSTD-Freq)) OF EUTRA-RSTD-Info {	1 entry		
EUTRA-RSTD-Info[1] SEQUENCE {		entry 1	
carrierFreq	ARFCN-ValueEUTRA		
measPRS-Offset	FFS		
}			
}			
}			

Table 4.6.3-65A: Void

– *LogicalChannelConfig*

Table 4.6.3-66: LogicalChannelConfig

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
LogicalChannelConfig ::= SEQUENCE {			
ul-SpecificParameters SEQUENCE {			

priority	1		
	3		SRB2, SRB4
prioritisedBitRate	infinity		
bucketSizeDuration	ms50		
allowedServingCells	Not present		
allowedSCS-List	Not present		
maxPUSCH-Duration	Not present		
configuredGrantType1Allowed	Not present		
logicalChannelGroup	1		HI, uuRelaySR Bn, uuRelayDR Bn
	2		LO
	0		SRB1, SRB2, SRB3, SRB4
schedulingRequestID	SchedulingRequestId		
logicalChannelSR-Mask	false		
logicalChannelSR-DelayTimerApplied	false		
bitRateQueryProhibitTimer	Not present		
}			
channelAccessPriority-r16	Not present		
	3		SharedSpec trum AND (HI OR LO OR SRB2)
bitRateMultiplier-r16	Not present		
}			

Condition	Explanation
HI	Used for DRBs with high logical channel priority
LO	Used for DRBs with low logical channel priority
SRB1	Establishment of SRB1
SRB2	Establishment of SRB2
SRB3	Establishment of SRB3
SRB4	Establishment of SRB4
SharedSpectrum	Operation with shared spectrum channel access in FR1
uuRelaySRBn	Establishment of Uu RelayRLC Channel for SRBn; n=0..3
uuRelayDRBn	Establishment of Uu RelayRLC Channel for DRBn; n=1..16

– LogicalChannelIdentity

Table 4.6.3-67: LogicalChannelIdentity

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
LogicalChannelIdentity	1		SRB1
LogicalChannelIdentity	2		SRB2
LogicalChannelIdentity	3		SRB3
LogicalChannelIdentity	4		SRB4
LogicalChannelIdentity	n+3		DRBn
LogicalChannelIdentity	2m+18		MRBm AND PTP
LogicalChannelIdentity	2m+19		MRBm AND PTM
LogicalChannelIdentity	n+20		uuRelaySR Bn
LogicalChannelIdentity	n+24		uuRelayDR Bn

LogicalChannelIdentity	n+10		PC5RelayS RBn
LogicalChannelIdentity	n+14		PC5RelayD RBn

Condition	Explanation
SRB1	Establishment of SRB1
SRB2	Establishment of SRB2
SRB3	Establishment of SRB3
SRB4	Establishment of SRB4
DRBn	Establishment of DRBn; n=1..16
MRBm	Establishment of MRBm; m = 1.. (16-n)
PTM	RLC entity is used for receiving PTM transmission
PTP	RLC entity is used for receiving PTP transmission
uuRelaySRBn	Establishment of Uu RelayRLC Channel for SRBn; n=0..3
uuRelayDRBn	Establishment of Uu RelayRLC Channel for DRBn; n=1..16
PC5RelaySRBn	Establishment of PC5 RelayRLC Channel for SRBn; n=1..3
PC5RelayDRBn	Establishment of PC5 RelayRLC Channel for DRBn; n=1..16

– *LTE-NeighCellsCRS-AssistInfoList*

Table 4.6.3-67A: *LTE-NeighCellsCRS-AssistInfoList*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
LTE-NeighCellsCRS-AssistInfoList-r17 ::= SEQUENCE (SIZE (1..maxNrofCRS-IM-InterfCell-r17)) OF LTE-NeighCellsCRS-AssistInfo-r17 {			
FFS			
}			

– *LTM-CandidateId*

Table 4.6.3-67B: *LTM-CandidateId*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
LTM-CandidateId-r18	1		

– *LTM-Candidate*

Table 4.6.3-67C: *LTM-Candidate*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
LTM-Candidate-r18 ::= SEQUENCE {			
ltm-CandidateId-r18	LTM-CandidateId		
ltm-CandidatePCI-r18	PhysCellId		
ltm-SSB-Config-r18	LTM-SSB-Config		
ltm-CandidateConfig-r18	RRCReconfiguration		
ltm-ConfigComplete-r18	true		
ltm-EarlyUL-SyncConfig-r18	EarlyUL-SyncConfig		
ltm-EarlyUL-SyncConfigSUL-r18	Not present		
ltm-TCI-Info-r18	LTM-TCI-Info		
ltm-NoResetID-r18	Not present		
ltm-UE-MeasuredTA-ID-r18	Not present		
}			

– *LTM-Config*

Table 4.6.3-67D: *LTM-Config*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
LTM-Config-r18 ::= SEQUENCE {			
lrm-ReferenceConfiguration-r18	Not present		
lrm-CandidateToReleaseList-r18	Not present		
lrm-CandidateToAddModList-r18 SEQUENCE (SIZE (1..maxNrofLTM-Configs-r18)) OF LTM-Candidate-r18 {	1 entry		
LTM-Candidate-r18[1]	LTM-Candidate	entry 1	
}			
lrm-ServingCellNoResetID-r18	Not present		
lrm-CSI-ResourceConfigToAddModList-r18 SEQUENCE (SIZE (1..maxNrofLTM-CSI-ResourceConfigurations-r18)) OF LTM-CSI-ResourceConfig-r18 {	1 entry		
LTM-CSI-ResourceConfig-r18[1]	LTM-CSI-ResourceConfig	entry 1	
}			
lrm-CSI-ResourceConfigToReleaseList-r18	Not present		
attemptLTM-Switch-r18	Not present		
lrm-ServingCellUE-MeasuredTA-ID-r18	1		
}			

– *LTM-ConfigNRDC*

Table 4.6.3-67EA: *LTM-ConfigNRDC*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
LTM-ConfigNRDC-r19 ::= SEQUENCE {			
FFS			
}			

– *LTM-CSI-ReportConfig*

Table 4.6.3-67E: *LTM-CSI-ReportConfig*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
LTM-CSI-ReportConfig-r18 ::= SEQUENCE {			
lrm-CSI-ReportConfigId-r18	LTM-CSI-ReportConfigId		
lrm-ResourcesForChannelMeasurement-r18	LTM-CSI-ResourceConfigId		
lrm-ReportConfigType-r18 CHOICE {			
periodic-r18 SEQUENCE {			PERIODIC
reportSlotConfig-r18	CSI-ReportPeriodicityAndOffset		
pucch-CSI-ResourceList-r18 SEQUENCE (SIZE (1..maxNrofBWPs)) OF PUCCH-CSI-Resource {	1 entry		
PUCCH-CSI-Resource[1]	PUCCH-CSI-Resource	entry 1	
}			
}			
semiPersistentOnPUCCH-r18 SEQUENCE {			SP-PUCCH
reportSlotConfig-r18	CSI-ReportPeriodicityAndOffset		

pucch-CSI-ResourceList-r18 SEQUENCE (SIZE (1..maxNrofBWPs)) OF PUCCH-CSI-Resource {	1 entry		
PUCCH-CSI-Resource[1]	PUCCH-CSI-Resource	entry 1	
}			
}			
semiPersistentOnPUSCH-r18 SEQUENCE {			SP-PUSCH
reportSlotConfig-r18	CSI-ReportPeriodicityAndOffset		
reportSlotOffsetList-r18 SEQUENCE (SIZE (1..maxNrofUL-Allocations-r16)) OF INTEGER	1 entry		
INTEGER[1]	0	entry 1	
}			
reportSlotOffsetListDCI-0-2-r18 SEQUENCE (SIZE (1.. maxNrofUL-Allocations-r16)) OF INTEGER	1 entry		
INTEGER[1]	0	entry 1	
}			
reportSlotOffsetListDCI-0-1-r18 SEQUENCE (SIZE (1.. maxNrofUL-Allocations-r16)) OF INTEGER	1 entry		
INTEGER[1]	0	entry 1	
}			
p0alpha	0		
}			
aperiodic-r18 SEQUENCE {			APERIODIC
reportSlotOffsetList-r18 SEQUENCE (SIZE (1..maxNrofUL-Allocations-r16)) OF INTEGER	1 entry		
INTEGER[1]	0	entry 1	
}			
reportSlotOffsetListDCI-0-2-r18 SEQUENCE (SIZE (1.. maxNrofUL-Allocations-r16)) OF INTEGER	1 entry		
INTEGER[1]	0	entry 1	
}			
reportSlotOffsetListDCI-0-1-r18 SEQUENCE (SIZE (1.. maxNrofUL-Allocations-r16)) OF INTEGER	1 entry		
INTEGER[1]	0	entry 1	
}			
}			
}			
lrm-ReportContent-r18	LTM-ReportContent		
}			

Condition	Explanation
APERIODIC	Aperiodic LTM report configuration
PERIODIC	Periodic LTM report configuration
SP-PUCCH	LTM report configuration of Semi-persistent on PUCCH
SP-PUSCH	LTM report configuration of Semi-persistent on PUSCH

– *LTM-CSI-ReportConfigId*

Table 4.6.3-67F: LTM-CSI-ReportConfigId

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
LTM-CSI-ReportConfigId-r18	0		

– *LTM-CSI-ResourceConfig*

Table 4.6.3-67G: LTM-CSI-ResourceConfig

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
LTM-CSI-ResourceConfig-r18 ::= SEQUENCE {			
lrm-CSI-ResourceConfigId-r18	LTM-CSI-ResourceConfigId		
lrm-CSI-SSB-ResourceSet-r18	LTM-CSI-SSB-ResourceSet		
}			

– *LTM-CSI-ResourceConfigId*

Table 4.6.3-67H: LTM-CSI-ResourceConfigId

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
LTM-CSI-ResourceConfigId-r18	0		

– *LTM-ExecutionConditionList*

Table 4.6.3-67HAA: LTM-ExecutionConditionList

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
LTM-ExecutionConditionList-r19 ::= SEQUENCE {			
FFS			
}			

– *LTM-CSI-SSB-ResourceSet*

Table 4.6.3-67HA: LTM-CSI-SSB-ResourceSet

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
LTM-CSI-SSB-ResourceSet-r18 ::= SEQUENCE {			
lrm-CSI-SSB-ResourceList-r18 SEQUENCE (SIZE (1..maxNrofLTM-CSI-SSB-ResourcesPerSet-r18)) OF SSB-Index {	1 entry		
SSB-Index[1]	SSB-Index	entry 1	
}			
lrm-CandidateIdList-r18 SEQUENCE (SIZE (1..maxNrofLTM-CSI-SSB-ResourcesPerSet-r18)) OF LTM-CandidateId-r18 {	1 entry		
LTM-CandidateId-r18[1]	LTM-CandidateId	entry 1	
}			
}			

– *LTM-QCL-Info*

Table 4.6.3-67HB: LTM-QCL-Info

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
LTM-QCL-Info-r18 ::= SEQUENCE {			
referenceSignal-r18 CHOICE {			

ssb-Index	SSB-Index		
}			
qcl-Type-r18	typeA		
}			

– *LTM-ReportContent*

Table 4.6.3-67HC: LTM-ReportContent

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
LTM-ReportContent-r18 ::= SEQUENCE {			
nrOfReportedCells-r18	n1		
nrOfReportedRS-PerCell-r18	n1		
spCellInclusion-r18	true		
}			

– *LTM-SSB-Config*

Table 4.6.3-67HD: LTM-SSB-Config

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
LTM-SSB-Config-r18 ::= SEQUENCE {			
ssb-Frequency-r18	ARFCN-ValueNR with condition DL_SSB		
subcarrierSpacing-r18	SubcarrierSpacing		
ssb-Periodicity-r18	ms20		
ssb-PositionsInBurst-r18 CHOICE {			
shortBitmap	0100		FR1 AND SSB#1 AND (1.88GHz<FREQ<=3GHz AND (FDD OR (TDD AND SCS15)) OR FREQ<=1.88GHz)
	1000		FR1 AND SSB#0 AND (1.88GHz<FREQ<=3GHz AND (FDD OR (TDD AND SCS15)) OR FREQ<=1.88GHz)
mediumBitmap	01000000		FR1 AND SSB#1 AND (1.88GHz<FREQ<=3GHz AND (TDD AND SCS30) OR FREQ>3GHz)
	10000000		FR1 AND SSB#0 AND (1.88GHz<FREQ<=3GHz AND (TDD

			AND SCS30) OR FREQ>3GH z)
longBitmap	01000000000000000000 00000000000000000000 00000000000000000000 0000		FR2 AND SSB#1
	10000000000000000000 00000000000000000000 00000000000000000000 0000		FR2 AND SSB#0
}			
ss-PBCH-BlockPower-r18	0		
}			

Condition	Explanation
FREQ<=1.88GHz	Frequency range <= 1.88GHz
1.88GHz<FREQ<=3GHz	Frequency range > 1.88GHz and <= 3GHz
FREQ>3GHz	Frequency range > 3GHz
SSB#N	Cell configured with SSB-Index set to N as defined in Table 4.4.2-2

LTM-TCI-Info

Table 4.6.3-67I: LTM-TCI-Info

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
LTM-TCI-Info-r18 ::= SEQUENCE {			
ltn-DL-OrJointTCI-StateToAddModList-r18	Not present		
ltn-DL-OrJointTCI-StateToAddModList-r18 SEQUENCE (SIZE (1..maxNrofCandidateTCI-State- r18)) OF CandidateTCI-State-r18 {	1 entry		DL TCI
CandidateTCI-State-r18[1]	CandidateTCI-State	entry 1	
}			
ltn-DL-OrJointTCI-StateToAddModList-r18 SEQUENCE (SIZE (1..maxNrofCandidateTCI-State- r18)) OF CandidateTCI-State-r18 {	1 entry		Joint
CandidateTCI-State-r18[1]	CandidateTCI-State with condition Joint	entry 1	
}			
ltn-DL-OrJointTCI-StateToReleaseList-r18	Not present		
ltn-UL-TCI-StateToAddModList-r18	Not present		
ltn-UL-TCI-StateToAddModList-r18 SEQUENCE (SIZE (1..maxNrofCandidateUL-TCI-r18)) OF CandidateTCI-UL-State-r18 {	1 entry		UL TCI
CandidateTCI-UL-State-r18[1]	CandidateTCI-UL-State	entry 1	
}			
ltn-UL-TCI-StateToReleaseList-r18	Not present		
ltn-NZP-CSI-RS-ResourceToAddModList-r18 SEQUENCE (SIZE (1..maxNrofNZP-CSI-RS- Resources)) OF NZP-CSI-RS-Resource {	1 entry		
NZP-CSI-RS-Resource[1]	NZP-CSI-RS-Resource	entry 1	
}			
ltn-NZP-CSI-RS-ResourceToReleaseList-r18	Not present		
ltn-NZP-CSI-RS-ResourceSetToAddModList-r18 SEQUENCE (SIZE (1..maxNrofNZP-CSI-RS- ResourceSets)) OF NZP-CSI-RS-ResourceSet {	1 entry		
NZP-CSI-RS-ResourceSet[1]	NZP-CSI-RS- ResourceSet	entry 1	
}			
ltn-NZP-CSI-RS-ResourceSetToReleaseList-r18	Not present		
pathlossReferenceRS-ToAddModList-r18 SEQUENCE (SIZE	1 entry		

(1..maxNrofPathlossReferenceRSs-r17)) OF PathlossReferenceRS-r17 {			
PathlossReferenceRS-r17[1]	PathlossReferenceRS	entry 1	
}			
pathlossReferenceRS-ToReleaseList-r18	Not present		
unifiedTCI-StateType-r18	separate		
	joint		Joint
}			

Condition	Explanation
DL TCI	Downlink TCI state the UE is configured
UL TCI	Uplink TCI state the UE is configured
Joint	LTM candidate configuration is configured with ltm-DL-OrJointTCI-StateToAddModList for joint TCI states for UL and DL operation

MAC-CellGroupConfig

Table 4.6.3-68: MAC-CellGroupConfig

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
MAC-CellGroupConfig ::= SEQUENCE {			
drx-Config	Not present		
drx-Config CHOICE {			DRX
setup	DRX-Config		
}			
schedulingRequestConfig	SchedulingRequestConfig		
bsr-Config	BSR-Config		
tag-Config	TAG-Config		
phr-Config CHOICE {			
setup	PHR-Config		
}			
skipUplinkTxDynamic	false		
intraCG-Prioritization-r17	Not present		
drx-ConfigSL-r17	Not present		
drx-ConfigExt-v1700	Not present		
schedulingRequestID-BFR-r17	Not present		
schedulingRequestID-BFR2-r17	Not present		
schedulingRequestConfig-v1700	Not present		
tar-Config-r17	Not present		
g-RNTI-ConfigToAddModList-r17	Not present		
g-RNTI-ConfigToAddModList-r17 SEQUENCE (SIZE (1..maxG-RNTI-r17)) OF MBS-RNTI-SpecificConfig-r17 {	1 entry		MBS_Multicast
MBS-RNTI-SpecificConfig-r17[1] SEQUENCE {		entry 1	
mbs-RNTI-SpecificConfigId-r17	0		
groupCommon-RNTI-r17 CHOICE {			
g-RNTI	RNTI-Value		
}			
drx-ConfigPTM-r17	Not present		
drx-ConfigPTM-r17 CHOICE {			DRX_MBS_Multicast
setup	DRX-ConfigPTM		
}			
harq-FeedbackEnablerMulticast-r17	Not present		
	dci-enabler		DCI
	enabled		RRC_Enable_HARQ_Feedback
harq-FeedbackOptionMulticast-r17	Not present		
	ack-nack		ACK_NACK

	nack-only		NACK_ONLY
pdsch-AggregationFactor-r17	Not present		
}			
g-RNTI-ConfigToReleaseList-r17	Not present		
g-CS-RNTI-ConfigToAddModList-r17	Not present		
g-CS-RNTI-ConfigToReleaseList-r17	Not present		
allowCSI-SRS-Tx-MulticastDRX-Active-r17	Not present		
drx-ConfigExt2-v1800	Not present		
additionalBS-TableAllowed-r18	Not present		
dsr-ConfigToAddModList-r18	Not present		
dsr-ConfigToAddModList-r18 SEQUENCE (SIZE (1..maxNrofLCGs-r18)) OF LCG-DSR-Config-r18 {	n entries		DSR
LCG-DSR-Config-r18[n] SEQUENCE {		entry n	
lcg-Id-r18	Set according to testcase specific values	INTEGER (0..maxLCG-ID)	
remainingTimeThreshold-r18	Set according to testcase specific values	INTEGER (1..64)	
}			
}			
dsr-ConfigToReleaseList-r18	Not present		
tar-Config-r18	Not present		
}			

Condition	Explanation
DRX	This condition applies when DRX is configured
MBS_Multicast	Used for MBS Multicast reception
DRX_MBS_Multicast	DRX is used for MBS Multicast reception test
DCI	HARQ feedback for MBS multicast is indicated by DCI
RRC_Enable_HARQFeedback	HARQ feedback for MBS multicast is enabled by RRC
ACK_NACK	ACK/NACK based HARQ-ACK feedback
NACK_ONLY	NACK-only based HARQ-ACK feedback
DSR	Used for XR delay status report test

– MeasConfig

Table 4.6.3-69: MeasConfig

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
MeasConfig ::= SEQUENCE {			
measObjectToRemoveList	Not present		
measObjectToAddModList	MeasObjectToAddModList		
reportConfigToRemoveList	Not present		
reportConfigToAddModList	ReportConfigToAddModList		
measIdToRemoveList	Not present		
measIdToAddModList	MeasIdToAddModList		
s-MeasureConfig	Not present		
quantityConfig	QuantityConfig		
measGapConfig	Not present		
measGapSharingConfig	Not present		
interFrequencyConfig-NoGap-r16	Not present		
effectiveMeasWindowConfig-r18	Not present		
effectiveMeasWindowConfig-r18 CHOICE {			EMW_Setup
setup	MeasWindowConfig		
}			
}			

Condition	Explanation
EMW_Setup	Setup effective measurement window in NR for E-UTRA measurements

– *MeasGapConfig*

Table 4.6.3-70: *MeasGapConfig*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
MeasGapConfig ::= SEQUENCE {			
gapFR2	Not present		
gapFR2 CHOICE {			GAP_FR2
setup SEQUENCE {			
gapOffset	159		
mgl	ms3dot5		
mgrp	ms160		
mgta	ms0		
}			
}			
gapFR1	Not present		
gapFR1 CHOICE {			GAP_FR1
setup SEQUENCE {			
gapOffset	39		
	9		SIG AND INTER-FREQ_ODD
mgl	ms6		
mgrp	ms40		
mgta	ms0		
refServCellIndicator	Not present		
refFR2ServCellAsyncCA-r16	Not present		
mgl-r16	Not present		
	ms10		PRS
}			
gapUE	Not present		GAP_FR1 OR GAP_FR2
gapUE CHOICE {			
setup SEQUENCE {			
gapOffset	39		
	9		SIG AND INTER-FREQ_ODD
mgl	ms6		
mgrp	ms40		
mgta	ms0		
refServCellIndicator	Not present		
refFR2ServCellAsyncCA-r16	Not present		
mgl-r16	Not present		
	ms10		PRS
}			
}			
gapToAddModList-r17	Not present		
gapToAddModList-r17 SEQUENCE (SIZE (1..maxNrofGapId-r17)) OF GapConfig-r17 {	1 entry		GAP_ADD
GapConfig-r17[1] SEQUENCE {			entry 1
measGapId-r17	MeasGapId		
gapType-r17	perUE		
gapOffset-r17	39		
mgl-r17	ms6		
mgrp-r17	ms40		
mgta-r17	ms0		
refServCellIndicator-r17	Not present		
refFR2-ServCellAsyncCA-r17	Not present		
preConfigInd-r17	Not present		
	true		Pre-config

ncsgInd-r17	Not present		
	true		NCSG
gapAssociationPRS-r17	Not present		
	true		PRS
gapSharing-r17	Not present		
gapPriority-r17	Not present		
}			
}			
gapToReleaseList-r17	Not present		
gapToReleaseList-r17 SEQUENCE (SIZE (1..maxNrofGapId-r17)) OF MeasGapId-r17 {	1 entry		GAP_RELEASE
MeasGapId-r17[1]	1		entry 1
}			
posMeasGapPreConfigToAddModList-r17	Not present		
posMeasGapPreConfigToAddModList-r17 SEQUENCE (SIZE (1..maxNrofPreConfigPosGapId-r17)) OF PosGapConfig-r17 {	1 entry		PRS_GAP_ADD
PosGapConfig-r17[1] SEQUENCE {			entry 1
measPosPreConfigGapId-r17	1		
gapOffset-r17	39		
mgl-r17	ms6		
mgrp-r17	ms40		
mgta-r17	ms0		
gapType-r17	perUE		
}			
posMeasGapPreConfigToReleaseList-r17	Not present		
posMeasGapPreConfigToReleaseList-r17 SEQUENCE (SIZE (1..maxNrofPreConfigPosGapId-r17)) OF MeasPosPreConfigGapId-r17 {	1 entry		PRS_GAP_RELEASE
MeasPosPreConfigGapId-r17[1]	1		entry 1
}			
}			

Condition	Explanation
GAP_FR1	Configuration for FR1 per-FR gaps
GAP_FR2	Configuration for FR2 per-FR gaps
INTER-FREQ_ODD	When the SFNoffset of inter frequency neighbour cell is odd number. SFNoffset is defined in TS 38.523-3 [23] Table 7.1.5.2-1
GAP_ADD	Addition or modification of measurement gaps
GAP_RELEASE	Release of measurement gaps
PRS	PRS measurement
PRS_GAP_ADD	Addition or modification of preconfigured measurement gap for positioning
PRS_GAP_RELEASE	Addition or modification of preconfigured measurement gap for positioning

– *MeasGapId*

Table 4.6.3-70A: *MeasGapId*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
MeasGapId-r17	1		

– *MeasGapSharingConfig*

Table 4.6.3-71: *MeasGapSharingConfig*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
MeasGapSharingConfig ::= SEQUENCE {			

gapSharingFR2	Not present		
}			

MeasId

Table 4.6.3-72: MeasId

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
MeasId	1		

MeasIdleConfig

Table 4.6.3-72A: MeasIdleConfig

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
MeasIdleConfigSIB-r16 ::= SEQUENCE {			
measIdleCarrierListNR-r16	Not present		
measIdleCarrierListNR-r16 SEQUENCE (SIZE (1..maxFreqIdle-r16)) OF MeasIdleCarrierNR-r16 {	The same number of entries as NR cells configured for measurements	Serving cell not included	EMR_NR_S IB4, EMR_NR_S IB11
MeasIdleCarrierNR-r16[n] SEQUENCE {		entry n	
carrierFreq-r16	ARFCN-ValueNR		
ssbSubcarrierSpacing-r16	SubcarrierSpacing	Table 4.6.3-188	
frequencyBandList	Not present		
measCellListNR-r16	Not present		
reportQuantities-r16	both		
qualityThreshold-r16	Not present		
ssb-MeasConfig-r16	Not present		EMR_NR_S IB4
ssb-MeasConfig-r16 SEQUENCE {			EMR_NR_S IB11
nrofSS-BlocksToAverage-r16	2		
absThreshSS-BlocksConsolidation-r16 SEQUENCE {			
thresholdRSRP	RSRP-Range	Table 4.6.3-152	
thresholdRSRQ	Not present		
thresholdSINR	Not present		
}			
smtc-r16	SSB-MTC	Table 4.6.3-185	
ssb-ToMeasure-r16	SSB-ToMeasure	Table 4.6.3-187	
deriveSSB-IndexFromCell-r16	false true		FR1_TDD, FR2_TDD
ss-RSSI-Measurement-r16	Not present		
}			
beamMeasConfigIdle-r16	Not present		
}			
}			
measIdleCarrierListEUTRA-r16	Not present		
measIdleCarrierListEUTRA-r16 SEQUENCE (SIZE (1..maxFreqIdle-r16)) OF MeasIdleCarrierEUTRA-r16 {	The same number of entries as E-UTRA cells configured for measurements	Serving cell not included	EMR_EUTR A_SIB11
MeasIdleCarrierEUTRA-r16[n] SEQUENCE {		entry n	
carrierFreqEUTRA-r16	ARFCN-ValueEUTRA		
allowedMeasBandwidth-r16	EUTRA-AllowedMeasBandwidth	Table 4.6.5-1	

measCellListEUTRA-r16 SEQUENCE (SIZE (1..maxCellMeasIdle-r16)) OF EUTRA-PhysCellIdRange {	1 entry		
EUTRA-PhysCellIdRange[1]	EUTRA-PhysCellIdRange	entry 1	
}			
reportQuatitiesEUTRA-r16	both		
qualityThresholdEUTRA-r16	Not present		
}			
}			
}			

Condition	Explanation
EMR_NR_SIB4	For NR idle/inactive measurement test cases with SIB4 broadcasted.
EMR_NR_SIB11	For NR idle/inactive measurement test cases with SIB11 broadcasted.
EMR_EUTRA_SIB11	For E-UTRA idle/inactive measurement test cases with SIB11 broadcasted.

– *MeasIdToAddModList*

Table 4.6.3-73: MeasIdToAddModList

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
MeasIdToAddModList ::= SEQUENCE (SIZE (1..maxNrofMeasId)) OF MeasIdToAddMod {	1 entry		
MeasIdToAddMod[1] SEQUENCE {		entry 1	
measId	MeasId		
measObjectId	MeasObjectId		
reportConfigId	ReportConfigId		
}			

– *MeasObjectCLI*

Table 4.6.3-73A: MeasObjectCLI

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
MeasObjectCLI-r16 ::= SEQUENCE {			
FFS			
}			

– *MeasObjectEUTRA*

Table 4.6.3-74: MeasObjectEUTRA

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
MeasObjectEUTRA ::= SEQUENCE {			
carrierFreq	Downlink EARFCN for Freq		
allowedmeasBandwidth	Set according to TS 36.508 [2] Table 4.4.3.4-1 for E-UTRA cell	row 'measurement Bandwidth'	
cellsToRemoveListEUTRAN	Not present		
cellsToAddModListEUTRAN	Not present		
excludedCellsToRemoveListEUTRAN	Not present		
excludedCellsToAddModListEUTRAN	Not present		
eutra-PresenceAntennaPort1	false		

	true	at least two cell-specific antenna ports are used in all neighbouring cells	All neighCells with port1
eutra-Q-OffsetRange	Not present		
widebandRSRQ-Meas	false		
}			

Condition	Explanation
All neighCells with port1	Used for all neighbouring cells with at least two cell-specific antenna ports

– *MeasObjectId*

Table 4.6.3-75: *MeasObjectId*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
MeasObjectId	1		

– *MeasObjectNR*

Table 4.6.3-76: *MeasObjectNR(Thres)*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
MeasObjectNR ::= SEQUENCE {			
ssbFrequency	ARFCN-ValueNR with condition DL_SSB		
ssbSubcarrierSpacing	SubcarrierSpacing		
smtc1	SSB-MTC		
smtc2	Not present		
refFreqCSI-RS	Not present		
referenceSignalConfig SEQUENCE {			
ssb-ConfigMobility SEQUENCE {			
ssb-ToMeasure CHOICE {			
setup	SSB-ToMeasure		
}			
deriveSSB-IndexFromCell	false		FDD
	true		TDD
ssb-PositionQCL-Common-r16	Not present		
	SSB-PositionQCL-Relation		Shared Spectrum
ssb-PositionQCL-CellsToAddModList-r16	Not present		
ssb-PositionQCL-CellsToRemoveList-r16	Not present		
ss-RSSI-Measurement	Not present		
}			
csi-rs-ResourceConfigMobility	Not present		
}			
absThreshSS-BlocksConsolidation SEQUENCE {			
thresholdRSRP	Thres	Thres is an entry value into a mapping table in TS 38.133 [13].	
thresholdRSRQ	Not present		
thresholdSINR	Not present		
}			
absThreshCSI-RS-Consolidation	Not present		
nrofSS-BlocksToAverage	2		
nrofCSI-RS-ResourcesToAverage	Not present		

quantityConfigIndex	1		
offsetMO SEQUENCE {			
rsrpOffsetSSB	dB0		
rsrqOffsetSSB	dB0		
sinrOffsetSSB	dB0		
rsrpOffsetCSI-RS	dB0		
rsrqOffsetCSI-RS	dB0		
sinrOffsetCSI-RS	dB0		
}			
cellsToRemoveList	Not present		
cellsToAddModList	Not present		
excludedCellsToRemoveList	Not present		
excludedCellsToAddModList	Not present		
allowedCellsToRemoveList	Not present		
allowedCellsToAddModList	Not present		
freqBandIndicatorNR	FreqBandIndicatorNR		
rmtc-Config-r16	Not present		
	RMTC-Config		SharedSpec trum
}			

Condition	Explanation
SharedSpectrum	Operation with shared spectrum channel access

– *MeasObjectNR-SL*

Table 4.6.3-76A: MeasObjectNR-SL

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
MeasObjectNR-SL-r16 ::= SEQUENCE {			
tx-PoolMeasToRemoveList-r16	Not present		
tx-PoolMeasToAddModList-r16 SEQUENCE (SIZE (1..maxNrofSL-PoolToMeasureNR-r16)) OF SL-ResourcePoolID-r16{	1 entry		
SL-ResourcePoolID-r16[1]	1	entry 1	
}			
}			

– *MeasObjectRxTxDiff*

Table 4.6.3-76B: MeasObjectRxTxDiff

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
MeasObjectRxTxDiff-r17 ::= SEQUENCE {			
dl-Ref-r17 CHOICE {			
prs-Ref-r17	NULL		PRS_REF
csi-RS-Ref-r17	NULL		CSI- RS_REF
}			

Condition	Explanation
PRS_REF	Test cases using PRS reference signal to measure Rx-Tx time difference
CSI-RS_REF	Test cases using CSI-RS for tracking to measure Rx-Tx time difference

– *MeasObjectToAddModList*

Table 4.6.3-77: *MeasObjectToAddModList*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
MeasObjectToAddModList ::= SEQUENCE (SIZE (1..maxNrofMeasId)) OF MeasObjectToAddMod {	1 entry		
MeasObjectToAddMod[1] SEQUENCE {		entry 1	
measObjectId	MeasObjectId		
measObject CHOICE {			
measObjectNR	MeasObjectNR		
}			
}			
}			
MeasObjectToAddModList ::= SEQUENCE (SIZE (1..maxNrofMeasId)) OF MeasObjectToAddMod {	2 entries		InterRAT
MeasObjectToAddMod[1] SEQUENCE {		entry 1	
measObjectId	1		
measObject CHOICE {			
measObjectNR	MeasObjectNR		
}			
}			
MeasObjectToAddMod[2] SEQUENCE {		entry 2	
measObjectId	2		
measObject CHOICE {			
measObjectEUTRA	MeasObjectEUTRA		
}			
}			
}			

Condition	Explanation
InterRAT	Configuration with at least one NR PCell and one or more E-UTRA neighbour cell(s)

– *MeasObjectUTRA-FDD*

Table 4.6.3-77A: *MeasObjectUTRA-FDD*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
MeasObjectUTRA-FDD-r16 ::= SEQUENCE {			
carrierFreq-r16	ARFCN-ValueUTRA-FDD-r16		
utra-FDD-Q-OffsetRange-r16	UTRA-FDD-Q-OffsetRange-r16		
cellsToRemoveList-r16	Not present		
cellsToAddModList-r16	Not present		
}			

– *MeasResultCellListSFTD-NR*

Table 4.6.3-78: *MeasResultCellListSFTD-NR*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
MeasResultCellListSFTD-NR ::= SEQUENCE {			
FFS			
}			

– *MeasResultCellListSFTD-EUTRA*

Table 4.6.3-78A: *MeasResultCellListSFTD-EUTRA*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
MeasResultCellListSFTD-EUTRA ::= SEQUENCE {			
FFS			
}			

– *MeasResultForRSSI*

Table 4.6.3-78AA: *MeasResultForRSSI*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
MeasResultForRSSI ::= SEQUENCE {			
rsi-Result-r16	FFS		
channelOccupancy-r16	FFS		
}			

– *MeasResults*

Table 4.6.3-79: *MeasResults*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
MeasResults ::= SEQUENCE {			
measId	MeasId		
measResultServingMOList	Not checked		SFTD_NEIG HBOUR or SFTD_PSC ELL
measResultServingMOList SEQUENCE (SIZE (1.. maxNrofServingCells)) OF MeasResultServMO {	1 entry		
MeasResultServMO[1] SEQUENCE {		entry 1	
servCellId	ServCellIndex		
measResultServingCell SEQUENCE {			
physCellId	PhysCellId		
measResult SEQUENCE {			
cellResults SEQUENCE {			
resultsSSB-Cell SEQUENCE {			
rsrp	Not checked		
rsrq	Not checked		
sinr	Not checked		
}			
resultsCSI-RS-Cell	Not present		
}			
rsIndexResults	Not present		
}			
cgi-Info	Not present		
}			
measResultBestNeighCell	Not present		
}			
}			
measResultNeighCells	Not present		A1, A2, SFTD_NEIG HBOUR or SFTD_PSC ELL, SFTD_EUT RA

measResultNeighCells CHOICE {			
measResultListNR	Set according to specific message content		A3, A4, A5, A6
measResultListEUTRA	Set according to specific message content		B1, B2
measResultListUTRA-FDD-r16	Set according to specific message content		B1_UTRA, B2_UTRA
}			
measResultServFreqListEUTRA-SCG	Not present		
measResultServFreqListNR-SCG	Not checked		
measResultSFTD-EUTRA	Not present		
measResultSFTD-EUTRA SEQUENCE {			SFTD_EUTRA
eutra-PhysCellId	PhysCellId of E-UTRA Cell 1		
sfn-OffsetResult	(0..1023)		
frameBoundaryOffsetResult	(-30720..30719)		
rsrp-Result	Not checked		
}			
measResultSFTD-NR	Not present		
measResultSFTD-NR SEQUENCE {			SFTD_PSC
physCellId	PhysCellId of PSCell		ELL
sfn-OffsetResult	Not checked		
frameBoundaryOffsetResult	Not checked		
rsrp-Result	Not checked		
}			
measResultCellListSFTD-NR	Not present		
measResultCellListSFTD-NR SEQUENCE (SIZE (1..maxCellSFTD)) OF MeasResultCellSFTD-NR {	1 entry		SFTD_NEIG
MeasResultCellSFTD-NR[1] SEQUENCE {		entry 1	HBOUR
physCellId	PhysCellId		
sfn-OffsetResult	Not checked		
frameBoundaryOffsetResult	Not checked		
rsrp-Result	Not checked		
}			
}			
measResultForRSSI-r16	Not present		
	MeasResultForRSSI		SharedSpec
locationInfo-r16	Not present		trum
ul-PDCP-DelayValueResultList-r16	Not present		
measResultsSL-r16	Not present		
measResultCLI-r16	Not present		
}			

Condition	Explanation
A1	If event trigger Id in corresponding Measurement Configuration was Event A1
A2	If event trigger Id in corresponding Measurement Configuration was Event A2
A3	If event trigger Id in corresponding Measurement Configuration was Event A3
A4	If event trigger Id in corresponding Measurement Configuration was Event A4
A5	If event trigger Id in corresponding Measurement Configuration was Event A5
A6	If event trigger Id in corresponding Measurement Configuration was Event A6
B1	If event trigger Id in corresponding Measurement Configuration was Event B1
B2	If event trigger Id in corresponding Measurement Configuration was Event B2
B1_UTRA	If event trigger Id in corresponding Measurement Configuration was Event B1-UTRA-FDD
B2_UTRA	If event trigger Id in corresponding Measurement Configuration was Event B2-UTRA-FDD
SFTD_NEIGHBOUR	Measurement reporting triggered by SFTD measurement on NR neighbour
SFTD_PSCell	Measurement reporting triggered by SFTD measurement on NR PSCell
SharedSpectrum	Operation with shared spectrum channel access
SFTD-EUTRA	Measurement reporting triggered by SFTD measurement on E-UTRA PSCell

– *MeasResult2EUTRA***Table 4.6.3-79A: MeasResult2EUTRA**

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
MeasResult2EUTRA ::= SEQUENCE {			
FFS			
}			

– *MeasResult2NR***Table 4.6.3-79B: MeasResult2NR**

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
MeasResult2NR ::= SEQUENCE {			
FFS			
}			

– *MeasResultIdleEUTRA***Table 4.6.3-79C: MeasResultIdleEUTRA**

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
MeasResultIdleEUTRA-r16 ::= SEQUENCE {			
FFS			
}			

– *MeasResultIdleNR***Table 4.6.3-79D: MeasResultIdleNR**

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
MeasResultIdleNR-r16 ::= SEQUENCE {			
FFS			
}			

– *MeasResultRxTxTimeDiff***Table 4.6.3-79E: MeasResultRxTxTimeDiff**

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
MeasResultRxTxTimeDiff-r17 ::= SEQUENCE {			
rxTxTimeDiff-ue-r17 SEQUENCE {			
result-k5-r17	INTEGER (0..61565)	Integer value for result-k5 measurements	
}			
}			

– *MeasResultSCG-Failure*

Table 4.6.3-80: *MeasResultSCG-Failure*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
MeasResultSCG-Failure ::= SEQUENCE {		<i>measResultPerMOList</i> for each <i>MeasObjectNR</i> for which a <i>measId</i> is configured (by the NR <i>RRCCongfiguration message</i>) and measurement results are available include an entry	
<i>measResultPerMOList</i> SEQUENCE (SIZE (1.. <i>maxFreq</i>)) OF <i>MeasResult2NR</i> {	<i>n</i> entries of <i>MeasResult2NR</i>	<i>MOList</i> [1] <i>n</i> denotes the number of non-serving frequencies being measured	
<i>MeasResult2NR</i> [1] SEQUENCE {		entry 1	
<i>ssbFrequency</i>	ARFCN-ValueNR with condition DL_SSB	the ARFCN if there is a <i>measId</i> configured with the <i>MeasObjectNR</i> and a <i>reportConfig</i> which has <i>rsType</i> set to <i>ssb</i>	
<i>refFreqCSI-RS</i>	INTEGER (0..3279165)	the ARFCN if there is a <i>measId</i> configured with the <i>MeasObjectNR</i> and a <i>reportConfig</i> which has <i>rsType</i> set to <i>csi-rs</i>	
<i>measResultServingCell</i> SEQUENCE {		if a serving cell is associated with the <i>MeasObjectNR</i>	
<i>physCellId</i>	INTEGER (0..1007)	the <i>physCellId</i> configured for this serving cell	
<i>measResult</i> SEQUENCE {			
<i>cellResults</i> SEQUENCE {			
<i>resultsSSB-Cell</i> SEQUENCE {			
<i>rsrp</i>	as specified in Table 4.6.3-152	Integer value for RSRP measurements	
<i>rsrq</i>	as specified in Table 4.6.3-153	Integer value for RSRQ measurements	
<i>sinr</i>	as specified in Table 4.6.3-172	Integer value for SINR measurements	
}			
<i>resultsCSI-RS-Cell</i> SEQUENCE {			

rsrp	as specified in Table 4.6.3-152	Integer value for RSRP measurements	
rsrq	as specified in Table 4.6.3-153	Integer value for RSRQ measurements	
sinr	as specified in Table 4.6.3-172	Integer value for SINR measurements	
}			
}			
rsIndexResults SEQUENCE {			
resultsSSB-Indexes SEQUENCE (SIZE (1..maxNrofSSBs)) OF ResultsPerSSB-Index {	<i>n</i> entires of ResultsPerSSB-Index	<i>ResultsPerSSB-IndexList</i>	
ResultsPerSSB-Index[1] SEQUENCE {		entry 1	
ssb-Index	SSB-Index	an SS-Block within an SS-Burst	
ssb-Results SEQUENCE {		<i>MeasQuantityResults</i>	
rsrp	as specified in Table 4.6.3-152	Integer value for RSRP measurements	
rsrq	as specified in Table 4.6.3-153	Integer value for RSRQ measurements	
sinr	as specified in Table 4.6.3-172	Integer value for SINR measurements	
}			
}			
}		<i>ResultsPerSSB-Index</i> entry [x] if any	
}			
resultsCSI-RS-Indexes SEQUENCE (SIZE (1..maxNrofCSI-RS)) OF ResultsPerCSI-RS-Index {	<i>n</i> entires of ResultsPerCSI-RS-Index	<i>ResultsPerCSI-RS-IndexList</i>	
ResultsPerCSI-RS-Index[1] SEQUENCE {		entry 1	
csi-RS-Index	INTEGER (0..maxNrofCSI-RS-ResourcesRRM-1)	CSI-RS resource index associated to the measurement information to be reported	
csi-RS-Results SEQUENCE {		<i>MeasQuantityResults</i>	
rsrp	as specified in Table 4.6.3-152	Integer value for RSRP measurements	
rsrq	as specified in Table 4.6.3-153	Integer value for RSRQ measurements	
sinr	as specified in Table 4.6.3-172	Integer value for SINR measurements	
}			
}			
}		<i>ResultsPerCSI-RS-Index</i> entry [x] if any	
}			
}			
}			
}			
measResultNeighCellListNR SEQUENCE (SIZE (1..maxCellReport)) OF MeasResultNR {	<i>n</i> entires of MeasResultNR	include the best measured cells, ordered such that the best cell is	

		listed first, and based on measurements collected up to the moment the UE detected the failure	
MeasResultNR[1] SEQUENCE {		entry 1	
physCellId	INTEGER (0..1007)	the <i>physCellId</i> configured for the measured cell	
measResult SEQUENCE {			
cellResults SEQUENCE {			
resultsSSB-Cell SEQUENCE {			
rsrp	as specified in Table 4.6.3-152	Integer value for RSRP measurements	
rsrq	as specified in Table 4.6.3-153	Integer value for RSRQ measurements	
sinr	as specified in Table 4.6.3-172	Integer value for SINR measurements	
}			
resultsCSI-RS-Cell SEQUENCE {			
rsrp	as specified in Table 4.6.3-152	Integer value for RSRP measurements	
rsrq	as specified in Table 4.6.3-153	Integer value for RSRQ measurements	
sinr	as specified in Table 4.6.3-172	Integer value for SINR measurements	
}			
}			
}			
		<i>MeasResultNR</i> entry [x] if any	
		<i>MeasResult2NR</i> entry [x] if any	
		MOList [x] if any	
}			

– *MeasResultsSL*

Table 4.6.3-80A: *MeasResultsSL*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
MeasResultsSL-r16 ::= SEQUENCE {			
measResultsListSL-r16 CHOICE {			
measResultNR-SL-r16 SEQUENCE {			
measResultListCBR-NR-r16 SEQUENCE (SIZE (1.. maxNrofSL-PoolToMeasureNR-r16)) OF MeasResultCBR-NR-r16 {	1 entry		
MeasResultCBR-NR-r16[1] SEQUENCE {		entry 1	
sl-poolReportIdentity-r16	1		
sl-CBR-ResultsNR-r16	(0..100)		
}			
}			
}			

}			
}			
}			

– *MeasRSSI-ReportConfig*

Table 4.6.3-80AA: MeasRSSI-ReportConfig

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
MeasRSSI-ReportConfig-r16 ::= SEQUENCE {			
channelOccupancyThreshold-r16	FFS		
}			

– *MeasSequence*

Table 4.6.3-80BA: MeasSequence

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
MeasSequence-r18	FFS		

– *MeasTriggerQuantity*

Table 4.6.3-80BB: MeasTriggerQuantity

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
MeasTriggerQuantity ::= SEQUENCE {			
FFS			
}			

– *MeasTriggerQuantityEUTRA*

Table 4.6.3-80B: MeasTriggerQuantityEUTRA

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
MeasTriggerQuantityEUTRA-r16 ::= SEQUENCE {			
FFS			
}			

– *MeasTriggerQuantityOffset*

Table 4.6.3-80CAA: MeasTriggerQuantityOffset

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
MeasTriggerQuantityOffset ::= SEQUENCE {			
FFS			
}			

– *MeasurementValidityDuration*

Table 4.6.3-80CA: MeasurementValidityDuration

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
MeasurementValidityDuration-r18	FFS		

– *MeasWindowConfig*

Table 4.6.3-80C: MeasWindowConfig

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
MeasWindowConfig-r18 ::= SEQUENCE {			
windowOffsetPeriodicity CHOICE {			
periodicityMs40	0		MS40
periodicityMs80	0		MS80
}			
windowDuration	ms5		
}			

Condition	Explanation
MS40	40 ms for measurement window periodicity
MS80	80 ms for measurement window periodicity

– *MobilityStateParameters*

Table 4.6.3-81: MobilityStateParameters

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
MobilityStateParameters ::= SEQUENCE {			
FFS			
}			

– *MRB-Identity*

Table 4.6.3-81AA: MRB-Identity

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
MRB-Identity-r17	m		MRBm

Condition	Explanation
MRBm	Establishment of MRBm

– *MsgA-ConfigCommon*

Table 4.6.3-81A: MsgA-ConfigCommon

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
MsgA-ConfigCommonL-r16 ::= SEQUENCE {			

rach-ConfigCommonTwoStepRA-r16	RACH-ConfigCommonTwoStepRA		
msgA-PUSCH-Config-r16	MsgA-PUSCH-Config		
}			

– *MsgA-PUSCH-Config*

Table 4.6.3-81B: *MsgA-PUSCH-Config*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
MsgA-PUSCH-Config-r16 ::= SEQUENCE {			
msgA-PUSCH-ResourceGroupA-r16 SEQUENCE {			
msgA-MCS-r16	1		
nrofSlotsMsgA-PUSCH-r16	1		
nrofMsgA-PO-PerSlot-r16	one		
msgA-PUSCH-TimeDomainOffset-r16	4		FR1 FDD
	10		FR1 TDD AND SCS 30
	20		FR1 TDD AND SCS60
	5		(FR1 TDD AND SCS 15) OR FR2
msgA-PUSCH-TimeDomainAllocation-r16	Not present		
startSymbolAndLengthMsgA-PO-r16	27	S=0, L=14	
mappingTypeMsgA-PUSCH-r16	typeA		
guardPeriodMsgA-PUSCH-r16	0		
guardBandMsgA-PUSCH-r16	0		
frequencyStartMsgA-PUSCH-r16	1		
nrofPRBs-PerMsgA-PO-r16	8		
nrofMsgA-PO-FDM-r16	one		
msgA-IntraSlotFrequencyHopping-r16	Not present		
msgA-HoppingBits-r16	Not present		
msgA-DMRS-Config-r16 SEQUENCE {			
msgA-DMRS-AdditionalPosition-r16	pos0		
msgA-MaxLength-r16	len2		
msgA-PUSCH-DMRS-CDM-Group-r16	0		
msgA-PUSCH-NrofPorts-r16	0		
msgA-ScramblingID0-r16	Not present		
msgA-ScramblingID1-r16	Not present		
}			
nrofDMRS-Sequences-r16	1		
msgA-Alpha-r16	alpha0		
interlaceIndexFirstPO-MsgA-PUSCH-r16	1		
nrofInterlacesPerMsgA-PO-r16	1		
}			
msgA-PUSCH-ResourceGroupB-r16	Not present		
msgA-TransformPrecoder-r16	enabled		
msgA-DataScramblingIndex-r16	Not present		
msgA-DeltaPreamble-r16	1		
}			

– *MultiFrequencyBandListNR*

Table 4.6.3-82: *MultiFrequencyBandListNR*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition

MultiFrequencyBandListNR ::= SEQUENCE (SIZE (1..maxNrofMultiBands)) OF FreqBandIndicatorNR {	1 entry		
FreqBandIndicatorNR[1]	FreqBandIndicatorNR	entry 1	
}			

– *MultiFrequencyBandListNR-SIB*

Table 4.6.3-82A: MultiFrequencyBandListNR-SIB

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
MultiFrequencyBandListNR-SIB ::= SEQUENCE (SIZE (1.. maxNrofMultiBands)) OF NR-MultiBandInfo {	1 entry		
NR-MultiBandInfo[1] SEQUENCE {		entry 1	
freqBandIndicatorNR	FreqBandIndicatorNR		
	200		LessThan5 MHz
nr-NS-PmaxList	NR-NS-PmaxList		
}			
}			

Condition	Explanation
LessThan5MHz	For test cases using a NR neighbouring cell with channel BW less than 5 MHz for FR1

– *MUSIM-GapConfig*

Table 4.6.3-82BA: MUSIM-GapConfig

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
MUSIM-GapConfig-r17 ::= SEQUENCE {			
FFS			
}			

– *MUSIM-GapId*

Table 4.6.3-82BB: MUSIM-GapId

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
MUSIM-GapId-r17	FFS		

– *MUSIM-GapInfo*

Table 4.6.3-82BC: MUSIM-GapInfo

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
MUSIM-GapInfo-r17 ::= SEQUENCE {			
FFS			
}			

– *N3C-IndirectPathConfigRelay*

Table 4.6.3-82BD: *N3C-IndirectPathConfigRelay*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
N3C-IndirectPathConfigRelay-r18 ::= SEQUENCE {			
FFS			
}			

– *N3C-IndirectPathAddChange*

Table 4.6.3-82BE: *N3C-IndirectPathAddChange*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
N3C-IndirectPathAddChange-r18 ::= SEQUENCE {			
FFS			
}			

– *N3C-RelayUE-Info*

Table 4.6.3-82BFA: *N3C-RelayUE-Info*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
N3C-RelayUE-Info-r18 ::= SEQUENCE {			
FFS			
}			

– *NCR-AperiodicFwdConfig*

Table 4.6.3-82BF: *NCR-AperiodicFwdConfig*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
NCR-AperiodicFwdConfig-r18 ::= SEQUENCE {			
FFS			
}			

– *NCR-FwdConfig*

Table 4.6.3-82BG: *NCR-FwdConfig*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
NCR-FwdConfig-r18 ::= SEQUENCE {			
FFS			
}			

– *NCR-PeriodicityAndOffset*

Table 4.6.3-82BH: *NCR-PeriodicityAndOffset*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
NCR-PeriodicityAndOffset-r18 ::= SEQUENCE {			
FFS			

}			

– *NCR-PeriodicFwdResourceSet*

Table 4.6.3-82BI: *NCR-PeriodicFwdResourceSet*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
NCR-PeriodicFwdResourceSet-r18 ::= SEQUENCE {			
FFS			
}			

– *NCR-PeriodicFwdResourceSetId*

Table 4.6.3-82BJ: *NCR-PeriodicFwdResourceSetId*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
NCR-PeriodicFwdResourceSetId-r18	FFS		

– *NCR-SemiPersistentFwdResourceSet*

Table 4.6.3-82BK: *NCR-SemiPersistentFwdResourceSet*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
NCR-SemiPersistentFwdResourceSet-r18 ::= SEQUENCE {			
FFS			
}			

– *NCR-SemiPersistentFwdResourceSetId*

Table 4.6.3-82BL: *NCR-SemiPersistentFwdResourceSetId*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
NCR-SemiPersistentFwdResourceSetId-r18	FFS		

– *NeedForGapsConfigNR*

Table 4.6.3-82B: *NeedForGapsConfigNR*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
NeedForGapsConfigNR-r16 ::= SEQUENCE {			
FFS			
}			

– *NeedForGapsInfoNR*

Table 4.6.3-82C: *NeedForGapsInfoNR*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
NeedForGapsInfoNR-r16 ::= SEQUENCE {			
FFS			

}			

– *NeedForGapNCSG-ConfigEUTRA*

Table 4.6.3-82D: *NeedForGapNCSG-ConfigEUTRA*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
NeedForGapNCSG-ConfigEUTRA-r17 ::= SEQUENCE {			
FFS			
}			

– *NeedForGapNCSG-ConfigNR*

Table 4.6.3-82E: *NeedForGapNCSG-ConfigNR*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
NeedForGapNCSG-ConfigNR-r17 ::= SEQUENCE {			
FFS			
}			

– *NeedForGapNCSG-InfoEUTRA*

Table 4.6.3-82F: *NeedForGapNCSG-InfoEUTRA*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
NeedForGapNCSG-InfoEUTRA-r17 ::= SEQUENCE {			
FFS			
}			

– *NeedForGapNCSG-InfoNR*

Table 4.6.3-82G: *NeedForGapNCSG-InfoNR*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
NeedForGapNCSG-InfoNR-r17 ::= SEQUENCE {			
FFS			
}			

– *NeedForInterruptionInfoNR*

Table 4.6.3-82H: *NeedForInterruptionInfoNR*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
NeedForInterruptionInfoNR-r18 ::= SEQUENCE {			
intraFreq-needForInterruption-r18 SEQUENCE (SIZE (1.. maxNrofServingCells)) OF			
NeedForInterruptionNR-r18 {			
NeedForInterruptionNR-r18[1] SEQUENCE {		entry 1	
interruptionIndication-r18	no-gap-no-interruption		
}			
}			

interFreq-needForInterruption-r18 SEQUENCE (SIZE (1..maxBands)) OF NeedForInterruptionNR-r18 {	1 entry		
NeedForInterruptionNR-r18[1] SEQUENCE {		entry 1	
interruptionIndication-r18	no-gap-with-interruption		
}			
}			
}			

– *NextHopChainingCount*

Table 4.6.3-83: NextHopChainingCount

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
NextHopChainingCount	0		

– *NG-5G-S-TMSI*

Table 4.6.3-84: NG-5G-S-TMSI

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
NG-5G-S-TMSI	Set to the value of the NG-5G-S-TMSI of the UE	BIT STRING (SIZE(40))	

– *NonCellDefiningSSB*

Table 4.6.3-84AAA: NonCellDefiningSSB

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
NonCellDefiningSSB-r17 ::= SEQUENCE {			
absoluteFrequencySSB-r17	Set to value of absoluteFrequencySSB for NCD-SSB in Table 6.2.3.1-8/9		
ssb-Periodicity-r17	Not present	The periodicity of this NCD-SSB is same as SSB periodicity of the CD-SSB	
ssb-TimeOffset-r17	Not present	The time offset between the first burst of CD-SSB transmitted in the serving cell and the first burst of this NCD-SSB transmitted is zero	
}			

– *NPN-Identity*

Table 4.6.3-84AA: NPN-Identity

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
NPN-Identity-r16 ::= CHOICE {			

pni-npn-r16 SEQUENCE {			CAG
plmn-identity-r16	PLMN-Identity		
cag-identityList-r16 SEQUENCE (SIZE (1..maxNPN-r16)) OF CAG-IdentityInfo-r16 {	1 entry		
cag-identity-r16[1]	1	cag-Identity is coded as a 32 bit BITSTRING	
manualCAGselectionAllowed-r16	true		
}			
snpn-r16 SEQUENCE {			SNPN
plmn-identity-r16	PLMN-Identity		
nid-List-r16 SEQUENCE (SIZE (1..maxNPN-r16)) OF NID-r16{	1 entry		
NID-r16[1]	See table 4.4.2-4	NID is coded as a BITSTRING based on Table 4.4.2-4	
}			
}			
}			

Condition	Explanation
CAG	PNI-NPN
SNPN	Standalone NPN cell

NPN-IdentityInfoList

Table 4.6.3-84AB: NPN-IdentityInfoList

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
NPN-IdentityInfoList-r16 ::= SEQUENCE (SIZE (1..maxNPN-r16)) OF NPN-IdentityInfo-r16 {	1 entry		
NPN-IdentityInfo-r16[1] SEQUENCE {			
npn-identityList-r16 SEQUENCE (SIZE (1..maxNPN-r16)) OF NPN-Identity-r16 {	1 entry		
NPN-Identity-r16[1]	NPN-Identity with condition CAG		CAG
	NPN-Identity with condition SNPN		SNPN
}			
}			
trackingAreaCode-r16	TrackingAreaCode		
ranac-r16	RAN-AreaCode		
cellIdentity-r16	CellIdentity		
cellReservedForOperatorUse-r16	notReserved		
iab-Support-r16	Not present		
}			
}			

Condition	Explanation
CAG	PNI-NPN
SNPN	Standalone NPN cell

NR-DL-PRS-PDC-Info

Table 4.6.3-84AC: NR-DL-PRS-PDC-Info

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition

NR-DL-PRS-PDC-Info-r17 ::= SEQUENCE {			
NR-DL-PRS-PDC-ResourceSet-r17 SEQUENCE {			
periodicityAndOffset-r17 CHOICE {			
scs15-r17 CHOICE {		entry 1	SCS15
n160-r17	10		
}			
scs30-r17 CHOICE {		entry 2	SCS30
n160-r17	10		
}			
scs120-r17 CHOICE {		entry 3	SCS120
n160-r17	10		
}			
}			
numSymbols-r17	n4		
dl-PRS-ResourceBandwidth-r17	8		SCS15
	22		SCS30
	11		SCS120
dl-PRS-StartPRB-r17	0		
resourceList-r17 SEQUENCE (SIZE (1..maxNrofPRS-ResourcesPerSet-r17)) OF NR-DL-PRS-Resource-r17 {	1 entry		
NR-DL-PRS-Resource-r17[1] SEQUENCE {		entry 1	
nr-DL-PRS-ResourceID-r17	0		
dl-PRS-SequenceID-r17	0		
dl-PRS-CombSizeN-AndReOffset-r17 CHOICE {			
n4-r17	0		SCS15 OR SCS30
n2-r17	0		SCS120
}			
dl-PRS-ResourceSlotOffset-r17	4		
dl-PRS-ResourceSymbolOffset-r17	0		
dl-PRS-QCL-Info-r17 CHOICE {			
ssb-r17 SEQUENCE {			SCS120
ssb-Index-r17	0	SSB#0	
rs-Type-r17	typeD		
}			
dl-PRS-r17 SEQUENCE {			SCS15 OR SCS30
qcl-DL-PRS-ResourceID-r17	0		
}			
}			
repFactorAndTimeGap-r17 SEQUENCE {			
repetitionFactor-r17	n2		
timeGap-r17	s1		
}			
}			
}			

NR-NS-PmaxList

Table 4.6.3-84A: NR-NS-PmaxList

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
NR-NS-PmaxList ::= SEQUENCE (SIZE (1..maxNrofMultiBands)) OF NR-NS-PmaxValue {	1 entry		
NR-NS-PmaxValue[1] SEQUENCE {		entry 1	
additionalPmax	Not present		
additionalSpectrumEmission	AdditionalSpectrumEmission		
}			
}			

– *NSAG-ID*

Table 4.6.3-84BA: *NSAG-ID*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
NSAG-ID-r17	Set according to specific message content		

– *NSAG-IdentityInfo*

Table 4.6.3-84B: *NSAG-IdentityInfo*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
NSAG-IdentityInfo-r17 ::= SEQUENCE {			
nsag-ID-r17	NSAG-ID		
trackingAreaCode-r17	Not present		
}			

– *NTN-Config*

Table 4.6.3-84C: *NTN-Config*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
NTN-Config-r17 ::= SEQUENCE {			
epochTime-r17	Not present		
ntn-UISyncValidityDuration-r17	s240		
cellSpecificKoffset-r17	Set to the value defined in Table 6.3.4.1-1 according to the cell type		GSO
	Set to the value defined in Table 6.3.4.2-1 according to the cell type		NGSO
kmac-r17	Not present		GSO
	Set to the value defined in Table 6.3.4.2-1 according to the cell type.		NGSO
ta-Info-r17 SEQUENCE {			
ta-Common-r17	Set to the value defined in Table 6.3.4.1-1 according to the cell type.		GSO
	0		NGSO
ta-CommonDrift-r17	0		
ta-CommonDriftVariant-r17	0		
}			
ntn-PolarizationDL-r17	Not present		
ntn-PolarizationUL-r17	Not present		
ephemerisInfo-r17	EphemerisInfo		
ta-Report-r17	Not present		
}			

Condition	Explanation
GSO	Geosynchronous Orbit scenario
NGSO	Non-geosynchronous Orbit scenario

– *NZP-CSI-RS-Resource*

Table 4.6.3-85: *NZP-CSI-RS-Resource*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
NZP-CSI-RS-Resource ::= SEQUENCE {			
nzp-CSI-RS-ResourceId	NZP-CSI-RS-ResourceId		
resourceMapping	CSI-RS-ResourceMapping		
powerControlOffset	-3		
powerControlOffsetSS	Not present		
scramblingId	ScramblingId		
periodicityAndOffset	CSI-ResourcePeriodicityAndOffset		
qcl-InfoPeriodicCSI-RS	TCI-StateId		
subcarrierSpacing-r18	Not present		
	SubcarrierSpacing		LTM
absoluteFrequencyPointA-r18	Not present		
	ARFCN-ValueNR with condition DL_SSB		LTM
cyclicPrefix-r18	Not present		
}			

Condition	Explanation
LTM	L1/L2-triggered mobility

– *NZP-CSI-RS-ResourceId*

Table 4.6.3-86: *NZP-CSI-RS-ResourceId*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
NZP-CSI-RS-ResourceId	0		

– *NZP-CSI-RS-ResourceSet*

Table 4.6.3-87: *NZP-CSI-RS-ResourceSet*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
NZP-CSI-RS-ResourceSet ::= SEQUENCE {			
nzp-CSI-ResourceSetId	NZP-CSI-RS-ResourceSetId		
nzp-CSI-RS-Resources SEQUENCE (SIZE (1..maxNrofNZP-CSI-RS-ResourcesPerSet)) OF NZP-CSI-RS-ResourceId {	1 entry		
NZP-CSI-RS-ResourceId[1]	NZP-CSI-RS-ResourceId	entry 1	
}			
repetition	off		
	Not present		TRS
aperiodicTriggeringOffset	Not present		
trs-Info	Not present		
	true		TRS
resourceType-r18	Not present		
	periodic		LTM
}			

Condition	Explanation

TRS	Tracking-Reference Signal
LTM	L1/L2-triggered mobility

– *NZP-CSI-RS-ResourceSetId*

Table 4.6.3-88: NZP-CSI-RS-ResourceSetId

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
NZP-CSI-RS-ResourceSetId	0		

– *OD-SSB-Config*

Table 4.6.3-88A: OD-SSB-Config

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
OD-SSB-Config-r19 ::= SEQUENCE {			
FFS			
}			

– *P-Max*

NOTE: Exceptions in clause 5.4.1 shall be applied for RF test cases.

Table 4.6.3-89: P-Max

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
P-Max	23		(NR OR pc_dynamic PowerSharingENDC) AND FR1
	20		EN-DC AND (NOT pc_dynamic PowerSharingENDC) AND FR1
	Not present		FR2

Condition	Explanation
NR	NR connected to 5GC
EN-DC	E-UTRA-NR Dual Connectivity with E-UTRA connected to EPC

– *PathlossReferenceRS*

Table 4.6.3-89AA: PathlossReferenceRS

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
PathlossReferenceRS-r17 ::= SEQUENCE {			
pathlossReferenceRS-Id-r17	PathlossReferenceRS-Id		
referenceSignal-r17 CHOICE {			
ssb-Index	SSB-Index		
}			
additionalPCI-r17	Not present		

}			

– *PathlossReferenceRS-Id*

Table 4.6.3-89AB: PathlossReferenceRS-Id

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
PathlossReferenceRS-Id-r17	0		

– *PCI-ARFCN-EUTRA*

Table 4.6.3-89A: PCI-ARFCN-EUTRA

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
PCI-ARFCN-EUTRA-r16 ::= SEQUENCE {			
FFS			
}			

– *PCI-ARFCN-NR*

Table 4.6.3-89B: PCI-ARFCN-NR

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
PCI-ARFCN-NR-r16 ::= SEQUENCE {			
FFS			
}			

– *PCI-List*

Table 4.6.3-90: PCI-List

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
PCI-List ::= SEQUENCE {			
FFS			
}			

– *PCI-Range*

Table 4.6.3-91: PCI-Range

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
PCI-Range ::= SEQUENCE {			
start	PhysCellId		
range	FFS		
}			

– *PCI-RangeElement***Table 4.6.3-92: PCI-RangeElement**

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
PCI-RangeElement ::= SEQUENCE {			
FFS			
}			

– *PCI-RangeIndex***Table 4.6.3-93: PCI-RangeIndex**

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
PCI-RangeIndex	0		

– *PCI-RangeIndexList***Table 4.6.3-94: PCI-RangeIndexList**

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
PCI-RangeIndexList ::= SEQUENCE {			
FFS			
}			

– *PDCCH-Config***Table 4.6.3-95: PDCCH-Config**

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
PDCCH-Config ::= SEQUENCE {			
controlResourceSetToAddModList	Not present		EN-DC, MSS
controlResourceSetToAddModList SEQUENCE(SIZE (1..3)) OF ControlResourceSet {	1 entry		
ControlResourceSet[1]	ControlResourceSet	entry 1	
}			
controlResourceSetToReleaseList	Not present		
searchSpacesToAddModList SEQUENCE(SIZE (1..10)) OF SearchSpace {	1 entry		
SearchSpace[1]	SearchSpace with condition USS	entry 1	
	SearchSpace with condition MSS	entry 1	MSS
	SearchSpace with condition SLSS	entry 1	SLSS
	SearchSpace with condition DCI_2_6	entry 1	DCI_2_6
	SearchSpace with condition DCI_2_9	entry 1	DCI_2_9
	SearchSpace with condition DCI_MC	entry 1	DCI_1_3, DCI_0_3
}			
searchSpacesToReleaseList	Not present		
downlinkPreemption	Not present		
tpc-PUSCH	Not present		

tpc-PUCCH	Not present		
tpc-SRS	Not present		
controlResourceSetToAddModListSizeExt-v1610	Not present		
controlResourceSetToReleaseListSizeExt-r16	Not present		
searchSpacesToAddModListExt-r16	Not present		
searchSpacesToAddModListExt-r16 SEQUENCE(SIZE (1..10)) OF SearchSpaceExt-r16 {	1 entry		DCI_2_6
SearchSpaceExt-r16[1] SEQUENCE{		entry 1	
controlResourceSetId-r16	ControlResourceSetId		
searchSpaceType-r16 SEQUENCE {			
common-r16 SEQUENCE {			
dcf-Format2-4-r16	Not present		
dcf-Format2-5-r16	Not present		
dcf-Format2-6-r16 SEQUENCE {			
}			
}			
}			
searchSpaceGroupList-r16	Not present		
freqMonitorLocations-r16	Not present		
}			
}			
uplinkCancellation-r16	Not present		
monitoringCapabilityConfig-r16	Not present		
searchSpaceSwitchConfig-r16	Not present		
searchSpacesToAddModListExt-v1700	Not present		
searchSpacesToAddModListExt-v1700 SEQUENCE(SIZE (1..10)) OF SearchSpaceExt- v1700 {	1 entry		MSS
SearchSpaceExt-v1700[1] SEQUENCE {		entry 1	
monitoringSlotPeriodicityAndOffset-v1710	Not present		
monitoringSlotsWithinSlotGroup-r17	Not present		
duration-r17	Not present		
searchSpaceType-r17 SEQUENCE {			
common-r17 SEQUENCE {			
dcf-Format4-0-r17	Not present		
dcf-Format4-1-r17	Not present		
dcf-Format4-2-r17	Not present		
dcf-Format4-1-AndFormat4-2-r17 SEQUENCE {			
}			
dcf-Format2-7-r17	Not present		
}			
}			
searchSpaceGroupList-r17	Not present		
searchSpaceLinkingId-r17	Not present		
}			
monitoringCapabilityConfig-v1710	Not present		
searchSpaceSwitchConfig-r17	Not present		
pdccch-SkippingDurationList-r17	Not present		
pdccch-MonitoringResumptionAfterNack-r18	Not present		
searchSpacesToAddModListExt-v1800	Not present		
searchSpacesToAddModListExt-v1800 SEQUENCE(SIZE (1..10)) OF SearchSpaceExt- v1800 {	1 entry		DCI_1_3, DCI_0_3, DCI_2_9
SearchSpaceExt-v1800 [1] SEQUENCE {		entry 1	
searchSpaceType-r18 CHOICE {			
ue-Specific-r18 SEQUENCE {			DCI_1_3, DCI_0_3
dcf-FormatsMC-r18	formats1-3		DCI_1_3
	formats0-3		DCI_0_3
	formats0-3-And-1-3		DCI_1_3 AND DCI_0_3
}			

common-r18 SEQUENCE {			DCI_2_9
dci-Format2-9-r18 SEQUENCE {			
}			
}			
}			
}			
}			

Condition	Explanation
MSS	SearchSpace for MBS Multicast reception
SLSS	SearchSpace for SL mode 1 transmission
DCI_2_6	Transmission of DCI_2_6 is required
DCI_2_9	Transmission of DCI_2_9 is required
DCI_1_3	Transmission of DCI_1_3 is required
DCI_0_3	Transmission of DCI_0_3 is required

– PDCCH-ConfigCommon

Table 4.6.3-96: PDCCH-ConfigCommon

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
PDCCH-ConfigCommon ::= SEQUENCE {			
controlResourceSetZero	ControlResourceSetZero Not present	Initial BWP	SCell_add InitialBWP_ SIB, BWP- Id1
commonControlResourceSet	ControlResourceSet Not present		EN-DC
searchSpaceZero	SearchSpaceZero Not present	Initial BWP	SCell_add InitialBWP_ SIB, BWP- Id1
commonSearchSpaceList SEQUENCE (SIZE (1..4)) OF SearchSpace {	2 entries		
SearchSpace[1]	SearchSpace with condition CSS	entry 1	
SearchSpace[2]	SearchSpace with condition SISS	entry 2	
SearchSpace[3]	SearchSpace with condition PEI	entry 3	PEI
}			
commonSearchSpaceList SEQUENCE (SIZE (1..4)) OF SearchSpace {	1 entry		EN-DC
SearchSpace[1]	SearchSpace with condition CSS	entry 1	
}			
commonSearchSpaceList	Not present		SCell_add
searchSpaceSIB1	0 Not present		EN-DC, SCell_add
searchSpaceOtherSystemInformation	SearchSpaceId with condition SISS Not present		EN-DC, SCell_add
pagingSearchSpace	0 Not present		EN-DC, SCell_add
ra-SearchSpace	SearchSpaceId with condition CSS		

	Not present		SCell_add
firstPDCCH-MonitoringOccasionOfPO	Not present		
commonSearchSpaceListExt-r16	Not present		
sdt-SearchSpace-r17	Not present		
sdt-SearchSpace-r17 CHOICE {			SDT
existingSearchSpace	SearchSpaceId with condition CSS		
}			
searchSpaceMCCH-r17	Not present		
searchSpaceMCCH-r17	SearchSpaceId with condition CSS		MBS_Broad cast
searchSpaceMTCH-r17	Not present		
commonSearchSpaceListExt2-r17	Not present		
commonSearchSpaceListExt2-r17	2 entries		MBS_Broad cast
SEQUENCE(SIZE (1..4)) OF SearchSpaceExt-v1700 {	3 entries		PEI
SearchSpaceExt-v1700[1] SEQUENCE {		entry 1	MBS_Broad cast, PEI
monitoringSlotPeriodicityAndOffset-v1710	Not present		
monitoringSlotsWithinSlotGroup-r17	Not present		
duration-r17	Not present		
searchSpaceType-r17	Not present		PEI
searchSpaceType-r17 SEQUENCE {			MBS_Broad cast
common-r17 SEQUENCE {			
dcf-Format4-0-r17 SEQUENCE {			
}			
dcf-Format4-1-r17	Not present		
dcf-Format4-2-r17	Not present		
dcf-Format4-1-AndFormat4-2-r17	Not present		
dcf-Format2-7-r17	Not present		
}			
}			
searchSpaceGroupIdList-r17	Not present		
searchSpaceLinkingId-r17	Not present		
}			
SearchSpaceExt-v1700[2] SEQUENCE {		entry 2	MBS_Broad cast, PEI
monitoringSlotPeriodicityAndOffset-v1710	Not present		
monitoringSlotsWithinSlotGroup-r17	Not present		
duration-r17	Not present		
searchSpaceType-r17	Not present		
searchSpaceGroupIdList-r17	Not present		
searchSpaceLinkingId-r17	Not present		
}			
SearchSpaceExt-v1700[3] SEQUENCE {		entry 3	PEI
monitoringSlotPeriodicityAndOffset-v1710	Not present		
monitoringSlotsWithinSlotGroup-r17	Not present		
duration-r17	Not present		
searchSpaceType-r17 SEQUENCE {			
common-r17 SEQUENCE {			
dcf-Format4-0-r17	Not present		
dcf-Format4-1-r17	Not present		
dcf-Format4-2-r17	Not present		
dcf-Format4-1-AndFormat4-2-r17	Not present		
dcf-Format2-7-r17 SEQUENCE {			
nrofCandidates-PEI-r17 SEQUENCE {			
aggregationLevel4-r17	n2		
aggregationLevel8-r17	Not present		
aggregationLevel16-r17	Not present		
}			
}			
}			
}			
}			

}			
firstPDCCH-MonitoringOccasionOfPO-v1710	Not present		
pei-ConfigBWP-r17	Not present		
pei-ConfigBWP-r17 SEQUENCE {			PEI
pei-SearchSpace-r17	SearchSpaceId with condition PEI		
firstPDCCH-MonitoringOccasionOfPEI-O-r17 CHOICE {			
sCS15KHzZoneT SEQUENCE (SIZE (1..maxPEI-perPF-r17)) OF INTEGER {	2 entries		SCS15
INTEGER[1]	0		
INTEGER[2]	1		
1			
}			
sCS30KHzZoneT-SCS15KHzhalfT SEQUENCE (SIZE (1..maxPEI-perPF-r17)) OF INTEGER {	1 entry		SCS30
INTEGER[1]	0		
}			
sCS120KHzZoneT-SCS60KHzhalfT-SCS30KHzquarterT-SCS15KHzZoneEighthT SEQUENCE (SIZE (1..maxPEI-perPF-r17)) OF INTEGER {	1 entry		SCS120
INTEGER[1]	0		
}			
}			
followUnifiedTCIstate-v1720	Not present		
applyIndicatedTCI-State-r18	Not present		
commonSearchSpaceListExt-r18	Not present		
searchSpaceMulticastMCCH-r18	Not present		
searchSpaceMulticastMCCH-r18	SearchSpaceId with condition MSS		MBS_Multicast_Inactive
searchSpaceMulticastMTCH-r18	Not present		
}			

Condition	Explanation
EN-DC	E-UTRA-NR Dual Connectivity with E-UTRA connected to EPC
SCell_add	Add SCell
InitialBWP_SIB	Configured via DownlinkConfigCommonSIB
BWP-Id1	Additional BWP 1
SDT	For SDT test cases
PEI	Paging Early Indication is configured in the cell.
MBS_Broadcast	NR Cell provide MBS Broadcast service
MBS_Multicast_Inactive	Used for MBS Multicast reception when UE in RRC_INACTIVE state

– PDCCH-ConfigSIB1

Table 4.6.3-97: PDCCH-ConfigSIB1

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
PDCCH-ConfigSIB1 ::= SEQUENCE {			
controlResourceSetZero	ControlResourceSetZero		
	ControlResourceSetZero with condition NCD-SSB		NCD-SSB
searchSpaceZero	SearchSpaceZero		
}			

Condition	Explanation
NCD-SSB	MIB for NCD-SSB

– *PDCCH-ServingCellConfig*

Table 4.6.3-98: PDCCH-ServingCellConfig

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
PDCCH-ServingCellConfig ::= SEQUENCE {			
slotFormatIndicator	Not present		
}			

– *PDCP-Config*

Table 4.6.3-99: PDCP-Config

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
PDCP-Config ::= SEQUENCE {			
drb SEQUENCE {			
discardTimer	infinity		
pdcp-SN-Size-UL	len18bits		
	len12bits		pc_support OfRedCap_r 17, pc_support OfRedCap r18
	Not present		MRBm
pdcp-SN-Size-DL	len18bits		pc_support OfRedCap_r 17, pc_support OfRedCap r18
	len12bits		
headerCompression CHOICE {			
notUsed	NULL		
}			
integrityProtection	Not present		
statusReportRequired	true	AM is default	
	Not present		UM, UM_MRB
outOfOrderDelivery	Not present		
}			
drb	Not present		SRB, Split_SRB
moreThanOneRLC	Not present		
moreThanOneRLC SEQUENCE {			Split, Split_SRB, NR_split
primaryPath SEQUENCE {			
cellGroup	CellGroupId		
	0	MCG path	Split_SRB, NR_split
logicalChannel	LogicalChannelIdentity		
}			
ul-DataSplitThreshold	infinity		
pdcp-Duplication	Not present		Split_SRB
	false		
	Not present	one UL path	Split_SRB
}			
t-Reordering	Not present		
	80ms		UM, UM_MRB
survivalTimeStateSupport-r17	Not present		

uplinkDataCompression-r17	Not present		
uplinkDataCompression-r17 CHOICE {			UDC
setup CHOICE {			
newSetup SEQUENCE {			
bufferSize-r17	kbyte2		
dictionary-r17	Not present		
}			
}			
discardTimerExt2-r17	Not present		
initialRX-DELIV-r17	Not present		
	0		MRB_Initiali zation
}			

Condition	Explanation
Split	More than one RLC
SRB	SRB
UM	RLC UM DRB
Split_SRB	SRB with more than one RLC
NR_split	MCG and split for NR-DC.
UDC	RLC AM DRB with uplinkDataCompression
MRB_Initialization	Multicast MRB setup or PDCP re-establishment for multicast MRB
UM_MRB	UM multicast MRB
MRBm	Establishment of MRBm

– PDSCH-Config

Table 4.6.3-100: PDSCH-Config

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
PDSCH-Config ::= SEQUENCE {			
dataScramblingIdentityPDSCH	0		
dmrs-DownlinkForPDSCH-MappingTypeA CHOICE {			
setup	DMRS-DownlinkConfig		
}			
dmrs-DownlinkForPDSCH-MappingTypeB	Not present		
tci-StatesToAddModList	Not present		MBS_Multic ast
tci-StatesToAddModList SEQUENCE(SIZE (1.. maxNrofTCI-States)) OF TCI-State {	1 entry		
TCI-State[1]	TCI-State	entry 1	
}			
tci-StatesToReleaseList	Not present		
vrb-ToPRB-Interleaver	Not present		
resourceAllocation	resourceAllocationType1 resourceAllocationType0		Used_for_T ype0
pdsch-TimeDomainAllocationList	Not present		
pdsch-AggregationFactor	Not present		
rateMatchPatternToAddModList	Not present		
rateMatchPatternToReleaseList	Not present		
rateMatchPatternGroup1	Not present		
rateMatchPatternGroup2	Not present		
rbg-Size	config1		
mcs-Table	Not present	qam64 per default	
maxNrofCodeWordsScheduledByDCI	Not present		
prb-BundlingType CHOICE {			
staticBundling SEQUENCE {			
bundleSize	wideband		
}			

}			
zp-CSI-RS-ResourceToAddModList	Not present		
zp-CSI-RS-ResourceToReleaseList	Not present		
aperiodic-ZP-CSI-RS-ResourceSetsToAddModList	Not present		
aperiodic-ZP-CSI-RS-ResourceSetsToReleaseList	Not present		
sp-ZP-CSI-RS-ResourceSetsToAddModList	Not present		
sp-ZP-CSI-RS-ResourceSetsToReleaseList	Not present		
p-ZP-CSI-RS-ResourceSet	Not present		
pdsch-HARQ-ACK-OneShotFeedbackDCI-1-2-r17	Not present		
pdsch-HARQ-ACK-EnhType3DCI-1-2-r17	Not present		
pdsch-HARQ-ACK-EnhType3DCI-Field-1-2-r17	Not present		
pdsch-HARQ-ACK-RetxDCI-1-2-r17	Not present		
pucch-sSCellDynDCI-1-2-r17	Not present		
dl-OrJointTCI-StateList-r17	Not present		
dl-OrJointTCI-StateList-r17 CHOICE {			DL_TCI, Joint_TCI, Unified_TCI
explicitlist			DL_TCI OR Joint_TCI
dl-OrJointTCI-StateToAddModList-r17 SEQUENCE (SIZE (1..maxNrofTCI-States)) OF TCI- State {	1 entry		
TCI-State[1]	TCI-State	entry 1	
}			
dl-OrJointTCI-StateToReleaseList-r17	Not present		
}			
unifiedTCI-StateRef-r17	ServingCellAndBWP-Id		Unified_TCI
}			
beamAppTime-r17	Not present		
dummy	Not present		
dmrs-FD-OCC-DisabledForRank1-PDSCH-r17	Not present		
minimumSchedulingOffsetK0-r17	Not present		
harq-ProcessNumberSizeDCI-1-2-v1700	Not present		
harq-ProcessNumberSizeDCI-1-1-r17	Not present		
mcs-Table-r17	Not present		
mcs-TableDCI-1-2-r17	Not present		
xOverheadMulticast-r17	Not present		
priorityIndicatorDCI-4-2-r17	Not present		
sizeDCI-4-2-r17	Not present		
advancedReceiver-MU-MIMO-r18	Not present		
pdsch-ConfigDCI-1-3-r18	Not present		
pdsch-ConfigDCI-1-3-r18 CHOICE {			DCI_1_3
setup SEQUENCE {			
resourceAllocationDCI-1-3-r18	resourceAllocationType1		
rbg-SizeDCI-1-3-r18	config2		
resourceAllocationType1GranularityDCI-1-3-r18	Not present	granularity is 1 PRB	
numberOfBitsForRV-DCI-1-3-r18	2		
harq-ProcessNumberSizeDCI-1-3-r18	4		
}			
}			
}			

Condition	Explanation
Used for Type0	Used for RF performance test cases
MBS_Multicast	Used for MBS Multicast reception
DCI_1_3	Transmission of DCI_1_3 is required
DL_TCI	Downlink TCI state is configured
Joint_TCI	Joint TCI states for UL and DL operation is configured
Unified_TCI	Unified TCI state is configured

– *PDSCH-ConfigCommon*

Table 4.6.3-101: PDSCH-ConfigCommon

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
PDSCH-ConfigCommon ::= SEQUENCE {			
pdsch-TimeDomainAllocationList	PDSCH-TimeDomainResourceAllocationList		
}			

– *PDSCH-ServingCellConfig*

Table 4.6.3-102: PDSCH-ServingCellConfig

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
PDSCH-ServingCellConfig ::= SEQUENCE {			
codeBlockGroupTransmission	Not present		
xOverhead	Not present		
nrofHARQ-ProcessesForPDSCH	n4		RF AND FDD
	n16		RRM AND FDD, NTN AND RF AND FDD, NTN AND RRM AND FDD
	Not present	Default value: 8 HARQ processes	
pucch-Cell	Not present		
}			

Condition	Explanation
NTN	For NTN test cases

– *PDSCH-TimeDomainResourceAllocationList*

Table 4.6.3-103: PDSCH-TimeDomainResourceAllocationList

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
PDSCH-TimeDomainResourceAllocationList ::= SEQUENCE(SIZE(1..maxNrofDL-Allocations)) OF PDSCH-TimeDomainResourceAllocation {	2 entries		FR1
PDSCH-TimeDomainResourceAllocation[1] SEQUENCE {		entry 1	
k0	Not present		
mappingType	typeA		
startSymbolAndLength	53	Start symbol(S)=2, Length(L)=12	
}			
PDSCH-TimeDomainResourceAllocation[2] SEQUENCE {		entry 2	
k0	Not present		
mappingType	typeA		
startSymbolAndLength	72	S=2, L=6	

}			
}			
PDSCH-TimeDomainResourceAllocationList SEQUENCE (SIZE(1..maxNrofDL-Allocations)) OF PDSCH-TimeDomainResourceAllocation {	1 entry		FR2
PDSCH-TimeDomainResourceAllocation[1] SEQUENCE {		entry 1	
k0	Not present		
mappingType	typeA		
startSymbolAndLength	53	S=2, L=12	
}			
}			

– *PDU-SessionID*

Table 4.6.3-103A: *PDU-SessionID*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
PDU-SessionID	FFS		

– *PHR-Config*

Table 4.6.3-104: *PHR-Config*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
PHR-Config ::= CHOICE {			
setup SEQUENCE {			
phr-PeriodicTimer	sf10		
phr-ProhibitTimer	sf0		
phr-Tx-PowerFactorChange	dB1		
multiplePHR	false		
	true		MR-DC OR NR-CA
dummy	false		
Phr-Type2OtherCell	false		
phr-ModeOtherCG	real		
}			
}			

Condition	Explanation
MR-DC	EN-DC, NGEN-DC, NE-DC or NR-DC.
NR-CA	UL CA for NR

– *PhysCellId*

Table 4.6.3-105: *PhysCellId*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
PhysCellId	Set according to table 4.4.2-2 for the NR Cell.		

– *PhysicalCellGroupConfig*

Table 4.6.3-106: *PhysicalCellGroupConfig*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
PhysicalCellGroupConfig ::= SEQUENCE {			
harq-ACK-SpatialBundlingPUCCH	Not present		
harq-ACK-SpatialBundlingPUSCH	Not present		
p-NR-FR1	P-Max		
pdsch-HARQ-ACK-Codebook	dynamic		
tpc-SRS-RNTI	Not present		
tpc-PUCCH-RNTI	Not present		
tpc-PUSCH-RNTI	Not present		
sp-CSI-RNTI	Not present		
cs-RNTI	Not present		
dcp-Config-r16	Not present		
dcp-Config-r16 CHOICE {			DCP
setup SEQUENCE {			
ps-RNTI-r16	RNTI-Value		
ps-Offset-r16	120		
sizeDCI-2-6-r16	6		
ps-PositionDCI-2-6-r16	0		
ps-WakeUp-r16	Not present		
ps-TransmitPeriodicL1-RSRP-r16	Not present		
ps-TransmitOtherPeriodicCSI-r16	Not present		
}			
}			
harq-ACK-SpatialBundlingPUCCH-secondaryPUCCHgroup-r16	Not present		
harq-ACK-SpatialBundlingPUSCH-secondaryPUCCHgroup-r16	Not present		
pdsch-HARQ-ACK-Codebook-secondaryPUCCHgroup-r16	Not present		
p-NR-FR2-r16	Not present		
p-UE-FR2-r16	Not present		
nrdc-PCmode-FR1-r16	Not present		
nrdc-PCmode-FR2-r16	Not present		
pdsch-HARQ-ACK-Codebook-r16	Not present		
nfi-TotalDAI-Included-r16	Not present		
ul-TotalDAI-Included-r16	Not present		
pdsch-HARQ-ACK-OneShotFeedback-r16	Not present		
pdsch-HARQ-ACK-OneShotFeedbackNDI-r16	Not present		
pdsch-HARQ-ACK-OneShotFeedbackCBG-r16	Not present		
downlinkAssignmentIndexDCI-0-2-r16	Not present		
downlinkAssignmentIndexDCI-1-2-r16	Not present		
pdsch-HARQ-ACK-CodebookList-r16	Not present		
ackNackFeedbackMode-r16	Not present		
pdccch-BlindDetectionCA-CombIndicator-r16	Not present		
pdccch-BlindDetection2-r16	Not present		
pdccch-BlindDetection3-r16	Not present		
bdFactorR-r16	Not present		
}			

Condition	Explanation
DCP	This condition applies when DCP is configured

– *PLMN-Identity*

Table 4.6.3-107: *PLMN-Identity*

Derivation Path: TS 38.331 [6], clause 6.3.2

Information Element	Value/remark	Comment	Condition
PLMN-Identity ::= SEQUENCE {			
mcc SEQUENCE (SIZE (3)) OF MCC-MNC-Digit	See table 4.4.2-3		
mnc SEQUENCE (SIZE (2..3)) OF MCC-MNC-Digit	See table 4.4.2-3		
}			

– *PLMN-IdentityInfoList*

Table 4.6.3-108: *PLMN-IdentityInfoList*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
PLMN-IdentityInfoList ::= SEQUENCE (SIZE (1..maxPLMN)) OF PLMN-IdentityInfo {	1 entry		
PLMN-IdentityInfo[1] SEQUENCE {		entry 1	
plmn-IdentityList SEQUENCE (SIZE (1..maxPLMN)) OF PLMN-Identity {	1 entry		
PLMN-Identity[1]	PLMN-Identity	entry 1	
}			
trackingAreaCode	TrackingAreaCode		
	Not present		NTN
ranac	RAN-AreaCode		
cellIdentity	CellIdentity		
cellReservedForOperatorUse	notReserved		
trackingAreaList-r17	Not present		
trackingAreaList-r17 SEQUENCE (SIZE (1..maxTAC-r17)) OF TrackingAreaCode {	1 entry		NTN
TrackingAreaCode[1]	TrackingAreaCode	entry1	
}			
gNB-ID-Length-r17	Not present		
}			
}			

Condition	Explanation
NTN	For NTN test cases

– *PLMN-IdentityList2*

Table 4.6.3-108A: *PLMN-IdentityList2*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
PLMN-IdentityList2-r16 ::= SEQUENCE {			
FFS			
}			

– *PRB-Id*

Table 4.6.3-109: *PRB-Id*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
PRB-Id	0		
	Set to value of the $L\_RBs - nrofPRBs$ where L_RBs is found in Table 4.3.1.0D-1 or Table 4.3.1.0D-2 for the bandwidth and SCS configured and $nrofPRBs$		secondHop PRB

	is defined for the corresponding <i>PUCCH-Resource</i> (1 otherwise).		

Condition	Explanation
secondHopPRB	The IE secondHopPRB in PUCCH-Resource is now set.

– *PTRS-DownlinkConfig*

Table 4.6.3-110: PTRS-DownlinkConfig

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
PTRS-DownlinkConfig ::= SEQUENCE {			
frequencyDensity	Not present		
timeDensity	Not present		
epre-Ratio	0		
resourceElementOffset	Not present		
}			

– *PTRS-UplinkConfig*

Table 4.6.3-111: PTRS-UplinkConfig

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
PTRS-UplinkConfig ::= SEQUENCE {			
transformPrecoderDisabled SEQUENCE {			
frequencyDensity	Not present		
timeDensity	Not present		
maxNrofPorts	n1		
resourceElementOffset	Not present		
ptrs-Power	p00		
}			
transformPrecoderEnabled SEQUENCE {			
sampleDensity SEQUENCE (SIZE (5)) OF INTEGER {	5 entries		
INTEGER[1]	1	entry 1	
INTEGER[2]	8	entry 2	
INTEGER[3]	32	entry 3	
INTEGER[4]	32	entry 4	
INTEGER[5]	108	entry 5	
}			
timeDensityTransformPrecoding	Not present		
}			
}			

– *PUCCH-Config*

Table 4.6.3-112: PUCCH-Config

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
PUCCH-Config ::= SEQUENCE {			
resourceSetToAddModList SEQUENCE (SIZE (1..maxNrofPUCCH-ResourceSets)) OF PUCCH-ResourceSet {	2 entries		
PUCCH-ResourceSet[1] SEQUENCE {		entry 1	
pucch-ResourceSetId	0		

resourceList SEQUENCE (SIZE (0..maxNrofPUCCH-ResourcesPerSet)) OF PUCCH-ResourceId {	8 entries		
PUCCH-ResourceId[1]	0	entry 1	
PUCCH-ResourceId[2]	1	entry 2	
PUCCH-ResourceId[3]	2	entry 3	
PUCCH-ResourceId[4]	3	entry 4	
PUCCH-ResourceId[5]	4	entry 5	
PUCCH-ResourceId[6]	5	entry 6	
PUCCH-ResourceId[7]	6	entry 7	
PUCCH-ResourceId[8]	7	entry 8	
}			
maxPayloadSize	Not present		
}			
PUCCH-ResourceSet[2] SEQUENCE {		entry 2	
pucch-ResourceSetId	1		
resourceList SEQUENCE (SIZE (8..maxNrofPUCCH-ResourcesPerSet)) OF PUCCH-ResourceId {	8 entries		
PUCCH-ResourceId[1]	8	entry 1	
PUCCH-ResourceId[2]	9	entry 2	
PUCCH-ResourceId[3]	10	entry 3	
PUCCH-ResourceId[4]	11	entry 4	
PUCCH-ResourceId[5]	12	entry 5	
PUCCH-ResourceId[6]	13	entry 6	
PUCCH-ResourceId[7]	14	entry 7	
PUCCH-ResourceId[8]	15	entry 8	
}			
maxPayloadSize	Not present		
}			
}			
resourceSetToReleaseList	Not present		
resourceToAddModList SEQUENCE (SIZE (1..maxNrofPUCCH-Resources)) OF PUCCH-Resource {	16 entries		
PUCCH-Resource[1] SEQUENCE {		entry 1	
pucch-ResourceId	0		
startingPRB	PRB-Id		
intraSlotFrequencyHopping	enabled		
	Not present		RF OR RRM
secondHopPRB	PRB-Id with condition secondHopPRB		
	Not present		RF OR RRM
format CHOICE {			
format0 SEQUENCE {			
initialCyclicShift	0		
nrofSymbols	2		
startingSymbolIndex	0		
}			
}			
}			
PUCCH-Resource[2] SEQUENCE {		entry 2	
pucch-ResourceId	1		
startingPRB	PRB-Id		
intraSlotFrequencyHopping	enabled		
	Not present		RF OR RRM
secondHopPRB	PRB-Id with condition secondHopPRB		
	Not present		RF OR RRM
format CHOICE {			
format0 SEQUENCE {			
initialCyclicShift	0		
nrofSymbols	2		
startingSymbolIndex	2		
}			
}			
}			

}			
PUCCH-Resource[3] SEQUENCE {		entry 3	
pucch-ResourceId	2		
startingPRB	PRB-Id		
intraSlotFrequencyHopping	enabled		
	Not present		RF OR RRM
secondHopPRB	PRB-Id with condition secondHopPRB		
	Not present		RF OR RRM
format CHOICE {			
format0 SEQUENCE {			
initialCyclicShift	0		
nrofSymbols	2		
startingSymbolIndex	4		
}			
}			
}			
PUCCH-Resource[4] SEQUENCE {		entry 4	
pucch-ResourceId	3		
startingPRB	PRB-Id		
intraSlotFrequencyHopping	enabled		
	Not present		RF OR RRM
secondHopPRB	PRB-Id with condition secondHopPRB		
	Not present		RF OR RRM
format CHOICE {			
format0 SEQUENCE {			
initialCyclicShift	0		
nrofSymbols	2		
startingSymbolIndex	6		
}			
}			
}			
PUCCH-Resource[5] SEQUENCE {		entry 5	
pucch-ResourceId	4		
startingPRB	PRB-Id		
intraSlotFrequencyHopping	enabled		
	Not present		RF OR RRM
secondHopPRB	PRB-Id with condition secondHopPRB		
	Not present		RF OR RRM
format CHOICE {			
format0 SEQUENCE {			
initialCyclicShift	0		
nrofSymbols	2		
startingSymbolIndex	8		
}			
}			
}			
PUCCH-Resource[6] SEQUENCE {		entry 6	
pucch-ResourceId	5		
startingPRB	PRB-Id		
intraSlotFrequencyHopping	enabled		
	Not present		RF OR RRM
secondHopPRB	PRB-Id with condition secondHopPRB		
	Not present		RF OR RRM
format CHOICE {			
format0 SEQUENCE {			
initialCyclicShift	0		
nrofSymbols	2		
startingSymbolIndex	10		
}			
}			
}			
PUCCH-Resource[7] SEQUENCE {		entry 7	

pucch-ResourceId	6		
startingPRB	PRB-Id		
intraSlotFrequencyHopping	enabled		
	Not present		RF OR RRM
secondHopPRB	PRB-Id with condition secondHopPRB		
	Not present		RF OR RRM
format CHOICE {			
format0 SEQUENCE {			
initialCyclicShift	0		
nrofSymbols	2		
startingSymbolIndex	12		
}			
}			
PUCCH-Resource[8] SEQUENCE {		entry 8	
pucch-ResourceId	7		
startingPRB	PRB-Id		
intraSlotFrequencyHopping	enabled		
	Not present		RF OR RRM
secondHopPRB	PRB-Id with condition secondHopPRB		
	Not present		RF OR RRM
format CHOICE {			
format1 SEQUENCE {			
initialCyclicShift	0		
nrofSymbols	14		
startingSymbolIndex	0		
timeDomainOCC	0		
}			
}			
}			
PUCCH-Resource[9] SEQUENCE {		entry 9	
pucch-ResourceId	8		
startingPRB	PRB-Id		
intraSlotFrequencyHopping	enabled		
	Not present		RF OR RRM
secondHopPRB	PRB-Id with condition secondHopPRB		
	Not present		RF OR RRM
format CHOICE {			
format2 SEQUENCE {			
nrofPRBs	6		
nrofSymbols	2		
startingSymbolIndex	0		
}			
}			
}			
PUCCH-Resource[10] SEQUENCE {		entry 10	
pucch-ResourceId	9		
startingPRB	PRB-Id		
intraSlotFrequencyHopping	enabled		
	Not present		RF OR RRM
secondHopPRB	PRB-Id with condition secondHopPRB		
	Not present		RF OR RRM
format CHOICE {			
format2 SEQUENCE {			
nrofPRBs	6		
nrofSymbols	2		
startingSymbolIndex	2		
}			
}			
}			
PUCCH-Resource[11] SEQUENCE {		entry 11	
pucch-ResourceId	10		

startingPRB	PRB-Id		
intraSlotFrequencyHopping	enabled		
	Not present		RF OR RRM
secondHopPRB	PRB-Id with condition secondHopPRB		
	Not present		RF OR RRM
format CHOICE {			
format2 SEQUENCE {			
nrofPRBs	6		
nrofSymbols	2		
startingSymbolIndex	4		
}			
}			
PUCCH-Resource[12] SEQUENCE {		entry 12	
pucch-ResourceId	11		
startingPRB	PRB-Id		
intraSlotFrequencyHopping	enabled		
	Not present		RF OR RRM
secondHopPRB	PRB-Id with condition secondHopPRB		
	Not present		RF OR RRM
format CHOICE {			
format2 SEQUENCE {			
nrofPRBs	6		
nrofSymbols	2		
startingSymbolIndex	6		
}			
}			
PUCCH-Resource[13] SEQUENCE {		entry 13	
pucch-ResourceId	12		
startingPRB	PRB-Id		
intraSlotFrequencyHopping	enabled		
	Not present		RF OR RRM
secondHopPRB	PRB-Id with condition secondHopPRB		
	Not present		RF OR RRM
format CHOICE {			
format2 SEQUENCE {			
nrofPRB	6		
nrofSymbols	2		
startingSymbolIndex	8		
}			
}			
PUCCH-Resource[14] SEQUENCE {		entry 14	
pucch-ResourceId	13		
startingPRB	PRB-Id		
intraSlotFrequencyHopping	enabled		
	Not present		RF OR RRM
secondHopPRB	PRB-Id with condition secondHopPRB		
	Not present		RF OR RRM
format CHOICE {			
format2 SEQUENCE {			
nrofPRBsinitial	6		
nrofSymbols	2		
startingSymbolIndex	10		
}			
}			
PUCCH-Resource[15] SEQUENCE {		entry 15	
pucch-ResourceId	14		
startingPRB	PRB-Id		
intraSlotFrequencyHopping	enabled		

	Not present		RF OR RRM
secondHopPRB	PRB-Id with condition secondHopPRB		
	Not present		RF OR RRM
format CHOICE {			
format2 SEQUENCE {			
nrofPRB	6		
nrofSymbols	2		
startingSymbolIndex	12		
}			
}			
PUCCH-Resource[16] SEQUENCE {		entry 16	
pucch-ResourceId	15		
startingPRB	PRB-Id		
intraSlotFrequencyHopping	enabled		
	Not present		RF OR RRM
secondHopPRB	PRB-Id with condition secondHopPRB		
	Not present		RF OR RRM
format CHOICE {			
format3 SEQUENCE {			
nrofPRBs	1		
nrofSymbols	14		
startingSymbolIndex	0		
}			
}			
resourceToReleaseList	Not present		
format1CHOICE {			
setup SEQUENCE {			
interslotFrequencyHopping	enabled		
additionalDMRS	Not Present		
maxCodeRate	Not Present		
nrofSlots	Not present		
pi2BPSK	Not present		
simultaneousHARQ-ACK-CSI	Not Present		
}			
}			
format2 CHOICE {			
setup SEQUENCE {			
interslotFrequencyHopping	Not Present		
additionalDMRS	Not Present		
maxCodeRate	zeroDot25		
nrofSlots	Not present		
pi2BPSK	Not present		
simultaneousHARQ-ACK-CSI	True		
}			
}			
format3 CHOICE {			
setup SEQUENCE {			
interslotFrequencyHopping	enabled		
additionalDMRS	True		
maxCodeRate	zeroDot25		
nrofSlots	Not present		
pi2BPSK	Not present		
simultaneousHARQ-ACK-CSI	true		
}			
}			
format4	Not present		
schedulingRequestResourceToAddModList SEQUENCE (SIZE (1..maxNrofSR-Resources)) OF SchedulingRequestResourceConfig {	1 entry		
SchedulingRequestResourceConfig[1]	SchedulingRequestResourceConfig	entry 1	

}			
schedulingRequestResourceToReleaseList	Not present		
multi-CSI-PUCCH-ResourceList	Not present		
dl-DataToUL-ACK SEQUENCE (SIZE (1..8)) OF INTEGER {	8 entries		
INTEGER[1]	2	entry 1	
INTEGER[2]	3	entry 2	
INTEGER[3]	4	entry 3	
INTEGER[4]	5	entry 4	
INTEGER[5]	6	entry 5	
INTEGER[6]	7	entry 6	
INTEGER[7]	8	entry 7	
INTEGER[8]	9	entry 8	
}			
dl-DataToUL-ACK	Not present		Short_DCI
spatialRelationInfoToAddModList	Not present		
spatialRelationInfoToReleaseList	Not present		
pucch-PowerControl	PUCCH-PowerControl		
ul-AccessConfigListDCI-1-1-r16	Not present		
ul-AccessConfigListDCI-1-1-r16 CHOICE {			SharedSpec trum
setup SEQUENCE {			
ul-AccessConfigListDCI-1-1-r16 SEQUENCE (SIZE (1..16)) OF INTEGER {	1 entry		
INTEGER[1]	7	entry 1	
}			
}			
}			
}			

Condition	Explanation
Short_DCI	Used in test scenarios requiring DCI formats 0-0 and 1-0 on USS
SharedSpectrum	Operation with shared spectrum channel access

– *PUCCH-ConfigCommon*

Table 4.6.3-113: PUCCH-ConfigCommon

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
PUCCH-ConfigCommon ::= SEQUENCE {			
pucch-ResourceCommon	0		
pucch-GroupHopping	enable		
hoppingId	Not present		
p0-nominal	-90		
}			

– *PUCCH-ConfigurationList*

Table 4.6.3-113A: PUCCH-ConfigurationList

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
PUCCH-ConfigurationList-r16 ::= SEQUENCE {			
FFS			
}			

– *PUCCH-CSI-Resource***Table 4.6.3-113B: PUCCH-CSI-Resource**

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
PUCCH-CSI-Resource ::= SEQUENCE {			
uplinkBandwidthPartId	BWP-Id		
pucch-Resource	PUCCH-ResourceId		
}			

– *PUCCH-PathlossReferenceRS-Id***Table 4.6.3-114: PUCCH-PathlossReferenceRS-Id**

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
PUCCH-PathlossReferenceRS-Id	0		

– *PUCCH-PowerControl***Table 4.6.3-115: PUCCH-PowerControl**

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
PUCCH-PowerControl ::= SEQUENCE {			
deltaF-PUCCH-f0	0		
deltaF-PUCCH-f1	0		
deltaF-PUCCH-f2	0		
deltaF-PUCCH-f3	0		
deltaF-PUCCH-f4	0		
p0-Set	Not present		
pathlossReferenceRSs SEQUENCE (SIZE (1..maxNrofPUCCH-PathlossReferenceRSs)) OF PUCCH-PathlossReferenceRS {	1 entry		
PUCCH-PathlossReferenceRS[1] SEQUENCE {		entry 1	
pucch-PathlossReferenceRS-Id	PUCCH-PathlossReferenceRS-Id		
referenceSignal CHOICE {			
ssb-Index	SSB-Index		
}			
}			
twoPUCCH-PC-AdjustmentStates	Not present		
}			

– *PUCCH-ResourceId***Table 4.6.3-115A: PUCCH-ResourceId**

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
PUCCH-ResourceId	0		

– *PUCCH-SpatialRelationInfo*

Table 4.6.3-116: PUCCH-SpatialRelationInfo

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
PUCCH-SpatialRelationInfo ::= SEQUENCE {			
pucch-SpatialRelationInfoId	1		
servingCellId	ServCellIndex		
referenceSignal CHOICE {			
ssb-Index	SSB-Index		
}			
pucch-PathlossReferenceRS-Id	PUCCH-PathlossReferenceRS-Id		
p0-PUCCH-Id	1		
closedLoopIndex	i0		
}			

– *PUCCH-SpatialRelationInfo-Id*

Table 4.6.3-116A: PUCCH-SpatialRelationInfo-Id

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
PUCCH-SpatialRelationInfoId ::= SEQUENCE {			
FFS			
}			

– *PUCCH-TPC-CommandConfig*

Table 4.6.3-117: PUCCH-TPC-CommandConfig

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
PUCCH-TPC-CommandConfig ::= SEQUENCE {			
FFS			
}			

– *PUSCH-Config*

Table 4.6.3-118: PUSCH-Config

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
PUSCH-Config ::= SEQUENCE {			
dataScramblingIdentityPUSCH	Not present		
txConfig	Not Present		Short_DCI
codebook			
dmrs-UplinkForPUSCH-MappingTypeA CHOICE {			
setup	DMRS-UplinkConfig		
}			
dmrs-UplinkForPUSCH-MappingTypeB	Not present		
pusch-PowerControl	PUSCH-PowerControl		
frequencyHopping	Not present		
frequencyHoppingOffsetLists	Not present		
resourceAllocation	resourceAllocationType1		
pusch-TimeDomainAllocationList	Not present		
pusch-AggregationFactor	Not present		
mcs-Table	Not present		
mcs-TableTransformPrecoder	Not present		

}			
}			
}			
}			

Condition	Explanation
TRANSFORM_PRECODER_ENABLED	Transform precoding is enabled (DFT-s-OFDM UL waveform is configured)
2TX_UL_MIMO	UL-MIMO test cases with 2 Tx antenna ports
4TX_UL_MIMO	UL-MIMO test cases with 4 Tx antenna ports
Short_DCI	Used in test scenarios requiring DCI formats 0-0 and 1-0 on USS
DCI_0_3	Transmission of DCI_0_3 is required
SharedSpectrum	Operation with shared spectrum channel access
2L_UL_MIMO	UL-MIMO test cases with 2 layers

– *PUSCH-ConfigCommon*

Table 4.6.3-119: PUSCH-ConfigCommon

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
PUSCH-ConfigCommon ::= SEQUENCE {			
groupHoppingEnabledTransformPrecoding	Not present		
pusch-TimeDomainAllocationList	PUSCH-TimeDomainResourceAllocationList		
msg3-DeltaPreamble	1		
p0-NominalWithGrant	-90		
}			

– *PUSCH-MutingResources*

Table 4.6.3-119A: PUSCH-MutingResources

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
PUSCH-MutingResources-r19 ::= SEQUENCE {			
FFS			
}			

– *PUSCH-PowerControl*

Table 4.6.3-120: PUSCH-PowerControl

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
PUSCH-PowerControl ::= SEQUENCE {			
tpc-Accumulation	Not present		
msg3-Alpha	alpha08		
p0-NominalWithoutGrant	-90		
p0-AlphaSets SEQUENCE (SIZE (1..maxNrofP0-PUSCH-AlphaSets)) OF P0-PUSCH-AlphaSet {	1 entry		
P0-PUSCH-AlphaSet[1] SEQUENCE {		entry 1	
p0-PUSCH-AlphaSetId	0		
p0	0		
alpha	alpha08		
}			
}			

pathlossReferenceRSToAddModList SEQUENCE (SIZE (1..maxNrofPUSCH-PathlossReferenceRSs)) OF PUSCH-PathlossReferenceRS {	1 entry		
PUSCH-PathlossReferenceRS[1] SEQUENCE {		entry 1	
pusch-PathlossReferenceRS-Id	0		
referenceSignal CHOICE{			
ssb-Index	SSB-Index		
}			
}			
}			
pathlossReferenceRSToReleaseList	Not present		
twoPUSCH-PC-AdjustmentStates	Not present		
deltaMCS	Not present		
sri-PUSCH-MappingToAddModList SEQUENCE (SIZE (1..maxNrofSRI-PUSCH-Mappings)) OF SRI-PUSCH-PowerControl {	1 entry		
SRI-PUSCH-PowerControl[1] SEQUENCE {		entry 1	
sri-PUSCH-PowerControlId	0		
sri-PUSCH-PathlossReferenceRS-Id	0		
sri-P0-PUSCH-AlphaSetId	0		
sri-PUSCH-ClosedLoopIndex	i0		
}			
}			
sri-PUSCH-MappingToReleaseList	Not present		
}			

– *PUSCH-ServingCellConfig*

Table 4.6.3-121: PUSCH-ServingCellConfig

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
PUSCH-ServingCellConfig ::= SEQUENCE {			
codeBlockGroupTransmission	Not present		
rateMatching	Not present		
xOverhead	Not present		
}			

– *PUSCH-TimeDomainResourceAllocationList*

Table 4.6.3-122: PUSCH-TimeDomainResourceAllocationList

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
PUSCH-TimeDomainResourceAllocationList ::= SEQUENCE (SIZE(1..maxNrofUL-Allocations)) OF PUSCH-TimeDomainResourceAllocation {	2 entries		
PUSCH-TimeDomainResourceAllocation[1] SEQUENCE {		entry 1	
k2	4		
	2		(RF OR RRM) AND (FR1 AND (SCS15 OR SCS30)) OR (FR2 AND SCS60 AND (DL OR RRM))
	3		((RF AND DL) OR RRM) AND

			FR2 AND SCS120
	6		((RF AND DL) OR RRM) AND FR1 AND SCS60
	4		RF AND FR2 AND SCS60 AND UL
	8		RF_FR2_12 0kHz_UL
mappingType	typeA		
startSymbolAndLength	27	Start symbol(S)=0, Length(L)=14	
}			
PUSCH-TimeDomainResourceAllocation[2] SEQUENCE {		entry 2 addressed by Msg3 PUSCH time resource allocation field of the Random Access Response acc. to TS 38.213 [22] Table 8.2-1.	
k2	Not present		
	2	K2+ Δ =4 acc. to TS 38.214 [21] Table 6.1.2.1.1-5 (NOTE 1)	FR1 AND SCS15
	6	K2+ Δ =9 acc. to TS 38.214 [21] Table 6.1.2.1.1-5 (NOTE 1)	FR1 AND SCS30
	3	K2+ Δ =9 acc. to TS 38.214 [21] Table 6.1.2.1.1-5 (NOTE 1)	FR2
mappingType	typeA		
startSymbolAndLength	27	Start symbol(S)=0, Length(L)=14	
}			
}			
NOTE 1: Values are chosen so that first slot of a TDD-UL-DL slot configuration period can be used for the Random Access Response and the last slot (of the same or another period) for the corresponding Msg3.			

Condition	Explanation
DL	RF Rx measurements.
UL	RF UL measurements.

Table 4.6.3-122A: PUSCH-TimeDomainResourceAllocationList-r16

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
PUSCH-TimeDomainResourceAllocationList-r16 ::= SEQUENCE (SIZE(1..maxNrofUL-Allocations-r16)) OF PUSCH-TimeDomainResourceAllocation-r16	2 entries		
PUSCH-TimeDomainResourceAllocation-r16[1] SEQUENCE {		entry 1	
k2-r16	4		

puschAllocationList-r16 SEQUENCE (SIZE(1..maxNrofMultiplePUSCHs-r16)) OF PUSCH- Allocation-r16 {	1 entry		
PUSCH-Allocation-r16[1] SEQUENCE {		entry 1	
mappingType-r16	typeA		
startSymbolAndLength-r16	27	start symbol(S)=0, Length(L)=14	
startSymbol-r16	Not present		
length-r16	Not present		
numberOfRepetitions-r16	Not present		
}			
}			
PUSCH-TimeDomainResourceAllocation-r16[2] SEQUENCE {		entry 2	
k2-r16	4		
puschAllocationList-r16 SEQUENCE (SIZE(1..maxNrofMultiplePUSCHs-r16)) OF PUSCH- Allocation-r16 {	1 entry		
PUSCH-Allocation-r16[1] SEQUENCE {		entry 1	
mappingType-r16	typeA		
startSymbolAndLength-r16	27	start symbol(S)=0, Length(L)=14	
startSymbol-r16	Not present		
length-r16	Not present		
numberOfRepetitions-r16	Not present		
}			
}			
}			
}			

– *PUSCH-TPC-CommandConfig*

Table 4.6.3-123: PUSCH-TPC-CommandConfig

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
PUSCH-TPC-CommandConfig ::= SEQUENCE {			
tpc-Index	Not present		
tpc-IndexSUL	Not present		
targetCell	Not present		
}			

– *QFI*

Table 4.6.3-123A: QFI

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
QFI	FFS		

– *Q-OffsetRange*

Table 4.6.3-124: Q-OffsetRange

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
Q-OffsetRange	dB0		

– *Q-QualMin*

Table 4.6.3-125: *Q-QualMin*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
Q-QualMin	FFS		

– *Q-RxLevMin*

Table 4.6.3-126: *Q-RxLevMin*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
Q-RxLevMin	FFS		

– *QuantityConfig*

Table 4.6.3-127: *QuantityConfig*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
QuantityConfig ::= SEQUENCE {			
quantityConfigNR-List SEQUENCE (SIZE (1..maxNrofQuantityConfig)) OF QuantityConfigNR {	2 entries		
QuantityConfigNR[1] SEQUENCE {		entry 1	
quantityConfigCell SEQUENCE {			
ssb-FilterConfig SEQUENCE {			
filterCoefficientRSRP	FilterCoefficient		
filterCoefficientRSRQ	FilterCoefficient		
filterCoefficientRS-SINR	FilterCoefficient		
}			
csi-RS-FilterConfig SEQUENCE {			
filterCoefficientRSRP	FilterCoefficient		
filterCoefficientRSRQ	FilterCoefficient		
filterCoefficientRS-SINR	FilterCoefficient		
}			
}			
quantityConfigRS-Index SEQUENCE {			
ssb-FilterConfig SEQUENCE {			
filterCoefficientRSRP	FilterCoefficient		
filterCoefficientRSRQ	FilterCoefficient		
filterCoefficientRS-SINR	FilterCoefficient		
}			
csi-RS-FilterConfig SEQUENCE {			
filterCoefficientRSRP	FilterCoefficient		
filterCoefficientRSRQ	FilterCoefficient		
filterCoefficientRS-SINR	FilterCoefficient		
}			
}			
}			
QuantityConfigNR[2] SEQUENCE {		entry 2	
quantityConfigCell SEQUENCE {			
ssb-FilterConfig SEQUENCE {			
filterCoefficientRSRP	FilterCoefficient		
filterCoefficientRSRQ	FilterCoefficient		
filterCoefficientRS-SINR	FilterCoefficient		
}			
csi-RS-FilterConfig SEQUENCE {			
filterCoefficientRSRP	FilterCoefficient		
filterCoefficientRSRQ	FilterCoefficient		
filterCoefficientRS-SINR	FilterCoefficient		
}			

}			
}			
quantityConfigRS-Index SEQUENCE {			
ssb-FilterConfig SEQUENCE {			
filterCoefficientRSRP	FilterCoefficient		
filterCoefficientRSRQ	FilterCoefficient		
filterCoefficientRS-SINR	FilterCoefficient		
}			
csi-RS-FilterConfig SEQUENCE {			
filterCoefficientRSRP	FilterCoefficient		
filterCoefficientRSRQ	FilterCoefficient		
filterCoefficientRS-SINR	FilterCoefficient		
}			
}			
}			
}			
quantityConfigEUTRA	Not present		
quantityConfigEUTRA SEQUENCE {			INTER-RAT
filterCoefficientRSRP	FilterCoefficient		
filterCoefficientRSRQ	FilterCoefficient		
filterCoefficientRS-SINR	FilterCoefficient		
}			
quantityConfigUTRA-FDD-r16	Not present		
quantityConfigUTRA-FDD-r16 SEQUENCE {			INTER-RAT_UTRA
filterCoefficientRSCP-r16	FilterCoefficient		
filterCoefficientEcNO-r16	FilterCoefficient		
}			
quantityConfigCLI-r16	Not present		
}			

Condition	Explanation
INTER-RAT	Configuration for EUTRA inter-RAT measurements
INTER-RAT_UTRA	Configuration for UTRA inter-RAT measurements

– *RACH-ConfigCommon*

Table 4.6.3-128: RACH-ConfigCommon

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
RACH-ConfigCommon ::= SEQUENCE {			
rach-ConfigGeneric	RACH-ConfigGeneric		
totalNumberOfRA-Preambles	Not present		
ssb-perRACH-OccasionAndCB-PreamblesPerSSB CHOICE {			
one	n8		FR1
	n4		FR2
}			
groupBconfigured	Not present		
ra-ContentionResolutionTimer	sf64		
rsrp-ThresholdSSB	RSRP-Range		
rsrp-ThresholdSSB-SUL	Not present		
	RSRP-Range		SUL
prach-RootSequenceIndex CHOICE {			
l139	Set according to table 4.4.2-2 for the NR Cell.		
}			
msg1-SubcarrierSpacing	SubcarrierSpacing		
restrictedSetConfig	unrestrictedSet		
msg3-transformPrecoder	Not present	transform precoding is disabled for Msg3	

		PUSCH transmission and any PUSCH transmission scheduled with DCI format 0_0	
ra-PrioritizationForSlicing-r17	Not present		
	RA-PrioritizationForSlicing-r17		Slice_RACH
featureCombinationPreambles-r17 SEQUENCE (SIZE(1..maxFeatureCombPreamblesPerRACHResource-r17)) OF FeatureCombinationPreambles-r17{}	Not present		
	FeatureCombinationPreambles-r17		Slice_RACH
}			

Condition	Explanation
SUL	Supplementary uplink
Slice_RACH	Slice specific RACH configuration

– *RACH-ConfigCommonTwoStepRA*

Table 4.6.3-128A: RACH-ConfigCommonTwoStepRA

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
RACH-ConfigCommonTwoStepRA-r16 ::= SEQUENCE {			
rach-ConfigGenericTwoStepRA-r16	RACH-ConfigGenericTwoStepRA		
msgA-TotalNumberOfRA-Preambles-r16	Not present		
msgA-SSB-PerRACH-OccasionAndCB-PreamblesPerSSB-r16 CHOICE {	Not present		
one	n8		FR1
}	n4		FR2
msgA-CB-PreamblesPerSSB-PerSharedRO-r16	Not present		
msgA-SSB-SharedRO-MaskIndex-r16	Not present		
groupB-ConfiguredTwoStepRA-r16	Not present		
msgA-PRACH-RootSequenceIndex-r16 CHOICE {	Not present		
msgA-TransMax-r16	N8		
msgA-RSRP-Threshold-r16	RSRP-Range		
msgA-RSRP-ThresholdSSB-r16	RSRP-Range		
msgA-SubcarrierSpacing-r16	Not present		
msgA-RestrictedSetConfig-r16	Not present		
ra-PrioritizationForAccessIdentityTwoStep-r16 SEQUENCE {			
ra-Prioritization-r16	RA-Prioritization		
ra-PrioritizationForAI-r16	'10'B		
}			
ra-ContentionResolutionTimer-r16	sf32		
ra-PrioritizationForSlicingTwoStep-r17	Not present		
	RA-PrioritizationForSlicing		Slice_RACH
featureCombinationPreamblesList-r17 SEQUENCE (SIZE(1..maxFeatureCombPreamblesPerRACHResource-r17)) OF FeatureCombinationPreambles-r17{}	Not present		
	FeatureCombinationPreambles		Slice_RACH
}			

Condition	Explanation
Slice_RACH	Slice specific RACH configuration

RACH-ConfigDedicated

Table 4.6.3-129: RACH-ConfigDedicated

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
RACH-ConfigDedicated ::= SEQUENCE {			
cfra SEQUENCE {			
occasions SEQUENCE {			
rach-ConfigGeneric	RACH-ConfigGeneric		
ssb-perRACH-Occasion	one		
}			
resources CHOICE {			
ssb SEQUENCE {			
ssb-ResourceList SEQUENCE (SIZE(1..maxRA-SSB-Resources)) OF CFRA-SSB-Resource {	1 entry		
CFRA-SSB-Resource[1] SEQUENCE {		entry 1	
ssb	SSB-Index		
ra-PreambleIndex	8		
}			
}			
ra-ssb-OccasionMaskIndex	0		
}			
}			
ra-Prioritization	Not present		
ra-PrioritizationTwoStep-r16	Not present		
cfra-TwoStep-r16	Not present		
cfra-TwoStep-r16 SEQUENCE {			2-step RA
occasionsTwoStepRA-r16 SEQUENCE {			
rach-ConfigGenericTwoStepRA-r16	RACH-ConfigGenericTwoStepRA		
ssb-PerRACH-OccasionTwoStepRA-r16	oneEighth		
}			
msgA-CFRA-PUSCH-r16 SEQUENCE {			
msgA-MCS-r16	1		
nrofSlotsMsgA-PUSCH-r16	1		
nrofMsgA-PO-PerSlot-r16	one		
msgA-PUSCH-TimeDomainOffset-r16	4		
msgA-PUSCH-TimeDomainAllocation-r16	Not present		
startSymbolAndLengthMsgA-PO-r16	32		
mappingTypeMsgA-PUSCH-r16	typeA		
guardPeriodMsgA-PUSCH-r16	0		
guardBandMsgA-PUSCH-r16	0		
frequencyStartMsgA-PUSCH-r16	1		
nrofPRBs-PerMsgA-PO-r16	1		
nrofMsgA-PO-FDM-r16	one		
msgA-IntraSlotFrequencyHopping-r16	Not present		
msgA-HoppingBits-r16	Not present		
msgA-DMRS-Config-r16 SEQUENCE {			
msgA-DMRS-AdditionalPosition-r16	pos0		
msgA-MaxLength-r16	len2		
msgA-PUSCH-DMRS-CDM-Group-r16	0		
msgA-PUSCH-NrofPorts-r16	0		
msgA-ScramblingID0-r16	Not present		
msgA-ScramblingID1-r16	Not present		
}			
nrofDMRS-Sequences-r16	1		

msgA-Alpha-r16	alpha0		
interlaceIndexFirstPO-MsgA-PUSCH-r16	1		
nrofInterlacesPerMsgA-PO-r16	1		
}			
msgA-TransMax-r16	n10		
resourcesTwoStep-r16 SEQUENCE {			
ssb-ResourceList SEQUENCE (SIZE(1..maxRA-SSB-Resources)) OF CFRA-SSB-Resource {	1 entry		
CFRA-SSB-Resource SEQUENCE {		entry 1	
ssb[1]	0		
ra-PreambleIndex[1]	52	Randomly selected	
}			
}			
ra-ssb-OccasionMaskIndex	0		
}			
}			
}			

Condition	Explanation
2-step RA	2-step RA type Random Access

– *RACH-ConfigGeneric*

Table 4.6.3-130: RACH-ConfigGeneric

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
RACH-ConfigGeneric ::= SEQUENCE {			
prach-ConfigurationIndex	160		FR1
	157		FR1 AND HD_FDD
	149		FR2
msg1-FDM	four		FR1
	one		FR2
msg1-FrequencyStart	0		
zeroCorrelationZoneConfig	15		
preambleReceivedTargetPower	-118		
preambleTransMax	n7		
powerRampingStep	dB4		
ra-ResponseWindow	sl20		
	sl10		FR1 AND SCS15
}			

Condition	Explanation
HD_FDD	SIG AND pc_halfDuplexFDD_TypeA_RedCap_r17 (i.e HD_FDD UE are performing signaling test on FDD band)

– *RACH-ConfigGenericTwoStepRA*

Table 4.6.3-130A: RACH-ConfigGenericTwoStepRA

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
RACH-ConfigGenericTwoStepRA-r16 ::= SEQUENCE {			
msgA-PRACH-ConfigurationIndex-r16	120		FR1 FDD
	88		(FR1 TDD AND SCS

			30) OR (FR1 TDD AND SCS60)
	89		FR1 TDD AND SCS 15
	34		FR2
msgA-RO-FDM-r16	one		
msgA-RO-FrequencyStart-r16	0		
msgA-ZeroCorrelationZoneConfig-r16	15		
msgA-PreamblePowerRampingStep-r16	dB0		
msgA-PreambleReceivedTargetPower-r16	-118		
msgB-ResponseWindow-r16	sl2		
preambleTransMax-r16	n10		
}			

– *RACH-ConfigTwoTA*

Table 4.6.3-130B: RACH-ConfigTwoTA

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
RACH-ConfigTwoTA-r18 ::= SEQUENCE {			
FFS			
}			

– *RA-AdaptConfig*

Table 4.6.3-130C: RA-AdaptConfig

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
RA-AdaptConfig-r19		Value not yet assigned.	

– *RA-Prioritization*

Table 4.6.3-131: RA-Prioritization

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
RA-Prioritization ::= SEQUENCE {	0		
powerRampingStepHighPriority	dB0		
	FFS		Slice_RACH
scalingFactorBI	zero	zero corresponds to 0	
	FFS		Slice_RACH
}			

Condition	Explanation
Slice_RACH	Slice specific RACH configuration

– *RA-PrioritizationForSlicing*

Table 4.6.3-131A: RA-PrioritizationForSlicing

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition

RA-PrioritizationForSlicing-r17::= SEQUENCE {			
ra-PrioritizationSlicingInfoList-r17 SEQUENCE (SIZE (1..maxSlicingInfo-r17)) OF RA-PrioritizationSlicingInfo-r17 {	1 entry		
RA-PrioritizationSlicingInfo-r17[1] SEQUENCE{		entry 1	
nsagIDList-r17 SEQUENCE (SIZE (1..maxSlicingInfo-r17)) OF NSAG-ID-r17 {	n entries	n is the number of NSAG values associated with the configured set of RA resources	
NSAG-ID-r17[k, k=1..n]	Set to the corresponding NSAG value used in the test case	entry [k, k=1..n]	
}			
}	RA-Prioritization		
}			
}			
}			
}			

RadioBearerConfig

Table 4.6.3-132: RadioBearerConfig

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
RadioBearerConfig ::= SEQUENCE {			
srb-ToAddModList	Not present		
srb-ToAddModList SEQUENCE (SIZE (1..2)) OF SRB-ToAddMod {	1 entry		SRB1
SRB-ToAddMod[1] SEQUENCE {		entry 1	
srb-Identity	SRB-Identity with condition SRB1		
reestablishPDCP	Not present		
discardOnPDCP	Not present		
pdcpc-Config	Not present	Default	
}			
}			
srb-ToAddModList SEQUENCE (SIZE (1..2)) OF SRB-ToAddMod {	1 entry		SRB2, RESUME
SRB-ToAddMod[1] SEQUENCE {		entry 1	
srb-Identity	SRB-Identity with condition SRB2		
reestablishPDCP	Not present		
discardOnPDCP	true		RESUME
pdcpc-Config	Not present	Default	
}			
}			
srb-ToAddModList SEQUENCE (SIZE (1..2)) OF SRB-ToAddMod {	1 entry		SRB3
SRB-ToAddMod[1] SEQUENCE {		entry 1	
srb-Identity	SRB-Identity with condition SRB3		
reestablishPDCP	Not present		
discardOnPDCP	Not present		
pdcpc-Config	Not present	Default	
}			
}			
srb-ToAddModList SEQUENCE (SIZE (1..2)) OF SRB-ToAddMod {	2 entries		SRB_NR_P DCP, REEST
SRB-ToAddMod[1] SEQUENCE {		entry 1	

srb-Identity	SRB-Identity with condition SRB1		
reestablishPDCP	Not present		
	true		SRB_NR_P DCP AND Re-establish_P DCP
discardOnPDCP	Not present		
pdcp-Config	Not present	Default	
}			
SRB-ToAddMod[2] SEQUENCE {		entry 2	
srb-Identity	SRB-Identity with condition SRB2		
reestablishPDCP	Not present		
	true		SRB_NR_P DCP AND Re-establish_P DCP, REEST
discardOnPDCP	Not present		
pdcp-Config	Not present	Default	
}			
}			
srb3-ToRelease	Not present		
drb-ToAddModList	Not present		
drb-ToAddModList SEQUENCE (SIZE (1..maxDRB)) OF DRB-ToAddMod {	1 entry		EN-DC_DRB
DRB-ToAddMod[1] SEQUENCE {		entry 1	
cnAssociation CHOICE {			
eps-BearerIdentity	6		
}			
drb-Identity	DRB-Identity using condition DRB2		
reestablishPDCP	Not present		
	true		EN-DC_DRB AND Re-establish_P DCP
recoverPDCP	Not present		
	true		EN-DC_DRB AND Recover_PDCP
pdcp-Config	PDCP-Config		
}			
}			
drb-ToAddModList SEQUENCE (SIZE (1..maxDRB)) OF DRB-ToAddMod {	1 entry		MCG_NR_P DCP
DRB-ToAddMod[1] SEQUENCE {		entry 1	
cnAssociation CHOICE {			
eps-BearerIdentity	12	EPS Bearer Id of default MCG DRB	
}			
drb-Identity	8	DRB Id of default MCG DRB	
reestablishPDCP	Not present		
recoverPDCP	Not present		
pdcp-Config	PDCP-Config		
}			
}			
drb-ToAddModList SEQUENCE (SIZE (1..maxDRB)) OF DRB-ToAddMod {	1 entry		DRB1

DRB-ToAddMod[1] SEQUENCE {		entry 1	
cnAssociation CHOICE {			
sdap-Config	SDAP-Config		
}			
drb-Identity	DRB-Identity using condition DRB1		
reestablishPDCP	Not present		
	true		DRB1 AND Re-establish_PDCP
recoverPDCP	Not present		
	true		DRB1 AND Recover_PDCP
pdcp-Config	PDCP-Config		
daps-Config-r16	Not present		
	true		DRB1 AND DAPS_PDCP
}			
}			
drb-ToAddModList SEQUENCE (SIZE (1..maxDRB)) OF DRB-ToAddMod {	1 entry		DRB2
DRB-ToAddMod[1] SEQUENCE {		entry 1	
cnAssociation CHOICE {			
sdap-Config	SDAP-Config		
}			
drb-Identity	DRB-Identity using condition DRB2		
reestablishPDCP	Not present		
	true		DRB2 AND Re-establish_PDCP
recoverPDCP	Not present		
	true		DRB2 AND Recover_PDCP
pdcp-Config	PDCP-Config		
daps-Config-r16	Not present		
}			
}			
drb-ToAddModList SEQUENCE (SIZE (1..maxDRB)) OF DRB-ToAddMod {	n entries	n is the number of DRBs established before RRC resume or RRC re-establishment	RESUME, REEST
DRB-ToAddMod[k, k=1..n] SEQUENCE {		entry [k, k=1..n]	
cnAssociation	Not present		
drb-Identity	DRB-Identity with condition DRBk		
reestablishPDCP	true		
recoverPDCP	Not present		
pdcp-Config	Not present		
daps-Config-r16	Not present		
}			
}			
drb-ToAddModList SEQUENCE (SIZE (1..maxDRB)) OF DRB-ToAddMod {	1 entry		DRBn
DRB-ToAddMod[1] SEQUENCE {		entry 1	
cnAssociation CHOICE {			
sdap-Config	SDAP-Config		
	SDAP-Config with condition No-defaultDRB		SCG_DRB
}			

drb-Identity	DRB-Identity with condition DRBn		
reestablishPDCP	Not present		
recoverPDCP	Not present		
pdcp-Config	PDCP-Config		
	PDCP-Config with condition Split		Split
}			
}			
drb-ToReleaseList	Not present		
securityConfig	Not present		SRB1
securityConfig SEQUENCE {			
securityAlgorithmConfig	SecurityAlgorithmConfig		
keyToUse	master		
	secondary		SRB3, EN-DC_DRB, SecondaryKeys
}			
mrbs-ToAddModList-r17	Not present		
mrbs-ToAddModList-r17 SEQUENCE (SIZE (1..maxDRB)) OF MRB-ToAddMod-r17 {	1 entry		MRBm
MRB-ToAddMod-r17 [1] SEQUENCE {		entry 1	
mbs-SessionId-r17	TMGI		
mrbs-Identity-r17	MRB-Identity with condition MRBm		
mrbs-IdentityNew-r17	Not present		
reestablishPDCP-r17	Not present		
recoverPDCP-r17	Not present		
pdcp-Config-r17	PDCP-Config with condition MRB_Initialization and UM_MRB and MRBm		UM_bi_PTP, UM_PTP, UM_PTM, UMPTP_UMPTM
	PDCP-Config with condition MRB_Initialization and MRBm		
}			
}			
mrbs-ToReleaseList-r17	Not present		
srb4-ToAddMod-r17	Not present		
srb4-ToAddMod-r17 SEQUENCE {			SRB4
srb-Identity	SRB-Identity with condition SRB1		
reestablishPDCP	Not present		
discardOnPDCP	Not present		
pdcp-Config	Not present		
srb-Identity-v1700	SRB-Identity-v1700		
}			
srb4-ToRelease-r17	Not present		
}			

Condition	Explanation
MCG_NR_PDCP	MCG DRB configured or reconfigured with NR PDCP
SRB_NR_PDCP	NR SRB1 and SRB2 configured with NR PDCP
SRB1	Establishment of SRB1
SRB2	Establishment of SRB2
SRB3	Establishment of SRB3
SRB4	Establishment of SRB4
DRB1	Establishment of DRB1
DRB2	Establishment of DRB2
DRBn	Establishment of DRBn
EN-DC_DRB	EN-DC DRB configured on SCG
Re-establish_PDCP	Re-establishment of PDCP

Recover_PDCP	Recovery of PDCP
RESUME	Used in RRCResume Message
REEST	The first RRCReconfiguration message after successful completion of the RRC re-establishment procedure.
SecondaryKeys	NR-DC SCG or MCG DRB configured or reconfigured with secondary security keys
Split	Split PDCP: more than one RLC
DAPS_PDCP	Used when the bearer is configured as DAPS bearer
SCG_DRB	Used when the bearer is configured as an SCG bearer in either NR-DC or NE-DC
MRBm	Establishment of MRBm
UM_bi_PTP	Multicast MRB with bidirectional RLC-UM configuration for receiving PTP transmission
UM_PTP	Multicast MRB with DL only RLC-UM configuration for receiving PTP transmission
UM_PTM	Multicast MRB with DL only RLC-UM entity for receiving PTM transmission
UMPTP_UMPTM	Multicast MRB with two RLC-UM entities, one DL only RLC-UM entity for receiving PTP transmission and the other DL only RLC-UM entity for receiving PTM transmission

RadioLinkMonitoringConfig

Table 4.6.3-133: RadioLinkMonitoringConfig

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
RadioLinkMonitoringConfig ::= SEQUENCE {			
failureDetectionResourcesToAddModList	1 entry		
SEQUENCE (SIZE(1..maxNrofFailureDetectionResources)) OF			
RadioLinkMonitoringRS {			
RadioLinkMonitoringRS[1] SEQUENCE {		entry 1	
radioLinkMonitoringRS-Id	RadioLinkMonitoringRS-Id		
purpose	rlf		
detectionResource CHOICE {			
ssb-Index	SSB-Index		
}			
}			
}			
failureDetectionResourcesToReleaseList	Not present		
beamFailureInstanceMaxCount	Not present		
beamFailureDetectionTimer	Not present		
}			

RadioLinkMonitoringRS-Id

Table 4.6.3-134: RadioLinkMonitoringRS-Id

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
RadioLinkMonitoringRS-Id	0		

RAN-AreaCode

Table 4.6.3-135: RAN-AreaCode

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
RAN-AreaCode	1		

– *RandomAccessAdaptConfig*

Table 4.6.3-135A: *RandomAccessAdaptConfig*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
RandomAccessAdaptConfig-r19 ::= SEQUENCE {			
FFS			
}			

– *RateMatchPattern*

Table 4.6.3-136: *RateMatchPattern*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
RateMatchPattern ::= SEQUENCE {			
rateMatchPatternId	RateMatchPatternId		
patternType CHOICE {			
controlResourceSet	ControlResourceSetId		
}			
subcarrierSpacing	SubcarrierSpacing		
dummy	semiStatic	Dummy IE value	
}			

– *RateMatchPatternId*

Table 4.6.3-137: *RateMatchPatternId*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
RateMatchPatternId	0		

– *RateMatchPatternLTE-CRS*

Table 4.6.3-138: *RateMatchPatternLTE-CRS*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
RateMatchPatternLTE-CRS ::= SEQUENCE {			
FFS			
}			

– *ReferenceConfiguration*

Table 4.6.3-138AAA: *ReferenceConfiguration*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
ReferenceConfiguration-r18	RRCReconfiguration with condition LTM	OCTET STRING (CONTAINING RRCReconfiguration)	

– *ReferenceLocation*

Table 4.6.3-138AA: ReferenceLocation

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
ReferenceLocation-r17	'2240 DC56 7176'H	reference location 1: -latitudeSign: north - Latitude: 24.08439333 - Longitude: 121.56076999	RefLocation _1
	'2519 0956 7176'H	reference location 2: -latitudeSign: north - Latitude: 26.08439333 - Longitude: 121.56076999	RefLocation _2

Condition	Explanation
RefLocation_1	Specified Reference Location 1
RefLocation_2	Specified Reference Location 2

– *ReferenceTimeInfo*

Table 4.6.3-138A: ReferenceTimeInfo

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
ReferenceTimeInfo-r16 ::= SEQUENCE {			
time-r16 ::= SEQUENCE {			
refDays-r16	obtained from the local clock		
refSeconds-r16	obtained from the local clock		
refMilliSeconds-r16	obtained from the local clock		
refTenNanoSeconds-r16	obtained from the local clock		
}			
uncertainty-r16	not present		
timeInfoType-r16	localClock		
referenceSFN-r16	SFN of PCell		
}			

– *RejectWaitTime*

Table 4.6.3-139: RejectWaitTime

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
RejectWaitTime	1		

– *RepetitionSchemeConfig*

Table 4.6.3-139A: RepetitionSchemeConfig

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
RepetitionSchemeConfig-r16 ::= CHOICE {			
FFS			
}			

– *ReportConfigId*

Table 4.6.3-140: ReportConfigId

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
ReportConfigId	1		

– *ReportConfigInterRAT*

Table 4.6.3-141: ReportConfigInterRAT (InterRAT-Thres, NR-Thres)

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
ReportConfigInterRAT ::= SEQUENCE {			
reportType CHOICE {			
periodical SEQUENCE {			PERIODICAL OR PERIODICAL_UTRA
reportInterval	ReportInterval		
reportAmount	infinity		
reportQuantity SEQUENCE {		UE shall ignore the value(s) provided in reportQuantity if reportQuantityUTRA-FDD-r16 is configured.	
rsrp	true		
rsrq	true		
sinr	false		
}			
maxReportCells	8		
reportQuantityUTRA-FDD-r16	Not present		
reportQuantityUTRA-FDD-r16 SEQUENCE {			PERIODICAL_UTRA
cpich-RSCP	true		
cpich-EcN0	false		
}			
}			
eventTriggered SEQUENCE {			EVENT_B1 OR EVENT_B2 OR EVENT_B1_UTRA OR EVENT_B2_UTRA
eventId CHOICE {			
eventB1 SEQUENCE {			EVENT_B1

b1-ThresholdEUTRA CHOICE {			
rsrp	InterRAT-Thres	INTEGER (0..97)	
}			
reportOnLeave	false		
Hysteresis	0 (0 dB)	The actual value is field value * 0.5 dB	
timeToTrigger	ms0		
}			
eventB2 SEQUENCE {			EVENT_B2
b2-Threshold1 CHOICE {			
rsrp	NR-Thres	INTEGER(0..127)	
}			
b2-Threshold2EUTRA CHOICE {			
rsrp	InterRAT-Thres	INTEGER (0..97)	
}			
reportOnLeave	FALSE		
Hysteresis	3 (1.5dB)	The actual value is field value * 0.5 dB	
timeToTrigger	ms1024		
}			
eventB1-UTRA-FDD-r16 SEQUENCE {			EVENT_B1_UTRA
b1-ThresholdUTRA-FDD-r16 CHOICE {			
utra-FDD-EcN0-r16	InterRAT-Thres		
}			
reportOnLeave-r16	false		
hysteresis-r16	0		
timeToTrigger-r16	ms0		
}			
eventB2-UTRA-FDD-r16 SEQUENCE {			EVENT_B2_UTRA
b2-Threshold1-r16 CHOICE {			
rsrp	NR-Thres	INTEGER(0..127)	
}			
b2-Threshold2UTRA-FDD-r16 CHOICE {			
utra-FDD-EcN0-r16	InterRAT-Thres		
}			
reportOnLeave-r16	false		
hysteresis-r16	0		
timeToTrigger-r16	ms0		
}			
eventY1-Relay-r17 SEQUENCE {			EVENT_Y1
y1-Threshold1-r17 CHOICE {			
rsrp	NR-Thres	Thres is an entry value into a mapping table in TS 38.133 [13].	
}			
y1-Threshold2-Relay-r17 CHOICE {			
rsrp	InterRAT-Thres	Thres is an entry value into a mapping table in TS 38.133 [13].	
}			
reportOnLeave-r17	false		
hysteresis-r17	0		
timeToTrigger-r17	TimeToTrigger		
}			
eventY2-Relay-r17 SEQUENCE {			EVENT_Y2
y2-Threshold-Relay-r17 CHOICE {			
rsrp	InterRAT-Thres	Thres is an entry value into a mapping table in TS 38.133 [13].	

}			
reportOnLeave-r17	false		
hysteresis-r17	0		
timeToTrigger-r17	TimeToTrigger		
}			
}			
rsType	ssb		
reportInterval	ms120		
reportAmount	r2		
reportQuantity SEQUENCE {		UE shall ignore the value(s) provided in reportQuantity if reportQuantityUTRA-FDD-r16 is configured.	
rsrp	true		
rsrq	true		
sinr	false		
}			
maxReportCells	8		
reportQuantityUTRA-FDD-r16	Not present		
reportQuantityUTRA-FDD-r16 SEQUENCE {			EVENT_B1_UTRA OR EVENT_B2_UTRA
cpich-RSCP	false		
cpich-EcN0	true		
}			
}			
reportCGI SEQUENCE {			CGI
cellForWhichToReportCGI	EUTRA-PhysCellId		
}			
reportSFTD SEQUENCE {			SFTD-EUTRA
reportSFTD-Meas	true		
reportRSRP	false		
}			
}			
}			

Condition	Explanation
EVENT_B1	Configuration of Event B1 on E-UTRA carrier
EVENT_B2	Configuration of Event B2 on E-UTRA carrier
EVENT_B1_UTRA	Configuration of Event B1 on UTRA carrier
EVENT_B2_UTRA	Configuration of Event B2 on UTRA carrier
CGI	Configuration of CGI measurement
PERIODICAL	Configuration of periodical reporting on E-UTRA carrier
PERIODICAL_UTRA	Configuration of periodical reporting on UTRA carrier
SFTD-EUTRA	Configuration of SFTD measurement on E-UTRA PSCell
EVENT_Y1	Configuration of Event Y1
EVENT_Y2	Configuration of Event Y2

– *ReportConfigNR*

Table 4.6.3-142: ReportConfigNR(Thres1, Thres2)

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
ReportConfigNR ::= SEQUENCE {			
reportType CHOICE {			
periodical SEQUENCE {			PERIODICAL

rsType	ssb		
reportInterval	ReportInterval		
reportAmount	infinity		
reportQuantityCell SEQUENCE {			
rsrp	true		
rsrq	true		
sinr	false		
	true		pc_ss_SINR Meas
}			
maxReportCells	8		
reportQuantityRS-Indexes	Not present		
maxNrofRS-IndexesToReport	Not present		
includeBeamMeasurements	false		
useAllowedCellList	false		
measRSSI-ReportConfig-r16	Not present		
includeCommonLocationInfo-r16	Not present		
includeBT-Meas-r16	Not present		
includeBT-Meas-r16 CHOICE {			MDT_BT
setup	BT-NameList		
}			
includeWLAN-Meas-r16	Not present		
includeWLAN-Meas-r16 CHOICE {			MDT_WLAN
setup	WLAN-NameList		
}			
includeSensor-Meas-r16	Not present		
includeSensor-Meas-r16 CHOICE {			MDT_SENS OR
setup	Sensor-NameList		
}			
ul-DelayValueConfig-r16	Not present		
ul-DelayValueConfig-r16 CHOICE {			MDT_DELA Y
setup	UL-DelayValueConfig		
}			
reportAddNeighMeas-r16	Not present		
}			
eventTriggered SEQUENCE {			
eventId CHOICE {			
eventA1 SEQUENCE {			EVENT_A1
a1-Threshold CHOICE {			
rsrp	Thres1	Thres is an entry value into a mapping table in TS 38.133 [13].	
}			
}			
reportOnLeave	false		
hysteresis	Hysteresis		
timeToTrigger	TimeToTrigger		
}			
eventA2 SEQUENCE {			EVENT_A2
a2-Threshold CHOICE {			
rsrp	Thres1	Thres is an entry value into a mapping table in TS 38.133 [13].	
}			
reportOnLeave	false		
hysteresis	Hysteresis		
timeToTrigger	TimeToTrigger		
}			
eventA3 SEQUENCE {			EVENT_A3
a3-Offset CHOICE {			
rsrp	Thres1	Thres is an entry value into a	

		mapping table in TS 38.133 [13].	
}			
reportOnLeave	false		
hysteresis	Hysteresis		
timeToTrigger	TimeToTrigger		
useAllowedCellList	false		
}			
eventA4 SEQUENCE {			EVENT_A4
a4-Threshold CHOICE {			
rsrp	Thres1	Thres is an entry value into a mapping table in TS 38.133 [13].	
}			
reportOnLeave	false		
hysteresis	Hysteresis		
timeToTrigger	TimeToTrigger		
useAllowedCellList	false		
}			
eventA5 SEQUENCE {			EVENT_A5
a5-Threshold1 CHOICE {			
rsrp	Thres1	Thres is an entry value into a mapping table in TS 38.133 [13].	
}			
a5-Threshold2 CHOICE {			
rsrp	Thres2	Thres is an entry value into a mapping table in TS 38.133 [13].	
}			
reportOnLeave	false		
hysteresis	Hysteresis		
timeToTrigger	TimeToTrigger		
useAllowedCellList	false		
}			
eventA6 SEQUENCE {			EVENT_A6
a6-Offset CHOICE {			
rsrp	Thres1	Thres is an entry value into a mapping table in TS 38.133 [13].	
}			
reportOnLeave	false		
hysteresis	Hysteresis		
timeToTrigger	TimeToTrigger		
useAllowedCellList	false		
}			
eventX1-r17 SEQUENCE {			EVENT_X1
x1-Threshold1-Relay-r17 CHOICE {			
sl-RSRP-r16	Thres1	Thres is an entry value into a mapping table in TS 38.133 [13].	
}			
x1-Threshold2-r17 CHOICE {			
rsrp	Thres2	Thres is an entry value into a mapping table in TS 38.133 [13].	
}			
reportOnLeave-r17	false		
hysteresis-r17	0		
timeToTrigger-r17	TimeToTrigger		

useAllowedCellList-r17	false		
}			
eventX2-r17 SEQUENCE {			EVENT_X2
x2-Threshold-Relay-r17 CHOICE {			
sl-RSRP-r16	Thres1	Thres is an entry value into a mapping table in TS 38.133 [13].	
}			
reportOnLeave-r17	false		
hysteresis-r17	0		
timeToTrigger-r17	TimeToTrigger		
useAllowedCellList-r17	false		
}			
eventH1-r18 SEQUENCE {			EVENT_H1
h1-Threshold-r18	Altitude-r18		
h1-Hysteresis-r18	HysteresisAltitude-r18		
reportOnLeave-r18	false		
timeToTrigger-r18	TimeToTrigger		
includeAltitudeUE-r18	true		
simulMultiTriggerSingleMeasReport-r18	false		
}			
eventH2-r18 SEQUENCE {			EVENT_H2
h2-Threshold-r18	Altitude-r18		
h2-Hysteresis-r18	HysteresisAltitude-r18		
reportOnLeave-r18	false		
timeToTrigger-r18	TimeToTrigger		
includeAltitudeUE-r18	true		
simulMultiTriggerSingleMeasReport-r18	false		
}			
eventA3H1-r18 SEQUENCE {			EVENT_A3 H1
a3-Offset-r18 CHOICE {			
rsrp	Thres1	Thres is an entry value into a mapping table in TS 38.133 [13].	
}			
reportOnLeave-r18	false		
a3-Hysteresis-r18	Hysteresis		
timeToTrigger-r18	TimeToTrigger		
useAllowedCellList-r18	false		
h1-Threshold-r18	Altitude-r18		
h1-Hysteresis-r18	HysteresisAltitude-r18		
includeAltitudeUE-r18	true		
simulMultiTriggerSingleMeasReport-r18	false		
}			
eventA3H2-r18 SEQUENCE {			EVENT_A3 H2
a3-Offset-r18 CHOICE {			
rsrp	Thres1	Thres is an entry value into a mapping table in TS 38.133 [13].	
}			
reportOnLeave-r18	false		
a3-Hysteresis-r18	Hysteresis		
timeToTrigger-r18	TimeToTrigger		
useAllowedCellList-r18	false		
h2-Threshold-r18	Altitude-r18		
h2-Hysteresis-r18	HysteresisAltitude-r18		
includeAltitudeUE-r18	true		
simulMultiTriggerSingleMeasReport-r18	false		
}			
eventA4H1-r18 SEQUENCE {			EVENT_A4 H1

a4-Threshold-r18 CHOICE {			
Rsrp	Thres1	Thres is an entry value into a mapping table in TS 38.133 [13].	
}			
reportOnLeave-r18	false		
a4-Hysteresis-r18	Hysteresis		
timeToTrigger-r18	TimeToTrigger		
useAllowedCellList-r18	false		
h1-Threshold-r18	Altitude-r18		
h1-Hysteresis-r18	HysteresisAltitude-r18		
includeAltitudeUE-r18	true		
simulMultiTriggerSingleMeasReport-r18	false		
}			
eventA4H2-r18 SEQUENCE {			EVENT_A4 H2
a4-Threshold-r18 CHOICE {			
rsrp	Thres1	Thres is an entry value into a mapping table in TS 38.133 [13].	
}			
reportOnLeave-r18	false		
a4-Hysteresis-r18	Hysteresis		
timeToTrigger-r18	TimeToTrigger		
useAllowedCellList-r18	false		
h2-Threshold-r18	Altitude-r18		
h2-Hysteresis-r18	HysteresisAltitude-r18		
includeAltitudeUE-r18	true		
simulMultiTriggerSingleMeasReport-r18	false		
}			
eventA5H1-r18 SEQUENCE {			EVENT_A5 H1
a5-Threshold1-r18 CHOICE {			
rsrp	Thres1	Thres is an entry value into a mapping table in TS 38.133 [13].	
}			
a5-Threshold2-r18 CHOICE {			
rsrp	Thres2	Thres is an entry value into a mapping table in TS 38.133 [13].	
}			
reportOnLeave-r18	false		
a5-Hysteresis-r18	Hysteresis		
timeToTrigger-r18	TimeToTrigger		
useAllowedCellList-r18	false		
h1-Threshold-r18	Altitude-r18		
h1-Hysteresis-r18	HysteresisAltitude-r18		
includeAltitudeUE-r18	true		
simulMultiTriggerSingleMeasReport-r18	false		
}e			
eventA5H2-r18 SEQUENCE {			EVENT_A5 H2
a5-Threshold1-r18 CHOICE {			
rsrp	Thres1	Thres is an entry value into a mapping table in TS 38.133 [13].	
}			
a5-Threshold2-r18 CHOICE {			
rsrp	Thres2	Thres is an entry value into a	

		mapping table in TS 38.133 [13].	
}			
reportOnLeave-r18	false		
a5-Hysteresis-r18	Hysteresis		
timeToTrigger-r18	TimeToTrigger		
useAllowedCellList-r18	false		
h2-Threshold-r18	Altitude-r18		
h2-Hysteresis-r18	HysteresisAltitude-r18		
includeAltitudeUE-r18	true		
simulMultiTriggerSingleMeasReport-r18	false		
}			
}			
rsType	ssb		
reportInterval	ReportInterval		
reportAmount	r2		
reportQuantityCell SEQUENCE {			
rsrp	true		
rsrq	true		
sinr	false		
	true		pc_ss_SINR_Meas
}			
maxReportCells	8		
reportQuantityRS-Indexes	Not present		
maxNrofRS-IndexesToReport	Not present		
includeBeamMeasurements	false		
reportAddNeighMeas	Not present		
measRSSI-ReportConfig-r16	Not present		
	MeasRSSI-ReportConfig		SharedSpec trum
useT312-r16	Not present		
includeCommonLocationInfo-r16	Not present		MDT
includeBT-Meas-r16	Not present		
includeBT-Meas-r16 CHOICE {			MDT_BT
setup	BT-NameList		
}			
includeWLAN-Meas-r16	Not present		
includeWLAN-Meas-r16 CHOICE {			MDT_WLAN
setup	WLAN-NameList		
}			
includeSensor-Meas-r16	Not present		
includeSensor-Meas-r16 CHOICE {			MDT_SENS OR
setup	Sensor-NameList		
}			
}			
reportCGI SEQUENCE {			CGI OR AUTO_GAP S
cellForWhichToReportCGI	PhysCellId		
useAutonomousGaps-r16	Not present		
	setup		AUTO_GAP S
}			
reportSFTD SEQUENCE {			SFTD_NEIG HBOUR or SFTD_PSC ELL
reportSFTD-Meas	false		SFTD_NEIG HBOUR
	true		SFTD_PSC ELL
reportRSRP	false		
reportSFTD-NeighMeas	true		SFTD_NEIG HBOUR

	Not present		SFTD_PSC ELL
drx-SFTD-NeighMeas	Not present		
cellsForWhichToReportSFTD	Not present		
}			
condTriggerConfig-r16 SEQUENCE {			CHO, CPC
condEventId CHOICE {			
condEventA3 SEQUENCE {			CHO AND EVENT_A3
a3-Offset CHOICE {			
rsrp	Thres1	Thres is an entry value into a mapping table in TS 38.133 [13].	
}			
hysteresis	Hysteresis		
timeToTrigger	TimeToTrigger		
}			
condEventA5 SEQUENCE {			CHO AND EVENT_A5
a5-Threshold1 CHOICE {			
rsrp	Thres1	Thres is an entry value into a mapping table in TS 38.133 [13].	
}			
a5-Threshold2 CHOICE {			
rsrp	Thres2	Thres is an entry value into a mapping table in TS 38.133 [13].	
}			
hysteresis	Hysteresis		
timeToTrigger	TimeToTrigger		
}			
}			
rsType-r16	ssb		
}			
}			
}			

Condition	Explanation
EVENT_A1	Configuration of Event A1
EVENT_A2	Configuration of Event A2
EVENT_A3	Configuration of Event A3
EVENT_A4	Configuration of Event A4
EVENT_A5	Configuration of Event A5
EVENT_A6	Configuration of Event A6
PERIODICAL	Configuration of periodical reporting
CGI	Configuration of CGI measurement
AUTO_GAPS	Configuration of Autonomous Gaps
CHO	Configuration of conditional handover
CPC	Conditional PSCell change
MDT	Configuration of MDT
MDT_BT	Configuration of MDT including Bluetooth measurements
MDT_WLAN	Configuration of MDT including WLAN measurements
MDT_SENSOR	Configuration of MDT including Sensor measurements
MDT_DELAY	Configuration of UL PDCP Packet Delay per DRB
SFTD_NEIGHBOUR	Configurations of SFTD measurement on NR neighbour
SFTD_PSCell	Configurations of SFTD measurement on NR PSCell
SharedSpectrum	Operation with shared spectrum channel access
EVENT_X1	Configuration of Event X1
EVENT_X2	Configuration of Event X2
EVENT_H1	Configuration of Event H1
EVENT_H2	Configuration of Event H2

ReportConfigToAddModList ::= SEQUENCE(SIZE (1..maxReportConfigId)) OF ReportConfigToAddMod {	1 entry		
ReportConfigToAddMod[1] SEQUENCE {		entry 1	
reportConfigId	ReportConfigId		
reportConfig CHOICE {			
reportConfigNR	ReportConfigNR		
reportConfigInterRAT	ReportConfigInterRAT		InterRAT
}			
}			
}			

Condition	Explanation
InterRAT	Configuration with at least one NR PCell and one or more E-UTRA neighbour cell(s)

– *ReportInterval*

Table 4.6.3-144: ReportInterval

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
ReportInterval	ms480		

– *ReselectionThreshold*

Table 4.6.3-145: ReselectionThreshold

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
ReselectionThreshold	FFS		

– *ReselectionThresholdQ*

Table 4.6.3-146: ReselectionThresholdQ

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
ReselectionThresholdQ	FFS		

– *ResumeCause*

Table 4.6.3-147: ResumeCause

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
ResumeCause	mt-Access		

– *RLC-BearerConfig*

Table 4.6.3-148: RLC-BearerConfig

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
RLC-BearerConfig ::= SEQUENCE {			
logicalChannelIdentity	LogicalChannelIdentity with condition DRBn		DRBn

	LogicalChannelIdentity with condition SRB1		SRB1
	LogicalChannelIdentity with condition SRB2		SRB2
	LogicalChannelIdentity with condition SRB3		SRB3
	LogicalChannelIdentity with condition SRB4		SRB4
	LogicalChannelIdentity with condition MRBm and PTP		MRBm AND PTP
	LogicalChannelIdentity with condition MRBm and PTM		MRBm AND PTM
servedRadioBearer CHOICE {			
srb-Identity	SRB-Identity with condition SRB1		SRB1
	SRB-Identity with condition SRB2		SRB2
	SRB-Identity with condition SRB3		SRB3
drb-Identity	DRB-Identity with condition DRBn		DRBn
}			
servedRadioBearer	Not present		RESUME, MRBm, SRB4
reestablishRLC	Not present		
	true		Re-establish_RLC, RESUME
rlc-Config	RLC-Config using condition AM		AM
	RLC-Config using condition UM.		UM
	RLC-Config using condition UM_DLonly		UM_DLonly
	Not present	Use default parameters as per TS 38.331 [6] clause 9.2.1	SRB1, SRB2, SRB3, RESUME
	RLC-Config with condition SRB4		SRB4
mac-LogicalChannelConfig	LogicalChannelConfig using condition HI		AM
	LogicalChannelConfig using condition LO		UM, UM_DLonly
	LogicalChannelConfig using condition SRBn	n= 1, 2, 3, 4 for SRB1, SRB2, SRB3, SRB4 resp.	SRB1, SRB2, SRB3, SRB4, RESUME
rlc-Config-v1700	Not present		
rlc-Config-v1700 SEQUENCE {			GSO
dl-AM-RLC-v1700 SEQUENCE {			
t-ReassemblyExt-r17	ms1100		
}			
dl-UM-RLC-v1700 SEQUENCE {			
t-ReassemblyExt-r17	Not present		
}			
}			
logicalChannelIdentityExt-r17	Not present		
multicastRLC-BearerConfig-r17	Not present		
multicastRLC-BearerConfig-r17 SEQUENCE {			MRBm
servedMBS-RadioBearer-r17	MRB-Identity with condition MRBm		

isPTM-Entity-r17	true		PTM
	Not present		PTP
}			
servedRadioBearerSRB4-r17	Not present		
	SRB-Identity-v1700		SRB4
}			

Condition	Explanation
AM	RLC AM DRB
UM	RLC UM DRB
SRB1	Establishment of SRB1
SRB2	Establishment of SRB2
SRB3	Establishment of SRB3
SRB4	Establishment of SRB4
DRBn	Establishment of DRBn
Re-establish_RLC	Re-establishment of RLC
RESUME	Used in RRCResume Message
MRBm	Establishment of MRBm
PTM	RLC entity is used for receiving PTM transmission
PTP	RLC entity is used for receiving PTP transmission
UM_DLonly	DL only RLC UM
GSO	Geosynchronous Orbit Scenario

– *RLC-Config*

Table 4.6.3-149: RLC-Config

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
RLC-Config ::= CHOICE {			
am SEQUENCE {			AM, SRB4
ul-AM-RLC SEQUENCE {			
sn-FieldLength	size18		
	size12		pc_support OfRedCap_r 17, SRB4, pc_support OfERedCap r18
t-PollRetransmit	ms80		FR1
	ms30		FR2
	ms45		SRB4 AND (FR1 OR FR2)
pollPDU	p32768		
	infinity		SRB4
pollByte	kB750		
	infinity		SRB4
maxRetxThreshold	t8		
}			
dl-AM-RLC SEQUENCE {			
sn-FieldLength	size18		
	size12		pc_support OfRedCap_r 17, SRB4, pc_support OfERedCap r18
t-Reassembly	ms80		FR1
	ms30		FR2
	ms35		SRB4 AND (FR1 OR FR2)

t-StatusProhibit	ms30		
	ms0		SRB4
}			
}			
um-Bi-Directional SEQUENCE {			UM
ul-UM-RLC SEQUENCE {			
sn-FieldLength	size12		pc_um_With LongSN
	size6		NOT pc_um_With LongSN AND pc_um_With ShortSN
}			
dl-UM-RLC SEQUENCE {			
sn-FieldLength	size12		pc_um_With LongSN
	size6		NOT pc_um_With LongSN AND pc_um_With ShortSN
t-Reassembly	ms80		FR1
	ms30		FR2
}			
}			
um-Uni-Directional-DL SEQUENCE {			UM_DLonly
dl-UM-RLC SEQUENCE {			
sn-FieldLength	size12		pc_um_With LongSN
	size6		NOT pc_um_With LongSN AND pc_um_With ShortSN
t-Reassembly	ms80		FR1
	ms30		FR2
}			
}			

Condition	Explanation
AM	RLC AM
UM	RLC UM
UM_DLonly	DL only RLC UM
SRB4	Establishment of SRB4

– *RLF-TimersAndConstants*

Table 4.6.3-150: RLF-TimersAndConstants

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
RLF-TimersAndConstants ::= SEQUENCE {			
t310	ms1000		
n310	n1		
n311	n1		
t311	ms1000		
}			

– *RMTC-Config*

Table 4.6.3-150A: Void

– *RNTI-Value*

Table 4.6.3-151: *RNTI-Value*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
RNTI-Value	SS arbitrarily selects a value between '0001'H and 'FFEF'H		
	SS arbitrarily selects a value between '0001'H and 'FFEF'H different from the MCG RNTI-Value.		NR-DC_SCG

Condition	Explanation
NR-DC_SCG	Add SCG (NR-DC)

– *RSRP-Range*

Table 4.6.3-152: *RSRP-Range*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
RSRP-Range	0	For measurements, 0 means L3 SS-RSRP<-156dBm according to Table 10.1.6.1-1 in TS 38.133 [13]. For thresholds, 0 means -156dBm.	

– *RSRQ-Range*

Table 4.6.3-153: *RSRQ-Range*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
RSRQ-Range	0	For measurements, 0 means SS-RSRQ<-43dB according to Table 10.1.11.1-1 in TS 38.133 [14]. For thresholds, 0 means -43.5dB.	

– *RSSI-Range***Table 4.6.3-153A: *RSSI-Range***

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
RSSI-Range-r16	FFS		

– *RxTxTimeDiff***Table 4.6.3-153B: *RxTxTimeDiff***

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
RxTxTimeDiff-r17 ::= SEQUENCE {			
FFS			
}			

– *SCellActivationRS-Config***Table 4.6.3-153C: *SCellActivationRS-Config***

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
SCellActivationRS-Config-r17 ::= SEQUENCE {			
FFS			
}			

– *SCellActivationRS-ConfigId***Table 4.6.3-153D: *SCellActivationRS-ConfigId***

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
SCellActivationRS-ConfigId-r17	FFS		

– *SCellIndex***Table 4.6.3-154: *SCellIndex***

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
SCellIndex	1		
	2		EN-DC

Condition	Explanation
EN-DC	E-UTRA-NR Dual Connectivity with E-UTRA connected to EPC

– *SchedulingRequestConfig***Table 4.6.3-155: *SchedulingRequestConfig***

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
SchedulingRequestConfig ::= SEQUENCE {			

schedulingRequestToAddModList SEQUENCE (SIZE(1..maxNrofSR-ConfigPerCellGroup)) OF SSchedulingRequestToAddMod {	1 entry		
SchedulingRequestToAddMod[1] SEQUENCE {		entry 1	
schedulingRequestId	SchedulingRequestId		
sr-ProhibitTimer	Not present		
sr-TransMax	n16		
}			
}			
schedulingRequestToReleaseList	Not present		
}			

– *SchedulingRequestId*

Table 4.6.3-156: SchedulingRequestId

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
SchedulingRequestId	0		

– *SchedulingRequestResourceConfig*

Table 4.6.3-157: SchedulingRequestResourceConfig

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
SchedulingRequestResourceConfig ::= SEQUENCE {			
schedulingRequestResourceCellId	SchedulingRequestResourceCellId		
schedulingRequestID	SchedulingRequestId		
periodicityAndOffset CHOICE {			
sl10	9	With SCS = kHz15 results in repetition every 10 ms	SCS15
sl640	639	With SCS = kHz15 results in repetition every 640 ms	SCS15 AND GSO AND SIG
sl80	79	With SCS = kHz15 results in repetition every 80 ms	SCS15 AND GSO AND RF
sl20	9	With SCS = kHz30 results in repetition every 10 ms	SCS30
sl40	19	With SCS = kHz60 results in repetition every 10 ms	FR1 AND SCS60
	9	With SCS = kHz60 results in repetition every 10 ms	FR2 AND SCS60
sl80	9	With SCS = kHz120 results in repetition every 10 ms	SCS120
}			
resource	0	ID of the PUCCH resource as configured by	

		PUCCH-Config (Table 4.6.3-112)	
	6	Same as the PUCCH resource for HARQ feedback indicated in Table 4.3.6.1.2.1-1 and Table 4.3.6.1.2.1-2	SIG AND (NOT pc_twoPUCCH_AnyOthersInSlot)
}			

Condition	Explanation
GSO	Geosynchronous Orbit Scenario

– *SchedulingRequestResourceId*

Table 4.6.3-158: *SchedulingRequestResourceId*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
SchedulingRequestResourceId	1		

– *ScramblingId*

Table 4.6.3-159: *ScramblingId*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
ScramblingId	0		

– *SCS-SpecificCarrier*

Table 4.6.3-160: *SCS-SpecificCarrier*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
SCS-SpecificCarrier ::= SEQUENCE {			
offsetToCarrier	offsetToCarrier as defined for the DL frequency of the cell	For signalling test cases see subclause 6.2.3. Otherwise, see subclause 4.3.1.	DL_PointA
	offsetToCarrier as defined for the UL frequency of the cell	For signalling test cases see subclause 6.2.3. Otherwise, see subclause 4.3.1.	UL_PointA
	offsetToCarrier as defined for the SL NRf1 frequency	For signalling test cases see subclause 6.2.3.7. Otherwise, see subclause 4.3.1.8.	SL_PointA
subcarrierSpacing	SubcarrierSpacing		
carrierBandwidth	carrierBandwidth as defined for the frequency of the cell	For signalling test cases see subclause 6.2.3. Otherwise, see subclause 4.3.1.	
}			

Condition	Explanation
DL_PointA	IE absoluteFrequencyPointA for downlink
UL_PointA	IE absoluteFrequencyPointA for uplink
SL_PointA	IE absoluteFrequencyPointA for sidelink

– SDAP-Config

Table 4.6.3-161: SDAP-Config

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
SDAP-Config ::= SEQUENCE {			
pdu-Session	The same value as the PDU session ID IE of the contained message		
sdap-HeaderDL	absent		
sdap-HeaderUL	present		
defaultDRB	true		
	false		No-defaultDRB
mappedQoS-FlowsToAdd SEQUENCE (SIZE (1..maxNrofQFIs)) OF QFI {	n entries		
QFI[n]	The list of QFIs of the Authorized QoS flow descriptions IE of the contained 5GSM message	entry n	
}			
mappedQoS-FlowsToRelease	Not present		
}			

Condition	Explanation
No-defaultDRB	The defaultDRB value is false.

– SearchSpace

Table 4.6.3-162: SearchSpace

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
SearchSpace ::= SEQUENCE {			
searchSpaceId	SearchSpaceId with condition CSS		CSS
	SearchSpaceId with condition USS		USS
	SearchSpaceId with condition SISS		SISS
	SearchSpaceId with condition MSS		MSS
	SearchSpaceId with condition SLSS		SLSS
	SearchSpaceId with condition DCI_2_6		DCI_2_6
	SearchSpaceId with condition DCI_2_9		DCI_2_9
	SearchSpaceId with condition PEI		PEI
	SearchSpaceId with condition DCI_MC		DCI_MC
controlResourceSetId	ControlResourceSetId		

	ControlResourceSetId with condition Common0		CSS, SISS, PEI
monitoringSlotPeriodicityAndOffset CHOICE {			
sl1	NULL		
sl5	0		(CSS OR USS) AND HD_FDD
sl10	5		SISS
}			
duration	Not present	1 slot per default	
	2		SISS
	4		(CSS OR USS) AND HD_FDD
monitoringSymbolsWithinSlot	10000000000000		
nrofCandidates SEQUENCE {			
aggregationLevel1	n0		
aggregationLevel2	n4		FR1
	n3		FR2
	n2		FR1 and BW3
aggregationLevel4	n2		
	n1		BW3
aggregationLevel8	n1		
	n0		BW3
aggregationLevel16	n0		
}			
searchSpaceType	Not present		MSS, DCI_MC
searchSpaceType CHOICE {			
common SEQUENCE {			CSS, SISS, DCI_2_6, DCI_2_9, PEI
dc-Format0-0-AndFormat1-0 SEQUENCE {			
}			
dc-Format2-0	Not present		
dc-Format2-1	Not present		
dc-Format2-2	Not present		
dc-Format2-3	Not present		
}			
ue-Specific SEQUENCE {			USS, SLSS
dc-Formats	formats0-0-And-1-0		Short_DCI
dc-Formats	formats0-1-And-1-1		
dc-Formats-MT-r16	Not present		
dc-FormatsSL-r16	formats3-0		SLSS
dc-FormatsExt-r16	Not present		
}			
}			
}			

Condition	Explanation
CSS	Common SearchSpace
USS	UE-Specific SearchSpace
Short_DCI	Used in test scenarios requiring DCI formats 0-0 and 1-0 on USS
SISS	SearchSpace for SI
MSS	SearchSpace for MBS Multicast reception
PEI	Paging Early Indication is configured in the cell.
SLSS	SearchSpace for SL mode 1 transmission
DCI_2_6	Transmission of DCI_2_6 is required
DCI_2_9	Transmission of DCI_2_9 is required
HD_FDD	SIG AND pc_halfDuplexFDD_TypeA_RedCap_r17 (i.e HD_FDD UE are performing signalling test on FDD band)
DCI_MC	Transmission of DCI_1_3 and(or) DCI_0_3 is required

– *SearchSpaceId*

Table 4.6.3-163: *SearchSpaceId*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
SearchSpaceId	1		CSS
	2		USS
	3		SISS
	4		PEI
	5		MSS
	6		SLSS
	7		DCI_2_6
	8		DCI_MC
	9		DCI_2_9

Condition	Explanation
CSS	Common SearchSpace
USS	UE-Specific SearchSpace
SISS	SearchSpace for SI
PEI	Paging Early Indication is configured in the cell.
MSS	SearchSpace for MBS Multicast reception.
SLSS	SearchSpace for SL mode 1 transmission
DCI_2_6	Transmission of DCI_2_6 is required
DCI_2_9	Transmission of DCI_2_9 is required
DCI_MC	Transmission of DCI_1_3 and(or) DCI_0_3 is required

– *SearchSpaceZero*

Table 4.6.3-164: *SearchSpaceZero*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
SearchSpaceZero	0	Index addressing SearchSpace#0 parameter set in Tables 13.11 .. 13.15 of TS 38.213 [22]	

– *SecurityAlgorithmConfig*

Table 4.6.3-165: *SecurityAlgorithmConfig*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
SecurityAlgorithmConfig ::= SEQUENCE {			
cipheringAlgorithm	nea0		RF OR RRM
	Set according to PIXIT px_NR_CipheringAlgorithm	see TS 38.523-3 [23]	SIG
integrityProtAlgorithm	nia2		
	Set according to PIXIT px_NR_IntegrityProtAlgorithm	see TS 38.523-3 [23]	SIG
}			

– *SelectedPSCellForCHO-WithSCG*

Table 4.6.3-165AA: SelectedPSCellForCHO-WithSCG

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
SelectedPSCellForCHO-WithSCG-r18 ::= SEQUENCE {			
FFS			
}			

– *SemiStaticChannelAccessConfig*

Table 4.6.3-165A: SemiStaticChannelAccessConfig

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
SemiStaticChannelAccessConfig-r16 ::= SEQUENCE {			
period-r16	ms5		
}			

– *SemiStaticChannelAccessConfigUE*

Table 4.6.3-165BA: SemiStaticChannelAccessConfigUE

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
SemiStaticChannelAccessConfigUE-r17 ::= SEQUENCE {			
FFS			
}			

– *Sensor-LocationInfo*

Table 4.6.3-165B: Sensor-LocationInfo

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
Sensor-LocationInfo-r16 ::= SEQUENCE {			
sensor-MeasurementInformation-r16	Not checked	OCTET STRING	
sensor-MotionInformation-r16	Not checked	OCTET STRING	
}			

– *ServingCellAndBWP-Id*

Table 4.6.3-165C: ServingCellAndBWP-Id

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
ServingCellAndBWP-Id-r17 ::= SEQUENCE {			
servingcell-r17	ServCellIndex		
bwp-r17	BWP-Id		
}			

– *ServCellIndex*

Table 4.6.3-166: *ServCellIndex*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
ServCellIndex	0		
	1		EN-DC, NR-DC_SCG

Condition	Explanation
EN-DC	E-UTRA-NR Dual Connectivity with E-UTRA connected to EPC
NR-DC_SCG	Add SCG (NR-DC)

– *ServingCellConfig*

Table 4.6.3-167: *ServingCellConfig*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
ServingCellConfig ::= SEQUENCE {			
tdd-UL-DL-ConfigurationDedicated	Not present		
initialDownlinkBWP	BWP-DownlinkDedicated		
	BWP-DownlinkDedicated with condition SCell_add		SCell_add
	BWP-DownlinkDedicated with condition MBS_Multicast		MBS_Multicast
	Not present		MEAS, RESUME
downlinkBWP-ToReleaseList	Not present		
downlinkBWP-ToAddModList	Not present		
downlinkBWP-ToAddModList SEQUENCE (SIZE (1..maxNrofBWPs)) OF SEQUENCE {	1 entry		DLBWP_add
BWP-Downlink[1]	BWP-Downlink		
}			
firstActiveDownlinkBWP-Id	BWP-Id		
	Not present		MEAS
bwp-InactivityTimer	Not present		
defaultDownlinkBWP-Id	BWP-Id		
	Not present		MEAS, RESUME
uplinkConfig	Not present		MEAS, No_UL
uplinkConfig SEQUENCE {			
initialUplinkBWP	BWP-UplinkDedicated		
	BWP-UplinkDedicated with condition SUL_NUL		PUSCH_PUSCH_ON_SUL
	BWP-UplinkDedicated with condition RESUME		RESUME
uplinkBWP-ToReleaseList	Not present		
uplinkBWP-ToAddModList	Not present		
uplinkBWP-ToAddModList SEQUENCE (SIZE (1..maxNrofBWPs)) OF SEQUENCE {	1 entry		ULBWP_add
BWP-Uplink[1]	BWP-Uplink		
}			
firstActiveUplinkBWP-Id	BWP-Id		
pusch-ServingCellConfig	Not present		RESUME
pusch-ServingCellConfig CHOICE {			
setup	PUSCH-ServingCellConfig		
}			

carrierSwitching	Not present		
powerBoostPi2BPSK	Not present		
uplinkChannelBW-PerSCS-List	Not present		
srs-PosTx-Hopping-r18	Not present		
enablePL-RS-UpdateForType1CG-PUSCH-r18	Not present		
powerBoostPi2BPSK-r18	Not present		
powerBoostQPSK-r18	Not present		
}			
supplementaryUplink	Not present		
supplementaryUplink SEQUENCE {			PUSCH_PU CCH_ON_S UL
initialUplinkBWP	BWP-UplinkDedicated		
	BWP-UplinkDedicated with condition RESUME		RESUME
uplinkBWP-ToReleaseList	Not present		
uplinkBWP-ToAddModList	Not present		
firstActiveUplinkBWP-Id	BWP-Id		
pusch-ServingCellConfig CHOICE {			
setup	PUSCH- ServingCellConfig		
}			
carrierSwitching	Not present		
}			
pdccch-ServingCellConfig CHOICE {			
setup	PDCCH- ServingCellConfig		
}			
pdccch-ServingCellConfig	Not present		MEAS, RESUME
pdsch-ServingCellConfig CHOICE {			
setup	PDSCH- ServingCellConfig		
}			
pdsch-ServingCellConfig	Not present		MEAS, RESUME
csi-MeasConfig	Not present		
	CSI-MeasConfig with condition LTM		LTM_CSI_M EAS
sCellDeactivationTimer	Not present		
crossCarrierSchedulingConfig	Not present		
tag-Id	0		
dummy1	Not present		
pathlossReferenceLinking	Not present		
servingCellMO	Not present		
	MeasObjectId		MEAS
channelAccessConfig-r16	Not present		
channelAccessConfig-r16 CHOICE {			SharedSpec trum
setup	ChannelAccessConfig		
}			
nr-dl-PRS-PDC-Info-r17	Not present		
semiStaticChannelAccessConfigUE-r17	Not present		
mimoParam-r17	Not present		
channelAccessMode2-r17	Not present		
timeDomainHARQ-BundlingType1-r17	Not present		
nrofHARQ-BundlingGroups-r17	Not present		
fdmed-ReceptionMulticast-r17	Not present		
moreThanOneNackOnlyMode-r17	Not present		
tci-ActivatedConfig-r17	Not present		
tci-ActivatedConfig-r17 SEQUENCE {			SCG_Activa te
pdccch-TCI-r17 SEQUENCE (SIZE(1..5)) OF TCI- StateId {	1 entry		
TCI-StateId[1]	TCI-StateId	entry 1	
}			

pdsch-TCI-r17	1	BIT STRING (SIZE (1..maxNrofTCI- States))	
}			
directionalCollisionHandling-DC-r17	Not present		
lte-NeighCellsCRS-AssistInfoList-r17	Not present		
lte-CRS-PatternList3-r18	Not present		
lte-CRS-PatternList4-r18	Not present		
pdccch-CandidateReceptionWith-CRS-Overlap-r18	Not present		
cjt-Scheme-PDSCH-r18	Not present		
tag2-r18	Not present		
cellDTXDRX-Config-r18	Not present		
positionInDCI-cellDTRX-r18	Not present		
cellDTXDRX-L1activation-r18	Not present		
mc-DCI-SetOfCellsToAddModList-r18	Not present		
mc-DCI-SetOfCellsToAddModList-r18 SEQUENCE (SIZE (1..maxNrofSetsOfCells-r18)) OF MC-DCI- SetOfCells-r18 {	1 entry		DCI_1_3 OR DCI_0_3
MC-DCI-SetOfCells-r18[1] SEQUENCE {		entry 1	
setOfCellsId-r18	0		
nCI-Value-r18	0		
scheduledCellListDCI-1-3-r18	Not present		
scheduledCellListDCI-1-3-r18 SEQUENCE (SIZE (2..maxNrofCellsInSet-r18)) OF ServCellIndex {	2 entries		DCI_1_3
ServCellIndex [1]	ServCellIndex	entry 1 SpCell	
ServCellIndex [2]	SCellIndex	entry 2 SCell	
}			
scheduledCellListDCI-0-3-r18	Not present		
scheduledCellListDCI-0-3-r18 SEQUENCE (SIZE (2..maxNrofCellsInSet-r18)) OF ServCellIndex {	2 entries		DCI_0_3
ServCellIndex [1]	ServCellIndex	entry 1 SpCell	
ServCellIndex [2]	SCellIndex	entry 2 SCell	
}			
scheduledCellComboListDCI-1-3-r18	Not present		
scheduledCellComboListDCI-0-3-r18	Not present		
antennaPortsDCI1-3-r18	Not present		
	type2		DCI_1_3
antennaPortsDCI0-3-r18	Not present		
	type2		DCI_0_3
tpmi-DCI0-3-r18	Not present		
	type2		DCI_0_3
sri-DCI0-3-r18	Not present		
	type2		DCI_0_3
priorityIndicatorDCI-1-3-r18	Not present		
priorityIndicatorDCI-0-3-r18	Not present		
dormancyDCI-1-3-r18	Not present		
dormancyDCI-0-3-r18	Not present		
pdccchMonAdaptDCI-1-3-r18	Not present		
pdccchMonAdaptDCI-0-3-r18	Not present		
minimumSchedulingOffsetK0DCI-1-3-r18	Not present		
minimumSchedulingOffsetK0DCI-0-3-r18	Not present		
pdsch-HARQ-ACK-OneShotFeedbackDCI-1-3-r18	Not present		
pdsch-HARQ-ACK-enhType3DCI-1-3-r18	Not present		
pdsch-HARQ-ACK-enhType3DCIfieldDCI-1-3-r18	Not present		
pdsch-HARQ-ACK-retxDCI-1-3-r18	Not present		
pucch-sSCellDynDCI-1-3-r18	Not present		
tdra-FieldIndexListDCI-1-3-r18	Not present		
tdra-FieldIndexListDCI-1-3-r18 SEQUENCE (SIZE (1..32)) OF TDRA-FieldIndexDCI-1-3-r18 {	4 entries		DCI_1_3
TDRA-FieldIndexDCI-1-3-r18 [1] SEQUENCE (SIZE (2.. maxNrofBWPsInSetOfCells-r18)) OF INTEGER {	2 entries	entry 1	
INTEGER [1]	0	entry 1	

		1st entry of pdsch-TDRAList for SpCell BWP#0	
INTEGER [2]	0	entry 2 1st entry of pdsch-TDRAList for SCell BWP#0	
}			
TDRA-FieldIndexDCI-1-3-r18 [2] SEQUENCE (SIZE (2.. maxNrofBWPsInSetOfCells-r18)) OF INTEGER {	2 entries	entry 2	
INTEGER [1]	0	entry 1 1st entry of pdsch-TDRAList for SpCell BWP#0	
INTEGER [2]	1	entry 2 2nd entry of pdsch-TDRAList for SCell BWP#0	
}			
TDRA-FieldIndexDCI-1-3-r18 [3] SEQUENCE (SIZE (2.. maxNrofBWPsInSetOfCells-r18)) OF INTEGER {	2 entries	entry 3	
INTEGER [1]	1	entry 1 2nd entry of pdsch-TDRAList for SpCell BWP#0	
INTEGER [2]	0	entry 2 1st entry of pdsch-TDRAList for SCell BWP#0	
}			
TDRA-FieldIndexDCI-1-3-r18 [4] SEQUENCE (SIZE (2.. maxNrofBWPsInSetOfCells-r18)) OF INTEGER {	2 entries	entry 4	
INTEGER [1]	1	entry 1 2nd entry of pdsch-TDRAList for SpCell BWP#0	
INTEGER [2]	1	entry 2 2nd entry of pdsch-TDRAList for SCell BWP#0	
}			
}			
tdra-FieldIndexListDCI-0-3-r18	Not present		
tdra-FieldIndexListDCI-0-3-r18 SEQUENCE (SIZE (1..32)) OF TDRA-FieldIndexDCI-0-3-r18 {	4 entries		DCI_0_3
TDRA-FieldIndexDCI-0-3-r18 [1] SEQUENCE (SIZE (2.. maxNrofBWPsInSetOfCells-r18)) OF INTEGER {	2 entries	entry 1	
INTEGER [1]	0	entry 1 1st entry of pusch-TDRAList for SpCell BWP#0	
INTEGER [2]	0	entry 2 1st entry of pusch-TDRAList for SCell BWP#0	
}			
TDRA-FieldIndexDCI-0-3-r18 [2] SEQUENCE (SIZE (2.. maxNrofBWPsInSetOfCells-r18)) OF INTEGER {	2 entries	entry 2	
INTEGER [1]	0	entry 1 1st entry of pusch-TDRAList for SpCell BWP#0	

INTEGER [2]	1	entry 2 2nd entry of pusch-TDRAList for SCell BWP#0	
}			
TDRA-FieldIndexDCI-0-3-r18 [3] SEQUENCE (SIZE (2.. maxNrofBWPsInSetOfCells-r18)) OF INTEGER {	2 entries	entry 3	
INTEGER [1]	1	entry 1 2nd entry of pusch-TDRAList for SpCell BWP#0	
INTEGER [2]	0	entry 2 1st entry of pusch- TDRAList for SCell BWP#0	
}			
TDRA-FieldIndexDCI-0-3-r18 [4] SEQUENCE (SIZE (2.. maxNrofBWPsInSetOfCells-r18)) OF INTEGER {	2 entries	entry 4	
INTEGER [1]	1	entry 1 2nd entry of pusch-TDRAList for SpCell BWP#0	
INTEGER [2]	1	entry 2 2nd entry of pusch-TDRAList for SCell BWP#0	
}			
}			
rateMatchListDCI-1-3-r18	Not present		
zp-CSI-RSListDCI-1-3-r18	Not present		
tcI-ListDCI-1-3-r18	Not present		
srs-RequestListDCI-1-3-r18	Not present		
srs-RequestListDCI-1-3-r18 SEQUENCE (SIZE (1..16)) OF SRS-RequestCombo-r18 {	1 entry		DCI_1_3
SRS-RequestCombo-r18 [1] SEQUENCE (SIZE (1.. maxNrofCellsInSet-r18)) OF BIT STRING {	2 entries	entry 1	
BIT STRING [1]	'00'B	entry 1 No aperiodic SRS resource set triggered in SpCell	
BIT STRING [2]	'00'B	entry 2 No aperiodic SRS resource set triggered in SCell	
}			
}			
srs-OffsetListDCI-1-3-r18	Not present		
srs-RequestListDCI-0-3-r18	Not present		
srs-RequestListDCI-0-3-r18 SEQUENCE (SIZE (1..16)) OF SRS-RequestCombo-r18 {	1 entry		DCI_0_3
SRS-RequestCombo-r18 [1] SEQUENCE (SIZE (1.. maxNrofCellsInSet-r18)) OF BIT STRING {	2 entries	entry 1	
BIT STRING [1]	'00'B	entry 1 No aperiodic SRS resource set triggered in SpCell	
BIT STRING [2]	'00'B	entry 2 No aperiodic SRS resource set triggered in SCell	
}			
}			
srs-OffsetListDCI-0-3-r18	Not present		
}			
}			

mc-DCI-SetOfCellsToReleaseList-r18	Not present		
}			

Condition	Explanation
PUSCH_PUCCH_ON_SUL	For the purpose of SUL test under condition that supplementary uplink is configured with both PUSCH and PUCCH on SUL carrier.
MEAS	A NR or EN-DC measurement is configured.
No_UL	No uplink CA
RESUME	Used in RRCResume Message
SCell_add	Add SCell
MBS_Multicast	Used for MBS Multicast reception
DLBWP_add	A dedicated DL BWP is configured
ULBWP_add	A dedicated UL BWP is configured
SCG_Activate	When SCG is being activated
SharedSpectrum	Operation with shared spectrum channel access
DCI_1_3	Transmission of DCI_1_3 is required
DCI_0_3	Transmission of DCI_0_3 is required
LTM_CSI_MEAS	CSI Measurement Configuration for LTM

ServingCellConfigCommon

Table 4.6.3-168: *ServingCellConfigCommon*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
ServingCellConfigCommon ::= SEQUENCE {			
physCellId	PhysCellId		
downlinkConfigCommon	DownlinkConfigCommon		
	DownlinkConfigCommon with condition SCell_add		SCell_add
uplinkConfigCommon	UplinkConfigCommon		
	Not present		No_UL
supplementaryUplinkConfig	Not present		
n-TimingAdvanceOffset	Not present		
ssb-PositionsInBurst CHOICE {			
shortBitmap	0100		FR1 AND SSB#1 AND (1.88GHz<FREQ<=3GHz AND (FDD OR (TDD AND SCS15)) OR FREQ<=1.88GHz)
	1000		FR1 AND SSB#0 AND (1.88GHz<FREQ<=3GHz AND (FDD OR (TDD AND SCS15)) OR FREQ<=1.88GHz)
mediumBitmap	01000000		FR1 AND SSB#1 AND (1.88GHz<FREQ<=3GHz AND (TDD AND

			SCS30) OR FREQ>3GH z)
	10000000		FR1 AND SSB#0 AND (1.88GHz<F REQ<=3GH z AND (TDD AND SCS30) OR FREQ>3GH z)
longBitmap	01000000000000000000 00000000000000000000 00000000000000000000 0000		FR2 AND SSB#1
	10000000000000000000 00000000000000000000 00000000000000000000 0000		FR2 AND SSB#0
}			
ssb-periodicityServingCell	ms20		
dmrs-TypeA-Position	pos2		
lte-CRS-ToMatchAround	Not present		
rateMatchPatternToAddModList	Not present		
rateMatchPatternToReleaseList	Not present		
ssbSubcarrierSpacing	SubcarrierSpacing	For signalling test cases see subclause 6.2.3. Otherwise, see subclause 4.3.1. Value SS block SCS.	
tdd-UL-DL-ConfigurationCommon	TDD-UL-DL- ConfigCommon		TDD
	Not present		FDD
ss-PBCH-BlockPower	0		
channelAccessMode-r16	Not present		
channelAccessMode-r16 CHOICE {			SharedSpec trum
semiStatic	SemiStaticChannelAcces sConfig-r16		pc_ul_Semi _StaticChAc cess_r16
dynamic	NULL		NOT pc_ul_Semi _StaticChAc cess_r16
}			
discoveryBurstWindowLength-r16	Not present		
ssb-PositionQCL-r16	Not present		
	SSB-PositionQCL- Relation-r16		SharedSpec trum
highSpeedConfig-r16	Not present		
	HighSpeedConfig-r16		R16 HST
highSpeedConfig-v1700	Not present		
	HighSpeedConfig-v1700		R17 HST FR1
channelAccessMode2-r17	Not present		
discoveryBurstWindowLength-r17	Not present		
ssb-PositionQCL-r17	Not present		
highSpeedConfigFR2-r17	Not present		
uplinkConfigCommon-v1700	Not present		
ntn-Config-r17	Not present		
	NTN-Config		GSO, NGSO
featurePriorities-v1800	Not present		

atg-Config-r18	Not present		
	ATG-Config-r18		ATG
}			

Condition	Explanation
FREQ<=1.88GHz	Frequency range <= 1.88GHz
1.88GHz<FREQ<=3GHz	Frequency range > 1.88GHz and <= 3GHz
FREQ>3GHz	Frequency range > 3GHz
No_UL	No uplink CA
SSB#N	Cell configured with SSB-Index set to N as defined in Table 4.4.2-2
SharedSpectrum	Operation with shared spectrum channel access in FR1
R16 HST	For R16 HST test
R17 HST FR1	For R17 HST FR1 test
GSO	Geosynchronous Orbit scenario
NGSO	Non-geosynchronous Orbit scenario
SCell_add	Add SCell
ATG	For ATG test

ServingCellConfigCommonSIB

Table 4.6.3-169: ServingCellConfigCommonSIB

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
ServingCellConfigCommonSIB ::= SEQUENCE {			
downlinkConfigCommon	DownlinkConfigCommon SIB		
	DownlinkConfigCommon SIB with condition PEI		PEI
	DownlinkConfigCommon SIB with condition SDT		SDT
	DownlinkConfigCommon SIB with condition MBS_Broadcast		MBS_Broadcast
	DownlinkConfigCommon SIB with condition MBS_Multicast_Inactive		MBS_Multicast_Inactive
uplinkConfigCommon	UplinkConfigCommonSIB		
supplementaryUplink	Not present		
	UplinkConfigCommonSIB with condition SUL SUL		SUL
n-TimingAdvanceOffset	Not present		
ssb-PositionsInBurst SEQUENCE {			
inOneGroup	'0100 0000'B	When carrier frequency is smaller than or equal to 3 GHz, only the 4 leftmost bits are valid	SSB#1
	'1000 0000'B		SSB#0
groupPresence	Not present		FR1
	'1000 0000'B		FR2
}			
ssb-PeriodicityServingCell	ms20		
tdd-UL-DL-ConfigurationCommon	TDD-UL-DL-ConfigCommon		TDD
	Not present		FDD
ss-PBCH-BlockPower	0		
channelAccessMode-r16	Not present		
channelAccessMode-r16 CHOICE {			SharedSpectrum

semiStatic	SemiStaticChannelAccessConfig-r16		pc_ul_SemiStaticChannelAccess_r16
dynamic	NULL		NOT pc_ul_SemiStaticChannelAccess_r16
}			
discoveryBurstWindowLength-r16	Not present		
highSpeedConfig-r16	Not present		
	HighSpeedConfig-r16		R16 HST OR R17 HST
channelAccessMode2-r17	Not present		
discoveryBurstWindowLength-v1700	Not present		
highSpeedConfigFR2-r17	Not present		
	HighSpeedConfigFR2-r17		R17 HST AND FR2
uplinkConfigCommon-v1700	Not present		
}			

Condition	Explanation
SUL	Supplementary uplink
SSB#N	Cell configured with SSB-Index set to N as defined in Table 4.4.2-2
SharedSpectrum	Operation with shared spectrum channel access
R16 HST	For R16 HST test
R17 HST	For R17 HST test
PEI	Paging Early Indication is configured in the cell.
SDT	For SDT test cases
MBS_Broadcast	NR Cell provide MBS Broadcast service
MBS_Multicast_Inactive	Used for MBS Multicast reception when UE in RRC_INACTIVE state

– *ShortI-RNTI-Value*

Table 4.6.3-170: ShortI-RNTI-Value

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
ShortI-RNTI-Value	SS arbitrarily selects a value between '00 0001'H and 'FF FFFF'H.	BIT STRING (SIZE(24))	

– *ShortMAC-I*

Table 4.6.3-171: ShortMAC-I

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
ShortMAC-I	The 16 least significant bits of the MAC-I calculated using the security configuration of the source PCell.		

– *SINR-Range*

Table 4.6.3-172: SINR-Range

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition

SINR-Range	0	For measurements, 0 means SS-SINR<-23dB according to Table 10.1.16.1-1 in TS 38.133 [14]. For thresholds, 0 means -23dB.	

– *SI-RequestConfig*

Table 4.6.3-172A: *SI-RequestConfig*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
SI-RequestConfig ::= SEQUENCE {			
FFS			
si-RequestPeriod	Not present		
si-RequestResources SEQUENCE (SIZE (1..maxSI-Message)) OF SI-RequestResources {	1 entry		
SI-RequestResources[1] SEQUENCE {		entry 1	
ra-PreambleStartIndex	62		
ra-AssociationPeriodIndex	Not present		
ra-ssb-OccasionMaskIndex	Not present		
}			
}			
}			

– *SI-RequestConfigRepetition*

Table 4.6.3-172B: *SI-RequestConfigRepetition*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
SI-RequestConfigRepetition-r18 ::= SEQUENCE {			
rach-OccasionsSI-r18	Not present	The corresponding parameters configured in <i>rach-ConfigCommon</i> of the initial uplink BWP are used.	
si-RequestResourcesRepetitionNum2-r18 SEQUENCE (SIZE (1..maxSI-Message)) OF SI-RequestResourcesRepetition-r18 {	1 entry	the configuration given in entry 1 is used for all SI messages for which <i>si-BroadcastStatus</i> = <i>notBroadcasting</i>	
SI-RequestResourcesRepetition-r18[1] SEQUENCE {		entry 1	
ra-PreambleStartIndex-r18	63		
}			
}			
si-RequestResourcesRepetitionNum4-r18	Not present		
si-RequestResourcesRepetitionNum8-r18	Not present		
}			

– *SI-SchedulingInfo*

Table 4.6.3-173: *SI-SchedulingInfo*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
SI-SchedulingInfo ::= SEQUENCE {			
schedulingInfoList SEQUENCE (SIZE (1..maxSI-Message)) OF SchedulingInfo {	n entries See subclause 4.4.3.1		
SchedulingInfo[n] SEQUENCE {		entry n	
si-BroadcastStatus	broadcasting		
si-Periodicity	See subclause 4.4.3.1		
sib-MappingInfo SEQUENCE (SIZE (1..maxSIB)) OF SIB-TypeInfo {	n entries		
SIB-TypeInfo[1] SEQUENCE {		entry n	
type	See subclause 4.4.3.1		
valueTag	0		
areaScope	Not present		
}			
}			
}			
si-WindowLength	s80 s160		FR1 FR2
si-RequestConfig	Not present		
si-RequestConfigSUL	Not present		
systemInformationAreaID	'0000 0000 0000 0000 0000 0001'B		
}			

Table 4.6.3-173AA: *SI-SchedulingInfo-v1700*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
SI-SchedulingInfo-v1700 ::= SEQUENCE {			
schedulingInfoList2-r17 SEQUENCE (SIZE (1..maxSI-Message)) OF SchedulingInfo2-r17 {	n entries See subclause 4.4.3.1		
SchedulingInfo2-r17 [n] SEQUENCE {		entry n	
si-BroadcastStatus-r17	broadcasting		
si-WindowPosition-r17	entry number for <i>si-SchedulingInfo</i> in <i>SIB1</i> + n		
si-Periodicity-r17	See subclause 4.4.3.1		
sib-MappingInfo-r17 SEQUENCE (SIZE (1..maxSIB)) OF SIB-TypeInfo-v1700 {	n entries		
SIB-TypeInfo-v1700 [n] SEQUENCE {		entry n	
sibType-r17 CHOICE {			
type1-r17	See subclause 4.4.3.1		
}			
valueTag-r17	0		
areaScope-r17	Not present		
}			
}			
}			
dummy	Not present		
}			

Table 4.6.3-173AB: *SI-SchedulingInfo-v1800*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
SI-SchedulingInfo-v1800 ::= SEQUENCE {			

si-RequestConfigMSG1-Repetition-r18	SI-RequestConfigRepetition-r18		
si-RequestConfigRedCap-MSG1-Repetition-r18	Not present		
si-RequestConfigSUL-MSG1-Repetition-r18	Not present		
}			

– *SK-Counter*

Table 4.6.3-173A: SK-Counter

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
SK-Counter	0		

– *SK-CounterConfigLTM*

Table 4.6.3-173B: SK-CounterConfigLTM

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
SK-CounterConfigLTM-r19 ::= SEQUENCE {			
FFS			
}			

– *SlotFormatCombinationsPerCell*

Table 4.6.3-174: SlotFormatCombinationsPerCell

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
SlotFormatCombinationsPerCell ::= SEQUENCE {			
FFS			
}			

– *SlotFormatIndicator*

Table 4.6.3-175: SlotFormatIndicator

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
SlotFormatIndicator ::= SEQUENCE {			
FFS			
}			

– *S-NSSAI*

Table 4.6.3-176: S-NSSAI

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
S-NSSAI ::= CHOICE {			
FFS			
}			

– *SpeedStateScaleFactors*

Table 4.6.3-177: *SpeedStateScaleFactors*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
SpeedStateScaleFactors ::= SEQUENCE {			
FFS			
}			

– *SPS-Config*

Table 4.6.3-179: *SPS-Config*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
SPS-Config ::= SEQUENCE {			
FFS			
}			

– *SPS-ConfigIndex*

Table 4.6.3-179A: *SPS-ConfigIndex*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
SPS-ConfigIndex-r16	FFS		

– *SPS-PUCCH-AN*

Table 4.6.3-179B: *SPS-PUCCH-AN*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
SPS-PUCCH-AN-r16 ::= SEQUENCE {			
FFS			
}			

– *SPS-PUCCH-AN-List*

Table 4.6.3-179C: *SPS-PUCCH-AN-List*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
SPS-PUCCH-AN-List-r16 ::= SEQUENCE {			
FFS			
}			

– *SRB-Identity*

Table 4.6.3-180: *SRB-Identity*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
SRB-Identity	1		SRB1
	2		SRB2

	3		SRB3

Condition	Explanation
SRB1	SRB1
SRB2	SRB2
SRB3	SRB3

Table 4.6.3-180A: SRB-Identity-v1700

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
SRB-Identity-v1700	4		

– *SRS-CarrierSwitching*

Table 4.6.3-181: SRS-CarrierSwitching

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
SRS-CarrierSwitching ::= SEQUENCE {			
FFS			
}			

– *SRS-Config*

Table 4.6.3-182: SRS-Config

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
SRS-Config ::= SEQUENCE {			
srs-ResourceSetToReleaseList	Not present		
srs-ResourceSetToAddModList SEQUENCE (SIZE(0..maxNrofSRS-ResourceSets)) OF SRS-ResourceSet {	1 entry		
SRS-ResourceSet[1] SEQUENCE {		entry 1	
srs-ResourceSetId	0		
srs-ResourceSetIdList SEQUENCE (SIZE(1..maxNrofSRS-ResourcesPerSet)) OF SRS-ResourceSetId {	1 entry		
SRS-ResourceSetId[1]	0	entry 1	
}			
resourceType CHOICE {			
aperiodic SEQUENCE {			
aperiodicSRS-ResourceTrigger	1		
csi-RS	Not present		
slotOffset	7		FR1
	4		FR2
}			
}			
usage	codebook		
alpha	Alpha		
p0	0		
pathlossReferenceRS CHOICE {			
ssb-Index	SSB-Index		
}			
srs-PowerControlAdjustmentStates	Not present		
}			
}			
srs-ResourceToReleaseList	Not present		

srs-ResourceToAddModList SEQUENCE (SIZE(1..maxNrofSRS-Resources)) OF SRS-Resource {	1 entry		
SRS-Resource[1] SEQUENCE {		entry 1	
srs-ResourceId	0		
nrofSRS-Ports	ports2		2TX_UL_MIMO
	ports4		4TX_UL_MIMO
	port1		
ptrs-PortIndex	Not present		
transmissionComb CHOICE {			
n2 SEQUENCE {			
combOffset-n2	0		
cyclicShift-n2	0		
}			
}			
resourceMapping SEQUENCE {			
startPosition	0		
nrofSymbols	n1		
repetitionFactor	n1		
}			
freqDomainPosition	0		
freqDomainShift	0		
freqHopping SEQUENCE {			
c-SRS	0		
	63		FR1_100MHz
	17		FR2_100MHz
	0		FR2_MBWP
b-SRS	0		
b-hop	0		
}			
groupOrSequenceHopping	groupHopping		
resourceType CHOICE {			
aperiodic SEQUENCE {			
}			
}			
sequenceId	0		
spatialRelationInfo SEQUENCE {	SRS-SpatialRelationInfo		
servingCellId	Not present		
referenceSignal CHOICE {			
ssb-Index	SSB-Index		
}			
}			
}			
tpc-Accumulation	Not present		
}			

Condition	Explanation
2TX_UL_MIMO	UL-MIMO test cases with 2 Tx antenna ports
4TX_UL_MIMO	UL-MIMO test cases with 4 Tx antenna ports
FR1_100MHz	FR1 is used under the test. CBW is set to 100MHz.
FR2_100MHz	FR2 is used under the test. CBW is set to 100MHz.
FR2_MBWP	FR2 is used under the test. Test case has multiple dedicated BWP.

– *SRS-PosTx-Hopping*

Table 4.6.3-182AA: SRS-PosTx-Hopping

Derivation Path: TS 38.331 [6], clause 6.3.2

Information Element	Value/remark	Comment	Condition
SRS-PosTx-Hopping-r18 ::= SEQUENCE {			
FFS			
}			

– *SRS-PosResourceSetLinkedForAggBW*

Table 4.6.3-182AB: SRS-PosResourceSetLinkedForAggBW

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
SRS-PosResourceSetLinkedForAggBW-r18 ::= SEQUENCE {			
FFS			
}			

– *SRS-RSRP-MeasResource*

Table 4.6.3-182AC: SRS-RSRP-MeasResource

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
SRS-RSRP-MeasResource-r19 ::= SEQUENCE {			
FFS			
}			

– *SRS-RSRP-MeasResourceId*

Table 4.6.3-182AD: SRS-RSRP-MeasResourceId

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
SRS-RSRP-MeasResourceId-r19	FFS		

– *SRS-RSRP-MeasResourceSet*

Table 4.6.3-182AE: SRS-RSRP-MeasResourceSet

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
SRS-RSRP-MeasResourceSet-r19 ::= SEQUENCE {			
FFS			
}			

– *SRS-RSRP-MeasResourceSetId*

Table 4.6.3-182AF: SRS-RSRP-MeasResourceSetId

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
SRS-RSRP-MeasResourceSetId-r19	FFS		

– *SRS-RSRP-Range*

Table 4.6.3-182A: SRS-RSRP-Range

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
SRS-RSRP-Range-r16	FFS		

– *SRS-TPC-CommandConfig*

Table 4.6.3-183: SRS-TPC-CommandConfig

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
SRS-TPC-CommandConfig ::= SEQUENCE {			
FFS			
}			

– *SSB-Index*

Table 4.6.3-184: SSB-Index

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
SSB-Index	Set according to Table 4.4.2-2 for the NR Cell		

– *SSB-MTC*

Table 4.6.3-185: SSB-MTC

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
SSB-MTC ::= SEQUENCE {			
periodicityAndOffset CHOICE {			
sf20	0		
	10		SIG AND INTER-FREQ_ODD
}			
duration	sf2		FR1
	sf3		FR2
}			

Condition	Explanation
INTER-FREQ_ODD	When the (SFNoffset of inter frequency neighbour cell - SFNoffset of serving cell) is odd number. SFNoffset is defined in TS 38.523-3 [23] Table 7.1.5.2-1

Table 4.6.3-186: SSB-MTC2

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
SSB-MTC2 ::= SEQUENCE {			
FFS			
}			

SSB-PositionQCL-Relation

Table 4.6.3-186A: SSB-PositionQCL-Relation

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
SSB-PositionQCL-Relation-r16	n1		

SSB-ToMeasure

Table 4.6.3-187: SSB-ToMeasure

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
SSB-ToMeasure ::= CHOICE {			
shortBitmap	1100		FR1 AND (1.88GHz<FREQ<=3GHz AND (FDD OR (TDD AND SCS15)) OR FREQ<=1.88GHz)
mediumBitmap	11000000		FR1 AND (1.88GHz<FREQ<=3GHz AND (TDD AND SCS30) OR FREQ>3GHz)
longBitmap	11000000 00000000 00000000 00000000 00000000 00000000 00000000 00000000		FR2
}			

Condition	Explanation
FREQ<=1.88GHz	Frequency range <= 1.88GHz
1.88GHz<FREQ<=3GHz	Frequency range > 1.88GHz and <= 3GHz
FREQ>3GHz	Frequency range > 3GHz

SS-RSSI-Measurement

Table 4.6.3-187A: SS-RSSI-Measurement

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
SS-RSSI-Measurement ::= SEQUENCE {			
FFS			
}			

SubcarrierSpacing

Table 4.6.3-188: SubcarrierSpacing

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition

SubcarrierSpacing	According to clause 6.2.3 for signalling test cases and clause 4.3.1 otherwise.		

– *T-Reselection*

Table 4.6.3-188AA: *T-Reselection*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
T-Reselection	0		

– *SubsequentCondReconfig*

Table 4.6.3-188A: *SubsequentCondReconfig*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
SubsequentCondReconfig-r18 ::= SEQUENCE {			
condExecutionCondToReleaseList-r18	Not present		
condExecutionCondToAddModList-r18 SEQUENCE (SIZE (1.. maxNrofCondCells-r16)) OF CondExecutionCondToAddMod-r18 {	1 entry		
CondExecutionCondToAddMod-r18[1] SEQUENCE {		entry 1	
subsequentCondReconfigId-r18	CondReconfigId		
subsequentCondExecutionCond-r18 SEQUENCE (SIZE (1..2)) OF MeasId {	1 entry		SCEC
MeasId[1]	1	entry 1	
}			
subsequentCondExecutionCondSCG-r18	CondReconfigExecCond SCG	OCTET STRING (CONTAINING CondReconfigExecCondSCG-r17)	SCECS
}			
}			

Condition	Explanation
SCEC	Subsequent execution of a conditional reconfiguration for SN initiated intra-SN subsequent CPAC without MN involvement
SCECS	subsequent execution of a conditional reconfiguration for SN initiated inter-SN subsequent CPAC, SN initiated intra-SN subsequent CPAC with MN involvement, or MN initiated subsequent CPAC

– *TAG-Config*

Table 4.6.3-189: *TAG-Config*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
TAG-Config ::= SEQUENCE {			
tag-ToReleaseList	Not present		
tag-ToAddModList SEQUENCE (SIZE (1..maxNrofTAGs)) OF TAG {	1 entry		
TAG[1] SEQUENCE {		entry 1	
tag-Id	0		
timeAlignmentTimer	infinity		
}			

}			
}			

– *TAR-Config*

Table 4.6.3-189AA: *TAR-Config*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
TAR-Config-r17 ::= SEQUENCE {			
FFS			
}			

– *TCI-ActivatedConfig*

Table 4.6.3-189A: *TCI-ActivatedConfig*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
TCI-ActivatedConfig-r17 ::= SEQUENCE {			
FFS			
}			

– *TCI-State*

Table 4.6.3-190: *TCI-State*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
TCI-State ::= SEQUENCE {			
tci-StateId	TCI-StateId		
qcl-Type1 SEQUENCE {			
cell	Not present		
bwp-Id	Not present		
referenceSignal CHOICE {			
ssb	SSB-Index		
}			
qcl-Type	typeD		
}			
qcl-Type2	Not present		
additionalPCI-r17	Not present		
pathlossReferenceRS-Id-r17	Not present		
	PathlossReferenceRS-Id		Joint
ul-powerControl-r17	Not present		
tag-Id-ptr-r18	Not present		
	n0		2TA
}			

Condition	Explanation
Joint	Serving cell is configured with unifiedTCI-StateType set to 'joint'
2TA	The tag2 is present for the serving cell

– *TCI-StateId***Table 4.6.3-191: TCI-StateId**

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
TCI-StateId	0		

– *TCI-UL-State***Table 4.6.3-191A: TCI-UL-State**

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
TCI-UL-State-r17 ::= SEQUENCE {			
tci-UL-StateId-r17	TCI-UL-StateId		
servingCellId-r17	Not present		
bwp-Id-r17	Not present		
referenceSignal-r17 CHOICE {			
ssb-Index-r17	SSB-Index		
}			
additionalPCI-r17	Not present		
ul-powerControl-r17	Not present		
pathlossReferenceRS-Id-r17	PathlossReferenceRS-Id		
tag-Id-ptr-r18	Not present		
	n0		2TA
}			

Condition	Explanation
2TA	The tag2 is present for the serving cell

– *TCI-UL-StateId***Table 4.6.3-191B: TCI-UL-StateId**

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
TCI-UL-State-Id-r17	0		

– *TDD-UL-DL-ConfigCommon***Table 4.6.3-192: TDD-UL-DL-ConfigCommon**

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
TDD-UL-DL-ConfigCommon ::= SEQUENCE {			
referenceSubcarrierSpacing	SubcarrierSpacing		
pattern1 SEQUENCE {			
dl-UL-TransmissionPeriodicity	ms5		FR1
	ms0p625		SIG AND FR2
	ms2		RF AND FR2
nrofDownlinkSlots	7		(FR1 AND SCS30) OR (RF AND FR2 AND SCS120)

	3		(FR1 AND SCS15) OR (FR2 AND SCS60) OR (SIG AND FR2 AND SCS120)
	14		FR1 AND SCS60
nrofDownlinkSymbols	6		FR1 AND SCS30
	10		(FR1 AND SCS15) OR (SIG AND FR2 AND (SCS60 OR SCS120))
	12		(FR1 AND SCS60) OR (RF AND FR2 AND SCS120)
	4		RF AND FR2 AND SCS60
nrofUplinkSlots	2		FR1 AND SCS30
	1		(FR1 AND SCS15) OR (SIG AND FR2 AND (SCS60 OR SCS120))
	4		(FR1 AND SCS60) OR ((RF AND FR2 AND SCS60)
	8		RF AND FR2 AND SCS120
nrofUplinkSymbols	4		(FR1 AND SCS30) OR (RF AND FR2 AND SCS60)
	2		(FR1 AND SCS15) OR (SIG AND FR2 AND (SCS60 OR SCS120))
	8		FR1 AND SCS60
	0		RF AND FR2 AND SCS120
}			
pattern2	Not present		
}			

– *TDD-UL-DL-ConfigDedicated*

Table 4.6.3-192A: *TDD-UL-DL-ConfigDedicated*

Derivation Path: TS 38.331 [6], clause 6.3.2

Information Element	Value/remark	Comment	Condition
TDD-UL-DL-ConfigDedicated ::= SEQUENCE {			
FFS			
}			

– *ThresholdP-LR*

Table 4.6.3-192B: *ThresholdP-LR*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
ThresholdP-LR-r19	FFS		

– *ThresholdQ-LR*

Table 4.6.3-192C: *ThresholdQ-LR*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
ThresholdQ-LR-r19	FFS		

Table 4.6.3-193: Void

Table 4.6.3-194: Void

– *TimeAlignmentTimer*

Table 4.6.3-194A: *TimeAlignmentTimer*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
TimeAlignmentTimer	FFS		

– *TimeToTrigger*

Table 4.6.3-195: *TimeToTrigger*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
TimeToTrigger	ms320		

– *TN-Areald*

Table 4.6.3-195A: *TN-Areald*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
TN-Areald-r18	1		

– *TrackingAreaCode*

Table 4.6.3-195B: *TrackingAreaCode*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
TrackingAreaCode	See table 4.4.2-3	BIT STRING (SIZE (24))	

– *UAC-BarringInfoSetIndex*

Table 4.6.3-196: *UAC-BarringInfoSetIndex*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
UAC-BarringInfoSetIndex	FFS		

– *UAC-BarringInfoSetList*

Table 4.6.3-197: *UAC-BarringInfoSetList*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
UAC-BarringInfoSetList	FFS		

– *UAC-BarringPerCatList*

Table 4.6.3-198: *UAC-BarringPerCatList*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
UAC-BarringPerCatList	FFS		

– *UAC-BarringPerPLMN-List*

Table 4.6.3-199: *UAC-BarringPerPLMN-List*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
UAC-BarringPerPLMN-List	FFS		

– *UE-TimersAndConstants*

Table 4.6.3-200: *UE-TimersAndConstants*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
UE-TimersAndConstants ::= SEQUENCE {			
t300	ms1000		
	ms2000		GSO
t301	ms1000		
t310	ms1000		
n310	n1		
t311	ms30000		
n311	n1		
t319	ms1000		

	ms2000		GSO
}			

Condition	Explanation
GSO	Geosynchronous Orbit Scenario

– *UE-TimersAndConstantsRemoteUE*

Table 4.6.3-200AA: *UE-TimersAndConstantsRemoteUE*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
UE-TimersAndConstantsRemoteUE-r17 ::= SEQUENCE {			
FFS			
}			

– *UL-DelayValueConfig*

Table 4.6.3-200A: *UL-DelayValueConfig*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
UL-DelayValueConfig-r16 ::= SEQUENCE {			
delay-DRBlist	Set according to specific message content		
}			

– *UL-ExcessDelayConfig*

Table 4.6.3-200BA: *UL-ExcessDelayConfig*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
UL-ExcessDelayConfig-r17 ::= SEQUENCE {			
FFS			
}			

– *UL-GapFR2-Config*

Table 4.6.3-200BB: *UE UL-GapFR2-Config*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
UL-GapFR2-Config-r17 ::= SEQUENCE {			
gapOffset-r17	0		
ugl-r17	ms1		
ugrp-r17	ms40		
refFR2ServCellAsyncCA-r17	Not Present		
refFR2ServCellAsyncCA-r17 CHOICE {			AsyncCA
setup	0	Optional ServCellIndex with condition AsyncCA	
}			

Condition	Explanation
AsyncCA	Used only when configuring the FR2 UL gap pattern to UE in NGEN-DC, NR, EN-DC, NE-DC or NR-DC without FR2-FR2 band combination, with asynchronous CA involving FR2 carriers. Otherwise, it is absent.

– UplinkCancellation

Table 4.6.3-200B: UplinkCancellation

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
UplinkCancellation-r16 ::= SEQUENCE {			
FFS			
}			

– UplinkConfigCommon

Table 4.6.3-201: UplinkConfigCommon

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
UplinkConfigCommon ::= SEQUENCE {			
frequencyInfoUL	FrequencyInfoUL		
initialUplinkBWP	BWP-UplinkCommon		
timeAlignmentTimerCommon	infinity		
}			

– UplinkConfigCommonSIB

Table 4.6.3-202: UplinkConfigCommonSIB

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
UplinkConfigCommonSIB SEQUENCE {			
frequencyInfoUL	FrequencyInfoUL-SIB		
initialUplinkBWP	BWP-UplinkCommon		
	BWP-UplinkCommon with confition SUL_SUL		SUL_SUL
timeAlignmentTimerCommon	infinity		
}			

Condition	Explanation
SUL_SUL	On the SUL carrier when supplementary carrier is configured

– Uplink-PowerControl

Table 4.6.3-202A: Uplink-PowerControl

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
Uplink-PowerControl-r17 ::= SEQUENCE {			
ul-powercontrolId-r17	1		
p0AlphaSetForPUSCH-r17 SEQUENCE {			
p0-r17	0		
alpha-r17	alpha08		
closedLoopIndex-r17	i0		
}			

p0AlphaSetforPUCCH-r17 SEQUENCE {			
p0-r17	0		
alpha-r17	Not present		
closedLoopIndex-17	i0		
}			
p0AlphaSetforSRS-r17 SEQUENCE {			
p0-r17	0		
alpha-r17	alpha08		
closedLoopIndex-17	i0		
}			
}			

– *Uu-RelayRLC-ChannelConfig*

Table 4.6.3-202B: Uu-RelayRLC-ChannelConfig

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
Uu-RelayRLC-ChannelConfig-r17 ::= SEQUENCE {			
uu-LogicalChannelIdentity-r17	LogicalChannelIdentity with condition uuRelaySRBn		uuRelaySRBn
	LogicalChannelIdentity with condition uuRelayDRBn		uuRelayDRBn
uu-RelayRLC-ChannelID-r17	Uu-RelayRLC-ChannelID with condition uuRelaySRBn		uuRelaySRBn
	Uu-RelayRLC-ChannelID with condition uuRelayDRBn		uuRelayDRBn
reestablishRLC-r17	true		
rlc-Config-r17	RLC-Config with condition AM		
mac-LogicalChannelConfig-r17	LogicalChannelConfig with condition uuRelaySRBn		uuRelaySRBn
	LogicalChannelConfig with condition uuRelayDRBn		uuRelayDRBn
}			

Condition	Explanation
uuRelaySRBn	Establishment of Uu RelayRLC Channel for SRBn; n=0..3
uuRelayDRBn	Establishment of Uu RelayRLC Channel for DRBn; n=1..16

– *Uu-RelayRLC-ChannelID*

Table 4.6.3-202C: Uu-RelayRLC-ChannelID

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
Uu-RelayRLC-ChannelID-r17	n+1		uuRelaySRBn
	n+4		uuRelayDRBn

Condition	Explanation
uuRelaySRBn	Establishment of Uu RelayRLC Channel for SRBn; n=0..3
uuRelayDRBn	Establishment of Uu RelayRLC Channel for DRBn; n=1..16

– *UplinkTxDirectCurrentList*

Table 4.6.3-203: *UplinkTxDirectCurrentList*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
UplinkTxDirectCurrentList ::= SEQUENCE (SIZE (1..maxNrofServingCells)) OF UplinkTxDirectCurrentCell {	1 entry		
UplinkTxDirectCurrentCell[1] SEQUENCE {		entry 1	
FFS			
}			
}			

– *UplinkTxDirectCurrentMoreCarrierList*

Table 4.6.3-203A: *UplinkTxDirectCurrentMoreCarrierList*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
UplinkTxDirectCurrentMoreCarrierList-r17 ::= SEQUENCE (SIZE (1..maxNrofCC-Group-r17)) OF CC-Group-r17 {			
FFS			
}			

– *UplinkTxDirectCurrentTwoCarrierList*

Table 4.6.3-203B: *UplinkTxDirectCurrentTwoCarrierList*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
UplinkTxDirectCurrentTwoCarrierList-r16 ::= SEQUENCE (SIZE (1..maxNrofTxDC-TwoCarrier-r16)) OF UplinkTxDirectCurrentTwoCarrier-r16 {			
FFS			
}			

– *ZP-CSI-RS-Resource*

Table 4.6.3-204: *ZP-CSI-RS-Resource*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
ZP-CSI-RS-Resource ::= SEQUENCE {			
zp-CSI-RS-ResourceId	ZP-CSI-RS-ResourceId		
resourceMapping	CSI-RS-ResourceMapping		
periodicityAndOffset	CSI-ResourcePeriodicityAndOffset		
}			

– *ZP-CSI-RS-ResourceId*

Table 4.6.3-204A: *ZP-CSI-RS-ResourceId*

Derivation Path: TS 38.331 [6], clause 6.3.2

Information Element	Value/remark	Comment	Condition
ZP-CSI-RS-ResourceId	0		

– *ZP-CSI-RS-ResourceSet*

Table 4.6.3-205: ZP-CSI-RS-ResourceSet

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
ZP-CSI-RS-ResourceSet ::= SEQUENCE {			
zp-CSI-RS-ResourceSetId	ZP-CSI-RS-ResourceSetId		
zp-CSI-RS-ResourceIdList SEQUENCE (SIZE(1..maxNrofZP-CSI-RS-ResourcesPerSet)) OF ZP-CSI-RS-ResourceId {	1 entry		
ZP-CSI-RS-ResourceId[1]	FFS	entry 1	
}			
}			

– *ZP-CSI-RS-ResourceSetId*

Table 4.6.3-206: ZP-CSI-RS-ResourceSetId

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
ZP-CSI-RS-ResourceSetId	0		

4.6.4 UE capability information elements

– *AccessStratumRelease*

Table 4.6.4-1: AccessStratumRelease

Derivation Path: TS 38.331 [6], clause 6.3.3			
Information Element	Value/remark	Comment	Condition
AccessStratumRelease	Same as indicated in TC applicability in TS 38.523-2 [19]		

– *AerialParameters*

Table 4.6.4-1AA: AerialParameters

Derivation Path: TS 38.331 [6], clause 6.3.3			
Information Element	Value/remark	Comment	Condition
AerialParameters-r18 ::= SEQUENCE {			
FFS			
}			

– *AIML-Parameters*

Table 4.6.4-1AB: AIML-Parameters

Derivation Path: TS 38.331 [6], clause 6.3.3			
Information Element	Value/remark	Comment	Condition
AIML-Parameters-r19 ::= SEQUENCE {			

FFS			
}			

– *AppLayerMeasParameters*

Table 4.6.4-1A: AppLayerMeasParameters

Derivation Path: TS 38.331 [6], clause 6.3.3			
Information Element	Value/remark	Comment	Condition
AppLayerMeasParameters-r17 ::= SEQUENCE {			
qoe-Streaming-MeasReport-r17	Not checked		
qoe-MTSI-MeasReport-r17	Not checked		
qoe-VR-MeasReport-r17	Not checked		
ran-VisibleQoE-Streaming-MeasReport-r17	Not checked		
ran-VisibleQoE-VR-MeasReport-r17	Not checked		
ul-MeasurementReportAppLayer-Seg-r17	Not checked		
}			

– *BandCombinationList*

Table 4.6.4-2: BandCombinationList

Derivation Path: TS 38.331 [6], clause 6.3.3			
Information Element	Value/remark	Comment	Condition
BandCombinationList ::= SEQUENCE (SIZE (1..maxBandComb)) OF BandCombination {	At least 1 entry		
BandCombination[1] SEQUENCE {		entry 1	
bandList SEQUENCE (SIZE (1..maxSimultaneousBands)) OF BandParameters {	1 entry		
BandParameters[1] CHOICE {		entry 1	
eutra SEQUENCE {			
bandEUTRA	FreqBandIndicatorEUTRA		
ca-BandwidthClassDL-EUTRA	Not checked		
ca-BandwidthClassUL-EUTRA	Not checked		
}			
nr SEQUENCE {			
bandNR	FreqBandIndicatorNR		
ca-BandwidthClassDL-NR	Not checked		
ca-BandwidthClassUL-NR	Not checked		
}			
}			
}			
featureSetCombination	Not checked		
ca-ParametersEUTRA	Not checked		
ca-ParametersNR	Not checked		
mrdc-Parameters	Not checked		
supportedBandwidthCombinationSet	BIT STRING (SIZE (1..32))		
powerClass-v1530	Not Checked		
}			
}			

– *BandCombinationListSidelinkEUTRA-NR*

Table 4.6.4-2A: BandCombinationListSidelinkEUTRA-NR

Derivation Path: TS 38.331 [6], clause 6.3.3			
Information Element	Value/remark	Comment	Condition

BandParametersSidelinkEUTRA-NR-r16 ::= SEQUENCE {			
FFS			
}			

– *CA-BandwidthClassEUTRA*

Table 4.6.4-3: CA-BandwidthClassEUTRA

Derivation Path: TS 38.331 [6], clause 6.3.3			
Information Element	Value/remark	Comment	Condition
CA-BandwidthClassEUTRA	Not checked		

– *CA-BandwidthClassNR*

Table 4.6.4-4: CA-BandwidthClassNR

Derivation Path: TS 38.331 [6], clause 6.3.3			
Information Element	Value/remark	Comment	Condition
CA-BandwidthClassNR	Not checked		

– *CA-ParametersEUTRA*

Table 4.6.4-5: CA- ParametersEUTRA

Derivation Path: TS 38.331 [6], clause 6.3.3			
Information Element	Value/remark	Comment	Condition
CA-ParametersEUTRA ::= SEQUENCE {			
multipleTimingAdvance	Not checked		
simultaneousRx-Tx	Not checked		
supportedNAICS-2CRS-AP	Not checked		
additionalRx-Tx-PerformanceReq	Not checked		
ue-CA-PowerClass-N	Not checked		
supportedBandwidthCombinationSetEUTRA-v1530	Not checked		
}			

– *CA-ParametersNR*

Table 4.6.4-6: CA- ParametersNR

Derivation Path: TS 38.331 [6], clause 6.3.3			
Information Element	Value/remark	Comment	Condition
CA-ParametersNR ::= SEQUENCE {			
dummy	Not checked		
parallelTxSRS-PUCCH-PUSCH	Not checked		
parallelTxPRACH-SRS-PUCCH-PUSCH	Not checked		
simultaneousRxTxInterBandCA	Not checked		
simultaneousRxTxSUL	Not checked		
diffNumerologyAcrossPUCCH-Group	Not checked		
diffNumerologyWithinPUCCH-GroupSmallerSCS	Not checked		
supportedNumberTAG	Not checked		
}			

– *CA-ParametersNRDC*

Table 4.6.4-6AA: CA- ParametersNRDC

Derivation Path: TS 38.331 [6], clause 6.3.3			
Information Element	Value/remark	Comment	Condition
CA-ParametersNRDC ::= SEQUENCE {			
ca-ParametersNR-ForDC	Not checked		
ca-ParametersNR-ForDC-v1540	Not checked		
ca-ParametersNR-ForDC-v1550	Not checked		
ca-ParametersNR-ForDC-v1560	Not checked		
featureSetCombinationDC	Not checked		
}			

– *CarrierAggregationVariant*

Table 4.6.4-6AB: CarrierAggregationVariant

Derivation Path: TS 38.331 [6], clause 6.3.3			
Information Element	Value/remark	Comment	Condition
CarrierAggregationVariant ::= SEQUENCE {			
FFS			
}			

– *CodebookParameters*

Table 4.6.4-6A: CodebookParameters

Derivation Path: TS 38.331 [6], clause 6.3.3			
Information Element	Value/remark	Comment	Condition
CodebookParameters ::= SEQUENCE {			
type1 SEQUENCE {			
singlePanel SEQUENCE {			
supportedCSI-RS-ResourceList SEQUENCE (SIZE (1.. maxNrofCSI-RS-Resources)) OF SupportedCSI-RS-Resource {	1 entry		
SupportedCSI-RS-Resource[1] SEQUENCE {		entry 1	
maxNumberTxPortsPerResource	Not checked		
maxNumberResourcesPerBand	Not checked		
totalNumberTxPortsPerBand	Not checked		
}			
}			
modes	Not checked		
maxNumberCSI-RS-PerResourceSet	Not checked		
}			
multiPanel SEQUENCE {			
supportedCSI-RS-ResourceList SEQUENCE (SIZE (1.. maxNrofCSI-RS-Resources)) OF SupportedCSI-RS-Resource {	1 entry		
SupportedCSI-RS-Resource[1] SEQUENCE {		entry 1	
maxNumberTxPortsPerResource	Not checked		
maxNumberResourcesPerBand	Not checked		
totalNumberTxPortsPerBand	Not checked		
}			
}			
modes	Not checked		
nrofPanels	Not checked		
maxNumberCSI-RS-PerResourceSet	Not checked		
}			
}			
type2 SEQUENCE {			

supportedCSI-RS-ResourceList SEQUENCE (SIZE (1.. maxNrofCSI-RS-Resources)) OF SupportedCSI-RS-Resource {	1 entry		
SupportedCSI-RS-Resource[1] SEQUENCE {		entry 1	
maxNumberTxPortsPerResource	Not checked		
maxNumberResourcesPerBand	Not checked		
totalNumberTxPortsPerBand	Not checked		
}			
}			
parameterLx	Not checked		
amplitudeScalingType	Not checked		
amplitudeSubsetRestriction	Not checked		
}			
type2-PortSelection SEQUENCE {			
supportedCSI-RS-ResourceList SEQUENCE (SIZE (1.. maxNrofCSI-RS-Resources)) OF SupportedCSI-RS-Resource {	1 entry		
SupportedCSI-RS-Resource[1] SEQUENCE {		entry 1	
maxNumberTxPortsPerResource	Not checked		
maxNumberResourcesPerBand	Not checked		
totalNumberTxPortsPerBand	Not checked		
}			
}			
parameterLx	Not checked		
amplitudeScalingType	Not checked		
}			
}			

– *DL-PRS-MeasurementWithRxFH-RRC-Connected*

Table 4.6.4-6B: DL-PRS-MeasurementWithRxFH-RRC-Connected

Derivation Path: TS 38.331 [6], clause 6.3.3			
Information Element	Value/remark	Comment	Condition
DL-PRS-MeasurementWithRxFH-RRC-Connected-r18 ::= SEQUENCE {			
FFS			
}			

– *ERedCapParameters*

Table 4.6.4-6C: ERedCapParameters

Derivation Path: TS 38.331 [6], clause 6.3.3			
Information Element	Value/remark	Comment	Condition
ERedCapParameters-r18 ::= SEQUENCE {			
FFS			
}			

– *FeatureSetCombination*

Table 4.6.4-7: FeatureSetCombination

Derivation Path: TS 38.331 [6], clause 6.3.3			
Information Element	Value/remark	Comment	Condition
FeatureSetCombination ::= SEQUENCE (SIZE (1..maxSimultaneousBands)) OF FeatureSetsPerBand {	1 entry		
FeatureSetsPerBand[1] SEQUENCE (SIZE (1..maxFeatureSetsPerBand)) OF FeatureSet {	1 entry	entry 1	

FeatureSet[1] CHOICE {		entry 1	
nr SEQUENCE {			
downlinkSetNR	Not checked		
uplinkSetNR	Not checked		
}			
}			
}			
}			

– *FeatureSetCombinationId*

Table 4.6.4-8: FeatureSetCombinationId

Derivation Path: TS 38.331 [6], clause 6.3.3			
Information Element	Value/remark	Comment	Condition
FeatureSetCombinationId	Not checked		

– *FeatureSetDownlink*

Table 4.6.4-9: FeatureSetDownlink

Derivation Path: TS 38.331 [6], clause 6.3.3			
Information Element	Value/remark	Comment	Condition
FeatureSetDownlink ::= SEQUENCE {			
featureSetListPerDownlinkCC SEQUENCE (SIZE (1..maxNrofServingCells)) OF FeatureSetDownlinkPerCC-Id {	1 entry		
FeatureSetDownlinkPerCC-Id[1]	Not checked	entry 1	
}			
intraBandFreqSeparationDL	FreqSeparationClass		
scalingFactor	Not checked		
crossCarrierSchedulingDL-OtherSCS	Not checked		
sCellWithoutSSB	Not checked		
csi-RS-MeasSCellWithoutSSB	Not checked		
dummy1	Not checked		
type1-3-CSS	Not checked		
pdcchMonitoringAnyOccasions	Not checked		
dummy2	Not checked		
ue-SpecificUL-DL-Assignment	Not checked		
searchSpaceSharingCA-DL	Not checked		
timeDurationForQCL SEQUENCE {			
scs-60kHz	Not checked		
scsh-120kHz	Not checked		
}			
pdsch- ProcessingType1-DifferentTB-PerSlot SEQUENCE {			
scs-15kHz	Not checked		
scs-30kHz	Not checked		
scs-60kHz	Not checked		
scs-120kHz	Not checked		
}			
dummy3	Not checked		
dummy4	Not checked		
dummy5	Not checked		
dummy6	Not checked		
dummy7	Not checked		
}			

– *FeatureSetDownlinkId***Table 4.6.4-10: FeatureSetDownlinkId**

Derivation Path: TS 38.331 [6], clause 6.3.3			
Information Element	Value/remark	Comment	Condition
FeatureSetDownlinkId	Not checked		

– *FeatureSetDownlinkPerCC***Table 4.6.4-11: FeatureSetDownlinkPerCC**

Derivation Path: TS 38.331 [6], clause 6.3.3			
Information Element	Value/remark	Comment	Condition
FeatureSetDownlinkPerCC ::= SEQUENCE {			
supportedSubcarrierSpacingDL	Not checked		
supportedBandwidthDL	SupportedBandwidth		
channelBW-90mhz	Not checked		
maxNumberMIMO-LayersPDSCH	MIMO-LayersDL		
supportedModulationOrderDL	ModulationOrder		
}			

– *FeatureSetDownlinkPerCC-Id***Table 4.6.4-12: FeatureSetDownlinkPerCC-Id**

Derivation Path: TS 38.331 [6], clause 6.3.3			
Information Element	Value/remark	Comment	Condition
FeatureSetDownlinkPerCC-Id	Not checked		

– *FeatureSetEUTRA-DownlinkId***Table 4.6.4-13: FeatureSetEUTRA-DownlinkId**

Derivation Path: TS 38.331 [6], clause 6.3.3			
Information Element	Value/remark	Comment	Condition
FeatureSetEUTRA-DownlinkId	Not checked		

– *FeatureSetEUTRA-UplinkId***Table 4.6.4-14: FeatureSetEUTRA-UplinkId**

Derivation Path: TS 38.331 [6], clause 6.3.3			
Information Element	Value/remark	Comment	Condition
FeatureSetEUTRA-UplinkId	Not checked		

– *FeatureSets***Table 4.6.4-15: FeatureSets**

Derivation Path: TS 38.331 [6], clause 6.3.3			
Information Element	Value/remark	Comment	Condition
FeatureSets ::= SEQUENCE {			
featureSetsDownlink SEQUENCE (SIZE (1..maxDownlinkFeatureSets)) OF FeatureSetDownlink {	1 entry		

FeatureSetDownlink[1]	FeatureSetDownlink	entry 1	
}			
featureSetsDownlinkPerCC SEQUENCE (SIZE (1..maxPerCC-FeatureSets)) OF FeatureSetDownlinkPerCC {	1 entry		
FeatureSetDownlinkPerCC[1]	FeatureSetDownlinkPerCC	entry 1	
}			
featureSetsUplink SEQUENCE (SIZE (1..maxUplinkFeatureSets)) OF FeatureSetUplink {	1 entry		
FeatureSetUplink[1]	FeatureSetUplink	entry 1	
}			
featureSetsUplinkPerCC SEQUENCE (SIZE (1..maxPerCC-FeatureSets)) OF FeatureSetUplinkPerCC {	1 entry		
FeatureSetUplinkPerCC[1]	FeatureSetUplinkPerCC	entry 1	
}			
}			

FeatureSetUplink

Table 4.6.4-16: FeatureSetUplink

Derivation Path: TS 38.331 [6], clause 6.3.3			
Information Element	Value/remark	Comment	Condition
FeatureSetUplink ::= SEQUENCE {			
featureSetListPerUplinkCC SEQUENCE (SIZE (1..maxNrofServingCells)) OF FeatureSetUplinkPerCC-Id {	1 entry		
FeatureSetUplinkPerCC-Id[1]	Not checked	entry 1	
}			
scalingFactor	Not checked		
crossCarrierSchedulingUL-OtherSCS	Not checked		
intraBandFreqSeparationUL	FreqSeparationClass		
searchSpaceSharingCA-UL	Not checked		
dummy1	Not checked		
supportedSRS-Resources SEQUENCE {			
maxNumberAperiodicSRS-PerBWP	Not Checked		
maxNumberAperiodicSRS-PerBWP-PerSlot	Not Checked		
maxNumberPeriodicSRS-PerBWP	Not Checked		
maxNumberPeriodicSRS-PerBWP-PerSlot	Not Checked		
maxNumberSemiPersistentSRS-PerBWP	Not Checked		
maxNumberSemiPersistentSRS-PerBWP-PerSlot	Not Checked		
maxNumberSRS-Ports-PerResource	Not Checked		
}			
twoPUCCH-Group	Not checked		
dynamicSwitchSUL	Not checked		
pusch- ProcessingType1-DifferentTB-PerSlot SEQUENCE {			
scs-15kHz	Not checked		
scs-30kHz	Not checked		
scs-60kHz	Not checked		
scs-120kHz	Not checked		
}			
dummy2	Not checked		
}			

FeatureSetUplinkId

Table 4.6.4-17: FeatureSetUplinkId

Derivation Path: TS 38.331 [6], clause 6.3.3

Information Element	Value/remark	Comment	Condition
FeatureSetUplinkId	Not checked		

– *FeatureSetUplinkPerCC*

Table 4.6.4-18: FeatureSetUplinkPerCC

Derivation Path: TS 38.331 [6], clause 6.3.3			
Information Element	Value/remark	Comment	Condition
FeatureSetUplinkPerCC ::= SEQUENCE {			
supportedSubcarrierSpacingUL	Not checked		
supportedBandwidthUL	SupportedBandwidth		
channelBW-90mhz	Not checked		
mimo-CB-PUSCH SEQUENCE {			
maxNumberMIMO-LayersCB-PUSCH	MIMO-LayersUL		
maxNumberSRS-ResourcePerSet	Not checked		
}			
maxNumberMIMO-LayersNonCB-PUSCH	MIMO-LayersUL		
supportedModulationOrderUL	ModulationOrder		
}			

– *FeatureSetUplinkPerCC-Id*

Table 4.6.4-19: FeatureSetUplinkPerCC-Id

Derivation Path: TS 38.331 [6], clause 6.3.3			
Information Element	Value/remark	Comment	Condition
FeatureSetUplinkPerCC-Id	Not checked		

– *FreqBandIndicatorEUTRA*

Table 4.6.4-20: FreqBandIndicatorEUTRA

Derivation Path: TS 38.331 [6], clause 6.3.3			
Information Element	Value/remark	Comment	Condition
FreqBandIndicatorEUTRA	EUTRA Operating band under test		

– *FreqBandList*

Table 4.6.4-21: FreqBandList

Derivation Path: TS 38.331 [6], clause 6.3.3			
Information Element	Value/remark	Comment	Condition
FreqBandList ::= SEQUENCE (SIZE (1..maxBandsMRDC)) OF FreqBandInformation {	Number of entries depends on the conditions		
FreqBandInformation[1] CHOICE {		entry 1	EN-DC, NE-DC
bandInformationEUTRA SEQUENCE {			
bandEUTRA	FreqBandIndicatorEUTRA		
ca-BandwidthClassDL-EUTRA	Not checked		
ca-BandwidthClassUL-EUTRA	Not checked		
}			
}			
FreqBandInformation[2] CHOICE {		entry 2	
bandInformationNR SEQUENCE {			
bandNR	FreqBandIndicatorNR		

maxBandwidthRequestedDL	Not checked		
maxBandwidthRequestedUL	Not checked		
maxCarriersRequestedDL	Not checked		
maxCarriersRequestedUL	Not checked		
}			
}			
FreqBandInformation[3] CHOICE {		entry 3	EN-DC AND CA- InterBand
bandInformationNR SEQUENCE {			
bandNR	FreqBandIndicatorNR with condition CA- InterBand		
maxBandwidthRequestedDL	Not checked		
maxBandwidthRequestedUL	Not checked		
maxCarriersRequestedDL	Not checked		
maxCarriersRequestedUL	Not checked		
}			
}			
FreqBandInformation[1] CHOICE {		entry 1	NR
bandInformationNR SEQUENCE {			
bandNR	FreqBandIndicatorNR		
maxBandwidthRequestedDL	Not checked		
maxBandwidthRequestedUL	Not checked		
maxCarriersRequestedDL	Not checked		
maxCarriersRequestedUL	Not checked		
}			
}			
FreqBandInformation[2] CHOICE {		entry 2	NR AND CA- InterBand
bandInformationNR SEQUENCE {			
bandNR	FreqBandIndicatorNR with condition CA- InterBand		
maxBandwidthRequestedDL	Not checked		
maxBandwidthRequestedUL	Not checked		
maxCarriersRequestedDL	Not checked		
maxCarriersRequestedUL	Not checked		
}			
}			
FreqBandInformation[2] CHOICE {		entry 2	NR-DC
bandInformationNR SEQUENCE {			
bandNR	FreqBandIndicatorNR with condition NR-DC- SecondaryBand		
maxBandwidthRequestedDL	Not checked		
maxBandwidthRequestedUL	Not checked		
maxCarriersRequestedDL	Not checked		
maxCarriersRequestedUL	Not checked		
}			
}			
}			

Condition	Explanation
EN-DC	E-UTRA-NR Dual Connectivity with E-UTRA connected to EPC
CA-InterBand	Used in NR CA Inter-band test cases
NR	NG-RAN NR Radio Access
NR-DC	NR-NR Dual Connectivity
NE-DC	NR E-UTRA Dual Connectivity

– *FreqSeparationClass***Table 4.6.4-22: FreqSeparationClass**

Derivation Path: TS 38.331 [6], clause 6.3.3			
Information Element	Value/remark	Comment	Condition
FreqSeparationClass	Not checked		

– *FreqSeparationClassDL-Only***Table 4.6.4-22A: FreqSeparationClassDL-Only**

Derivation Path: TS 38.331 [6], clause 6.3.3			
Information Element	Value/remark	Comment	Condition
FreqSeparationClassDL-Only-r16	FFS		

– *FR2-2-AccessParamsPerBand***Table 4.6.4-22BA: FR2-2-AccessParamsPerBand**

Derivation Path: TS 38.331 [6], clause 6.3.3			
Information Element	Value/remark	Comment	Condition
FR2-2-AccessParamsPerBand-r17 ::= SEQUENCE {			
FFS			
}			

– *HighSpeedParameters***Table 4.6.4-22B: HighSpeedParameters**

Derivation Path: TS 38.331 [6], clause 6.3.3			
Information Element	Value/remark	Comment	Condition
HighSpeedParameters-r16 ::= SEQUENCE {			
FFS			
}			

– *IMS-Parameters***Table 4.6.4-23: IMS-Parameters**

Derivation Path: TS 38.331 [6], clause 6.3.3			
Information Element	Value/remark	Comment	Condition
IMS-Parameters ::= SEQUENCE {			
ims-ParametersCommon SEQUENCE {			
voiceOverEUTRA-5GC	Not Checked		
}			
ims-ParametersFRX-Diff SEQUENCE {			
voiceOverNR	Not Checked		
}			
}			

– *InterRAT-Parameters***Table 4.6.4-24: InterRAT-Parameters**

Derivation Path: TS 38.331 [6], clause 6.3.3			

Information Element	Value/remark	Comment	Condition
InterRAT-Parameters ::= SEQUENCE {			
eutra SEQUENCE {			
supportedBandListEUTRA SEQUENCE (SIZE (1..maxBandsEUTRA)) OF FreqBandIndicatorEUTRA {	1 entry		
FreqBandIndicatorEUTRA[1]	FreqBandIndicatorEUTRA	entry 1	
}			
eutra-ParametersCommon SEQUENCE {			
mfbi-EUTRA	Not Checked		
modifiedMPR-BehaviorEUTRA	Not Checked		
multiNS-Pmax-EUTRA	Not Checked		
rs-SINR-MeasEUTRA	Not Checked		
ne-DC	Not Checked		
nr-HO-ToEN-DC-r16	Not Checked		>=Rel16
}			
eutra-ParametersXDD-Diff SEQUENCE {			
rsrqMeasWidebandEUTRA	Not Checked		
}			
}			

MAC-Parameters

Table 4.6.4-25: MAC-Parameters

Derivation Path: TS 38.331 [6], clause 6.3.3			
Information Element	Value/remark	Comment	Condition
MAC-Parameters ::= SEQUENCE {			
mac-ParametersCommon SEQUENCE {			
lcp-Restriction	Not checked		
dummy	Not checked		
lch-ToSCellRestriction	Not checked		
}			
mac-ParametersXDD-Diff SEQUENCE {			
skipUplinkTxDynamic	Not checked		
logicalChannelSR-DelayTimer	Not checked		
longDRX-Cycle	Not checked		
shortDRX-Cycle	Not checked		
multipleSR-Configurations	Not checked		
multipleConfiguredGrants	Not checked		
}			
}			

MeasAndMobParameters

Table 4.6.4-26: MeasAndMobParameters

Derivation Path: TS 38.331 [6], clause 6.3.3			
Information Element	Value/remark	Comment	Condition
MeasAndMobParameters ::= SEQUENCE {			
measAndMobParametersCommon SEQUENCE {			
supportedGapPattern	Not checked		
ssb-RLM	Not checked		
ssb-AndCSI-RS-RLM	Not checked		
eutra-CGI-Reporting	Not checked		
nr-CGI-Reporting	Not checked		
nr-CGI-Reporting-ENDC	Not checked		
eutra-CGI-Reporting-NEDC	Not checked		
eutra-CGI-Reporting-NRDC	Not checked		
nr-CGI-Reporting-NEDC	Not checked		

nr-CGI-Reporting-NRDC	Not checked		
}			
measAndMobParametersXDD-Diff SEQUENCE {			
intraAndInterF-MeasAndReport	Not checked		
eventA-MeasAndReport	Not checked		
}			
MeasAndMobParametersFRX-Diff SEQUENCE {			
ss-SINR-Meas	Not checked		
csi-RSRP-AndRSRQ-MeasWithSSB	Not checked		
csi-RSRP-AndRSRQ-MeasWithoutSSB	Not checked		
csi-SINR-Meas	Not checked		
csi-RS-RLM	Not checked		
}			
}			

– *MeasAndMobParametersMRDC*

Table 4.6.4-27: MeasAndMobParametersMRDC

Derivation Path: TS 38.331 [6], clause 6.3.3			
Information Element	Value/remark	Comment	Condition
MeasAndMobParametersMRDC ::= SEQUENCE {			
measAndMobParametersMRDC-Common SEQUENCE			
{			
independentGapConfig	Not checked		
}			
measAndMobParametersMRDC-XDD-Diff SEQUENCE			
{			
sftd-MeasPSCell	Not checked		
sftd-MeasNR-Cell	Not checked		
}			
measAndMobParametersMRDC-FRX-Diff SEQUENCE			
{			
simultaneousRxDataSSB-DiffNumerology	Not checked		
}			
}			

– *MIMO-Layers*

Table 4.6.4-28: MIMO-Layers

Derivation Path: TS 38.331 [6], clause 6.3.3			
Information Element	Value/remark	Comment	Condition
MIMO-LayersDL	Not checked		
MIMO-LayersUL	Not checked		

– *MIMO-ParametersPerBand*

Table 4.6.4-29: MIMO-ParametersPerBand

Derivation Path: TS 38.331 [6], clause 6.3.3			
Information Element	Value/remark	Comment	Condition
MIMO-ParametersPerBand ::= SEQUENCE {			
tci-StatePDSCH SEQUENCE {			
maxNumberConfiguredTCIstatesPerCC	Not checked		
maxNumberActiveTCI-PerBWP	Not checked		
}			
additionalActiveTCI-StatePDCCH	Not checked		
pusch-TransCoherence	Not checked		
beamCorrespondenceWithoutUL-BeamSweeping	Not checked		

periodicBeamReport	Not checked		
aperiodicBeamReport	Not checked		
sp-BeamReportPUCCH	Not checked		
sp-BeamReportPUSCH	Not checked		
dummy1	Not checked		
maxNumberRxBeam	Not checked		
maxNumberRxTxBeamSwitchDL SEQUENCE {			
scs-15kHz	Not checked		
scs-30kHz	Not checked		
scs-60kHz	Not checked		
scs-120kHz	Not checked		
scs-240kHz	Not checked		
}			
maxNumberNonGroupBeamReporting	Not checked		
groupBeamReporting	Not checked		
uplinkBeamManagement SEQUENCE {			
maxNumberSRS-ResourcePerSet	Not checked		
maxNumberSRS-ResourceSet	Not checked		
}			
maxNumberCSI-RS-BFD	Not checked		
maxNumbeSSB-BFD	Not checked		
maxNumberCSI-RS-SSB-CBD	Not checked		
dummy2	Not checked		
twoPortsPTRS-UL	Not checked		
dummy5	Not checked		
dummy3	Not checked		
beamReportTiming SEQUENCE {			
scs-15kHz	Not checked		
scs-30kHz	Not checked		
scs-60kHz	Not checked		
scs-120kHz	Not checked		
}			
ptrs-DensityRecommendationSetDL SEQUENCE {			
scs-15kHz			
frequencyDensity1	Not checked		
frequencyDensity2	Not checked		
timeDensity1	Not checked		
timeDensity2	Not checked		
timeDensity3	Not checked		
}			
scs-30kHz			
frequencyDensity1	Not checked		
frequencyDensity2	Not checked		
timeDensity1	Not checked		
timeDensity2	Not checked		
timeDensity3	Not checked		
}			
scs-60kHz			
frequencyDensity1	Not checked		
frequencyDensity2	Not checked		
timeDensity1	Not checked		
timeDensity2	Not checked		
timeDensity3	Not checked		
}			
scs-120kHz			
frequencyDensity1	Not checked		
frequencyDensity2	Not checked		
timeDensity1	Not checked		
timeDensity2	Not checked		
timeDensity3	Not checked		
}			
}			
ptrs-DensityRecommendationSetUL SEQUENCE {			
scs-15kHz SEQUENCE {			
frequencyDensity1	Not checked		

frequencyDensity2	Not checked		
timeDensity1	Not checked		
timeDensity2	Not checked		
timeDensity3	Not checked		
sampleDensity1	Not checked		
sampleDensity2	Not checked		
sampleDensity3	Not checked		
sampleDensity4	Not checked		
sampleDensity5	Not checked		
}			
scs-30kHz SEQUENCE {			
frequencyDensity1	Not checked		
frequencyDensity2	Not checked		
timeDensity1	Not checked		
timeDensity2	Not checked		
timeDensity3	Not checked		
sampleDensity1	Not checked		
sampleDensity2	Not checked		
sampleDensity3	Not checked		
sampleDensity4	Not checked		
sampleDensity5	Not checked		
scs-60kHz SEQUENCE {			
frequencyDensity1	Not checked		
frequencyDensity2	Not checked		
timeDensity1	Not checked		
timeDensity2	Not checked		
timeDensity3	Not checked		
sampleDensity1	Not checked		
sampleDensity2	Not checked		
sampleDensity3	Not checked		
sampleDensity4	Not checked		
sampleDensity5	Not checked		
scs-120kHz SEQUENCE {			
frequencyDensity1	Not checked		
frequencyDensity2	Not checked		
timeDensity1	Not checked		
timeDensity2	Not checked		
timeDensity3	Not checked		
sampleDensity1	Not checked		
sampleDensity2	Not checked		
sampleDensity3	Not checked		
sampleDensity4	Not checked		
sampleDensity5	Not checked		
}			
dummy4	Not checked		
aperiodicTRS	Not checked		
}			

– *ModulationOrder*

Table 4.6.4-30: ModulationOrder

Derivation Path: TS 38.331 [6], clause 6.3.3			
Information Element	Value/remark	Comment	Condition
ModulationOrder	Not checked		

– *MRDC-Parameters*

Table 4.6.4-31: MRDC-Parameters

Derivation Path: TS 38.331 [6], clause 6.3.3			
Information Element	Value/remark	Comment	Condition

MRDC-Parameters ::= SEQUENCE {			
singleUL-Transmission	Not checked		
dynamicPowerSharingENDC	Not checked		
tdm-Pattern	Not checked		
ul-SharingEUTRA-NR	Not checked		
ul-SwitchingTimeEUTRA-NR	Not checked		
simultaneousRxTxInterBandENDC	Not checked		
asyncIntraBandENDC	Not checked		
}			

– *NCR-Parameters*

Table 4.6.4-31AA: NCR-Parameters

Derivation Path: TS 38.331 [6], clause 6.3.3			
Information Element	Value/remark	Comment	Condition
NCR-Parameters-r18 ::= SEQUENCE {			
FFS			
}			

– *NRDC-Parameters*

Table 4.6.4-31A: NRDC-Parameters

Derivation Path: TS 38.331 [6], clause 6.3.3			
Information Element	Value/remark	Comment	Condition
NRDC-Parameters ::= SEQUENCE {			
measAndMobParametersNRDC	Not checked		
generalParametersNRDC SEQUENCE {			
splitSRB-WithOneUL-Path	Not checked		
splitDRB-withUL-Both-MCG-SCG	Not checked		
srb3	Not checked		
dummy	Not checked		
}			
fdd-Add-UE-NRDC-Capabilities SEQUENCE {			
measAndMobParametersMRDC-XDD-Diff SEQUENCE {			
sftd-MeasPSCell	Not checked		
sftd-MeasNR-Cell	Not checked		
}			
generalParametersMRDC-XDD-Diff SEQUENCE {			
splitSRB-WithOneUL-Path	Not checked		
splitDRB-withUL-Both-MCG-SCG	Not checked		
srb3	Not checked		
dummy	Not checked		
}			
tdd-Add-UE-NRDC-Capabilities SEQUENCE {			
measAndMobParametersMRDC-XDD-Diff SEQUENCE {			
sftd-MeasPSCell	Not checked		
sftd-MeasNR-Cell	Not checked		
}			
generalParametersMRDC-XDD-Diff SEQUENCE {			
splitSRB-WithOneUL-Path	Not checked		
splitDRB-withUL-Both-MCG-SCG	Not checked		
srb3	Not checked		
dummy	Not checked		
}			
}			
fr1-Add-UE-NRDC-Capabilities SEQUENCE {	UE-MRDC-CapabilityAddFRX-Mode		

measAndMobParametersMRDC-FRX-Diff SEQUENCE {			
simultaneousRxDataSSB-DiffNumerology	Not checked		
}			
}			
fr2-Add-UE-NRDC-Capabilities SEQUENCE {			
measAndMobParametersMRDC-FRX-Diff SEQUENCE {			
simultaneousRxDataSSB-DiffNumerology	Not checked		
}			
}			
dummy2	Not checked		
dummy	Not checked		
}			

– *NTN-Parameters*

Table 4.6.4-31BA: NTN-Parameters

Derivation Path: TS 38.331 [6], clause 6.3.3			
Information Element	Value/remark	Comment	Condition
NTN-Parameters-r17 ::= SEQUENCE {			
inactiveStateNTN-r17	Not checked		
ra-SDT-NTN-r17	Not checked		
srb-SDT-NTN-r17	Not checked		
measAndMobParametersNTN-r17	Not checked		
mac-ParametersNTN-r17	Not checked		
phy-ParametersNTN-r17	Not checked		
fdd-Add-UE-NR-CapabilitiesNTN-r17 SEQUENCE {			
phy-ParametersXDD-Diff SEQUENCE {			
dynamicSFI	Not checked		
twoPUCCH-F0-2-ConsecSymbols	Not checked		
twoDifferentTPC-Loop-PUSCH	Not checked		
twoDifferentTPC-Loop-PUCCH	Not checked		
}			
mac-ParametersXDD-Diff SEQUENCE {			
skipUplinkTxDynamic	Not checked		
logicalChannelSR-DelayTimer	Not checked		
longDRX-Cycle	Not checked		
shortDRX-Cycle	Not checked		
multipleSR-Configurations	Not checked		
multipleConfiguredGrants	Not checked		
}			
measAndMobParametersXDD-Diff SEQUENCE {			
intraAndInterF-MeasAndReport	Not checked		
eventA-MeasAndReport	Not checked		
}			
}			
fr1-Add-UE-NR-CapabilitiesNTN-r17 SEQUENCE {			
phy-ParametersFRX-Diff SEQUENCE {			
dynamicSFI	Not checked		
dummy1	Not checked		
twoFL-DMRS	Not checked		
dummy2	Not checked		
dummy3	Not checked		
supportedDMRS-TypeDL	Not checked		
supportedDMRS-TypeUL	Not checked		
semiOpenLoopCSI	Not checked		
csi-ReportWithoutPMI	Not checked		
csi-ReportWithoutCQI	Not checked		
onePortsPTRS	Not checked		
twoPUCCH-F0-2-ConsecSymbols	Not checked		
pucch-F2-WithFH	Not checked		
pucch-F3-WithFH	Not checked		

pucch-F4-WithFH	Not checked		
pucch-F0-2WithoutFH	Not checked		
pucch-F1-3-4WithoutFH	Not checked		
mux-SR-HARQ-ACK-CSI-PUCCH-MultiPerSlot	Not checked		
uci-CodeBlockSegmentation	Not checked		
onePUCCH-LongAndShortFormat	Not checked		
twoPUCCH-AnyOthersInSlot	Not checked		
intraSlotFreqHopping-PUSCH	Not checked		
pusch-LBRM	Not checked		
pdcch-BlindDetectionCA	Not checked		
tpc-PUSCH-RNTI	Not checked		
tpc-PUCCH-RNTI	Not checked		
tpc-SRS-RNTI	Not checked		
absoluteTPC-Command	Not checked		
twoDifferentTPC-Loop-PUSCH	Not checked		
twoDifferentTPC-Loop-PUCCH	Not checked		
pusch-HalfPi-BPSK	Not checked		
pucch-F3-4-HalfPi-BPSK	Not checked		
almostContiguousCP-OFDM-UL	Not checked		
sp-CSI-RS	Not checked		
sp-CSI-IM	Not checked		
tdd-MultiDL-UL-SwitchPerSlot	Not checked		
multipleCORESET	Not checked		
}			
measAndMobParametersFRX-Diff SEQUENCE {			
ss-SINR-Meas	Not checked		
csi-RSRP-AndRSRQ-MeasWithSSB	Not checked		
csi-RSRP-AndRSRQ-MeasWithoutSSB	Not checked		
csi-SINR-Meas	Not checked		
csi-RS-RLM	Not checked		
}			
}			
ue-BasedPerfMeas-ParametersNTN-r17	Not checked		
son-ParametersNTN-r17	Not checked		
}			

– *OLPC-SRS-Pos*

Table 4.6.4-31B: OLPC-SRS-Pos

Derivation Path: TS 38.331 [6], clause 6.3.3			
Information Element	Value/remark	Comment	Condition
OLPC-SRS-Pos-r16 ::= SEQUENCE {			
FFS			
}			

– *PDCCH-RACH-DL-Info*

Table 4.6.4-31C: PDCCH-RACH-DL-Info

Derivation Path: TS 38.331 [6], clause 6.3.3			
Information Element	Value/remark	Comment	Condition
PDCCH-RACH-DL-Info-r18 ::= SEQUENCE {			
FFS			
}			

– *PDCCP-Parameters*

Table 4.6.4-32: *PDCCP-Parameters*

Derivation Path: TS 38.331 [6], clause 6.3.3			
Information Element	Value/remark	Comment	Condition
PDCCP-Parameters ::= SEQUENCE {			
supportedROHC-Profiles SEQUENCE {			
profile0x0000	Not checked		
profile0x0001	Not checked		
profile0x0002	Not checked		
profile0x0003	Not checked		
profile0x0004	Not checked		
profile0x0006	Not checked		
profile0x0101	Not checked		
profile0x0102	Not checked		
profile0x0103	Not checked		
profile0x0104	Not checked		
}			
maxNumberROHC-ContextSessions	Not checked		
uplinkOnlyROHC-Profiles	Not checked		
continueROHC-Context	Not checked		
outOfOrderDelivery	Not checked		
shortSN	Not checked		
pdcp-DuplicationSRB	Not checked		
pdcp-DuplicationMCG-OrSCG-DRB	Not checked		
}			

– *PDCCP-ParametersMRDC*

Table 4.6.4-33: *PDCCP-ParametersMRDC*

Derivation Path: TS 38.331 [6], clause 6.3.3			
Information Element	Value/remark	Comment	Condition
PDCCP-ParametersMRDC ::= SEQUENCE {			
pdcp-DuplicationSplitSRB	Not checked		
pdcp-DuplicationSplitDRB	Not checked		
}			

– *Phy-Parameters*

Table 4.6.4-34: *Phy-Parameters*

Derivation Path: TS 38.331 [6], clause 6.3.3			
Information Element	Value/remark	Comment	Condition
Phy-Parameters ::= SEQUENCE {			
phy-ParametersCommon SEQUENCE {			
csi-RS-CFRA-ForHO	Not checked		
dynamicPRB-BundlingDL	Not checked		
sp-CSI-ReportPUCCH	Not checked		
sp-CSI-ReportPUSCH	Not checked		
nzp-CSI-RS-IntefMgmt	Not checked		
type2-SP-CSI-Feedback-LongPUCCH	Not checked		
precoderGranularityCORESET	Not checked		
dynamicHARQ-ACK-Codebook	Not checked		
semiStaticHARQ-ACK-Codebook	Not checked		
spatialBundlingHARQ-ACK	Not checked		
dynamicBetaOffsetInd-HARQ-ACK-CSI	Not checked		
pucch-Repetition-F1-3-4	Not checked		
ra-Type0-PUSCH	Not checked		
dynamicSwitchRA-Type0-1-PDSCH	Not checked		
dynamicSwitchRA-Type0-1-PUSCH	Not checked		

pdsch-MappingTypeA	Not checked		
pdsch-MappingTypeB	Not checked		
interleavingVRB-ToPRB-PDSCH	Not checked		
interSlotFreqHopping-PUSCH	Not checked		
type1-PUSCH-RepetitionMultiSlots	Not checked		
type2-PUSCH-RepetitionMultiSlots	Not checked		
pusch-RepetitionMultiSlots	Not checked		
pdsch-RepetitionMultiSlots	Not checked		
downlinkSPS	Not checked		
configuredUL-GrantType1	Not checked		
configuredUL-GrantType2	Not checked		
pre-EmptIndication-DL	Not checked		
cbg-TransIndication-DL	Not checked		
cbg-TransIndication-UL	Not checked		
cbg-FlushIndication-DL	Not checked		
dynamicHARQ-ACK-CodeB-CBG-Retx-DL	Not checked		
rateMatchingResrcSetSemi-Static	Not checked		
rateMatchingResrcSetDynamic	Not checked		
bwp-SwitchingDelay	Not checked		
}			
phy-ParametersXDD-Diff SEQUENCE {			
dynamicSFI	Not checked		
twoPUCCH-F0-2-ConsecSymbols	Not checked		
twoDifferentTPC-Loop-PUSCH	Not checked		
twoDifferentTPC-Loop-PUCCH	Not checked		
}			
phy-ParametersFRX-Diff SEQUENCE {			
dynamicSFI	Not checked		
dummy1	Not checked		
twoFL-DMRS	Not checked		
dummy2	Not checked		
dummy3	Not checked		
supportedDMRS-TypeDL	Not checked		
supportedDMRS-TypeUL	Not checked		
semiOpenLoopCSI	Not checked		
csi-ReportWithoutPMI	Not checked		
csi-ReportWithoutCQI	Not checked		
onePortsPTRS	Not checked		
twoPUCCH-F0-2-ConsecSymbols	Not checked		
pucch-F2-WithFH	Not checked		
pucch-F3-WithFH	Not checked		
pucch-F4-WithFH	Not checked		
freqHoppingPUCCH-F0-2	Not checked		
freqHoppingPUCCH-F1-3-4	Not checked		
mux-SR-HARQ-ACK-CSI-PUCCH- MultiPerSlot	Not checked		
uci-CodeBlockSegmentation	Not checked		
onePUCCH-LongAndShortFormat	Not checked		
twoPUCCH-AnyOthersInSlot	Not checked		
intraSlotFreqHopping-PUSCH	Not checked		
pusch-LBRM	Not checked		
pdcch-BlindDetectionCA	Not checked		
tpc-PUSCH-RNTI	Not checked		
tpc-PUCCH-RNTI	Not checked		
tpc-SRS-RNTI	Not checked		
absoluteTPC-Command	Not checked		
twoDifferentTPC-Loop-PUSCH	Not checked		
twoDifferentTPC-Loop-PUCCH	Not checked		
pusch-HalfPi-BPSK	Not checked		
pucch-F3-4-HalfPi-BPSK	Not checked		
almostContiguousCP-OFDM-UL	Not checked		
sp-CSI-RS	Not checked		
sp-CSI-IM	Not checked		
tdd-MultiDL-UL-SwitchPerSlot	Not checked		
multipleCORESET	Not checked		
}			

phy-ParametersFR1 SEQUENCE {			
pdccchMonitoringSingleOccasion	Not checked		
scs-60kHz	Not checked		
pdsch-256QAM-FR1	Not checked		
pdsch-RE-MappingFR1- PerSymbol	Not checked		
}			
phy-ParametersFR2 SEQUENCE {			
dummy	Not checked		
pdsch-RE-MappingFR2- PerSymbol	Not checked		
}			
}			

Phy-ParametersMRDC

Table 4.6.4-35: Phy-ParametersMRDC

Derivation Path: TS 38.331 [6], clause 6.3.3			
Information Element	Value/remark	Comment	Condition
Phy-ParametersMRDC ::= SEQUENCE {			
naics-Capability-List SEQUENCE (SIZE (1..maxNrofNAICS-Entries)) OF NAICS-Capability-Entry {	1 entry		
NAICS-Capability-Entry[1] SEQUENCE {		entry 1	
numberOfNAICS-CapableCC	Not checked		
numberOfAggregatedPRB	Not checked		
}			
}			

Phy-ParametersSharedSpectrumChAccess

Table 4.6.4-35AA: Phy-ParametersSharedSpectrumChAccess

Derivation Path: TS 38.331 [6], clause 6.3.3			
Information Element	Value/remark	Comment	Condition
Phy-ParametersSharedSpectrumChAccess-r16 ::= SEQUENCE {			
FFS			
ss-SINR-Meas-r16			
sp-CSI-ReportPUCCH-r16	Not checked		
sp-CSI-ReportPUSCH-r16	Not checked		
dynamicSFI-r16	Not checked		
mux-SR-HARQ-ACK-CSI-PUCCH-OncePerSlot-r16 SEQUENCE {			
sameSymbol-r16	Not checked		
diffSymbol-r16	Not checked		
}	Not checked		
mux-SR-HARQ-ACK-PUCCH-r16	Not checked		
mux-SR-HARQ-ACK-CSI-PUCCH-MultiPerSlot-r16	Not checked		
mux-HARQ-ACK-PUSCH-DiffSymbol-r16	Not checked		
pucch-Repetition-F1-3-4-r16	Not checked		
type1-PUSCH-RepetitionMultiSlots-r16	Not checked		
type2-PUSCH-RepetitionMultiSlots-r16	Not checked		
pusch-RepetitionMultiSlots-r16	Not checked		
pdsch-RepetitionMultiSlots-r16	Not checked		
downlinkSPS-r16	Not checked		
configuredUL-GrantType1-r16	Not checked		
configuredUL-GrantType2-r16	Not checked		
pre-EmptIndication-DL-r16	Not checked		
}			

– *PosSRS-BWA-RRC-Inactive***Table 4.6.4-35ABA: *PosSRS-BWA-RRC-Inactive***

Derivation Path: TS 38.331 [6], clause 6.3.3			
Information Element	Value/remark	Comment	Condition
PosSRS-BWA-RRC-Inactive-r18 ::= SEQUENCE {			
FFS			
}			

– *PosSRS-RRC-Inactive-OutsideInitialUL-BWP***Table 4.6.4-35AB: *PosSRS-RRC-Inactive-OutsideInitialUL-BWP***

Derivation Path: TS 38.331 [6], clause 6.3.3			
Information Element	Value/remark	Comment	Condition
PosSRS-RRC-Inactive-OutsideInitialUL-BWP-r17 ::= SEQUENCE {			
FFS			
}			

– *PosSRS-TxFrequencyHoppingRRC-Connected***Table 4.6.4-35AC: *PosSRS-TxFrequencyHoppingRRC-Connected***

Derivation Path: TS 38.331 [6], clause 6.3.3			
Information Element	Value/remark	Comment	Condition
PosSRS-TxFrequencyHoppingRRC-Connected-r18 ::= SEQUENCE {			
FFS			
}			

– *PosSRS-TxFrequencyHoppingRRC-ConnectedNonRedCap***Table 4.6.4-35ADA: *PosSRS-TxFrequencyHoppingRRC-ConnectedNonRedCap***

Derivation Path: TS 38.331 [6], clause 6.3.3			
Information Element	Value/remark	Comment	Condition
PosSRS-TxFrequencyHoppingRRC-ConnectedNonRedCap-r19 ::= SEQUENCE {			
FFS			
}			

– *PosSRS-TxFrequencyHoppingRRC-Inactive***Table 4.6.4-35AD: *PosSRS-TxFrequencyHoppingRRC-Inactive***

Derivation Path: TS 38.331 [6], clause 6.3.3			
Information Element	Value/remark	Comment	Condition
PosSRS-TxFrequencyHoppingRRC-Inactive-r18 ::= SEQUENCE {			
FFS			
}			

– *PosSRS-TxFrequencyHoppingRRC-InactiveNonRedCap*

Table 4.6.4-35AE: *PosSRS-TxFrequencyHoppingRRC-InactiveNonRedCap*

Derivation Path: TS 38.331 [6], clause 6.3.3			
Information Element	Value/remark	Comment	Condition
PosSRS-TxFrequencyHoppingRRC-InactiveNonRedCap-r19 ::= SEQUENCE {			
FFS			
}			

– *PowSav-Parameters*

Table 4.6.4-35A: *PowSav-Parameters*

Derivation Path: TS 38.331 [6], clause 6.3.3			
Information Element	Value/remark	Comment	Condition
PowSav-Parameters-r16 ::= SEQUENCE {			
FFS			
}			

– *ProcessingParameters*

Table 4.6.4-36: *ProcessingParameters*

Derivation Path: TS 38.331 [6], clause 6.3.3			
Information Element	Value/remark	Comment	Condition
ProcessingParameters ::= SEQUENCE {			
fallback	Not checked		
differentTB-PerSlot SEQUENCE {			
upto1	Not checked		
upto2	Not checked		
upto4	Not checked		
upto7	Not checked		
}			
}			

– *PRS-ProcessingCapabilityOutsideMGinPPWperType*

Table 4.6.4-36A: *PRS-ProcessingCapabilityOutsideMGinPPWperType*

Derivation Path: TS 38.331 [6], clause 6.3.3			
Information Element	Value/remark	Comment	Condition
PRS-ProcessingCapabilityOutsideMGinPPWperType-r17 ::= SEQUENCE {			
FFS			
}			

– *RAT-Type*

Table 4.6.4-37: *RAT-Type*

Derivation Path: TS 38.331 [6], clause 6.3.3			
Information Element	Value/remark	Comment	Condition
RAT-Type	nr		
	eutra-nr		EN-DC, NE-DC

Condition	Explanation
EN-DC	E-UTRA-NR Dual Connectivity with E-UTRA connected to EPC
NE-DC	NR E-UTRA Dual Connectivity

– *RedCapParameters*

Table 4.6.4-37A: RedCapParameters

Derivation Path: TS 38.331 [6], clause 6.3.3			
Information Element	Value/remark	Comment	Condition
RedCapParameters-r17 ::= SEQUENCE {			
FFS			
}			

– *RF-Parameters*

Table 4.6.4-38: RF-Parameters

Derivation Path: TS 38.331 [6], clause 6.3.3			
Information Element	Value/remark	Comment	Condition
RF-Parameters ::= SEQUENCE {			
supportedBandListNR SEQUENCE (SIZE (1..maxBands)) OF BandNR {	At least 1 entry		
BandNR[1] SEQUENCE {		entry 1	
bandNR	FreqBandIndicatorNR with condition NR		
modifiedMPR-Behaviour	Not checked		
mimo-ParametersPerBand	Not checked		
extendedCP	Not checked		
multipleTCI	Not checked		
bwp-WithoutRestriction	Not checked		
bwp-SameNumerology	Not checked		
bwp-DiffNumerology	Not checked		
crossCarrierScheduling-SameSCS	Not checked		
pdsch-256QAM-FR2	Not checked		
pusch-256QAM	Not checked		
ue-PowerClass	Not checked		
rateMatchingLTE-CRS	Not checked		
channelBWs-DL CHOICE {			
fr1 SEQUENCE {			
scs-15kHz	Not checked		
scs-30kHz	Not checked		
scs-60kHz	Not checked		
}			
fr2 SEQUENCE {			
scs-60kHz	Not checked		
scs-120kHz	Not checked		
}			
}			
channelBWs-UL CHOICE {			
fr1 SEQUENCE {			
scs-15kHz	Not checked		
scs-30kHz	Not checked		
scs-60kHz	Not checked		
}			
fr2 SEQUENCE {			
scs-60kHz	Not checked		
scs-120kHz	Not checked		
}			
}			
}			
}			

BandNR[2] SEQUENCE {		entry 2	NR-DC-SecondaryB and NR_CA-InterBand
bandNR	FreqBandIndicatorNR with condition NR-DC-SecondaryBand		NR-DC-SecondaryB and
	FreqBandIndicatorNR with condition NR_CA-InterBand		NR_CA-InterBand
modifiedMPR-Behaviour	Not checked		
mimo-ParametersPerBand	Not checked		
extendedCP	Not checked		
multipleTCI	Not checked		
bwp-WithoutRestriction	Not checked		
bwp-SameNumerology	Not checked		
bwp-DiffNumerology	Not checked		
crossCarrierScheduling-SameSCS	Not checked		
pdsch-256QAM-FR2	Not checked		
pusch-256QAM	Not checked		
ue-PowerClass	Not checked		
rateMatchingLTE-CRS	Not checked		
channelBWs-DL CHOICE {			
fr1 SEQUENCE {			
scs-15kHz	Not checked		
scs-30kHz	Not checked		
scs-60kHz	Not checked		
}			
fr2 SEQUENCE {			
scs-60kHz	Not checked		
scs-120kHz	Not checked		
}			
}			
channelBWs-UL CHOICE {			
fr1 SEQUENCE {			
scs-15kHz	Not checked		
scs-30kHz	Not checked		
scs-60kHz	Not checked		
}			
fr2 SEQUENCE {			
scs-60kHz	Not checked		
scs-120kHz	Not checked		
}			
}			
}			
}			
maxUplinkDutyCycle-PC2-FR1	Not checked		
pucch-SpatialRelInfoMAC-CE	Not checked		
powerBoosting-pi2BPSK	Not checked		
maxUplinkDutyCycle-FR2	Not checked		
channelBWs-DL-v1590	Not checked		
channelBWs-UL-v1590	Not checked		
asymmetricBandwidthCombinationSet	Not checked		
sharedSpectrumChAccessParamsPerBand-r16	Not checked		
cancelOverlappingPUSCH-r16	Not checked		
multipleRateMatchingEUTRA-CRS-r16	Not checked		
overlapRateMatchingEUTRA-CRS-r16	Not checked		
pdsch-MappingTypeB-Alt-r16	Not checked		
oneSlotPeriodicTRS-r16	Not checked		
olpc-SRS-Pos-r16	Not checked		
spatialRelationsSRS-Pos-r16	Not checked		
simulSRS-MIMO-TransWithinBand-r16	Not checked		
channelBW-DL-IAB-r16	Not checked		
channelBW-UL-IAB-r16	Not checked		
rasterShift7dot5-IAB-r16	Not checked		

ue-PowerClass-v1610	Not checked		
condHandover-r16	Not checked		
condHandoverFailure-r16	Not checked		
condHandoverTwoTriggerEvents-r16	Not checked		
condPSCellChange-r16	Not checked		
condPSCellChangeTwoTriggerEvents-r16	Not checked		
mpr-PowerBoost-FR2-r16	Not checked		
activeConfiguredGrant-r16	Not checked		
maxNumberConfigsPerBWP-r16	Not checked		
maxNumberConfigsAllCC-r16	Not checked		
jointReleaseConfiguredGrantType2-r16	Not checked		
sps-r16	Not checked		
maxNumberConfigsPerBWP-r16	Not checked		
maxNumberConfigsAllCC-r16	Not checked		
jointReleaseSPS-r16	Not checked		
simulSRS-TransWithinBand-r16	Not checked		
trs-AdditionalBandwidth-r16	Not checked		
handoverIntraF-IAB-r16	Not checked		
simulTX-SRS-AntSwitchingIntraBandUL-CA-r16	Not checked		
sharedSpectrumChAccessParamsPerBand-v1630	Not checked		
handoverUTRA-FDD-r16	Not checked		
enhancedUL-TransientPeriod-r16	Not checked		
sharedSpectrumChAccessParamsPerBand-v1640	Not checked		
type1-PUSCH-RepetitionMultiSlots-v1650	Not checked		
type2-PUSCH-RepetitionMultiSlots-v1650	Not checked		
pusch-RepetitionMultiSlots-v1650	Not checked		
configuredUL-GrantType1-v1650	Not checked		
configuredUL-GrantType2-v1650	Not checked		
sharedSpectrumChAccessParamsPerBand-v1650	Not checked		
enhancedSkipUplinkTxConfigured-v1660	Not checked		
enhancedSkipUplinkTxDynamic-v1660	Not checked		
maxUplinkDutyCycle-PC1dot5-MPE-FR1-r16	Not checked		
supportedBandCombinationList	Not checked		
appliedFreqBandListFilter	Not present		
	FreqBandList		FILTER_RE QUESTED
}			

Condition	Explanation
FILTER_REQUESTED	This condition shall be set to true when UE is requested to filter the information via 'capabilityRequestFilter' IE in the NR5GC UECapabilityEnquiry message or via 'requestedFreqBandsNR-MRDC' IE in the EN-DC UECapabilityEnquiry message
NR-DC-SecondaryBand	Used in NR-DC test cases
NR_CA-InterBand	NG-RAN NR Radio Access using NR CA Inter-band test cases

RF-ParametersMRDC

Table 4.6.4-39: RF-ParametersMRDC

Derivation Path: TS 38.331 [6], clause 6.3.3			
Information Element	Value/remark	Comment	Condition
RF-ParametersMRDC ::= SEQUENCE {			
supportedBandCombinationList	BandCombinationList		
appliedFreqBandListFilter	FreqBandList with condition EN-DC		EN-DC
	FreqBandList with condition NE-DC		NE-DC
	FreqBandList with condition EN-DC and CA-InterBand		ENDC_CA-InterBand
}			

Condition	Explanation
EN-DC	E-UTRA-NR Dual Connectivity
EN-DC CA-InterBand	E-UTRA-NR Dual Connectivity used in NR CA Inter-band test cases
NE-DC	NR E-UTRA Dual Connectivity

– *RLC-Parameters*

Table 4.6.4-40: RLC-Parameters

Derivation Path: TS 38.331 [6], clause 6.3.3			
Information Element	Value/remark	Comment	Condition
RLC-Parameters ::= SEQUENCE {			
am-WithShortSN	Not checked		
um-WithShortSN	Not checked		
um-WithLongSN	Not checked		
}			

– *SDAP-Parameters*

Table 4.6.4-41: SDAP-Parameters

Derivation Path: TS 38.331 [6], clause 6.3.3			
Information Element	Value/remark	Comment	Condition
SDAP-Parameters ::= SEQUENCE {			
as-ReflectiveQoS	Not checked		
}			

– *SharedSpectrumChAccessParamsPerBand*

Table 4.6.4-41AA: SharedSpectrumChAccessParamsPerBand

Derivation Path: TS 38.331 [6], clause 6.3.3			
Information Element	Value/remark	Comment	Condition
SharedSpectrumChAccessParamsPerBand-r16 ::= SEQUENCE {			
FFS			
}			

– *SharedSpectrumChAccessParamsSidelinkPerBand*

Table 4.6.4-41AB: SharedSpectrumChAccessParamsSidelinkPerBand

Derivation Path: TS 38.331 [6], clause 6.3.3			
Information Element	Value/remark	Comment	Condition
SharedSpectrumChAccessParamsSidelinkPerBand-r18 ::= SEQUENCE {			
FFS			
}			

– *SidelinkParameters*

Table 4.6.4-41A: SidelinkParameters

Derivation Path: TS 38.331 [6], clause 6.3.3			
Information Element	Value/remark	Comment	Condition
SidelinkParameters-r16 ::= SEQUENCE {			
FFS			

}			

– *SimultaneousRxTxPerBandPair*

Table 4.6.4-41BA: *SimultaneousRxTxPerBandPair*

Derivation Path: TS 38.331 [6], clause 6.3.3			
Information Element	Value/remark	Comment	Condition
SimultaneousRxTxPerBandPair	FFS		

– *SON-Parameters*

Table 4.6.4-41B: *SON-Parameters*

Derivation Path: TS 38.331 [6], clause 6.3.3			
Information Element	Value/remark	Comment	Condition
SON-Parameters-r16 ::= SEQUENCE {			
FFS			
}			

– *SpatialRelationsSRS-Pos*

Table 4.6.4-41C: *SpatialRelationsSRS-Pos*

Derivation Path: TS 38.331 [6], clause 6.3.3			
Information Element	Value/remark	Comment	Condition
SpatialRelationsSRS-Pos-r16 ::= SEQUENCE {			
FFS			
}			

– *SRS-AllPosResourcesRRC-Inactive*

Table 4.6.4-41D: *SRS-AllPosResourcesRRC-Inactive*

Derivation Path: TS 38.331 [6], clause 6.3.3			
Information Element	Value/remark	Comment	Condition
SRS-AllPosResourcesRRC-Inactive-r17 ::= SEQUENCE {			
FFS			
}			

– *SRS-SwitchingTimeNR*

Table 4.6.4-42: *SRS-SwitchingTimeNR*

Derivation Path: TS 38.331 [6], clause 6.3.3			
Information Element	Value/remark	Comment	Condition
SRS-SwitchingTimeNR ::= SEQUENCE {			
switchingTimeDL	Not checked		
switchingTimeUL	Not checked		
}			

– *SRS-SwitchingTimeEUTRA*

Table 4.6.4-43: SRS-SwitchingTimeEUTRA

Derivation Path: TS 38.331 [6], clause 6.3.3			
Information Element	Value/remark	Comment	Condition
SRS-SwitchingTimeEUTRA ::= SEQUENCE {			
switchingTimeDL	Not checked		
switchingTimeUL	Not checked		
}			

– *SupportedAggBandwidth*

Table 4.6.4-43A: SupportedAggBandwidth

Derivation Path: TS 38.331 [6], clause 6.3.3			
Information Element	Value/remark	Comment	Condition
SupportedAggBandwidth-r17 ::= CHOICE {			
FFS			
}			

– *SupportedBandwidth*

Table 4.6.4-44: SupportedBandwidth

Derivation Path: TS 38.331 [6], clause 6.3.3			
Information Element	Value/remark	Comment	Condition
SupportedBandwidth ::= CHOICE {			
fr1	Not checked		FR1
fr2	Not checked		FR2
}			

– *UE-BasedPerfMeas-Parameters*

Table 4.6.4-44A: UE-BasedPerfMeas-Parameters

Derivation Path: TS 38.331 [6], clause 6.3.3			
Information Element	Value/remark	Comment	Condition
UE-BasedPerfMeas-Parameters-r16 ::= SEQUENCE {			
FFS			
}			

– *UE-CapabilityRAT-ContainerList*

Table 4.6.4-45: UE-CapabilityRAT-ContainerList

Derivation Path: TS 38.331 [6], clause 6.3.3			
Information Element	Value/remark	Comment	Condition
UE-CapabilityRAT-ContainerList ::= SEQUENCE (SIZE (0.. maxRAT-CapabilityContainers)) OF UE-CapabilityRAT-Container {	n entries		
UE-CapabilityRAT-Container[1] SEQUENCE {		entry 1	
rat-Type	RAT-Type		
ue-CapabilityRAT-Container	UE-NR-Capability with condition NR		
	UE-NR-Capability with condition NR-DC		NR-DC

	UE-NR-Capability with condition NR_CA-InterBand		NR_CA-InterBand
}			
UE-CapabilityRAT-Container[2] SEQUENCE {		entry 2	EN-DC, NE-DC, EN-DC_CA-InterBand
rat-Type	RAT-Type with condition NE-DC		EN-DC NE-DC EN-DC_CA-InterBand
ue-CapabilityRAT-Container	UE-MRDC-Capability with condition EN-DC		
	UE-MRDC-Capability with condition NE-DC		
	UE-MRDC-Capability with condition EN-DC_CA-InterBand		
}			
}			

Condition	Explanation
EN-DC	E-UTRA-NR Dual Connectivity
EN-DC_CA-InterBand	E-UTRA-NR Dual Connectivity using NR CA Inter-band test cases
NE-DC	NR E-UTRA Dual Connectivity
NR_CA-InterBand	NG-RAN NR Radio Access using NR CA Inter-band test cases
NR-DC	Used in NR-DC test cases

– UE-CapabilityRAT-RequestList

Table 4.6.4-46: UE-CapabilityRAT-RequestList

Derivation Path: TS 38.331 [6], clause 6.3.3			
Information Element	Value/remark	Comment	Condition
UE-CapabilityRAT-RequestList ::= SEQUENCE (SIZE (0.. maxRAT-CapabilityContainers)) OF UE-CapabilityRAT-Request {	n entries		
UE-CapabilityRAT-Request[1] SEQUENCE {		entry 1	NR, NR-DC, NR_CA-InterBand
rat-Type	RAT-Type		
capabilityRequestFilter	UE-CapabilityRequestFilterNR with condition NR	OCTET STRING (CONTAINING UE-CapabilityRequestFilterNR)	
	UE-CapabilityRequestFilterNR with condition NR-DC	OCTET STRING (CONTAINING UE-CapabilityRequestFilterNR)	NR-DC
	UE-CapabilityRequestFilterNR with condition NR_CA-InterBand	OCTET STRING (CONTAINING UE-CapabilityRequestFilterNR)	NR_CA-InterBand
}			
UE-CapabilityRAT-Request[1] SEQUENCE {		entry 1	NE-DC, EN-DC, EN-DC_CA-InterBand
rat-Type	RAT-Type with condition NR		
capabilityRequestFilter	UE-CapabilityRequestFilter	OCTET STRING (CONTAINING	

	erNR with condition NR	UE-CapabilityRequestFilterNR)	NE-DC
}			
UE-CapabilityRAT-Request[2] SEQUENCE {		entry 2	
rat-Type	RAT-Type with condition NE-DC		
capabilityRequestFilter	UE-CapabilityRequestFiltererNR with condition NE-DC	OCTET STRING (CONTAINING UE-CapabilityRequestFilterNR)	
}			
UE-CapabilityRAT-Request[2] SEQUENCE {		entry 2	EN-DC, EN-DC_CA-InterBand
rat-Type	RAT-Type with condition EN-DC		
capabilityRequestFilter	UE-CapabilityRequestFiltererNR with condition EN-DC	OCTET STRING (CONTAINING UE-CapabilityRequestFilterNR)	
	UE-CapabilityRequestFiltererNR with condition EN-DC_CA-InterBand		
}			
}			

Condition	Explanation
EN-DC	E-UTRA-NR Dual Connectivity
EN-DC_CA-InterBand	E-UTRA-NR Dual Connectivity using NR CA Inter-band test cases
NR	NG-RAN NR Radio Access
NR-DC	Used in NR-DC test cases
NR_CA-InterBand	NG-RAN NR Radio Access using NR CA Inter-band test cases
NE-DC	NR E-UTRA Dual Connectivity

Table 4.6.4-46AA: *UECapabilityEnquiry-v1560-IEs*

Derivation Path: TS 38.331 [6], clause 6.3.3			
Information Element	Value/remark	Comment	Condition
UECapabilityEnquiry-v1560-IEs ::= SEQUENCE {			
capabilityRequestFilterCommon	UE-CapabilityRequestFilterCommon		
nonCriticalExtension	Not present		
}			

– *UE-CapabilityRequestFilterCommon*

Table 4.6.4-46A: *UE-CapabilityRequestFilterCommon*

Derivation Path: TS 38.331 [6], clause 6.3.3			
Information Element	Value/remark	Comment	Condition
UE-CapabilityRequestFilterCommon ::= SEQUENCE {			
mrdr-Request SEQUENCE {			
omitEN-DC	Not present		
includeNR-DC	Not present		
	true		NR-DC
includeNE-DC	Not present		
}			

}			

Condition	Explanation
NR-DC	Used in NR-DC test cases

– *UE-CapabilityRequestFilterNR*

Table 4.6.4-47: UE-CapabilityRequestFilterNR

Derivation Path: TS 38.331 [6], clause 6.3.3			
Information Element	Value/remark	Comment	Condition
UE-CapabilityRequestFilterNR ::= SEQUENCE {			
frequencyBandListFilter	FreqBandList with condition NR		NR
	FreqBandList with condition EN-DC		EN-DC
	FreqBandList with condition EN-DC AND CA-InterBand		EN-DC_CA-InterBand
	FreqBandList with condition NR AND CA-InterBand		NR_CA-InterBand
	FreqBandList with condition NR and NR-DC		NR-DC
	FreqBandList with condition NR and NE-DC		NE-DC
nonCriticalExtension SEQUENCE {	Not present		
srs-SwitchingTimeRequest	Not present		
nonCriticalExtension SEQUENCE {			
sidelinkRequest-r17	Not present		
nonCriticalExtension	Not present		
}			
}			
}			

Condition	Explanation
EN-DC	E-UTRA-NR Dual Connectivity
EN-DC_CA-InterBand	E-UTRA-NR Dual Connectivity using NR CA Inter-band test cases
NR_CA-InterBand	NG-RAN NR Radio Access using NR CA Inter-band test cases
NR	NG-RAN NR Radio Access
NR-DC	Used in NR-DC test cases
NE-DC	NR E-UTRA Dual Connectivity

– *UE-MRDC-Capability*

Table 4.6.4-48: UE-MRDC-Capability

Derivation Path: TS 38.331 [6], clause 6.3.3			
Information Element	Value/remark	Comment	Condition
UE-MRDC-Capability ::= SEQUENCE {			
measAndMobParametersMRDC	Not checked		
phy-ParametersMRDC-v1530	Not checked		
rf-ParametersMRDC	RF-ParametersMRDC with condition EN-DC		
	RF-ParametersMRDC with condition NE-DC		NE-DC
	RF-ParametersMRDC with condition EN-DC_CA-InterBand		EN-DC_CA-InterBand

generalParametersMRDC SEQUENCE {			
splitSRB-WithOneUL-Path	Not checked		
splitDRB-withUL-Both-MCG-SCG	Not checked		
srb3	Not checked		
dummy	Not checked		
}			
fdd-Add-UE-MRDC-Capabilities SEQUENCE {			
measAndMobParametersMRDC-XDD-Diff SEQUENCE {			
sftd-MeasPSCell	Not checked		
sftd-MeasNR-Cell	Not checked		
}			
generalParametersMRDC-XDD-Diff SEQUENCE {			
splitSRB-WithOneUL-Path	Not checked		
splitDRB-withUL-Both-MCG-SCG	Not checked		
srb3	Not checked		
dummy	Not checked		
}			
}			
tdd-Add-UE-MRDC-Capabilities SEQUENCE {			
measAndMobParametersMRDC-XDD-Diff SEQUENCE {			
sftd-MeasPSCell	Not checked		
sftd-MeasNR-Cell	Not checked		
}			
generalParametersMRDC-XDD-Diff SEQUENCE {			
splitSRB-WithOneUL-Path	Not checked		
splitDRB-withUL-Both-MCG-SCG	Not checked		
srb3	Not checked		
dummy	Not checked		
}			
}			
fr1-Add-UE-MRDC-Capabilities SEQUENCE {			
measAndMobParametersMRDC-FRX-Diff SEQUENCE {			
simultaneousRxDataSSB-DiffNumerology	Not checked		
}			
}			
fr2-Add-UE-MRDC-Capabilities			
measAndMobParametersMRDC-FRX-Diff SEQUENCE {			
simultaneousRxDataSSB-DiffNumerology	Not checked		
}			
}			
featureSetCombinations	Not checked		
pdcp-ParametersMRDC-v1530	Not checked		
lateNonCriticalExtension	Not checked		
nonCriticalExtension SEQUENCE {		UE-MRDC-Capability-v1560	
receivedFilters	Not checked		
measAndMobParametersMRDC-v1560 SEQUENCE {			
measAndMobParametersMRDC-XDD-Diff-v1560 SEQUENCE {			
sftd-MeasPSCell-NEDC	Not checked		
}			
}			
fdd-Add-UE-MRDC-Capabilities-v1560 SEQUENCE {			
measAndMobParametersMRDC-XDD-Diff-v1560 SEQUENCE {			
sftd-MeasPSCell-NEDC	Not checked		
}			
}			
tdd-Add-UE-MRDC-Capabilities-v1560 SEQUENCE {			
measAndMobParametersMRDC-XDD-Diff-v1560 SEQUENCE {			
sftd-MeasPSCell-NEDC	Not checked		

}			
}			
nonCriticalExtension	Not checked		
}			
}			

Condition	Explanation
EN-DC	E-UTRA-NR Dual Connectivity
EN-DC_CA-InterBand	E-UTRA-NR Dual Connectivity used in NR CA Inter-band test cases
NE-DC	NR E-UTRA Dual Connectivity

– *UE-NR-Capability*

Table 4.6.4-49: UE-NR-Capability

Derivation Path: TS 38.331 [6], clause 6.3.3			
Information Element	Value/remark	Comment	Condition
UE-NR-Capability ::= SEQUENCE {			
accessStratumRelease	AccessStratumRelease		
pdcp-Parameters	Not checked		
rlc-Parameters	Not checked		
mac-Parameters	Not checked		
phy-Parameters	Not checked		
rf-Parameters	RF-Parameters		
	RF-Parameters with condition NR-DC		NR-DC
	RF-Parameters with condition NR_CA-InterBand		NR_CA-InterBand
measAndMobParameters	Not checked		
fdd-Add-UE-NR-Capabilities SEQUENCE {			
phy-ParametersXDD-Diff SEQUENCE {			
dynamicSFI	Not checked		
twoPUCCH-F0-2-ConsecSymbols	Not checked		
twoDifferentTPC-Loop-PUSCH	Not checked		
twoDifferentTPC-Loop-PUCCH	Not checked		
}			
mac-ParametersXDD-Diff SEQUENCE {			
skipUplinkTxDynamic	Not checked		
logicalChannelSR-DelayTimer	Not checked		
longDRX-Cycle	Not checked		
shortDRX-Cycle	Not checked		
multipleSR-Configurations	Not checked		
multipleConfiguredGrants	Not checked		
}			
measAndMobParametersXDD-Diff SEQUENCE {			
intraAndInterF-MeasAndReport	Not checked		
eventA-MeasAndReport	Not checked		
}			
}			
tdd-Add-UE-NR-Capabilities SEQUENCE {			
phy-ParametersXDD-Diff SEQUENCE {			
dynamicSFI	Not checked		
twoPUCCH-F0-2-ConsecSymbols	Not checked		
twoDifferentTPC-Loop-PUSCH	Not checked		
twoDifferentTPC-Loop-PUCCH	Not checked		
}			
mac-ParametersXDD-Diff SEQUENCE {			
skipUplinkTxDynamic	Not checked		
logicalChannelSR-DelayTimer	Not checked		
longDRX-Cycle	Not checked		
shortDRX-Cycle	Not checked		

multipleSR-Configurations	Not checked		
multipleConfiguredGrants	Not checked		
}			
measAndMobParametersXDD-Diff SEQUENCE {			
intraAndInterF-MeasAndReport	Not checked		
eventA-MeasAndReport	Not checked		
}			
fr1-Add-UE-NR-Capabilities SEQUENCE {			
phy-ParametersFRX-Diff SEQUENCE {			
dynamicSFI	Not checked		
dummy1	Not checked		
twoFL-DMRS	Not checked		
dummy2	Not checked		
dummy3	Not checked		
supportedDMRS-TypeDL	Not checked		
supportedDMRS-TypeUL	Not checked		
semiOpenLoopCSI	Not checked		
csi-ReportWithoutPMI	Not checked		
csi-ReportWithoutCQI	Not checked		
onePortsPTRS	Not checked		
twoPUCCH-F0-2-ConsecSymbols	Not checked		
pucch-F2-WithFH	Not checked		
pucch-F3-WithFH	Not checked		
pucch-F4-WithFH	Not checked		
pucch-F0-2WithoutFH	Not checked		
pucch-F1-3-4WithoutFH	Not checked		
mux-SR-HARQ-ACK-CSI-PUCCH-MultiPerSlot	Not checked		
uci-CodeBlockSegmentation	Not checked		
onePUCCH-LongAndShortFormat	Not checked		
twoPUCCH-AnyOthersInSlot	Not checked		
intraSlotFreqHopping-PUSCH	Not checked		
pusch-LBRM	Not checked		
pdcch-BlindDetectionCA	Not checked		
tpc-PUSCH-RNTI	Not checked		
tpc-PUCCH-RNTI	Not checked		
tpc-SRS-RNTI	Not checked		
absoluteTPC-Command	Not checked		
twoDifferentTPC-Loop-PUSCH	Not checked		
twoDifferentTPC-Loop-PUCCH	Not checked		
pusch-HalfPi-BPSK	Not checked		
pucch-F3-4-HalfPi-BPSK	Not checked		
almostContiguousCP-OFDM-UL	Not checked		
sp-CSI-RS	Not checked		
sp-CSI-IM	Not checked		
tdd-MultiDL-UL-SwitchPerSlot	Not checked		
multipleCORESET	Not checked		
}			
measAndMobParametersFRX-Diff SEQUENCE {			
ss-SINR-Meas	Not checked		
csi-RSRP-AndRSRQ-MeasWithSSB	Not checked		
csi-RSRP-AndRSRQ-MeasWithoutSSB	Not checked		
csi-SINR-Meas	Not checked		
csi-RS-RLM	Not checked		
}			
}			
fr2-Add-UE-NR-Capabilities SEQUENCE {			
phy-ParametersFRX-Diff SEQUENCE {	Not checked		
dynamicSFI	Not checked		
dummy1	Not checked		
twoFL-DMRS	Not checked		
dummy2	Not checked		
dummy3	Not checked		
supportedDMRS-TypeDL	Not checked		
supportedDMRS-TypeUL	Not checked		
semiOpenLoopCSI	Not checked		

csi-ReportWithoutPMI	Not checked		
csi-ReportWithoutCQI	Not checked		
onePortsPTRS	Not checked		
twoPUCCH-F0-2-ConsecSymbols	Not checked		
pucch-F2-WithFH	Not checked		
pucch-F3-WithFH	Not checked		
pucch-F4-WithFH	Not checked		
pucch-F0-2WithoutFH	Not checked		
pucch-F1-3-4WithoutFH	Not checked		
mux-SR-HARQ-ACK-CSI-PUCCH-MultiPerSlot	Not checked		
uci-CodeBlockSegmentation	Not checked		
onePUCCH-LongAndShortFormat	Not checked		
twoPUCCH-AnyOthersInSlot	Not checked		
intraSlotFreqHopping-PUSCH	Not checked		
pusch-LBRM	Not checked		
pdcch-BlindDetectionCA	Not checked		
tpc-PUSCH-RNTI	Not checked		
tpc-PUCCH-RNTI	Not checked		
tpc-SRS-RNTI	Not checked		
absoluteTPC-Command	Not checked		
twoDifferentTPC-Loop-PUSCH	Not checked		
twoDifferentTPC-Loop-PUCCH	Not checked		
pusch-HalfPi-BPSK	Not checked		
pucch-F3-4-HalfPi-BPSK	Not checked		
almostContiguousCP-OFDM-UL	Not checked		
sp-CSI-RS	Not checked		
sp-CSI-IM	Not checked		
tdd-MultiDL-UL-SwitchPerSlot	Not checked		
multipleCORESET	Not checked		
}			
measAndMobParametersFRX-Diff SEQUENCE {			
ss-SINR-Meas	Not checked		
csi-RSRP-AndRSRQ-MeasWithSSB	Not checked		
csi-RSRP-AndRSRQ-MeasWithoutSSB	Not checked		
csi-SINR-Meas	Not checked		
csi-RS-RLM	Not checked		
}			
}			
featureSets	Not checked		
featureSetCombinations	Not checked		
lateNonCriticalExtension	Not checked		
nonCriticalExtension SEQUENCE {			
fdd-Add-UE-NR-Capabilities-1530 SEQUENCE {			
eutra-ParametersXDD-Diff SEQUENCE {			
rsrqMeasWidebandEUTRA	Not checked		
}			
}			
tdd-Add-UE-NR-Capabilities-v1530 SEQUENCE {			
eutra-ParametersXDD-Diff SEQUENCE {			
rsrqMeasWidebandEUTRA	Not Checked		
}			
}			
dummy	Not checked		
interRAT-Parameters	Not checked		
inactiveState	Not checked		
delayBudgetReporting	Not checked		
nonCriticalExtension SEQUENCE {			
sdap-Parameters	Not checked		
overheatingInd	Not checked		
ims-Parameters	Not checked		
fr1-Add-UE-NR-Capabilities-v1540 SEQUENCE {			
ims-ParametersFRX-Diff SEQUENCE {			
voiceOverNR	Not checked		
}			
}			

fr2-Add-UE-NR-Capabilities-v1540 SEQUENCE {			
ims-ParametersFRX-Diff SEQUENCE {			
voiceOverNR	Not checked		
}			
}			
fr1-fr2-Add-UE-NR-Capabilities SEQUENCE {			
phy-ParametersFRX-Diff SEQUENCE {			
dynamicSFI	Not checked		
dummy1	Not checked		
twoFL-DMRS	Not checked		
dummy2	Not checked		
dummy3	Not checked		
supportedDMRS-TypeDL	Not checked		
supportedDMRS-TypeUL	Not checked		
semiOpenLoopCSI	Not checked		
csi-ReportWithoutPMI	Not checked		
csi-ReportWithoutCQI	Not checked		
onePortsPTRS	Not checked		
twoPUCCH-F0-2-ConsecSymbols	Not checked		
pucch-F2-WithFH	Not checked		
pucch-F3-WithFH	Not checked		
pucch-F4-WithFH	Not checked		
pucch-F0-2WithoutFH	Not checked		
pucch-F1-3-4WithoutFH	Not checked		
mux-SR-HARQ-ACK-CSI-PUCCH-MultiPerSlot	Not checked		
uci-CodeBlockSegmentation	Not checked		
onePUCCH-LongAndShortFormat	Not checked		
twoPUCCH-AnyOthersInSlot	Not checked		
intraSlotFreqHopping-PUSCH	Not checked		
pusch-LBRM	Not checked		
pdcch-BlindDetectionCA	Not checked		
tpc-PUSCH-RNTI	Not checked		
tpc-PUCCH-RNTI	Not checked		
tpc-SRS-RNTI	Not checked		
absoluteTPC-Command	Not checked		
twoDifferentTPC-Loop-PUSCH	Not checked		
twoDifferentTPC-Loop-PUCCH	Not checked		
pusch-HalfPi-BPSK	Not checked		
pucch-F3-4-HalfPi-BPSK	Not checked		
almostContiguousCP-OFDM-UL	Not checked		
sp-CSI-RS	Not checked		
sp-CSI-IM	Not checked		
tdd-MultiDL-UL-SwitchPerSlot	Not checked		
multipleCORESET	Not checked		
}			
measAndMobParametersFRX-Diff SEQUENCE {			
ss-SINR-Meas	Not checked		
csi-RSRP-AndRSRQ-MeasWithSSB	Not checked		
csi-RSRP-AndRSRQ-MeasWithoutSSB	Not checked		
csi-SINR-Meas	Not checked		
csi-RS-RLM	Not checked		
}			
}			
nonCriticalExtension SEQUENCE {	Not checked		
reducedCP-Latency	Not checked		
nonCriticalExtension SEQUENCE {			
nrdc-Parameters	Not checked		
receivedFilters	Not checked		
nonCriticalExtension	Not checked		
}			
}			
}			
}			
}			

Condition	Explanation
NR-DC	Used in NR-DC test cases
NR_CA-InterBand	NG-RAN NR Radio Access using NR CA Inter-band test cases

– *UE-RadioPagingInfo*

Table 4.6.4-49A: UE-RadioPagingInfo

Derivation Path: TS 38.331 [6], clause 6.3.3			
Information Element	Value/remark	Comment	Condition
UE-RadioPagingInfo-r17 ::= SEQUENCE {			
FFS			
}			

Table 4.6.4-50: Void

4.6.5 Other information elements

– *AbsoluteTimeInfo*

Table 4.6.5-0A: AbsoluteTimeInfo

Derivation Path: TS 38.331 [6], clause 6.3.4			
Information Element	Value/remark	Comment	Condition
AbsoluteTimeInfo-r16	FFS		

– *AppLayerIdleInactiveConfig*

Table 4.6.5-0BAA: AppLayerIdleInactiveConfig

Derivation Path: TS 38.331 [6], clause 6.3.4			
Information Element	Value/remark	Comment	Condition
AppLayerIdleInactiveConfig-r18 ::= SEQUENCE {			
FFS			
}			

– *AppLayerMeasConfig*

Table 4.6.5-0BA: AppLayerMeasConfig

Derivation Path: TS 38.331 [6], clause 6.3.4			
Information Element	Value/remark	Comment	Condition
AppLayerMeasConfig-r17 ::= SEQUENCE {			
measConfigAppLayerToAddModList-r17	1 entry		
SEQUENCE (SIZE (1..maxNrofAppLayerMeas-r17))			
OF MeasConfigAppLayer-r17 {			
MeasConfigAppLayer-r17[1] SEQUENCE {		entry 1	
measConfigAppLayerId-r17	MeasConfigAppLayerId-r17		
measConfigAppLayerContainer-r17	OCTET STRING containing configuration of application layer measurements according to clause 4.14.		
serviceType-r17	mtsi		
pauseReporting-r17	Not present		

transmissionOfSessionStartStop-r17	Not present		
ran-VisibleParameters-r17	Not present		
}			
}			
measConfigAppLayerToReleaseList-r17	Not present		
rrc-SegAllowedSRB4-r17	Not present		
}			

– *AreaConfiguration*

Table 4.6.5-0B: AreaConfiguration

Derivation Path: TS 38.331 [6], clause 6.3.4			
Information Element	Value/remark	Comment	Condition
AreaConfiguration-r16 ::= SEQUENCE {			
FFS			
}			

– *BT-NameList*

Table 4.6.5-0C: BT-NameList

Derivation Path: TS 38.331 [6], clause 6.3.4			
Information Element	Value/remark	Comment	Condition
BT-NameList-r16 ::= SEQUENCE (SIZE (1..maxBT-Name-r16)) OF BT-Name-r16 {	1 entry		
BT-Name-r16[1]	Set according to specific message content	OCTET STRING (SIZE (1..248))	
}			

– *DedicatedInfoF1c*

Table 4.6.5-0D: DedicatedInfoF1c

Derivation Path: TS 38.331 [6], clause 6.3.4			
Information Element	Value/remark	Comment	Condition
DedicatedInfoF1c-r17	FFS		

– *EUTRA-AllowedMeasBandwidth*

Table 4.6.5-1: EUTRA-AllowedMeasBandwidth

Derivation Path: TS 38.331 [6], clause 6.3.4			
Information Element	Value/remark	Comment	Condition
EUTRA-AllowedMeasBandwidth	Set according to TS 36.508 [2] Table 4.4.3.4-1 for E-UTRA cell	row 'measurement Bandwidth'	

– *EUTRA-MBSFN-SubframeConfigList*

Table 4.6.5-2: EUTRA-MBSFN-SubframeConfigList

Derivation Path: TS 38.331 [6], clause 6.3.4			
Information Element	Value/remark	Comment	Condition
EUTRA-MBSFN-SubframeConfigList ::= SEQUENCE (SIZE (1..maxMBSFN-Allocations)) OF EUTRA-MBSFN-SubframeConfig {	1 entry		

MBSFN-SubframeConfig[1] SEQUENCE {		entry 1	
radioframeAllocationPeriod	FFS		
radioframeAllocationOffset	FFS		
subframeAllocation1 CHOICE {			
oneFrame	FFS		
fourFrames	FFS		
}			
subframeAllocation2 CHOICE {			
oneFrame	FFS		
fourFrames	FFS		
}			
}			
}			

– EUTRA-MultiBandInfoList

Table 4.6.5-3: EUTRA-MultiBandInfoList

Derivation Path: TS 38.331 [6], clause 6.3.4			
Information Element	Value/remark	Comment	Condition
EUTRA-MultiBandInfoList ::= SEQUENCE (SIZE (1..maxMultiBands)) OF EUTRA-MultiBandInfo {	1 entry		
EUTRA-MultiBandInfo[1] SEQUENCE {		entry 1	
eutra-FreqBandIndicator	FreqBandIndicatorEUTRA		
eutra-NS-PmaxList	EUTRA-NS-PmaxList		
}			
}			

– EUTRA-MultiBandInfoListAerial

Table 4.6.5-3A: EUTRA-MultiBandInfoListAerial

Derivation Path: TS 38.331 [6], clause 6.3.4			
Information Element	Value/remark	Comment	Condition
EUTRA-MultiBandInfoListAerial-r18 ::= SEQUENCE {			
FFS			
}			

– EUTRA-NS-PmaxList

Table 4.6.5-4: EUTRA-NS-PmaxList

Derivation Path: TS 38.331 [6], clause 6.3.4			
Information Element	Value/remark	Comment	Condition
EUTRA-NS-PmaxList ::= SEQUENCE (SIZE (1..maxEUTRA-NS-Pmax)) OF EUTRA-NS-PmaxValue {	1 entry		
EUTRA-NS-PmaxValue[1] SEQUENCE {		entry 1	
additionalPmax	FFS		
additionalSpectrumEmission	FFS		
}			
}			

– *EUTRA-PhysCellId***Table 4.6.5-5: EUTRA-PhysCellId**

Derivation Path: TS 38.331 [6], clause 6.3.4			
Information Element	Value/remark	Comment	Condition
EUTRA-PhysCellId	Set according to TS 36.508 [2] Table 4.4.2-1A for E-UTRA cell		

– *EUTRA-PhysCellIdRange***Table 4.6.5-6: EUTRA-PhysCellIdRange**

Derivation Path: TS 38.331 [6], clause 6.3.4			
Information Element	Value/remark	Comment	Condition
EUTRA-PhysCellIdRange ::= SEQUENCE {			
start	EUTRA-PhysCellId		
range	Not present		
}			

– *EUTRA-PresenceAntennaPort1***Table 4.6.5-7: EUTRA-PresenceAntennaPort1**

Derivation Path: TS 38.331 [6], clause 6.3.4			
Information Element	Value/remark	Comment	Condition
EUTRA-PresenceAntennaPort1	FFS		

– *EUTRA-Q-OffsetRange***Table 4.6.5-8: EUTRA-Q-OffsetRange**

Derivation Path: TS 38.331 [6], clause 6.3.4			
Information Element	Value/remark	Comment	Condition
EUTRA-Q-OffsetRange	FFS		

Table 4.6.5-9: Void**Table 4.6.5-10: Void**– *IAB-IP-Address***Table 4.6.5-10A: IAB-IP-Address**

Derivation Path: TS 38.331 [6], clause 6.3.4			
Information Element	Value/remark	Comment	Condition
IAB-IP-Address-r16 ::= SEQUENCE {			
FFS			
}			

– *IAB-IP-AddressIndex***Table 4.6.5-10B: IAB-IP-AddressIndex**

Derivation Path: TS 38.331 [6], clause 6.3.4			

Information Element	Value/remark	Comment	Condition
IAB-IP-AddressIndex-r16	FFS		

– *IAB-IP-Usage*

Table 4.6.5-10C: IAB-IP-Usage

Derivation Path: TS 38.331 [6], clause 6.3.4			
Information Element	Value/remark	Comment	Condition
IAB-IP-Usage-r16	FFS		

– *LoggingDuration*

Table 4.6.5-10D: LoggingDuration

Derivation Path: TS 38.331 [6], clause 6.3.4			
Information Element	Value/remark	Comment	Condition
LoggingDuration-r16	FFS		

– *LoggingInterval*

Table 4.6.5-10E: LoggingInterval

Derivation Path: TS 38.331 [6], clause 6.3.4			
Information Element	Value/remark	Comment	Condition
LoggingInterval-r16	FFS		

– *LogMeasResultListBT*

Table 4.6.5-10F: LogMeasResultListBT

Derivation Path: TS 38.331 [6], clause 6.3.4			
Information Element	Value/remark	Comment	Condition
LogMeasResultListBT-r16 ::= SEQUENCE {			
LogMeasResultBT-r16 ::= SEQUENCE {			
bt-Addr-r16	Not checked	BIT STRING (SIZE (48))	
rssi-BT-r16	Not checked	INTEGER (-128..127)	
}			
}			

– *LogMeasResultListWLAN*

Table 4.6.5-10G: LogMeasResultListWLAN

Derivation Path: TS 38.331 [6], clause 6.3.4			
Information Element	Value/remark	Comment	Condition
LogMeasResultListWLAN-r16 ::= SEQUENCE (SIZE (1..maxWLAN-Id-Report-r16)) OF LogMeasResultWLAN-r16 {			
LogMeasResultWLAN-r16 SEQUENCE {			
wlan-Identifiers-r16 SEQUENCE {			
ssid-r16	Not checked	OCTET STRING (SIZE (1..32))	
bssid-r16	Not checked	OCTET STRING (SIZE (6))	

hessid-r16	Not checked	OCTET STRING (SIZE (6))	
}			
rssIWLAN-r16	Not checked	INTEGER(0..141)	
rtt-WLAN-r16 SEQUENCE {			
rttValue-r16	Not checked	INTEGER (0..16777215)	
rttUnits-r16	Not checked		
rttAccuracy-r16	Not checked	INTEGER (0..255)	
}			
}			

– *MeasConfigAppLayerId*

Table 4.6.5-10H: *MeasConfigAppLayerId*

Derivation Path: TS 38.331 [6], clause 6.3.4			
Information Element	Value/remark	Comment	Condition
MeasConfigAppLayerId-r17	1		

– *OtherConfig*

Table 4.6.5-11: *OtherConfig*

Derivation Path: TS 38.331 [6], clause 6.3.4			
Information Element	Value/remark	Comment	Condition
OtherConfig ::=SEQUENCE {			
delayBudgetReportingConfig CHOICE{			
release	FFS		
setup SEQUENCE {			
delayBudgetReportingProhibitTimer	FFS		
}			
}			
}			

– *PhysCellIdUTRA-FDD*

Table 4.6.5-11A: *PhysCellIdUTRA-FDD*

Derivation Path: TS 38.331 [6], clause 6.3.4			
Information Element	Value/remark	Comment	Condition
PhysCellIdUTRA-FDD-r16	FFS		

– *RRC-TransactionIdentifier*

Table 4.6.5-12: *RRC-TransactionIdentifier*

Derivation Path: TS 38.331 [6], clause 6.3.4			
Information Element	Value/remark	Comment	Condition
RRC-TransactionIdentifier	0		

– *Sensor-NameList*

Table 4.6.5-13: *Sensor-NameList*

Derivation Path: TS 38.331 [6], clause 6.3.4			
Information Element	Value/remark	Comment	Condition

Sensor-NameList-r16 ::= SEQUENCE {			
measUncomBarPre-r16	Set according to specific message content		
measUeSpeed	Set according to specific message content		
measUeOrientation	Set according to specific message content		
}			

– *TraceReference*

Table 4.6.5-14: TraceReference

Derivation Path: TS 38.331 [6], clause 6.3.4			
Information Element	Value/remark	Comment	Condition
TraceReference-r16 ::= SEQUENCE {			
FFS			
}			

– *UE-MeasurementsAvailable*

Table 4.6.5-15: UE-MeasurementsAvailable

Derivation Path: TS 38.331 [6], clause 6.3.4			
Information Element	Value/remark	Comment	Condition
UE-MeasurementsAvailable-r16 ::= SEQUENCE {			
logMeasAvailable-r16	Not checked		
	true		LOG
logMeasAvailableBT-r16	Not checked		
	true		BT
logMeasAvailableWLAN-r16	Not checked		
	true		WLAN
connEstFailInfoAvailable-r16	Not checked		
	true		CEF
rlf-InfoAvailable-r16	Not checked		
	true		RLF
..successHO-InfoAvailable-r17	Not checked		
	true		SHR
..sigLogMeasConfigAvailable-r17	Not checked		
	true		sig_LOG
}			

Condition	Explanation
LOG	Logged measurement information reporting
BT	Bluetooth measurement information reporting
WLAN	WLAN measurement information reporting
CEF	Connection failure information reporting
RLF	Radio link failure information reporting
SHR	Successful handover reporting
sig_LOG	Signalling based logged measurements information reporting

– *UTRA-FDD-Q-OffsetRange*

Table 4.6.5-16: UTRA-FDD-Q-OffsetRange

Derivation Path: TS 38.331 [6], clause 6.3.4			
Information Element	Value/remark	Comment	Condition
UTRA-FDD-Q-OffsetRange-r16	dB0		

– VisitedCellInfoList

Table 4.6.5-17: VisitedCellInfoList

Derivation Path: TS 38.331 [6], clause 6.3.4			
Information Element	Value/remark	Comment	Condition
VisitedCellInfoList-r16 ::= SEQUENCE {			
FFS			
}			

– WLAN-NameList

Table 4.6.5-18: WLAN-NameList

Derivation Path: TS 38.331 [6], clause 6.3.4			
Information Element	Value/remark	Comment	Condition
WLAN-NameList-r16 ::= SEQUENCE (SIZE (1..maxWLAN-Name-r16)) OF WLAN-Name-r16 {	1 entry		
WLAN-Name-r16[1]	Set according to specific message content	OCTET STRING (SIZE (1..32))	
}			

4.6.6 Sidelink information elements

– SL-BWP-Config

Table 4.6.6-1: SL-BWP-Config

Derivation Path: TS 38.331 [6], clause 6.3.5			
Information Element	Value/remark	Comment	Condition
SL-BWP-Config-r16 ::= SEQUENCE {			
sl-BWP-Id	BWP-Id		
sl-BWP-Generic-r16 SEQUENCE {			
sl-BWP-r16	BWP		
sl-LengthSymbols-r16	sym14	All symbols in slot are used for SL	
	sym12	All symbols in slot are used for SL	EXTENDED
sl-StartSymbol-r16	sym0		
sl-PSBCH-Config-r16	Not present		
sl-TxDirectCurrentLocation-r16	Not present		
sl-Unlicensed-r18	Not present		
sl-Unlicensed-r18 CHOICE {			SL_SharedSpectrum
setup SEQUENCE {			
sl-LBT-FailureRecoveryConfig-r18 CHOICE {			
setup	SL-LBT-FailureRecoveryConfig		
}			
sl-StartingSymbolFirst-r18	Not present		
sl-StartingSymbolSecond-r18	Not present		
sl-TransmissionStructureForPSCCHandPSSCH-r18	Not present		
sl-GapOfAdditionalSSSB-Occasion-r18	Not present		
sl-AbsoluteFrequencySSB-NonAnchorList-r18	Not present		
sl-CPE-StartingPositionS-SSB-r18	Not present		
sl-CWS-ForPsschWithoutHargAck-r18	Not present		
sl-NumOfAdditionalSSSBOccasion-r18	Not present		
sl-SSSBPowerOffsetOfAnchorRBSet-r18	Not present		
sl-RBSetConfigList-r18	Not present		

sl-IntraCellGuardBandsSL-List-r18	Not present		
}			
}			
}			
sl-BWP-PoolConfig-r16	SL-BWP-PoolConfig with condition SCHEDULING		
}			

Condition	Explanation
EXTENDED	When cyclicPrefix is configured in sl-BWP-r16, i.e. extended CP is used
SL_SharedSpectrum	To configure sidelink in Shared Spectrum

– SL-BWP-ConfigCommon

Table 4.6.6-2: SL-BWP-ConfigCommon

Derivation Path: TS 38.331 [6], clause 6.3.5			
Information Element	Value/remark	Comment	Condition
SL-BWP-ConfigCommon-r16 ::= SEQUENCE {			
sl-BWP-Generic-r16 SEQUENCE {			
sl-BWP-r16	BWP		
sl-LengthSymbols-r16	sym14	All symbols in slot are used for SL	
	sym12	All symbols in slot are used for SL	EXTENDED
sl-StartSymbol-r16	sym0		
sl-PSBCH-Config-r16	Not present		
sl-TxDirectCurrentLocation-r16	Not present		
}			
sl-BWP-PoolConfigCommon-r16	SL-BWP-PoolConfigCommon with RXPOOL and SELECTED		
sl-BWP-PoolConfigCommon-r16	SL-BWP-PoolConfigCommon with SLPP		SLPP
}			

Condition	Explanation
EXTENDED	When cyclicPrefix is configured in sl-BWP-r16, i.e. extended CP is used
SLPP	To configure SL-PRS resource pool for SLPP test cases

– SL-BWP-DiscPoolConfig

Table 4.6.6-2A: SL-BWP-DiscPoolConfig

Derivation Path: TS 38.331 [6], clause 6.3.5			
Information Element	Value/remark	Comment	Condition
SL-BWP-DiscPoolConfig-r17 ::= SEQUENCE {			
sl-DiscRxPool-r17	Not present		
sl-DiscTxPoolSelected-r17	Not present		
sl-DiscTxPoolSelected-r17 SEQUENCE {			DISC_SELECTED
sl-PoolToReleaseList-r16	Not present		
sl-PoolToAddModList-r16 SEQUENCE (SIZE (1..maxNrofTXPool-r16)) OF SL-ResourcePoolConfig-r16 {	1 entry		
SL-ResourcePoolConfig-r16[1] SEQUENCE {		entry 1	
sl-ResourcePoolID-r16	1	Index of the resource pool for normal case	
sl-ResourcePool-r16	SL-ResourcePool		

}			
}			
}			
sl-DiscTxPoolScheduling-r17	Not present		
}			

Condition	Explanation
DISC_SELECTED	To configure NR sidelink discovery Tx resource pool

– *SL-BWP-DiscPoolConfigCommon*

Table 4.6.6-2B: SL-BWP-DiscPoolConfigCommon

Derivation Path: TS 38.331 [6], clause 6.3.5			
Information Element	Value/remark	Comment	Condition
SL-BWP-DiscPoolConfigCommon-r17 ::= SEQUENCE {			
sl-DiscRxPool-r17	Not present		
sl-DiscRxPool-r17 SEQUENCE (SIZE (1..maxNrofRXPool-r16)) OF SL-ResourcePool-r16 {	1 entry		DISC_RXPOOL
SL-ResourcePool-r16[1]	SL-ResourcePool	entry 1	
}			
sl-DiscTxPoolSelected-r17	Not present		
sl-DiscTxPoolSelected-r17 SEQUENCE (SIZE (1..maxNrofTXPool-r16)) OF SL-ResourcePoolConfig-r16 {	1 entry		DISC_SELECTED
SL-ResourcePoolConfig-r16[1] SEQUENCE {		entry 1	
sl-ResourcePoolID-r16	1	Index of the resource pool for normal case	
sl-ResourcePool-r16	SL-ResourcePool		
}			
}			
}			

Condition	Explanation
DISC_RXPOOL	To configure NR sidelink discovery Rx resource pool
DISC_SELECTED	To configure NR sidelink discovery Tx resource pool

– *SL-BWP-DiscPoolConfig*

Table 4.6.6-2A: SL-BWP-DiscPoolConfig

Derivation Path: TS 38.331 [6], clause 6.3.5			
Information Element	Value/remark	Comment	Condition
SL-BWP-DiscPoolConfig-r17 ::= SEQUENCE {			
FFS			
}			

– *SL-BWP-DiscPoolConfigCommon*

Table 4.6.6-2B: SL-BWP-DiscPoolConfigCommon

Derivation Path: TS 38.331 [6], clause 6.3.5			
Information Element	Value/remark	Comment	Condition
SL-BWP-DiscPoolConfigCommon-r17 ::= SEQUENCE {			
FFS			

}			

– SL-BWP-PoolConfig

Table 4.6.6-3: SL-BWP-PoolConfig

Derivation Path: TS 38.331 [6], clause 6.3.5			
Information Element	Value/remark	Comment	Condition
SL-BWP-PoolConfig-r16 ::= SEQUENCE {			
sl-RxPool-r16	Not present		
sl-TxPoolSelectedNormal-r16	Not present		
sl-TxPoolSelectedNormal-r16 SEQUENCE {			SELECTED
sl-PoolToReleaseList-r16	Not present		
sl-PoolToAddModList-r16 SEQUENCE (SIZE (1..maxNrofTXPool-r16)) OF SL-ResourcePoolConfig-r16 {	1 entry		
SL-ResourcePoolConfig-r16[1] SEQUENCE {		entry 1	
sl-ResourcePoolID-r16	1	Index of the resource pool for normal case	
sl-ResourcePool-r16	SL-ResourcePool with condition SL_HARQ		
}			
}			
}			
sl-TxPoolScheduling-r16	Not present		
sl-TxPoolScheduling-r16 SEQUENCE {			SCHEDULING
sl-PoolToReleaseList-r16	Not present		
sl-PoolToAddModList-r16 SEQUENCE (SIZE (1..maxNrofTXPool-r16)) OF SL-ResourcePoolConfig-r16 {	1 entry		
SL-ResourcePoolConfig-r16[1] SEQUENCE {		entry 1	
sl-ResourcePoolID-r16	1	Index of the resource pool used for normal case	
sl-ResourcePool-r16	SL-ResourcePool with condition SL_HARQ		
}			
}			
}			
sl-TxPoolExceptional-r16	Not present		
sl-TxPoolExceptional-r16 SEQUENCE {			EXCEPTIONAL
sl-ResourcePoolID-r16	2	Index of the pool used during exceptional cases	
sl-ResourcePool-r16	SL-ResourcePool with condition EXCEPTIONAL and SL_HARQ		
}			
}			

Condition	Explanation
SCHEDULING	To configure Tx resource pool for Mode 1 SL transmission
SELECTED	To configure Tx resource pool for Mode 2 SL transmission
EXCEPTIONAL	To configure Tx resource pool for exceptional cases such as HO, re-establishment etc.

– *SL-BWP-PoolConfigCommon*

Table 4.6.6-4: *SL-BWP-PoolConfigCommon*

Derivation Path: TS 38.331 [6], clause 6.3.5			
Information Element	Value/remark	Comment	Condition
SL-BWP-PoolConfigCommon-r16 ::= SEQUENCE {			
sl-RxPool-r16	Not present		
sl-RxPool-r16 SEQUENCE (SIZE (1..maxNrofRXPool-r16)) OF SL-ResourcePool-r16 {	1 entry		RXPOOL
SL-ResourcePool-r16[1]	SL-ResourcePool with condition SL_HARQ	entry 1	
	SL-ResourcePool with condition SLPP	entry 1	SLPP
}			
sl-TxPoolSelectedNormal-r16	Not present		
sl-TxPoolSelectedNormal-r16 SEQUENCE (SIZE (1..maxNrofTXPool-r16)) OF SL-ResourcePoolConfig-r16 {	1 entry		SELECTED
SL-ResourcePoolConfig-r16[1] SEQUENCE {		entry 1	
sl-ResourcePoolID-r16	1	Index of the resource pool for normal case	
sl-ResourcePool-r16	SL-ResourcePool with condition SL_HARQ		
	SL-ResourcePool with condition SLPP		SLPP
}			
}			
sl-TxPoolExceptional-r16	Not present		
sl-TxPoolExceptional-r16 SEQUENCE {			EXCEPTIONAL
sl-ResourcePoolID-r16	2	Index of the resource pool used for normal case	
sl-ResourcePool-r16	SL-ResourcePool with condition EXCEPTIONAL and SL_HARQ		
}			

Condition	Explanation
RXPOOL	To configure Rx resource pool
SELECTED	To configure Tx resource pool for Mode 2 SL transmission
EXCEPTIONAL	To configure Tx resource pool for exceptional cases such as HO, re-establishment etc.
SLPP	To configure SL-PRS resource pool for SLPP test cases

– *SL-BWP-PRS-PoolConfig*

Table 4.6.6-4A: *SL-BWP-PRS-PoolConfig*

Derivation Path: TS 38.331 [6], clause 6.3.5			
Information Element	Value/remark	Comment	Condition
SL-BWP-PRS-PoolConfig-r18 ::= SEQUENCE {			
sl-PRS-RxPool-r18 SEQUENCE (SIZE (1..maxNrofRXPool-r16)) OF SL-ResourcePool-r18 {	1 entry		
SL-PRS-ResourcePool-r18[1]	SL-PRS-ResourcePool	entry 1	
}			
sl-PRS-TxPoolSelectedNormal-r18	Not present		
sl-PRS-TxPoolScheduling-r18 SEQUENCE {			
sl-PRS-PoolToReleaseList-r18	Not present		

sl-PRS-PoolToAddModList-r18 SEQUENCE (SIZE (1..maxNrofSL-PRS-TxPool-r18)) OF SL-PRS-ResourcePoolConfig-r18 {	1 entry		
SL-PRS-ResourcePoolConfig-r18[1] SEQUENCE {		entry 1	
sl-PRS-ResourcePoolID-r18	1		
sl-PRS-ResourcePool-r18	SL-PRS-ResourcePool		
}			
}			
}			
sl-PRS-TxPoolExceptional-r18	Not present		
}			

– *SL-BWP-PRS-PoolConfigCommon*

Table 4.6.6-4B: SL-BWP-PRS-PoolConfigCommon

Derivation Path: TS 38.331 [6], clause 6.3.5			
Information Element	Value/remark	Comment	Condition
SL-BWP-PRS-PoolConfigCommon-r18 ::= SEQUENCE {			
FFS			
}			

– *SL-CBR-PriorityTxConfigList*

Table 4.6.6-5: SL-CBR-PriorityTxConfigList

Derivation Path: TS 38.331 [6], clause 6.3.5			
Information Element	Value/remark	Comment	Condition
SL-CBR-PriorityTxConfigList -r16 ::= SEQUENCE (SIZE (1..8)) OF SL-PriorityTxConfigIndex-r16 {	8 entries		
SL-PriorityTxConfigIndex-r16[k, k=1..8] SEQUENCE {		entry k	
sl-PriorityThreshold-r16	k	priority value = k	
sl-DefaultTxConfigIndex-r16	0	PSSCH Tx configuration corresponding to the first CBR level is used by UE when UE has no available CBR results.	
sl-CBR-ConfigIndex-r16	0	1st CBR level table is used	
sl-Tx-ConfigIndexList-r16 SEQUENCE (SIZE (1..maxCBR-Level-r16)) OF SL-TxConfigIndex-r16 {	2 entries		
SL-TxConfigIndex-r16[1]	0	entry 1 for CBR level corresponding to the first entry in sl-CBR-RangeConfigList	
SL-TxConfigIndex-r16[2]	0	entry 2 for CBR level corresponding to the second entry in sl-CBR-RangeConfigList	
}			
}			
}			

– *SL-CBR-CommonTxConfigList*

Table 4.6.6-6: *SL-CBR-CommonTxConfigList*

Derivation Path: TS 38.331 [6], clause 6.3.5			
Information Element	Value/remark	Comment	Condition
SL-CBR-CommonTxConfigList-r16 ::= SEQUENCE {			
sl-CBR-RangeConfigList-r16 SEQUENCE (SIZE (1..maxCBR-Config-r16)) OF SL-CBR-LevelsConfig-r16 {	1 entry		
SL-CBR-LevelsConfig-r16[1] SEQUENCE (SIZE (1..maxCBR-Level-r16)) OF SL-CBR-r16 {	2 entries		
SL-CBR-r16[1]	50	entry 1 0<=CBR<0.5	
SL-CBR-r16[2]	100	entry 2 0.5<=CBR<1	
}			
}			
sl-CBR-PSSCH-TxConfigList-r16 SEQUENCE (SIZE (1.. maxTxConfig-r16)) OF SL-CBR-PSSCH-TxConfig-r16 {	1 entry		
SL-CBR-PSSCH-TxConfig-r16 SEQUENCE {			
sl-CR-Limit-r16	10000	CR limit = 100%	
sl-TxParameters-r16 SEQUENCE {			
sl-MinMCS-PSSCH-r16	0		
sl-MaxMCS-PSSCH-r16	26		
sl-MinSubChannelNumPSSCH-r16	1		
sl-MaxSubchannelNumPSSCH-r16	27		
sl-MaxTxTransNumPSSCH-r16	4		
sl-MaxTxPower-r16	Not present		
}			
}			
}			
}			

– *SL-CBR-CommonTxDedicated-SL-PRS-RP-List*

Table 4.6.6-6A: *SL-CBR-CommonTxDedicated-SL-PRS-RP-List*

Derivation Path: TS 38.331 [6], clause 6.3.5			
Information Element	Value/remark	Comment	Condition
SL-CBR-CommonTxDedicatedSL-PRS-RP-List-r18 ::= SEQUENCE {			
FFS			
}			

– *SL-ConfigDedicatedNR*

Table 4.6.6-7: *SL-ConfigDedicatedNR*

Derivation Path: TS 38.331 [6], clause 6.3.5			
Information Element	Value/remark	Comment	Condition
SL-ConfigDedicatedNR-r16 ::= SEQUENCE {			
sl-PHY-MAC-RLC-Config-r16	Not present		
sl-PHY-MAC-RLC-Config-r16 SEQUENCE {			SCHEDULING, SELECTED
sl-ScheduledConfig-r16	Not present		
sl-ScheduledConfig-r16 CHOICE {			SCHEDULING
setup	SL-ScheduledConfig		
}			

sl-UE-SelectedConfig-r16	Not present		
sl-UE-SelectedConfig-r16 CHOICE {			SELECTED
setup	SL-UE-SelectedConfig		
}			
sl-FreqInfoToReleaseList-r16	Not present		
sl-FreqInfoToAddModList-r16	Not present		
sl-FreqInfoToAddModList-r16 SEQUENCE (SIZE (1..maxNrofFreqSL-r16)) OF SL-FreqConfig-r16 {	1 entry		SCHEDULING, SELECTED
SL-FreqConfig-r16[1]	SL-FreqConfig	entry 1	
}			
sl-FreqInfoToAddModList-r16 SEQUENCE (SIZE (1..maxNrofFreqSL-r16)) OF SL-FreqConfig-r16 {	2 entries		SL_CA
SL-FreqConfig-r16[1]	SL-FreqConfig	entry 1	
SL-FreqConfig-r16[2]	SL-FreqConfig with condition SL_CA	entry 2	
}			
sl-RLC-BearerToReleaseList-r16	Not present		
sl-RLC-BearerToAddModList-r16	Not present		
sl-RLC-BearerToAddModList-r16 SEQUENCE (SIZE (1..maxSL-LCID-r16)) OF SL-RLC-BearerConfig-r16 {	1 entry		SL_DRB
SL-RLC-BearerConfig-r16[1]	SL-RLC-BearerConfig	entry 1	
}			
sl-MaxNumConsecutiveDTX-r16	Not present		
sl-CSI-Acquisition-r16	Not present		
	enabled		SL_CSI_REPORT
sl-CSI-SchedulingRequestId-r16	Not present		
sl-SSB-PriorityNR-r16	1		
networkControlledSyncTx-r16	off	UE doesn't send SL SSB by default	
}			
sl-RadioBearerToReleaseList-r16	Not present		
sl-RadioBearerToAddModList-r16	Not present		
sl-RadioBearerToAddModList-r16 SEQUENCE (SIZE (1..maxNrofSLRB-r16)) OF SL-RadioBearerConfig-r16 {	1 entry		SL_DRB
SL-RadioBearerConfig-r16[1]	SL-RadioBearerConfig		
}			
sl-MeasConfigInfoToReleaseList-r16	Not present		
sl-MeasConfigInfoToAddModList-r16	Not present		
sl-MeasConfigInfoToAddModList-r16 SEQUENCE (SIZE (1..maxNrofSL-Dest-r16)) OF SL-MeasConfigInfo-r16 {	1 entry		SL_MEAS
SL-MeasConfigInfo-r16[1]	SL-MeasConfigInfo		
}			
t400-r16	ms2000		
sl-PHY-MAC-RLC-Config-v1700	Not present		
sl-PHY-MAC-RLC-Config-v1700 CHOICE {			L2RelayUE, L2RemoteUE, SL_DRX, SL_CA, SL_SharedSpectrum
setup SEQUENCE {			
sl-DRX-Config-r17	Not present		
sl-DRX-Config-r17	SL-DRX-Config		SL_DRX
sl-RLC-ChannelToReleaseList-r17	Not present		
sl-RLC-ChannelToAddModList-r17 SEQUENCE (SIZE (1..maxSL-LCID-r16)) OF SL-RLC-ChannelConfig-r17 {	1 entry		PC5RelaySRB1
SL-RLC-ChannelConfig-r17[1]	SL-RLC-ChannelConfig-r17 with condition PC5RelaySRB1	entry 1	
}			

sl-RLC-ChannelToAddModList-r17 SEQUENCE (SIZE (1..maxSL-LCID-r16)) OF SL-RLC-ChannelConfig-r17 {	2 entries		PC5RelaySRB2_DRB1
SL-RLC-ChannelConfig-r17[1]	SL-RLC-ChannelConfig-r17 with condition PC5RelaySRB2	entry 1	
SL-RLC-ChannelConfig-r17[2]	SL-RLC-ChannelConfig-r17 with condition PC5RelayDRB1	entry 2	
}			
sl-RLC-BearerToAddModListSizeExt-v1800	Not present		
sl-RLC-BearerToReleaseListSizeExt-v1800	Not present		
sl-FreqInfoToAddModListExt-v1800	Not present		
sl-FreqInfoToAddModListExt-v1800 SEQUENCE (SIZE (1..maxNrofFreqSL-r16)) OF SL-FreqConfigExt-v1800 {	1 entry		SL_CA, SL_SharedSpectrum
SL-FreqConfigExt-v1800[1] SEQUENCE {		entry 1	
absenceOfAnyOtherTechnology-r18	Not present		
absenceOfAnyOtherTechnology-r18	true		SL_SharedSpectrum
sl-FreqSelectionConfigList-r18	Not present		
sl-FreqSelectionConfigList-r18 SEQUENCE (SIZE (1..8)) OF SL-FreqSelectionConfig-r18 {	1 entry		SL_CA
SL-FreqSelectionConfig-r18[1]	SL-FreqSelectionConfig	entry 1	
}			
sl-SyncTxDisabled-r18	Not present		
sl-EnergyDetectionConfig-r18	Not present		
sl-EnergyDetectionConfig-r18 CHOICE {			SL_SharedSpectrum
sl-MaxEnergyDetectionThreshold-r18	-85		
}			
ue-ToUE-COT-SharingED-Threshold-r18	Not present		
harq-ACK-FeedbackRatioforCW-AdjustmentGC-Option2-r18	Not present		
}			
sl-LBT-SchedulingRequestId-r18	Not present		
sl-SyncFreqList-r18	Not present		
sl-SyncTxMultiFreq-r18	Not present		
sl-MaxTransPowerCA-r18	Not present		
sl-SCCH-CarrierSetConfig-r18	Not present		
sl-PRS-SchedulingRequestId-r18	Not present		
}			
}			
sl-DiscConfig-r17	Not present		
}			

Condition	Explanation
SCHEDULING	To configure UE performing mode 1 SL transmission
SELECTED	To configure UE performing mode 2 SL transmission
SL_DRB	To establish SL DRB
SL_MEAS	To configure UE performing measurements based on RS sent by peer UE
SL_CSI_REPORT	To configure UE performing SL CSI reporting
L2RelayUE	Setup L2 U2N Relay UE configuration
L2RemoteUE	Setup L2 U2N Remote UE configuration
PC5RelaySRB1	Establish PC5 RelayRLC Channel for SRB1
PC5RelaySRB2_DRB1	Establish PC5 RelayRLC Channel for SRB2 and DRB1
SL_DRX	To configure sidelink DRX configuration
SL_CA	To configure sidelink CA configuration
SL_SharedSpectrum	To configure sidelink in Shared Spectrum

– *SL-ConfiguredGrantConfig*

Table 4.6.6-8: SL-ConfiguredGrantConfig

Derivation Path: TS 38.331 [6], clause 6.3.5			
Information Element	Value/remark	Comment	Condition
SL-ConfiguredGrantConfig-r16 ::= SEQUENCE {			
sl-ConfigIndexCG-r16	1		
sl-PeriodCG-r16 CHOICE {			
sl-PeriodCG1-r16	ms100		
}			
sl-NrOfHARQ-Processes-r16	4		
sl-HARQ-ProclD-offset-r16	1		
sl-CG-MaxTransNumList-r16 SEQUENCE (SIZE (1..8)) OF SL-CG-MaxTransNum-r16	8 entries		
SL-CG-MaxTransNum-r16[k, k=1..8] SEQUENCE {		entry k	
sl-Priority-r16	k		
sl-MaxTransNum-r16	8	max Tx number = 8 for all priorities	
}			
}			
rrc-ConfiguredSidelinkGrant-r16	Not present	TYPE 2 CG is configured by default	
rrc-ConfiguredSidelinkGrant-r16 SEQUENCE {			TYPE 1
sl-TimeResourceCG-Type1-r16	0	N = 1, i.e. only one PSSCH resource is reserved	
sl-StartSubchannelCG-Type1-r16	0		
sl-FreqResourceCG-Type1-r16	0	L _{subCH} = 1, i.e. only 1 subchannel is allocated. $n_{subCH,1}^{start} = 0$, will be ignored by UE because only one PSSCH resource is reserved	
sl-TimeOffsetCG-Type1-r16	0		
sl-N1PUCCH-AN-r16	Not present		
	PUCCH-ResourceId		SL_HARQ_VIA_UU
sl-PSFCH-ToPUCCH-CG-Type1-r16	Not present		
	1		SL_HARQ_VIA_UU
sl-ResourcePoolID-r16	1	Resource pool for normal case is used	
sl-TimeReferenceSFN-Type1-r16	Not present	Default value sfno is used	
}			
}			

Condition	Explanation
TYPE 1	To configure a type 1 SL configured grant for UE
SL_HARQ_VIA_UU	to report HARQ-ACK information that the UE generates based on PSFCH reception via UL

– *SL-ConfiguredGrantConfigDedicated-SL-PRS-RP*

Table 4.6.6-8A: SL-ConfiguredGrantConfigDedicated-SL-PRS-RP

Derivation Path: TS 38.331 [6], clause 6.3.5

Information Element	Value/remark	Comment	Condition
SL-ConfiguredGrantConfigDedicatedSL-PRS-RP-r18 ::= SEQUENCE {			
FFS			
}			

– *SL-DestinationIdentity*

Table 4.6.6-9: *SL-DestinationIdentity*

Derivation Path: TS 38.331 [6], clause 6.3.5			
Information Element	Value/remark	Comment	Condition
SL-DestinationIdentity-r16	24 bits destination ID chosen by SS		

– *SL-DRX-Config*

Table 4.6.6-9A: *SL-DRX-Config*

Derivation Path: TS 38.331 [6], clause 6.3.5			
Information Element	Value/remark	Comment	Condition
SL-DRX-Config-r17 ::= SEQUENCE {			
sl-DRX-ConfigGC-BC-r17	Not Present		
sl-DRX-ConfigGC-BC-r17	SL-DRX-ConfigGC-BC with condition SL_DRX_GC_BC		SL_DRX_GC_BC
sl-DRX-ConfigUC-ToReleaseList-r17	Not Present		
sl-DRX-ConfigUC-ToReleaseList-r17 SEQUENCE (SIZE (1..maxNrofSL-Dest-r16)) OF SL-DestinationIndex-r16 {	1 entry		SL_DRX_UC_Release
SL-DestinationIndex-r16[1]	0	entry 1 The first destination UE reported in sl-TxResourceReqList in SidelinkUEInformationNR	
}			
sl-DRX-ConfigUC-ToAddModList-r17	Not Present		
sl-DRX-ConfigUC-ToAddModList-r17 SEQUENCE (SIZE (1..maxNrofSL-Dest-r16)) OF SL-DRX-ConfigUC-Info-r17 {	1 entry		SL_DRX_UC_AddMod
SL-DRX-ConfigUC-Info-r17[1] SEQUENCE {		entry 1	
sl-DestinationIndex-r17	0	The first destination UE reported in sl-TxResourceReqList in SidelinkUEInformationNR	
sl-DRX-ConfigUC-r17	sl-DRX-ConfigUC		
}			
}			
}			

Condition	Explanation
SL_DRX_GC_BC	To configure one or multiple sidelink DRX configurations for groupcast and broadcast communication.
SL_DRX_UC_Release	To configure the sidelink DRX configurations for corresponding unicast destinations to remove.
SL_DRX_UC_AddMod	To configure the sidelink DRX configurations for corresponding unicast destinations to add and/or modify.

– *SL-DRX-ConfigGC-BC*

Table 4.6.6-9B: *SL-DRX-ConfigGC-BC*

Derivation Path: TS 38.331 [6], clause 6.3.5			
Information Element	Value/remark	Comment	Condition
SL-DRX-ConfigGC-BC-r17 ::= SEQUENCE {			
sl-DRX-GC-BC-PerQoS-List-r17	Not Present		
sl-DRX-GC-BC-PerQoS-List-r17 SEQUENCE (SIZE (1..maxSL-GC-BC-DRX-QoS-r17)) OF SL-DRX-GC-BC-QoS-r17 {	1 entry		SL_DRX_GC_BC
SL-DRX-GC-BC-QoS-r17[1]	SL-DRX-GC-BC-QoS	entry 1	
}			
sl-DRX-GC-generic-r17	Not Present		
	FFS		SL_DRX_GC
sl-DefaultDRX-GC-BC-r17	Not Present		
	SL-DRX-GC-BC-QoS		SL_DRX_Default
}			

Condition	Explanation
SL_DRX_GC_BC	To configure one or multiple sidelink DRX configurations for groupcast and broadcast communication.
SL_DRX_GC	To configure a sidelink DRX configuration for groupcast communication.
SL_DRX_Default	To configure the default sidelink DRX configuration for groupcast and broadcast communications or for the broadcast based or unicast based communication of Direct Link Establishment Request.

– *SL-DRX-GC-BC-QoS*

Table 4.6.6-9BA: *SL-DRX-GC-BC-QoS*

Derivation Path: TS 38.331 [6], clause 6.3.5			
Information Element	Value/remark	Comment	Condition
SL-DRX-GC-BC-QoS-r17 ::= SEQUENCE {			
sl-DRX-GC-BC-MappedQoS-FlowList-r17 SEQUENCE (SIZE (1..maxNrofSL-QFIs-r16)) OF SL-QoS-Profile-r16 {	1 entry		
SL-QoS-Profile-r16[1]	SL-QoS-Profile	entry 1	
}			
sl-DRX-GC-BC-OnDurationTimer-r17 CHOICE {			
milliseconds	ms6		
}			
sl-DRX-GC-InactivityTimer-r17	ms1280		
sl-DRX-GC-BC-Cycle-r17	ms10240		
}			

– *SL-DRX-ConfigUC*

Table 4.6.6-9C: *SL-DRX-ConfigUC*

Derivation Path: TS 38.331 [6], clause 6.3.5			
Information Element	Value/remark	Comment	Condition
SL-DRX-ConfigUC-r17 ::= SEQUENCE {			
sl-drx-onDurationTimer-r17 CHOICE {			
milliseconds	ms6		
}			

sl-drx-InactivityTimer-r17	ms1280		
sl-drx-HARQ-RTT-Timer1-r17	Not Present		
sl-drx-HARQ-RTT-Timer2-r17	Not Present		
sl-drx-RetransmissionTimer-r17	sl16		
sl-drx-CycleStartOffset-r17 CHOICE {			
ms10240	0		
}			
sl-drx-SlotOffset	0		
}			

– *SL-DRX-ConfigUC-SemiStatic*

Table 4.6.6-9D: SL-DRX-ConfigUC-SemiStatic

Derivation Path: TS 38.331 [6], clause 6.3.5			
Information Element	Value/remark	Comment	Condition
SL-DRX-ConfigUC-SemiStatic-r17 ::= SEQUENCE {			
sl-drx-onDurationTimer-r17 CHOICE {			
milliseconds	ms6		
}			
sl-drx-CycleStartOffset-r17 CHOICE {			
ms512	0		
}			
sl-drx-SlotOffset-r17	0		
}			

– *SL-FreqConfig*

Table 4.6.6-10: SL-FreqConfig

Derivation Path: TS 38.331 [6], clause 6.3.5			
Information Element	Value/remark	Comment	Condition
SL-FreqConfig-r16 ::= SEQUENCE {			
sl-Freq-Id-r16	1		
sl-Freq-Id-r16	2		SL_CA
sl-SCS-SpecificCarrierList-r16 SEQUENCE (SIZE (1..maxSCSs)) OF SCS-SpecificCarrier {	1 entry		
SCS-SpecificCarrier[1]	SCS-SpecificCarrier with condition SL_PointA	entry 1	
}			
sl-AbsoluteFrequencyPointA-r16	ARFCN-ValueNR with condition SL_PointA		
sl-AbsoluteFrequencySSB-r16	ARFCN-ValueNR with condition SL_SSB		
frequencyShift7p5khzSL-r16	Not present		
valueN-r16	0		
sl-BWP-ToReleaseList-r16	Not present		
sl-BWP-ToAddModList-r16 SEQUENCE (SIZE (1..maxNrofSL-BWPs-r16)) OF SL-BWP-Config-r16 {	1 entry		
SL-BWP-Config-r16[1]	SL-BWP-Config	entry 1	
}			
sl-SyncConfigList-r16 SEQUENCE (SIZE (1..maxSL-SyncConfig-r16)) OF SL-SyncConfig-r16 {	1 entry		
SL-SyncConfig-r16[1]	SL-SyncConfig	entry 1	
}			
sl-SyncPriority-r16	gnss		
}			

Condition	Explanation
SL_CA	To configure sidelink CA configuration

– *SL-FreqConfigCommon*

Table 4.6.6-11: *SL-FreqConfigCommon*

Derivation Path: TS 38.331 [6], clause 6.3.5			
Information Element	Value/remark	Comment	Condition
SL-FreqConfigCommon-r16 ::= SEQUENCE {			
sl-SCS-SpecificCarrierList-r16 SEQUENCE (SIZE (1..maxSCSs)) OF SCS-SpecificCarrier {	1 entry		
SCS-SpecificCarrier[1]	SCS-SpecificCarrier with condition SL_PointA	entry 1	
}			
sl-AbsoluteFrequencyPointA-r16	ARFCN-ValueNR with condition SL_PointA		
sl-AbsoluteFrequencySSB-r16	ARFCN-ValueNR with condition SL_SSB		
frequencyShift7p5khzSL-r16	Not present		
valueN-r16	0		
sl-BWP-List-r16 SEQUENCE (SIZE (1..maxNrofSL-BWPs-r16)) OF SL-BWP-ConfigCommon-r16 {	1 entry		
SL-BWP-ConfigCommon-r16[1]	SL-BWP-ConfigCommon		
SL-BWP-ConfigCommon-r16[1]	SL-BWP-ConfigCommon with SLPP		pc_sl_PRS_RxInSharedResourcePool or UE supporting both pc_sl_PRS_RxInSharedResourcePool and pc_sl_PRS_RxInDedicatedResourcePool
}			
sl-SyncPriority-r16	gnss		
sl-NbAsSync-r16	Not present		
sl-SyncConfigList-r16 SEQUENCE (SIZE (1..maxSL-SyncConfig-r16)) OF SL-SyncConfig-r16 {	1 entry		
SL-SyncConfig-r16[1]	SL-SyncConfig	entry 1	
}			
sl-UnlicensedFreqConfigCommon-r18	Not present		
sl-UnlicensedFreqConfigCommon-r18 SEQUENCE {			SL_CA, SL_SharedSpectrum
absenceOfAnyOtherTechnology-r18	Not present		
absenceOfAnyOtherTechnology-r18	true		SL_SharedSpectrum
sl-FreqSelectionConfigList-r18	Not present		
sl-FreqSelectionConfigList-r18 SEQUENCE (SIZE (1..8)) OF SL-FreqSelectionConfig-r18 {	1 entry		SL_CA
SL-FreqSelectionConfig-r18[1]	SL-FreqSelectionConfig	entry 1	
}			
sl-SyncTxDisabled-r18	Not present		
sl-EnergyDetectionConfig-r18	Not present		
sl-EnergyDetectionConfig-r18 CHOICE {			SL_SharedSpectrum
sl-MaxEnergyDetectionThreshold-r18	-85		
}			
ue-ToUE-COT-SharingED-Threshold-r18	Not present		
harq-ACK-FeedbackRatioforCW-AdjustmentGC-Option2-r18	Not present		
}			

sl-PosBWP-List-r18	Not present		
sl-PosBWP-List-r18 SEQUENCE (SIZE (1..maxNrofSL-BWPs-r16) SL-PosBWP-ConfigCommon-r18 {	1 entry		SLPP and pc_sl_PRS_RxInDedicatedResourcePool
SL-PosBWP-ConfigCommon-r18[1]	SL-PosBWP-ConfigCommon	entry 1	
}			
}			

Condition	Explanation
SLPP	To configure SL-PRS resource pool for SLPP test cases
SL_CA	To configure sidelink CA configuration
SL_SharedSpectrum	To configure sidelink in Shared Spectrum

– *SL-FreqSelectionConfig*

Table 4.6.6-11A: SL-FreqSelectionConfig

Derivation Path: TS 38.331 [6], clause 6.3.5			
Information Element	Value/remark	Comment	Condition
SL-FreqSelectionConfig-r18 ::= SEQUENCE {			
FFS			
}			

– *SL-IndirectPathAddChange*

Table 4.6.6-11B: SL-IndirectPathAddChange

Derivation Path: TS 38.331 [6], clause 6.3.5			
Information Element	Value/remark	Comment	Condition
SL-IndirectPathAddChange-r18 ::= SEQUENCE {			
FFS			
}			

– *SL-InterUE-CoordinationConfig*

Table 4.6.6-11C: SL-InterUE-CoordinationConfig

Derivation Path: TS 38.331 [6], clause 6.3.5			
Information Element	Value/remark	Comment	Condition
SL-InterUE-CoordinationConfig-r17 ::= SEQUENCE {			
FFS			
}			

– *SL-LBT-FailureRecoveryConfig*

Table 4.6.6-11D: SL-LBT-FailureRecoveryConfig

Derivation Path: TS 38.331 [6], clause 6.3.5			
Information Element	Value/remark	Comment	Condition
SL-LBT-FailureRecoveryConfig-r18 ::= SEQUENCE {			
FFS			
}			

– *SL-LogicalChannelConfig*

Table 4.6.6-12: SL-LogicalChannelConfig

Derivation Path: TS 38.331 [6], clause 6.3.5			
Information Element	Value/remark	Comment	Condition
SL-LogicalChannelConfig-r16 ::= SEQUENCE {			
sl-Priority-r16	1		
sl-PrioritisedBitRate-r16	infinity		
sl-BucketSizeDuration-r16	ms50		
sl-ConfiguredGrantType1Allowed-r16	Not present		
sl-HARQ-FeedbackEnabled-r16	enabled		
sl-AllowedCG-List-r16	Not present		
sl-AllowedSCS-List-r16	Not present		
sl-MaxPUSCH-Duration-r16	Not present		
sl-LogicalChannelGroup-r16	1	Avoiding using LCG #0, which is reserved for SL SRB	
	5	Avoiding using LCG #0, which s reserved for SL SRB	LO
sl-SchedulingRequestId-r16	SchedulingRequestId		
sl-LogicalChannelSR-DelayTimerApplied-r16	Not present		
sl-ChannelAccessPriority-r18	Not present		
	3		SL_SharedSpectrum
sl-AllowedCarriers-r18	Not present		
}			

Condition	Explanation
LO	LCG of the lower priority logical channels mapped to SL DRBs
SL_SharedSpectrum	To configure sidelink in Shared Spectrum

– *SL-L2RelayUE-Config*

Table 4.6.6-12A: SL-L2RelayUE-Config

Derivation Path: TS 38.331 [6], clause 6.3.5			
Information Element	Value/remark	Comment	Condition
SL-L2RelayUE-Config-r17 ::= SEQUENCE {			
sl-RemoteUE-ToAddModList-r17 SEQUENCE (SIZE (1..maxNrofRemoteUE-r17)) OF SL-RemoteUE-ToAddMod-r17{	n entries		
SL-RemoteUE-ToAddMod-r17[n] ::= SEQUENCE {		entry n	
sl-L2IdentityRemote-r17	SL-DestinationIdentity-r16		
sl-SRAP-ConfigRelay-r17	SL-SRAP-Config with condition L2RelayUE and SRBn		SRBn
	SL-SRAP-Config with condition L2RelayUE and DRBn		DRBn
}			
}			
sl-RemoteUE-ToReleaseList-r17	Not present		
}			

Condition	Explanation
SRBn	Establishment of SRBn:n=0..3
DRBn	Establishment of DRBn:n=1..32

– *SL-L2RemoteUE-Config*

Table 4.6.6-12B: SL-L2RemoteUE-Config

Derivation Path: TS 38.331 [6], clause 6.3.5			
Information Element	Value/remark	Comment	Condition
SL-L2RemoteUE-Config-r17 ::= SEQUENCE {			
sl-SRAP-ConfigRemote-r17	SL-SRAP-Config with condition L2RemoteUE and SRBn		SRBn
	SL-SRAP-Config with condition L2RemoteUE and DRBn		DRBn
sl-UEIdentityRemote-r17	RNTI-Value		FirstRRCReconfig
	Not present		
}			

Condition	Explanation
SRBn	Establishment of SRBn; n=1..3
DRBn	Establishment of DRBn; n=1..32
FirstRRCReconfig	Used for first RRCReconfiguration

– *SL-MeasConfigCommon*

Table 4.6.6-13: SL-MeasConfigCommon

Derivation Path: TS 38.331 [6], clause 6.3.5			
Information Element	Value/remark	Comment	Condition
SL-MeasConfigCommon-r16 ::= SEQUENCE {			
sl-MeasObjectListCommon-r16	SL-MeasObjectList		
sl-ReportConfigListCommon-r16	SL-ReportConfigList with condition PERIODICAL		
sl-MeasIdListCommon-r16	SL-MeasIdList		
sl-QuantityConfigCommon-r16	SL-QuantityConfig		
}			

– *SL-MeasConfigInfo*

Table 4.6.6-14: SL-MeasConfigInfo

Derivation Path: TS 38.331 [6], clause 6.3.5			
Information Element	Value/remark	Comment	Condition
SL-MeasConfigInfo-r16 ::= SEQUENCE {			
sl-DestinationIndex-r16	0	The first destination UE reported in sl-TxResourceReqList in SidelinkUEInformationNR	
sl-MeasConfig-r16 SEQUENCE {			
sl-MeasObjectToRemoveList-r16	Not present		
sl-MeasObjectToAddModList-r16	SL-MeasObjectList		
sl-ReportConfigToRemoveList-r16	Not present		
sl-ReportConfigToAddModList-r16	SL-ReportConfigList with condition PERIODICAL		
sl-MeasIdToRemoveList-r16	Not present		
sl-MeasIdToAddModList-r16	SL-MeasIdList		

sl-QuantityConfig-r16	SL-QuantityConfig		
}			
}			

– *SL-MeasIdList*

Table 4.6.6-15: *SL-MeasIdList*

Derivation Path: TS 38.331 [6], clause 6.3.5			
Information Element	Value/remark	Comment	Condition
SL-MeasIdList-r16 ::= SEQUENCE (SIZE (1..maxNrofSL-MeasId-r16)) OF SL-MeasIdInfo-r16	1 entry		
SL-MeasIdInfo-r16[1] SEQUENCE {		entry 1	
sl-MeasId-r16	1		
sl-MeasObjectId-r16	1		
sl-ReportConfigId-r16	1		
}			
}			

– *SL-MeasObjectList*

Table 4.6.6-16: *SL-MeasObjectList*

Derivation Path: TS 38.331 [6], clause 6.3.5			
Information Element	Value/remark	Comment	Condition
SL-MeasObjectList-r16 ::= SEQUENCE (SIZE (1..maxNrofSL-ObjectId-r16)) OF SL-MeasObjectInfo-r16 {	1 entry		
SL-MeasObjectInfo-r16[1] SEQUENCE {		entry 1	
sl-MeasObjectId-r16	1		
sl-MeasObject-r16 SEQUENCE {			
frequencyInfoSL-r16	ARFCN-ValueNR with condition SL_MeasFrequencyInfo	For signalling test cases, set as subclause 6.2.3.7. Otherwise, set as subclause 4.3.1.8.	
}			
}			
}			

– *SL-PagingIdentityRemoteUE*

Table 4.6.6-16A: *SL-PagingIdentityRemoteUE*

Derivation Path: TS 38.331 [6], clause 6.3.5			
Information Element	Value/remark	Comment	Condition
SL-PagingIdentityRemoteUE-r17 ::= SEQUENCE {			
FFS			
}			

– *SL-PBPS-CPS-Config*

Table 4.6.6-16B: *SL-PBPS-CPS-Config*

Derivation Path: TS 38.331 [6], clause 6.3.5			
Information Element	Value/remark	Comment	Condition
SL-PBPS-CPS-Config-r17 ::= SEQUENCE {			
sl-AllowedResourceSelectionConfig-r17	c7		

sl-MinNumCandidateSlotsPeriodic-r17	1		
sl-PBPS-OccasionReservePeriodList-r17	Not present		
sl-Additional-PBPS-Occasion-r17	Not present		
sl-CPS-WindowPeriodic-r17	31		
sl-MinNumCandidateSlotsAperiodic-r17	Not present		
sl-MinNumRssiMeasurementSlots-r17	1		
sl-DefaultCBR-RandomSelection-r17	1		
sl-DefaultCBR-PartialSensing-r17	1		
sl-CPS-WindowAperiodic-r17	Not present		
sl-PartialSensingInactiveTime-r17	enabled		
}			

– *SL-PDCP-Config*

Table 4.6.6-17: SL-PDCP-Config

Derivation Path: TS 38.331 [6], clause 6.3.5			
Information Element	Value/remark	Comment	Condition
SL-PDCP-Config-r16 ::= SEQUENCE {			
sl-DiscardTimer-r16	infinity		
sl-PDCP-SN-Size-r16	len12bits		
sl-OutOfOrderDelivery	Not present		
}			

– *SL-PosBWP-ConfigCommon*

Table 4.6.6-17A: SL-PosBWP-ConfigCommon

Derivation Path: TS 38.331 [6], clause 6.3.5			
Information Element	Value/remark	Comment	Condition
SL-PosBWP-ConfigCommon-r18 ::= SEQUENCE {			
sl-BWP-Generic-r18 SEQUENCE {			
sl-BWP-r16	BWP		
sl-LengthSymbols-r16	sym14	All symbols in slot are used for SL	
sl-StartSymbol-r16	sym0		
sl-PSBCH-Config-r16	Not present		
sl-TxDirectCurrentLocation-r16	Not present		
}			
sl-BWP-PRS-PoolConfigCommon-r18 SEQUENCE {			
sl-PRS-RxPool-r18 SEQUENCE (SIZE (1..maxNrofRXPool-r16)) OF SL-PRS-ResourcePool-r18 {	1 entry		
SL-PRS-ResourcePool-r18[1]	SL-PRS-ResourcePool	entry 1	
}			
sl-PRS-TxPoolSelectedNormal-r18 SEQUENCE (SIZE (1..maxNrofSL-PRS-TxPool-r18)) OF SL-PRS-ResourcePoolConfig-r18 {	1 entry		
SL-PRS-ResourcePoolConfig-r18[1] SEQUENCE {		entry 1	
sl-PRS-ResourcePoolID-r18	1		
sl-PRS-ResourcePool-r18	SL-PRS-ResourcePool		
}			
}			
sl-PRS-TxPoolExceptional-r18	Not present		
}			
}			

*SL-PRS-ResourcePool***Table 4.6.6-17B: SL-PRS-ResourcePool**

Derivation Path: TS 38.331 [6], clause 6.3.5			
Information Element	Value/remark	Comment	Condition
SL-PRS-ResourcePool-r18 ::= SEQUENCE {			
sl-PRS-PSCCH-Config-r18 CHOICE {			
setup SEQUENCE {			
sl-TimeResourcePSCCH-DedicatedSL-PRS-RP-r18	n2		
sl-FreqResourcePSCCH-DedicatedSL-PRS-RP-r18	n10		
sl-DMRS-ScrambleID-DedicatedSL-PRS-RP-r18	0		
}			
}			
sl-StartRB-SubchannelDedicatedSL-PRS-RP-r18	0	start RB of BWP	
sl-FilterCoefficient-r18	fc4		
sl-ThreshS-RSSI-PRS-CBR-r18	0	actual value is -112 dBm	
sl-RB-Number-r18	10		
sl-TimeResource-r18	1111111100	First 8 of every 10 logical slots	
	0000000011	Last 2 of every 10 logical slots	EXCEPTIONAL
sl-PosAllowedResourceSelectionConfig-r18	c3		
sl-PRS-ResourceReservePeriodList-r18 SEQUENCE (SIZE (1..16)) OF SL-ReservationPeriodAllowedDedicatedSL-PRS-RP-r18 {	1 entry		
SL-ReservationPeriodAllowedDedicatedSL-PRS-RP-r18[1] CHOICE {		entry 1	
sl-ResourceReservePeriod1-r18	ms0		
}			
}			
sl-PRS-ResourcesDedicatedSL-PRS-RP-r18 SEQUENCE (SIZE (1..12)) OF SL-PRS-ResourceDedicatedSL-PRS-RP-r18 {	1 entry		
SL-PRS-ResourceDedicatedSL-PRS-RP-r18[1] SEQUENCE {		entry 1	
sl-PRS-ResourceID-r18	0		
sl-NumberOfSymbols-r18	4		
sl-CombSize-r18	n4		
sl-PRS-starting-symbol-r18	4		
sl-PRS-comb-offset-r18	1		
}			
}			
sl-PRS-PowerControl-r18	Not present		
sl-SensingWindowDedicatedSL-PRS-RP-r18	ms100		
sl-TxPercentageDedicatedSL-PRS-RP-List-r18 SEQUENCE (SIZE (8)) OF SL-TxPercentageDedicatedSL-PRS-RP-Config-r18 {	8 entries		
SL-TxPercentageDedicatedSL-PRS-RP-Config-r18 [k, k=1..8] SEQUENCE {		entry k	
sl-TxPercentageDedicatedSL-PRS-RP-r18	k		
sl-Priority-DedicatedSL-PRS-RP	p50		
}			
}			
sl-SCI-basedSL-PRS-TxTriggerSCI1-B-r18	Not present		
sl-NumSubchannelDedicatedSL-PRS-RP-r18	floor(n/m)	(NOTE 1, 2)	
sl-SubchannelSizeDedicatedSL-PRS-RP-r18	n10		
sl-MaxNumPerReserveDedicatedSL-PRS-RP-r18	n2		

sl-NumReservedBitsSCI1B-DedicatedSL-PRS-RP-r18	2		
sl-SRC-ID-LenDedicatedSL-PRS-RP-r18	n24		
sl-CBR-PriorityTxConfigDedicatedSL-PRS-RP-List-r18	Not present		
sl-TimeWindowSizeCBR-DedicatedSL-PRS-RP-r18	slot100		
sl-TimeWindowSizeCR-DedicatedSL-PRS-RP-r18	slot1000		
sl-CBR-CommonTxConfigDedicatedSL-PRS-RP-List-r18 SEQUENCE {			
sl-CBR-RangeDedicatedSL-PRS-RP-List-r18 SEQUENCE (SIZE (1..maxCBR-ConfigDedSL-PRS-1-r18)) OF SL-CBR-LevelsDedicatedSL-PRS-RP-r18 {	1 entry		
SL-CBR-LevelsDedicatedSL-PRS-RP-r18[1] SEQUENCE (SIZE (0..maxCBR-LevelDedSL-PRS-1-r18)) OF SL-CBR-Dedicated-SL-PRS-RP-r18 {	2 entries	entry 1	
SL-CBR-Dedicated-SL-PRS-RP-r18[1]	50	entry 1 0<=CBR<0.5	
SL-CBR-Dedicated-SL-PRS-RP-r18[2]	100	entry 2 0.5<=CBR<1	
}			
}			
sl-CBR-SL-PRS-TxConfigList-r18 SEQUENCE (SIZE (1..maxNrofSL-PRS-TxConfig-r18)) OF SL-CBR-SL-PRS-TxConfig-r18 {	1 entry		
SL-CBR-SL-PRS-TxConfig-r18[1] SEQUENCE {		entry 1	
sl-PRS-CR-Limit-r18	10000	CR limit = 100%	
sl-PRS-MaxTx-power-r18	Not present		
sl-PRS-MaxNum-Transmissions-r18	5		
}			
}			
}			
sl-PriorityThreshold-UL-URLLC-r18	Not present		
sl-PriorityThreshold-r18	Not present		
sl-SelectionWindowListDedicatedSL-PRS-RP-r18 SEQUENCE (SIZE (8)) OF SL-SelectionWindowConfigDedicated-SL-PRS-RP-r18 {	8 entries		
SL-SelectionWindowConfigDedicated-SL-PRS-RP-r18 [k, k=1..8] SEQUENCE {		entry k	
sl-PRS-Priority-r18	k		
sl-PRS-SelectionWindow-r18	n10		
}			
sl-Thres-RSRP-ListDedicatedSL-PRS-RP-r18 SEQUENCE (SIZE (64)) OF SL-PRS-ThresRSRP-r18 {	64 entries		
INTEGER[k, k=1..64]	0	entry k	
}			
sl-PreemptionEnableDedicatedSL-PRS-RP-r18	Not present		
}			
Note 1: n is the bandwidth of active SL BWP (in RB). n is determined in TS 38.508-1 [30] Table 4.3.1.0D-1 and Table 4.3.1.0D-2 for FR1 and FR2 respectively.			
Note 2: m is subchannel size configured by sl-SubchannelSizeDedicatedSL-PRS-RP-r18.			

Condition	Explanation
EXCEPTIONAL	For exceptional resource pool

– SL-PSBCH-Config

Table 4.6.6-18: SL-PSBCH-Config

Derivation Path: TS 38.331 [6], clause 6.3.5			
Information Element	Value/remark	Comment	Condition
SL-PSBCH-Config-r16 ::= SEQUENCE {			
dl-P0-PSBCH-r16	0		
dl-Alpha-PSBCH-r16	Not present	Default value 1 is used	
dl-P0-PSBCH-r17	0		
}			

– SL-PSSCH-TxConfigList

Table 4.6.6-19: SL-PSSCH-TxConfigList

Derivation Path: TS 38.331 [6], clause 6.3.5			
Information Element	Value/remark	Comment	Condition
SL-PSSCH-TxConfigList-r16 ::= SEQUENCE (SIZE (1..maxPSSCH-TxConfig-r16)) OF SL-PSSCH-TxConfig-r16 {	1 entry		
SL-PSSCH-TxConfig-r16[1] SEQUENCE {		entry 1	
sl-TypeTxSync-r16	Not present	Applicable for all synchronization reference types	
sl-ThresUE-Speed-r16	kmph60		
sl-ParametersAboveThres-r16 SEQUENCE {			
sl-MinMCS-PSSCH-r16	0		
sl-MaxMCS-PSSCH-r16	15		
sl-MinSubChannelNumPSSCH-r16	1		
sl-MaxSubchannelNumPSSCH-r16	27		
sl-MaxTxTransNumPSSCH-r16	4		
sl-MaxTxPower-r16	Not present		
}			
sl-ParametersBelowThres-r16 SEQUENCE {			
sl-MinMCS-PSSCH-r16	16		
sl-MaxMCS-PSSCH-r16	26		
sl-MinSubChannelNumPSSCH-r16	1		
sl-MaxSubchannelNumPSSCH-r16	27		
sl-MaxTxTransNumPSSCH-r16	4		
sl-MaxTxPower-r16	Not present		
}			
}			
}			

– SL-QoS-FlowIdentity

Table 4.6.6-20: SL-QoS-FlowIdentity

Derivation Path: TS 38.331 [6], clause 6.3.5			
Information Element	Value/remark	Comment	Condition
SL-QoS-FlowIdentity-r16	1		

– SL-QoS-Profile

Table 4.6.6-21: SL-QoS-Profile

Derivation Path: TS 38.331 [6], clause 6.3.5			
Information Element	Value/remark	Comment	Condition

SL-QoS-Profile-r16 ::= SEQUENCE {			
sl-PQI-r16 CHOICE {			
sl-StandardizedPQI-r16	0		
}			
sl-GFBR-r16	500		
sl-MFBR-r16	1000		
sl-Range-r16	Not present		
}			

– *SL-QuantityConfig*

Table 4.6.6-22: SL-QuantityConfig

Derivation Path: TS 38.331 [6], clause 6.3.5			
Information Element	Value/remark	Comment	Condition
SL-QuantityConfig-r16 ::= SEQUENCE {			
sl-FilterCoefficientDMRS-r16	fc4		
}			

– *SL-RadioBearerConfig*

Table 4.6.6-23: SL-RadioBearerConfig

Derivation Path: TS 38.331 [6], clause 6.3.5			
Information Element	Value/remark	Comment	Condition
SL-RadioBearerConfig-r16 ::= SEQUENCE {			
slrb-Uu-ConfigIndex-r16	SLRB-Uu-ConfigIndex		
sl-SDAP-Config-r16	SL-SDAP-Config		
sl-PDCP-Config-r16	SL-PDCP-Config		
sl-TransRange-r16	Not present		
}			

– *SL-RBSetConfig*

Table 4.6.6-23A: SL-RBSetConfig

Derivation Path: TS 38.331 [6], clause 6.3.5			
Information Element	Value/remark	Comment	Condition
SL-RBSetConfig-r18 ::= SEQUENCE {			
FFS			
}			

– *SL-RelayIndicationMP*

Table 4.6.6-23B: SL-RelayIndicationMP

Derivation Path: TS 38.331 [6], clause 6.3.5			
Information Element	Value/remark	Comment	Condition
SL-RelayIndicationMP-r18	FFS		

– *SL-RelayUE-Config*

Table 4.6.6-23C: SL-RelayUE-Config

Derivation Path: TS 38.331 [6], clause 6.3.5			
Information Element	Value/remark	Comment	Condition
SL-RelayUE-Config-r17 ::= SEQUENCE {			

threshHighRelay-r1	Not present		
threshLowRelay-r17	RSRP-Range		
hystMaxRelay-r17	Not present		
hystMinRelay-r17	Not present		
}			

– *SL-RelayUE-ConfigU2U*

Table 4.6.6-23D: SL-RelayUE-ConfigU2U

Derivation Path: TS 38.331 [6], clause 6.3.5			
Information Element	Value/remark	Comment	Condition
SL-RelayUE-ConfigU2U-r18 ::= SEQUENCE {			
sl-RSRP-Thresh-DiscConfig-r18	4		
sd-RSRP-ThreshDiscConfig-r18	Not present		
sd-hystMaxRelay-r18	Not present		
}			

– *SL-RemoteUE-Config*

Table 4.6.6-23E: SL-RemoteUE-Config

Derivation Path: TS 38.331 [6], clause 6.3.5			
Information Element	Value/remark	Comment	Condition
SL-RemoteUE-Config-r17 ::= SEQUENCE {			
threshHighRemote-r17	36		
hystMaxRemote-r17	Not present		
sl-ReselectionConfig-r17 SEQUENCE {			
sl-RSRP-Thresh-r17	4		
sl-FilterCoefficientRSRP-r17	Not present		
sl-HystMin-r17	Not present		
}			
}			

– *SL-RemoteUE-ConfigU2U*

Table 4.6.6-23F: SL-RemoteUE-ConfigU2U

Derivation Path: TS 38.331 [6], clause 6.3.5			
Information Element	Value/remark	Comment	Condition
SL-RemoteUE-ConfigU2U-r18 ::= SEQUENCE {			
sl-RSRP-ThreshU2U-r18	4		
sl-HystMinU2U-r18	0		
sd-RSRP-ThreshU2U-r18	Not present		
sd-FilterCoefficientU2U-r18	Not present		
sd-HystMinU2U-r18	Not present		
}			

– *SL-ReportConfigList*

Table 4.6.6-24: SL-ReportConfigList (Thres)

Derivation Path: TS 38.331 [6], clause 6.3.5			
Information Element	Value/remark	Comment	Condition
SL-ReportConfigList-r16 ::= SEQUENCE (SIZE (1..maxNrofSL-ReportConfigId-r16)) OF SL-ReportConfigInfo-r16 {	1 entry		
SL-ReportConfigInfo-r16[1] SEQUENCE {		entry 1	

sl-ReportConfigId-r16	1		
sl-ReportConfig-r16 SEQUENCE {			
sl-ReportType-r16 CHOICE {			
sl-Periodical-r16 SEQUENCE {			PERIODICAL
sl-ReportInterval-r16	ReportInterval		
sl-ReportAmount-r16	infinity		
sl-ReportQuantity-r16 CHOICE {			
sl-RSRP-r16	true		
}			
sl-RS-Type-r16	dmrs		
}			
sl-EventTriggered-r16 SEQUENCE {			EVENT_S1, EVENT_S2
sl-EventId-r16 CHOICE {			
eventS1-r16 SEQUENCE {			EVENT_S1
s1-Threshold-r16 CHOICE {			
sl-RSRP-r16	Thres + 156	Thres is the actual value of event S1 threshold (in dBm)	
}			
sl-ReportOnLeave-r16	false		
sl-Hysteresis-r16	Hysteresis		
sl-TimeToTrigger-r16	TimeToTrigger		
}			
eventS2-r16 SEQUENCE {			EVENT_S2
s2-Threshold-r16 CHOICE {			
sl-RSRP-r16	Thres + 156	Thres is the actual value of event S2 threshold (in dBm)	
}			
sl-ReportOnLeave-r16	false		
sl-Hysteresis-r16	Hysteresis		
sl-TimeToTrigger-r16	TimeToTrigger		
}			
}			
sl-ReportInterval-r16	ReportInterval		
sl-ReportAmount-r16	r2		
sl-ReportQuantity-r16 CHOICE {			
sl-RSRP-r16	true		
}			
sl-RS-Type-r16	dmrs		
}			
}			
}			
}			
}			
}			

Condition	Explanation
EVENT_S1	Configuration of event S1 triggered reprting
EVENT_S2	Configuration of event S2 triggered reprting
PERIODICAL	Configuration of periodical reporting

- *SL-ResourcePool*

Table 4.6.6-25: SL-ResourcePool

Derivation Path: TS 38.331 [6], clause 6.3.5			
Information Element	Value/remark	Comment	Condition
SL-ResourcePool-r16 ::= SEQUENCE {			
sl-PSCCH-Config-r16 CHOICE {			
setup SEQUENCE {			
sl-TimeResourcePSCCH-r16	n2		

sl-FreqResourcePSCCH-r16	n10		
sl-DMRS-ScrambleID-r16	0		
sl-NumReservedBits-r16	2		
}			
}			
sl-PSSCH-Config-r16 CHOICE {			
setup SEQUENCE {			
sl-PSSCH-DMRS-TimePatternList-r16	2 entries		
SEQUENCE (SIZE (1..3)) OF INTEGER (2..4) {			
INTEGER[1]	2	entry 1	
INTEGER[2]	4	entry 2	
}			
sl-BetaOffsets2ndSCI-r16 SEQUENCE (SIZE (4))	4 entries		
OF SL-BetaOffsets-r16 {			
SL-BetaOffsets-r16[k, k=1..4]	1	entry k	
}			
sl-Scaling-r16	f1		
}			
}			
sl-PSFCH-Config-r16	Not present		
sl-PSFCH-Config-r16 CHOICE {			SL_HARQ
setup SEQUENCE {			
sl-PSFCH-Period-r16	sl4		
sl-PSFCH-RB-Set-r16	bitstring of length n, The leftmost $p \cdot \text{floor}(m/p) \cdot \text{floor}(n/m)$ bits are set to "1" and the rest are set to "0"	Note 1, Note 2, Note 3	
sl-NumMuxCS-Pair-r16	n2		
sl-MinTimeGapPSFCH-r16	sl2		
sl-PSFCH-HopID-r16	Not present	Default frequency hopping ID 0 is used	
sl-PSFCH-CandidateResourceType-r16	startSubCH		
}			
}			
sl-SyncAllowed-r16 SEQUENCE {			
gnss-Sync-r16	true		
gnbEnb-Sync-r16	true		
ue-Sync-r16	true		
}			
sl-SubchannelSize-r16	n10		
dummy	Not present		
sl-StartRB-Subchannel-r16	0	start RB of BWP	
sl-NumSubchannel-r16	$\text{floor}(n/m)$	Note 1, Note 2	
sl-Additional-MCS-Table-r16	Not present		
sl-ThreshS-RSSI-CBR-r16	0	actual value is - 112 dBm	
sl-TimeWindowSizeCBR-r16	slot100		
sl-TimeWindowSizeCR-r16	slot1000		
sl-PTRS-Config-r16	Not present		
sl-UE-SelectedConfigRP-r16 SEQUENCE {			
sl-CBR-PriorityTxConfigList-r16	SL-CBR- PriorityTxConfigList		
sl-Thres-RSRP-List-r16	SL-Thres-RSRP-List		
sl-MultiReserveResource-r16	Not present		
sl-MaxNumPerReserve-r16	n2		
sl-SensingWindow-r16	ms100		
sl-SelectionWindowList-r16 SEQUENCE (SIZE (8))	8 entries		
OF SL-SelectionWindowConfig-r16 {			
SL-SelectionWindowConfig-r16[k, k=1..8]		entry k	
SEQUENCE {			
sl-Priority-r16	k		
sl-SelectionWindow-r16	n10		
}			

}			
sl-ResourceReservePeriodList-r16	Not present		
sl-RS-ForSensing-r16	pssch		
sl-CBR-PriorityTxConfigList-v1650	Not present		
}			
sl-RxParametersNcell-r16	Not present		
sl-ZoneConfigMCR-List-r16	Not present		
sl-FilterCoefficient-r16	fc4		
sl-RB-Number-r16	$10 \cdot \text{floor}(n/10)$	Note 1	
sl-PreemptionEnable-r16	Not present		
sl-PriorityThreshold-UL-URLLC-r16	Not present		
sl-PriorityThreshold-r16	Not present		
sl-X-Overhead-r16	Not present	Default value n0 is used	
sl-PowerControl-r16	Not present		
sl-TxPercentageList-r16 SEQUENCE (SIZE (8)) OF SL-TxPercentageConfig-r16 {	8 entries		
SL-TxPercentageConfig-r16[k, k=1..8] SEQUENCE {		entry k	
sl-Priority-r16	k		
sl-TxPercentage-r16	p50		
}			
}			
sl-MinMaxMCS-List-r16	Not present		
sl-TimeResource-r16	1111111100	First 8 of every 10 logical slots	
	0000000011	Last 2 of every 10 logical slots	EXCEPTIONAL
sl-PBPS-CPS-Config-r17 CHOICE {			
setup	SL-PBPS-CPS-Config		
}			
sl-InterUE-CoordinationConfig-r17	Not present		
sl-CPE-StartingPositionsPSCCH-PSSCH-InitiateCOT-List-r18	Not present		
sl-CPE-StartingPositionsPSCCH-PSSCH-InitiateCOT-Default-r18	Not present		
sl-CPE-StartingPositionsPSCCH-PSSCH-WithinCOT-List-r18	Not present		
sl-CPE-StartingPositionsPSCCH-PSSCH-WithinCOT-Default-r18	Not present		
sl-Type1-LBT-BlockingOption1-r18	Not present		
sl-Type1-LBT-BlockingOption2-r18	Not present		
sl-NumInterlacePerSubchannel-r18	Not present		
sl-NumReferencePRBs-OfInterlace-r18	Not present		
sl-TransmissionStructureForPSFCH-r18	Not present		
sl-NumDedicatedPRBs-ForPSFCH-r18	Not present		
sl-NumPSFCH-Occasions-r18	Not present		
sl-PSFCH-CommonInterlaceIndex-r18	Not present		
sl-CPE-StartingPositionPSFCH-r18	Not present		
sl-NumRefSymbolLength-r18	Not present		
sl-PSFCH-RB-SetList-r18	Not present		
sl-IUC-RB-SetList-r18	Not present		
sl-PSFCH-PowerOffset-r18	Not present		
sl-RBSetIndexOfResourcePool-r18	Not present		
sl-A2X-Service-r18	Not present		
sl-PRS-ResourcesSharedSL-PRS-RP-r18	Not present		
sl-PRS-ResourcesSharedSL-PRS-RP-r18 SEQUENCE (SIZE (1..17)) OF SL-PRS-ResourceSharedSL-PRS-RP-r18 {	1 entry		SLPP
SL-PRS-ResourceSharedSL-PRS-RP-r18 [1] SEQUENCE {		entry 1	
sl-PRS-ResourceID-r18	0		
mNumberOfSymbols-r18	4		
sl-PRS-CombSizeN-AndReOffset-r18 CHOICE {			
n4-r18	1		
}			

}			
}			
numSym-SL-PRS-2ndStageSCI-r18	Not present		
	2		SLPP
sl-SCI-basedSL-PRS-TxTriggerSCI2-D-r18	Not present		
}			
Note 1: n is the bandwidth of active SL BWP (in RB). n is determined in Table 4.3.1.0D-1 and Table 4.3.1.0D-2 for FR1 and FR2 respectively.			
Note 2: m is subchannel size configured by sl-SubchannelSize-r16.			
Note 3: p is the PSFCH period configured by sl-PSFCH-Period-r16			

Condition	Explanation
SL_HARQ	To enable SL HARQ feedback
EXCEPTIONAL	For exceptional resource pool
SLPP	To configure SL-PRS resource pool for SLPP test cases

– *SL-RLC-BearerConfig*

Table 4.6.6-26: *SL-RLC-BearerConfig*

Derivation Path: TS 38.331 [6], clause 6.3.5			
Information Element	Value/remark	Comment	Condition
SL-RLC-BearerConfig-r16 ::= SEQUENCE {			
sl-RLC-BearerConfigIndex-r16	SL-RLC-BearerConfigIndex		
sl-ServedRadioBearer-r16	SLRB-Uu-ConfigIndex		
sl-RLC-Config-r16	SL-RLC-Config with condition AM		
sl-MAC-LogicalChannelConfig-r16	SL-LogicalChannelConfig		
}			

Table 4.6.6-26A: *Void*

Table 4.6.6-26B: *Void*

– *SL-RLC-BearerConfigIndex*

Table 4.6.6-27: *SL-RLC-BearerConfigIndex*

Derivation Path: TS 38.331 [6], clause 6.3.5			
Information Element	Value/remark	Comment	Condition
SL-RLC-BearerConfigIndex-r16	1		

– *SL-RLC-ChannelConfig*

Table 4.6.6-27AA: *SL-RLC-ChannelConfig*

Derivation Path: TS 38.331 [6], clause 6.3.5			
Information Element	Value/remark	Comment	Condition
SL-RLC-ChannelConfig-r17 ::= SEQUENCE {			
sl-RLC-ChannelID-r17	SL-RLC-ChannelID-r17 with condition PC5RelaySRBn		PC5RelayS RBn

	SL-RLC-ChannelID-r17 with condition PC5RelayDRBn		PC5RelayS RBn
sl-RLC-Config-r17	SL-RLC-Config with condition AM		
sl-MAC-LogicalChannelConfig-r17	SL-LogicalChannelConfig		
sl-PacketDelayBudget-r17	Not present		
}			

Condition	Explanation
PC5RelaySRBn	Establishment of PC5 RelayRLC Channel for SRBn; n=1..3
PC5RelayDRBn	Establishment of PC5 RelayRLC Channel for DRBn; n=1..16

– *SL-RLC-ChannelID*

Table 4.6.6-27A: SL-RLC-ChannelID

Derivation Path: TS 38.331 [6], clause 6.3.5			
Information Element	Value/remark	Comment	Condition
SL-RLC-ChannelID-r17	n+1		PC5RelayS RBn
	n+4		PC5RelayD RBn

Condition	Explanation
PC5RelaySRBn	Establishment of PC5 RelayRLC Channel for SRBn; n=1..3
PC5RelayDRBn	Establishment of PC5 RelayRLC Channel for DRBn; n=1..16

– *SL-RLC-Config*

Table 4.6.6-28: SL-RLC-Config

Derivation Path: TS 38.331 [6], clause 6.3.5			
Information Element	Value/remark	Comment	Condition
SL-RLC-Config-r16 ::= CHOICE {			
sl-AM-RLC-r16 SEQUENCE {			AM
sl-SN-FieldLengthAM-r16	size12		
sl-T-PollRetransmit-r16	ms80		
sl-PollPDU-r16	p32768		
sl-PollByte-r16	kB750		
sl-MaxRetxThreshold-r16	t8		
}			
sl-UM-RLC-r16 SEQUENCE {			UM
sl-SN-FieldLengthUM-r16	size6		
}			
}			

Condition	Explanation
AM	RLC AM
UM	RLC UM

– *SL-ScheduledConfig*

Table 4.6.6-29: SL-ScheduledConfig

Derivation Path: TS 38.331 [6], clause 6.3.5			
Information Element	Value/remark	Comment	Condition

SL-ScheduledConfig-r16 ::= SEQUENCE {			
sl-RNTI-r16	RNTI-Value		
mac-MainConfigSL-r16 SEQUENCE {			
sl-BSR-Config-r16	BSR-Config		
ul-PrioritizationThres-r16	Not present		
sl-PrioritizationThres-r16	Not present		
}			
sl-CS-RNTI-r16	Not present		
	RNTI-Value which is different with sl-RNTI-r16		SL_CG
sl-PSFCH-ToPUCCH-r16	Not present		
sl-PSFCH-ToPUCCH-r16 SEQUENCE (SIZE (1..8)) OF INTEGER {	1 entry		SL HARQ_VIA_UU
INTEGER[1]	4	entry 1	
}			
sl-ConfiguredGrantConfigList-r16	Not present		
sl-ConfiguredGrantConfigList-r16 SEQUENCE {			SL_CG
sl-ConfiguredGrantConfigToReleaseList-r16	Not present		
sl-ConfiguredGrantConfigToAddModList-r16 SEQUENCE (SIZE (1..maxNrofCG-SL-r16)) OF SL-ConfiguredGrantConfig-r16 {	1 entry		
SL-ConfiguredGrantConfig-r16[1]	SL-ConfiguredGrantConfig	entry 1	
}			
}			
sl-DCI-ToSL-Trans-r16 SEQUENCE (SIZE (1..8)) OF INTEGER {	1 entry		
INTEGER[1]	4	entry 1	
}			
}			

Condition	Explanation
SL_CG	To provide UE SL configured grant
SL HARQ_VIA_UU	to report HARQ-ACK information that the UE generates based on PSFCH reception via PUCCH/PUSCH

– SL-SDAP-Config

Table 4.6.6-30: SL-SDAP-Config

Derivation Path: TS 38.331 [6], clause 6.3.5			
Information Element	Value/remark	Comment	Condition
SL-SDAP-Config-r16 ::= SEQUENCE {			
sl-SDAP-Header-r16	present		
sl-DefaultRB-r16	true		
sl-MappedQoS-Flows-r16	Not present	All PC5 QoS flows are mapped to default SL DRB	
sl-CastType-r16	Unicast		
}			

– SL-ServingCellInfo

Table 4.6.6-30AA: SL-ServingCellInfo

Derivation Path: TS 38.331 [6], clause 6.3.5			
Information Element	Value/remark	Comment	Condition
SL-ServingCellInfo-r17 ::= SEQUENCE {			
sl-PhysCellId-r17	PhysCellId		

sl-CarrierFreqNR-r17	ARFCN-ValueNR with condition DL_SSB		
}			

– *SL-SourcelIdentity*

Table 4.6.6-30AB: SL-SourcelIdentity

Derivation Path: TS 38.331 [6], clause 6.3.5			
Information Element	Value/remark	Comment	Condition
SL-SourcelIdentity-r17	FFS		

– *SL-SRAP-Config*

Table 4.6.6-30A: SL-SRAP-Config

Derivation Path: TS 38.331 [6], clause 6.3.5			
Information Element	Value/remark	Comment	Condition
SL-SRAP-Config-r17 ::= SEQUENCE {			
sl-LocalIdentity-r17	1		
sl-MappingToAddModList-r17	Not present		
sl-MappingToAddModList-r17 SEQUENCE (SIZE (1..maxLC-ID)) OF SL-MappingToAddMod-r17[1] SEQUENCE {	1 entry		SRB0
sl-RemoteUE-RB-Identity-r17 CHOICE {			
srb-Identity-r17	0		
}			
sl-EgressRLC-ChannelUu-r17	Not present		
sl-EgressRLC-ChannelUu-r17	Uu-RelayRLC-ChannelID using condition uuRelay SRB0		L2RelayUE
sl-EgressRLC-ChannelPC5-r17	Not present		
}			
sl-MappingToAddModList-r17 SEQUENCE (SIZE (1..maxLC-ID)) OF SL-MappingToAddMod-r17[1] SEQUENCE {	1 entry		SRB1
sl-RemoteUE-RB-Identity-r17 CHOICE {			
srb-Identity-r17	1		
}			
sl-EgressRLC-ChannelUu-r17	Not present		
sl-EgressRLC-ChannelUu-r17	Uu-RelayRLC-ChannelID using condition uuRelay SRB1		L2RelayUE
sl-EgressRLC-ChannelPC5-r17	Not present		
}			
sl-MappingToAddModList-r17 SEQUENCE (SIZE (1..maxLC-ID)) OF SL-MappingToAddMod-r17[1] SEQUENCE {	1 entry		SRB2
sl-RemoteUE-RB-Identity-r17 CHOICE {			
srb-Identity-r17	2		
}			
sl-EgressRLC-ChannelUu-r17	Not present		
sl-EgressRLC-ChannelUu-r17	Uu-RelayRLC-ChannelID using condition uuRelay SRB2		L2RelayUE
sl-EgressRLC-ChannelPC5-r17	Not present		
sl-EgressRLC-ChannelPC5-r17	SL-RLC-ChannelID using condition PC5Relay SRB2		L2RelayUE, L2RemoteUE
}			
sl-MappingToAddModList-r17 SEQUENCE (SIZE (1..maxLC-ID)) OF SL-MappingToAddMod-r17[1] SEQUENCE {	1 entry		DRB1

sl-RemoteUE-RB-Identity-r17 CHOICE {			
drb-Identity-r17	DRB-Identity using condition DRB1		
}			
sl-EgressRLC-ChannelUu-r17	Uu-RelayRLC-ChannelID using condition uuRelay DRB1		L2RelayUE
sl-EgressRLC-ChannelPC5-r17	Not present		
sl-EgressRLC-ChannelPC5-r17	SL-RLC-ChannelID using condition PC5Relay DRB1		L2RelayUE, L2RemoteUE
}			
sl-MappingToAddModList-r17 SEQUENCE (SIZE (1..maxLC-ID)) OF SL-MappingToAddMod-r17[1] SEQUENCE {	1 entry		DRB2
sl-RemoteUE-RB-Identity-r17 CHOICE {			
drb-Identity-r17	DRB-Identity using condition DRB2		
}			
sl-EgressRLC-ChannelUu-r17	Not present		
sl-EgressRLC-ChannelUu-r17	Uu-RelayRLC-ChannelID using condition uuRelay DRB2		L2RelayUE
sl-EgressRLC-ChannelPC5-r17	Not present		
sl-EgressRLC-ChannelPC5-r17	SL-RLC-ChannelID using condition PC5Relay DRB2		L2RelayUE, L2RemoteUE
}			
sl-MappingToReleaseList-r1	Not present		
}			

Condition	Explanation
SRB0	Establishment of SRB0
SRB1	Establishment of SRB1
SRB2	Establishment of SRB2
DRB1	Establishment of DRB1
DRB2	Establishment of DRB2
L2RelayUE	For L2 U2N Relay UE
L2RemoteUE	For L2 U2N Remote UE

– *SL-SRAP-ConfigU2U*

Table 4.6.6-30B: SL-SRAP-ConfigU2U

Derivation Path: TS 38.331 [6], clause 6.3.5			
Information Element	Value/remark	Comment	Condition
SL-SRAP-ConfigU2U-r18 ::= SEQUENCE {			
FFS			
}			

– *SL-SyncConfig*

Table 4.6.6-31: SL-SyncConfig

Derivation Path: TS 38.331 [6], clause 6.3.5			
Information Element	Value/remark	Comment	Condition
SL-SyncConfig-r16 ::= SEQUENCE {			
sl-SyncRefMinHyst-r16	dB3		
sl-SyncRefDiffHyst-r16	dB3		
sl-filterCoefficient-r16	fc4		
sl-SSB-TimeAllocation1-r16 SEQUENCE {			

sl-NumSSB-WithinPeriod-r16	n1		SCS15
	n2		SCS30, SCS60, SCS120
sl-TimeOffsetSSB-r16	0		
sl-TimeInterval-r16	Not present		SCS15
	1		SCS30, SCS60, SCS120
}			
sl-SSB-TimeAllocation2-r16 SEQUENCE {			
sl-NumSSB-WithinPeriod-r16	n1		SCS15
	n2		SCS30, SCS60, SCS120
sl-TimeOffsetSSB-r16	80		
sl-TimeInterval-r16	Not present		SCS15
	1		SCS30, SCS60, SCS120
}			
sl-SSB-TimeAllocation3-r16			
sl-SSID-r16	Arbitrarily chosen by SS from the range 1 to 335		
txParameters-r16 SEQUENCE {			
syncTxThreshIC-r16	Not present		
syncTxThreshOoC-r16	4	actual threshold is -100 dBm	
syncInfoReserved-r16	00		
}			
gnss-Sync-r16	Not present		
}			

– *SL-Thres-RSRP-List*

Table 4.6.6-32: *SL-Thres-RSRP-List*

Derivation Path: TS 38.331 [6], clause 6.3.5			
Information Element	Value/remark	Comment	Condition
SL-Thres-RSRP-List-r16 ::= SEQUENCE (SIZE (64)) OF INTEGER {	64 entries		
INTEGER[k, k=1..64]	0	entry k	
}			

– *SL-TxPower*

Table 4.6.6-33: *SL-TxPower*

Derivation Path: TS 38.331 [6], clause 6.3.5			
Information Element	Value/remark	Comment	Condition
SL-TxPower-r16 ::= CHOICE {			
txPower-r16	23	23dBm	
}			

– *SL-TypeTxSync*

Table 4.6.6-34: *SL-TypeTxSync*

Derivation Path: TS 38.331 [6], clause 6.3.5			
Information Element	Value/remark	Comment	Condition

SL-TypeTxSync-r16	gnss		

– *SL-UE-SelectedConfig*

Table 4.6.6-35: SL-UE-SelectedConfig

Derivation Path: TS 38.331 [6], clause 6.3.5			
Information Element	Value/remark	Comment	Condition
SL-UE-SelectedConfig-r16 ::= SEQUENCE {			
sl-PSSCH-TxConfigList-r16	SL-PSSCH-TxConfigList		
sl-ProbResourceKeep-r16	v0		
sl-ReselectAfter-r16	n9		
sl-CBR-CommonTxConfigList-r16	SL-CBR-CommonTxConfigList		
ul-PrioritizationThres-r16	Not present		
sl-PrioritizationThres-r16	Not present		
}			

– *SL-ZoneConfig*

Table 4.6.6-36: SL-ZoneConfig

Derivation Path: TS 38.331 [6], clause 6.3.5			
Information Element	Value/remark	Comment	Condition
SL-ZoneConfig-r16 ::= SEQUENCE {			
sl-ZoneLength-r16	m50		
}			

– *SLRB-Uu-ConfigIndex*

Table 4.6.6-37: SLRB-Uu-ConfigIndex

Derivation Path: TS 38.331 [6], clause 6.3.5			
Information Element	Value/remark	Comment	Condition
SLRB-Uu-ConfigIndex-r16	1		

Table 4.6.6-38: Void

4.6.7 MBS information elements

– *CarrierFreqListMBS*

Table 4.6.7-1: CarrierFreqListMBS

Derivation Path: TS 38.331 [6], clause 6.3.6			
Information Element	Value/remark	Comment	Condition
CarrierFreqListMBS-r17 ::= SEQUENCE {			
FFS			
}			

– *CFR-ConfigMCCH-MTCH*

Table 4.6.7-2: CFR-ConfigMCCH-MTCH

Derivation Path: TS 38.331 [6], clause 6.3.6			
Information Element	Value/remark	Comment	Condition
CFR-ConfigMCCH-MTCH-r17 ::= SEQUENCE {			
locationAndBandwidthBroadcast-r17	Not present		
locationAndBandwidthBroadcast-r17 CHOICE {			SIB1_BWP
sameAsSib1ConfiguredLocationAndBW	NULL		
}			
pdsch-ConfigMCCH-r17	PDSCH-ConfigBroadcast with condition MCCH		
commonControlResourceSetExt-r17	Not present		
}			

Condition	Explanation
SIB1_BWP	CFR for broadcast has the same location and size as the <i>locationAndBandwidth</i> for initial BWP configured in SIB1

– *DRX-ConfigPTM*

Table 4.6.7-3: DRX-ConfigPTM

Derivation Path: TS 38.331 [6], clause 6.3.6			
Information Element	Value/remark	Comment	Condition
DRX-ConfigPTM-r17 ::= SEQUENCE {			
drx-onDurationTimerPTM-r17 CHOICE {			
milliseconds	ms6		
}			
drx-InactivityTimerPTM-r17	ms1280		
drx-HARQ-RTT-TimerDL-PTM-r17	Not present		
	56		HARQ_Fee dback
drx-RetransmissionTimerDL-PTM-r17	Not present		
	sl16		FR1 and HARQ_Fee dback
	sl64		FR2 and HARQ_Fee dback
drx-LongCycleStartOffsetPTM-r17 CHOICE {			
ms10240	0		
}			
drx-SlotOffsetPTM-r17	0		
}			

Condition	Explanation
HARQ_Feedback	HARQ feedback is enabled for a G-RNTI associated with this DRX configuration

– *MBS-NeighbourCellList*

Table 4.6.7-4: MBS-NeighbourCellList

Derivation Path: TS 38.331 [6], clause 6.3.6			
Information Element	Value/remark	Comment	Condition
MBS-NeighbourCellList-r17 ::= SEQUENCE {			
FFS			
}			

– *MBS-NonServingInfoList*

Table 4.6.7-4A: MBS-NonServingInfoList

Derivation Path: TS 38.331 [6], clause 6.3.6			
Information Element	Value/remark	Comment	Condition
MBS-NonServingInfoList-r18 ::= SEQUENCE (SIZE (1..maxFreqMBS-r17)) OF NonServingInfo-r18 {	1 entry		
NonServingInfo-r18[1] SEQUENCE {		entry 1	
freqInfoMBS-r18 SEQUENCE {			
carrierFreqMBS-r18	ARFCN-ValueNR		
freqBandIndicatorMBS-r18	FreqBandIndicatorNR		
}			
cfr-InfoMBS-r18	Not checked		
subcarrierSpacing-r18	Not checked		
}			
}			

– *MBS-ServiceList*

Table 4.6.7-5: MBS-ServiceList

Derivation Path: TS 38.331 [6], clause 6.3.6			
Information Element	Value/remark	Comment	Condition
MBS-ServiceList-r17 ::= SEQUENCE {			
FFS			
}			

– *MBS-SessionInfoList*

Table 4.6.7-6: MBS-SessionInfoList

Derivation Path: TS 38.331 [6], clause 6.3.6			
Information Element	Value/remark	Comment	Condition
MBS-SessionInfoList-r17 ::= SEQUENCE (SIZE (0..maxNrofMBS-Session-r17)) OF MBS-SessionInfo-r17 {	1 entry		
MBS-SessionInfo-r17[1] SEQUENCE {			
mbs-SessionId-r17	TMGI with condition MBS_Broadcast		
g-RNTI-r17	RNTI-Value		
mrbs-ListBroadcast-r17 SEQUENCE (SIZE (1..maxNrofMRB-Broadcast-r17)) OF MRB-InfoBroadcast-r17 {	1 entry		
MRB-InfoBroadcast-r17[1] SEQUENCE {		entry 1	
pdcp-Config-r17 SEQUENCE {			
pdcp-SN-SizeDL-r17	Not present		
headerCompression-r17 CHOICE {			
notUsed	NULL		
}			
t-Reordering-r17	Not present		
}			
rlc-Config-r17 SEQUENCE {			
logicalChannelIdentity-r17	1		
sn-FieldLength-r17	Not present		
t-Reassembly-r17	Not present		
}			
}			
}			

mtch-SchedulingInfo-r17	Not present		
	0		DRX_MBS_Broadcast
mtch-NeighbourCell-r17	Not present		
pdsch-ConfigIndex-r17	Not present		
mtch-SSB-MappingWindowIndex-r17	Not present		
}			
}			

Condition	Explanation
DRX_MBS_Broadcast	DRX is used for MBS Broadcast test
MBS_Broadcast	MBS Broadcast service

– *MBS-SessionInfoListMulticast*

Table 4.6.7-6A: MBS-SessionInfoListMulticast

Derivation Path: TS 38.331 [6], clause 6.3.6			
Information Element	Value/remark	Comment	Condition
MBS-SessionInfoListMulticast-r18 ::= SEQUENCE (SIZE (1..maxNrofMBS-Session-r17)) OF MBS-SessionInfoMulticast-r18 {	1 entry		
MBS-SessionInfoMulticast-r18[1] SEQUENCE {		entry 1	
mbs-SessionId-r18	TMGI		
g-RNTI-r18	RNTI-Value		
mrb-ListMulticast-r18 SEQUENCE (SIZE (1..maxMRB-r17)) OF MRB-InfoMulticast-r18 {	1 entry		
MRB-InfoMulticast-r18[1] {		entry 1	
pdcp-Config-r18 SEQUENCE {			
pdcp-SN-SizeDL-r18	len12bits		
headerCompression-r18 CHOICE {			
notUsed	NULL		
}			
t-Reordering-r17	Not present		
}			
rlc-Config-r18 SEQUENCE {			
logicalChannelIdentity-r18 CHOICE {			
logicalChannelIdentitymulticast-r18	1		
}			
sn-FieldLength-r18	size6		
t-Reassembly-r18	Not present		
}			
}			
}			
mtch-SchedulingInfo-r18	Not present		
mtch-NeighbourCell-r18	Not present		
pdsch-ConfigIndex-r18	Not present		
mtch-SSB-MappingWindowIndex-r18	Not present		
thresholdIndex-r18	0		
pdcp-SyncIndicator-r18	Not present		
stopMonitoringRNTI-r18	Not present		
}			
}			

– *MTCH-SSB-MappingWindowList*

Table 4.6.7-7: MTCH-SSB-MappingWindowList

Derivation Path: TS 38.331 [6], clause 6.3.6			
Information Element	Value/remark	Comment	Condition

MTCH-SSB-MappingWindowList-r17 ::= SEQUENCE			
{			
FFS			
}			

– *PDSCH-ConfigBroadcast*

Table 4.6.7-8: PDSCH-ConfigBroadcast

Derivation Path: TS 38.331 [6], clause 6.3.6			
Information Element	Value/remark	Comment	Condition
PDSCH-ConfigBroadcast-r17 ::= SEQUENCE {			
pdschConfigList-r17 SEQUENCE (SIZE (1..maxNrofPDSCH-ConfigPTM-r17)) OF PDSCH-ConfigPTM-r17 {	1 entry		MCCH
PDSCH-ConfigPTM-r17[1] SEQUENCE {		entry 1	
dataScramblingIdentityPDSCH-r17	0		
dmrs-ScramblingID0-r17	Not present		
pdsch-AggregationFactor-r17	Not present		
}			
}			
pdschConfigList-r17 SEQUENCE (SIZE (1..maxNrofPDSCH-ConfigPTM-r17)) OF PDSCH-ConfigPTM-r17 {	2 entries		MTCH
PDSCH-ConfigPTM-r17[1] SEQUENCE {		entry 1	
dataScramblingIdentityPDSCH-r17	0		
dmrs-ScramblingID0-r17	Not present		
pdsch-AggregationFactor-r17	Not present		
}			
PDSCH-ConfigPTM-r17[1] SEQUENCE {		entry 2	
dataScramblingIdentityPDSCH-r17	1023		
dmrs-ScramblingID0-r17	Not present		
pdsch-AggregationFactor-r17	Not present		
}			
}			
pdsch-TimeDomainAllocationList-r17	Not present		MCCH
pdsch-TimeDomainAllocationList-r17 SEQUENCE (SIZE(1..maxNrofDL-Allocations)) OF PDSCH-TimeDomainResourceAllocation-r16 {	2 entries		MTCH
PDSCH-TimeDomainResourceAllocation-r16[1] SEQUENCE {		entry 1	
k0-r16	Not present	K0=0	
mappingType-r16	typeA		
startSymbolAndLength-r16	72	S=2, L=6	
repetitionNumber-r16	Not present		
k0-v1710	Not present		
repetitionNumber-v1730	Not present		
}			
PDSCH-TimeDomainResourceAllocation-r16[2] SEQUENCE {		entry 2	
k0-r16	Not present	K0=0	
mappingType-r16	typeA		
startSymbolAndLength-r16	53	S=2, L=12	
repetitionNumber-r16	Not present		
k0-v1710	Not present		
repetitionNumber-v1730	Not present		
}			
}			
rateMatchPatternToAddModList-r17	Not present		
lte-CRS-ToMatchAround-r17	Not present		
mcs-Table-r17	Not present		
xOverhead-r17	Not present		
}			

Condition	Explanation
MCCH	PDSCH-ConfigBroadcast-r17 is configured in pdsch-ConfigMCCH-r17
MTCH	PDSCH-ConfigBroadcast-r17 is configured in pdsch-ConfigMTCH-r17

– *TMGI*

Table 4.6.7-9: *TMGI*

Derivation Path: TS 38.331 [6], clause 6.3.6			
Information Element	Value/remark	Comment	Condition
TMGI-r17 ::= SEQUENCE {			
plmn-Id-r17 CHOICE {			
plmn-Index-r17	1		
}			
serviceId-r17	'000001'H	OCTET STRING (SIZE (3))	MBS_Broadcast
	'000101'H	OCTET STRING (SIZE (3))	
}			

Condition	Explanation
MBS_Broadcast	MBS Broadcast service

4.7 Default 5GC NAS message and information elements contents

4.7.0 General

4.7.0.1 Interpretation of IE presence and values

For Uplink NAS messages, the following terms and their meanings shall be used to determine how to test specific IEs:

- "Not present": test cases fail if IE is present.
- "Present but contents not checked": test cases fail if IE is not present. No requirements regarding contents of the IE.
- "Not checked":
 - Optional IE: IE may or may not be present. No requirements regarding contents of the IE.
 - Mandatory IE: IE shall be present. No requirements regarding contents of the IE.
- "If present: <specific values>": IE may or may not be present. If present, its contents shall be as specified.
- "<specific values>": test cases fail if IE is not present. Its contents shall be as specified.

4.7.0.2 Security protected 5GS NAS messages

In subclause 4.7.1, all 5GS NAS messages are described in the plain 5GS NAS message format.

When a 5GS NAS message is security protected, the message shall be contained by SECURITY PROTECTED 5GS NAS MESSAGE unless contained by another NAS message.

The default contents of SECURITY PROTECTED 5GS NAS MESSAGE message is defined in table 4.7.1-28.

4.7.1 Contents of 5GMM messages

– Authentication request

Table 4.7.1-1: AUTHENTICATION REQUEST

Derivation Path: 24.501 clause 8.2.1			
Information Element	Value/remark	Comment	Condition
Extended protocol discriminator	'0111 1110'B	5GS mobility management messages	
Security header type	'0000'B	Plain 5GS NAS message, not security protected	
Spare half octet	'0000'B		
Authentication request message identity	'0101 0110'B		
ngKSI			
NAS key set identifier	An arbitrarily selected value between '000'B and '110'B, different from the valid NAS key set identifier of the UE if such a value exists.		
TSC	'0'B	native security context (for KSI _{AMF})	
Spare half octet	'0000'B		
ABBA	'0000 0000 0000 0000'B		
Authentication parameter RAND (5G authentication challenge)	Not Present		EAP-AKA
	An arbitrarily selected 128 bits value		5G-AKA
Authentication parameter AUTN (5G authentication challenge)	Not Present		EAP-AKA
	128 bits value generated according to TS 24.501 [28] subclause 9.11.3.15		5G-AKA
EAP message	Not Present		5G-AKA
EAP message	EAP-request/AKA'-challenge	See Table 4.7.3.2-01	EAP-AKA

Condition	Explanation
EAP_AKA	EAP based primary authentication and key agreement procedure
5G-AKA	5G AKA based primary authentication and key agreement procedure

NOTE: Within a test execution this message is sent without integrity protection before NAS security mode control procedure has been successfully completed; and sent integrity protected and ciphered within SECURITY PROTECTED 5GS NAS MESSAGE message after 5GS NAS security mode control procedure has been successfully completed. SS does not maintain information for 5GS NAS security mode control procedure after a TC is completed.

– Authentication response

Table 4.7.1-2: AUTHENTICATION RESPONSE

Derivation Path: 24.501 clause 8.2.2			
Information Element	Value/remark	Comment	Condition
Extended protocol discriminator	5GMM		
Security header type	'0000'B	Plain 5GS NAS message, not security protected	
Spare half octet	'0000'B		
Authentication response message identity	'0101 0111'B		

Authentication response parameter	16 octets RES* value calculated according to TS 24.501 [28] subclause 9.11.3.17		5G-AKA
	Not Present		EAP-AKA
EAP message	EAP-response/AKA'-challenge	See Table 4.7.3.2-02	EAP-AKA

Condition	Explanation
EAP-AKA	EAP based primary authentication and key agreement procedure
5G-AKA	5G AKA based primary authentication and key agreement procedure

NOTE: When sent in response to an AUTHENTICATION REQUEST message which is not integrity protected and not ciphered, the AUTHENTICATION RESPONSE message is sent integrity protected when a valid security context exists and without integrity protection and ciphering otherwise.

– Authentication result

Table 4.7.1-3: AUTHENTICATION RESULT

Derivation Path: 24.501 clause 8.2.3			
Information Element	Value/remark	Comment	Condition
Extended protocol discriminator	5GMM		
Security header type	'0000'B	Plain 5GS NAS message, not security protected	
Spare half octet	'0000'B		
Authentication result message identity	'0101 1010'B		
ngKSI	The same value as the last AUTHENTICATION REQUEST message		
Spare half octet	'0000'B		
EAP message	EAP-Success	See Table 4.7.3.2-03	
ABBA	'0000 0000 0000 0000'B		
AUN3 device security key	Not present		

NOTE: The security protection of this message is the same as the previous AUTHENTICATION REQUEST message.

– Authentication failure

Table 4.7.1-4: AUTHENTICATION FAILURE

Derivation Path: 24.501 clause 8.2.4			
Information Element	Value/remark	Comment	Condition
Extended protocol discriminator	5GMM		
Security header type	'0000'B	Plain 5GS NAS message, not security protected	
Spare half octet	'0000'B		
Authentication failure message identity	'0101 1001'B		
5GMM cause	Present but contents not checked		
Authentication failure parameter	Not checked		

NOTE: The security protection of this message is the same as the previous AUTHENTICATION REQUEST message.

– *Authentication reject*

Table 4.7.1-5: AUTHENTICATION REJECT

Derivation Path: 24.501 clause 8.2.5			
Information Element	Value/remark	Comment	Condition
Extended protocol discriminator	5GMM		
Security header type	'0000'B	Plain 5GS NAS message, not security protected	
Spare half octet	'0000'B		
Authentication reject message identity	'0101 1000'B		
EAP message	Not present		
EAP message	EAP-Response/AKA-Authentication-Reject	See Table 4.7.3.2-04	EAP-AKA

Condition	Explanation
EAP-AKA	EAP based primary authentication and key agreement procedure

NOTE: This message is sent without integrity protection.

– *Registration request*

Table 4.7.1-6: REGISTRATION REQUEST

Derivation Path: 24.501 clause 8.2.6			
Information Element	Value/remark	Comment	Condition
Extended protocol discriminator	'0111 1110'B	5GS mobility management messages	
Security header type	'0000'B	Plain 5GS NAS message, not security protected	
Spare half octet	'0000'B		
Registration request message identity	'0100 0001'B		
5GS registration type			
5GS registration type value	'001'B	Initial registration	
	'010'B		MOBILITY
	'011'B		PERIODIC
	'100'B		EMERGENCY
	'101'B		SNPN_ONBOARDING
FOR	Present but contents not checked		
	'1'B	Follow-on request pending	EMERGENCY
ngKSI	Present but contents not checked		
5GS mobile identity	Present but contents not checked		
Non-current native NAS key set identifier	Not checked		NON_CLEAR TEXT_IE
5GMM capability	Not checked		NON_CLEAR TEXT_IE
UE security capability	Not checked		
Requested NSSAI	Not checked		NON_CLEAR TEXT_IE
Last visited registered TAI	Not checked		NON_CLEAR TEXT_IE
S1 UE network capability	Not checked		NON_CLEAR TEXT_IE

Uplink data status	Not checked		NON_CLEAR TEXT_IE
PDU session status	Not checked		NON_CLEAR TEXT_IE
MICO indication	Not checked		NON_CLEAR TEXT_IE
UE status	Not checked		
Additional GUTI	Not checked		
Allowed PDU session status	Not checked		NON_CLEAR TEXT_IE
UE's usage setting	Not checked		NOT pc_IMS AND NON_CLEAR TEXT_IE
	Present but contents not checked		NON_CLEAR TEXT_IE
Requested DRX parameters	Not checked		NON_CLEAR TEXT_IE
EPS NAS message container	Not checked		
LADN indication	Not checked		NON_CLEAR TEXT_IE
Payload container type	If present: '0101'B	UE policy container	NON_CLEAR TEXT_IE
Payload container	Not checked		NON_CLEAR TEXT_IE
Network slicing indication	Not checked		NON_CLEAR TEXT_IE
5GS update type	Not checked		NON_CLEAR TEXT_IE
Mobile station classmark 2	Not checked		NON_CLEAR TEXT_IE
Supported codecs	Not checked		NON_CLEAR TEXT_IE
NAS message container	The complete, ciphered, REGISTRATION REQUEST message including all IEs.		CIPHERED_M ESSAGE
EPS bearer context status	Not checked		NON_CLEAR TEXT_IE
Requested extended DRX parameters	Not checked		NON_CLEAR TEXT_IE
T3324 value	Not checked		NON_CLEAR TEXT_IE
UE radio capability ID	Not checked		NON_CLEAR TEXT_IE
Requested mapped NSSAI	Not checked		NON_CLEAR TEXT_IE
Additional information requested	Not checked		NON_CLEAR TEXT_IE
Requested WUS assistance information	Not checked		NON_CLEAR TEXT_IE
N5GC indication	Not checked		NON_CLEAR TEXT_IE
Requested NB-N1 mode DRX parameters	Not checked		NON_CLEAR TEXT_IE
UE request type	Not checked		NON_CLEAR TEXT_IE
Paging restriction	Not checked		NON_CLEAR TEXT_IE
Service-level-AA container	Not checked		NON_CLEAR TEXT_IE
NID	Not checked		NON_CLEAR TEXT_IE
MS determined PLMN with disaster condition	Not checked		NON_CLEAR TEXT_IE
Requested PEIPS assistance information	Not checked		NON_CLEAR TEXT_IE

Requested T3512 value	Not checked		NON_CLEAR TEXT_IE
Unavailability information	Not checked		NON_CLEAR TEXT_IE
Non-3GPP path switching information	Not checked		NON_CLEAR TEXT_IE
AUN3 indication	Not checked		NON_CLEAR TEXT_IE

Condition	Explanation
INITIAL	Initial registration
MOBILITY	Mobility registration updating
PERIODIC	Periodic registration updating
EMERGENCY	Emergency registration
NON_CLEARTEXT_IE	An information element that is not allowed to be sent in cleartext and shall only be included in the complete REGISTRATION REQUEST message in the NAS message container IE.
CIPHERED_MESSAGE	If any of the IEs marked with the condition NON_CLEARTEXT_IE is present, and the UE has a valid 5G NAS security context, this condition applies.
SNPN_ONBOARDING	SNPN onboarding registration

NOTE: This message is sent integrity protected when a valid security context exists otherwise sent without integrity protection, including only cleartext IEs.

– Registration accept

Table 4.7.1-7: REGISTRATION ACCEPT

Derivation Path: 24.501 clause 8.2.7			
Information Element	Value/remark	Comment	Condition
Extended protocol discriminator	'0111 1110'B	5GS mobility management messages	
Security header type	'0000'B	Plain 5GS NAS message, not security protected	
Spare half octet	'0000'B		
Registration accept message identity	'0100 0010'B		
5GS registration result			
5GS registration result value	'001'B	3GPP access	
SMS allowed	'0'B	SMS over NAS not allowed	
5G-GUTI	See Table 4.4.2-3	For 5GC NAS test cases see Table 6.3.2.2-1	
Equivalent PLMNs	Not Present		
TAI list			
Length of tracking area identity list contents	'0000 0111'B	7 octets	
Partial tracking area identity list 1			
Number of elements	'0 0000'B	1 element	
Type of list	'00'B	list of TACs belonging to one PLMN, with non-consecutive TAC values	
MCC	See Table 4.4.2-3	For 5GC NAS test cases see Table 6.3.2.2-1	
MNC	See Table 4.4.2-3	For 5GC NAS test cases see Table 6.3.2.2-1	

TAC 1	See Table 4.4.2-3	For 5GC NAS test cases see Table 6.3.2.2-1	
Allowed NSSAI			
Length of NSSAI contents	4 entries	Equal to the number of S-NSSAI values included	
S-NSSAI			
Length of S-NSSAI contents	'0000 0001'B	SST	
SST	'0000 0001'B	SST value 1 (eMBB)	
S-NSSAI			
Length of S-NSSAI contents	'0000 0001'B	SST	
SST	'0000 0010'B	SST value 2 (URLLC)	
S-NSSAI			
Length of S-NSSAI contents	'0000 0001'B	SST	
SST	'0000 0011'B	SST value 3 (MIoT)	
S-NSSAI			
Length of S-NSSAI contents	'0000 0001'B	SST	
SST	'0000 0100'B	SST value 4 (V2X)	
Rejected NSSAI	Not Present		
Configured NSSAI	Not Present		
5GS network feature support	'0000 1101 0000 0000 0000 0000'B	IMS voice over PS session supported over 3GPP access, Emergency services supported in NR connected to 5GCN and E-UTRA connected to 5GCN. All other features set to "not supported" including the 'Interworking without N26 interface not supported'.	
5GS network feature support	Not Present		SST_URLLC OR SST_V2X OR SST_MIoT
PDU session status	The same value as the PDU session status IE of the most recently received REGISTRATION REQUEST message		
PDU session reactivation result	Not Present		
PDU session reactivation result error cause	Not Present		
LADN information	Not Present		
MICO indication	Not Present		
Network slicing indication	Not Present		
Service area list	Not Present		
T3512 value			INITIAL
Timer value	'0 0000'B		
Unit	'111'B	value indicates that the timer is deactivated	

T3512 value	Not Present		
Non-3GPP de-registration timer value	Not Present		
T3502 value	Not Present		
Emergency number list	Not Present		
Extended emergency number list	Not Present		
SOR Transparent container	Not Present		
EAP message	Not Present		
NSSAI inclusion mode	Not Present		
Operator-defined access category definitions	Not Present		
Negotiated DRX parameters	Not Present		
Non-3GPP NW policies	Not Present		
EPS bearer context status	The same value as the EPS bearer context status IE of the most recently received REGISTRATION REQUEST message		
Negotiated extended DRX parameters	Not Present		
T3447 value	Not Present		
T3448 value	Not Present		
T3324 value	Not Present		
UE radio capability ID	Not Present		
UE radio capability ID	The same value as received in UE radio capability ID; if any of the REGISTRATION REQUEST message		pc_5GC_RA CS
UE radio capability ID deletion indication	Not Present		
Pending NSSAI	Not Present		
Ciphering key data	Not Present		
CAG information list	Not Present		
Truncated 5G-S-TMSI configuration	Not Present		
Negotiated WUS assistance information	Not Present		
Negotiated NB-N1 mode DRX parameters	Not Present		
Extended rejected NSSAI	Not Present		
Service-level-AA container	Not Present		
Negotiated PEIPS assistance information	Not Present		
Negotiated PEIPS assistance information			pc_PEIPS_assistance_information
Length of tracking area identity list contents	'0000 0001'B	1 octet	
PEIPS assistance information type 1			
Type of information	'000'B	Paging subgroup ID	
Paging subgroup ID value	'00000'B		
5GS additional request result	Not Present		
NSSRG information	Not Present		
Disaster roaming wait range	Not Present		
Disaster return wait range	Not Present		
List of PLMNs to be used in disaster condition	Not Present		
Forbidden TAI(s) for the list of "5GS forbidden tracking areas for roaming"	Not Present		
Forbidden TAI(s) for the list of "5GS forbidden tracking areas for regional provision of service"	Not Present		
Extended CAG information list	Not Present		
NSAG information	Not Present		
Equivalent SNPNs	Not Present		
NID	Not Present		
Registration accept type 6 IE container	Not Present		
RAN timing synchronization	Not Present		
Alternative NSSAI	Not Present		
Maximum time offset	Not Present		
S-NSSAI time validity information	Not Present		
Unavailability configuration	Not Present		
Feature authorization indication	Not Present		
On-demand NSSAI	Not Present		

Condition	Explanation
INITIAL	Initial registration

NOTE: This message is always sent within SECURITY PROTECTED 5GS NAS MESSAGE message.

– *Registration complete*

Table 4.7.1-8: REGISTRATION COMPLETE

Derivation Path: 24.501 clause 8.2.8			
Information Element	Value/remark	Comment	Condition
Extended protocol discriminator	'0111 1110'B	5GS mobility management messages	
Security header type	'0000'B	Plain 5GS NAS message, not security protected	
Spare half octet	'0000'B		
Registration complete message identity	'0100 0011'B		
SOR transparent container	Not checked		

NOTE: This message is always sent within SECURITY PROTECTED 5GS NAS MESSAGE message.

– *Registration reject*

Table 4.7.1-9: REGISTRATION REJECT

Derivation Path: 24.501 clause 8.2.9			
Information Element	Value/remark	Comment	Condition
Extended protocol discriminator	'0111 1110'B	5GS mobility management messages	
Security header type	'0000'B	Plain 5GS NAS message, not security protected	
Spare half octet	'0000'B		
Registration reject message identity	'0100 0100'B		
5GMM cause	Set according to specific message content		
T3346 value	Not Present		
T3502 value	Not Present		
EAP message	Not Present		
Rejected NSSAI	Not Present		
CAG information list	Not Present		
Extended rejected NSSAI	Not Present		
Disaster return wait range	Not Present		
Extended CAG information list	Not Present		
Lower bound timer value	Not Present		
Forbidden TAI(s) for the list of "5GS forbidden tracking areas for roaming"	Not Present		
Forbidden TAI(s) for the list of "5GS forbidden tracking areas for regional provision of service"	Not Present		
N3IWF identifier	Not Present		
TNAN information	Not Present		

NOTE: This message is sent without integrity protection before the secure exchange of NAS messages has been established and sent within SECURITY PROTECTED 5GS NAS MESSAGE message after the secure exchange of NAS messages has been established.

– *UL NAS transport*

Table 4.7.1-10: UL NAS TRANSPORT

Derivation Path: 24.501 clause 8.2.10			
Information Element	Value/remark	Comment	Condition
Extended protocol discriminator	'0111 1110'B	5GS mobility management messages	
Security header type	'0000'B	Plain 5GS NAS message, not security protected	
Spare half octet	'0000'B		
UL NAS TRANSPORT message identity	'0110 0111'B		
Payload container type	Set according to specific message content		
Payload container type	'0001'B	N1 SM information	INITIAL_PD U_REQUEST
Payload container type	'0100'B	SOR transparent container	5GS_SOR_CMCI
Spare half octet	'0000'B		
Payload container	Set according to specific message content		
Payload container	Present	The SOR transparent container in the payload container IE carries steering of roaming information.	5GS_SOR_CMCI
Length of payload container contents		2 octet	
Payload container contents			
SOR transparent container	Present	The SOR transparent container carries steering of roaming information.	
Length of SOR transparent container contents		2 octet	
SOR header		1 octet	
SOR data type	1	The SOR transparent container carries acknowledgement of successful reception of the steering of roaming information.	
ME support of SOR-CMCI indicator (MSSI) value	Not checked		
ME support of SOR-CMCI indicator (MSSI) value	1	SOR-CMCI supported by the ME	
ME support of SOR-SNPNI-SI indicator (MSSNPNSI) value	Not checked		
MS support of SOR-SNPNI-SI-LS indicator (MSSNPNSILS) value	Not checked		
SOR-MAC-IAUSF	Set to match the calculated SoR-MAC-IAUS as the way defined in TS 33.501 A.17		
Payload container	PDU SESSION ESTABLISHMENT REQUEST message		INITIAL_PD U_REQUEST
PDU session ID	Not checked		

PDU session ID	Same PDU session ID as defined in the PDU SESSION ESTABLISHMENT REQUEST message in the Payload container		INITIAL_PDU_REQUEST
Old PDU session ID	Not checked		
Request type	Not checked		
Request type	'001'B	initial request	INITIAL_PDU_REQUEST
S-NSSAI	Not checked		
DNN	Not checked	(NOTE 1)	
Additional information	Not checked		
MA PDU session information	Not checked		
Release assistance indication	Not checked		
Non-3GPP access path switching indication	Not checked		
Alternative S-NSSAI	Not checked		
Payload container information	Not checked		
NOTE 1: Although the contents of the IE is not required to be verified for PASS/FAIL purposes, the provided information shall be taken into account e.g. for the building the content of messages and allowing for specific UE behaviour as specified in Table 4.8.4-1.			

Condition	Explanation
INITIAL_PDU_REQUEST	The UL NAS TRANSPORT message is used to transport a PDU SESSION ESTABLISHMENT REQUEST message to establish a new PDU session.
5GS_SOR_CMCI	Used in Rel-17 SOR-CMCI test cases (TS 38.523-1 [12])

NOTE: This message is always sent within SECURITY PROTECTED 5GS NAS MESSAGE message.

– DL NAS transport

Table 4.7.1-11: DL NAS TRANSPORT

Derivation Path: 24.501 clause 8.2.11			
Information Element	Value/remark	Comment	Condition
Extended protocol discriminator	'0111 1110'B	5GS mobility management messages	
Security header type	'0000'B	Plain 5GS NAS message, not security protected	
Spare half octet	'0000'B		
DL NAS TRANSPORT message identity	'0110 1000'B		
Payload container type	Set according to specific message content		
Payload container type	'0001'B	N1 SM information	5GSM_MESSAGE
Payload container type	'0100'B	SOR transparent container	5GS_SOR_CMCI
Spare half octet	'0000'B		
Payload container	Set according to specific message content		
Payload container	5GSM message		5GSM_MESSAGE
Payload container	Present	The SOR transparent container in the payload container IE carries steering of roaming information.	5GS_SOR_CMCI
Length of payload container contents		2 octet	

Payload container contents			
SOR transparent container	Present	The SOR transparent container carries steering of roaming information.	
Length of SOR transparent container contents		2 octet	
SOR header		1 octet	
SOR data type	0	The SOR transparent container carries steering of roaming information.	
List indication value	1	List of preferred PLMN/access technology combinations is provided	
List type	1	The list type is a "PLMN ID and access technology list"	
Acknowledgement (ACK) value	1	Acknowledgement requested	
Additional parameters (AP) value	0	Additional parameters not included	
Additional parameters (AP) value	1	Additional parameters included	
SOR-MAC-IAUSF	Set to match the calculated SoR-MAC-IAUS as the way defined in TS 33.501 A.17		
CounterSOR	Value generated as per TS 33.501 CI 6.14.2.3		
Length of PLMN ID and access technology list		1 octet	
PLMN ID and access technology list		Values determined by test implementation	
SOR-CMCI indicator (SI) value	0	SOR-CMCI absent	
SOR-CMCI indicator (SI) value	1	SOR-CMCI present	
Store SOR-CMCI in ME indicator (SSCMI) value		Value determined by test implementation	
SOR-SNPN-SI indicator (SSSI) value	0	subscribed SNPN or HPLMN indication that 'no change of the SOR-SNPN-SI stored in the UE is needed and thus no SOR-SNPN-SI is provided'	
SOR-SNPN-SI-LS indicator (SSSLI) value	0	SOR-SNPN-SI-LS absent	
SOR-CMCI	Present		
Length of SOR-CMCI contents		Length value determined by test implementation	
SOR-CMCI rule 1		Value determined by test implementation	

Length of SOR-CMCI rule contents		Length value determined by test implementation	
Tsor-cm timer value	00100001	60s	
Criterion type		Value determined by test implementation	
Criterion value		Value determined by test implementation	
SOR-SNPNI-SI	Not Present		
SOR-SNPNI-SI-LS	Not Present		
PDU session ID	Not Present		
PDU session ID	Set to the same value as the PDU session ID of the 5GSM message in the Payload container.		5GSM_MESSAGE
Additional information	Not Present		
5GMM cause	Not Present		
Back-off timer value	Not Present		
Lower bound timer value	Not Present		

Condition	Explanation
5GSM_MESSAGE	The DL NAS TRANSPORT message is used to transport a 5GSM message
5GS_SOR_CMCI	Used in Rel-17 SOR-CMCI test cases (TS 38.523-1 [12])

NOTE: This message is always sent within SECURITY PROTECTED 5GS NAS MESSAGE message.

– *De-registration request (UE originating de-registration)*

Table 4.7.1-12: DEREGISTRATION REQUEST_1

Derivation Path: 24.501 clause 8.2.12			
Information Element	Value/remark	Comment	Condition
Extended protocol discriminator	'0111 1110'B	5GS mobility management messages	
Security header type	'0000'B	Plain 5GS NAS message, not security protected	
Spare half octet	'0000'B		
De-registration request message identity	'0100 0101'B		
De-registration type			
Switch off	'0'B		NORMAL
	'1'B		SWITCH_OFF
Re-registration required	'0'B		
Access type	'01'B	3GPP access	
ngKSI	Present but contents not checked		
5GS mobile identity	Present but contents not checked		
Unavailability information	Not checked		NON_CLEARTXT_IE
NAS message container	The complete, ciphered, DEREGISTRATION REQUEST message including all IEs.		CIPHERED_MESSAGE

Condition	Explanation
NORMAL	Normal de-registration
SWITCH_OFF	Switch off

NON_CLEARTEXT_IE	An information element that is not allowed to be sent in cleartext.
CIPHERED_MESSAGE	If any of the IEs marked with the condition NON_CLEARTEXT_IE is present, this condition applies. NOTE: This condition is only applicable if the DEREGISTRATION REQUEST message is sent as an initial NAS message.

NOTE: If this message is sent as an initial NAS message, it is sent with integrity protection but without ciphering. Otherwise it is sent without integrity protection and ciphering before SS has started the ciphering and integrity and ciphered protected after SS has started the ciphering.

– *De-registration accept (UE originating de-registration)*

Table 4.7.1-13: DEREGISTRATION ACCEPT_1

Derivation Path: 24.501 clause 8.2.13			
Information Element	Value/remark	Comment	Condition
Extended protocol discriminator	'0111 1110'B	5GS mobility management messages	
Security header type	'0000'B	Plain 5GS NAS message, not security protected	
Spare half octet	'0000'B		
De-registration accept message identity	'0100 0110'B		

NOTE: This message is sent using the same security protection as in the previous DETACH REQUEST message received from the UE.

– *De-registration request (UE terminated de-registration)*

Table 4.7.1-14: DEREGISTRATION REQUEST_2

Derivation Path: 24.501 clause 8.2.14			
Information Element	Value/remark	Comment	Condition
Extended protocol discriminator	'0111 1110'B	5GS mobility management messages	
Security header type	'0000'B	Plain 5GS NAS message, not security protected	
Spare half octet	'0000'B		
De-registration request message identity	'0100 0111'B		
De-registration type	Set according to specific message content		
Spare half octet	'0000'B		
5GMM cause	Not Present		
T3346 value	Not Present		
Rejected NSSAI	Not Present		
CAG information list	Not Present		
Extended rejected NSSAI	Not Present		
Disaster return wait range	Not Present		
Extended CAG information list	Not Present		
Lower bound timer value	Not Present		
Forbidden TAI(s) for the list of "5GS forbidden tracking areas for roaming"	Not Present		
Forbidden TAI(s) for the list of "5GS forbidden tracking areas for regional provision of service"	Not Present		

NOTE: This message is always sent within SECURITY PROTECTED 5GS NAS MESSAGE message.

– *De-registration accept (UE terminated de-registration)*

Table 4.7.1-15: DEREGISTRATION ACCEPT_2

Derivation Path: 24.501 clause 8.2.15			
Information Element	Value/remark	Comment	Condition
Extended protocol discriminator	'0111 1110'B	5GS mobility management messages	
Security header type	'0000'B	Plain 5GS NAS message, not security protected	
Spare half octet	'0000'B		
De-registration accept message identity	'0100 1000'B		

NOTE: This message is always sent within SECURITY PROTECTED 5GS NAS MESSAGE message.

– *Service request*

Table 4.7.1-16: SERVICE REQUEST

Derivation Path: 24.501 clause 8.2.16			
Information Element	Value/remark	Comment	Condition
Extended protocol discriminator	'0111 1110'B	5GS mobility management messages	
Security header type	'0000'B	Plain 5GS NAS message, not security protected	
Spare half octet	'0000'B		
Service request message identity	'0100 1100'B		
ngKSI			
NAS key set identifier	The valid NAS key set identifier of the UE		
TSC	'0'B	native security context (for KSI _{AMF})	
Service type	'0010'B	mobile terminated services	
5G-S-TMSI	The valid 5G-S-TMSI of the UE		
Uplink data status	Not checked		NON_CLEARTEXT_IE
PDU session status	Not checked		NON_CLEARTEXT_IE
Allowed PDU session status	Not checked		NON_CLEARTEXT_IE
NAS message container	If present, the complete, ciphered, SERVICE REQUEST message including all IEs.		CIPHERED_MESSAGE
UE request type	Not checked		NON_CLEARTEXT_IE
Paging restriction	Not checked		NON_CLEARTEXT_IE

Condition	Explanation
NON_CLEARTEXT_IE	An information element that is not allowed to be sent in cleartext and shall only be included in the complete SERVICE REQUEST message in the NAS message container IE. NOTE: This condition is only applicable if the SERVICE REQUEST message is sent as an initial NAS message.
CIPHERED_MESSAGE	If any of the IEs marked with the condition NON_CLEARTEXT_IE is present, this condition applies.

NOTE: This condition is only applicable if the SERVICE REQUEST message is sent as an initial NAS message.

NOTE: This message is sent without integrity protection, including only cleartext IEs, before NAS security mode control procedure has been successfully completed and sent within SECURITY PROTECTED 5GS NAS MESSAGE message after NAS security mode control procedure has been successfully completed

Service accept

Table 4.7.1-17: SERVICE ACCEPT

Derivation Path: 24.501 clause 8.2.17			
Information Element	Value/remark	Comment	Condition
Extended protocol discriminator	'0111 1110'B	5GS mobility management messages	
Security header type	'0000'B	Plain 5GS NAS message, not security protected	
Spare half octet	'0000'B		
Service accept message identity	'0100 1110'B		
PDU session status	The same value as the PDU session status IE of the most recently received SERVICE REQUEST message		
PDU session reactivation result	Not Present		
PDU session reactivation result error cause	Not Present		
EAP message	Not Present		
T3448 value	Not Present		
5GS additional request result	Not Present		
Forbidden TAI(s) for the list of "5GS forbidden tracking areas for roaming"	Not Present		
Forbidden TAI(s) for the list of "5GS forbidden tracking areas for regional provision of service"	Not Present		

NOTE: This message is always sent within SECURITY PROTECTED 5GS NAS MESSAGE message.

Service reject

Table 4.7.1-18: SERVICE REJECT

Derivation Path: 24.501 clause 8.2.18			
Information Element	Value/remark	Comment	Condition
Extended protocol discriminator	'0111 1110'B	5GS mobility management messages	
Security header type	'0000'B	Plain 5GS NAS message, not security protected	
Spare half octet	'0000'B		
Service reject message identity	'0100 1101'B		
5GMM cause	The value is set according to specific message content		
PDU session status	Not Present		
T3346 value	Not Present		
EAP message	Not Present		
T3448 value	Not Present		
CAG information list	Not Present		
Disaster return wait range	Not Present		
Extended CAG information list	Not Present		
Lower bound timer value	Not Present		

Forbidden TAI(s) for the list of "5GS forbidden tracking areas for roaming"	Not Present		
Forbidden TAI(s) for the list of "5GS forbidden tracking areas for regional provision of service"	Not Present		

NOTE: This message is sent without integrity protection before NAS security mode control procedure has been successfully completed and sent within SECURITY PROTECTED 5GS NAS MESSAGE message after NAS security mode control procedure has been successfully completed

– *Configuration update command*

Table 4.7.1-19: CONFIGURATION UPDATE COMMAND

Derivation Path: 24.501 clause 8.2.19			
Information Element	Value/remark	Comment	Condition
Extended protocol discriminator	'0111 1110'B	5GS mobility management messages	
Security header type	'0000'B	Plain 5GS NAS message, not security protected	
Spare half octet	'0000'B		
Configuration update command message identity	'0101 0100'B		
Configuration update indication	Not Present		
5G-GUTI	Not Present		
TAI list	Not Present		
Allowed NSSAI	Not Present		
Service area list	Not Present		
Full name for network	Not Present		
Short name for network	Not Present		
Local time zone	Not Present		
Universal time and local time zone	Not Present		
Network daylight saving time	Not Present		
LADN information	Not Present		
MICO indication	Not Present		
Network slicing indication	Not Present		
Configured NSSAI	Not Present		
Rejected NSSAI	Not Present		
Operator-defined access category definitions	Not Present		
SMS indication	Not Present		
T3447 value	Not Present		
CAG information list	Not Present		
UE radio capability ID	Not Present		
UE radio capability ID deletion indication	Not Present		
5GS registration result	Not Present		
Truncated 5G-S-TMSI configuration	Not Present		
Additional configuration indication	Not Present		
Extended rejected NSSAI	Not Present		
Service-level-AA container	Not Present		
NSSRG information	Not Present		
Disaster roaming wait range	Not Present		
Disaster return wait range	Not Present		
List of PLMNs to be used in disaster condition	Not Present		
Extended CAG information list	Not Present		
Updated PEIPS assistance information	Not Present		
NSAG information	Not Present		
Priority indicator	Not Present		
RAN timing synchronization	Not Present		
Extended LADN information	Not Present		
Alternative NSSAI	Not Present		
S-NSSAI location validity information	Not Present		
S-NSSAI time validity information	Not Present		
Maximum time offset	Not Present		
Partially allowed NSSAI	Not Present		

Partially rejected NSSAI	Not Present		
Feature authorization indication	Not Present		
On-demand NSSAI	Not Present		

NOTE: This message is always sent within SECURITY PROTECTED 5GS NAS MESSAGE message.

– *Configuration update complete*

Table 4.7.1-20: CONFIGURATION UPDATE COMPLETE

Derivation Path: 24.501 clause 8.2.20			
Information Element	Value/remark	Comment	Condition
Extended protocol discriminator	'0111 1110'B	5GS mobility management messages	
Security header type	'0000'B	Plain 5GS NAS message, not security protected	
Spare half octet	'0000'B		
Configuration update complete message identity	'0101 0101'B		

NOTE: This message is always sent within SECURITY PROTECTED 5GS NAS MESSAGE message.

– *Identity request*

Table 4.7.1-21: IDENTITY REQUEST

Derivation Path: 24.501 clause 8.2.21			
Information Element	Value/remark	Comment	Condition
Extended protocol discriminator	'0111 1110'B	5GS mobility management messages	
Security header type	'0000'B	Plain 5GS NAS message, not security protected	
Spare half octet	'0000'B		
Identity request message identity	'0101 1011'B		
Identity type	Set according to specific message contents		
Spare half octet	'0000'B		

NOTE: This message is sent without integrity protection before 5GS NAS security mode control procedure has been successfully completed and sent within SECURITY PROTECTED 5GS NAS MESSAGE message after 5GS NAS security mode control procedure has been successfully completed.

– *Identity response*

Table 4.7.1-22: IDENTITY RESPONSE

Derivation Path: 24.501 clause 8.2.22			
Information Element	Value/remark	Comment	Condition
Extended protocol discriminator	'0111 1110'B	5GS mobility management messages	
Security header type	'0000'B	Plain 5GS NAS message, not security protected	
Spare half octet	'0000'B		
Identity response message identity	0101 1100'B		
Mobile identity	Present but contents not checked		

NOTE: This message is sent without integrity protection before 5GS NAS security mode control procedure has been successfully completed and sent within SECURITY PROTECTED 5GS NAS MESSAGE message after 5GS NAS security mode control procedure has been successfully completed.

Notification

Table 4.7.1-23: NOTIFICATION

Derivation Path: 24.501 clause 8.2.23			
Information Element	Value/remark	Comment	Condition
Extended protocol discriminator	'0111 1110'B	5GS mobility management messages	
Security header type	'0000'B	Plain 5GS NAS message, not security protected	
Spare half octet	'0000'B		
Notification message identity	'0110 0101'B		
Access type	'01'B	3GPP access	
Spare half octet	'0000'B		

NOTE: This message is always sent within SECURITY PROTECTED 5GS NAS MESSAGE message.

Notification response

Table 4.7.1-24: NOTIFICATION RESPONSE

Derivation Path: 24.501 clause 8.2.24			
Information Element	Value/remark	Comment	Condition
Extended protocol discriminator	'0111 1110'B	5GS mobility management messages	
Security header type	'0000'B	Plain 5GS NAS message, not security protected	
Spare half octet	'0000'B		
Notification response message identity	'0110 0110'B		
PDU session status	Not checked		

NOTE: This message is always sent within SECURITY PROTECTED 5GS NAS MESSAGE message.

Security mode command

Table 4.7.1-25: SECURITY MODE COMMAND

Derivation Path: 24.501 clause 8.2.25			
Information Element	Value/remark	Comment	Condition
Extended protocol discriminator	'0111 1110'B	5GS mobility management messages	
Security header type	'0000'B	Plain 5GS NAS message, not security protected	
Spare half octet	'0000'B		
Security mode command message identity	'0101 1101'B		
Selected NAS security algorithms			
Type of ciphering algorithm	Set according to PIXIT px_NAS_5GC_Ciphering Algorithm for default ciphering algorithm		

Type of ciphering algorithm	'0000'B	5G encryption algorithm 5G EAO (null ciphering algorithm)	For RF
Type of integrity protection algorithm	Set according to PIXIT px_NAS_5GC_IntegrityProtAlgorithm for default integrity protection algorithm	This value should not be equal to the null integrity algorithm.	
ngKSI			
NAS key set identifier	The valid NAS key set identifier		
TSC	'0'B	native security context (for KSI _{AMF})	
Spare half octet	'0000'B		
Replayed UE security capabilities	Set according to the received UE security capabilities		
IMEISV request	Not Present		
Selected EPS NAS security algorithms	Not Present		
Selected EPS NAS security algorithms			UE_S1_SUPPORTED
Type of ciphering algorithm	Set according to PIXIT px_NAS_CipheringAlgorithm for default ciphering algorithm	The px_NAS_CipheringAlgorithm PIXIT is defined in TS 36.523-3 [x]	
Type of integrity protection algorithm	Set according to PIXIT px_NAS_IntegrityProtAlgorithm for default integrity protection algorithm	The px_NAS_IntegrityProtAlgorithm is defined in TS 36.523-3 [x]	
Additional 5G security information	Not Present		
Additional 5G security information			NO_VALID_SS_SECURITY_CONTEXT
RINMR	'1'B	Retransmission of the initial NAS message requested	
HDP	'0'B	K _{AMF} derivation is not required	
EAP message	Not Present		
EAP message	EAP-Success	See Table 4.7.3.2-03	EAP-AKA
ABBA	'0000 0000 0000 0000'B		EAP-AKA
Replayed S1 UE security capabilities	Not Present		
Replayed S1 UE security capabilities	Set according to the received UE security capabilities in the last REGISTRATION REQUEST message		UE_S1_SUPPORTED
AUN3 device security key	Not Present		

Condition	Explanation
NO_VALID_SS_SECURITY_CONTEXT	If the SS doesn't have a valid security context
EAP_AKA	EAP based primary authentication and key agreement procedure
For RF	Used for RF/RRM test cases
UE_S1_SUPPORTED	The UE indicated support of S1 in the last REGISTRATION REQUEST message

NOTE: This message is always sent integrity protected with new 5GS NAS security context.

– *Security mode complete*

Table 4.7.1-26: SECURITY MODE COMPLETE

Derivation Path: 24.501 clause 8.2.26			
Information Element	Value/remark	Comment	Condition
Extended protocol discriminator	'0111 1110'B	5GS mobility management messages	
Security header type	'0000'B	Plain 5GS NAS message, not security protected	
Spare half octet	'0000'B		
Security mode complete message identity	'0101 1110'B		
IMEISV	Not present		
NAS message container	Not present		
	Complete initial NAS message		RINMR_INDICATED
non-IMEISV PEI	Not present		

Condition	Explanation
RINMR_INDICATED	The SS requested retransmission of the initial NAS message in the last SECURITY MODE COMMAND

NOTE: This message is always sent within SECURITY PROTECTED 5GS NAS MESSAGE message with new 5GS NAS security context.

– *Security mode reject*

Table 4.7.1-27: SECURITY MODE REJECT

Derivation Path: 24.501 clause 8.2.27			
Information Element	Value/remark	Comment	Condition
Extended protocol discriminator	'0111 1110'B	5GS mobility management messages	
Security header type	'0000'B	Plain 5GS NAS message, not security protected	
Spare half octet	'0000'B		
Security mode reject message identity	'0101 1111'B		
5GMM cause	The value is set according to specific message content		

NOTE: This message is sent without integrity protection before 5GS NAS security mode control procedure has been successfully completed and sent within SECURITY PROTECTED 5GS NAS MESSAGE message after 5GS NAS security mode control procedure has been successfully completed.

– *Security protected 5GS NAS message*

Table 4.7.1-28: SECURITY PROTECTED 5GS NAS MESSAGE

Derivation Path: 24.501 clause 8.2.28			
Information Element	Value/remark	Comment	Condition
Extended protocol discriminator	5GMM		
Security header type	'0001'B	Integrity protected	UNCIPHERED
	'0010'B	Integrity protected and ciphered	CIPHERED

	'0011'B	Integrity protected with new 5G NAS security context	UNCIPHERED-NEW
	'0100'B	Integrity protected and ciphered with new 5G NAS security context	CIPHERED-NEW
Spare half octet	'0000'B		
Message authentication code	The calculated value of MAC-I for this message.	The value of MAC-I is calculated by SS using Sequence number sent by UE.	SENT-BY-SS
	The same value as the XMAC-I value calculated by SS.		SENT-BY-UE
Sequence number	The internal counter of the SS		SENT-BY-SS
	Present but contents not checked		SENT-BY-UE
Plain 5GS NAS message	Set according to specific message content		

Condition	Explanation
UNCIPHERED	This condition applies to unciphered NAS message exchange
CIPHERED	This condition applies to ciphered NAS message exchange
UNCIPHERED-NEW	This condition applies to unciphered NAS message exchange with new 5G NAS security context
CIPHERED-NEW	This condition applies to ciphered NAS message exchange with new 5G NAS security context
SENT-BY-SS	Use for the message sent from SS to UE
SENT-BY-UE	Use for the message sent from UE to SS

— 5GMM status

Table 4.7.1-29: 5GMM STATUS

Derivation Path: 24.501 clause 8.2.29			
Information Element	Value/remark	Comment	Condition
Extended protocol discriminator	5GMM		
Security header type	'0000'B	Plain 5GS NAS message, not security protected	
Spare half octet	'0000'B		
5GMM STATUS message identity	'0110 0100'B		
5GMM cause	'0110 1111'B	Protocol error, unspecified	SENT-BY-SS
	Present but contents not checked		SENT-BY-UE

Condition	Explanation
SENT-BY-SS	Use for the message sent from SS to UE
SENT-BY-UE	Use for the message sent from UE to SS

NOTE: This message is always sent within SECURITY PROTECTED 5GS NAS MESSAGE message.

– *Control plane service request*

Table 4.7.1-30: CONTROL PLANE SERVICE REQUEST

Derivation Path: 24.501 clause 8.2.30			
Information Element	Value/remark	Comment	Condition
Extended protocol discriminator	'0111 1110'B	5GS mobility management messages	
Security header type	'0000'B	Plain 5GS NAS message, not security protected	
Spare half octet	'0000'B		
Control plane service request message identity	'0100 1111'B		
Control plane service type	'001'B	mobile terminated request	
ngKSI			
NAS key set identifier	The valid NAS key set identifier of the UE		
TSC	'0'B	native security context (for KSI _{AMF})	
CIoT small data container	Not checked		NON_CLEARTXT_IE
Payload container type	Not checked		NON_CLEARTXT_IE
Payload container	Not checked		NON_CLEARTXT_IE
PDU session ID	Not checked		NON_CLEARTXT_IE
PDU session status	Not checked		NON_CLEARTXT_IE
Release assistance indication	Not checked		NON_CLEARTXT_IE
Uplink data status	Not checked		NON_CLEARTXT_IE
NAS message container	Not checked		CIPHERED_MESSAGE
Additional information	Not checked		NON_CLEARTXT_IE
Allowed PDU session status	Not checked		NON_CLEARTXT_IE
UE request type	Not checked		NON_CLEARTXT_IE
Paging restriction	Not checked		NON_CLEARTXT_IE

Condition	Explanation
NON_CLEARTXT_IE	An information element that is not allowed to be sent in cleartext and shall only be included in the complete CONTROL PLANE SERVICE REQUEST message in the NAS message container IE. NOTE: This condition is only applicable if the CONTROL PLANE SERVICE REQUEST message is sent as an initial NAS message.
CIPHERED_MESSAGE	If any of the IEs marked with the condition NON_CLEARTXT_IE is present, this condition applies. NOTE: This condition is only applicable if the CONTROL PLANE SERVICE REQUEST message is sent as an initial NAS message.

NOTE: This message is sent without integrity protection, including only cleartext IEs, before NAS security mode control procedure has been successfully completed and sent within SECURITY PROTECTED 5GS NAS MESSAGE message after NAS security mode control procedure has been successfully completed

– *Network slice-specific authentication command*

Table 4.7.1-31: NETWORK SLICE-SPECIFIC AUTHENTICATION COMMAND

Derivation Path: 24.501 clause 8.2.31			
Information Element	Value/remark	Comment	Condition
Extended protocol discriminator	'0111 1110'B	5GS mobility management messages	
Security header type	'0000'B	Plain 5GS NAS message, not security protected	
Spare half octet	'0000'B		
NETWORK SLICE-SPECIFIC AUTHENTICATION COMMAND message identity	'0101 0000'B		
S-NSSAI	Set according to specific message content		
EAP message	Set according to Table 4.7.3.2-1	See TS 24.501 [25] subclause 9.11.2.2	

NOTE: This message is always sent within SECURITY PROTECTED 5GS NAS MESSAGE message.

– *Network slice-specific authentication complete*

Table 4.7.1-32: NETWORK SLICE-SPECIFIC AUTHENTICATION COMPLETE

Derivation Path: 24.501 clause 8.2.32			
Information Element	Value/remark	Comment	Condition
Extended protocol discriminator	'0111 1110'B	5GS mobility management messages	
Security header type	'0000'B	Plain 5GS NAS message, not security protected	
Spare half octet	'0000'B		
NETWORK SLICE-SPECIFIC AUTHENTICATION COMPLETE message identity	'0101 0001'B		
S-NSSAI	Set according to specific message content		
EAP message	Set according to Table 4.7.3.2-2	See TS 24.501 [25] subclause 9.11.2.2	

NOTE: This message is always sent within SECURITY PROTECTED 5GS NAS MESSAGE message.

– *Network slice-specific authentication result*

Table 4.7.1-33: NETWORK SLICE-SPECIFIC AUTHENTICATION RESULT

Derivation Path: 24.501 clause 8.2.33			
Information Element	Value/remark	Comment	Condition
Extended protocol discriminator	'0111 1110'B	5GS mobility management messages	
Security header type	'0000'B	Plain 5GS NAS message, not security protected	
Spare half octet	'0000'B		
NETWORK SLICE-SPECIFIC AUTHENTICATION COMPLETE message identity	'0101 0010'B		
S-NSSAI	Set according to specific message content		

EAP message	EAP-Success	See Table 4.7.3.2-3	NSSAA Success
	EAP-Failure	See Table 4.7.3.2-6	NSSAA Failure

Condition	Explanation
NSSAA Success	Network slice-specific authentication succeeds
NSSAA Failure	Network slice-specific authentication fails

NOTE: This message is always sent within SECURITY PROTECTED 5GS NAS MESSAGE message.

– *Relay key request*

Table 4.7.1-34: RELAY KEY REQUEST

Derivation Path: 24.501 clause 8.2.34			
Information Element	Value/remark	Comment	Condition
Extended protocol discriminator	'0111 1110'B	5GS mobility management messages	
Security header type	'0000'B	Plain 5GS NAS message, not security protected	
Spare half octet	'0000'B		
Relay key request message identity	'0110 1001'B		
PRTI	FFS		
Relay key request parameters	FFS		

NOTE: This message is always sent within SECURITY PROTECTED 5GS NAS MESSAGE message.

– *Relay key accept*

Table 4.7.1-35: RELAY KEY ACCEPT

Derivation Path: 24.501 clause 8.2.35			
Information Element	Value/remark	Comment	Condition
Extended protocol discriminator	'0111 1110'B	5GS mobility management messages	
Security header type	'0000'B	Plain 5GS NAS message, not security protected	
Spare half octet	'0000'B		
Relay key accept message identity	'0110 1010'B		
PRTI	FFS		
Relay key response parameters	FFS		
EAP message	FFS		

NOTE: This message is always sent within SECURITY PROTECTED 5GS NAS MESSAGE message.

– *Relay key reject*

Table 4.7.1-36: RELAY KEY REJECT

Derivation Path: 24.501 clause 8.2.36			
Information Element	Value/remark	Comment	Condition
Extended protocol discriminator	'0111 1110'B	5GS mobility management messages	

Security header type	'0000'B	Plain 5GS NAS message, not security protected	
Spare half octet	'0000'B		
Relay key reject message identity	'0110 1011'B		
PRTI	FFS		
EAP message	FFS		

NOTE: This message is always sent within SECURITY PROTECTED 5GS NAS MESSAGE message.

– Relay authentication request

Table 4.7.1-37: RELAY AUTHENTICATION REQUEST

Derivation Path: 24.501 clause 8.2.37			
Information Element	Value/remark	Comment	Condition
Extended protocol discriminator	'0111 1110'B	5GS mobility management messages	
Security header type	'0000'B	Plain 5GS NAS message, not security protected	
Spare half octet	'0000'B		
Relay authentication request message identity	'0110 1100'B		
PRTI	FFS		
EAP message	FFS		

NOTE: This message is always sent within SECURITY PROTECTED 5GS NAS MESSAGE message.

– Relay authentication response

Table 4.7.1-38: RELAY AUTHENTICATION RESPONSE

Derivation Path: 24.501 clause 8.2.37			
Information Element	Value/remark	Comment	Condition
Extended protocol discriminator	'0111 1110'B	5GS mobility management messages	
Security header type	'0000'B	Plain 5GS NAS message, not security protected	
Spare half octet	'0000'B		
Relay authentication response message identity	'0110 1101'B		
PRTI	FFS		
EAP message	FFS		

NOTE: This message is always sent within SECURITY PROTECTED 5GS NAS MESSAGE message.

4.7.2 Contents of 5GSM messages

– PDU session establishment request

Table 4.7.2-1: PDU SESSION ESTABLISHMENT REQUEST

Derivation Path: 24.501 clause 8.3.1			
Information Element	Value/remark	Comment	Condition
Extended protocol discriminator	'0010 1110'B	5GS session management messages	

PDU session ID	Any value according to TS 24.501 [25] subclause 9.4		
PTI	Any value from 1 to 254		
PDU SESSION ESTABLISHMENT REQUEST message identity	'1100 0001'B		
Integrity protection maximum data rate	Present but contents not checked		
PDU session type	Any value between '001'B, '010'B, '011'B and '101'B	The allowed values are respectively IPv4, IPv6, IPv4v6 and Ethernet (EtherType as defined in IEEE 802.3)	
SSC mode	Not checked		
5GSM capability	Not checked		
Maximum number of supported packet filters	Not checked		
Always-on PDU session requested	Not checked		
Always-on PDU session requested			SST_URLLC
APSR	'1'B	Always-on PDU session requested	
SM PDU DN request container	Not checked		
Extended protocol configuration options	Not checked	The SS shall remember if this IE is present and its contents because this affects subsequent SS behaviour, e.g. coding of PDU SESSION ESTABLISHMENT ACCEPT.	
Extended protocol configuration options	Present including at least the following container		DATA_OFF
Container ID n	'0017'H	3GPP PS data off UE status	
Length of container ID n contents		1 octet	
Container ID n contents	Any value between '01'H and '02'H		
IP header compression configuration	Not checked		
DS-TT Ethernet port MAC address	Not checked		
DS-TT Ethernet port MAC address	Any value according to TS 24.501 [25] subclause 9.11.4.25		Ethernet
UE-DS-TT residence time	Not checked		
Port management information container	Not checked		
Ethernet header compression configuration	Not checked		
Ethernet header compression configuration	Any value according to TS 24.501 [25] subclause 9.11.4.28		Ethernet
Suggested interface identifier	Not checked		
Service-level-AA container	Not checked		
Requested MBS container	Not checked		
PDU session pair ID	Not checked		
RSN	Not checked		
URSP rule enforcement reports	Not checked		

Condition	Explanation
DATA_OFF	If the UE supports 3GPP PS data off as specified in TS 34.229-2 [51], Table A.12
Ethernet	If the PDU session type = '101'B.

– *PDU session establishment accept*

Table 4.7.2-2: PDU SESSION ESTABLISHMENT ACCEPT

Derivation Path: 24.501 clause 8.3.2			
Information Element	Value/remark	Comment	Condition
Extended protocol discriminator	'0010 1110'B	5GS session management messages	
PDU session ID	The same value as the value set in PDU SESSION ESTABLISHMENT REQUEST message		
PTI	The same value as the value set in PDU SESSION ESTABLISHMENT REQUEST message		
PDU SESSION ESTABLISHMENT ACCEPT message identity	'1100 0010'B		
Selected PDU session type	'001'B		IPv4
	'010'B		IPv6
	'011'B		IPv4v6
	'101'B		Ethernet
Selected SSC mode	'001'B	SSC mode 1	
Authorized QoS rules	5GC QoS rule of the entry in Table 4.8.4-1 which has been determined by the DNN IE in the UL NAS TRANSPORT message which carried the corresponding PDU SESSION ESTABLISHMENT REQUEST or by pc_APN_Default_Configuration if the DNN IE was not present		
Session AMBR			
Unit for Session-AMBR for downlink	'000 00101'	Value is incremented in multiples of 256 Kbps	
Session-AMBR for downlink	'0000 0000 0000 0100'B	1024 Kbps	
Unit for Session-AMBR for uplink	'000 00101'	Value is incremented in multiples of 256 Kbps	
Session-AMBR for uplink	'0000 0000 0000 0100'B	1024 Kbps	
5GSM cause	Not Present		
PDU address			IPv4
Length of PDU address contents	5 octets		
PDU type value	'001'B	IPv4	
PDU address information	IPv4 address	The SS provides a valid IPv4 address	NOT IPv4-DHCP
	0.0.0.0	DHCPv4 is to be used to allocate the IPv4 address	IPv4-DHCP
PDU address			IPv6
Length of PDU address contents	9 octets		
PDU type value	'010'B	IPv6	

PDU address information	IPv6 interface identifier	The SS provides a valid IPv6 interface identifier	
PDU address			IPv4v6
Length of PDU address contents	13 octets		
PDU type value	'011'B	IPv4v6	
PDU address information (Octets 4 to 11)	IPv6 interface identifier	The SS provides a valid IPv6 interface identifier	
PDU address information (Octets 12 to 15)	IPv4 address	The SS provides a valid IPv4 address	NOT IPv4-DHCP
	0.0.0.0	DHCPv4 is to be used to allocate the IPv4 address	IPv4-DHCP
RQ timer value	Not Present		
S-NSSAI			
Length of S-NSSAI contents	'0000 0001'B	SST	
SST	'0000 0001'B	SST value 1 (eMBB)	SST_eMBB
SST	'0000 0010'B	SST value 2 (URLLC)	SST_URLLC
SST	'0000 0011'B	SST value 3 (MIoT)	SST_MIoT
SST	'0000 0100'B	SST value 4 (V2X)	SST_V2X
Always-on PDU session indication	Not Present		
Always-on PDU session indication			
APSI	'0'B	Always-on PDU session not allowed	Always_On_Requested
APSI	'1'B	Always-on PDU session required	Always_On_Requested AND SST_URLLC
Mapped EPS bearer contexts	Not Present		
Mapped EPS bearer contexts			Interworking with EPS
Mapped EPS bearer context			
EPS bearer identity	The same value as the one specified in the Reference QoS flow referred to from the Reference QoS rule indicated in the IE Authorized QoS rules		
Operation code	'001'B	Create new EPS bearer	
E bit	'1'B	Parameters list is included	
Number of EPS parameters	'0001'B	1 parameter	
Mapped EPS QoS parameters	EPC default bearer context of the entry in Table 4.8.4-1 which has been determined by the DNN IE in the UL NAS TRANSPORT message which carried the corresponding PDU SESSION ESTABLISHMENT REQUEST or by pc_APN_Default_Configuration if the DNN IE was not present		
EAP message	Not Present		

Authorized QoS flow descriptions	The QoS flow referred to in the relevant Authorized QoS rules IE		
Extended protocol configuration options	Not Present		
Extended protocol configuration options			P-CSCF_IPv6 OR P-CSCF_IPv4
Container ID 1	'0001'H		P-CSCF_IPv6
Length of container ID 1 contents		Length value determined by test implementation	
Container ID 1 contents	IPv6 address	P-CSCF IPv6 Address	
Container ID 2	'000C'H		P-CSCF_IPv4
Length of container ID 2 contents		Length value determined by test implementation	
Container ID 2 contents	IPv4 address	P-CSCF IPv4 Address	
Container ID 3	'0001'H		Additional_P-CSCF_IPv6
Length of container ID 3 contents		Length value determined by test implementation	
Container ID 3 contents	IPv6 address	Additional P-CSCF IPv6 Address	
Container ID 4	'000C'H		Additional_P-CSCF_IPv4
Length of container ID 4 contents		Length value determined by test implementation	
Container ID 4 contents	IPv4 address	Additional P-CSCF IPv4 Address	
Container ID n	'0003'H	n assigned to next available number	DNS IPv6 AND XCAP
Length of container ID n contents		Length value determined by the TTCN implementation	
Container ID n contents	IPv6 address	DNS IPv6 address	
Container ID n+1	'000D'H	n assigned to next available number	DNS IPv4 AND XCAP
Length of container ID n contents		Length value determined by the TTCN implementation	
Container ID n contents	IPv4 address	DNS IPv4 address	
DNN	The DNN/APN ID of the entry in Table 4.8.4-1 which has been determined by the DNN IE in the UL NAS TRANSPORT message which carried the corresponding PDU SESSION ESTABLISHMENT REQUEST or by		

	pc_APN_Default_Configuration if the DNN IE was not present		
5GSM network feature support	Not Present		
Serving PLMN rate control	Not Present		
ATSSS container	Not Present		
Control plane only indication	Not Present		
IP header compression configuration	Not Present		
Ethernet header compression configuration	Not Present		
Ethernet header compression configuration	Any value according to TS 24.501 [25] subclause 9.11.4.28		Ethernet
Service-level-AA container	Not Present		
Received MBS container	Not Present		
N3QAI	Not Present		
Protocol description	Not Present		

Condition	Explanation
IPv4	If in the last PDU SESSION ESTABLISHMENT REQUEST sent prior to this message, the PDU session type = '001'B
IPv6	If in the last PDU SESSION ESTABLISHMENT REQUEST sent prior to this message, the PDU session type = '010'B
IPv4v6	If in the last PDU SESSION ESTABLISHMENT REQUEST sent prior to this message, the PDU session type = '011'B
IPv4-DHCP	If in the last PDU SESSION ESTABLISHMENT REQUEST sent prior to this message, the IE Extended protocol configuration options contains a configuration protocol option = '000BH' ("IPv4 address allocation via DHCPv4", length of contents = 0). Note: This condition is used in conjunction with IPv4 or IPv4v6 as indicated in the "PDU address information" just above.
Ethernet	If in the last PDU SESSION ESTABLISHMENT REQUEST sent prior to this message, the PDU session type = '101'B.
Always_On_Requested	If the last PDU SESSION ESTABLISHMENT REQUEST message included the Always-on PDU session requested IE
P-CSCF_IPv6	If in the last PDU SESSION ESTABLISHMENT REQUEST sent prior to this message the IE Extended protocol configuration options contains a configuration protocol option = '0001H' ("P-CSCF IPv6 Address Request", length of contents = 0)
P-CSCF_IPv4	If in the last PDU SESSION ESTABLISHMENT REQUEST sent prior to this message the IE Extended protocol configuration options contains a configuration protocol option = '000CH' ("P-CSCF IPv4 Address Request", length of contents = 0)
Interworking_with_EPS	If the UE has indicated support of S1 and the SS has indicated support of N26, then the SS shall include this IE to provide details for the interworking with EPS being supported for a PDU session. This requirement is set up for the purpose of facilitating the test description. It is not mandatory for the Network to support Mapped EPS bearer contexts.
Additional_P-CSCF_IPv6	P-CSCF_IPv6 AND SS requires to be configured with second P-CSCF Ipv6 address
Additional_P-CSCF_IPv4	P-CSCF_IPv6 AND SS requires to be configured with second P-CSCF Ipv4 address
DNS IPv6	If in the last PDU SESSION ESTABLISHMENT REQUEST the Extended protocol configuration options was included with a "DNS IPv6 Address Request".
DNS IPv4	If in the last PDU SESSION ESTABLISHMENT REQUEST the Extended protocol configuration options was included with a "DNS IPv4 Address Request".
XCAP	Used for test cases (TS 34.229-5[47]) involving signalling between UE and XCAP server to activate or deactivate a supplementary service.

– *PDU session establishment reject*

Table 4.7.2-3: PDU SESSION ESTABLISHMENT REJECT

Derivation Path: 24.501 clause 8.3.3			
Information Element	Value/remark	Comment	Condition
Extended protocol discriminator	'0010 1110'B	5GS session management messages	
PDU session ID	The same value as the value set in PDU SESSION ESTABLISHMENT REQUEST message		
PTI	The same value as the value set in PDU SESSION ESTABLISHMENT REQUEST message		
PDU SESSION ESTABLISHMENT REJECT message identity	'1100 0011'B		
5GSM cause	The value is set according to specific message content		
Back-off timer value	Not Present		
Allowed SSC mode	Not Present		
EAP message	Not Present		
5GSM congestion re-attempt indicator	Not Present		
Extended protocol configuration options	Not Present		
Re-attempt indicator	Not Present		
Service-level-AA container	Not Present		

– *PDU session authentication command*

Table 4.7.2-4: PDU SESSION AUTHENTICATION COMMAND

Derivation Path: 24.501 clause 8.3.4			
Information Element	Value/remark	Comment	Condition
Extended protocol discriminator	'0010 1110'B	5GS session management messages	
PDU session ID	Set according to specific message content		
PTI	'0000 0000'B	No procedure transaction identity assigned	
PDU SESSION AUTHENTICATION COMMAND message identity	'1100 0101'B		
EAP message	Set according to TS 38.508 Table 4.7.3.2-1	See TS 24.501 [25] subclause 9.11.2.2	
Extended protocol configuration options	Not Present		

– *PDU session authentication complete*

Table 4.7.2-5: PDU SESSION AUTHENTICATION COMPLETE

Derivation Path: 24.501 clause 8.3.5			
Information Element	Value/remark	Comment	Condition
Extended protocol discriminator	'0010 1110'B	5GS session management messages	

PDU session ID	The value indicated in PDU SESSION AUTHENTICATION COMMAND message		
PTI	'0000 0000'B	No procedure transaction identity assigned	
PDU SESSION AUTHENTICATION COMPLETE message identity	'1100 0110'B		
EAP message	Set according to TS 38.508 Table 4.7.3.2-2	See TS 24.501 [25] subclause 9.11.2.2	
Extended protocol configuration options	Not checked		

– *PDU session authentication result*

Table 4.7.2-6: PDU SESSION AUTHENTICATION RESULT

Derivation Path: 24.501 clause 8.3.6			
Information Element	Value/remark	Comment	Condition
Extended protocol discriminator	'0010 1110'B	5GS session management messages	
PDU session ID	The value indicated in PDU SESSION AUTHENTICATION COMMAND message		
PTI	'0000 0000'B	No procedure transaction identity assigned	
PDU SESSION AUTHENTICATION RESULT message identity	'1100 0111'B		
EAP message	Set according to specific message content	See TS 24.501 [25] subclause 9.11.2.2	
Extended protocol configuration options	Not Present		

– *PDU session modification request*

Table 4.7.2-7: PDU SESSION MODIFICATION REQUEST

Derivation Path: 24.501 clause 8.3.7			
Information Element	Value/remark	Comment	Condition
Extended protocol discriminator	'0010 1110'B	5GS session management messages	
PDU session ID	The value indicated in PDU SESSION ESTABLISHMENT REQUEST message		
PTI	Any value from 1 to 254		
PDU SESSION MODIFICATION REQUEST message identity	'1100 1001'B		
5GSM capability	Not checked		
5GSM cause	Not checked		
Maximum number of supported packet filters	Not checked		
Always-on PDU session requested	Not checked		
Integrity protection maximum data rate	Not checked		
Requested QoS rules	Not checked		
Requested QoS flow descriptions	Not checked		
Mapped EPS bearer contexts	Not checked		
Extended protocol configuration options	Not checked		
Port management information container	Not checked		

IP header compression configuration	Not checked		
Ethernet header compression configuration	Not checked		
Requested MBS container	Not checked		
Service-level-AA container	Not checked		
Non-3GPP delay budget	Not checked		
URSP rule enforcement reports	Not checked		

– *PDU session modification reject*

Table 4.7.2-8: PDU SESSION MODIFICATION REJECT

Derivation Path: 24.501 clause 8.3.8			
Information Element	Value/remark	Comment	Condition
Extended protocol discriminator	'0010 1110'B	5GS session management messages	
PDU session ID	The value indicated in PDU SESSION MODIFICATION REQUEST message.		
PTI	The value indicated in PDU SESSION MODIFICATION REQUEST message.		
PDU SESSION MODIFICATION REJECT message identity	'1100 1010'B		
5GSM cause	Set according to specific message content.		
Back-off timer value	Not Present		
5GSM congestion re-attempt indicator	Not Present		
Extended protocol configuration options	Not Present		
Re-attempt indicator	Not Present		

– *PDU session modification command*

Table 4.7.2-9: PDU SESSION MODIFICATION COMMAND

Derivation Path: 24.501 clause 8.3.9			
Information Element	Value/remark	Comment	Condition
Extended protocol discriminator	'0010 1110'B	5GS session management messages	
PDU session ID	Set according to specific message content.		
PDU session ID	The value indicated in PDU SESSION MODIFICATION REQUEST message.		UE_Initiated_Modification
PTI	'0000 0000'B	No procedure transaction identity assigned	
PTI	The value indicated in PDU SESSION MODIFICATION REQUEST message.		UE_Initiated_Modification
PDU SESSION MODIFICATION COMMAND message identity	'1100 1011'B		
5GSM cause	Not Present		
Session AMBR	Not Present		
RQ timer value	Not Present		
Always-on PDU session indication	Not Present		
Always-on PDU session indication			

APSI	'0'B	Always-on PDU session not allowed	Always_On_Requested
APSI	'1'B	Always-on PDU session required	Always_On_Requested AND SST_URLLC
Authorized QoS rules	Not Present		
Mapped EPS bearer contexts	Not Present		
Authorized QoS flow descriptions	Not Present		
Extended protocol configuration options	Not Present		
ATSSS container	Not Present		
IP header compression configuration	Not Present		
Port management information container	Not Present		
Serving PLMN rate control	Not Present		
Ethernet header compression configuration	Not Present		
Received MBS container	Not Present		
Service-level-AA container	Not Present		
Alternative S-NSSAI	Not Present		
N3QAI	Not Present		
Protocol description	Not Present		

Condition	Explanation
Always_On_Requested	If the last PDU SESSION MODIFICATION REQUEST message included the Always-on PDU session requested IE
UE_Initiated_Modification	If this message was triggered by a PDU SESSION MODIFICATION REQUEST message sent by the UE

– *PDU session modification complete*

Table 4.7.2-10: PDU SESSION MODIFICATION COMPLETE

Derivation Path: 24.501 clause 8.3.10			
Information Element	Value/remark	Comment	Condition
Extended protocol discriminator	'0010 1110'B	5GS session management messages	
PDU session ID	The value indicated in PDU SESSION MODIFICATION COMMAND message		
PTI	'0000 0000'B	No procedure transaction identity assigned	
PTI	The value indicated in PDU SESSION MODIFICATION REQUEST message.		UE_Initiated_Modification
PDU SESSION MODIFICATION COMPLETE message identity	'1100 1100'B		
Extended protocol configuration options	Not checked		
Port management information container	Not checked		

Condition	Explanation
UE_Initiated_Modification	If this message was triggered by a PDU SESSION MODIFICATION REQUEST message sent by the UE

– *PDU session modification command reject*

Table 4.7.2-11: PDU SESSION MODIFICATION COMMAND REJECT

Derivation Path: 24.501 clause 8.3.11			
Information Element	Value/remark	Comment	Condition
Extended protocol discriminator	'0010 1110'B	5GS session management messages	
PDU session ID	The value indicated in PDU SESSION MODIFICATION COMMAND message		
PTI	'0000 0000'B	No procedure transaction identity assigned	
PDU SESSION MODIFICATION COMMAND REJECT message identity	'1100 1101'B		
5GSM cause	Not checked		
Extended protocol configuration options	Not checked		

– *PDU session release request*

Table 4.7.2-12: PDU SESSION RELEASE REQUEST

Derivation Path: 24.501 clause 8.3.12			
Information Element	Value/remark	Comment	Condition
Extended protocol discriminator	'0010 1110'B	5GS session management messages	
PDU session ID	The value indicated in PDU SESSION ESTABLISHMENT REQUEST message		
PTI	Any value from 1 to 254		
PDU SESSION RELEASE REQUEST message identity	'1101 0001'B		
5GSM cause	Not checked		
Extended protocol configuration options	Not checked		

– *PDU session release reject*

Table 4.7.2-13: PDU SESSION RELEASE REJECT

Derivation Path: 24.501 clause 8.3.13			
Information Element	Value/remark	Comment	Condition
Extended protocol discriminator	'0010 1110'B	5GS session management messages	
PDU session ID	The value indicated in PDU SESSION RELEASE REQUEST message.		
PTI	The value indicated in PDU SESSION RELEASE REQUEST message.		
PDU SESSION RELEASE REJECT message identity	'1101 0010'B		
5GSM cause	Set according to specific message content.		
Extended protocol configuration options	Not Present		

– *PDU session release command*

Table 4.7.2-14: PDU SESSION RELEASE COMMAND

Derivation Path: 24.501 clause 8.3.14			
Information Element	Value/remark	Comment	Condition
Extended protocol discriminator	'0010 1110'B	5GS session management messages	
PDU session ID	Set according to specific message content.		
PTI	'0000 0000'B	No procedure transaction identity assigned	
PDU SESSION RELEASE COMMAND message identity	'1101 0011'B		
5GSM cause	'0001 1010'B	Insufficient resources	
Back-off timer value	Not Present		
EAP message	Not Present		
5GSM congestion re-attempt indicator	Not Present		
Extended protocol configuration options	Not Present		
Access type	Not Present		
Service-level-AA container	Not Present		
Alternative S-NSSAI	Not Present		

– *PDU session release complete*

Table 4.7.2-15: PDU SESSION RELEASE COMPLETE

Derivation Path: 24.501 clause 8.3.15			
Information Element	Value/remark	Comment	Condition
Extended protocol discriminator	'0010 1110'B	5GS session management messages	
PDU session ID	The value indicated in PDU SESSION RELEASE COMMAND message.		
PTI	'0000 0000'B	No procedure transaction identity assigned	
PDU SESSION RELEASE COMPLETE message identity	'1101 0100'B		
5GSM cause	Not checked		
Extended protocol configuration options	Not checked		

– *5GSM status*

Table 4.7.2-16: 5GSM STATUS

Derivation Path: 24.501 clause 8.3.16			
Information Element	Value/remark	Comment	Condition
Extended protocol discriminator	'0010 1110'B	5GS session management messages	
PDU session ID	Set according to specific message content.		
PTI	Set according to specific message content.		
5GSM STATUS message identity	'1101 0110'B		

5GSM cause	Set according to specific message content.		

– *Service-level authentication command*

Table 4.7.2-17: SERVICE-LEVEL AUTHENTICATION COMMAND

Derivation Path: 24.501 clause 8.3.17			
Information Element	Value/remark	Comment	Condition
Extended protocol discriminator	'0010 1110'B	5GS session management messages	
PDU session ID	Set according to specific message content.		
PTI	Set according to specific message content.		
SERVICE-LEVEL AUTHENTICATION COMMAND message identity	'1101 1000'B		
Service-level-AA container	FFS		

– *Service-level authentication complete*

Table 4.7.2-18: SERVICE-LEVEL AUTHENTICATION COMPLETE

Derivation Path: 24.501 clause 8.3.18			
Information Element	Value/remark	Comment	Condition
Extended protocol discriminator	'0010 1110'B	5GS session management messages	
PDU session ID	Set according to specific message content.		
PTI	Set according to specific message content.		
SERVICE-LEVEL AUTHENTICATION COMPLETE message identity	'1101 1001'B		
Service-level-AA container	FFS		

– *Remote UE report*

Table 4.7.2-19: REMOTE UE REPORT

Derivation Path: 24.501 clause 8.3.19			
Information Element	Value/remark	Comment	Condition
Extended protocol discriminator	'0010 1110'B	5GS session management messages	
PDU session ID	Set according to specific message content.		
PTI	Set according to specific message content.		
REMOTE UE REPORT message identity	'1101 1010'B		
Remote UE context connected	FFS		
Remote UE context disconnected	FFS		

– *Remote UE report response*

Table 4.7.2-20: REMOTE UE REPORT RESPONSE

Derivation Path: 24.501 clause 8.3.20

Information Element	Value/remark	Comment	Condition
Extended protocol discriminator	'0010 1110'B	5GS session management messages	
PDU session ID	Set according to specific message content.		
PTI	Set according to specific message content.		
REMOTE UE REPORT RESPONSE message identity	'1101 1011'B		

4.7.3 Contents of EAP-AKA' messages

For all the message definitions below, the acceptable order and syntax of attributes and fields within these attributes must be according to IETF RFCs where those attributes have been defined. Typically the order of attributes is not significant, but there could be well defined exceptions where the order is important.

The contents of the messages described in the present Annex is not complete - only the attributes required to be checked or generated by SS are listed here. The messages sent by the UE may contain additional attributes which are not checked and must thus be ignored by SS.

4.7.3.1 EAP-AKA' message attributes

Table 4.7.3.1-1: AT_RANDOM_Def

Derivation Path: IETF RFC 4187 [30] clause 10.6			
Information Element	Value/remark	Comment	Condition
AT_RANDOM	'0000 0001'B	1	
Length	'0000 0101'B	5	
Reserved	'0000 0000 0000 0000'B		
RAND	An arbitrarily selected 128 bits value		

Table 4.7.3.1-2: AT_AUTN_Def

Derivation Path: IETF RFC 4187 [30] clause 10.7			
Information Element	Value/remark	Comment	Condition
AT_AUTN	'0000 0010'B	2	
Length	'0000 0101'B	5	
Reserved	'0000 0000 0000 0000'B		
AUTN	128 bits value generated according to TS 24.501 [28] subclause 9.11.3.15		

Table 4.7.3.1-3: AT_KDF_Def

Derivation Path: IETF RFC 5448 [31] clause 3.3			
Information Element	Value/remark	Comment	Condition
AT_KDF	'0001 1000'B	24	
Length	'0000 0001'B	1	
KDF	'0000 0000 0000 0001'	1: EAP_AKA'	

Table 4.7.3.1-4: AT_KDF_INPUT_Def

Derivation Path: IETF RFC 5448 [31] clause 3.2			
Information Element	Value/remark	Comment	Condition
AT_KDF_INPUT	'0001 0111'B	23	
Length	Set to the Length of attribute AT_KDF_INPUT in 4 bytes		

Actual Network Name Length	Set to the actual length of 'Network Name' in bytes excluding any appended all zero bytes at end		
Network Name	Value generated according to TS 24.501 [28] clause 9.12.1 and shall be a multiple of 4 bytes (appended with 1,2 or 3 bytes of all zero bits when necessary)		

Table 4.7.3.1-5: AT_MAC_Def

Derivation Path: IETF RFC 4187 [30] clause 10.15			
Information Element	Value/remark	Comment	Condition
AT_MAC	'0000 1011'B	11	
Length	'0000 0101'B	5	
Reserved	'0000 0000 0000 0000'B		
MAC	128 bits value generated according to RFC 4187 [30] subclause 10.15		

Table 4.7.3.1-6: AT_RES_Def

Derivation Path: IETF RFC 4187 [30] clause 10.08			
Information Element	Value/remark	Comment	Condition
AT_RES	'0000 0011'B	3	
Length	Set to Length of AT_RES attribute in 4 bytes.	1 byte	
RES_LENGTH	Set to the actual length of 'RES' in bytes excluding any appended all zero bytes at end		
RES	RES* value calculated according to TS 24.501 [28] clause 9.11.3.17, possibly appended with 1,2 or 3 bytes of all zero bits to make length multiple of 4 bytes.		

Table 4.7.3.1-7: AT_AUTS_Def

Derivation Path: IETF RFC 4187 [30] clause 10.08			
Information Element	Value/remark	Comment	Condition
AT_AUTS	'0000 0100'B	4	
Length	'0000 0100'B	4	
AUTS	14 octets RES* value not checked		

Table 4.7.3.1-8: AT_PERMANENT_ID_Def

Derivation Path: IETF RFC 4187 [30] clause 10.2			
Information Element	Value/remark	Comment	Condition
AT_PERMANENT_ID_REQ	'0000 1010'B	10	
Length	'0000 0001'B	1	
Reserved	'0000 0000 0000 0000'B		

Table 4.7.3.1-9: AT_ANY_ID_REQ_Def

Derivation Path: IETF RFC 4187 [30] clause 10.3			
Information Element	Value/remark	Comment	Condition
AT_ANY_ID_REQ	'0000 1101'B	13	
Length	'0000 0001'B	1	
Reserved	'0000 0000 0000 0000'B		

Table 4.7.3.1-10: AT_FULLAUTH_ID_Def

Derivation Path: IETF RFC 4187 [30] clause 10.4			
Information Element	Value/remark	Comment	Condition
AT_FULLAUTH_ID_REQ	'0001 0001'B	17	
Length	'0000 0001'B	1	
Reserved	'0000 0000 0000 0000'B		

Table 4.7.3.1-11: AT_IDENTITY_Def

Derivation Path: IETF RFC 4187 [30] clause 10.5			
Information Element	Value/remark	Comment	Condition
AT_IDENTITY	'0000 1110'B	14	
Length	Set to the Length of AT_IDENTITY attribute in 4 bytes		
Actual Identity Length	Set to the actual length of 'identity' in bytes excluding any appended all zero bytes at end		
Identity	Value generated according to TS 24.501 [28] clause 9.11.3.4 and shall be a multiple of 4 bytes (appended with 1,2 or 3 bytes of all zero bits when necessary)		

Table 4.7.3.1-12: AT_NOTIFICATION_Def

Derivation Path: IETF RFC 4187 [30] clause 10.19			
Information Element	Value/remark	Comment	Condition
AT_NOTIFICATION	'0000 1100'B	12	
Length	'0000 0001'B	1	
Notification Code	16 bits value generated according to RFC 4187 [30] subclause 10.19.		

4.7.3.2 EAP-AKA' messages

Table 4.7.3.2-1: EAP-Request/AKA'-Challenge

Derivation Path: IETF RFC 4187 [30] clause 9.3, RFC 3748 [32] clause 4			
Information Element	Value/remark	Comment	Condition
Code	1	Request	
Length	Set to length of EAP packet		
Data			
AT_RAND	AT_RAND_Def		
AT_AUTN	AT_AUTN_Def		
AT_KDF	AT_KDF_Def		
AT_KDF_INPUT	AT_KDF_INPUT_Def		
AT_MAC	AT_MAC_Def		

Table 4.7.3.2-2: EAP-Response/AKA'-Challenge

Derivation Path: IETF RFC 4187 [30] clause 9.4, RFC 3748 [32] clause 4			
Information Element	Value/remark	Comment	Condition
Code	2	Response	
Length	Set to length of EAP packet		
Data			
AT_Res	AT_Res_Def		
AT_MAC	AT_MAC_Def		

Table 4.7.3.2-3: EAP-Success

Derivation Path: IETF RFC 4187 [30] clause 6.3.4, RFC 3748 [32] clause 4			
Information Element	Value/remark	Comment	Condition
Code	3	Success	
Length	Set to length of EAP packet		
Data	Not present	Specific attributes not present	

Table 4.7.3.2-4: EAP-Response/AKA-Authentication-Reject

Derivation Path: IETF RFC 4187 [30] clause 9.5, RFC 3748 [32] clause 4			
Information Element	Value/remark	Comment	Condition
Code	4	Failure	
Length	Set to length of EAP packet		
Data	Not checked		

Table 4.7.3.2-5: EAP-Response/AKA-Synchronization-Failure

Derivation Path: IETF RFC 4187 [30] clause 9.6, RFC 3748 [32] clause 4			
Information Element	Value/remark	Comment	Condition
Code	4	Failure	
Length	Set to length of EAP packet		
Data			
AT_AUTS	AT_AUTS_Def		

Table 4.7.3.2-6: EAP-Failure

Derivation Path: IETF RFC 4187 [30] clause 6.3.3, RFC 3748 [32] clause 4			
Information Element	Value/remark	Comment	Condition
Code	4	Failure	
Length	Set to length of EAP packet		
Data	Not present	Specific attributes not present	

Table 4.7.3.2-7: EAP-Request/AKA-Identity

Derivation Path: IETF RFC 4187 [30] clause 9.1, RFC 3748 [32] clause 4			
Information Element	Value/remark	Comment	Condition
Code	1	Request	
Length	Set to length of EAP packet		
Data			

AT_PERMANENT_ID_REQ	AT_PERMANENT_ID_REQ_Def		SS requests that the UE send its permanent identity.
AT_ANY_ID_REQ	AT_ANY_ID_REQ_Def		SS does not specify which kind of an identity the UE should return.
AT_FULLAUTH_ID_REQ	AT_FULLAUTH_ID_REQ_Def		SS requests either the permanent identity or a pseudonym identity.

Table 4.7.3.2-8: EAP-Response/AKA-Identity

Derivation Path: IETF RFC 4187 [30] clause 9.2, RFC 3748 [32] clause 4			
Information Element	Value/remark	Comment	Condition
Code	2	Response	
Length	Set to length of EAP packet		
Data			
AT_IDENTITY	AT_IDENTITY_Def		

Table 4.7.3.2-9: EAP-Request/AKA-Notification

Derivation Path: IETF RFC 4187 [30] clause 9.10, RFC 3748 [32] clause 4			
Information Element	Value/remark	Comment	Condition
Code	1	Request	
Length	Set to length of EAP packet		
Data			
AT_NOTIFICATION	AT_NOTIFICATION_Def		

Table 4.7.3.2-10: EAP-Response/AKA-Notification

Derivation Path: IETF RFC 4187 [30] clause 9.11, RFC 3748 [32] clause 4			
Information Element	Value/remark	Comment	Condition
Code	2	Response	
Length	Set to length of EAP packet		
Data	Not present	Specific attributes not present	

4.7.4 Void

4.7.5 Void

4.7.6 Contents of UE Policy Delivery messages

– *MANAGE UE POLICY COMMAND***Table 4.7.6-1: MANAGE UE POLICY COMMAND**

Derivation Path: TS 24.501 Table D.5.1.1.1			
Information Element	Value/remark	Comment	Condition
PTI	Any value from 1 to 254		
MANAGE UE POLICY COMMAND message identity	'0000 0001'B	MANAGE UE POLICY COMMAND message	
UE policy section management list			
Length of UE policy section management list contents	Set to the actual length of 'UE policy section management list contents' in bytes		
UE policy section management list contents	1 entry		
UE policy section management sublist (PLMN-1)			
Length of UE policy section management sublist	Set to the actual length of 'UE policy section management sublist' in bytes		
PLMN ID	Set to the PLMN value used in the test case		
UE policy section management sublist contents			
Instruction 1			
Instruction contents length	Set to the actual length of 'Instruction contents' in bytes		
UPSC	'00 01'H	2 bytes, value set by PCF	
UE policy section contents			
UE policy part 1			
UE policy part contents length	Set to the actual length of 'UE policy part contents' in bytes		
Spare	'0000'B		
UE policy part type	'0001'B		URSP
	'0010'B		ANDSP
	'0011'B		V2XP
	'0100'B		ProSeP
UE policy part contents	See Table 4.8.5.1-1		URSP
	FFS		ANDSP
	See Table 4.7D.2.1-1		V2XP
	See Table 4.7C.1.1-1		ProSeP
UE policy network classmark	Not present		
VPS URSP configuration	Not present		

Condition	Explanation
URSP	UE Route Selection Policy (URSP)
ANDSP	UE Access Network Discovery and Selection Policy (ANDSP)
V2XP	UE policies for V2X (V2XP)
ProSeP	UE policies for ProSe (ProSeP)

– *MANAGE UE POLICY COMPLETE*

Table 4.7.6-2: MANAGE UE POLICY COMPLETE

Derivation Path: TS 24.501 Table D.5.2.1.1			
Information Element	Value/remark	Comment	Condition
PTI	The same value as the value set in MANAGE UE POLICY COMMAND message.		
MANAGE UE POLICY COMPLETE message identity	'0000 0010'B	MANAGE UE POLICY COMPLETE message	

– *MANAGE UE POLICY COMMAND REJECT*

Table 4.7.6-3: MANAGE UE POLICY COMMAND REJECT

Derivation Path: TS 24.501 Table D.5.3.1.1			
Information Element	Value/remark	Comment	Condition
PTI	The same value as the value set in MANAGE UE POLICY COMMAND message.		
MANAGE UE POLICY COMMAND REJECT message identity	'0000 0011'B	MANAGE UE POLICY COMMAND REJECT message	
UE policy section management result			
Length of UE policy section management result contents	Set to the actual length of 'UE policy section management result contents' in bytes		
UE policy section management list contents	1 entry		
UE policy section management subresult (PLMN 1)			
Number of results	1		
PLMN ID	Set to the PLMN value used in the test case		
UE policy section management subresult contents	1 entry		
Result 1			
UPSC	'00 01'H		
Failed instruction order	Set according to specific message content.		
Cause	Set according to specific message content.		

– *UE STATE INDICATION*

Table 4.7.6-4: UE STATE INDICATION

Derivation Path: TS 24.501 Table D.5.4.1.1			
Information Element	Value/remark	Comment	Condition
PTI	Any value from 1 to 254		
UE STATE INDICATION message identity	'0000 0100'B		
UPSI list	1 entry		

Length of UPSI list contents	Set to the actual length of 'UPSI list contents' in bytes		
UPSI sublist (PLMN 1)	1 entry		
Length of UPSI sublist	Set to the actual length of 'UPSI sublist' in bytes		
PLMN ID	Set to the PLMN value used in the test case		
UPSC 1	Set according to specific message content.		
UE policy classmark	Not checked		
Length of Policy information contents	Set to the actual length of 'Policy information contents' in bytes		
Spare	'0000 000'B		
SupportANDSP	'1'B		ANDSP
	Not checked		
UE OS Id			
Length of OS Id information contents	Set to the actual length of 'OS Id information contents' in bytes		
OS Id_1	Set according to parameter given in test case		

Condition	Explanation
ANDSP	UE Access Network Discovery and Selection Policy (ANDSP)

– UE POLICY PROVISIONING REQUEST

Table 4.7.6-5: UE POLICY PROVISIONING REQUEST

Derivation Path: TS 24.587 Table 7.2.1.1.1			
Information Element	Value/remark	Comment	Condition
PTI	Any value from 1 to 254		
UE POLICY PROVISIONING REQUEST message identity	'0000 0101'B		
Requested UE policies			
Length of Requested UE policies contents	2		
	Set to the actual length of 'Requested UE policies contents' in bytes		ProSeP
Requested UE policies contents	'0000 0001 0000 0000'B	UE policies for V2X communication over PC5 requested	
	Set according to parameter given in test case		ProSeP

Condition	Explanation
ProSeP	UE policies for ProSe (ProSeP)

– UE POLICY PROVISIONING REJECT

Table 4.7.6-6: UE POLICY PROVISIONING REJECT

Derivation Path: TS 24.587 Table 7.2.2.1.1			
Information Element	Value/remark	Comment	Condition
PTI	The same value as the value set in UE POLICY PROVISIONING REQUEST message.		
UE POLICY PROVISIONING REJECT message identity	'0000 0110'B		
UPDS cause	'0001 1111'B	Request rejected, unspecified	

4.7.7 Void

4.7A Default TC message and information element contents

This clause contains the default values of common TC (Test Control, see [11]) messages and information elements, which apply to all test cases unless otherwise specified. All the messages and information elements are listed in alphabetical order.

4.7A.1 Test mode messages

- *ACTIVATE TEST MODE* with the following exception:
 - The supported test modes for 5GS are limited to those specified in subclause 38.509 [11] 5.3.4.

Same as TS 36.508 [2], Table 4.7A-1.

- *ACTIVATE TEST MODE COMPLETE*

Same as TS 36.508 [2], Table 4.7A-2.

- *DEACTIVATE TEST MODE*

Same as TS 36.508 [2], Table 4.7A-5.

- *DEACTIVATE TEST MODE COMPLETE*

Same as TS 36.508 [2], Table 4.7A-6.

4.7A.2 Test loop messages

- *CLOSE UE TEST LOOP*

Same as TS 36.508 [2], Table 4.7A-3 with the following exception:

- The supported test modes for 5GS are limited to those specified in subclause 38.509 [11] 5.3.4.

Derivation Path: 38.509 [11] clause 6.3			
Information Element	Value/remark	Comment	Condition
UE test loop mode	'0 0 0 0 0 0 1 0'B	UE test loop mode C	(UE TEST LOOP MODE C) AND (Broadcast MRB)
UE test loop mode A LB setup	Not present		
UE test loop mode B LB setup	Not present		
UE test loop mode C LB setup		MRB ID	
MRB ID	'0 0 0 0 0 0 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0'B	Bit1 of Octet1 = 1: Broadcast MRB. Bit4 – bit1 of Octet2 = 0 0 0 0 and bit8 of Octet3 = 0: Identity of the logical channel of broadcast MTCH is 1.	
UE test loop mode D LB setup	Not present		
UE test loop mode E LB setup	Not present		
UE test loop mode F setup	Not present		(UE TEST LOOP MODE C) AND (Multicast MRB)
UE test loop mode	'0 0 0 0 0 0 1 0'B	UE test loop mode C	
UE test loop mode A LB setup	Not present		
UE test loop mode B LB setup	Not present		
UE test loop mode C LB setup		MRB ID	
MRB ID	'0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0'B	Bit1 of Octet1 = 0: Multicast MRB Bit8 - bit1 of Octet2 = 0 0 0 0 0 0 0 0 0 and bit8 of Octet3 = 0: MRB- Identity is 1	
UE test loop mode D LB setup	Not present		
UE test loop mode E LB setup	Not present		
UE test loop mode F setup	Not present		

Condition	Explanation
Broadcast MRB	Trigger the UE to count the MBS packet on Broadcast MRB of the Identity of the logical channel of broadcast MTCH
Multicast MRB	Trigger the UE to count the MBS packet on Multicast MRB of the MRB-Identity

- CLOSE UE TEST LOOP COMPLETE

Same as TS 36.508 [2], Table 4.7A-4.

- OPEN UE TEST LOOP

Same as TS 36.508 [2], Table 4.7A-7.

- OPEN UE TEST LOOP COMPLETE

Same as TS 36.508 [2], Table 4.7A-8.

4.7A.3 Beamlock messages

- ACTIVATE BEAMLOCK

This message is only sent in the direction SS to UE, embedded in a RRC *DLInformationTransfer* message.

Table 4.7A.3-1: ACTIVATE BEAMLOCK

Derivation Path: 38.509 clause 6.4.1			
Information Element	Value/remark	Comment	Condition
Protocol discriminator	1 1 1 1		
Skip indicator	0 0 0 0		
Message type	1 0 1 0 0 0 0 0		

UE Beamlock test Function	0 0 0 0 0 0 1		Tx Only
UE Beamlock test Function	0 0 0 0 0 1 0		Rx Only
UE Beamlock test Function	0 0 0 0 0 1 1		Tx and Rx

Condition	Explanation
Tx Only	Activation UE beamlock function for Tx only
Rx Only	Activation UE beamlock function for Rx only
Tx and Rx	Activation UE beamlock function for both Tx and Rx

- *ACTIVATE BEAMLOCK COMPLETE*

This message is only sent in the direction UE to SS, embedded in a RRC *ULInformationTransfer* message.

Table 4.7A.3-2: ACTIVATE BEAMLOCK COMPLETE

Derivation Path: 38.509 clause 6.4.2			
Information Element	Value/remark	Comment	Condition
Protocol discriminator	1 1 1 1		
Skip indicator	0 0 0 0		
Message type	1 0 1 0 0 0 1		

- *DEACTIVATE BEAMLOCK*

This message is only sent in the direction SS to UE, embedded in a RRC *DLInformationTransfer* message.

Table 4.7A.3-3: DEACTIVATE BEAMLOCK

Derivation Path: 38.509 clause 6.4.3			
Information Element	Value/remark	Comment	Condition
Protocol discriminator	1 1 1 1		
Skip indicator	0 0 0 0		
Message type	1 0 1 0 0 0 1 0		

- *DEACTIVATE BEAMLOCK COMPLETE*

This message is only sent in the direction UE to SS, embedded in a RRC *ULInformationTransfer* message.

Table 4.7A.3-4: DEACTIVATE BEAMLOCK COMPLETE

Derivation Path: 38.509 clause 6.4.4			
Information Element	Value/remark	Comment	Condition
Protocol discriminator	1 1 1 1		
Skip indicator	0 0 0 0		
Message type	1 0 1 0 0 0 1 1		

4.7A.4 UE SS-RSRP per receiver branch reporting messages

- *SS-RSRPB REPORT REQUEST*

FFS

- *SS-RSRPB REPORT RESPONSE*

FFS

4.7A.5 UE Positioning messages

- *RESET UE POSITIONING STORED INFORMATION*

FFS

- *UPDATE UE LOCATION INFORMATION*

FFS

4.7A.6 NSSAI delete messages

- *NSSAI DELETE REQUEST*

This message is only sent in the direction SS to UE, embedded in a RRC *DLInformationTransfer* message.

Table 4.7A.6-1: NSSAI DELETE REQUEST

Derivation Path: 38.509 clause 6.7.1			
Information Element	Value/remark	Comment	Condition
Protocol discriminator	1 1 1 1		
Skip indicator	0 0 0 0		
Message type	1 0 0 0 1 1 0		
Delete NSSAI type	Set according to specific message contents		
Configured NSSAI	Set according to specific message contents		
Allowed NSSAI	Set according to specific message contents		

- *NSSAI DELETE RESPONSE*

This message is only sent in the direction UE to SS, embedded in a RRC *ULInformationTransfer* message.

Table 4.7A.6-2: NSSAI DELETE RESPONSE

Derivation Path: 38.509 clause 6.7.2			
Information Element	Value/remark	Comment	Condition
Protocol discriminator	1 1 1 1		
Skip indicator	0 0 0 0		
Message type	1 0 1 0 0 1 1 1		

4.7A.7 UE Power Limit Messages

- *ACTIVATE POWER LIMIT REQUEST*

This Message is only sent in the direction SS to UE, embedded in a RRC *DLInformationTransfer* message.

Table 4.7A.7-1: ACTIVATE POWER LIMIT REQUEST

Derivation Path: 38.509 clause 6.11.1			
Information Element	Value/remark	Comment	Condition
Protocol discriminator	1 1 1 1		
Skip indicator	0 0 0 0		
Message type	1 0 1 0 1 1 1 0		
TOTAL NR AGGREGATED BANDWIDTH	0 0 0 0 0 0 1 0		TOT NR AGG BW 100
TOTAL NR AGGREGATED BANDWIDTH	0 0 0 0 0 0 1 1		TOT NR AGG BW 150
TOTAL NR AGGREGATED BANDWIDTH	0 0 0 0 0 1 0 0		TOT NR AGG BW 200
TOTAL NR AGGREGATED BANDWIDTH	0 0 0 0 0 1 0 1		TOT NR AGG BW 250
TOTAL NR AGGREGATED BANDWIDTH	0 0 0 0 0 1 1 0		TOT NR AGG BW 300
TOTAL NR AGGREGATED BANDWIDTH	0 0 0 0 0 1 1 1		TOT NR AGG BW 350
TOTAL NR AGGREGATED BANDWIDTH	0 0 0 0 1 0 0 0		TOT NR AGG BW 400
TOTAL NR AGGREGATED BANDWIDTH	0 0 0 0 1 0 0 1		TOT NR AGG BW 450
TOTAL NR AGGREGATED BANDWIDTH	0 0 0 0 1 0 1 0		TOT NR AGG BW 500
TOTAL NR AGGREGATED BANDWIDTH	0 0 0 0 1 0 1 1		TOT NR AGG BW 550
TOTAL NR AGGREGATED BANDWIDTH	0 0 0 0 1 1 0 0		TOT NR AGG BW 600
TOTAL NR AGGREGATED BANDWIDTH	0 0 0 0 1 1 0 1		TOT NR AGG BW 650
TOTAL NR AGGREGATED BANDWIDTH	0 0 0 0 1 1 1 0		TOT NR AGG BW 700
TOTAL NR AGGREGATED BANDWIDTH	0 0 0 0 1 1 1 1		TOT NR AGG BW 750
TOTAL NR AGGREGATED BANDWIDTH	0 0 0 1 0 0 0 0		TOT NR AGG BW 800
TOTAL NR AGGREGATED BANDWIDTH	0 0 0 1 0 0 0 1		TOT NR AGG BW 850
TOTAL NR AGGREGATED BANDWIDTH	0 0 0 1 0 0 1 0		TOT NR AGG BW 900

TOTAL NR AGGREGATED BANDWIDTH	0 0 0 1 0 0 1 1		TOT NR AGG BW 950
TOTAL NR AGGREGATED BANDWIDTH	0 0 0 1 0 1 0 0		TOT NR AGG BW 1000
TOTAL NR AGGREGATED BANDWIDTH	0 0 0 1 0 1 0 1		TOT NR AGG BW 1050
TOTAL NR AGGREGATED BANDWIDTH	0 0 0 1 0 1 1 0		TOT NR AGG BW 1100
TOTAL NR AGGREGATED BANDWIDTH	0 0 0 1 0 1 1 1		TOT NR AGG BW 1150
TOTAL NR AGGREGATED BANDWIDTH	0 0 0 1 1 0 0 0		TOT NR AGG BW 1200
TOTAL NR AGGREGATED BANDWIDTH	0 0 0 1 1 0 0 1		TOT NR AGG BW 1250
TOTAL NR AGGREGATED BANDWIDTH	0 0 0 1 1 0 1 0		TOT NR AGG BW 1300
TOTAL NR AGGREGATED BANDWIDTH	0 0 0 1 1 0 1 1		TOT NR AGG BW 1350
TOTAL NR AGGREGATED BANDWIDTH	0 0 0 1 1 1 0 0		TOT NR AGG BW 1400
TOTAL NR AGGREGATED BANDWIDTH	0 0 0 1 1 1 0 1		TOT NR AGG BW 1450
TOTAL NR AGGREGATED BANDWIDTH	0 0 0 1 1 1 1 0		TOT NR AGG BW 1500
TOTAL NR AGGREGATED BANDWIDTH	0 0 0 1 1 1 1 1		TOT NR AGG BW 1550
TOTAL NR AGGREGATED BANDWIDTH	0 0 1 0 0 0 0 0		TOT NR AGG BW 1600
PCELL NR BANDWIDTH	0 0 0 0 0 0 0 1		PCELL NR BW 50
PCELL NR BANDWIDTH	0 0 0 0 0 0 1 0		PCELL NR BW 100
PCELL NR BANDWIDTH	0 0 0 0 0 1 0 0		PCELL NR BW 200
PCELL NR BANDWIDTH	0 0 0 0 1 0 0 0		PCELL NR BW 400

Condition	Explanation
TOT NR AGG BW 100	Total NR aggregated Bandwidth equal to 100 MHz
TOT NR AGG BW 150	Total NR aggregated Bandwidth equal to 150 MHz
TOT NR AGG BW 200	Total NR aggregated Bandwidth equal to 200 MHz
TOT NR AGG BW 250	Total NR aggregated Bandwidth equal to 250 MHz
TOT NR AGG BW 300	Total NR aggregated Bandwidth equal to 300 MHz
TOT NR AGG BW 350	Total NR aggregated Bandwidth equal to 350 MHz
TOT NR AGG BW 400	Total NR aggregated Bandwidth equal to 400 MHz
TOT NR AGG BW 450	Total NR aggregated Bandwidth equal to 450 MHz
TOT NR AGG BW 500	Total NR aggregated Bandwidth equal to 500 MHz
TOT NR AGG BW 550	Total NR aggregated Bandwidth equal to 550 MHz
TOT NR AGG BW 600	Total NR aggregated Bandwidth equal to 600 MHz
TOT NR AGG BW 650	Total NR aggregated Bandwidth equal to 650 MHz
TOT NR AGG BW 700	Total NR aggregated Bandwidth equal to 700 MHz
TOT NR AGG BW 750	Total NR aggregated Bandwidth equal to 750 MHz

TOT NR AGG BW 800	Total NR aggregated Bandwidth equal to 800 MHz
TOT NR AGG BW 850	Total NR aggregated Bandwidth equal to 850 MHz
TOT NR AGG BW 900	Total NR aggregated Bandwidth equal to 900 MHz
TOT NR AGG BW 950	Total NR aggregated Bandwidth equal to 950 MHz
TOT NR AGG BW 1000	Total NR aggregated Bandwidth equal to 1000 MHz
TOT NR AGG BW 1050	Total NR aggregated Bandwidth equal to 1050 MHz
TOT NR AGG BW 1100	Total NR aggregated Bandwidth equal to 1100 MHz
TOT NR AGG BW 1150	Total NR aggregated Bandwidth equal to 1150 MHz
TOT NR AGG BW 1200	Total NR aggregated Bandwidth equal to 1200 MHz
TOT NR AGG BW 1250	Total NR aggregated Bandwidth equal to 1250 MHz
TOT NR AGG BW 1300	Total NR aggregated Bandwidth equal to 1300 MHz
TOT NR AGG BW 1350	Total NR aggregated Bandwidth equal to 1350 MHz
TOT NR AGG BW 1400	Total NR aggregated Bandwidth equal to 1400 MHz
TOT NR AGG BW 1450	Total NR aggregated Bandwidth equal to 1450 MHz
TOT NR AGG BW 1500	Total NR aggregated Bandwidth equal to 1500 MHz
TOT NR AGG BW 1550	Total NR aggregated Bandwidth equal to 1550 MHz
TOT NR AGG BW 1600	Total NR aggregated Bandwidth equal to 1600 MHz
PCELL NR BW 50	PCC NR Bandwidth equal to 50 MHz
PCELL NR BW 100	PCC NR Bandwidth equal to 100 MHz
PCELL NR BW 200	PCC NR Bandwidth equal to 200 MHz
PCELL NR BW 400	PCC NR Bandwidth equal to 400 MHz

- ACTIVATE POWER LIMIT RESPONSE

This message is only sent in the direction UE to SS, embedded in a RRC *ULInformationTransfer* message.

Table 4.7A.7-2: ACTIVATE POWER LIMIT RESPONSE

Derivation Path: 38.509 clause 6.11.2			
Information Element	Value/remark	Comment	Condition
Protocol discriminator	1 1 1 1		
Skip indicator	0 0 0 0		
Message type	1 0 1 0 1 1 1 1		

- DEACTIVATE POWER LIMIT REQUEST

This message is only sent in the direction SS to UE, embedded in a RRC *DLInformationTransfer* message.

Table 4.7A.7-3: DEACTIVATE POWER LIMIT REQUEST

Derivation Path: 38.509 clause 6.11.3			
Information Element	Value/remark	Comment	Condition
Protocol discriminator	1 1 1 1		
Skip indicator	0 0 0 0		
Message type	1 0 1 1 0 0 0 0		

- DEACTIVATE POWER LIMIT RESPONSE

This message is only sent in the direction UE to SS, embedded in a RRC *ULInformationTransfer* message.

- Table 4.7A.7-3: DEACTIVATE POWER LIMIT RESPONSE

Derivation Path: 38.509 clause 6.11.4			
Information Element	Value/remark	Comment	Condition
Protocol discriminator	1 1 1 1		
Skip indicator	0 0 0 0		
Message type	1 0 1 1 0 0 0 1		

4.7B Default AT Command message and information element

- *AT Command +CATM*

Same as TS 36.508 [2], Table 4.7I-1.

- *AT Command +CCUTLE*

This AT Command is sent by the SS to the UE.

Table 4.7B-1: +CCUTLE

Derivation Path: 27.007 clause 15.3			
Field	Value/remark	Comment	Condition
+ CCUTLE =			
<status>	1		Open
<status>	0		Close
<direction>	1		Transmit
<sl_mimo>	0		Transmit
	1		Transmit AND SL_MIMO
<direction>	0		Receive
<format>	1		Receive
<length>	1		Receive
<monitor_list>	HEX '0000AA'		Receive

Condition	Explanation
Open	Open UE test loop back mode E.
Close	Close UE test loop back mode E
Transmit	UE is configured to transmit V2X or ProSe communication packets
Receive	UE is configured to receive V2X or ProSe communication packets
SL_MIMO	UE is configured to transmit PSSCH with 2 spatial layers, i.e. SL MIMO

- *AT Command +CUTCR*

Same as TS 36.508 [2], Table 4.7I-3.

- *AT Command +CUSPCREQ*

Same as TS 36.508 [2], Table 4.7I-4.

4.7C Default 5G ProSe message and information elements contents

4.7C.1 5G ProSe information elements

4.7C.1.1 5G ProSe information elements for UE policy part

- *UE policy part when UE policy part type = {ProSeP}*

Table 4.7C.1.1-1: UE policy part when UE policy part type = {ProSeP}

Derivation Path: TS 24.555 [59] Figure 5.2.1			
Information Element	Value/remark	Comment	Condition

UE policy part contents length	Set to the actual length of 'UE policy part contents' in bytes		
UE policy part type	'0100'B	UE policy part type={ProSeP}	
Spare	'0000'B		
UE policy part contents={ProSeP contents}	See Table 4.7C.1.1-2		

– *ProSeP contents*

Table 4.7C.1.1-2: ProSeP contents

Derivation Path: TS 24.555 [59] Figure 5.2.2			
Information Element	Value/remark	Comment	Condition
ProSeP info #1	ProSeP info with condition DirectDiscovery		
ProSeP info #2	ProSeP info with condition DirectCommunications		
ProSeP info #3	ProSeP info with condition UEtoNetRelayUE		
ProSeP info #4	ProSeP info with condition RemoteUE		

– *ProSeP info*

Table 4.7C.1.1-3: ProSeP info

Derivation Path: TS 24.555 [59] Figure 5.2.3			
Information Element	Value/remark	Comment	Condition
ProSeP info type	'0001'B		DirectDiscovery
	'0010'B		DirectCommunications
	'0011'B		UEtoNetRelayUE
	'0100'B		RemoteUE
	'0101'B		UsageInformationReporting
Spare	'0000'B		
Length of ProSeP info contents	Set to the actual length of 'ProSeP info contents' in bytes		
ProSeP info contents	Set according to specific message content		

Condition	Explanation
DirectDiscovery	UE policies for 5G ProSe direct discovery
DirectCommunications	UE policies for 5G ProSe direct communications
UEtoNetRelayUE	UE policies for 5G ProSe UE-to-network relay UE
RemoteUE	UE policies for 5G ProSe remote UE
UsageInformationReporting	UE policies for 5G ProSe usage information reporting

4.7C.1.2 5G ProSe information elements of UE policies for 5G ProSe direct discovery

– *ProSeP info = { UE policies for 5G ProSe direct discovery }*

Table 4.7C.1.2-1: ProSeP info = { UE policies for 5G ProSe direct discovery }

Derivation Path: TS 24.555 [59] Figure 5.3.2.1			
Information Element	Value/remark	Comment	Condition
ProSeP info type	'0001'B	UE policies for 5G ProSe direct discovery	
Spare	'0000'B		
Length of ProSeP info contents	Set to the actual length of 'ProSeP info contents' in bytes		
Validity timer	'FF FF FF FF FF'H	5 bytes, Expiration UTC time of validity of the UE policies, in seconds since midnight UTC of January 1, 1970 (not counting leap seconds)	
Served by NG-RAN	See Table 4.7C.1.2-2 with condition Announcing_Open_Model_A		Announcing_Open_Model_A
	See Table 4.7C.1.2-2 with condition Announcing_Restricted_Model_A		Announcing_Restricted_Model_A
	See Table 4.7C.1.2-2 with condition Monitoring_Open_Model_A		Monitoring_Open_Model_A
	See Table 4.7C.1.2-2 with condition Monitoring_Restricted_Model_A		Monitoring_Restricted_Model_A
	See Table 4.7C.1.2-2 with condition Discoveree_Restricted_Model_B		Discoveree_Restricted_Model_B
	See Table 4.7C.1.2-2 with condition Discoverer_Restricted_Model_B		Discoverer_Restricted_Model_B
Not served by NG-RAN	See Table 4.7C.1.2-6		
ProSe direct discovery UE ID	'000002'O		
Group member discovery parameters	See Table 4.7C.1.2-12		
ProSe identifiers	See Table 4.7C.1.2-14		
ProSe identifier to default destination layer-2 ID for initial discovery signalling mapping rules	See Table 4.7C.1.2-15		
H5DAI	'000'B	HPLMN 5G DDNMF address information is absent	
Spare	'0000 0'B		
HPLMN 5G DDNMF address information	Not present		

Condition	Explanation
Announcing_Open_Model_A	Announce request procedure for open 5G ProSe direct discovery model A

Announcing_Restricted_Model_A	Announce request procedure for restricted 5G ProSe direct discovery model A
Monitoring_Open_Model_A	Monitor request procedure for open 5G ProSe direct discovery model A
Monitoring_Restricted_Model_A	Monitor request procedure for restricted 5G ProSe direct discovery model A
Discoveree_Restricted_Model_B	Discoveree request procedure for restricted 5G ProSe direct discovery model B
Discoverer_Restricted_Model_B	Discoverer request procedure for restricted 5G ProSe direct discovery model B

– *Served by NG-RAN*

Table 4.7C.1.2-2: Served by NG-RAN

Derivation Path: TS 24.555 [59] Figure 5.3.2.2			
Information Element	Value/remark	Comment	Condition
Length of served by NG-RAN contents	Set to the actual length of 'served by NG-RAN ' in bytes		
Authorization for direct discovery info 1	Table 4.7C.1.2-3 with condition Announcing and Open and Model_A		Announcing_Open_Model_A
	Table 4.7C.1.2-3 with condition Announcing and Restricted and Model_A		Announcing_Restricted_Model_A
	Table 4.7C.1.2-3 with condition Monitoring and Open and Model_A		Monitoring_Open_Model_A
	Table 4.7C.1.2-3 with condition Monitoring and Restricted and Model_A		Monitoring_Restricted_Model_A
	Table 4.7C.1.2-3 with condition Discoveree and Restricted and Model_B		Discoveree_Restricted_Model_B
	Table 4.7C.1.2-3 with condition Discoverer and Restricted and Model_B		Discoverer_Restricted_Model_B

Condition	Explanation
Announcing_Open_Model_A	Announce request procedure for open 5G ProSe direct discovery model A
Announcing_Restricted_Model_A	Announce request procedure for restricted 5G ProSe direct discovery model A
Monitoring_Open_Model_A	Monitor request procedure for open 5G ProSe direct discovery model A
Monitoring_Restricted_Model_A	Monitor request procedure for restricted 5G ProSe direct discovery model A
Discoveree_Restricted_Model_B	Discoveree request procedure for restricted 5G ProSe direct discovery model B
Discoverer_Restricted_Model_B	Discoverer request procedure for restricted 5G ProSe direct discovery model B

– *Authorization for direct discovery info*

Table 4.7C.1.2-3: Authorization for direct discovery info

Derivation Path: TS 24.555 [59] Figure 5.3.2.3			
Information Element	Value/remark	Comment	Condition

Length of authorization for direct discovery info contents	Set to the actual length of 'authorization for direct discovery info' in bytes		
DDT	'0'B	Direct discovery type is Open	Open
	'1'B	Direct discovery type is Restricted	Restricted
Model	'0'B	Model A	Model_A
	'1'B	Model B	Model_B
Role	'0'B	Role is Announcing when Model is A, Role is Discoverer when Model is B	Announcing, Discoverer
	'1'B	Role is Monitoring when Model is A, Role is Discoveree when Model is B	Monitoring, Discoveree
Spare	'0000 0'B		
Authorized PLMN info	See Table 4.7C.1.2-4		

Condition	Explanation
Announcing	Direct discovery role is set to announcing.
Monitoring	Direct discovery role is set to monitoring.
Discoverer	Direct discovery role is set to discoverer.
Discoveree	Direct discovery role is set to discoveree.
Model_A	Direct discovery model A is used.
Model_B	Direct discovery model B is used.
Open	Direct discovery type is set to open.
Restricted	Direct discovery type is set to restricted.

– *Authorized PLMN info*

Table 4.7C.1.2-4: Authorized PLMN info

Derivation Path: TS 24.555 [59] Figure 5.3.2.4			
Information Element	Value/remark	Comment	Condition
Length of authorized PLMN info contents	Set to the actual length of 'authorized PLMN info' in bytes		
Authorized PLMN 1	See Table 4.7C.1.2-5		

– *PLMN ID*

Table 4.7C.1.2-5: PLMN ID

Derivation Path: TS 24.555 [59] Figure 5.3.2.5			
Information Element	Value/remark	Comment	Condition
MCC digit 1	Set according to parameter given in test case		
MCC digit 2	Set according to parameter given in test case		
MNC digit 3	Set according to parameter given in test case		
MCC digit 3	Set according to parameter given in test case		

MNC digit 1	Set according to parameter given in test case		
MNC digit 2	Set according to parameter given in test case		

– *Not served by NG-RAN*

Table 4.7C.1.2-6: Not served by NG-RAN

Derivation Path: TS 24.555 [59] Figure 5.3.2.6			
Information Element	Value/remark	Comment	Condition
Length of not served by NG-RAN contents	Set to the actual length of 'not served by NG-RAN contents' in bytes		
PDNNI	'1'B	UE is authorized to perform 5G ProSe direct discovery when not served by NG-RAN	
Spare	'0000 000'B		
NR radio parameters per geographical area list	See Table 4.7C.1.2-7		
Default PC5 DRX configuration	See Table 4.7C.1.2-11A		

– *NR radio parameters per geographical area list*

Table 4.7C.1.2-7: NR radio parameters per geographical area list

Derivation Path: TS 24.555 [59] Figure 5.3.2.7			
Information Element	Value/remark	Comment	Condition
Length of radio parameters per geographical area list contents	Set to the actual length of 'radio parameters per geographical area list contents' in bytes		
Radio parameters per geographical area info 1	See Table 4.7C.1.2-8		

– *Radio parameters per geographical area info*

Table 4.7C.1.2-8: Radio parameters per geographical area info

Derivation Path: TS 24.555 [59] Figure 5.3.2.8			
Information Element	Value/remark	Comment	Condition
Length of radio parameters per geographical area contents	Set to the actual length of 'Length of radio parameters per geographical area contents' in bytes		
Geographical area	See Table 4.7C.1.2-9		
Radio parameters	See Table 4.7C.1.2-11		
Spare	'000 0000'B		
MI	'1'B	Operator managed	

– *Geographical area*

Table 4.7C.1.2-9: Geographical area

Derivation Path: TS 24.555 [59] Figure 5.3.2.9			
Information Element	Value/remark	Comment	Condition
Length of geographical area contents	Set to the actual length of 'geographical area contents' in bytes		
Coordinate 1	Table 4.7C.1.2-10 with condition Coordinate 1		
Coordinate 2	Table 4.7C.1.2-10 with condition Coordinate 2		
Coordinate 3	Table 4.7C.1.2-10 with condition Coordinate 3		

– *Coordinate area*

Table 4.7C.1.2-10: Coordinate area

Derivation Path: TS 24.555 [59] Figure 5.3.2.10			
Information Element	Value/remark	Comment	Condition
Latitude	35.753056		Coordinate 1
	35.735278		Coordinate 2
	35.744167		Coordinate 3
Longitude	139.689167		Coordinate 1
	139.689167		Coordinate 2
	139.709167		Coordinate 3

– *Radio parameters*

Table 4.7C.1.2-11: Radio parameters

Derivation Path: TS 24.555 [59] Figure 5.3.2.11			
Information Element	Value/remark	Comment	Condition
Length of radio parameters contents	Set to the actual length of 'radio parameters contents' in bytes		
Radio parameters contents	Table 4.10.1-1: SL-PreconfigurationNR with condition L2RemoteUE		

– *Default PC5 DRX configuration*

Table 4.7C.1.2-11A: Default PC5 DRX configuration

Derivation Path: TS 24.555 [59] Figure 5.3.2.11a			
Information Element	Value/remark	Comment	Condition
Length of default PC5 DRX configuration contents	Set to the actual length of 'default PC5 DRX configuration contents' in bytes		
Default PC5 DRX configuration contents	See Table 4.6.6-38		

– *Groupcast parameters*

Table 4.7C.1.2-12: Groupcast parameters

Derivation Path: TS 24.555 [59] Figure 5.3.2.12			

Information Element	Value/remark	Comment	Condition
Length of groupcast parameters contents	Set to the actual length of 'groupcast parameters contents' in bytes		
Application layer group info 1	See Table 4.7C.1.2-13		

– *Application layer group info*

Table 4.7C.1.2-13: Application layer group info

Derivation Path: TS 24.555 [59] Figure 5.3.2.13			
Information Element	Value/remark	Comment	Condition
Length of application layer group info contents	Set to the actual length of 'application layer group info contents' in bytes		
Application layer group identifier	'01 01'H		
ProSe layer-2 group identifier	'00 00 10'H		
User info ID	'000000000001'H		

– *ProSe identifiers*

Table 4.7C.1.2-14: ProSe identifiers

Derivation Path: TS 24.555 [59] Figure 5.3.2.14			
Information Element	Value/remark	Comment	Condition
Length of ProSe identifiers contents	Set to the actual length of 'ProSe identifiers contents' in bytes		
ProSe identifier 1	'00 00 00 00 00 00 00 00 00 00 00 00 01 01'H		

– *ProSe identifier to default destination layer-2 ID for initial discovery signalling mapping rules*

Table 4.7C.1.2-15: ProSe identifier to default destination layer-2 ID for initial discovery signalling mapping rules

Derivation Path: TS 24.555 [59] Figure 5.3.2.15			
Information Element	Value/remark	Comment	Condition
Length of ProSe identifier to default destination layer-2 ID for initial discovery signalling mapping rules contents	Set to the actual length of 'ProSe identifier to default destination layer-2 ID for initial discovery signalling mapping rules contents' in bytes		
ProSe identifier to default destination layer-2 ID for initial discovery signalling mapping rule 1	See Table 4.7C.1.2-16		

– *ProSe identifier to default destination layer-2 ID for initial discovery signalling mapping rule*

Table 4.7C.1.2-16: ProSe identifier to default destination layer-2 ID for initial discovery signalling mapping rule

Derivation Path: TS 24.555 [59] Figure 5.3.2.16			
Information Element	Value/remark	Comment	Condition

Length of ProSe identifier to default destination layer-2 ID for initial discovery signalling mapping rule contents	Set to the actual length of 'ProSe identifier to default destination layer-2 ID for initial discovery signalling mapping rule contents' in bytes		
ProSe identifiers	See Table 4.7C.1.2-14		
Destination layer-2 ID for initial discovery signalling	'00 00 41'H		

4.7C.1.3 5G ProSe information elements of UE policies for 5G ProSe direct communications

– ProSeP info = {UE policies for 5G ProSe direct communications}

Table 4.7C.1.3-1: UE policies for 5G ProSe direct communications

Derivation Path: TS 24.555 [59] Figure 5.4.2.1			
Information Element	Value/remark	Comment	Condition
ProSeP info type	'0010'B	UE policies for 5G ProSe direct communications	
Spare	'0000'B		
Length of ProSeP info contents	Set to the actual length of 'ProSeP info contents' in bytes		
Validity timer	'FF FF FF FF FF'H	Expiration UTC time of validity of the UE policies, in seconds since midnight UTC of January 1, 1970 (not counting leap seconds)	
Served by NG-RAN	See Table 4.7C.1.3-2		
Not served by NG-RAN	See Table 4.7C.1.3-5		
Privacy config	See Table 4.7C.1.3-11		
5G ProSe direct communication in NR-PC5	See Table 4.7C.1.3-16		
ProSe application to path preference mapping rules	See Table 4.7C.1.3-41		
ProSe identifiers to NR Tx profile for broadcast and groupcast mapping rules	See Table 4.7C.1.3-43		

– Served by NG-RAN

Table 4.7C.1.3-2: Served by NG-RAN

Derivation Path: TS 24.555 [59] Figure 5.4.2.2			
Information Element	Value/remark	Comment	Condition
Length of served by NG-RAN contents	Set to the actual length of 'served by NG-RAN contents' in bytes		
Authorized PLMN	See Table 4.7C.1.3-3		

– Authorized PLMN

Table 4.7C.1.3-3: Authorized PLMN

Derivation Path: TS 24.555 [59] Figure 5.4.2.3			
Information Element	Value/remark	Comment	Condition

Length of authorized PLMN contents	Set to the actual length of 'authorized PLMN contents' in bytes		
PLMN ID 1	See Table 4.7C.1.3-4		

– *PLMN ID*

Table 4.7C.1.3-4: PLMN ID

Derivation Path: TS 24.555 [59] Figure 5.4.2.4			
Information Element	Value/remark	Comment	Condition
MCC digit 1	Set according to parameter given in test case		
MCC digit 2	Set according to parameter given in test case		
MCC digit 3	Set according to parameter given in test case		
MNC digit 3	Set according to parameter given in test case		
MNC digit 1	Set according to parameter given in test case		
MNC digit 2	Set according to parameter given in test case		

– *Not served by NG-RAN*

Table 4.7C.1.3-5: Not served by NG-RAN

Derivation Path: TS 24.555 [59] Figure 5.4.2.5			
Information Element	Value/remark	Comment	Condition
Length of not served by NG-RAN contents	Set to the actual length of 'not served by NG-RAN contents' in bytes		
PNNI	'1'B	UE is authorized to use 5G ProSe direct communication when not served by NG-RAN	
Spare	'0000 000'B		
NR radio parameters per geographical area list	See Table 4.7C.1.3-6		
PC5 DRX configuration for broadcast, groupcast and initial signalling of 5G ProSe direct link establishment	See Table 4.7C.1.3-7		

– *Radio parameters per geographical area list*

Table 4.7C.1.3-6: Radio parameters per geographical area list

Derivation Path: TS 24.555 [59] Figure 5.4.2.6			
Information Element	Value/remark	Comment	Condition
Length of radio parameters per geographical area list contents	Set to the actual length of 'radio parameters per geographical area list contents' in bytes		

Radio parameters per geographical area info 1	See Table 4.7C.1.3-7		

– *Radio parameters per geographical area info*

Table 4.7C.1.3-7: Radio parameters per geographical area info

Derivation TS 24.555 [59] Figure 5.4.2.7			
Information Element	Value/remark	Comment	Condition
Length of radio parameters per geographical area contents	Set to the actual length of 'radio parameters per geographical area contents' in bytes		
Geographical area	See Table 4.7C.1.3-8		
Radio parameters	See Table 4.7C.1.3-10		
Spare	'000 0000'B		
MI	'1'B	Operator managed	

– *Geographical area*

Table 4.7C.1.3-8: Geographical area

Derivation Path: TS 24.555 [59] Figure 5.4.2.8			
Information Element	Value/remark	Comment	Condition
Length of geographical area contents	Set to the actual length of 'geographical area contents' in bytes		
Coordinate 1	See Table 4.7C.1.3-9 with Condition Coordinate 1		
Coordinate 2	See Table 4.7C.1.3-9 with Condition Coordinate 2		
Coordinate 3	See Table 4.7C.1.3-9 with Condition Coordinate 3		

– *Coordinate area*

Table 4.7C.1.3-9: Coordinate area

Derivation Path: TS 24.555 [59] Figure 5.4.2.9			
Information Element	Value/remark	Comment	Condition
Latitude	35.753056		Coordinate 1
	35.735278		Coordinate 2
	35.744167		Coordinate 3
Longitude	139.689167		Coordinate 1
	139.689167		Coordinate 2
	139.709167		Coordinate 3

– *Radio parameters*

Table 4.7C.1.3-10: Radio parameters

Derivation Path: TS 24.555 [59] Figure 5.4.2.10			
Information Element	Value/remark	Comment	Condition
Length of radio parameters contents	Set to the actual length of 'radio parameters contents' in bytes		
Radio parameters contents	See Table 4.10.1-1: SL-PreconfigurationNR		

– *Privacy config*

Table 4.7C.1.3-11: Privacy config

Derivation Path: TS 24.555 [59] Figure 5.4.2.11			
Information Element	Value/remark	Comment	Condition
Length of privacy config contents	Set to the actual length of 'privacy config contents' in bytes		
ProSe applications requiring privacy	See Table 4.7C.1.3-12		
Privacy timer	'FF FF'H	Expressed in units of seconds, after which the UE shall change the source Layer-2 ID self-assigned by the UE	

– *ProSe applications requiring privacy*

Table 4.7C.1.3-12: ProSe applications requiring privacy

Derivation Path: TS 24.555 [59] Figure 5.4.2.12			
Information Element	Value/remark	Comment	Condition
Length of ProSe applications requiring privacy contents	Set to the actual length of 'ProSe applications requiring privacy contents' in bytes		
ProSe applications requiring privacy 1	See Table 4.7C.1.3-13		

– *ProSe applications requiring privacy*

Table 4.7C.1.3-13: ProSe applications requiring privacy

Derivation Path: TS 24.555 [59] Figure 5.4.2.13			
Information Element	Value/remark	Comment	Condition
Length of ProSe applications requiring privacy contents	Set to the actual length of 'ProSe applications requiring privacy contents' in bytes		
ProSe identifiers	See Table 4.7C.1.3-14		
Geographical areas	See Table 4.7C.1.3-15		

– *ProSe identifiers*

Table 4.7C.1.3-14: ProSe identifiers

Derivation Path: TS 24.555 [59] Figure 5.4.2.14			
Information Element	Value/remark	Comment	Condition
Length of ProSe identifiers contents	Set to the actual length of 'ProSe identifiers' in bytes		
ProSe identifiers 1	'00 00 00 00 00 00 00 00 00 00 00 00 00 00 01 01'H		
ProSe identifiers 2	'00 00 00 00 00 00 00 00 00 00 00 00 00 00 01 02'H		

– *Geographical areas*

Table 4.7C.1.3-15: Geographical areas

Derivation Path: TS 24.555 [59] Figure 5.4.2.15			
Information Element	Value/remark	Comment	Condition
Length of geographical areas contents	Set to the actual length of 'geographical areas contents' in bytes		
Geographical area 1	See Table 4.7C.1.3-8		

– *5G ProSe direct communication in NR-PC5*

Table 4.7C.1.3-16: 5G ProSe direct communication in NR-PC5

Derivation Path: TS 24.555 [59] Figure 5.4.2.16			
Information Element	Value/remark	Comment	Condition
Length of 5G ProSe direct communication in NR-PC5 contents	Set to the actual length of '5G ProSe direct communication in NR-PC5 contents' in bytes		
Spare	'00 0000'B		
PINFMRI	'1'B	ProSe identifier to ProSe NR frequency mapping rules field is present	
Spare	'0'B		
ProSe identifier to ProSe NR frequency mapping rules	See Table 4.7C.1.3-17		
ProSe identifier to destination layer-2 ID for broadcast mapping rules	See Table 4.7C.1.3-22		
Groupcast parameters	See Table 4.7C.1.3-24		
ProSe identifier to destination layer-2 ID for unicast initial signalling mapping rules	See Table 4.7C.1.3-26		
ProSe identifier to PC5 QoS parameters mapping rules	See Table 4.7C.1.3-28		
AS configuration	See Table 4.7C.1.3-30		
NR-PC5 unicast security policies	See Table 4.7C.1.3-34		
ProSe identifier to default mode of communication mapping rules	See Table 4.7C.1.3-37		
ProSe identifier to destination layer-2 ID for groupcast mapping rules	See Table 4.7C.1.3-39		

– *ProSe identifier to ProSe NR frequency mapping rules*

Table 4.7C.1.3-17: ProSe identifier to ProSe NR frequency mapping rules

Derivation Path: TS 24.555 [59] Figure 5.4.2.17			
Information Element	Value/remark	Comment	Condition
Length of ProSe identifier to ProSe NR frequency mapping rules contents	Set to the actual length of 'ProSe identifier to ProSe NR frequency mapping rules contents' in bytes		
ProSe identifier to ProSe NR frequency mapping rule 1	See Table 4.7C.1.3-18		

– *ProSe identifier to ProSe NR frequency mapping rule*

Table 4.7C.1.3-18: ProSe identifier to ProSe NR frequency mapping rule

Derivation Path: TS 24.555 [59] Figure 5.4.2.18			
Information Element	Value/remark	Comment	Condition
Length of ProSe identifier to ProSe NR frequency mapping rule contents	Set to the actual length of 'ProSe identifier to ProSe NR frequency mapping rule contents' in bytes		
ProSe identifiers	See Table 4.7C.1.3-14		
ProSe NR frequencies with geographical areas list	See Table 4.7C.1.3-19		

– *ProSe NR frequencies with geographical areas list*

Table 4.7C.1.3-19: ProSe NR frequencies with geographical areas list

Derivation Path: TS 24.555 [59] Figure 5.4.2.19			
Information Element	Value/remark	Comment	Condition
Length of ProSe NR frequencies with geographical areas list contents	Set to the actual length of 'ProSe NR frequencies with geographical areas list contents' in bytes		
ProSe NR frequencies with geographical areas info 1	See Table 4.7C.1.3-20		

– *ProSe NR frequencies with geographical areas info*

Table 4.7C.1.3-20: ProSe NR frequencies with geographical areas info

Derivation Path: TS 24.555 [59] Figure 5.4.2.20			
Information Element	Value/remark	Comment	Condition
Length of ProSe NR frequencies with geographical areas info contents	Set to the actual length of 'ProSe NR frequencies with geographical areas info contents' in bytes		
ProSe NR frequencies	See Table 4.7C.1.3-21		
Geographical areas	See Table 4.7C.1.3-15		

– *ProSe NR frequencies*

Table 4.7C.1.3-21: ProSe NR frequencies

Derivation Path: TS 24.555 [59] Figure 5.4.2.21			
Information Element	Value/remark	Comment	Condition

Length of ProSe NR frequencies contents	Set to the actual length of 'ProSe NR frequencies contents' in bytes		
ProSe NR frequency 1	ARFCN-ValueNR with condition SL_SSB in Table 4.6.3-5		

– *ProSe identifier to destination layer-2 ID for broadcast mapping rules*

Table 4.7C.1.3-22: ProSe identifier to destination layer-2 ID for broadcast mapping rules

Derivation Path: TS 24.555 [59] Figure 5.4.2.22			
Information Element	Value/remark	Comment	Condition
Length of ProSe identifier to destination layer-2 ID for broadcast mapping rules contents	Set to the actual length of 'ProSe identifier to destination layer-2 ID for broadcast mapping rules contents' in bytes		
ProSe identifier to destination layer-2 ID for broadcast mapping rule 1	See Table 4.7C.1.3-23		

– *ProSe identifier to destination layer-2 ID for broadcast mapping rule*

Table 4.7C.1.3-23: ProSe identifier to destination layer-2 ID for broadcast mapping rule

Derivation Path: TS 24.555 [59] Figure 5.4.2.23			
Information Element	Value/remark	Comment	Condition
Length of ProSe identifier to destination layer-2 ID for broadcast mapping rule contents	Set to the actual length of 'ProSe identifier to destination layer-2 ID for broadcast mapping rule contents' in bytes		
ProSe identifiers	See Table 4.7C.1.3-14		
Destination layer-2 ID for broadcast	'00 00 51'H		

– *Groupcast parameters*

Table 4.7C.1.3-24: Groupcast parameters

Derivation Path: TS 24.555 [59] Figure 5.4.2.24			
Information Element	Value/remark	Comment	Condition
Length of groupcast parameters contents	Set to the actual length of 'groupcast parameters contents' in bytes		
Application layer group info 1	See Table 4.7C.1.3-25		

– *Application layer group info*

Table 4.7C.1.3-25: Application layer group info

Derivation Path: TS 24.555 [59] Figure 5.4.2.25			
Information Element	Value/remark	Comment	Condition
Length of application layer group info contents	Set to the actual length of 'application layer group info contents' in bytes		
Application layer group identifier	'01 01'H		
Spare	'0000 0'B		
IPv6	'0'B	IPv6 is not authorized	

	'1'B	IPv6 is authorized	
IPv4AI	'0'B	IPv4 address is absent	
	'1'B	IPv4 address is present	
IPv4	'0'B	IPv4 is not authorized	
	'1'B	IPv4 is authorized	
ProSe layer-2 group identifier	'00 00 10'H		
ProSe group IP multicast address	10.10.10.2		
IPv4 address	10.10.10.3		

- *ProSe identifier to destination layer-2 ID for unicast initial signalling mapping rules*

Table 4.7C.1.3-26: ProSe identifier to destination layer-2 ID for unicast initial signalling mapping rules

Derivation Path: TS 24.555 [59] Figure 5.4.2.26			
Information Element	Value/remark	Comment	Condition
Length of ProSe identifier to destination layer-2 ID for unicast initial signalling mapping rules contents	Set to the actual length of 'ProSe identifier to destination layer-2 ID for unicast initial signalling mapping rules contents' in bytes		
ProSe identifier to destination layer-2 ID for unicast initial signalling mapping rule 1	See Table 4.7C.1.3-27		

- *ProSe identifier to destination layer-2 ID for unicast initial signalling mapping rule*

Table 4.7C.1.3-27: ProSe identifier to destination layer-2 ID for unicast initial signalling mapping rule

Derivation Path: TS 24.555 [59] Figure 5.4.2.23			
Information Element	Value/remark	Comment	Condition
Length of ProSe identifier to destination layer-2 ID for unicast initial signalling mapping rule contents	Set to the actual length of 'ProSe identifier to destination layer-2 ID for unicast initial signalling mapping rule contents' in bytes		
ProSe identifiers	See Table 4.7C.1.3-14		
Destination layer-2 ID for unicast initial signalling	'00 00 41'H		

- *ProSe identifier to PC5 QoS parameters mapping rules*

Table 4.7C.1.3-28: ProSe identifier to PC5 QoS parameters mapping rules

Derivation Path: TS 24.555 [59] Figure 5.4.2.28			
Information Element	Value/remark	Comment	Condition
Length of ProSe identifier to PC5 QoS parameters mapping rules contents	Set to the actual length of 'ProSe identifier to PC5 QoS parameters mapping rules contents' in bytes		
ProSe identifier to PC5 QoS parameters mapping rule 1	See Table 4.7C.1.3-29		

– *ProSe identifier to PC5 QoS parameters mapping rule*

Table 4.7C.1.3-29: ProSe identifier to PC5 QoS parameters mapping rule

Derivation Path: TS 24.555 [59] Figure 5.4.2.29			
Information Element	Value/remark	Comment	Condition
Length of ProSe identifier to PC5 QoS parameters mapping rule contents	Set to the actual length of 'ProSe identifier to PC5 QoS parameters mapping rule contents' in bytes		
ProSe identifiers	See Table 4.7C.1.3-14		
Spare	'0000'B		
RI	'1'B	Range field is present	
PLAMBRI	'1'B	Per-link aggregate maximum bit rate field is present	
MFBRl	'1'B	Maximum flow bit rate field is present	
GFBRl	'1'B	Guaranteed flow bit rate field is present	
PQl	24	See Table 5.6.1-1 in TS 23.304	
Guaranteed flow bit rate	'0000 0110 0000 0000 0000 1010'B	10 * 1Mbps = 10Mbps.	
Maximum flow bit rate	'0000 0110 0000 0000 0001 0100'B	20 * 1Mbps = 20Mbps.	
Per-link aggregate maximum bit rate	'0000 0110 0000 0000 0000 0010'B	2 * 1Mbps = 2Mbps.	
Range	'0000 0001 1111 0100'B	500 meters	

– *AS configuration*

Table 4.7C.1.3-30: AS configuration

Derivation Path: TS 24.555 [59] Figure 5.4.2.30			
Information Element	Value/remark	Comment	Condition
Length of AS configuration contents	Set to the actual length of 'AS configuration contents' in bytes		
SLRB mapping rules	See Table 4.7C.1.3-31		

– *SLRB mapping rules*

Table 4.7C.1.3-31: SLRB mapping rules

Derivation Path: TS 24.555 [59] Figure 5.4.2.31			
Information Element	Value/remark	Comment	Condition
Length of SLRB mapping rules contents	Set to the actual length of 'SLRB mapping rules contents' in bytes		
SLRB mapping rule 1	See Table 4.7C.1.3-32		

– *SLRB mapping rule*

Table 4.7C.1.3-32: SLRB mapping rule

Derivation Path: TS 24.555 [59] Figure 5.4.2.32			

Information Element	Value/remark	Comment	Condition
Length of SLRB mapping rule contents	Set to the actual length of 'SLRB mapping rule contents' in bytes		
PC5 QoS profile	See Table 4.7C.1.3-33		
Length of SLRB	Set to the actual length of 'SLRB' in bytes		
SLRB	See Table 4.10.1-1		

– *PC5 QoS profile*

Table 4.7C.1.3-33: PC5 QoS profile

Derivation Path: TS 24.555 [59] Figure 5.4.2.33			
Information Element	Value/remark	Comment	Condition
Length of PC5 QoS profile contents	Set to the actual length of 'PC5 QoS profile contents' in bytes		
Spare	'0'B		
MDBVI	'0'B	Maximum data burst volume field is absent	
AWI	'1'B	Averaging window field is present	
PLOI	'1'B	The octet of the priority level is present	
RI	'1'B	Range field is present	
PLAMBRI	'1'B	Per-link aggregate maximum bit rate field is present	
MFBR	'1'B	Maximum flow bit rate field is present	
GFBRI	'1'B	Guaranteed flow bit rate field is present	
PQI	24	See Table 5.6.1-1 in TS 23.304	
Guaranteed flow bit rate	'0000 0110 0000 0000 0000 1010'B	10 * 1Mbps = 10Mbps.	
Maximum flow bit rate	'0000 0110 0000 0000 0001 0100'B	20 * 1Mbps = 20Mbps.	
Per-link aggregate maximum bit rate	'0000 0110 0000 0000 0000 0010'B	2 * 1Mbps = 2Mbps.	
Range	'0000 0001 1111 0100'B	500 meters	
Priority level	4		
Spare	'0000 0'B		
Averaging window	'0000 0111 1101 0000'B	2000ms	
Maximum data burst volume	Not Present		

– *NR-PC5 unicast security policies*

Table 4.7C.1.3-34: NR-PC5 unicast security policies

Derivation Path: TS 24.555 [59] Figure 5.4.2.34			
Information Element	Value/remark	Comment	Condition
Length of NR-PC5 unicast security policies contents	Set to the actual length of 'NR-PC5 unicast security policies contents' in bytes		
NR-PC5 unicast security policy 1	See Table 4.7C.1.3-35		

– *NR-PC5 unicast security policy*

Table 4.7C.1.3-35: NR-PC5 unicast security policy

Derivation Path: TS 24.555 [59] Figure 5.4.2.35			
Information Element	Value/remark	Comment	Condition
Length of NR-PC5 unicast security policy contents	Set to the actual length of 'NR-PC5 unicast security policy contents' in bytes		
ProSe identifiers	See Table 4.7C.1.3-14		
Security policy	See Table 4.7C.1.3-36		
Geographical areas	See Table 4.7C.1.3-15		

– *Security policy*

Table 4.7C.1.3-36: Security policy

Derivation Path: TS 24.555 [59] Figure 5.4.2.36			
Information Element	Value/remark	Comment	Condition
Signalling integrity protection policy	'000'B	Signalling integrity protection not needed	
Spare	'0'B		
Signalling ciphering policy	'000'B	Signalling ciphering not needed	
Spare	'0'B		
User plane integrity protection policy	'000'B	User plane integrity protection not needed	
Spare	'0'B		
User plane ciphering policy	'000'B	User plane ciphering not needed	
Spare	'0'B		

– *ProSe identifier to default mode of communication mapping rules*

Table 4.7C.1.3-37: ProSe identifier to default mode of communication mapping rules

Derivation Path: TS 24.555 [59] Figure 5.4.2.37			
Information Element	Value/remark	Comment	Condition
Length of ProSe identifier to default mode of communication mapping rules contents	'Set to the actual length of 'ProSe identifier to default mode of communication mapping rules contents' in bytes		
ProSe identifier to default mode of communication mapping rule 1	See Table 4.7C.1.3-38		

– *ProSe identifier to default mode of communication mapping rule*

Table 4.7C.1.3-38: ProSe identifier to default mode of communication mapping rule

Derivation Path: TS 24.555 [59] Figure 5.4.2.38			
Information Element	Value/remark	Comment	Condition
Length of ProSe identifier to default mode of communication mapping rule contents	'Set to the actual length of 'ProSe identifier to default mode of communication mapping rule contents' in bytes		
ProSe identifiers	See Table 4.7C.1.3-14		
DMC	'00'B	Default mode of communication is set to unicast	
Spare	'0000 00'B		

– *ProSe identifier to destination layer-2 ID for groupcast mapping rules*

Table 4.7C.1.3-39: ProSe identifier to destination layer-2 ID for groupcast mapping rules

Derivation Path: TS 24.555 [59] Figure 5.4.2.39			
Information Element	Value/remark	Comment	Condition
Length of ProSe identifier to destination layer-2 ID for groupcast mapping rules contents	Set to the actual length of 'ProSe identifier to destination layer-2 ID for groupcast mapping rules contents' in bytes		
ProSe identifier to destination layer-2 ID for groupcast mapping rule 1	See Table 4.7C.1.3-40		

– *ProSe identifier to destination layer-2 ID for groupcast mapping rule*

Table 4.7C.1.3-40: ProSe identifier to destination layer-2 ID for groupcast mapping rule

Derivation Path: TS 24.555 [59] Figure 5.4.2.40			
Information Element	Value/remark	Comment	Condition
Length of ProSe identifier to destination layer-2 ID for groupcast mapping rule contents	Set to the actual length of 'ProSe identifier to destination layer-2 ID for groupcast mapping rule contents' in bytes		
ProSe identifiers	See Table 4.7C.1.3-14		
Destination layer-2 ID for groupcast	'00 00 52'H		

– *ProSe application to path preference mapping rules*

Table 4.7C.1.3-41: ProSe application to path preference mapping rules

Derivation Path: TS 24.555 [59] Figure 5.4.2.41			
Information Element	Value/remark	Comment	Condition
Length of ProSe application to path preference mapping rules contents	Set to the actual length of 'ProSe application to path preference mapping rules contents' in bytes		
ProSe application to path preference mapping rule 1	See Table 4.7C.1.3-42		

– *ProSe application to path preference mapping rule*

Table 4.7C.1.3-42: ProSe application to path preference mapping rule

Derivation Path: TS 24.555 [59] Figure 5.4.2.42			
Information Element	Value/remark	Comment	Condition
Length of ProSe application to path preference mapping rule contents	Set to the actual length of 'ProSe application to path preference mapping rule contents' in bytes		
PP	'00'B	PC5 preferred	
SI	'1'B	For all ProSe services	
Spare	'0000 0'B		

– *ProSe identifiers to NR Tx profile for broadcast and groupcast mapping rules*

Table 4.7C.1.3-43: ProSe identifiers to NR Tx profile for broadcast and groupcast mapping rules

Derivation Path: TS 24.555 [59] Figure 5.4.2.43			
Information Element	Value/remark	Comment	Condition
Length of ProSe identifiers to NR Tx profile for broadcast and groupcast mapping rules contents	Set to the actual length of 'ProSe identifiers to NR Tx profile for broadcast and groupcast mapping rules contents' in bytes		
ProSe identifiers to NR Tx profile for broadcast and groupcast mapping rule 1	See Table 4.7C.1.3-44		

– *ProSe identifiers to NR Tx profile for broadcast and groupcast mapping rule*

Table 4.7C.1.3-44: ProSe identifiers to NR Tx profile for broadcast and groupcast mapping rule

Derivation Path: TS 24.555 [59] Figure 5.4.2.44			
Information Element	Value/remark	Comment	Condition
Length of ProSe identifiers to NR Tx profile for broadcast and groupcast mapping rule contents	Set to the actual length of 'ProSe identifiers to NR Tx profile for broadcast and groupcast mapping rule contents' in bytes		
ProSe identifiers	See Table 4.7C.1.3-14		
NR Tx profile	FFS		

4.7C.1.4 5G ProSe information elements of UE policies for 5G ProSe UE-to-network relay UE

– *ProSeP Info = {UE policies for 5G ProSe UE-to-network relay UE}*

Table 4.7C.1.4-1: ProSeP Info = {UE policies for 5G ProSe UE-to-network relay UE}

Derivation Path: TS 24.555[59] Figure 5.5.2.1			
Information Element	Value/remark	Comment	Condition
ProSeP info type	'0011'B	UE policies for 5G ProSe UE-to-network relay UE	
PAI	'0'B		
Spare	'000'B		
Length of ProSeP info contents	Set to the actual length of ProSeP info contents		
Validity timer	'FF FF FF FF FF'O	5 octets, Expiration UTC time of validity of the UE policies, in seconds since midnight UTC of January 1, 1970 (not counting leap seconds)	
Served by NG-RAN	See Table 4.7C.1.4-2		
Not served by NG-RAN	See Table 4.7C.1.4-5		
Default destination layer-2 IDs for sending the discovery signalling for announcement and additional information and for receiving the discovery signalling for solicitation	See Table 4.7C.1.4-13		
User info ID for discovery	'000001'O		
RSC info list	See Table 4.7C.1.4-14		
5QI to PC5 QoS parameters mapping rules	See Table 4.7C.1.4-22		

ProSe identifier to ProSe application server address mapping rules	See Table 4.7C.1.4-24		
5G PKMF address information	See Table 4.7C.1.4-28		
Privacy timer	'FF FF FF FF FF'O		

– *Served by NG-RAN*

Table 4.7C.1.4-2: Served by NG-RAN

Derivation Path: TS 24.555[59] Figure 5.5.2.2			
Information Element	Value/remark	Comment	Condition
Length of served by NG-RAN contents	Set to the actual length of 'NG-RAN contents' in bytes		
Authorized PLMN list for layer-3 relay UE	See Table 4.7C.1.4-3		
Authorized PLMN list for layer-2 relay UE	See Table 4.7C.1.4-3		

– *Authorized PLMN list*

Table 4.7C.1.4-3: Authorized PLMN list

Derivation Path: TS 24.555[59] Figure 5.5.2.3			
Information Element	Value/remark	Comment	Condition
Length of authorized PLMN list contents	Set to the actual length of 'authorized PLMN list contents ' in bytes		
Authorized PLMN 1	See Table 4.7C.1.4-4		

– *PLMN ID*

Table 4.7C.1.4-4: PLMN ID

Derivation Path: TS 24.555[59] Figure 5.5.2.4			
Information Element	Value/remark	Comment	Condition
MCC digit 1	Set according to parameter given in test case		
MCC digit 2	Set according to parameter given in test case		
MCC digit 3	Set according to parameter given in test case		
MNC digit 3	Set according to parameter given in test case		
MNC digit 1	Set according to parameter given in test case		
MNC digit 2	Set according to parameter given in test case		

– *Not served by NG-RAN*

Table 4.7C.1.4-5: Not served by NG-RAN

Derivation Path: TS 24.555[59] Figure 5.5.2.5

Information Element	Value/remark	Comment	Condition
Length of not served by NG-RAN contents	Set to the actual length of 'not served by NG-RAN contents' in bytes		
NR radio parameters per geographical area list for UE-to-network relay discovery	See Table 4.7C.1.4-6		
NR radio parameters per geographical area list for UE-to-network relay communication	See Table 4.7C.1.4-7		
Default PC5 DRX configuration for UE-to-network relay discovery	See Table 4.7C.1.4-12		

- *NR radio parameters per geographical area list for UE-to-network relay discovery*

Table 4.7C.1.4-6: NR radio parameters per geographical area list for UE-to-network relay discovery

Derivation Path: TS 24.555[59] Figure 5.5.2.6			
Information Element	Value/remark	Comment	Condition
Length of NR radio parameters per geographical area list for UE-to-network relay discovery contents	Set to the actual length of 'NR radio parameters per geographical area list for UE-to-network relay discovery contents' in bytes		
Radio parameters per geographical area info 1	See Table 4.7C.1.4-8		

- *NR radio parameters per geographical area list for UE-to-network relay communication*

Table 4.7C.1.4-7: NR radio parameters per geographical area list for UE-to-network relay communication

Derivation Path: TS 24.555[59] Figure 5.5.2.7			
Information Element	Value/remark	Comment	Condition
Length of NR radio parameters per geographical area list for UE-to-network relay communication contents	Set to the actual length of 'NR radio parameters per geographical area list for UE-to-network relay communication contents' in bytes		
Radio parameters per geographical area info 1	See Table 4.7C.1.4-8		

- *Radio parameters per geographical area info*

Table 4.7C.1.4-8: Radio parameters per geographical area info

Derivation TS 24.555[59] Figure 5.5.2.8			
Information Element	Value/remark	Comment	Condition
Length of radio parameters per geographical area contents	Set to the actual length of 'radio parameters per geographical area contents' in bytes		
Geographical area	See Table 4.7C.1.4-9		
Radio parameters	See Table 4.7C.1.4-11		
Spare	'0000000'B		
MI	'1'B	Operator managed	

– *Geographical area*

Table 4.7C.1.4-9: Geographical area

Derivation Path: TS 24.555[59] Figure 5.5.2.9			
Information Element	Value/remark	Comment	Condition
Length of geographical area contents	Set to the actual length of 'geographical area contents' in bytes		
Coordinate 1	See Table 4.7C.1.4-10		
Coordinate 2	See Table 4.7C.1.4-10		
Coordinate 3	See Table 4.7C.1.4-10		

– *Coordinate area*

Table 4.7C.1.4-10: Coordinate area

Derivation Path: TS 24.555[59] Figure 5.5.2.10			
Information Element	Value/remark	Comment	Condition
Latitude	35.753056		Coordinate 1
	35.735278		Coordinate 2
	35.744167		Coordinate 3
Longitude	139.689167		Coordinate 1
	139.689167		Coordinate 2
	139.709167		Coordinate 3

– *Radio parameters*

Table 4.7C.1.4-11: Radio parameters

Derivation Path: TS 24.555[59] Figure 5.5.2.11			
Information Element	Value/remark	Comment	Condition
Length of radio parameters contents	Set to the actual length of 'radio parameters contents' in bytes		
Radio parameters contents	See Table 4.10.1-1: SL-PreconfigurationNR		

– *Default PC5 DRX configuration for UE-to-network relay discovery*

Table 4.7C.1.4-12: Default PC5 DRX configuration for UE-to-network relay discovery

Derivation Path: TS 24.555[59] Figure 5.5.2.11a			
Information Element	Value/remark	Comment	Condition
Length of default PC5 DRX configuration for UE-to-network relay discovery contents	Set to the actual length of 'default PC5 DRX configuration for UE-to-network relay discovery contents' in bytes		
Default PC5 DRX configuration for UE-to-network relay discovery contents	See Table 4.6.6-38		

- *Default destination layer-2 IDs for sending the discovery signalling for announcement and additional information and for receiving the discovery signalling for solicitation*

Table 4.7C.1.4-13: Default destination layer-2 IDs for sending the discovery signalling for announcement and additional information and for receiving the discovery signalling for solicitation

Derivation Path: TS 24.555[59] Figure 5.5.2.11b			
Information Element	Value/remark	Comment	Condition
Length of default destination layer-2 IDs for sending the discovery signalling for announcement and additional information and for receiving the discovery signalling for solicitation contents	Set to the actual length of 'default destination layer-2 IDs for sending the discovery signalling for announcement and additional information and for receiving the discovery signalling for solicitation contents' in bytes		
Default destination layer-2 ID 1	'000040'O		

- *RSC info list*

Table 4.7C.1.4-14: RSC info list

Derivation Path: TS 24.555[59] Figure 5.5.2.12			
Information Element	Value/remark	Comment	Condition
Length of RSC info list contents	Set to the actual length of 'RSC info list contents' in bytes		
RSC info 1	See Table 4.7C.1.4-15		

- *RSC info*

Table 4.7C.1.4-15: RSC info

Derivation Path: TS 24.555[59] Figure 5.5.2.13			
Information Element	Value/remark	Comment	Condition
Length of RSC info contents	Set to the actual length of 'RSC info contents' in bytes		
RSC list	See Table 4.7C.1.4-16		
Security related parameters for discovery	See Table 4.7C.1.4-17		
LI	'10'B	Layer 2	
CPSI	'0'B	security procedure over control plane is not used	
Spare	'00000'B		
NR-PC5 UE-to-network relay security policies	See Table 4.7C.1.4-20		
PDU session parameters of layer-3 relay	Not Present		

- *RSC list*

Table 4.7C.1.4-16: RSC list

Derivation Path: TS 24.555[59] Figure 5.5.2.14			
Information Element	Value/remark	Comment	Condition
Length of RSC list contents	Set to the actual length of 'RSC list contents' in bytes		

RSC 1	'000010'O		

– *Security related parameters for discovery*

Table 4.7C.1.4-17: Security related parameters for discovery

Derivation Path: TS 24.555[59] Figure 5.5.2.15			
Information Element	Value/remark	Comment	Condition
Security related parameters validity timer	'FF FF FF FF FF'O	5 octets, Expiration UTC time of validity, in seconds since midnight UTC of January 1, 1970 (not counting leap seconds)	
Code-sending security parameters	See Table 4.7C.1.4-18		
Code-receiving security parameters	See Table 4.7C.1.4-19		

– *Code-sending security parameters*

Table 4.7C.1.4-18: Code-sending security parameters

Derivation Path: TS 24.555[59] Figure 5.5.2.15a			
Information Element	Value/remark	Comment	Condition
PDUSK	'0'B	DUSK field is not included	
PDUIK	'0'B	DUIK field is not included	
PDUCK	'0'B	DUCK and encrypted bitmask fields are not included	
Spare	'00000'B		
DUSK	Not Present		
DUIK	Not Present		
DUCK	Not Present		
Encrypted bitmask	Not Present		

– *Code-receiving security parameters*

Table 4.7C.1.4-19: Code-receiving security parameters

Derivation Path: TS 24.555[59] Figure 5.5.2.15b			
Information Element	Value/remark	Comment	Condition
PDUSK	'0'B	DUSK field is not included	
PDUIK	'0'B	DUIK field is not included	
PDUCK	'0'B	DUCK and encrypted bitmask fields are not included	
Spare	'00000'B		
DUSK	Not Present		
DUIK	Not Present		
DUCK	Not Present		
Encrypted bitmask	Not Present		

– *NR-PC5 UE-to-network relay security policies*

Table 4.7C.1.4-20: NR-PC5 UE-to-network relay security policies

Derivation Path: TS 24.555[59] Figure 5.4.2.34			
Information Element	Value/remark	Comment	Condition
Length of NR-PC5 unicast security policies contents	Set to the actual length of 'NR-PC5 unicast security policies contents' in bytes		
NR-PC5 unicast security policy 1	See Table 4.7C.1.3-35		

– *PDU session parameters for layer-3 relay UE*

Table 4.7C.1.4-21: PDU session parameters for layer-3 relay UE

Derivation Path: TS 24.555[59] Figure 5.5.2.16			
Information Element	Value/remark	Comment	Condition
Length of PDU session parameters for layer-3 relay UE contents	Set to the actual length of 'PDU session parameters for layer-3 relay UE contents' in bytes		
PDU session type	'001'B		IPv4
	'010'B		IPv6
	'011'B		IPv4v6
PDNN	'0'B		
PSNSSAI	'0'B		
PSSCM	'0'B		
PATP	'0'B		
Spare	'0'B		
DNN	Not Present		
S-NSSAI	Not Present		
SSC mode	Not Present		
Access type preference	Not Present		
Spare	Not Present		

– *5QI to PC5 QoS parameters mapping rules*

Table 4.7C.1.4-22: 5QI to PC5 QoS parameters mapping rules

Derivation Path: TS 24.555[59] Figure 5.5.2.17			
Information Element	Value/remark	Comment	Condition
Length of 5QI to PC5 QoS parameters mapping rules contents	Set to the actual length of '5QI to PC5 QoS parameters mapping rules contents' in bytes		
5QI to PC5 QoS parameters mapping rule 1	See Table 4.7C.1.4-23		

– *5QI to PC5 QoS parameters mapping rule*

Table 4.7C.1.4-23: 5QI to PC5 QoS parameters mapping rule

Derivation Path: TS 24.555[59] Figure 5.5.2.18			
Information Element	Value/remark	Comment	Condition
Length of 5QI to PC5 QoS parameters mapping rule contents	Set to the actual length of '5QI to PC5 QoS parameters mapping rule contents' in bytes		
5QI	'00000001'B	5QI 1	
PQI	'00010110'B	PQI 22	
PDB adjustment factor	'00000000'B		

RSC list	Not Present		

– *ProSe identifier to ProSe application server address mapping rules*

Table 4.7C.1.4-24: ProSe identifier to ProSe application server address mapping rules

Derivation Path: TS 24.555[59] Figure 5.5.2.19			
Information Element	Value/remark	Comment	Condition
Length of ProSe identifier to ProSe application server address mapping rules contents	Set to the actual length of 'ProSe identifier to ProSe application server address mapping rules contents' in bytes		
ProSe identifier to ProSe application server address mapping rule 1	See Table 4.7C.1.4-25		

– *ProSe identifier to ProSe application server address mapping rule*

Table 4.7C.1.4-25: ProSe identifier to ProSe application server address mapping rule

Derivation Path: TS 24.555[59] Figure 5.5.2.20			
Information Element	Value/remark	Comment	Condition
Length of ProSe identifier to ProSe application server address mapping rule contents	Set to the actual length of 'ProSe identifier to ProSe application server address mapping rule contents' in bytes		
ProSe identifiers	See Table 4.7C.1.4-26		
AT	'001'B		IPv4
	'010'B		IPv6
	'011'B		FQDN
Spare	'00000'B		
ProSe application server address	IPv4 address	4 octets	IPv4
	IPv6 address	16 octets	IPv6
	FQDN length field and FQDN value		FQDN

– *ProSe identifiers*

Table 4.7C.1.4-26: ProSe identifiers

Derivation Path: TS 24.555[59] Figure 5.3.2.14			
Information Element	Value/remark	Comment	Condition
Length of ProSe identifiers contents	Set to the actual length of 'ProSe identifiers contents' in bytes		
ProSe identifier 1	See Table 4.7C.1.4-27	a sixteen octet OS Id field, a one octet OS App Id length field, and an OS App Id field	

– *ProSe identifier*

Table 4.7C.1.4-27: ProSe identifier

Derivation Path: TS 24.555[59] Table 5.3.2.14			
Information Element	Value/remark	Comment	Condition

OS Id	Set according to parameter given in test case	sixteen octets	
OS App Id length	Set to the actual length of 'OS App Id' in bytes	one octet	
OS App Id	Set according to parameter given in test case		

– *5G PKMF address information*

Table 4.7C.1.4-28: 5G PKMF address information

Derivation Path: TS 24.555[59] Figure 5.5.2.21			
Information Element	Value/remark	Comment	Condition
Length of 5G PKMF address information	Set to the actual length of '5G PKMF address information' in bytes		
IPv4add	'0'B		
	'1'B		IPv4
IPv6add	'0'B		
	'1'B		IPv6
FQDN	'0'B		
	'1'B		FQDN
Spare	'00000'B		
IPv4 address list	See Table 4.7C.1.4-29		IPv4
IPv6 address list	See Table 4.7C.1.4-30		IPv6
FQDN	FQDN length field and FQDN value		FQDN

– *IPv4 address list*

Table 4.7C.1.4-29: IPv4 address list

Derivation Path: TS 24.555[59] Figure 5.5.2.22			
Information Element	Value/remark	Comment	Condition
Number of IPv4 addresses	'01'O		
IPv4 address 1	IPv4 address		

– *IPv6 address list*

Table 4.7C.1.4-30: IPv6 address list

Derivation Path: TS 24.555[59] Figure 5.5.2.23			
Information Element	Value/remark	Comment	Condition
Number of IPv6 addresses	'01'O		
IPv6 address 1	IPv6 address		

4.7C.1.5 5G ProSe information elements of UE policies for 5G ProSe remote UE

– *ProSeP Info = {UE policies for 5G ProSe remote UE}*

Table 4.7C.1.5-1: ProSeP Info = {UE policies for 5G ProSe remote UE}

Derivation Path: TS 24.555[59] Figure 5.6.2.1			
Information Element	Value/remark	Comment	Condition
ProSeP info type	'0100'B	UE policies for 5G ProSe remote UE	

PAI	'0'B		
NSII	'0'B		
Spare	'00'B		
Length of ProSeP info contents	Set to the actual length of ProSeP info contents		
Validity timer	'FF FF FF FF FF'O	5 octets, Expiration UTC time of validity of the UE policies, in seconds since midnight UTC of January 1, 1970 (not counting leap seconds)	
Served by NG-RAN	See Table 4.7C.1.5-2		
Not served by NG-RAN	See Table 4.7C.1.5-5		
Default destination layer-2 IDs for sending the discovery signalling for solicitation and for receiving the discovery signalling for announcement and additional information	See Table 4.7C.1.5-13		
User info ID for discovery	'000001'O		
RSC info list	See Table 4.7C.1.5-14		
Privacy timer	'FF FF FF FF FF'O		
N3IWF selection information for 5G ProSe layer-3 remote UE	Not Present		
5G PKMF address information	Not Present		

– *Served by NG-RAN*

Table 4.7C.1.5-2: Served by NG-RAN

Derivation Path: TS 24.555[59] Figure 5.6.2.2			
Information Element	Value/remark	Comment	Condition
Length of served by NG-RAN contents	Set to the actual length of 'NG-RAN contents' in bytes		
L3RI	'0'B		
Spare	'0000000'B		
Authorized PLMN list for layer-2 relay UE	See Table 4.7C.1.5-3		

– *Authorized PLMN list*

Table 4.7C.1.5-3: Authorized PLMN list

Derivation Path: TS 24.555[59] Figure 5.6.2.3			
Information Element	Value/remark	Comment	Condition
Length of authorized PLMN list contents	Set to the actual length of 'authorized PLMN list contents' in bytes		
Authorized PLMN 1	See Table 4.7C.1.5-4		

– *PLMN ID*

Table 4.7C.1.5-4: PLMN ID

Derivation Path: TS 24.555[59] Figure 5.6.2.4			
Information Element	Value/remark	Comment	Condition
MCC digit 1	Set according to parameter given in test case		

MCC digit 2	Set according to parameter given in test case		
MCC digit 3	Set according to parameter given in test case		
MNC digit 3	Set according to parameter given in test case		
MNC digit 1	Set according to parameter given in test case		
MNC digit 2	Set according to parameter given in test case		

– *Not served by NG-RAN*

Table 4.7C.1.5-5: Not served by NG-RAN

Derivation Path: TS 24.555[59] Figure 5.6.2.5			
Information Element	Value/remark	Comment	Condition
Length of not served by NG-RAN contents	Set to the actual length of 'not served by NG-RAN contents' in bytes		
NR radio parameters per geographical area list for UE-to-network relay discovery	See Table 4.7C.1.5-6		
NR radio parameters per geographical area list for UE-to-network relay communication	See Table 4.7C.1.5-7		
Default PC5 DRX configuration for UE-to-network relay discovery	See Table 4.7C.1.5-12		

– *NR radio parameters per geographical area list for UE-to-network relay discovery*

Table 4.7C.1.5-6: NR radio parameters per geographical area list for UE-to-network relay discovery

Derivation Path: TS 24.555[59] Figure 5.6.2.6			
Information Element	Value/remark	Comment	Condition
Length of NR radio parameters per geographical area list for UE-to-network relay discovery contents	Set to the actual length of 'NR radio parameters per geographical area list for UE-to-network relay discovery contents' in bytes		
Radio parameters per geographical area info 1	See Table 4.7C.1.5-8		

– *NR radio parameters per geographical area list for UE-to-network relay communication*

Table 4.7C.1.5-7: NR radio parameters per geographical area list for UE-to-network relay communication

Derivation Path: TS 24.555[59] Figure 5.6.2.7			
Information Element	Value/remark	Comment	Condition
Length of NR radio parameters per geographical area list for UE-to-network relay communication contents	Set to the actual length of 'NR radio parameters per geographical area list for UE-to-network relay communication contents' in bytes		

Radio parameters per geographical area info 1	See Table 4.7C.1.5-8		

– *Radio parameters per geographical area info*

Table 4.7C.1.5-8: Radio parameters per geographical area info

Derivation TS 24.555[59] Figure 5.6.2.8			
Information Element	Value/remark	Comment	Condition
Length of radio parameters per geographical area contents	Set to the actual length of 'radio parameters per geographical area contents' in bytes		
Geographical area	See Table 4.7C.1.5-9		
Radio parameters	See Table 4.7C.1.5-11		
Spare	'0000000'B		
MI	'1'B	Operator managed	

– *Geographical area*

Table 4.7C.1.5-9: Geographical area

Derivation Path: TS 24.555[59] Figure 5.6.2.9			
Information Element	Value/remark	Comment	Condition
Length of geographical area contents	Set to the actual length of 'geographical area contents' in bytes		
Coordinate 1	See Table 4.7C.1.5-10		
Coordinate 2	See Table 4.7C.1.5-10		
Coordinate 3	See Table 4.7C.1.5-10		

– *Coordinate area*

Table 4.7C.1.5-10: Coordinate area

Derivation Path: TS 24.555[59] Figure 5.6.2.10			
Information Element	Value/remark	Comment	Condition
Latitude	35.753056		Coordinate 1
	35.735278		Coordinate 2
	35.744167		Coordinate 3
Longitude	139.689167		Coordinate 1
	139.689167		Coordinate 2
	139.709167		Coordinate 3

– *Radio parameters*

Table 4.7C.1.5-11: Radio parameters

Derivation Path: TS 24.555[59] Figure 5.6.2.11			
Information Element	Value/remark	Comment	Condition
Length of radio parameters contents	Set to the actual length of 'radio parameters contents' in bytes		

Radio parameters contents	See Table 4.10.1-1: SL-PreconfigurationNR with condition L2RemoteUE		

– *Default PC5 DRX configuration for UE-to-network relay discovery*

Table 4.7C.1.5-12: Default PC5 DRX configuration for UE-to-network relay discovery

Derivation Path: TS 24.555[59] Figure 5.6.2.11a			
Information Element	Value/remark	Comment	Condition
Length of default PC5 DRX configuration for UE-to-network relay discovery contents	Set to the actual length of 'default PC5 DRX configuration for UE-to-network relay discovery contents' in bytes		
Default PC5 DRX configuration for UE-to-network relay discovery contents	See Table 4.6.6-38		

– *Default destination layer-2 IDs for sending the discovery signalling for solicitation and for receiving the discovery signalling for announcement and additional information*

Table 4.7C.1.5-13: Default destination layer-2 IDs for sending the discovery signalling for solicitation and for receiving the discovery signalling for announcement and additional information

Derivation Path: TS 24.555[59] Figure 5.6.2.11b			
Information Element	Value/remark	Comment	Condition
Length of default destination layer-2 IDs for sending the discovery signalling for solicitation and for receiving the discovery signalling for announcement and additional information contents	Set to the actual length of 'default destination layer-2 IDs for sending the discovery signalling for solicitation and for receiving the discovery signalling for announcement and additional information contents' in bytes		
Default destination layer-2 ID 1	'000040'O		

– *RSC info list*

Table 4.7C.1.5-14: RSC info list

Derivation Path: TS 24.555[59] Figure 5.6.2.12			
Information Element	Value/remark	Comment	Condition
Length of RSC info list contents	Set to the actual length of 'RSC info list contents' in bytes		
RSC info 1	See Table 4.7C.1.5-15		

– *RSC info*

Table 4.7C.1.5-15: RSC info

Derivation Path: TS 24.555[59] Figure 5.6.2.13			
Information Element	Value/remark	Comment	Condition
Length of RSC info contents	Set to the actual length of 'RSC info contents' in bytes		

RSC list	See Table 4.7C.1.5-16		
Security related parameters for discovery	See Table 4.7C.1.5-17		
LI	'10'B	Layer 2	
NSI	'0'B		
CPSI	'0'B	security procedure over control plane is not used	
TDI	'0'B	Traffic descriptor field is not included	
Spare	'000'B		
NR-PC5 UE-to-network relay security policies	See Table 4.7C.1.5-20		
PDU session parameters of layer-3 relay	Not Present		
Traffic descriptor	Not Present		

– *RSC list*

Table 4.7C.1.5-16: RSC list

Derivation Path: TS 24.555[59] Figure 5.6.2.14			
Information Element	Value/remark	Comment	Condition
Length of RSC list contents	Set to the actual length of 'RSC list contents' in bytes		
RSC 1	'000010'O		

– *Security related parameters for discovery*

Table 4.7C.1.5-17: Security related parameters for discovery

Derivation Path: TS 24.555[59] Figure 5.6.2.15			
Information Element	Value/remark	Comment	Condition
Security related parameters validity timer	'FF FF FF FF FF'O	5 octets, Expiration UTC time of validity, in seconds since midnight UTC of January 1, 1970 (not counting leap seconds)	
Code-sending security parameters	See Table 4.7C.1.5-18		
Code-receiving security parameters	See Table 4.7C.1.5-19		

– *Code-sending security parameters*

Table 4.7C.1.5-18: Code-sending security parameters

Derivation Path: TS 24.555[59] Figure 5.6.2.15a			
Information Element	Value/remark	Comment	Condition
PDUSK	'0'B	DUSK field is not included	
PDUIK	'0'B	DUIK field is not included	
PDUCK	'0'B	DUCK and encrypted bitmask fields are not included	
Spare	'00000'B		
DUSK	Not Present		
DUIK	Not Present		
DUCK	Not Present		

Encrypted bitmask	Not Present		

– *Code-receiving security parameters*

Table 4.7C.1.5-19: Code-receiving security parameters

Derivation Path: TS 24.555[59] Figure 5.6.2.15b			
Information Element	Value/remark	Comment	Condition
PDUSK	'0'B	DUSK field is not included	
PDUIK	'0'B	DUIK field is not included	
PDUCK	'0'B	DUCK and encrypted bitmask fields are not included	
Spare	'00000'B		
DUSK	Not Present		
DUIK	Not Present		
DUCK	Not Present		
Encrypted bitmask	Not Present		

– *NR-PC5 UE-to-network relay security policies*

Table 4.7C.1.5-20: NR-PC5 UE-to-network relay security policies

Derivation Path: TS 24.555[59] Figure 5.4.2.34			
Information Element	Value/remark	Comment	Condition
Length of NR-PC5 unicast security policies contents	Set to the actual length of 'NR-PC5 unicast security policies contents' in bytes		
NR-PC5 unicast security policy 1	See Table 4.7C.1.3-35		

– *PDU session parameters for layer-3 relay UE*

Table 4.7C.1.5-21: PDU session parameters for layer-3 relay UE

Derivation Path: TS 24.555[59] Figure 5.6.2.16			
Information Element	Value/remark	Comment	Condition
Length of PDU session parameters for layer-3 relay UE contents	Set to the actual length of 'PDU session parameters for layer-3 relay UE contents' in bytes		
PDU session type	'001'B		IPv4
	'010'B		IPv6
	'011'B		IPv4v6
PDNN	'0'B		
PSNSSAI	'0'B		
PSSCM	'0'B		
PATP	'0'B		
Spare	'0'B		
DNN	Not Present		
S-NSSAI	Not Present		
SSC mode	Not Present		
Access type preference	Not Present		
Spare	Not Present		

– *Traffic descriptor*

Table 4.7C.1.5-22: Traffic descriptor

Derivation Path: TS 24.555[59] Figure 5.6.2.16a			
Information Element	Value/remark	Comment	Condition
Length of traffic descriptor contents	Set to the actual length of 'traffic descriptor contents' in bytes		
Traffic descriptor	Coded according to figure 5.2.2 and table 5.2.1 in clause 5.2 of 3GPP TS 24.526		

4.7C.1.6 5G ProSe information elements of UE policies for 5G ProSe usage information reporting

– *ProSeP Info = {UE policies for 5G ProSe usage information reporting }*

Table 4.7C.1.6-1: ProSeP Info = {UE policies for 5G ProSe usage information reporting }

Derivation Path: TS 24.555[59] Figure 5.7.2.1			
Information Element	Value/remark	Comment	Condition
ProSeP info type	'0101'B	UE policies for 5G ProSe usage information reporting	
Spare	'0000'B		
Length of ProSeP info contents	Set to the actual length of ProSeP info contents		
Validity timer	'FF FF FF FF FF'O	5 octets, Expiration UTC time of validity of the UE policies, in seconds since midnight UTC of January 1, 1970 (not counting leap seconds)	
Collection period	'00'O	disables generation of usage information reports at the UE	
Reporting window	'00'O	disables upload of the usage information reports by the UE	
DRRI	'00'B		
DTRI	'00'B		
TTRRI	'0'B		
TIORI	'0'B		
GPRI	'0'B		
LRI	'0'B		
AT	'001'B	IPv4	
QRI	'0'B		
RPRI	'0'B		
Spare	'000'B		
5G DDNMF CTF (ADF) address information for uploading the usage information reports	5G DDNMF address		

4.7C.1.7 5G ProSe information elements of UE policies for 5G ProSe UE-to-UE relay UE

– *ProSeP Info = {UE policies for 5G ProSe UE-to-UE relay UE}*

Table 4.7C.1.7-1: ProSeP Info = {UE policies for 5G ProSe UE-to-UE relay UE}

Derivation Path: TS 24.555[59] Figure 5.8.2.1			
Information Element	Value/remark	Comment	Condition
ProSeP info type	'0110'B	UE policies for 5G ProSe UE-to-UE relay UE	
PAI	'0'B		
Spare	'000'B		
Length of ProSeP info contents	Set to the actual length of ProSeP info contents		
Validity timer	'FF FF FF FF FF'O	5 octets, Expiration UTC time of validity of the UE policies, in seconds since midnight UTC of January 1, 1970 (not counting leap seconds)	
Served by NG-RAN	See Table 4.7C.1.7-2		
Not served by NG-RAN	See Table 4.7C.1.7-5		
Default destination layer-2 IDs for sending the discovery signalling for announcement and for sending and receiving the discovery signalling for solicitation	See Table 4.7C.1.7-13		
User info ID for discovery	'000001'O		
RSC info list	See Table 4.7C.1.7-14		
Default destination layer-2 ID(s) for sending or receiving the direct communication signalling for 5G ProSe UE-to-UE relay communication with integrated discovery	See Table 4.7C.1.7-17		
5G PKMF address information	'FF FF FF FF FF'O		

– *Served by NG-RAN*

Table 4.7C.1.7-2: Served by NG-RAN

Derivation Path: TS 24.555[59] Figure 5.8.2.2			
Information Element	Value/remark	Comment	Condition
Length of served by NG-RAN contents	Set to the actual length of 'NG-RAN contents' in bytes		
Authorized PLMN list for layer-3 relay UE	See Table 4.7C.1.7-3		
Authorized PLMN list for layer-2 relay UE	See Table 4.7C.1.7-3		

– *Authorized PLMN list*

Table 4.7C.1.7-3: Authorized PLMN list

Derivation Path: TS 24.555[59] Figure 5.8.2.3			
Information Element	Value/remark	Comment	Condition
Length of authorized PLMN list contents	Set to the actual length of 'authorized PLMN list contents' in bytes		
Authorized PLMN 1	See Table 4.7C.1.7-4		

– *PLMN ID***Table 4.7C.1.7-4: PLMN ID**

Derivation Path: TS 24.555[59] Figure 5.8.2.4			
Information Element	Value/remark	Comment	Condition
MCC digit 1	Set according to parameter given in test case		
MCC digit 2	Set according to parameter given in test case		
MCC digit 3	Set according to parameter given in test case		
MNC digit 3	Set according to parameter given in test case		
MNC digit 1	Set according to parameter given in test case		
MNC digit 2	Set according to parameter given in test case		

– *Not served by NG-RAN***Table 4.7C.1.7-5: Not served by NG-RAN**

Derivation Path: TS 24.555[59] Figure 5.8.2.5			
Information Element	Value/remark	Comment	Condition
Length of not served by NG-RAN contents	Set to the actual length of 'not served by NG-RAN contents' in bytes		
NR radio parameters per geographical area list for UE-to-UE relay discovery	See Table 4.7C.1.7-6		
NR radio parameters per geographical area list for UE-to-UE relay communication	See Table 4.7C.1.7-7		
Default PC5 DRX configuration for UE-to-UE relay discovery	See Table 4.7C.1.7-12		
L3U2URUI	'0'B		
L2U2URUI	'0'B		

– *NR radio parameters per geographical area list for UE-to-UE relay discovery***Table 4.7C.1.7-6: NR radio parameters per geographical area list for UE-to-UE relay discovery**

Derivation Path: TS 24.555[59] Figure 5.8.2.6			
Information Element	Value/remark	Comment	Condition
Length of NR radio parameters per geographical area list for UE-to-UE relay discovery contents	Set to the actual length of 'NR radio parameters per geographical area list for UE-to-UE relay discovery contents' in bytes		
Radio parameters per geographical area info 1	See Table 4.7C.1.7-8		

- *NR radio parameters per geographical area list for UE-to-UE relay communication*

Table 4.7C.1.7-7: NR radio parameters per geographical area list for UE-to-UE relay communication

Derivation Path: TS 24.555[59] Figure 5.8.2.7			
Information Element	Value/remark	Comment	Condition
Length of NR radio parameters per geographical area list for UE-to-UE relay communication contents	Set to the actual length of 'NR radio parameters per geographical area list for UE-to-UE relay communication contents' in bytes		
Radio parameters per geographical area info 1	See Table 4.7C.1.7-8		

- *Radio parameters per geographical area info*

Table 4.7C.1.7-8: Radio parameters per geographical area info

Derivation TS 24.555[59] Figure 5.8.2.8			
Information Element	Value/remark	Comment	Condition
Length of radio parameters per geographical area contents	Set to the actual length of 'radio parameters per geographical area contents' in bytes		
Geographical area	See Table 4.7C.1.7-9		
Radio parameters	See Table 4.7C.1.7-11		
Spare	'0000000'B		
MI	'1'B	Operator managed	

- *Geographical area*

Table 4.7C.1.7-9: Geographical area

Derivation Path: TS 24.555[59] Figure 5.8.2.9			
Information Element	Value/remark	Comment	Condition
Length of geographical area contents	Set to the actual length of 'geographical area contents' in bytes		
Coordinate 1	See Table 4.7C.1.7-10		
Coordinate 2	See Table 4.7C.1.7-10		
Coordinate 3	See Table 4.7C.1.7-10		

- *Coordinate area*

Table 4.7C.1.7-10: Coordinate area

Derivation Path: TS 24.555[59] Figure 5.8.2.10			
Information Element	Value/remark	Comment	Condition
Latitude	35.753056		Coordinate 1
	35.735278		Coordinate 2
	35.744167		Coordinate 3
Longitude	139.689167		Coordinate 1
	139.689167		Coordinate 2

	139.709167		Coordinate 3

– *Radio parameters*

Table 4.7C.1.7-11: Radio parameters

Derivation Path: TS 24.555[59] Figure 5.8.2.11			
Information Element	Value/remark	Comment	Condition
Length of radio parameters contents	Set to the actual length of 'radio parameters contents' in bytes		
Radio parameters contents	See Table 4.10.1-1: SL-PreconfigurationNR		

– *Default PC5 DRX configuration for UE-to-UE relay discovery*

Table 4.7C.1.7-12: Default PC5 DRX configuration for UE-to-UE relay discovery

Derivation Path: TS 24.555[59] Figure 5.8.2.11a			
Information Element	Value/remark	Comment	Condition
Length of default PC5 DRX configuration for UE-to-UE relay discovery contents	Set to the actual length of 'default PC5 DRX configuration for UE-to-UE relay discovery contents' in bytes		
Default PC5 DRX configuration for UE-to-UE relay discovery contents	See Table 4.6.6-9A		

– *Default destination layer-2 IDs for sending the discovery signalling for announcement and for sending and receiving the discovery signalling for solicitation*

Table 4.7C.1.7-13: Default destination layer-2 IDs for sending the discovery signalling for announcement and for sending and receiving the discovery signalling for solicitation

Derivation Path: TS 24.555[59] Figure 5.8.2.11b			
Information Element	Value/remark	Comment	Condition
Length of default destination layer-2 IDs for sending the discovery signalling for announcement and for sending and receiving the discovery signalling for solicitation contents	Set to the actual length of 'default destination layer-2 IDs for sending the discovery signalling for announcement and for sending and receiving the discovery signalling for solicitation contents' in bytes		
Default destination layer-2 ID 1	'000040'O		

– *RSC info list*

Table 4.7C.1.7-14: RSC info list

Derivation Path: TS 24.555[59] Figure 5.8.2.12			
Information Element	Value/remark	Comment	Condition
Length of RSC info list contents	Set to the actual length of 'RSC info list contents' in bytes		
RSC info 1	See Table 4.7C.1.7-15		

– *RSC info*

Table 4.7C.1.7-15: RSC info

Derivation Path: TS 24.555[59] Figure 5.8.2.13			
Information Element	Value/remark	Comment	Condition
Length of RSC info contents	Set to the actual length of 'RSC info contents' in bytes		
LI	'10'B	Layer 2	
TT	Not present		
NASI	'0'B	the security procedure without network assistance	
CPSI	'0'B	security procedure over control plane is not used	
SLPI	'0'B	security procedure over control plane is not used	
Spare	'00000'B		
RSC list	See Table 4.7C.1.7-16		
Security related parameters for UE-to-UE relay discovery	Not present		
NR-PC5 UE-to-UE relay security policies	See Table 4.7C.1.3-36		

– *RSC list*

Table 4.7C.1.7-16: RSC list

Derivation Path: TS 24.555[59] Figure 5.8.2.14			
Information Element	Value/remark	Comment	Condition
Length of RSC list contents	Set to the actual length of 'RSC list contents' in bytes		
RSC 1	'000010'O		

– *Default destination layer-2 ID(s) for sending or receiving the direct communication signalling for 5G ProSe UE-to-UE relay communication with integrated discovery*

Table 4.7C.1.7-17: Default destination layer-2 ID(s) for sending or receiving the direct communication signalling for 5G ProSe UE-to-UE relay communication with integrated discovery

Derivation Path: TS 24.555[59] Figure 5.8.2.15			
Information Element	Value/remark	Comment	Condition
Length of Default destination layer-2 ID(s) for sending or receiving the direct communication signalling for 5G ProSe UE-to-UE relay communication with integrated discovery	Set to the actual length of 'default destination layer-2 ID(s) for sending or receiving the direct communication signalling for 5G ProSe UE-to-UE relay communication with integrated discovery' in bytes		
Default destination layer-2 ID 1	'000040'O		

4.7C.1.8 5G ProSe information elements of UE policies for 5G ProSe end UE

FFS

4.7C.2 Contents of 5G ProSe direct discovery messages

– PROSE PC5 DISCOVERY

Table 4.7C.2-1: PROSE PC5 DISCOVERY message content for open 5G ProSe direct discovery announcement

Derivation Path: TS 24.554 [58] Table 10.2.1.1			
Information Element	Value/remark	Comment	Condition
ProSe direct discovery PC5 message type	'01000001'B		
UTC-based counter LSB			
UTC-based counter LSB contents	four least significant bits of the UTC-based counter associated with the discovery transmission opportunity used by the UE		
Spare	'0000'B		
MIC	Computed by UE		
ProSe application code			
PLMN ID			
Scope	'10'	country-specific scope	
Spare	'0'		
E	'1'	MCC and MNC included	
MCC	The MCC part of the PLMN ID of the ProSe Function that assigned the ProSe Application Code (the relevant PLMN will be set in the TC)		
MNC	The MNC part of the PLMN ID of the ProSe Function that assigned the ProSe Application Code (the relevant PLMN will be set in the TC)		
TemporaryID	1111111100000000 0000000000000000 0000000000000000 0000000000000000 0000000000000000 0000000000000000 0000000000000000 0000000000000000 0000000000000000 0000000011111111		
Metadata	Not checked		

Table 4.7C.2-2: PROSE PC5 DISCOVERY message content restricted 5G ProSe direct discovery announcement

Derivation Path: TS 24.554 [58] Table 10.2.1.2			
Information Element	Value/remark	Comment	Condition
ProSe direct discovery PC5 message type	'10000001'B		
UTC-based counter LSB			

UTC-based counter LSB contents	four least significant bits of the UTC-based counter associated with the discovery transmission opportunity used by the UE		
Spare	'0000'B		
MIC	Computed by UE		
ProSe restricted code			
PLMN ID	the relevant PLMN will be set in the TC		
TemporaryID	1111111100000000 0000000000000000 0000000000000000 0000000000000000 0000000000000000 0000000000000000 0000000000000000 0000000000000000 0000000000000000 0000000011111111		
Metadata	Not checked		

Table 4.7C.2-3: PROSE PC5 DISCOVERY message content for restricted 5G ProSe direct discovery solicitation

Derivation Path: TS 24.554 [58] Table 10.2.1.3			
Information Element	Value/remark	Comment	Condition
ProSe direct discovery PC5 message type	'10000100'B		
UTC-based counter LSB			
UTC-based counter LSB contents	four least significant bits of the UTC-based counter associated with the discovery transmission opportunity used by the UE		
Spare	'0000'B		
MIC	Computed by UE		
ProSe query code			
PLMN ID	the relevant PLMN will be set in the TC		
TemporaryID	1111111100000000 0000000000000000 0000000000000000 0000000000000000 0000000000000000 0000000000000000 0000000000000000 0000000000000000 0000000000000000 0000000011111111		

Table 4.7C.2-4: PROSE PC5 DISCOVERY message for restricted 5G ProSe direct discovery response

Derivation Path: TS 24.554 [58] Table 10.2.1.4			
Information Element	Value/remark	Comment	Condition
ProSe direct discovery PC5 message type	'10000010'B		
UTC-based counter LSB			
UTC-based counter LSB contents	four least significant bits of the UTC-based counter associated with the discovery		

	transmission opportunity used by the UE		
Spare	'0000'B		
MIC	Computed by UE		
ProSe response code			
PLMN ID	the relevant PLMN will be set in the TC		
TemporaryID	1111111100000000 0000000000000000 0000000000000000 0000000000000000 0000000000000000 0000000000000000 0000000000000000 0000000000000000 0000000000000000 0000000011111111		
Metadata	Not present		

Table 4.7C.2-5: PROSE PC5 DISCOVERY message for group member discovery announcement

Derivation Path: TS 24.554 [58] Table 10.2.1.5			
Information Element	Value/remark	Comment	Condition
ProSe direct discovery PC5 message type	'10011001'B		
UTC-based counter LSB			
UTC-based counter LSB contents	four least significant bits of the UTC-based counter associated with the discovery transmission opportunity used by the UE		
Spare	'0000'B		
MIC	Computed by UE		
Application layer group ID			
Length of application layer group ID contents	Set to the actual length of 'application layer group ID contents' in bytes		
Application layer group ID contents	'01 01'H		
Announcer info	'000000000001'H		
Metadata	Not checked		

Table 4.7C.2-6: PROSE PC5 DISCOVERY message for group member discovery solicitation

Derivation Path: TS 24.554 [58] Table 10.2.1.6			
Information Element	Value/remark	Comment	Condition
ProSe direct discovery PC5 message type	'10011110'B		
UTC-based counter LSB			
UTC-based counter LSB contents	four least significant bits of the UTC-based counter associated with the discovery transmission opportunity used by the UE		
Spare	'0000'B		
MIC	Computed by UE		
Application layer group ID			
Length of application layer group ID contents	Set to the actual length of 'application layer group ID contents' in bytes		
Application layer group ID contents	'01 01'H		
Discoverer info	'000000000001'H		
Target user info	Not checked		

Table 4.7C.2-7: PROSE PC5 DISCOVERY message for group member discovery response

Derivation Path: TS 24.554 [58] Table 10.2.1.7			
Information Element	Value/remark	Comment	Condition
ProSe direct discovery PC5 message type	'10011010'B		
UTC-based counter LSB			
UTC-based counter LSB contents	four least significant bits of the UTC-based counter associated with the discovery transmission opportunity used by the UE		
Spare	'0000'B		
MIC	Computed by UE		
Application layer group ID			
Length of application layer group ID contents	Set to the actual length of 'application layer group ID contents' in bytes		
Application layer group ID contents	'01 01'H		
Discoveree info	'000000000001'H		
Metadata	Not present		

Table 4.7C.2-8: PROSE PC5 DISCOVERY message for UE-to-network relay discovery announcement

Derivation Path: TS 24.554 [58] Table 10.2.1.8			
Information Element	Value/remark	Comment	Condition
ProSe direct discovery PC5 message type	'10010001'B		
UTC-based counter LSB			
UTC-based counter LSB contents	four least significant bits of the UTC-based counter associated with the discovery transmission opportunity used by the UE		
Spare	'0000'B		
PLMN ID	the relevant PLMN will be set in the TC		
MIC	Computed by UE Computed as described in TS 33.503 [x3].		L2RelayUE L2RemoteUE
Announcer info	'000000000001'H		
Relay service code	'000001'H		
Status indicator			
RSI	'0'B	the UE does not have resources available to provide a connectivity service for additional ProSe-enabled UEs	
Spare	'0000000'B		
NCGI	Global ID of the serving cell		
RRC container			
Length of RRC container contents	Set to the actual length of 'application layer group ID contents' in bytes		
RRC container contents	coded as SL-AccessInfo-L2U2N defined in Table 4.12.1-1		

Condition	Explanation

L2RelayUE	For L2 U2N Relay UE test cases.
L2RemoteUE	For L2 U2N Remote UE test cases.

Table 4.7C.2-9: PROSE PC5 DISCOVERY message for UE-to-network relay discovery solicitation

Derivation Path: TS 24.554 [58] Table 10.2.1.9			
Information Element	Value/remark	Comment	Condition
ProSe direct discovery PC5 message type	'10010110'B		
UTC-based counter LSB			
UTC-based counter LSB contents	four least significant bits of the UTC-based counter associated with the discovery transmission opportunity used by the UE		
Spare	'0000'B		
MIC	Computed by UE		L2RemoteUE
	Computed as described in TS 33.503 [x3].		L2RelayUE
Discoverer info	'000000000001'H		
Relay service code	'000001'H		
Target discoveree info	Not checked		L2RemoteUE
	Not present		L2RelayUE

Condition	Explanation
L2RelayUE	For L2 U2N Relay UE test cases.
L2RemoteUE	For L2 U2N Remote UE test cases.

Table 4.7C.2-10: PROSE PC5 DISCOVERY message for UE-to-network relay discovery response

Derivation Path: TS 24.554 [58] Table 10.2.1.10			
Information Element	Value/remark	Comment	Condition
ProSe direct discovery PC5 message type	'10010010'B		
UTC-based counter LSB			
UTC-based counter LSB contents	four least significant bits of the UTC-based counter associated with the discovery transmission opportunity used by the UE		
Spare	'0000'B		
PLMN ID	the relevant PLMN will be set in the TC		
MIC	Computed by UE		L2RelayUE
	Computed as described in TS 33.503 [x3].		L2RemoteUE
Discoveree info	'000000000001'H		
Relay service code	'000001'H		
Status indicator			
RSI	'0'B	the UE does not have resources available to provide a connectivity service for additional ProSe-enabled UEs	
Spare	'0000000'B		
NCGI	Global ID of the serving cell		

RRC container			
Length of RRC container contents	Set to the actual length of 'application layer group ID contents' in bytes		
RRC container contents	coded as SL-AccessInfo-L2U2N defined in Table 4.12.1-1		

Condition	Explanation
L2RelayUE	For L2 U2N Relay UE test cases.
L2RemoteUE	For L2 U2N Remote UE test cases.

Table 4.7C.2-11: PROSE PC5 DISCOVERY message for relay discovery additional information

Derivation Path: TS 24.554 [58] Table 10.2.1.11			
Information Element	Value/remark	Comment	Condition
ProSe direct discovery PC5 message type	'10100001'B		
UTC-based counter LSB			
UTC-based counter LSB contents	four least significant bits of the UTC-based counter associated with the discovery transmission opportunity used by the UE		
Spare	'0000'B		
MIC	Computed by UE		
Relay service code	'000001'H		
Announcer info	'000000000001'H		
NCGI	Not checked		
Relay TAI	Not checked		

– PROSE PC5 DISCOVERY

Table 4.7C.2-12: PROSE PC5 DISCOVERY message for UE-to-UE relay discovery announcement

Derivation Path: TS 24.554 [58] Table 10.2.1.12			
Information Element	Value/remark	Comment	Condition
ProSe direct discovery PC5 message type	'10001001'B		
UTC-based counter LSB			
UTC-based counter LSB contents	four least significant bits of the UTC-based counter associated with the discovery transmission opportunity used by the UE		
Spare	'0000'B		
PLMN ID	the relevant PLMN will be set in the TC		
MIC	Computed by UE		
Relay service code	'000001'H		
Direct discovery set	FFS		
Status indicator			
RSI	'1'B	the UE has resources available to provide a connectivity service for additional ProSe-enabled UEs	
Spare	'0000000'B		

UE-to-UE relay UE info	'000000000001'H		

Table 4.7C.2-13: PROSE PC5 DISCOVERY message for UE-to-UE relay discovery solicitation

Derivation Path: TS 24.554 [58] Table 10.2.1.13			
Information Element	Value/remark	Comment	Condition
ProSe direct discovery PC5 message type	'10001010'B		
UTC-based counter LSB			
UTC-based counter LSB contents	four least significant bits of the UTC-based counter associated with the discovery transmission opportunity used by the UE		
Spare	'0000'B		
PLMN ID	the relevant PLMN will be set in the TC		
MIC	Computed by UE		
Relay service code	'000001'H		
Direct discovery set	FFS		
UE-to-UE relay UE info	'000000000001'H		
Status indicator			
RSI	'1'B	the UE has resources available to provide a connectivity service for additional ProSe-enabled UEs	
Spare	'0000000'B		
Announce prohibited indication			
API	'0'B	It is not prohibited to broadcast the user info.	
Spare	'000'B		

Table 4.7C.2-14: PROSE PC5 DISCOVERY message for UE-to-UE relay discovery response

Derivation Path: TS 24.554 [58] Table 10.2.1.14			
Information Element	Value/remark	Comment	Condition
ProSe direct discovery PC5 message type	'10001010'B		
UTC-based counter LSB			
UTC-based counter LSB contents	four least significant bits of the UTC-based counter associated with the discovery transmission opportunity used by the UE		
Spare	'0000'B		
PLMN ID	the relevant PLMN will be set in the TC		
MIC	Computed by UE		
Relay service code	'000001'H		
Direct discovery set	FFS		
UE-to-UE relay UE info	'000000000001'H		
Status indicator			
RSI	'1'B	the UE has resources available to provide a connectivity	

		service for additional ProSe-enabled UEs	
Spare	'0000000'B		
Announce prohibited indication			
API	'0'B	It is not prohibited to broadcast the user info.	
Spare	'000'B		

4.7C.3 Contents of ProSe PC5 signalling messages

– PROSE DIRECT LINK ESTABLISHMENT REQUEST

Table 4.7C.3-1: PROSE DIRECT LINK ESTABLISHMENT REQUEST

Derivation Path: TS 24.554 [58] Table 10.3.1.1.1			
Information Element	Value/remark	Comment	Condition
PROSE DIRECT LINK ESTABLISHMENT REQUEST message identity	'0000 0001'B		
Sequence number	Not Checked	0~255, uniquely identify a PC5 signalling message being sent or received	Tx
	Incremented by TTCN by 1 for each outgoing new PC5 Signalling message.	0~255, uniquely identify a PC5 signalling message being sent or received	Rx
Source user info			
Length of Application layer ID contents	'04'H		
Application Layer ID 1	'00 00 01 00'H	Application Layer ID in initiating UE side	
UE security capabilities			
Length of UE security capabilities contents	'02'H		
5G-EA algorithms	'1000 0000'B	5G-EA0 supported	
5G-IA algorithms	'1000 0000'B	5G-IA0 supported	
UE PC5 unicast signalling security policy	'0000 0010'B	Signalling integrity protection required, Signalling ciphering not needed.	
MIC	Not Checked		Tx
	Not Present		Rx
ProSe identifiers	Not Present		
Key establishment information container	Not Present		
Nonce 1	Not Present		
MSB of K _{NRP-sess} ID	Not Checked		Tx
	'5C 00'H		Rx
Target user info	Not Checked		Tx
Target user info			Rx
Application layer ID IEI	'28'H		
Length of Application layer ID contents	'04'H		
Application layer ID contents	'00 00 11 00'H		
K _{NRP} ID	Not Present		
Relay service code	Not Checked		Tx
	Not Present		Rx
UE identity	Not Checked		Tx
	SUCI of the UE		Rx

User security key ID	Not Checked		Tx
	Not Present		Rx
HPLMN ID	Not Checked		Tx
	Not Present		Rx
UTC-based counter LSB	Not Checked		Tx
	Not Present		Rx

Condition	Explanation
Tx	UE transmits and NR-SS-UE receives
Rx	UE receives and NR-SS-UE transmits

PROSE DIRECT LINK ESTABLISHMENT ACCEPT

Table 4.7C.3-2: PROSE DIRECT LINK ESTABLISHMENT ACCEPT

Derivation Path: TS 24.554 [58] Table 10.3.2.1.1			
Information Element	Value/remark	Comment	Condition
PROSE DIRECT LINK ESTABLISHMENT ACCEPT message identity	'0000 0010'B		
Sequence number	Not Checked	0~255, uniquely identify a PC5 signalling message being sent or received	Tx
	Incremented by TTCN by 1 for each outgoing new PC5 Signalling message.	0~255, uniquely identify a PC5 signalling message being sent or received	Rx
Source user info			
Length of Application layer ID contents	'04'H		
Application Layer ID 1	'00 00 02 00'H	Application Layer ID in target UE side	
Configuration of UE PC5 unicast user plane security protection	'0000 0000'B	User plane integrity protection and ciphering is off	
QoS flow descriptions			
Length of PC5 QoS flow descriptions contents	Set to the actual length of 'PC5 QoS flow descriptions contents' in bytes		
PC5 QoS flow description 1			
PQFI	'00 0001'B		
Operation Code	'001'B	Create new PC5 QoS flow description	
Pll	1	Associated ProSe identifiers field is included	
Number of parameters	5		
E	1	parameters list is included	
Associated ProSe identifiers			
Length of ProSe identifier contents	'04'H		
ProSe identifier 1	'00 00 00 01'H		
Parameters list			
Parameter 1			
Parameter identifier	'01'H	PQI	
Length of parameter contents	1		
Parameter contents	22	Sensor sharing, See Table 5.4.4-1 in TS 23.287[xx]	

Parameter 2			
Parameter identifier	'02'H	GFBR	
Length of parameter contents	3		
Parameter contents	'0000 0110 0000 0000 0000 1010'B	10 * 1Mbps = 10Mbps.	
Parameter 3			
Parameter identifier	'03'H	MFBR	
Length of parameter contents	3		
Parameter contents	'0000 0110 0000 0000 0001 0100'B	20 * 1Mbps = 20Mbps.	
Parameter 4			
Parameter identifier	'04'H	Averaging window	
Length of parameter contents	2		
Parameter contents	'0000 0111 1101 0000'B	2000ms	
Parameter 5			
Parameter identifier	'06'H	Default priority level	
Length of parameter contents	1		
Parameter contents	4		
QoS rules	Not Present		
IP address configuration	Not Checked		Tx
IP address configuration	Not Present		Non-IP
IP address configuration			Rx
IP address configuration IEI	'57'H		
IP address configuration content	'0000 0001'B	IPv6 Router	
Target link local IPv6 address	Not Present		

Condition	Explanation
Tx	UE transmits and NR-SS-UE receives
Rx	UE receives and NR-SS-UE transmits
Non-IP	Non-IP traffic type

– PROSE DIRECT LINK ESTABLISHMENT REJECT

Table 4.7C.3-3: PROSE DIRECT LINK ESTABLISHMENT REJECT

Derivation Path: TS 24.554 [58] Table 10.3.3.1.1			
Information Element	Value/remark	Comment	Condition
PROSE DIRECT LINK ESTABLISHMENT REJECT message identity	'0000 0011'B		
Sequence number	Not Checked	0~255, uniquely identify a PC5 signalling message being sent or received	Tx
	Incremented by TTCN by 1 for each outgoing new PC5 Signalling message.	0~255, uniquely identify a PC5 signalling message being sent or received	Rx
PC5 signalling protocol cause	'0110 1111'B	Protocol error, unspecified	
Back-off value	Not Present		
EAP message	Not Present		

Condition	Explanation
Tx	UE transmits and NR-SS-UE receives
Rx	UE receives and NR-SS-UE transmits

– PROSE DIRECT LINK RELEASE REQUEST

Table 4.7C.3-4: PROSE DIRECT LINK RELEASE REQUEST

Derivation Path: TS 24.554 [58] Table 10.3.4.1.1			
Information Element	Value/remark	Comment	Condition
PROSE DIRECT LINK RELEASE REQUEST message identity	'0000 0111'B		
Sequence number	Not Checked	0~255, uniquely identify a PC5 signalling message being sent or received	Tx
	Incremented by TTCN by 1 for each outgoing new PC5 Signalling message.	0~255, uniquely identify a PC5 signalling message being sent or received	Rx
PC5 signalling protocol cause	Not Checked		Tx
	'0110 1111'B	Protocol error, unspecified	Rx
MSBs of KNRP ID	Not Checked		Tx
	'00 00'H		Rx
Back-off value	Not Present		

Condition	Explanation
Tx	UE transmits and NR-SS-UE receives
Rx	UE receives and NR-SS-UE transmits

– PROSE DIRECT LINK RELEASE ACCEPT

Table 4.7C.3-5: PROSE DIRECT LINK RELEASE ACCEPT

Derivation Path: TS 24.554 [58] Table 10.3.5.1.1			
Information Element	Value/remark	Comment	Condition
PROSE DIRECT LINK RELEASE ACCEPT message identity	'0000 1000'B		
Sequence number	Not Checked	0~255, uniquely identify a PC5 signalling message being sent or received	Tx
	Incremented by TTCN by 1 for each outgoing new PC5 Signalling message.	0~255, uniquely identify a PC5 signalling message being sent or received	Rx
LSBs of K _{NR} P ID	Not Checked		Tx
	'00 00'H		Rx

Condition	Explanation
Tx	UE transmits and NR-SS-UE receives
Rx	UE receives and NR-SS-UE transmits

– PROSE DIRECT LINK MODIFICATION REQUEST

Table 4.7C.3-6: PROSE DIRECT LINK MODIFICATION REQUEST

Derivation Path: TS 24.554 [58] Table 10.3.6.1.1			
Information Element	Value/remark	Comment	Condition

PROSE DIRECT LINK MODIFICATION REQUEST message identity	'0000 0100'B		
Sequence number	Not Checked	0~255, uniquely identify a PC5 signalling message being sent or received	Tx
	Incremented by TTCN by 1 for each outgoing new PC5 Signalling message.	0~255, uniquely identify a PC5 signalling message being sent or received	Rx
Link modification operation code	'0000 0011'B	Add new PC5 QoS flow(s) to the existing ProSe direct link	
QoS flow descriptions			
Length of PC5 QoS flow descriptions contents	Set to the actual length of 'PC5 QoS flow descriptions contents' in bytes		
PC5 QoS flow description 1			
PQFI	'00 0010'B		
Operation Code	'001'B	Create new PC5 QoS flow description	
PII	1	Associated ProSe identifiers field is included	
Number of parameters	5		
E	1	parameters list is included	
Associated ProSe identifiers			
Length of ProSe identifier contents	'04'H		
ProSe identifier 1	'00 00 00 02'H		
Parameters list			
Parameter 1			
Parameter identifier	'01'H	PQI	
Length of parameter contents	1		
Parameter contents	23	Platooning between UEs, See Table 5.4.4-1 in TS 23.287[xx]	
Parameter 2			
Parameter identifier	'02'H	GFBR	
Length of parameter contents	3		
Parameter contents	'0000 0111 0000 0000 0000 1010'B	10 * 4Mbps = 40Mbps.	
Parameter 3			
Parameter identifier	'03'H	MFBR	
Length of parameter contents	3		
Parameter contents	'0000 0111 0000 0000 0001 0100'B	20 * 4Mbps = 80Mbps.	
Parameter 4			
Parameter identifier	'04'H	Averaging window	
Length of parameter contents	2		
Parameter contents	'0000 0111 1101 0000'B	2000ms	
Parameter 5			
Parameter identifier	'06'H	Default priority level	
Length of parameter contents	1		
Parameter contents	3		
QoS rules	Not Present		

Condition	Explanation
Tx	UE transmits and NR-SS-UE receives

Rx	UE receives and NR-SS-UE transmits

– PROSE DIRECT LINK MODIFICATION ACCEPT

Table 4.7C.3-7: PROSE DIRECT LINK MODIFICATION ACCEPT

Derivation Path: TS 24.554 [58] Table 10.3.7.1.1			
Information Element	Value/remark	Comment	Condition
PROSE DIRECT LINK MODIFICATION ACCEPT message identity	'0000 0101'B		
Sequence number	Not Checked	0~255, uniquely identify a PC5 signalling message being sent or received	Tx
	Incremented by TTCN by 1 for each outgoing new PC5 Signalling message.	0~255, uniquely identify a PC5 signalling message being sent or received	Rx
QoS flow descriptions			
PC5 QoS flow descriptions IEI	'79'H		
Length of PC5 QoS flow descriptions contents	Set to the actual length of 'PC5 QoS flow descriptions contents' in bytes		
PC5 QoS flow description 1			
PQFI	'00 0010'B		
Operation Code	'001'B	Create new PC5 QoS flow description	
Pll	1	Associated ProSe identifiers field is included	
Number of parameters	5		
E	1	parameters list is included	
Associated ProSe identifiers			
Length of ProSe identifier contents	'04'H		
ProSe identifier 1	'00 00 00 02'H		
Parameters list			
Parameter 1			
Parameter identifier	'01'H	PQI	
Length of parameter contents	1		
Parameter contents	23	Platooning between UEs, See Table 5.4.4-1 in TS 23.287[xx]	
Parameter 2			
Parameter identifier	'02'H	GFBR	
Length of parameter contents	3		
Parameter contents	'0000 0111 0000 0000 0000 1010'B	10 * 4Mbps = 40Mbps.	
Parameter 3			
Parameter identifier	'03'H	MFBR	
Length of parameter contents	3		
Parameter contents	'0000 0111 0000 0000 0001 0100'B	20 * 4Mbps = 80Mbps.	
Parameter 4			
Parameter identifier	'04'H	Averaging window	
Length of parameter contents	2		
Parameter contents	'0000 0111 1101 0000'B	2000ms	
Parameter 5			
Parameter identifier	'06'H	Default priority level	

Length of parameter contents	1		
Parameter contents	3		
QoS rules	Not Present		

Condition	Explanation
Tx	UE transmits and NR-SS-UE receives
Rx	UE receives and NR-SS-UE transmits

PROSE DIRECT LINK KEEPALIVE REQUEST

Table 4.7C.3-8: PROSE DIRECT LINK KEEPALIVE REQUEST

Derivation Path: TS 24.554 [58] Table 10.3.8.1.1			
Information Element	Value/remark	Comment	Condition
PROSE DIRECT LINK KEEPALIVE REQUEST message identity	'0000 1001'B		
Sequence number	Not Checked	0~255, uniquely identify a PC5 signalling message being sent or received	Tx
	Incremented by TTCN by 1 for each outgoing new PC5 Signalling message.	0~255, uniquely identify a PC5 signalling message being sent or received	Rx
Keep-alive counter	'00 00 00 00'H	Increase by 1 after each keep-alive procedure.	
Maximum inactivity period	Not Checked		Tx
			Rx
Maximum inactivity period IEI	'55'H		
Maximum inactivity period contents	'00 00 00 06'H		

Condition	Explanation
Tx	UE transmits and NR-SS-UE receives
Rx	UE receives and NR-SS-UE transmits

PROSE DIRECT LINK KEEPALIVE RESPONSE

Table 4.7C.3-9: PROSE DIRECT LINK KEEPALIVE RESPONSE

Derivation Path: TS 24.554 [58] Table 10.3.9.1.1			
Information Element	Value/remark	Comment	Condition
PROSE DIRECT LINK KEEPALIVE RESPONSE message identity	'0000 1010'B		
Sequence number	Not Checked	0~255, uniquely identify a PC5 signalling message being sent or received	Tx
	Incremented by TTCN by 1 for each outgoing new PC5 Signalling message.	0~255, uniquely identify a PC5 signalling message being sent or received	Rx
Keep-alive counter	'00 00 00 01'H		

Condition	Explanation
Tx	UE transmits and NR-SS-UE receives

Rx	UE receives and NR-SS-UE transmits

PROSE DIRECT LINK AUTHENTICATION REQUEST

Table 4.7C.3-10: PROSE DIRECT LINK AUTHENTICATION REQUEST

Derivation Path: TS 24.554 [58] Table 10.3.10.1.1			
Information Element	Value/remark	Comment	Condition
PROSE DIRECT LINK AUTHENTICATION REQUEST message identity	'0000 1011'B		
Sequence number	Not Checked	0~255, uniquely identify a PC5 signalling message being sent or received	Tx
	Incremented by TTCN by 1 for each outgoing new PC5 Signalling message.	0~255, uniquely identify a PC5 signalling message being sent or received	Rx
Key establishment information container	Not checked		Tx
			Rx
Length of key establishment information container contents	'00'H		
Key establishment information container contents	Not Present		

Condition	Explanation
Tx	UE transmits and NR-SS-UE receives
Rx	UE receives and NR-SS-UE transmits

PROSE DIRECT LINK AUTHENTICATION RESPONSE

Table 4.7C.3-11: PROSE DIRECT LINK AUTHENTICATION RESPONSE

Derivation Path: TS 24.554 [58] Table 10.3.11.1.1			
Information Element	Value/remark	Comment	Condition
PROSE DIRECT LINK AUTHENTICATION RESPONSE message identity	'0000 1100'B		
Sequence number	Not Checked	0~255, uniquely identify a PC5 signalling message being sent or received	Tx
	Incremented by TTCN by 1 for each outgoing new PC5 Signalling message.	0~255, uniquely identify a PC5 signalling message being sent or received	Rx
Key establishment information container	Not checked		Tx
			Rx
Length of key establishment information container contents	'00'H		
Key establishment information container contents	Not Present		

Condition	Explanation
Tx	UE transmits and NR-SS-UE receives
Rx	UE receives and NR-SS-UE transmits

– PROSE DIRECT LINK AUTHENTICATION REJECT

Table 4.7C.3-12: PROSE DIRECT LINK AUTHENTICATION REJECT

Derivation Path: TS 24.554 [58] Table 10.3.12.1.1			
Information Element	Value/remark	Comment	Condition
PROSE DIRECT LINK AUTHENTICATION REJECT message identity	'0000 1101'B		
Sequence number	Not Checked	0~255, uniquely identify a PC5 signalling message being sent or received	Tx
	Incremented by TTCN by 1 for each outgoing new PC5 Signalling message.	0~255, uniquely identify a PC5 signalling message being sent or received	Rx
PC5 signalling protocol cause value	'0110 1111'B	Protocol error, unspecified	

Condition	Explanation
Tx	UE transmits and NR-SS-UE receives
Rx	UE receives and NR-SS-UE transmits

– PROSE DIRECT LINK SECURITY MODE COMMAND

Table 4.7C.3-13: PROSE DIRECT LINK SECURITY MODE COMMAND

Derivation Path: TS 24.554 [58] Table 10.3.13.1.1			
Information Element	Value/remark	Comment	Condition
PROSE DIRECT LINK SECURITY MODE COMMAND message identity	'0000 1110'B		
Sequence number	Not Checked	0~255, uniquely identify a PC5 signalling message being sent or received	Tx
	Incremented by TTCN by 1 for each outgoing new PC5 Signalling message.	0~255, uniquely identify a PC5 signalling message being sent or received	Rx
Selected security algorithms	'0000 0000'B		
UE security capabilities			
Length of UE security capabilities contents	'02'H		
5G-EA algorithms	'1000 0000'B	5G-EA0 supported	
5G-IA algorithms	'1000 0000'B	5G-IA0 supported	
UE PC5 unicast signalling security policy			
UE PC5 unicast signalling security policy IEI	'59'H		
Signalling integrity protection policy	'000'B	Signalling integrity protection not needed	
Signalling ciphering policy	'000'B	Signalling ciphering not needed.	
Nonce_2	Not Checked		Tx
	Not Present		Rx
LSB of K _{NRP-sess} ID	Not Checked		Tx
	Not Present		Rx
Key establishment information container	Not Checked		Tx
	Not Present		Rx

MSBs of K _{NR} P ID	Not Checked		Tx
	Not Present		Rx
GPI	Not Checked		Tx
	Not Present		Rx
EAP message	Not Checked		Tx
	Not Present		Rx

Condition	Explanation
Tx	UE transmits and NR-SS-UE receives
Rx	UE receives and NR-SS-UE transmits

PROSE DIRECT LINK SECURITY MODE COMPLETE

Table 4.7C.3-14: PROSE DIRECT LINK SECURITY MODE COMPLETE

Derivation Path: TS 24.554 [58] Table 10.3.14.1.1			
Information Element	Value/remark	Comment	Condition
PROSE DIRECT LINK SECURITY MODE COMPLETE message identity	'0000 1111'B		
Sequence number	Not Checked	0~255, uniquely identify a PC5 signalling message being sent or received	Tx
	Incremented by TTCN by 1 for each outgoing new PC5 Signalling message.	0~255, uniquely identify a PC5 signalling message being sent or received	Rx
UE PC5 unicast user plane security policy	'0000 0000'B	Signalling integrity protection not needed, Signalling ciphering not needed.	
QoS flow descriptions			
Length of PC5 QoS flow descriptions contents	Set to the actual length of 'PC5 QoS flow descriptions contents' in bytes		
PC5 QoS flow description 1			
PQFI	'00 0001'B		
Operation Code	'001'B	Create new PC5 QoS flow description	
Number of parameters	'05'H		
E	'1'B	parameters list is included	
Associated ProSe identifiers			
Length of ProSe identifier contents	'12'H		
ProSe identifier 1	'00 00 00 00 00 00 00 00 00 00 00 01'H		
Parameters list			
Parameter 1			
Parameter identifier	'01'H	PQI	
Length of parameter contents	'01'H		
Parameter contents	'0001 0110'B		
Parameter 2			
Parameter identifier	'02'H	GFBR	
Length of parameter contents	'03'H		
Parameter contents	'0000 0110 0000 0000 0000 1010'B	10 * 1Mbps = 10Mbps.	

Parameter 3			
Parameter identifier	'03'H	MFBR	
Length of parameter contents	'03'H		
Parameter contents	'0000 0110 0000 0000 0001 0100'B	20 * 1Mbps = 20Mbps.	
Parameter 4			
Parameter identifier	'04'H	Averaging window	
Length of parameter contents	'02'H		
Parameter contents	'0000 0111 1101 0000'B	2000ms	
Parameter 5			
Parameter identifier	'06'H	Default priority level	
Length of parameter contents	'01'H		
Parameter contents	'0000 0100'B		
IP address configuration	Not Checked		Tx
IP address configuration	Not Present		Non-IP
IP address configuration			Rx
IP address configuration IEI	'57'H		
IP address configuration content	'0000 0001'B	IPv6 Router	
Target link local IPv6 address	Not Checked		Tx
	Not present		Rx
LSBs of KNRP ID	Not Checked		Tx
	Not present		Rx
QoS rules	Not Checked		Tx
	Not present		Rx

Condition	Explanation
Tx	UE transmits and NR-SS-UE receives
Rx	UE receives and NR-SS-UE transmits
Non-IP	Non-IP traffic type

– PROSE DIRECT LINK SECURITY MODE REJECT

Table 4.7C.3-15: PROSE DIRECT LINK SECURITY MODE REJECT

Derivation Path: TS 24.554 [58] Table 10.3.15.1.1			
Information Element	Value/remark	Comment	Condition
PROSE DIRECT LINK SECURITY MODE REJECT message identity	'0001 0000'B		
Sequence number	Not Checked	0~255, uniquely identify a PC5 signalling message being sent or received	Tx
	Incremented by TTCN by 1 for each outgoing new PC5 Signalling message.	0~255, uniquely identify a PC5 signalling message being sent or received	Rx
PC5 signalling protocol cause	'0110 1111'B	Protocol error, unspecified	
RAND	Not Checked		Tx
	Not Present		Rx
AUTS	Not Checked		Tx
	Not Present		Rx

Condition	Explanation
Tx	UE transmits and NR-SS-UE receives
Rx	UE receives and NR-SS-UE transmits

PROSE DIRECT LINK REKEYING REQUEST

Table 4.7C.3-16: PROSE DIRECT LINK REKEYING REQUEST

Derivation Path: TS 24.554 [58] Table 10.3.16.1.1			
Information Element	Value/remark	Comment	Condition
PROSE DIRECT LINK REKEYING REQUEST message identity	'0001 0001'B		
Sequence number	Not Checked	0~255, uniquely identify a PC5 signalling message being sent or received	Tx
	Incremented by TTCN by 1 for each outgoing new PC5 Signalling message.	0~255, uniquely identify a PC5 signalling message being sent or received	Rx
UE security capabilities			
Length of UE security capabilities contents	'02'H		
5G-EA algorithms	'1000 0000'B	5G-EA0 supported	
5G-IA algorithms	'1000 0000'B	5G-IA0 supported	
Key establishment information container	Not Checked		
Nonce_1	Not Checked		
MSBs of $K_{NR-P, sess}$ ID	Not Checked		
Re-authentication indication			
Re-authentication indication IE1	'56'H		
Re-authentication indication contents	'0000 0000'B	K_{NR-P} is not requested to be refreshed	
User security key ID	Not Checked		
HPLMN ID	Not Checked		

Condition	Explanation
Tx	UE transmits and NR-SS-UE receives
Rx	UE receives and NR-SS-UE transmits

PROSE DIRECT LINK REKEYING RESPONSE

Table 4.7C.3-17: PROSE DIRECT LINK REKEYING RESPONSE

Derivation Path: TS 24.554 [58] Table 10.3.17.1.1			
Information Element	Value/remark	Comment	Condition
PROSE DIRECT LINK REKEYING RESPONSE message identity	'0001 0010'B		
Sequence number	Not Checked	0~255, uniquely identify a PC5 signalling message being sent or received	Tx
	Incremented by TTCN by 1 for each outgoing new PC5 Signalling message.	0~255, uniquely identify a PC5 signalling message being sent or received	Rx

Condition	Explanation
Tx	UE transmits and NR-SS-UE receives
Rx	UE receives and NR-SS-UE transmits

– PROSE DIRECT LINK IDENTIFIER UPDATE REQUEST

Table 4.7C.3-18: PROSE DIRECT LINK IDENTIFIER UPDATE REQUEST

Derivation Path: TS 24.554 [58] Table 10.3.18.1.1			
Information Element	Value/remark	Comment	Condition
PROSE DIRECT LINK IDENTIFIER UPDATE REQUEST message identity	'0001 0011'B		
Sequence number	Not Checked	0~255, uniquely identify a PC5 signalling message being sent or received	Tx
	Incremented by TTCN by 1 for each outgoing new PC5 Signalling message.	0~255, uniquely identify a PC5 signalling message being sent or received	Rx
MSB of K _{NRP-session} ID	Not checked		Tx
	'00'H		Rx
Source layer-2 ID	Not checked		Tx
	'00 00 10'H	New Layer-2 ID in initiating UE side	Rx
Source user info	Not checked		Tx
			Rx
Application layer ID IEI	'27'H		
Length of Application layer ID contents	'04'H		
Application Layer ID 1	'00 00 03 00'H	New application Layer ID in initiating UE side	
Source link local IPv6 address	Not present		

Condition	Explanation
Tx	UE transmits and NR-SS-UE receives
Rx	UE receives and NR-SS-UE transmits

– PROSE DIRECT LINK IDENTIFIER UPDATE ACCEPT

Table 4.7C.3-19: PROSE DIRECT LINK IDENTIFIER UPDATE ACCEPT

Derivation Path: TS 24.554 [58] Table 10.3.19.1.1			
Information Element	Value/remark	Comment	Condition
PROSE DIRECT LINK IDENTIFIER UPDATE ACCEPT message identity	'0001 0100'B		
Sequence number	Not Checked	0~255, uniquely identify a PC5 signalling message being sent or received	Tx
	Incremented by TTCN by 1 for each outgoing new PC5 Signalling message.	0~255, uniquely identify a PC5 signalling message being sent or received	Rx
LSB of K _{NRP-session} ID	Not checked		Tx
	'00'H		Rx
MSB of K _{NRP-session} ID	Not checked		Tx
	'00'H		Rx
Source layer-2 ID	Not checked		Tx
	'00 00 20'H		Rx
Target layer-2 ID	'00 00 10'H		Tx
	Same as the source layer-2 ID in PROSE		Rx

	DIRECT LINK IDENTIFIER UPDATE REQUEST message with Tx condition		
Target user info	Not Present		Rx AND (NOT Update_user_info)
Target user info			
Application layer ID IEI	'28'H		
Length of Application layer ID contents	'04'H		
Application Layer ID 1	'00 00 03 00'H	New application Layer ID in initiating UE side	Tx
	Same as the source user info in PROSE DIRECT LINK IDENTIFIER UPDATE REQUEST message with Tx condition	New application Layer ID in initiating UE side	Rx AND Update_user_info
Target link local IPv6 address	Not Present		
Source user info	Not checked		Tx
			Rx
Application layer ID IEI	'27'H		
Length of Application layer ID contents	'04'H		
Application Layer ID 1	'00 00 04 00'H	New application Layer ID in target UE side	
Source link local IPv6 address	Not Present		

Condition	Explanation
Tx	UE transmits and NR-SS-UE receives
Rx	UE receives and NR-SS-UE transmits
Update_user_info	NR-SS-UE receives the source user info in the PROSE DIRECT LINK IDENTIFIER UPDATE REQUEST.

PROSE DIRECT LINK IDENTIFIER UPDATE ACK

Table 4.7C.3-20: PROSE DIRECT LINK IDENTIFIER UPDATE ACK

Derivation Path: TS 24.554 [58] Table 10.3.20.1.1			
Information Element	Value/remark	Comment	Condition
PROSE DIRECT LINK IDENTIFIER UPDATE ACK message identity	'0001 0101'B		
Sequence number	Not Checked	0~255, uniquely identify a PC5 signalling message being sent or received	Tx
	Incremented by TTCN by 1 for each outgoing new PC5 Signalling message.	0~255, uniquely identify a PC5 signalling message being sent or received	Rx
LSB of K _{NRP-sess} ID	Not checked		Tx
	'00'H		Rx
Target layer-2 ID	'00 00 20'H		Tx
	Same as the source layer-2 ID in PROSE DIRECT LINK IDENTIFIER UPDATE ACCEPT message with Tx condition		Rx

Target user info	Not Present		Rx AND (NOT Update_user_info)
Target user info			
Application layer ID IEI	'28'H		
Length of Application layer ID contents	'04'H		
Application Layer ID 1	'00 00 04 00'H	New application Layer ID in target UE side	Tx
	Same as the source user info in PROSE DIRECT LINK IDENTIFIER UPDATE ACCEPT message with Tx condition	New application Layer ID in target UE side	Rx AND Update_user_info
Target link local IPv6 address	Not Present		

Condition	Explanation
Tx	UE transmits and NR-SS-UE receives
Rx	UE receives and NR-SS-UE transmits
Update_user_info	NR-SS-UE receives the source user info in the PROSE DIRECT LINK IDENTIFIER UPDATE REQUEST.

– PROSE DIRECT LINK IDENTIFIER UPDATE REJECT

Table 4.7C.3-21: PROSE DIRECT LINK IDENTIFIER UPDATE REJECT

Derivation Path: TS 24.554 [58] Table 10.3.21.1.1			
Information Element	Value/remark	Comment	Condition
PROSE DIRECT LINK IDENTIFIER UPDATE REJECT message identity	'0001 0110'B		
Sequence number	Not Checked	0~255, uniquely identify a PC5 signalling message being sent or received	Tx
	Incremented by TTCN by 1 for each outgoing new PC5 Signalling message.	0~255, uniquely identify a PC5 signalling message being sent or received	Rx
PC5 signalling protocol cause	'0110 1111'B	Protocol error, unspecified	

Condition	Explanation
Tx	UE transmits and NR-SS-UE receives
Rx	UE receives and NR-SS-UE transmits

– PROSE DIRECT LINK MODIFICATION REJECT

Table 4.7C.3-22: PROSE DIRECT LINK MODIFICATION REJECT

Derivation Path: TS 24.554 [58] Table 10.3.22.1.1			
Information Element	Value/remark	Comment	Condition
PROSE DIRECT LINK MODIFICATION REJECT message identity	'0000 0110'B		
Sequence number	Not Checked	0~255, uniquely identify a PC5 signalling message being sent or received	Tx

	Incremented by TTCN by 1 for each outgoing new PC5 Signalling message.	0~255, uniquely identify a PC5 signalling message being sent or received	Rx
PC5 signalling protocol cause	'0110 1111'B	Protocol error, unspecified	

Condition	Explanation
Tx	UE transmits and NR-SS-UE receives
Rx	UE receives and NR-SS-UE transmits

– PROSE DIRECT LINK AUTHENTICATION FAILURE

Table 4.7C.3-23: PROSE DIRECT LINK AUTHENTICATION FAILURE

Derivation Path: TS 24.554 [58] Table 10.3.23.1.1			
Information Element	Value/remark	Comment	Condition
PROSE DIRECT LINK AUTHENTICATION FAILURE message identity	'0001 0111'B		
Sequence number	Not Checked	0~255, uniquely identify a PC5 signalling message being sent or received	Tx
	Incremented by TTCN by 1 for each outgoing new PC5 Signalling message.	0~255, uniquely identify a PC5 signalling message being sent or received	Rx
Key establishment information container	Not Checked		Tx
	Not Present		Rx

Condition	Explanation
Tx	UE transmits and NR-SS-UE receives
Rx	UE receives and NR-SS-UE transmits

4.7C.4 Contents of 5G ProSe discovery and security messages over PC3a

– DISCOVERY_REQUEST

This message is sent by the UE to the SS.

Table 4.7C.4-1: DISCOVERY_REQUEST

Derivation path: 24.554 [58], clause 10.5.4.2			
Information Element	Value/remark	Comment	Condition
discovery-request [1] {			
transaction-ID	Present but contents not checked		
command	1		Announce
	2		Monitor
	3	Query	Discoverer
	4	Response	Discoveree
ProSe-Application-ID	Present but contents not checked		Open
RPAUID	Present but contents not checked		Restricted
application-identity	Present but contents not checked		

discovery-type	2		Restricted
announcing-type	0		Restricted
discovery-model	1		Model_A AND Restricted
	2		Model_B AND Restricted
Discovery-Entry-ID	Present but contents not checked		Open
discovery-entry-id	Present but contents not checked		Restricted
}			
...			
discovery-request[N] {}	Not checked	A UE can include one or multiple transactions in one DISCOVERY_REQUEST message for one or more ProSe Application IDs/ RPAUIDs	

Condition	Explanation
Announce	Announce request procedure for open or restricted 5G ProSe direct discovery.
Monitor	Monitor request procedure for open or restricted 5G ProSe direct discovery.
Discoveree	Discoveree request procedure for restricted 5G ProSe direct discovery.
Discoverer	Discoverer request procedure for restricted 5G ProSe direct discovery.
Open	5G ProSe direct discovery is set to open.
Restricted	5G ProSe direct discovery is set to restricted.
Model_A	Direct discovery model A is used.
Model_B	Direct discovery model B is used.

- DISCOVERY_RESPONSE

This message is sent by the SS to the UE.

Table 4.7C.4-2: DISCOVERY_RESPONSE

Derivation path: 24.554 [58], clause 10.5.4.3			
Information Element	Value/remark	Comment	Condition
Current-Time	Current UTC time		
Max-Offset	32	32 seconds	
response-announce [1] {}			Announce AND Open
transaction-ID	the transaction ID received in the DISCOVERY_REQUEST message		
ProSe-Application-Code [1] {}		184 bits See TS 23.003 [2], section 24.3.	
PLMN ID {}		24 bits The PLMN ID of the ProSe Function that assigned the ProSe Application Code, i.e. Mobile Country Code (MCC) and Mobile Network Code (MNC).	

Scope	'10'	country-specific scope	
Spare	'0'		
E	'1'	MCC and MNC included	
MCC	The MCC part of the The PLMN ID of the ProSe Function that assigned the ProSe Application Code (the relevant PLMN will be set in the TC)		
MNC	The MNC part of the The PLMN ID of the ProSe Function that assigned the ProSe Application Code (the relevant PLMN will be set in the TC)		
}			
TemporaryID	1111111100000000 0000000000000000 0000000000000000 0000000000000000 0000000000000000 0000000000000000 0000000000000000 0000000000000000 0000000011111111	160 bits - see setting of bit 'E' above. A temporary identity that corresponds to the ProSe Application ID Name.	
}			
validity-timer-T5060	5	Indicating the time during which the Application Code is valid Integer in the 1-525600 range representing the timer value in unit of minutes	
discovery-key	1000100000001000 0100010000001000 0010001000001000 0001000100001000 0000100010001000 0000010001001000 0000001000101000 0000000100011000	128-bit As defined in TS 33.303 [60] and TS 33.220 [61]	
discovery-entry-ID	the discovery-entry-ID received in the DISCOVERY_REQUEST message		
}			
restricted-announce-response [1] {			Announce AND Restricted
transaction-ID	the transaction ID received in the DISCOVERY_REQUEST message		
ProSe-Restricted-Code [1] {			
PLMN ID	Set to the PLMN value used in the test case	The PLMN ID of the ProSe Function that assigned the ProSe Restricted Code.	
TemporaryID	1111111100000000 0000000000000000 0000000000000000	A temporary identity that	

	0000000000000000 0000000000000000 0000000000000000 0000000000000000 0000000000000000 0000000000000000 0000000011111111	corresponds to the RPAUID.	
}			
validity-timer-T5062	3	Indicating the time during which the Application Code is valid Integer in the 1-525600 range representing the timer value in unit of minutes	
discovery-entry-id	the discovery-entry-id received in the DISCOVERY_REQUEST message		
}			
response-monitor [1] {			Monitor AND Open
transaction-ID	the transaction ID received in the DISCOVERY_REQUEST message		
discovery-filter [1] {			
ProSe Application code {		184 bits See TS 23.003 [2], section 24.3.	
PLMN ID {		24 bits The PLMN ID of the ProSe Function that assigned the ProSe Application Code, i.e. Mobile Country Code (MCC) and Mobile Network Code (MNC).	
Scope	'10'	country-specific scope	
Spare	'0'		
E	'1'	MCC and MNC included	
MCC	The MCC part of the PLMN ID of the ProSe Function that assigned the ProSe Application Code (the relevant PLMN will be set in the TC)		
MNC	The MNC part of the PLMN ID of the ProSe Function that assigned the ProSe Application Code (the relevant PLMN will be set in the TC)		
}			
TemporaryID	1111111100000000 0000000000000000 0000000000000000 0000000000000000 0000000000000000 0000000000000000 0000000000000000	160 bits - see setting of bit 'E' above. A temporary identity that corresponds to the ProSe	

	0000000000000000 0000000000000000 0000000011111111	Application ID Name.	
}			
ProSe application mask [1]	0000111111111100 00000000 1111111111111111 0000000000000000 0000000000000000 0000000000000000 0000000000000000 0000000000000000 0000000000000000 0000000000000000 0000000000000000 0000000000000000	184 bits - The length of the ProSe Application mask is the same as the length of ProSe Application code Full matching for the MCC part is required, as well as for the first 16 bits of the Temporary ID in order a received ProSe Application code to result in a match	
ProSe application mask [2]	0000111111111100 00000000 0000000000000000 0000000000000000 0000000000000000 0000000000000000 0000000000000000 0000000000000000 0000000000000000 0000000000000000 0000000000000000 1111111111111111	184 bits - The length of the ProSe Application mask is as same as the length of ProSe Application code Full matching for the MCC part is required, as well as for the last 16 bits of the Temporary ID	
TTLTimer T5064	3	Indicating the time during which the filter is valid Integer in the 1- 525600 range representing the timer value in unit of minutes	
}			
}			
restricted-discoveree-response [1] {			Monitor AND Restricted
transaction-ID	the transaction ID received in the DISCOVERY_REQUEST message		
restricted-discovery-filter [1] {			
filter	Set according to specific message content		
TTL Timer T5066	3	Indicating the time during which the filter is valid Integer in the 1- 525600 range representing the timer value in unit of minutes	
RPAUID	Set according to specific message content		
metadata indicator	0		
metadata	Not present		

}			
discovery-entry-id	the discovery-entry-id received in the DISCOVERY_REQUEST message		
}			
restricted-discoveree-response [1] {			Discoveree
transaction-ID	the transaction ID received in the DISCOVERY_REQUEST message		
ProSe-Response-Code {			
PLMN ID	Set to the PLMN value used in the test case		
TemporaryID	1111111100000000 0000000000000000 0000000000000000 0000000000000000 0000000000000000 0000000000000000 0000000000000000 0000000000000000 0000000000000000 0000000011111111		
}			
validity-timer-T5068	3	Indicating the time during which the filter is valid Integer in the 1-525600 range representing the timer value in unit of minutes	
discovery-entry-id	the discovery-entry-id received in the DISCOVERY_REQUEST message		
}			
restricted-discoverer-response [1] {			Discoverer
transaction-ID	the transaction ID received in the DISCOVERY_REQUEST message		
subquery-result [1] {			
ProSe query code {			
PLMN ID	Set to the PLMN value used in the test case		
TemporaryID	1111111100000000 0000000000000000 0000000000000000 0000000000000000 0000000000000000 0000000000000000 0000000000000000 0000000000000000 0000000000000000 0000000011111111		
}			
discovery response filter	Set according to specific message content		
validity timer T5070	3	Indicating the time during which the filter is valid Integer in the 1-525600 range representing the	

		timer value in unit of minutes	
code-sending security parameter	Set according to specific message content		
code-receiving security parameter	Set according to specific message content		
RPAUID	Set according to specific message content		
metadata	Not present		
}			
discovery-entry-id	the discovery-entry-id received in the DISCOVERY_REQUEST message		
}			
response-reject	Not Present		

Condition	Explanation
Announce	Announce request procedure for open or restricted 5G ProSe direct discovery.
Monitor	Monitor request procedure for open or restricted 5G ProSe direct discovery.
Discoveree	Discoveree request procedure for restricted 5G ProSe direct discovery.
Discoverer	Discoverer request procedure for restricted 5G ProSe direct discovery.
Open	5G ProSe direct direct discovery is set to open.
Restricted	5G ProSe direct direct discovery is set to restricted.

- MATCH_REPORT

This message is sent by the UE to the SS.

Table 4.7C.4-3: MATCH_REPORT

Derivation path: 24.554 [58], clause 10.5.4.4			
Information Element	Value/remark	Comment	Condition
transaction-ID	a new transaction ID		
ProSe-PC5-discovery-message	PROSE PC5 DISCOVERY message for open 5G ProSe direct discovery announcement as defined in Table 4.7C.2-1		
Monitored-PLMN-id	The expected value will be set in the relevant TC.		
VPLMN-id	Not included		
UTC-based Counter	Generated by UE	This parameter is used to indicate the UTC time associated with the discovery transmission opportunity in which a PROSE PC5 DISCOVERY message is sent. It is expressed in unit of seconds and coded in binary format as the 32 least significant bits of the Coordinated	

		Universal Time as defined in 3GPP TS 38.331 [13].	
metadata-flag	Present but contents not checked		

- **MATCH_REPORT_ACK**

This message is sent by the SS to the UE.

Table 4.7C.4-4: MATCH_REPORT_ACK

Derivation path: 24.554 [58], clause 10.5.4.5			
Information Element	Value/remark	Comment	Condition
Current-Time	Current UTC time		
match-ack {			
transaction-ID	the transaction ID received in the MATCH_REPORT message		
ProSe-Application-ID	"mcc<MCC>.mnc*.ProSe App.Shops.Food.Wine	a ProSe Application ID which is corresponding to the ProSe application code contained in the MATCH_REPOR T message; <MCC> will be set in the TC	
validity-timer-T5072	4	4 min	
metadata	Not Present		
match-report-refresh-timer-T5074	1	1 min	
}			

- **DISCOVERY_UPDATE_REQUEST**

This message is sent by the SS to the UE.

Table 4.7C.4-5: DISCOVERY_UPDATE_REQUEST

Derivation path: 24.554 [58], clause 10.5.4.6			
Information Element	Value/remark	Comment	Condition
discovery-update-request {			
DDNMF-transaction-ID	A new DDNMF transaction ID	a new DDNMF transaction ID not used in any other direct discovery procedures in PC3a interface. The DDNMF transaction ID is an integer in the 0-255 range	
discovery-entry-id	Set according to specific message content		
update-info	Set according to specific message content		
}			

- *DISCOVERY_UPDATE_RESPONSE*

This message is sent by the UE to the SS.

Table 4.7C.4-6: DISCOVERY_UPDATE_RESPONSE

Derivation path: 24.554 [58], clause 10.5.4.7			
Information Element	Value/remark	Comment	Condition
discovery-update-response {			
DDNMF-transaction-ID	the DDNMF transaction ID received in the DISCOVERY_UPDATE_REQUEST message		
discovery-entry-id	the discovery-entry-id received in the DISCOVERY_UPDATE_REQUEST message		
}			
response-reject	Not Present		

- *ANNOUNCING_ALERT_REQUEST*

This message is sent by the SS to the UE.

Table 4.7C.4-7: ANNOUNCING_ALERT_REQUEST

Derivation path: 24.554 [58], clause 10.5.4.8			
Information Element	Value/remark	Comment	Condition
announcing-alert-request {			
DDNMF-transaction-ID	A new DDNMF transaction ID	a new DDNMF transaction ID not used in any other direct discovery procedures in PC3a interface. The DDNMF transaction ID is an integer in the 0-255 range	
RPAUID	Set according to specific message content		
Discovery-Entry-ID	Set according to specific message content		
ProSe-Restricted-Code			
PLMN ID	the relevant PLMN will be set in the TC		
TemporaryID	1111111100000000 0000000000000000 0000000000000000 0000000000000000 0000000000000000 0000000000000000 0000000000000000 0000000000000000 0000000000000000 0000000011111111		
}			

- ANNOUNCING_ALERT_RESPONSE

This message is sent by the UE to the SS.

Table 4.7C.4-8: ANNOUNCING_ALERT_RESPONSE

Derivation path: 24.554 [58], clause 10.5.4.9			
Information Element	Value/remark	Comment	Condition
announcing-alert-response {			
DDNMF-transaction-ID	the DDNMF transaction ID received in the ANNOUNCING_ALERT_REQUEST message		
}			
response-reject	Not Present		

4.7D Default V2X message and information elements contents

4.7D.1 Contents of V2X messages

Table 4.7D.1-1 to -6: Void

- DIRECT LINK ESTABLISHMENT REQUEST

Table 4.7D.1-7: DIRECT LINK ESTABLISHMENT REQUEST

Derivation Path: TS 24.587 [54] Table 7.3.1.1.1			
Information Element	Value/remark	Comment	Condition
DIRECT LINK ESTABLISHMENT REQUEST message identity	'0000 0001'B		
Sequence number	Not Checked	0~255, uniquely identify a PC5 signalling message being sent or received	Tx
	Incremented by TTCN by 1 for each outgoing new PC5 Signalling message.	0~255, uniquely identify a PC5 signalling message being sent or received	Rx
V2X service identifiers			
Length of V2X service identifier contents	'04'H		
V2X service identifier 1	'00 00 00 01'H		
Source user info			
Length of Application layer ID contents	'04'H		
Application Layer ID 1	'00 00 01 00'H	Application Layer ID in initiating UE side	
UE security capabilities			
Length of UE security capabilities contents	'02'H		
5G-EA algorithms	'1000 0000'B	5G-EA0 supported	
5G-IA algorithms	'1000 0000'B	5G-IA0 supported	
UE PC5 unicast signalling security policy	'0000 0000'B	Signalling integrity protection not needed, Signalling ciphering not needed.	
Key establishment information container	Not Present		
Nonce_1	Not Present		
MSBs of K _{NRP-_{sess}} ID	Not Present		

Target user info	Not Checked		Tx
Target user info			Rx
Application layer ID IEI	'28'H		
Length of Application layer ID contents	'04'H		
Application layer ID contents	'00 00 11 00'H		
K _{NR} P ID	Not Present		

Condition	Explanation
Tx	UE transmits and NR-SS-UE receives
Rx	UE receives and NR-SS-UE transmits

DIRECT LINK ESTABLISHMENT ACCEPT

Table 4.7D.1-8: DIRECT LINK ESTABLISHMENT ACCEPT

Derivation Path: TS 24.587 [54] Table 7.3.1.1.1			
Information Element	Value/remark	Comment	Condition
DIRECT LINK ESTABLISHMENT ACCEPT message identity	'0000 0010'B		
Sequence number	Not Checked	0~255, uniquely identify a PC5 signalling message being sent or received	Tx
	Incremented by TTCN by 1 for each outgoing new PC5 Signalling message.	0~255, uniquely identify a PC5 signalling message being sent or received	Rx
Source user info			
Length of Application layer ID contents	'04'H		
Application Layer ID 1	'00 00 02 00'H	Application Layer ID in target UE side	
QoS flow descriptions			
Length of PC5 QoS flow descriptions contents	Set to the actual length of 'PC5 QoS flow descriptions contents' in bytes		
PC5 QoS flow description 1			
PQFI	'00 0001'B		
Operation Code	'001'B	Create new PC5 QoS flow description	
Number of parameters	5		
E	1	parameters list is included	
Associated V2X service identifiers			
Length of V2X service identifier contents	'04'H		
V2X service identifier 1	'00 00 00 01'H		
Parameters list			
Parameter 1			
Parameter identifier	'01'H	PQI	
Length of parameter contents	1		
Parameter contents	22	Sensor sharing, See Table 5.4.4-1 in TS 23.287[xx]	
Parameter 2			
Parameter identifier	'02'H	GFBR	
Length of parameter contents	3		
Parameter contents	'0000 0110 0000 0000 0000 1010'B	10 * 1Mbps = 10Mbps.	
Parameter 3			
Parameter identifier	'03'H	MFBR	

Length of parameter contents	3		
Parameter contents	'0000 0110 0000 0000 0001 0100'B	20 * 1Mbps = 20Mbps.	
Parameter 4			
Parameter identifier	'04'H	Averaging window	
Length of parameter contents	2		
Parameter contents	'0000 0111 1101 0000'B	2000ms	
Parameter 5			
Parameter identifier	'06'H	Default priority level	
Length of parameter contents	1		
Parameter contents	4		
Configuration of UE PC5 unicast user plane security protection	'0000 0000'B	User plane integrity protection and ciphering is off	
IP address configuration	Not Checked		Tx
IP address configuration	Not Present		Non-IP
IP address configuration			Rx
IP address configuration IEI	'57'H		
IP address configuration content	'0000 0001'B	IPv6 Router	
Link local IPv6 address	Not Present		

Condition	Explanation
Tx	UE transmits and NR-SS-UE receives
Rx	UE receives and NR-SS-UE transmits
Non-IP	Non-IP based V2X communication

DIRECT LINK MODIFICATION REQUEST

Table 4.7D.1-9: DIRECT LINK MODIFICATION REQUEST

Derivation Path: TS 24.587 [54] Table 7.3.4.1.1			
Information Element	Value/remark	Comment	Condition
DIRECT LINK MODIFICATION REQUEST message identity	'0000 0100'B		
Sequence number	Not Checked	0~255, uniquely identify a PC5 signalling message being sent or received	Tx
	Incremented by TTCN by 1 for each outgoing new PC5 Signalling message.	0~255, uniquely identify a PC5 signalling message being sent or received	Rx
Link modification operation code	'0000 0011'B	Add new PC5 QoS flow(s) to the existing PC5 unicast link	
QoS flow descriptions			
Length of PC5 QoS flow descriptions contents	Set to the actual length of 'PC5 QoS flow descriptions contents' in bytes		
PC5 QoS flow description 1			
PQFI	'00 0010'B		
Operation Code	'001'B	Create new PC5 QoS flow description	
Number of parameters	5		
E	1	parameters list is included	

Associated V2X service identifiers			
Length of V2X service identifier contents	'04'H		
V2X service identifier 1	'00 00 00 02'H		
Parameters list			
Parameter 1			
Parameter identifier	'01'H	PQI	
Length of parameter contents	1		
Parameter contents	23	Platooning between UEs, See Table 5.4.4-1 in TS 23.287[xx]	
Parameter 2			
Parameter identifier	'02'H	GFBR	
Length of parameter contents	3		
Parameter contents	'0000 0111 0000 0000 0000 1010'B	10 * 4Mbps = 40Mbps.	
Parameter 3			
Parameter identifier	'03'H	MFBR	
Length of parameter contents	3		
Parameter contents	'0000 0111 0000 0000 0001 0100'B	20 * 4Mbps = 80Mbps.	
Parameter 4			
Parameter identifier	'04'H	Averaging window	
Length of parameter contents	2		
Parameter contents	'0000 0111 1101 0000'B	2000ms	
Parameter 5			
Parameter identifier	'06'H	Default priority level	
Length of parameter contents	1		
Parameter contents	3		

Condition	Explanation
Tx	UE transmits and NR-SS-UE receives
Rx	UE receives and NR-SS-UE transmits

– DIRECT LINK MODIFICATION ACCEPT

Table 4.7D.1-10: DIRECT LINK MODIFICATION ACCEPT

Derivation Path: TS 24.587 [54] Table 7.3.5.1.1			
Information Element	Value/remark	Comment	Condition
DIRECT LINK MODIFICATION ACCEPT message identity	'0000 0101'B		
Sequence number	Not Checked	0~255, uniquely identify a PC5 signalling message being sent or received	Tx
	Incremented by TTCN by 1 for each outgoing new PC5 Signalling message.	0~255, uniquely identify a PC5 signalling message being sent or received	Rx
QoS flow descriptions			
PC5 QoS flow descriptions IEI	'79'H		
Length of PC5 QoS flow descriptions contents	Set to the actual length of 'PC5 QoS flow descriptions contents' in bytes		
PC5 QoS flow description 1			
PQFI	'00 0010'B		
Operation Code	'001'B	Create new PC5 QoS flow description	

Number of parameters	5		
E	1	parameters list is included	
Associated V2X service identifiers			
Length of V2X service identifier contents	'04'H		
V2X service identifier 1	'00 00 00 02'H		
Parameters list			
Parameter 1			
Parameter identifier	'01'H	PQI	
Length of parameter contents	1		
Parameter contents	23	Platooning between UEs, See Table 5.4.4-1 in TS 23.287[xx]	
Parameter 2			
Parameter identifier	'02'H	GFBR	
Length of parameter contents	3		
Parameter contents	'0000 0111 0000 0000 0000 1010'B	10 * 4Mbps = 40Mbps.	
Parameter 3			
Parameter identifier	'03'H	MFBR	
Length of parameter contents	3		
Parameter contents	'0000 0111 0000 0000 0001 0100'B	20 * 4Mbps = 80Mbps.	
Parameter 4			
Parameter identifier	'04'H	Averaging window	
Length of parameter contents	2		
Parameter contents	'0000 0111 1101 0000'B	2000ms	
Parameter 5			
Parameter identifier	'06'H	Default priority level	
Length of parameter contents	1		
Parameter contents	3		

Condition	Explanation
Tx	UE transmits and NR-SS-UE receives
Rx	UE receives and NR-SS-UE transmits

DIRECT LINK RELEASE REQUEST

Table 4.7D.1-11: DIRECT LINK RELEASE REQUEST

Derivation Path: TS 24.587 [54] Table 7.3.6.1.1			
Information Element	Value/remark	Comment	Condition
DIRECT LINK RELEASE REQUEST message identity	'0000 0111'B		
Sequence number	Not Checked	0~255, uniquely identify a PC5 signalling message being sent or received	Tx
	Incremented by TTCN by 1 for each outgoing new PC5 Signalling message.	0~255, uniquely identify a PC5 signalling message being sent or received	Rx
PC5 signalling protocol cause	'0110 1111'B	Protocol error, unspecified	Rx
	Not Checked		Tx
MSB of KNRP ID	Not Checked		Tx
	'00 00'H		Rx

Condition	Explanation
Tx	UE transmits and NR-SS-UE receives
Rx	UE receives and NR-SS-UE transmits

– **DIRECT LINK RELEASE ACCEPT**

Table 4.7D.1-12: DIRECT LINK RELEASE ACCEPT

Derivation Path: TS 24.587 [54] Table 7.3.7.1.1			
Information Element	Value/remark	Comment	Condition
DIRECT LINK RELEASE ACCEPT message identity	'0000 1000'B		
Sequence number	Not Checked	0~255, uniquely identify a PC5 signalling message being sent or received	Tx
	Incremented by TTCN by 1 for each outgoing new PC5 Signalling message.	0~255, uniquely identify a PC5 signalling message being sent or received	Rx
LSB of KNRP ID	Not Checked		Tx
	'00 00'H		Rx

Condition	Explanation
Tx	UE transmits and NR-SS-UE receives
Rx	UE receives and NR-SS-UE transmits

– **DIRECT LINK KEEPALIVE REQUEST**

Table 4.7D.1-13: DIRECT LINK KEEPALIVE REQUEST

Derivation Path: TS 24.587 [54] Table 7.3.8.1.1			
Information Element	Value/remark	Comment	Condition
DIRECT LINK KEEPALIVE REQUEST message identity	'0000 1001'B		
Sequence number	Not Checked	0~255, uniquely identify a PC5 signalling message being sent or received	Tx
	Incremented by TTCN by 1 for each outgoing new PC5 Signalling message.	0~255, uniquely identify a PC5 signalling message being sent or received	Rx
Keep-alive counter	'00 00 00 00'H	Increase by 1 after each keep-alive procedure.	
Maximum inactivity period	Not Checked		Tx
Maximum inactivity period			Rx
Maximum inactivity period IEI	'55'H		
Maximum inactivity period contents	'00 00 00 06'H	6 seconds, higher value than T5003=5s	

Condition	Explanation
Tx	UE transmits and NR-SS-UE receives
Rx	UE receives and NR-SS-UE transmits

DIRECT LINK KEEPALIVE RESPONSE

Table 4.7D.1-14: DIRECT LINK KEEPALIVE RESPONSE

Derivation Path: TS 24.587 [54] Table 7.3.9.1.1			
Information Element	Value/remark	Comment	Condition
DIRECT LINK KEEPALIVE RESPONSE message identity	'0000 1010'B		
Sequence number	Not Checked	0~255, uniquely identify a PC5 signalling message being sent or received	Tx
	Incremented by TTCN by 1 for each outgoing new PC5 Signalling message.	0~255, uniquely identify a PC5 signalling message being sent or received	Rx
Keep-alive counter	'00 00 00 01'H		

Condition	Explanation
Tx	UE transmits and NR-SS-UE receives
Rx	UE receives and NR-SS-UE transmits

DIRECT LINK AUTHENTICATION REQUEST

Table 4.7D.1-15: DIRECT LINK AUTHENTICATION REQUEST

Derivation Path: TS 24.587 [54] Table 7.3.10.1.1			
Information Element	Value/remark	Comment	Condition
DIRECT LINK AUTHENTICATION REQUEST message identity	'0000 1011'B		
Sequence number	Not Checked	0~255, uniquely identify a PC5 signalling message being sent or received	Tx
	Incremented by TTCN by 1 for each outgoing new PC5 Signalling message.	0~255, uniquely identify a PC5 signalling message being sent or received	Rx
Key establishment information container			
Length of key establishment information container contents	Not checked		Tx
	'00'H		Rx
Key establishment information container contents	Not checked		Tx
	Not Present		Rx

Condition	Explanation
Tx	UE transmits and NR-SS-UE receives
Rx	UE receives and NR-SS-UE transmits

DIRECT LINK AUTHENTICATION RESPONSE

Table 4.7D.1-16: DIRECT LINK AUTHENTICATION RESPONSE

Derivation Path: TS 24.587 [54] Table 7.3.11.1.1			
Information Element	Value/remark	Comment	Condition
DIRECT LINK AUTHENTICATION RESPONSE message identity	'0000 1100'B		

Sequence number	Not Checked	0~255, uniquely identify a PC5 signalling message being sent or received	Tx
	Incremented by TTCN by 1 for each outgoing new PC5 Signalling message.	0~255, uniquely identify a PC5 signalling message being sent or received	Rx
Key establishment information container			
Length of key establishment information container contents	Not checked		Tx
	'00'H		Rx
Key establishment information container contents	Not checked		Tx
	Not Present		Rx

Condition	Explanation
Tx	UE transmits and NR-SS-UE receives
Rx	UE receives and NR-SS-UE transmits

– DIRECT LINK AUTHENTICATION REJECT

Table 4.7D.1-17: DIRECT LINK AUTHENTICATION REJECT

Derivation Path: TS 24.587 [54] Table 7.3.12.1.1			
Information Element	Value/remark	Comment	Condition
DIRECT LINK AUTHENTICATION REJECT message identity	'0000 1101'B		
Sequence number	Not Checked	0~255, uniquely identify a PC5 signalling message being sent or received	Tx
	Incremented by TTCN by 1 for each outgoing new PC5 Signalling message.	0~255, uniquely identify a PC5 signalling message being sent or received	Rx
PC5 signalling protocol cause value	'0110 1111'B	Protocol error, unspecified	

Condition	Explanation
Tx	UE transmits and NR-SS-UE receives
Rx	UE receives and NR-SS-UE transmits

– DIRECT LINK SECURITY MODE COMMAND

Table 4.7D.1-18: DIRECT LINK SECURITY MODE COMMAND

Derivation Path: TS 24.587 [54] Table 7.3.13.1.1			
Information Element	Value/remark	Comment	Condition
DIRECT LINK SECURITY MODE COMMAND message identity	'0000 1110'B		
Sequence number	Not Checked	0~255, uniquely identify a PC5 signalling message being sent or received	Tx

	Incremented by TTCN by 1 for each outgoing new PC5 Signalling message.	0~255, uniquely identify a PC5 signalling message being sent or received	Rx
Selected security algorithms	'0000 0000'B		
UE security capabilities			
Length of UE security capabilities contents	'02'H		
5G-EA algorithms	'1000 0000'B	5G-EA0 supported	
5G-IA algorithms	'1000 0000'B	5G-IA0 supported	
UE PC5 unicast signalling security policy			
UE PC5 unicast signalling security policy IEI	'59'H		
Signalling integrity protection policy	'000'B	Signalling integrity protection not needed	
Signalling ciphering policy	'000'B	Signalling ciphering not needed.	
Nonce_2	Not Checked		Tx
	Not Present		Rx
LSBs of K _{NR-P-sec} ID	Not Checked		Tx
	Not Present		Rx
Key establishment information container	Not Checked		Tx
	Not Present		Rx
MSBs of K _{NR-P} ID	Not Checked		Tx
	Not Present		Rx

Condition	Explanation
Tx	UE transmits and NR-SS-UE receives
Rx	UE receives and NR-SS-UE transmits

– **DIRECT LINK SECURITY MODE COMPLETE**

Table 4.7D.1-19: DIRECT LINK SECURITY MODE COMPLETE

Derivation Path: TS 24.587 [54] Table 7.3.14.1.1			
Information Element	Value/remark	Comment	Condition
DIRECT LINK SECURITY MODE COMPLETE message identity	'0000 1111'B		
Sequence number	Not Checked	0~255, uniquely identify a PC5 signalling message being sent or received	Tx
	Incremented by TTCN by 1 for each outgoing new PC5 Signalling message.	0~255, uniquely identify a PC5 signalling message being sent or received	Rx
QoS flow descriptions			
Length of PC5 QoS flow descriptions contents	Set to the actual length of 'PC5 QoS flow descriptions contents' in bytes		
PC5 QoS flow description 1			
PQFI	'00 0001'B		
Operation Code	'001'B	Create new PC5 QoS flow description	
Number of parameters	5		
E	1	parameters list is included	

Associated V2X service identifiers			
Length of V2X service identifier contents	'04'H		
V2X service identifier 1	'00 00 00 01'H		
Parameters list			
Parameter 1			
Parameter identifier	'01'H	PQI	
Length of parameter contents	1		
Parameter contents	22	Sensor sharing, See Table 5.4.4-1 in TS 23.287[xx]	
Parameter 2			
Parameter identifier	'02'H	GFBR	
Length of parameter contents	3		
Parameter contents	'0000 0110 0000 0000 0000 1010'B	10 * 1Mbps = 10Mbps.	
Parameter 3			
Parameter identifier	'03'H	MFBR	
Length of parameter contents	3		
Parameter contents	'0000 0110 0000 0000 0001 0100'B	20 * 1Mbps = 20Mbps.	
Parameter 4			
Parameter identifier	'04'H	Averaging window	
Length of parameter contents	2		
Parameter contents	'0000 0111 1101 0000'B	2000ms	
Parameter 5			
Parameter identifier	'06'H	Default priority level	
Length of parameter contents	1		
Parameter contents	4		
UE PC5 unicast user plane security policy	'0000 0000'B	Signalling integrity protection not needed, Signalling ciphering not needed.	
IP address configuration	Not Checked		Tx
IP address configuration	Not Present		Non-IP
IP address configuration			Rx
IP address configuration IEI	'57'H		
IP address configuration content	'0000 0001'B	IPv6 Router	
Link local IPv6 address	Not Present		Rx
	Not Checked		Tx
LSBs of KNRP ID	Not Checked		Tx
	Not present		Rx

Condition	Explanation
Tx	UE transmits and NR-SS-UE receives
Rx	UE receives and NR-SS-UE transmits
Non-IP	Non-IP based V2X communication

– **DIRECT LINK SECURITY MODE REJECT**

Table 4.7D.1-20: DIRECT LINK SECURITY MODE REJECT

Derivation Path: TS 24.587 [54] Table 7.3.15.1.1			
Information Element	Value/remark	Comment	Condition
DIRECT LINK SECURITY MODE REJECT message identity	'0001 0000'B		
Sequence number	Not Checked	0~255, uniquely identify a PC5 signalling message being sent or received	Tx

	Incremented by TTCN by 1 for each outgoing new PC5 Signalling message.	0~255, uniquely identify a PC5 signalling message being sent or received	Rx
PC5 signalling protocol cause	'0110 1111'B	Protocol error, unspecified	

Condition	Explanation
Tx	UE transmits and NR-SS-UE receives
Rx	UE receives and NR-SS-UE transmits

– DIRECT LINK REKEYING REQUEST

Table 4.7D.1-21: DIRECT LINK REKEYING REQUEST

Derivation Path: TS 24.587 [54] Table 7.3.16.1.1			
Information Element	Value/remark	Comment	Condition
DIRECT LINK REKEYING REQUEST message identity	'0001 0001'B		
Sequence number	Not Checked	0~255, uniquely identify a PC5 signalling message being sent or received	Tx
	Incremented by TTCN by 1 for each outgoing new PC5 Signalling message.	0~255, uniquely identify a PC5 signalling message being sent or received	Rx
UE security capabilities			
Length of UE security capabilities contents	'02'H		
5G-EA algorithms	'1000 0000'B	5G-EA0 supported	
5G-IA algorithms	'1000 0000'B	5G-IA0 supported	
Key establishment information container	Not Checked		
Nonce_1	Not Checked		
MSBs of K _{NR-P-sec} ID	Not Checked		
Re-authentication indication			
Re-authentication indication IEI	'56'H		
Re-authentication indication contents	'0000 0000'B	K _{NR-P} is not requested to be refreshed	

Condition	Explanation
Tx	UE transmits and NR-SS-UE receives
Rx	UE receives and NR-SS-UE transmits

– DIRECT LINK REKEYING RESPONSE

Table 4.7D.1-22: DIRECT LINK REKEYING RESPONSE

Derivation Path: TS 24.587 [54] Table 7.3.17.1.1			
Information Element	Value/remark	Comment	Condition
DIRECT LINK REKEYING RESPONSE message identity	'0001 0010'B		
Sequence number	Not Checked	0~255, uniquely identify a PC5 signalling message being sent or received	Tx

	Incremented by TTCN by 1 for each outgoing new PC5 Signalling message.	0~255, uniquely identify a PC5 signalling message being sent or received	Rx

Condition	Explanation
Tx	UE transmits and NR-SS-UE receives
Rx	UE receives and NR-SS-UE transmits

DIRECT LINK IDENTIFIER UPDATE REQUEST

Table 4.7D.1-23: DIRECT LINK IDENTIFIER UPDATE REQUEST

Derivation Path: TS 24.587 [54] Table 7.3.18.1.1			
Information Element	Value/remark	Comment	Condition
DIRECT LINK IDENTIFIER UPDATE REQUEST message identity	'0001 0011'B		
Sequence number	Not Checked	0~255, uniquely identify a PC5 signalling message being sent or received	Tx
	Incremented by TTCN by 1 for each outgoing new PC5 Signalling message.	0~255, uniquely identify a PC5 signalling message being sent or received	Rx
MSB of K _{NR-P-sec} ID	Not checked		Tx
	'00'H		Rx
Source layer-2 ID	Not checked		Tx
	'00 00 10'H	New Layer-2 ID in initiating UE side	Rx
Source user info	Not checked		Tx
Source layer-2 ID	Not checked		Tx
Application layer ID IEI	'57'H		
Length of Application layer ID contents	'04'H		
Application Layer ID 1	'00 00 03 00'H	New application Layer ID in initiating UE side	
Source link local IPv6 address	Not present		

Condition	Explanation
Tx	UE transmits and NR-SS-UE receives
Rx	UE receives and NR-SS-UE transmits

DIRECT LINK IDENTIFIER UPDATE ACCEPT

Table 4.7D.1-24: DIRECT LINK IDENTIFIER UPDATE ACCEPT

Derivation Path: TS 24.587 [54] Table 7.3.19.1.1			
Information Element	Value/remark	Comment	Condition
DIRECT LINK IDENTIFIER UPDATE ACCEPT message identity	'0001 0100'B		
Sequence number	Not Checked	0~255, uniquely identify a PC5 signalling message being sent or received	Tx

	Incremented by TTCN by 1 for each outgoing new PC5 Signalling message.	0~255, uniquely identify a PC5 signalling message being sent or received	Rx
LSB of K _{NRP-sess} ID	Not checked		Tx
	'00'H		Rx
MSB of K _{NRP-sess} ID	Not checked		Tx
	'00'H		Rx
Source layer-2 ID	Not checked		Tx
	'00 00 20'H		Rx
Target layer-2 ID	'00 00 10'H		Tx
	Same as the source layer-2 ID in DIRECT LINK IDENTIFIER UPDATE REQUEST message with Tx condition		Rx
Target user info			Tx
Application layer ID IEI	'28'H		
Length of Application layer ID contents	'04'H		
Application Layer ID 1	'00 00 03 00'H	New application Layer ID in initiating UE side	
Target user info	Not Present		Rx AND (NOT Update_user_info)
Target user info			Rx AND Update_user_info
Application layer ID IEI	'28'H		
Length of Application layer ID contents	'04'H		
Application Layer ID 1	Same as the source user info in DIRECT LINK IDENTIFIER UPDATE REQUEST message with Tx condition	New application Layer ID in initiating UE side	
Target link local IPv6 address	Not Present		
Source user info	Not checked		Tx
Source user info			Rx
Application layer ID IEI	'57'H		
Length of Application layer ID contents	'04'H		
Application Layer ID 1	'00 00 04 00'H	New application Layer ID in target UE side	
Source link local IPv6 address	Not Present		

Condition	Explanation
Tx	UE transmits and NR-SS-UE receives
Rx	UE receives and NR-SS-UE transmits
Update_user_info	NR-SS-UE receives the source user info in the DIRECT LINK IDENTIFIER UPDATE REQUEST.

– **DIRECT LINK IDENTIFIER UPDATE ACK**

Table 4.7D.1-25: DIRECT LINK IDENTIFIER UPDATE ACK

Derivation Path: TS 24.587 [54] Table 7.3.20.1.1			
Information Element	Value/remark	Comment	Condition
DIRECT LINK IDENTIFIER UPDATE ACK message identity	'0001 0101'B		
Sequence number	Not Checked	0~255, uniquely identify a PC5	Tx

		signalling message being sent or received	
	Incremented by TTCN by 1 for each outgoing new PC5 Signalling message.	0~255, uniquely identify a PC5 signalling message being sent or received	Rx
LSB of K _{NR} -sess ID	Not checked		Tx
Target layer-2 ID	'00'H		Rx
	'00 00 20'H		Tx
	Same as the source layer-2 ID in DIRECT LINK IDENTIFIER UPDATE ACCEPT message with Tx condition		Rx
Target user info			Tx
Application layer ID IEI	'28'H		
Length of Application layer ID contents	'04'H		
Application Layer ID 1	'00 00 04 00'H	New application Layer ID in target UE side	
Target user info	Not Present		Rx AND (NOT Update_user_info)
Target user info			Rx AND Update_user_info
Application layer ID IEI	'28'H		
Length of Application layer ID contents	'04'H		
Application Layer ID 1	Same as the source user info in DIRECT LINK IDENTIFIER UPDATE ACCEPT message with Tx condition	New application Layer ID in target UE side	
Target link local IPv6 address	Not Present		

Condition	Explanation
Tx	UE transmits and NR-SS-UE receives
Rx	UE receives and NR-SS-UE transmits
Update_user_info	NR-SS-UE receives the source user info in the DIRECT LINK IDENTIFIER UPDATE ACCEPT

– DIRECT LINK IDENTIFIER UPDATE REJECT

Table 4.7D.1-26: DIRECT LINK IDENTIFIER UPDATE REJECT

Derivation Path: TS 24.587 [54] Table 7.3.21.1.1			
Information Element	Value/remark	Comment	Condition
DIRECT LINK IDENTIFIER UPDATE REJECT message identity	'0001 0110'B		
Sequence number	Not Checked	0~255, uniquely identify a PC5 signalling message being sent or received	Tx
	Incremented by TTCN by 1 for each outgoing new PC5 Signalling message.	0~255, uniquely identify a PC5 signalling message being sent or received	Rx

PC5 signalling protocol cause	'0110 1111'B	Protocol error, unspecified	

Condition	Explanation
Tx	UE transmits and NR-SS-UE receives
Rx	UE receives and NR-SS-UE transmits

– DIRECT LINK MODIFICATION REJECT

Table 4.7D.1-27: DIRECT LINK MODIFICATION REJECT

Derivation Path: TS 24.587 [54] Table 7.3.22.1.1			
Information Element	Value/remark	Comment	Condition
DIRECT LINK MODIFICATION REJECT message identity	'0000 0110'B		
Sequence number	Not Checked	0~255, uniquely identify a PC5 signalling message being sent or received	Tx
	Incremented by TTCN by 1 for each outgoing new PC5 Signalling message.	0~255, uniquely identify a PC5 signalling message being sent or received	Rx
PC5 signalling protocol cause	'0110 1111'B	Protocol error, unspecified	

Condition	Explanation
Tx	UE transmits and NR-SS-UE receives
Rx	UE receives and NR-SS-UE transmits

– DIRECT LINK ESTABLISHMENT REJECT

Table 4.7D.1-28: DIRECT LINK ESTABLISHMENT REJECT

Derivation Path: TS 24.587 [54] Table 7.3.23.1.1			
Information Element	Value/remark	Comment	Condition
DIRECT LINK ESTABLISHMENT REJECT message identity	'0000 0011'B		
Sequence number	Not Checked	0~255, uniquely identify a PC5 signalling message being sent or received	Tx
	Incremented by TTCN by 1 for each outgoing new PC5 Signalling message.	0~255, uniquely identify a PC5 signalling message being sent or received	Rx
PC5 signalling protocol cause	'0110 1111'B	Protocol error, unspecified	

Condition	Explanation
Tx	UE transmits and NR-SS-UE receives
Rx	UE receives and NR-SS-UE transmits

4.7D.2 V2X information elements

4.7D.2.1 V2X information elements for UE policy part

– *UE policy part when UE policy part type = {V2XP}*

Table 4.7D.2.1-1: UE policy part when UE policy part type = {V2XP}

Derivation Path: TS 24.588 Figure 5.2.1.1			
Information Element	Value/remark	Comment	Condition
UE policy part contents length	Set to the actual length of 'UE policy part contents' in bytes		
UE policy part type	'0001'B	UE policy part type={ V2XP }	
Spare	'0000'B		
UE policy part contents={V2XP contents}	See Table 4.7D.2.1-2		

– *V2XP contents*

Table 4.7D.2.1-2: V2XP contents

Derivation Path: TS 24.588 Figure 5.2.1.2			
Information Element	Value/remark	Comment	Condition
V2XP info #1	See Table 4.7D.2.1-3		
V2XP info #2	FFS		

– *V2XP info*

Table 4.7D.2.1-3: V2XP info

Derivation Path: TS 24.588 Figure 5.3.1.1			
Information Element	Value/remark	Comment	Condition
V2XP info type	'0001'B	UE policies for V2X communication over PC5	
Spare	'0000'B		
Length of V2XP info contents	Set to the actual length of 'V2XP info contents' in bytes		
V2XP info contents	See Table 4.7D.2.2-1		

4.7D.2.2 V2X information elements of UE policies for V2X communication over PC5

– *V2XP info = {UE policies for V2X communication over PC5}*

Table 4.7D.2.2-1: V2XP info = {UE policies for V2X communication over PC5}

Derivation Path: TS 24.588 Figure 5.3.1.1			
Information Element	Value/remark	Comment	Condition
V2XP info type	'0001'B	UE policies for V2X communication over PC5	

Length of V2XP info contents	Set to the actual length of 'V2XP info contents' in bytes		
Validity timer	'FF FF FF FF FF FF FF FF FF FF'H	5 bytes, Expiration UTC time of validity of the UE policies, in seconds since midnight UTC of January 1, 1970 (not counting leap seconds)	
VSITPMRI	'1'B	'V2X service identifier to PC5 RAT and Tx profiles mapping rules' is present	
Served by E-UTRA or served by NR	See Table 4.7D.2.2-2		
Not served by E-UTRA and not served by NR	See Table 4.7D.2.2-6		
V2X service identifier to PC5 RAT and Tx profiles mapping rules	See Table 4.7D.2.2-12		
Privacy config	See Table 4.7D.2.2-15		
V2X communication over PC5 in E-UTRA-PC5	See Table 4.7D.2.2-19		
V2X communication over PC5 in NR-PC5	See Table 4.7D.2.2-31		

– *Served by E-UTRA or served by NR*

Table 4.7D.2.2-2: Served by E-UTRA or served by NR

Derivation Path: TS 24.588 Figure 5.3.1.2			
Information Element	Value/remark	Comment	Condition
Length of served by E-UTRA or served by NR contents	Set to the actual length of 'served by E-UTRA or served by NR contents' in bytes		
Authorized PLMN and RATs combinations	See Table 4.7D.2.2-3		

– *Authorized PLMN and RATs combinations*

Table 4.7D.2.2-3: Authorized PLMN and RATs combinations

Derivation Path: TS 24.588 Figure 5.3.1.3			
Information Element	Value/remark	Comment	Condition
Length of authorized PLMN and RATs combinations contents	Set to the actual length of 'authorized PLMN and RATs combinations contents' in bytes		
Authorized PLMN and RATs combination 1	See Table 4.7D.2.2-4		
Authorized PLMN and RATs combination 2	FFS		

– *Authorized PLMN and RATs combination*

Table 4.7D.2.2-4: Authorized PLMN and RATs combination

Derivation Path: TS 24.588 Figure 5.3.1.4			
Information Element	Value/remark	Comment	Condition
PLMN ID	Set according to parameter given in test case		

NPIEN	'1'B	UE is authorized to use V2X communication over NR-PC5 when served by E-UTRA or served by NR	
EPIEN	'1'B	UE is authorized to use V2X communication over E-UTRA-PC5 when served by E-UTRA or served by NR	

– *PLMN ID*

Table 4.7D.2.2-5: *PLMN ID*

Derivation Path: TS 24.588 Figure 5.3.1.5			
Information Element	Value/remark	Comment	Condition
MCC digit 1	Set according to parameter given in test case		
MCC digit 2	Set according to parameter given in test case		
MCC digit 3	Set according to parameter given in test case		
MNC digit 3	Set according to parameter given in test case		
MNC digit 1	Set according to parameter given in test case		
MNC digit 2	Set according to parameter given in test case		

– *Not served by E-UTRA and not served by NR*

Table 4.7D.2.2-6: *Not served by E-UTRA and not served by NR*

Derivation Path: TS 24.588 Figure 5.3.1.6			
Information Element	Value/remark	Comment	Condition
Length of not served by E-UTRA and not served by NR contents	Set to the actual length of 'not served by E-UTRA and not served by NR contents' in bytes		
VPNENNI	'1'B	UE is authorized to use V2X communication over PC5	
NPINENN	'1'B	UE is authorized to use V2X communication over NR-PC5 when not served by E-UTRA and not served by NR	
EPINENN	'1'B	UE is authorized to use V2X communication	

		over E-UTRA-PC5 when not served by E-UTRA and not served by NR	
E-UTRA radio parameters per geographical area list	See Table 4.7D.2.2-7		
NR radio parameters per geographical area list	See Table 4.7D.2.2-7		

– *Radio parameters per geographical area list*

Table 4.7D.2.2-7: Radio parameters per geographical area list

Derivation Path: TS 24.588 Figure 5.3.1.7			
Information Element	Value/remark	Comment	Condition
Length of radio parameters per geographical area list contents	Set to the actual length of 'radio parameters per geographical area list contents' in bytes		
Radio parameters per geographical area info 1	See Table 4.7D.2.2-8		
Radio parameters per geographical area info 2	FFS		

– *Radio parameters per geographical area info*

Table 4.7D.2.2-8: Radio parameters per geographical area info

Derivation TS 24.588 Figure 5.3.1.8			
Information Element	Value/remark	Comment	Condition
Length of radio parameters per geographical area contents	Set to the actual length of 'radio parameters per geographical area contents' in bytes		
Geographical area	See Table 4.7D.2.2-9		
Radio parameters	See Table 4.7D.2.2-11		
MI	'1'B	Operator managed	

– *Geographical area*

Table 4.7D.2.2-9: Geographical area

Derivation Path: TS 24.588 Figure 5.3.1.9			
Information Element	Value/remark	Comment	Condition
Length of geographical area contents	Set to the actual length of 'geographical area contents' in bytes		
Coordinate 1	See Table 4.7D.2.2-10		
Coordinate 2	See Table 4.7D.2.2-10		
Coordinate 3	See Table 4.7D.2.2-10		

– *Coordinate area*

Table 4.7D.2.2-10: Coordinate area

Derivation Path: TS 24.588 Figure 5.3.1.10			
Information Element	Value/remark	Comment	Condition
Latitude	35.753056		Coordinate 1

Longitude	35.735278		Coordinate 2
	35.744167		Coordinate 3
	139.689167		Coordinate 1
	139.689167		Coordinate 2
	139.709167		Coordinate 3

– *Radio parameters*

Table 4.7D.2.2-11: Radio parameters

Derivation Path: TS 24.588 Figure 5.3.1.11			
Information Element	Value/remark	Comment	Condition
Length of radio parameters contents	Set to the actual length of 'radio parameters contents' in bytes		
Radio parameters contents	See Table 4.10.1.1-1: SL-V2X-Preconfiguration in TS 36.508 [2]		E-UTRAN V2X
	See Table 4.10.1-1: SL-PreconfigurationNR		NR V2X

– *V2X service identifier to PC5 RAT and Tx profiles mapping rules*

Table 4.7D.2.2-12: V2X service identifier to PC5 RAT and Tx profiles mapping rules

Derivation Path: TS 24.588 Figure 5.3.1.12			
Information Element	Value/remark	Comment	Condition
Length of V2X service identifier to PC5 RAT and Tx profiles mapping rules contents	Set to the actual length of 'V2X service identifier to PC5 RAT and Tx profiles mapping rules contents' in bytes		
V2X service identifier to PC5 RAT and Tx profiles mapping rule 1	See Table 4.7D.2.2-13		
V2X service identifier to PC5 RAT and Tx profiles mapping rule 2	FFS		

– *V2X service identifier to PC5 RAT and Tx profiles mapping rule*

Table 4.7D.2.2-13: V2X service identifier to PC5 RAT and Tx profiles mapping rule

Derivation Path: TS 24.588 Figure 5.3.1.13			
Information Element	Value/remark	Comment	Condition
Length of V2X service identifier to PC5 RAT and Tx profiles mapping rule contents	Set to the actual length of 'V2X service identifier to PC5 RAT and Tx profiles mapping rule contents' in bytes		
V2X service identifiers	See Table 4.7D.2.2-14		
PC5 RAT	'00'B		E-UTRA-PC5
	'01'B		NR-PC5
Length of E-UTRA-PC5 Tx profiles	Set to the actual length of 'E-UTRA-PC5 Tx profiles' in bytes		E-UTRA-PC5

E-UTRA-PC5 Tx profiles	rel14	UE shall use Release 14 compatible format (i.e. using MCS table in Table 8.6.1-1 with 64 QAM indices overridden by 16QAM in TS 36.213 [23] and not Rel-15 feature) to transmit the corresponding V2X packet, Refer to IE v2x-TxProfileList in TS 36.331	E-UTRA-PC5

– *V2X service identifiers*

Table 4.7D.2.2-14: V2X service identifiers

Derivation Path: TS 24.588 Figure 5.3.1.14			
Information Element	Value/remark	Comment	Condition
Length of V2X service identifiers contents	Set to the actual length of 'V2X service identifiers contents' in bytes		
V2X service identifier 1	'00 00 00 01'H	4 bytes for each V2X service identifier	
V2X service identifier 2	'00 00 00 02'H		

– *Privacy config*

Table 4.7D.2.2-15: Privacy config

Derivation Path: TS 24.588 Figure 5.3.1.15			
Information Element	Value/remark	Comment	Condition
Length of privacy config contents	Set to the actual length of 'privacy config contents' in bytes		
V2X services requiring privacy	See Table 4.7D.2.2-16		
Privacy timer	'FF FF'H	Expressed in units of seconds, after which the UE shall change the source Layer-2 ID self-assigned by the UE	

– *V2X services requiring privacy*

Table 4.7D.2.2-16: V2X services requiring privacy

Derivation Path: TS 24.588 Figure 5.3.1.16			
Information Element	Value/remark	Comment	Condition
Length of V2X services requiring privacy contents	Set to the actual length of 'V2X services requiring privacy contents' in bytes		
V2X service requiring privacy 1	See Table 4.7D.2.2-17		

V2X service requiring privacy 2	FFS		

– *V2X service requiring privacy*

Table 4.7D.2.2-17: V2X service requiring privacy

Derivation Path: TS 24.588 Figure 5.3.1.17			
Information Element	Value/remark	Comment	Condition
Length of V2X service requiring privacy contents	Set to the actual length of 'V2X service requiring privacy contents' in bytes		
V2X service identifiers	See Table 4.7D.2.2-14		
Geographical areas	See Table 4.7D.2.2-18		

– *Geographical areas*

Table 4.7D.2.2-18: Geographical areas

Derivation Path: TS 24.588 Figure 5.3.1.18			
Information Element	Value/remark	Comment	Condition
Length of geographical areas contents	Set to the actual length of 'geographical areas contents' in bytes		
Geographical area 1	See Table 4.7D.2.2-9		
Geographical area 2	FFS		

– *V2X communication over PC5 in E-UTRA-PC5*

Table 4.7D.2.2-19: V2X communication over PC5 in E-UTRA-PC5

Derivation Path: TS 24.588 Figure 5.3.1.19			
Information Element	Value/remark	Comment	Condition
Length of V2X communication over PC5 in E-UTRA-PC5 contents	Set to the actual length of 'V2X communication over PC5 in E-UTRA-PC5 contents' in bytes		
PPMR	'1'B	PPPP to PDB mapping rules field is present	
VSAPI	'1'B	V2X services authorized for PPPR field is present	
VSIEFMRI	'1'B	V2X service identifier to V2X E-UTRA frequency mapping rules field is present	
DDL2II	'1'B	Default destination layer-2 ID field is present	
V2X service identifier to destination layer-2 ID mapping rules	See Table 4.7D.2.2-20		
PPPP to PDB mapping rules	See Table 4.7D.2.2-22		
V2X service identifier to V2X E-UTRA frequency mapping rules	See Table 4.7D.2.2-24		
V2X services authorized for PPPR	See Table 4.7D.2.2-29		
Default destination layer-2 ID	'00 00 40'H	3 bytes, Random value	

– *V2X service identifier to destination layer-2 ID mapping rules*

Table 4.7D.2.2-20: V2X service identifier to destination layer-2 ID mapping rules

Derivation Path: TS 24.588 Figure 5.3.1.20			
Information Element	Value/remark	Comment	Condition
Length of V2X service identifier to destination layer-2 ID mapping rules contents	Set to the actual length of 'V2X service identifier to destination layer-2 ID mapping rules contents' in bytes		
V2X service identifier to destination layer-2 ID mapping rule 1	See Table 4.7D.2.2-21		
V2X service identifier to destination layer-2 ID mapping rule 2	FFS		

– *V2X service identifier to destination layer-2 ID mapping rule*

Table 4.7D.2.2-21: V2X service identifier to destination layer-2 ID mapping rule

Derivation Path: TS 24.588 Figure 5.3.1.21			
Information Element	Value/remark	Comment	Condition
Length of V2X service identifier to destination layer-2 ID mapping rule contents	Set to the actual length of 'V2X service identifier to destination layer-2 ID mapping rule contents' in bytes		
V2X service identifiers	See Table 4.7D.2.2-14		
Destination layer-2 ID	'00 00 41'H		

– *PPPP to PDB mapping rules*

Table 4.7D.2.2-22: PPPP to PDB mapping rules

Derivation Path: TS 24.588 Figure 5.3.1.22			
Information Element	Value/remark	Comment	Condition
Length of PPPP to PDB mapping rules contents	Set to the actual length of 'PPPP to PDB mapping rules contents' in bytes		
PPPP to PDB mapping rule 1	See Table 4.7D.2.2-23		
PPPP to PDB mapping rule 2	FFS		

– *PPPP to PDB mapping rule*

Table 4.7D.2.2-23: PPPP to PDB mapping rule

Derivation Path: TS 24.588 Figure 5.3.1.23			
Information Element	Value/remark	Comment	Condition
PPPP	'000'B	PPPP value 1	
PDB	'00 32'H	50ms	

– *V2X service identifier to V2X E-UTRA frequency mapping rules*

Table 4.7D.2.2-24: V2X service identifier to V2X E-UTRA frequency mapping rules

Derivation Path: TS 24.588 Figure 5.3.1.24			
Information Element	Value/remark	Comment	Condition
Length of V2X service identifier to V2X E-UTRA frequency mapping rules contents	Set to the actual length of 'V2X service identifier to		

	V2X E-UTRA frequency mapping rules contents' in bytes		
V2X service identifier to V2X E-UTRA frequency mapping rule 1	See Table 4.7D.2.2-25		
V2X service identifier to V2X E-UTRA frequency mapping rule 2	FFS		

– *V2X service identifier to V2X E-UTRA frequency mapping rule*

Table 4.7D.2.2-25: V2X service identifier to V2X E-UTRA frequency mapping rule

Derivation Path: TS 24.588 Figure 5.3.1.25			
Information Element	Value/remark	Comment	Condition
Length of V2X service identifier to V2X E-UTRA frequency mapping rule contents	Set to the actual length of 'V2X service identifier to V2X E-UTRA frequency mapping rule contents' in bytes		
V2X service identifiers	See Table 4.7D.2.2-14		
V2X E-UTRA frequencies with geographical areas list	See Table 4.7D.2.2-26		

– *V2X E-UTRA frequencies with geographical areas list*

Table 4.7D.2.2-26: V2X E-UTRA frequencies with geographical areas list

Derivation Path: TS 24.588 Figure 5.3.1.26			
Information Element	Value/remark	Comment	Condition
Length of V2X E-UTRA frequencies with geographical areas list contents	Set to the actual length of 'V2X E-UTRA frequencies with geographical areas list contents' in bytes		
V2X E-UTRA frequencies with geographical areas info 1	See Table 4.7D.2.2-27		
V2X E-UTRA frequencies with geographical areas info 2	FFS		

– *V2X E-UTRA frequencies with geographical areas info*

Table 4.7D.2.2-27: V2X E-UTRA frequencies with geographical areas info

Derivation Path: TS 24.588 Figure 5.3.1.27			
Information Element	Value/remark	Comment	Condition
Length of V2X E-UTRA frequencies with geographical areas info contents	Set to the actual length of 'V2X E-UTRA frequencies with geographical areas info contents' in bytes		
V2X E-UTRA frequencies	See Table 4.7D.2.2-28		
Geographical areas	See Table 4.7D.2.2-18		

– *V2X E-UTRA frequencies*

Table 4.7D.2.2-28: V2X E-UTRA frequencies

Derivation Path: TS 24.588 Figure 5.3.1.28			
Information Element	Value/remark	Comment	Condition

Length of V2X E-UTRA frequencies contents	Set to the actual length of 'V2X E-UTRA frequencies contents' in bytes		
V2X E-UTRA frequency 1	Downlink E-UTRA ARFCN under test. f5 of Table 6.2.3.5-1 in TS 36.508 [2]		SIG
	Downlink E-UTRA ARFCN under test. Mid Range EARFCN value of Table 4.3.1.2.15-1 in TS 36.508 [2].		
V2X E-UTRA frequency 2	FFS		

– *V2X services authorized for PPPR*

Table 4.7D.2.2-29: V2X services authorized for PPPR

Derivation Path: TS 24.588 Figure 5.3.1.29			
Information Element	Value/remark	Comment	Condition
Length of V2X services authorized for PPPR contents	Set to the actual length of 'V2X services authorized for PPPR contents' in bytes		
V2X service authorized for PPPR 1	See Table 4.7D.2.2-30		
V2X service authorized for PPPR 2	FFS		

– *V2X service authorized for PPPR*

Table 4.7D.2.2-30: V2X service authorized for PPPR

Derivation Path: TS 24.588 Figure 5.3.1.30			
Information Element	Value/remark	Comment	Condition
Length of V2X service authorized for PPPR contents	Set to the actual length of 'V2X service authorized for PPPR contents' in bytes		
V2X service identifiers	See Table 4.7D.2.2-14		
PPPR	'000'B	PPPR value 1	

– *V2X communication over PC5 in NR-PC5*

Table 4.7D.2.2-31: V2X communication over PC5 in NR-PC5

Derivation Path: TS 24.588 Figure 5.3.1.31			
Information Element	Value/remark	Comment	Condition
Length of V2X communication over PC5 in NR-PC5 contents	Set to the actual length of 'V2X communication over PC5 in NR-PC5 contents' in bytes		
VSINFMRI	'1'B	V2X service identifier to V2X NR frequency mapping rules field is present	
DDL2IBI	'1'B	Default destination layer-2 ID for broadcast field is present	

V2X service identifier to V2X NR frequency mapping rules	See Table 4.7D.2.2-32		
V2X service identifier to destination layer-2 ID for broadcast mapping rules	See Table 4.7D.2.2-37		
V2X service identifier to destination layer-2 ID for groupcast mapping rules	See Table 4.7D.2.2-39		
V2X service identifier to destination layer-2 ID for unicast initial signalling mapping rules	See Table 4.7D.2.2-41		
V2X service identifier to PC5 QoS parameters mapping rules	See Table 4.7D.2.2-43		
AS configuration	See Table 4.7D.2.2-45		
Default destination layer-2 ID for broadcast	'00 00 50'H		
NR-PC5 unicast security policies	See Table 4.7D.2.2-49		
V2X service identifier to default mode of communication mapping rules	See Table 4.7D.2.2-52		

– *V2X service identifier to V2X NR frequency mapping rules*

Table 4.7D.2.2-32: V2X service identifier to V2X NR frequency mapping rules

Derivation Path: TS 24.588 Figure 5.3.1.32			
Information Element	Value/remark	Comment	Condition
Length of V2X service identifier to V2X NR frequency mapping rules contents	Set to the actual length of 'V2X service identifier to V2X NR frequency mapping rules contents' in bytes		
V2X service identifier to V2X NR frequency mapping rule 1	See Table 4.7D.2.2-33		
V2X service identifier to V2X NR frequency mapping rule 2	FFS		

– *V2X service identifier to V2X NR frequency mapping rule*

Table 4.7D.2.2-33: V2X service identifier to V2X NR frequency mapping rule

Derivation Path: TS 24.588 Figure 5.3.1.33			
Information Element	Value/remark	Comment	Condition
Length of V2X service identifier to V2X NR frequency mapping rule contents	Set to the actual length of 'V2X service identifier to V2X NR frequency mapping rule contents' in bytes		
V2X service identifiers	See Table 4.7D.2.2-14		
V2X NR frequencies with geographical areas list	See Table 4.7D.2.2-34		

– *V2X NR frequencies with geographical areas list*

Table 4.7D.2.2-34: V2X NR frequencies with geographical areas list

Derivation Path: TS 24.588 Figure 5.3.1.34			
Information Element	Value/remark	Comment	Condition
Length of V2X NR frequencies with geographical areas list contents	Set to the actual length of 'V2X NR frequencies with geographical areas list contents' in bytes		
V2X NR frequencies with geographical areas info 1	See Table 4.7D.2.2-35		
V2X NR frequencies with geographical areas info 2	FFS		

– *V2X NR frequencies with geographical areas info*

Table 4.7D.2.2-35: V2X NR frequencies with geographical areas info

Derivation Path: TS 24.588 Figure 5.3.1.35			
Information Element	Value/remark	Comment	Condition
Length of V2X NR frequencies with geographical areas info contents	Set to the actual length of 'V2X NR frequencies with geographical areas info contents' in bytes		
V2X NR frequencies	See Table 4.7D.2.2-36		
Geographical areas	See Table 4.7D.2.2-18		

– *V2X NR frequencies*

Table 4.7D.2.2-36: V2X NR frequencies

Derivation Path: TS 24.588 Figure 5.3.1.36			
Information Element	Value/remark	Comment	Condition
Length of V2X NR frequencies contents	Set to the actual length of 'V2X NR frequencies contents' in bytes		
V2X NR frequency 1	ARFCN-ValueNR with condition SL_SSB in Table 4.6.3-5		
V2X NR frequency 2	FFS		

– *V2X service identifier to destination layer-2 ID for broadcast mapping rules*

Table 4.7D.2.2-37: V2X service identifier to destination layer-2 ID for broadcast mapping rules

Derivation Path: TS 24.588 Figure 5.3.1.37			
Information Element	Value/remark	Comment	Condition
Length of V2X service identifier to destination layer-2 ID for broadcast mapping rules contents	Set to the actual length of 'V2X service identifier to destination layer-2 ID for broadcast mapping rules contents' in bytes		
V2X service identifier to destination layer-2 ID for broadcast mapping rule 1	See Table 4.7D.2.2-38		
V2X service identifier to destination layer-2 ID for broadcast mapping rule 2	FFS		

– *V2X service identifier to destination layer-2 ID for broadcast mapping rule*

Table 4.7D.2.2-38: V2X service identifier to destination layer-2 ID for broadcast mapping rule

Derivation Path: TS 24.588 Figure 5.3.1.38			
Information Element	Value/remark	Comment	Condition
Length of V2X service identifier to destination layer-2 ID for broadcast mapping rule contents	Set to the actual length of 'V2X service identifier to destination layer-2 ID for broadcast mapping rule contents' in bytes		
V2X service identifiers	See Table 4.7D.2.2-14		
Destination layer-2 ID for broadcast	'00 00 51'H		

– *V2X service identifier to destination layer-2 ID for groupcast mapping rules*

Table 4.7D.2.2-39: V2X service identifier to destination layer-2 ID for groupcast mapping rules

Derivation Path: TS 24.588 Figure 5.3.1.39			
Information Element	Value/remark	Comment	Condition
Length of V2X service identifier to destination layer-2 ID for groupcast mapping rules contents	Set to the actual length of 'V2X service identifier to destination layer-2 ID for groupcast mapping rules contents' in bytes		
V2X service identifier to destination layer-2 ID for groupcast mapping rule 1	See Table 4.7D.2.2-40		
V2X service identifier to destination layer-2 ID for groupcast mapping rule 2	FFS		

– *V2X service identifier to destination layer-2 ID for groupcast mapping rule*

Table 4.7D.2.2-40: V2X service identifier to destination layer-2 ID for groupcast mapping rule

Derivation Path: TS 24.588 Figure 5.3.1.40			
Information Element	Value/remark	Comment	Condition
Length of V2X service identifier to destination layer-2 ID for groupcast mapping rule contents	Set to the actual length of 'V2X service identifier to destination layer-2 ID for groupcast mapping rule contents' in bytes		
V2X service identifiers	See Table 4.7D.2.2-14		
Destination layer-2 ID for groupcast	'00 00 52'H		

– *V2X service identifier to destination layer-2 ID for unicast initial signalling mapping rules*

Table 4.7D.2.2-41: V2X service identifier to destination layer-2 ID for unicast initial signalling mapping rules

Derivation Path: TS 24.588 Figure 5.3.1.41			
Information Element	Value/remark	Comment	Condition
Length of V2X service identifier to destination layer-2 ID for unicast initial signalling mapping rules contents	Set to the actual length of 'V2X service identifier to destination layer-2 ID for unicast initial signalling mapping rules contents' in bytes		
V2X service identifier to destination layer-2 ID for unicast initial signalling mapping rule 1	See Table 4.7D.2.2-42		
V2X service identifier to destination layer-2 ID for unicast initial signalling mapping rule 2	FFS		

– *V2X service identifier to destination layer-2 ID for unicast initial signalling mapping rule*

Table 4.7D.2.2-42: V2X service identifier to destination layer-2 ID for unicast initial signalling mapping rule

Derivation Path: TS 24.588 Figure 5.3.1.42			
Information Element	Value/remark	Comment	Condition
Length of V2X service identifier to destination layer-2 ID for unicast initial signalling mapping rule contents	Set to the actual length of 'V2X service identifier to destination layer-2 ID for		

	unicast initial signalling mapping rule contents' in bytes		
V2X service identifiers	See Table 4.7D.2.2-14		
Destination layer-2 ID for unicast initial signalling	'00 00 53'H		

– *V2X service identifier to PC5 QoS parameters mapping rules*

Table 4.7D.2.2-43: V2X service identifier to PC5 QoS parameters mapping rules

Derivation Path: TS 24.588 Figure 5.3.1.43			
Information Element	Value/remark	Comment	Condition
Length of V2X service identifier to PC5 QoS parameters mapping rules contents	Set to the actual length of 'V2X service identifier to PC5 QoS parameters mapping rules contents' in bytes		
V2X service identifier to PC5 QoS parameters mapping rule 1	See Table 4.7D.2.2-44		
V2X service identifier to PC5 QoS parameters mapping rule 2	FFS		

– *V2X service identifier to PC5 QoS parameters mapping rule*

Table 4.7D.2.2-44: V2X service identifier to PC5 QoS parameters mapping rule

Derivation Path: TS 24.588 Figure 5.3.1.46			
Information Element	Value/remark	Comment	Condition
Length of V2X service identifier to PC5 QoS parameters mapping rule contents	Set to the actual length of 'V2X service identifier to PC5 QoS parameters mapping rule contents' in bytes		
V2X service identifiers	See Table 4.7D.2.2-14		
RI	'1'B	Range field is present	
PLAMBRI	'1'B	Per-link aggregate maximum bit rate field is present	
MFBRI	'1'B	Maximum flow bit rate field is present	
GFBRI	'1'B	Guaranteed flow bit rate field is present	
PQI	22	See Table 5.4.4-1 in TS 23.287 [xx]	
Guaranteed flow bit rate	'0000 0110 0000 0000 0000 1010'B	10 * 1Mbps = 10Mbps.	
Maximum flow bit rate	'0000 0110 0000 0000 0001 0100'B	20 * 1Mbps = 20Mbps.	
Per-link aggregate maximum bit rate	'0000 0110 0000 0000 0000 0010'B	2 * 1Mbps = 2Mbps.	
Range	'0000 0001 1111 0100'B	500 meters	

– *AS configuration*

Table 4.7D.2.2-45: AS configuration

Derivation Path: TS 24.588 Figure 5.3.1.46a			
Information Element	Value/remark	Comment	Condition

Length of AS configuration contents	Set to the actual length of 'AS configuration contents' in bytes		
SLRB mapping rules	See Table 4.7D.2.2-46		

– *SLRB mapping rules*

Table 4.7D.2.2-46: SLRB mapping rules

Derivation Path: TS 24.588 Figure 5.3.1.47			
Information Element	Value/remark	Comment	Condition
Length of SLRB mapping rules contents	Set to the actual length of 'SLRB mapping rules contents' in bytes		
SLRB mapping rule 1	See Table 4.7D.2.2-47		
SLRB mapping rule 2	FFS		

– *SLRB mapping rule*

Table 4.7D.2.2-47: SLRB mapping rule

Derivation Path: TS 24.588 Figure 5.3.1.48			
Information Element	Value/remark	Comment	Condition
Length of SLRB mapping rule contents	Set to the actual length of 'SLRB mapping rule contents' in bytes		
PC5 QoS profile	See Table 4.7D.2.2-48		
Length of SLRB	Set to the actual length of 'SLRB' in bytes		
SLRB	See Table 4.10.1-1		

– *PC5 QoS profile*

Table 4.7D.2.2-48: PC5 QoS profile

Derivation Path: TS 24.588 Figure 5.3.1.49			
Information Element	Value/remark	Comment	Condition
Length of PC5 QoS profile contents	Set to the actual length of 'PC5 QoS profile contents' in bytes		
MDBVI	'0'B	Maximum data burst volume field is absent	
AWI	'1'B	Averaging window field is present	
PLOI	'1'B	The octet of the priority level is present	
RI	'1'B	Range field is present	
PLAMBRI	'1'B	Per-link aggregate maximum bit rate field is present	
MFBRI	'1'B	Maximum flow bit rate field is present	
GFBRI	'1'B	Guaranteed flow bit rate field is present	
PQI	22	See Table 5.4.4-1 in TS 23.287[xx]	

Guaranteed flow bit rate	'0000 0110 0000 0000 0000 1010'B	10 * 1Mbps = 10Mbps.	
Maximum flow bit rate	'0000 0110 0000 0000 0001 0100'B	20 * 1Mbps = 20Mbps.	
Per-link aggregate maximum bit rate	'0000 0110 0000 0000 0000 0010'B	2 * 1Mbps = 2Mbps.	
Range	'0000 0001 1111 0100'B	500 meters	
Priority level	4		
Averaging window	'0000 0111 1101 0000'B	2000ms	
Maximum data burst volume	Not Present		

– *NR-PC5 unicast security policies*

Table 4.7D.2.2-49: NR-PC5 unicast security policies

Derivation Path: TS 24.588 Figure 5.3.1.50			
Information Element	Value/remark	Comment	Condition
Length of NR-PC5 unicast security policies contents	Set to the actual length of 'NR-PC5 unicast security policies contents' in bytes		
NR-PC5 unicast security policy 1	See Table 4.7D.2.2-50		
NR-PC5 unicast security policy 2	FFS		

– *NR-PC5 unicast security policy*

Table 4.7D.2.2-50: NR-PC5 unicast security policy

Derivation Path: TS 24.588 Figure 5.3.1.51			
Information Element	Value/remark	Comment	Condition
Length of NR-PC5 unicast security policy contents	Set to the actual length of 'NR-PC5 unicast security policy contents' in bytes		
V2X service identifiers	See Table 4.7D.2.2-14		
Security policy	See Table 4.7D.2.2-51		
Geographical areas	See Table 4.7D.2.2-18		

– *Security policy*

Table 4.7D.2.2-51: Security policy

Derivation Path: TS 24.588 Figure 5.3.1.52			
Information Element	Value/remark	Comment	Condition
Signalling integrity protection policy	'000'B	Signalling integrity protection not needed	
Spare	'0'B		
Signalling ciphering policy	'000'B	Signalling ciphering not needed	
Spare	'0'B		
User plane integrity protection policy	'000'B	User plane integrity protection not needed	
Spare	'0'B		
User plane ciphering policy	'000'B	User plane ciphering not needed	
Spare	'0'B		

– *V2X service identifier to default mode of communication mapping rules*

Table 4.7D.2.2-52: V2X service identifier to default mode of communication mapping rules

Derivation Path: TS 24.588 Figure 5.3.1.53			
Information Element	Value/remark	Comment	Condition

Length of V2X service identifier to default mode of communication mapping rules contents	'Set to the actual length of 'V2X service identifier to default mode of communication mapping rules contents' in bytes		
V2X service identifier to default mode of communication mapping rule 1	See Table 4.7D.2.2-53		
V2X service identifier to default mode of communication mapping rule 2	FFS		

– *V2X service identifier to default mode of communication mapping rule*

Table 4.7D.2.2-53: V2X service identifier to default mode of communication mapping rule

Derivation Path: TS 24.588 Figure 5.3.1.54			
Information Element	Value/remark	Comment	Condition
Length of V2X service identifier to default mode of communication mapping rule contents	'Set to the actual length of 'V2X service identifier to default mode of communication mapping rule contents' in bytes		
V2X service identifiers	See Table 4.7D.2.2-14		
DMC	'00'B	Default mode of communication is set to unicast	
Spare	'0000 00'B		

4.7E Default HTTP messages for communication with 5G ProSe

- *HTTP Request*

This message is sent by the UE to the SS.

Table 4.7E-1: HTTP Request

Derivation Path: RFC 7230 [x2]			
Header/param	Value/remark	Comment	Condition
Request-Line Method Request-URI Version	"POST" Request-URI "HTTP 1.1"		
Content-Type media-type	"application/vnd.3gpp-prose-pc3a+xml"		
Content-Length value	length of the message body		
Message-body	PC3a Control Protocol messages		
Note: HTTP request may contain further headers which are ignored.			

- *HTTP Response*

This message is sent by the SS to the UE.

Table 4.7E-2: HTTP Response

Derivation Path: RFC 7230 [x2]			
Header/param	Value/remark	Comment	Condition
Status-Line Version Code	"HTTP 1.1" 200		

Reason	"OK"		
Content-Type media-type	"application/vnd.3gpp-prose-pc3a+xml"		
Content-Length value	length of the message body		
Message-body	PC3a Control Protocol messages		

4.7F Default TLS message and information element contents for communication with 5G ProSe

- *ClientHello*

This message is sent by the UE to the SS.

Table 4.7F-1: ClientHello

Derivation Path: RFC 5246 [x1]			
Field	Value/remark	Comment	Condition
Protocolversion	At least TLS 1.2	TLS protocol versions 1.2 is defined in RFCs 5246 [x1].	
Random	Not checked		
SessionID	Empty		
CipherSuite	A list of supported cryptographic options including one or more PSK-based ciphersuites		
CompressionMethod	A list including CompressionMethod.null		
Extension	Not checked		

- *ServerHello*

This message is sent by the SS to the UE.

Table 4.7F-2: ServerHello

Derivation Path: RFC 5246 [x1]			
Field	Value/remark	Comment	Condition
Protocolversion	TLS 1.2		
Random	A SS generated random structure different from ClientHello		
SessionID	Identity of the TLS session generated by SS		
CipherSuite	One of the PSK-based ciphersuites listed in ClientHello	Ciphersuite according to PIXIT parameter	
CompressionMethod	CompressionMethod.null		
Extension	Empty		

- *ServerKeyExchange*

This message is sent by the SS to the UE.

Table 4.7F-3: ServerKeyExchange

Derivation Path: RFC 5246 [x1]			
Field	Value/remark	Comment	Condition

psk identity hint	"3GPP-bootstrapping"		

- *ServerHelloDone*

This message is sent by the SS to the UE.

Table 4.7F-4: ServerHelloDone

Derivation Path: RFC 5246 [x1]			
Field	Value/remark	Comment	Condition
Note: No fields present.			

- *ClientKeyExchange*

This message is sent by the UE to the SS.

Table 4.7F-5: ClientKeyExchange

Derivation Path: RFC 5246 [x1]			
Field	Value/remark	Comment	Condition
psk identity	Concatenation of "3GPP-bootstrapping", "." and B-TID		

- *ChangeCipherSpec*

This message is sent by the UE or the SS.

Table 4.7F-6: ChangeCipherSpec

Derivation Path: RFC 5246 [x1]			
Field	Value/remark	Comment	Condition
Enum	1		

- *Finished*

This message is sent by the UE or the SS.

Table 4.7F-7: Finished

Derivation Path: RFC 5246 [x1]			
Field	Value/remark	Comment	Condition
opaque	Not checked		UE
opaque	SS generated verify_data	The verify data contains the hash of the handshake messages. For details, see the RFC for TLS defined in annex E of 3GPP TS 33.310 [x4].	SS

Condition	Explanation
UE	Sent by the UE.
SS	Sent by the SS.

4.8 Reference configurations

4.8.1 Radio configurations

– *RRCReconfiguration-DRB(n, m)*

Table 4.8.1-1: RRCReconfiguration-DRB (n, m)

Derivation Path: Table 4.6.1-13 with condition NR.			
Information Element	Value/remark	Comment	Condition
RRCReconfiguration ::= SEQUENCE {			
criticalExtensions CHOICE {			
rrcReconfiguration SEQUENCE {			
radioBearerConfig	RadioBearerConfig-DRB-NR(n,m)		
nonCriticalExtension SEQUENCE {			
masterCellGroup	CellGroupConfig-DRB(n, m)	OCTET STRING (CONTAINING CellGroupConfig)	
}			
}			
}			
}			

– *RRCReconfiguration-HO*

Table 4.8.1-1A: RRCReconfiguration-HO

Derivation Path: Table 4.6.1-13.			
Information Element	Value/remark	Comment	Condition
RRCReconfiguration ::= SEQUENCE {			
criticalExtensions CHOICE {			
rrcReconfiguration SEQUENCE {			
radioBearerConfig	RadioBearerConfig with conditions SRB_NR_PDCP and DRBn and Re-establish_PDCP		RBConfig_KeyChange
	RadioBearerConfig with conditions DRBn and Recover_PDCP		RBConfig_NoKeyChange
secondaryCellGroup	Not present		
nonCriticalExtension SEQUENCE {			
masterCellGroup	CellGroupConfig with conditions PCell_change	OCTET STRING (CONTAINING CellGroupConfig)	
masterKeyUpdate	Not present		
masterKeyUpdate SEQUENCE {			RBConfig_KeyChange
keySetChangeIndicator	false	Horizontal key derivation	
nextHopChainingCount	NextHopChainingCount		
nas-Container	Not present		
}			
}			
}			
}			
}			

Condition	Explanation

RBConfig_KeyChange	RadioBearerConfig to perform Intra-NR handover with security key change
RBConfig_NoKeyChange	RadioBearerConfig to perform Intra-NR handover without security key change

– *RRCReconfiguration-CPA*

Table 4.8.1-1AB: RRCReconfiguration-CPA

Derivation Path: Table 4.6.1-13			
Information Element	Value/remark	Comment	Condition
RRCReconfiguration ::= SEQUENCE {			
criticalExtensions CHOICE {			
rrcReconfiguration SEQUENCE {			
nonCriticalExtension SEQUENCE {			
nonCriticalExtension SEQUENCE {			
nonCriticalExtension SEQUENCE {			
mrdc-SecondaryCellGroupConfig CHOICE {			
setup SEQUENCE {			
mrdc-SecondaryCellGroup CHOICE {			
nr-SCG	RRCReconfiguration with condition NR-DC_SCG	OCTET STRING (CONTAINING RRCReconfiguration)	
}			
}			
}			
}			
}			
}			
}			
}			
}			

– *RRCReconfiguration-SRB2-DRB(n, m)*

Table 4.8.1-1B: RRCReconfiguration-SRB2-DRB(n, m)

Derivation Path: Table 4.6.1-13 with condition NR.			
Information Element	Value/remark	Comment	Condition
RRCReconfiguration ::= SEQUENCE {			
criticalExtensions CHOICE {			
rrcReconfiguration SEQUENCE {			
radioBearerConfig	RadioBearerConfig-SRB2-DRB(n,m)		
nonCriticalExtension SEQUENCE {			
masterCellGroup	CellGroupConfig-SRB2-DRB(n, m)	OCTET STRING (CONTAINING CellGroupConfig)	
}			
}			
}			
}			

– *RRCReconfiguration-SRB2-SRB4-DRB(n, m)*

Table 4.8.1-1CAA: RRCReconfiguration-SRB2-SRB4-DRB(n, m)

Derivation Path: Table 4.6.1-13 with condition NR and QoE.			
Information Element	Value/remark	Comment	Condition
RRCReconfiguration ::= SEQUENCE {			

criticalExtensions CHOICE {			
rrcReconfiguration SEQUENCE {			
radioBearerConfig	RadioBearerConfig-SRB2-SRB4-DRB(n,m)		
nonCriticalExtension SEQUENCE {			
masterCellGroup	CellGroupConfig-SRB2-SRB4-DRB(n, m)	OCTET STRING (CONTAINING CellGroupConfig)	
}			
}			
}			
}			

– *RRCReconfiguration-NR-DC-DRB*

Table 4.8.1-1CA: RRCReconfiguration-NR-DC-DRB

Derivation Path: Table 4.6.1-13 with condition NR-DC.			
Information Element	Value/remark	Comment	Condition
RRCReconfiguration ::= SEQUENCE {			
criticalExtensions CHOICE {			
rrcReconfiguration SEQUENCE {			
radioBearerConfig	Not present		
nonCriticalExtension SEQUENCE {			
masterCellGroup	Not present		MCG(s) and SCG
	CellGroupConfig with condition DRB(n+m+1)	OCTET STRING (CONTAINING CellGroupConfig)	MCG(s) and split
nonCriticalExtension SEQUENCE {			
nonCriticalExtension SEQUENCE {			
radioBearerConfig2	RadioBearerConfig with conditions DRB(n+m+1) and SCG_DRB and SecondaryKeys	OCTET STRING (CONTAINING RadioBearerConfig) DRB(n,m) already configured on MCG	MCG(s) and SCG
	RadioBearerConfig with conditions DRB(n+m+1) and SCG_DRB and Split and SecondaryKeys	OCTET STRING (CONTAINING RadioBearerConfig) DRB(n,m) already configured on MCG	MCG(s) and split
}			
}			
}			
}			
}			
}			

– *RRCReconfiguration-NE-DC-DRB*

Table 4.8.1-1CB: RRCReconfiguration-NE-DC-DRB

Derivation Path: Table 4.6.1-13 with condition NE-DC.			
Information Element	Value/remark	Comment	Condition
RRCReconfiguration ::= SEQUENCE {			
criticalExtensions CHOICE {			
rrcReconfiguration SEQUENCE {			
radioBearerConfig	Not present		
nonCriticalExtension SEQUENCE {			

masterCellGroup	Not present		MCG(s) and SCG
	CellGroupConfig with condition DRB(n+m+1)	OCTET STRING (CONTAINING CellGroupConfig)	MCG(s) and split
nonCriticalExtension SEQUENCE {			
nonCriticalExtension SEQUENCE {			
radioBearerConfig2	RadioBearerConfig with conditions DRB(n+m+1) and SCG_DRB and SecondaryKeys	OCTET STRING (CONTAINING RadioBearerConfig) DRB(n,m) already configured on MCG	MCG(s) and SCG
	RadioBearerConfig with conditions DRB(n+m+1) and SCG_DRB and Split and SecondaryKeys	OCTET STRING (CONTAINING RadioBearerConfig) DRB(n,m) already configured on MCG	MCG(s) and split
}			
}			
}			
}			
}			
}			

– *RRCReconfiguration-Speech*

Table 4.8.1-1C: RRCReconfiguration-Speech

Derivation Path: Table 4.6.1-13 with condition NR.			
Information Element	Value/remark	Comment	Condition
RRCReconfiguration ::= SEQUENCE {			
criticalExtensions CHOICE {			
rrcReconfiguration SEQUENCE {			
radioBearerConfig	RadioBearerConfig-Speech		
nonCriticalExtension SEQUENCE {			
masterCellGroup	CellGroupConfig-DRB(0.1)	OCTET STRING (CONTAINING CellGroupConfig)	
}			
}			
}			
}			

– *RRCReconfiguration-Video*

Table 4.8.1-1D: RRCReconfiguration-Video

Derivation Path: Table 4.6.1-13 with condition NR.			
Information Element	Value/remark	Comment	Condition
RRCReconfiguration ::= SEQUENCE {			
criticalExtensions CHOICE {			
rrcReconfiguration SEQUENCE {			
radioBearerConfig	RadioBearerConfig-Video		
nonCriticalExtension SEQUENCE {			
masterCellGroup	CellGroupConfig-DRB(0,2)	OCTET STRING (CONTAINING CellGroupConfig)	

}			
}			
}			
}			

– *RRCReconfiguration-Speech-RTT*

Table 4.8.1-1E: RRCReconfiguration-Speech-RTT

Derivation Path: Table 4.6.1-13 with condition NR.			
Information Element	Value/remark	Comment	Condition
RRCReconfiguration ::= SEQUENCE {			
criticalExtensions CHOICE {			
rrcReconfiguration SEQUENCE {			
radioBearerConfig	RadioBearerConfig-Speech-RTT		
nonCriticalExtension SEQUENCE {			
masterCellGroup	CellGroupConfig-DRB(0,2)	OCTET STRING (CONTAINING CellGroupConfig)	
}			
}			
}			
}			

– *CellGroupConfig-DRB(n, m)*

Table 4.8.1-2: CellGroupConfig-DRB(n, m)

Derivation Path: Table 4.6.3-19.			
Information Element	Value/remark	Comment	Condition
CellGroupConfig ::= SEQUENCE {			
rlc-BearerToAddModList SEQUENCE (SIZE(1..maxLCH)) OF RLC-BearerConfig {	n+m entries	BID is the total number of established DRBs in the UE, before applying the contents of this IE	
RLC-BearerConfig[k, k=1..n]	RLC-BearerConfig with conditions AM and DRBj (with j=BID+k)	entry (1..n+1)	n>0
RLC-BearerConfig[k, k=n+1..n+m]	RLC-BearerConfig with conditions UM and DRBj (with j=BID+k)	entry (n+1..n+m)	m>0
}			
}			

Condition	Explanation
n>0	n is greater than zero
m>0	m is greater than zero

– *CellGroupConfig-SRB3*

Table 4.8.1-2A: CellGroupConfig-SRB3

Derivation Path: Table 4.6.3-19 and condition EN-DC.			
Information Element	Value/remark	Comment	Condition
CellGroupConfig ::= SEQUENCE {			
rlc-BearerToAddModList SEQUENCE (SIZE(1..maxLCH)) OF RLC-BearerConfig {	2 entries		

RLC-BearerConfig[1]	RLC-BearerConfig with conditions AM and DRB2	entry 1	
RLC-BearerConfig[2]	RLC-BearerConfig with condition SRB3	entry 2	
}			
}			

– *CellGroupConfig-SRB2-DRB(n, m)*

Table 4.8.1-2B: CellGroupConfig-SRB2-DRB(n, m)

Derivation Path: Table 4.6.3-19			
Information Element	Value/remark	Comment	Condition
CellGroupConfig ::= SEQUENCE {			
rlc-BearerToAddModList SEQUENCE (SIZE(1..maxLCH)) OF RLC-BearerConfig {	1+n+m entries		
RLC-BearerConfig[1]	RLC-BearerConfig with condition SRB2	entry 1	
RLC-BearerConfig[k, k=2..n+1]	RLC-BearerConfig with conditions AM and DRBj	entry (2..n+1) j is allocated according to internal TTCN mapping	n>0
...		...	
RLC-BearerConfig[k, k=n+2..n+m+1]	RLC-BearerConfig with conditions UM and DRBj	entry (n+2..n+m+1) j is allocated according to internal TTCN mapping	m>0
}			
mac-CellGroupConfig	Not present		
physicalCellGroupConfig	Not present		
spCellConfig	Not present		
}			

– *CellGroupConfig-SRB2-SRB4-DRB(n, m)*

Table 4.8.1-2C: CellGroupConfig-SRB2-SRB4-DRB(n, m)

Derivation Path: Table 4.6.3-19			
Information Element	Value/remark	Comment	Condition
CellGroupConfig ::= SEQUENCE {			
rlc-BearerToAddModList SEQUENCE (SIZE(1..maxLCH)) OF RLC-BearerConfig {	2+n+m entries		
RLC-BearerConfig[1]	RLC-BearerConfig with condition SRB2	entry 1	
RLC-BearerConfig[2]	RLC-BearerConfig with condition SRB4	entry 2	
RLC-BearerConfig[k, k=3..n+2]	RLC-BearerConfigWithSRB4 with conditions AM and DRBj	entry (3..n+2) j is allocated according to internal TTCN mapping.	n>0
...		...	
RLC-BearerConfig[k, k=n+3..n+m+2]	RLC-BearerConfigWithSRB4 with conditions UM and DRBj	entry (n+3..n+m+2) j is allocated according to internal TTCN mapping.	m>0
}			
mac-CellGroupConfig	Not present		

physicalCellGroupConfig	Not present		
spCellConfig	Not present		
}			

Table 4.8.1-2D: RLC-BearerConfigWithSRB4

Derivation Path: Table 4.6.3-148 and condition DRBn			
Information Element	Value/remark	Comment	Condition
RLC-BearerConfig ::= SEQUENCE {			
logicalChannelIdentity	n+4		
}			

– *RadioBearerConfig-DRB (n, m)*

Table 4.8.1-3: RadioBearerConfig-DRB (n, m)

Derivation Path: Table 4.6.3-132 and condition EN-DC.			
Information Element	Value/remark	Comment	Condition
RadioBearerConfig ::= SEQUENCE {			
drb-ToAddModList SEQUENCE (SIZE (1..maxDRB)) OF DRB-ToAddMod {	n+m entries	BID is the total number of established DRBs in the UE, before applying the contents of this IE	
DRB-ToAddMod[k=1..n+m] SEQUENCE {		entry (1..n+m)	
cnAssociation CHOICE {			
eps-BearerIdentity	l, l=BID+5..BID+4+n+m		
}			
drb-Identity	l, l=BID+1..BID+n+m		
reestablishPDCP	Not present		
recoverPDCP	Not present		
pdcP-Config	PDCP-Config		k ≤ n
	PDCP-Config with condition UM		k > n
}			
}			
}			

- *RadioBearerConfig-DRB-NR(n, m)*

Table 4.8.1-3A: RadioBearerConfig-DRB-NR(n, m)

Derivation Path: Table 4.6.3-132 .			
Information Element	Value/remark	Comment	Condition
RadioBearerConfig ::= SEQUENCE {			
drb-ToAddModList SEQUENCE (SIZE (1..maxDRB)) OF DRB-ToAddMod {	n+m entries	BID is the total number of established DRBs in the UE, before applying the contents of this IE	
DRB-ToAddMod[k=1..n+m] SEQUENCE {		entry (1..n+m)	
cnAssociation CHOICE {			
sdap-Config	SDAP-Config		
}			
drb-Identity	BID+k	k=1..n+m	
reestablishPDCP	Not present		
recoverPDCP	Not present		
pdcP-Config	PDCP-Config		k ≤ n
	PDCP-Config with condition UM		k > n

}			
}			
}			

– *RadioBearerConfig-SRB2-DRB (n, m)*

Table 4.8.1-4: RadioBearerConfig-SRB2-DRB (n, m)

Derivation Path: Table 4.6.3-132 and condition SRB2.			
Information Element	Value/remark	Comment	Condition
RadioBearerConfig ::= SEQUENCE {			
drb-ToAddModList SEQUENCE (SIZE (1..maxDRB))	n+m entries		
OF DRB-ToAddMod {			
DRB-ToAddMod[k=1..n+m] := SEQUENCE {		entry (1..n+m)	
cnAssociation CHOICE {			
sdap-Config	SDAP-Config	SDAP-Config is configured according to internal TTCN mapping (Note 1)	
}			
drb-Identity	j	j is allocated according to internal TTCN mapping	
reestablishPDCP	Not present		
recoverPDCP	Not present		
pdcp-Config	PDCP-Config		(1<k <= n) OR (k=1 AND NOT NR_split)
	PDCP-Config with condition UM		k > n
	PDCP-Config with condition NR_split		k=1 AND NR_split
}			
}			
}			
}			
Note 1: Configure a default DRB or configure QoS flow to DRB mapping rule.			

– *RadioBearerConfig-SRB2-SRB4-DRB (n, m)*

Table 4.8.1-4A: RadioBearerConfig-SRB2-SRB4-DRB (n, m)

Derivation Path: Table 4.6.3-132 and conditions SRB2 and SRB4.			
Information Element	Value/remark	Comment	Condition
RadioBearerConfig ::= SEQUENCE {			
drb-ToAddModList SEQUENCE (SIZE (1..maxDRB))	n+m entries		
OF DRB-ToAddMod {			
DRB-ToAddMod[k=1..n+m] := SEQUENCE {		entry (1..n+m)	
cnAssociation CHOICE {			
sdap-Config	SDAP-Config	SDAP-Config is configured according to internal TTCN mapping (Note 1)	
}			
drb-Identity	j	j is allocated according to internal TTCN mapping	
reestablishPDCP	Not present		

recoverPDCP	Not present		
pdcpc-Config	PDCP-Config		1<k <= n
	PDCP-Config with condition UM		k > n
}			
}			
}			
}			
Note 1: Configure a default DRB or configure QoS flow to DRB mapping rule.			

– *RadioBearerConfig-Speech*

Table 4.8.1-5: RadioBearerConfig-Speech

Derivation Path: Table 4.6.3-132.			
Information Element	Value/remark	Comment	Condition
RadioBearerConfig ::= SEQUENCE {			
drb-ToAddModList SEQUENCE (SIZE (1..maxDRB))	1 entry		
OF DRB-ToAddMod {			
DRB-ToAddMod[1] SEQUENCE {			
cnAssociation CHOICE {			
sdap-Config SEQUENCE {	SDAP-Config		
defaultDRB	false		
}			
}			
drb-Identity	j	j is allocated according to internal TTCN mapping	
reestablishPDCP	Not present		
recoverPDCP	Not present		
pdcpc-Config	PDCP-Config with condition UM		
}			
}			
}			

– *RadioBearerConfig-Video*

Table 4.8.1-6: RadioBearerConfig-Video

Derivation Path: Table 4.6.3-132.			
Information Element	Value/remark	Comment	Condition
RadioBearerConfig ::= SEQUENCE {			
drb-ToAddModList SEQUENCE (SIZE (1..maxDRB))	2 entries		
OF DRB-ToAddMod {			
DRB-ToAddMod [1] SEQUENCE {		entry 1	
cnAssociation CHOICE {			
sdap-Config SEQUENCE {	SDAP-Config		
defaultDRB	false		
}			
}			
drb-Identity	j	j is allocated according to internal TTCN mapping	
reestablishPDCP	Not present		
recoverPDCP	Not present		
pdcpc-Config	PDCP-Config with condition UM		
}			
DRB-ToAddMod [2] SEQUENCE {		entry 2	
cnAssociation CHOICE {			

sdap-Config SEQUENCE {	SDAP-Config		
defaultDRB	false		
}			
}			
drb-Identity	k	k is allocated according to internal TTCN mapping	
reestablishPDCP	Not present		
recoverPDCP	Not present		
pdcp-Config	PDCP-Config with condition UM		
}			
}			
}			

– *RadioBearerConfig-Speech-RTT*

Table 4.8.1-6A: RadioBearerConfig-Speech-RTT

Derivation Path: Table 4.6.3-132.			
Information Element	Value/remark	Comment	Condition
RadioBearerConfig ::= SEQUENCE {			
drb-ToAddModList SEQUENCE (SIZE (1..maxDRB)) OF DRB-ToAddMod {	2 entries		
DRB-ToAddMod [1] SEQUENCE {		entry 1	
cnAssociation CHOICE {			
sdap-Config SEQUENCE {	SDAP-Config		
defaultDRB	false		
}			
}			
drb-Identity	j	j is allocated according to internal TTCN mapping	
reestablishPDCP	Not present		
recoverPDCP	Not present		
pdcp-Config	PDCP-Config with condition UM		
}			
DRB-ToAddMod [2] SEQUENCE {		entry 2	
cnAssociation CHOICE {			
sdap-Config SEQUENCE {	SDAP-Config		
defaultDRB	false		
}			
}			
drb-Identity	k	k is allocated according to internal TTCN mapping	
reestablishPDCP	Not present		
recoverPDCP	Not present		
pdcp-Config	PDCP-Config with condition UM		
}			
}			
}			

4.8.2 5GC configurations

4.8.2.1 Reference QoS rules

Table 4.8.2.1-1: Reference QoS rule #1

Derivation Path: TS 24.501, table 9.11.4.13			
Information Element	Value/remark	Comment	Condition
QoS rules			
QoS rule			
QoS rule identifier	'0000 0001'B	1 (unique per PDU session)	
Rule operation code	'001'B	Create new QoS rule	
DQR bit	'1'B	The QoS rule is the default QoS rule.	
Number of packet filters	'0001'B	1 packet filters	
Packet filter list	See table 4.8.2.2-1	Packet filter list #1	
QoS rule precedence	'1111 1111'B	255 (unique per PDU session; If the default QoS rule contains a match-all packet filter, then the highest precedence value shall be used for the default QoS rule.)	
Spare bit	'0'B		
Segregation	'0'B	Spare	
QoS flow identifier (QFI)	'00 0001'B	QFI 1 (Table 4.8.2.3-1)	

Table 4.8.2.1-2: Reference QoS rule #2

Derivation Path: TS 24.501, table 9.11.4.13			
Information Element	Value/remark	Comment	Condition
QoS rules			
QoS rule			
QoS rule identifier	'0000 0010'B	2 (unique per PDU session)	
Rule operation code	'001'B	Create new QoS rule	
DQR bit	'1'B	The QoS rule is the default QoS rule.	
Number of packet filters	'0001'B	1 packet filter	
Packet filter list	See table 4.8.2.2-1	Packet filter list #1	
QoS rule precedence	'1111 1111'B	255 (unique per PDU session; If the default QoS rule contains a match-all packet filter, then the highest precedence value shall be used for the default QoS rule.)	
Spare bit	'0'B		
Segregation	'0'B	Spare	

QoS flow identifier (QFI)	'00 0010'B	QFI 2 (Table 4.8.2.3-2)	

Table 4.8.2.1-3: Reference QoS rule #3

Derivation Path: TS 24.501, table 9.11.4.13			
Information Element	Value/remark	Comment	Condition
QoS rules			
QoS rule			
QoS rule identifier	'0000 0011'B	3 (unique per PDU session)	
Rule operation code	'001'B	Create new QoS rule	
DQR bit	'0'B	The QoS rule is the non-default QoS rule.	
Number of packet filters	'0001'B	1 packet filter	
Packet filter list	See table 4.8.2.2-2	Packet filter list #2	
QoS rule precedence	'0000 0011'B	3 (unique per PDU session)	
Spare bit	'0'B		
Segregation	'0'B	Spare	
QoS flow identifier (QFI)	'00 0001'B	QFI 1 (Table 4.8.2.3-1)	

Table 4.8.2.1-4: Reference QoS rule #4

Derivation Path: TS 24.501, table 9.11.4.13			
Information Element	Value/remark	Comment	Condition
QoS rules			
QoS rule			
QoS rule identifier	'0000 0100'B	4 (unique per PDU session)	
Rule operation code	'001'B	Create new QoS rule	
DQR bit	'1'B	The QoS rule is the default QoS rule.	
Number of packet filters	'0001'B	1 packet filter	
Packet filter list	See table 4.8.2.2-3	Packet filter list #3	
QoS rule precedence	'0000 00100'B	4 (unique per PDU session)	
Spare bit	'0'B		
Segregation	'0'B	Spare	
QoS flow identifier (QFI)	'00 0010'B	QFI 2 (Table 4.8.2.3-2)	

Table 4.8.2.1-4a: Reference QoS rule #4a

Derivation Path: TS 24.501, table 9.11.4.13			
Information Element	Value/remark	Comment	Condition
QoS rules			
QoS rule			
QoS rule identifier	'0000 1111'B	15 (unique per PDU session)	
Rule operation code	'001'B	Create new QoS rule	
DQR bit	'0'B	The QoS rule is the non-default QoS rule.	
Number of packet filters	'0001'B	1 packet filter	
Packet filter list	See table 4.8.2.2-3a	Packet filter list #3a	

QoS rule precedence	'0000 1111'B	15 (unique per PDU session)	
Spare bit	'0'B		
Segregation	'0'B	Spare	
QoS flow identifier (QFI)	'00 0100'B	QFI 4 (Table 4.8.2.3-2a)	

Table 4.8.2.1-5: Reference QoS rule #5

Derivation Path: TS 24.501, table 9.11.4.13			
Information Element	Value/remark	Comment	Condition
QoS rules			
QoS rule			
QoS rule identifier	'0000 0101'B	5 (unique per PDU session)	
Rule operation code	'001'B	Create new QoS rule	
DQR bit	'0'B	The QoS rule is the non-default QoS rule.	
Number of packet filters	'0001'B	1 packet filter	
Packet filter list	See table 4.8.2.2-4	Packet filter list #4	
QoS rule precedence	'0000 0101'B	5 (unique per PDU session)	
Spare bit	'0'B		
Segregation	'0'B	Spare	
QoS flow identifier (QFI)	'00 0101'B	QFI 5 (Table 4.8.2.3-3)	

Table 4.8.2.1-6: Reference QoS rule #6

Derivation Path: TS 24.501, table 9.11.4.13			
Information Element	Value/remark	Comment	Condition
QoS rules			
QoS rule			
QoS rule identifier	'0000 0110'B	6 (unique per PDU session)	
Rule operation code	'001'B	Create new QoS rule	
DQR bit	'0'B	The QoS rule is the non-default QoS rule.	
Number of packet filters	'0001'B	1 packet filter	
Packet filter list	See table 4.8.2.2-5	Packet filter list #5	
QoS rule precedence	'0000 0110'B	6 (unique per PDU session)	
Spare bit	'0'B		
Segregation	'0'B	Spare	
QoS flow identifier (QFI)	'00 0110'B	QFI 6 (Table 4.8.2.3-4)	

Table 4.8.2.1-7: Reference QoS rule #7

Derivation Path: TS 24.501, table 9.11.4.13			
Information Element	Value/remark	Comment	Condition
QoS rules			
QoS rule			IMS_VOICE
QoS rule identifier	'0000 0011'B	3 (unique per PDU session)	
Rule operation code	'001'B	Create new QoS rule	

DQR bit	'0'B	The QoS rule a non-default QoS rule.	
Number of packet filters	'0001'B	1 packet filter	
Packet filter list	See table 4.8.2.2-6	Packet filter list #6	
QoS rule precedence	'0000 0001'B	1 (unique per PDU session)	
Spare bit	'0'B		
Segregation	'0'B	Spare	
QoS flow identifier (QFI)	'00 0111'B	QFI 7 (Table 4.8.2.3-5)	
QoS rule			IMS_VIDEO
QoS rule identifier	'0000 0100'B	4 (unique per PDU session)	
Rule operation code	'001'B	Create new QoS rule	
DQR bit	'0'B	The QoS rule a non-default QoS rule.	
Number of packet filters	'0001'B	1 packet filter	
Packet filter list	See table 4.8.2.2-7	Packet filter list #7	
QoS rule precedence	'0000 0010'B	2 (unique per PDU session)	
Spare bit	'0'B		
Segregation	'0'B	Spare	
QoS flow identifier (QFI)	'00 1000'B	QFI 8 (Table 4.8.2.3-6)	
QoS rule			IMS_RTT
QoS rule identifier	'0000 1101'B	13 (unique per PDU session)	
Rule operation code	'001'B	Create new QoS rule	
DQR bit	'0'B	The QoS rule a non-default QoS rule.	
Number of packet filters	'0001'B	1 packet filter	
Packet filter list	See table 4.8.2.2-11	Packet filter list #11	
QoS rule precedence	'0000 0011'B	3 (unique per PDU session)	
Spare bit	'0'B		
Segregation	'0'B	Spare	
QoS flow identifier (QFI)	'00 1111'B	QFI 15 (Table 4.8.2.3-11)	
QoS rule			IMS_BDC
QoS rule identifier	'0000 0101'B	5 (unique per PDU session)	
Rule operation code	'001'B	Create new QoS rule	
DQR bit	'0'B	The QoS rule a non-default QoS rule.	
Number of packet filters	'0001'B	1 packet filter	
Packet filter list	See table 4.8.2.2-12	Packet filter list #12	
QoS rule precedence	'0000 0100'B	4 (unique per PDU session)	
Spare bit	'0'B		
Segregation	'0'B	Spare	
QoS flow identifier (QFI)	'01 0000'B	QFI 16 (Table 4.8.2.3-12)	

Condition	Explanation
IMS_VOICE	If this QoS rule is used to setup an IMS voice session
IMS_VIDEO	If this QoS rule is used to setup an IMS video session

IMS_RTT	If this QoS rule is used to setup an IMS Real-time text session
IMS_BDC	If this QoS rule is used to setup an IMS bootstrap data channel session

Table 4.8.2.1-8: Reference QoS rule #8

Derivation Path: TS 24.501, table 9.11.4.13			
Information Element	Value/remark	Comment	Condition
QoS rules			
QoS rule			
QoS rule identifier	'0000 0111'B	7 (unique per PDU session)	
Rule operation code	'001'B	Create new QoS rule	
DQR bit	'1'B	The QoS rule is the default QoS rule.	
Number of packet filters	'0001'B	1 packet filter	
Packet filter list	See table 4.8.2.2-1	Packet filter list #1	
QoS rule precedence	'1111 1111'B	255 (unique per PDU session; If the default QoS rule contains a match-all packet filter, then the highest precedence value shall be used for the default QoS rule.)	
Spare bit	'0'B		
Segregation	'0'B	Spare	
QoS flow identifier (QFI)	'00 1001'B	QFI 9 (Table 4.8.2.3-7)	

Table 4.8.2.1-9: Reference QoS rule #9

Derivation Path: TS 24.501, table 9.11.4.13			
Information Element	Value/remark	Comment	Condition
QoS rules			
QoS rule			
QoS rule identifier	'0000 1000'B	8 (unique per PDU session)	
Rule operation code	'001'B	Create new QoS rule	
DQR bit	'1'B	The QoS rule is the default QoS rule.	
Number of packet filters	'0001'B	1 packet filter	
Packet filter list	See table 4.8.2.2-1	Packet filter list #1	
QoS rule precedence	'1111 1111'B	255 (unique per PDU session; If the default QoS rule contains a match-all packet filter, then the highest precedence value shall be used for the default QoS rule.)	
Spare bit	'0'B		
Segregation	'0'B	Spare	
QoS flow identifier (QFI)	'00 1100'B	QFI 10 (Table 4.8.2.3-8)	

Table 4.8.2.1-10: Reference QoS rule #10 (MCX signalling)

Derivation Path: TS 24.501, table 9.11.4.13			
Information Element	Value/remark	Comment	Condition
QoS rules			
QoS rule			
QoS rule identifier	'0000 1001'B	9 (unique per PDU session)	
Rule operation code	'001'B	Create new QoS rule	
DQR bit	'1'B	The QoS rule is the default QoS rule.	
Number of packet filters	'0001'B	1 packet filter	
Packet filter list	See table 4.8.2.2-1	Packet filter list #1	
QoS rule precedence	'1111 1111'B	255 (unique per PDU session; If the default QoS rule contains a match-all packet filter, then the highest precedence value shall be used for the default QoS rule.)	
Spare bit	'0'B		
Segregation	'0'B	Spare	
QoS flow identifier (QFI)	'00 1101'B	QFI 11 (Table 4.8.2.3-9)	

Table 4.8.2.1-11: Reference QoS rule #11 (MCX user plane data)

Derivation Path: TS 24.501, table 9.11.4.13			
Information Element	Value/remark	Comment	Condition
QoS rules			
QoS rule			
QoS rule identifier	'0000 1010'B	10 (unique per PDU session)	MCPTT
	'0000 1011'B	11 (unique per PDU session)	MCVIDEO
	'0000 1100'B	12 (unique per PDU session)	MCDATA
Rule operation code	'001'B	Create new QoS rule	
DQR bit	'0'B	The QoS rule a non-default QoS rule.	
Number of packet filters	'0010'B	2 packet filters	MCPTT
	'0011'B	3 packet filters	MCVIDEO
	'0001'B	1 packet filter	MCDATA
Packet filter list	See table 4.8.2.2-8	Packet filter list #8	MCPTT
	See table 4.8.2.2-9	Packet filter list #9	MCVIDEO
	See table 4.8.2.2-10	Packet filter list #10	MCDATA
QoS rule precedence	'0000 0001'B	1 (Note 1)	MCPTT
	'0000 0010'B	2 (Note 1)	MCVIDEO
	'0000 0011'B	3 (Note 1)	MCDATA
Spare bit	'0'B		
Segregation	'0'B	Spare	
QoS flow identifier (QFI)	'00 1100'B	QFI 12 (Table 4.8.2.3-10)	MCPTT

	'00 1101'B	QFI 13 (Table 4.8.2.3-10)	MCVIDEO
	'00 1110'B	QFI 14 (Table 4.8.2.3-10)	MCDATA
Note 1: In case of parallel MCX sessions the precedences would need to be unique within the PDU session.			

Condition	Explanation
MCPTT	QoS rule for MCPTT user plane data
MCVIDEO	QoS rule for MCVideo user plane data
MCDATA	QoS rule for MCDData user plane data

4.8.2.2 Reference packet filters

Table 4.8.2.2-1: Packet filter list #1

Derivation Path: TS 24.501, table 9.11.4.13			
Information Element	Value/remark	Comment	Condition
Packet filter list			
Packet filter direction	'11'B	bidirectional	
Packet filter identifier	'0001'B	Id 1	
Component type 1 ID	'0000 0001'B	Match-all type	

Table 4.8.2.2-2: Packet filter list #2

Derivation Path: TS 24.501, table 9.11.4.13			
Information Element	Value/remark	Comment	Condition
Packet filter list			
Packet filter direction	'11'B	bidirectional	
Packet filter identifier	'0010'B	Id 2	
Component type 1 ID	0 0 0 1 0 0 0 0	IPv4 remote address type	remoteIPv4
	0 0 1 0 0 0 0 1	IPv6 remote address type/prefix length type	remoteIPv6
Component type 1 Value	10.10.10.2 255.255.255.255	See Note 1	remoteIPv4
	C0C0:C0C0:C0C0:C002 C0C0:C0C0:C0C0:C0C0/ 64	See Note 1	remoteIPv6
Note 1: This IP address is also the address of an IP server able to send a flow of downlink IP packets to the UE. remoteIPv4 applies if the UE has acquired an IPv4 address only, remoteIPv6 applies if the UE has acquired an IPv6 address only, or both an IPv6 and an IPv4 address.			

Table 4.8.2.2-3: Packet filter list #3

Derivation Path: TS 24.501, table 9.11.4.13			
Information Element	Value/remark	Comment	Condition
Packet filter list			
Packet filter direction	'11'B	bidirectional	
Packet filter identifier	'0011'B	Id 3	
Component type 1 ID	0 0 0 1 0 0 0 0	IPv4 remote address type	remoteIPv4
	0 0 1 0 0 0 0 1	IPv6 remote address type/prefix length type	remoteIPv6
Component type 1 Value	10.10.10.3 255.255.255.255	See Note 1	remoteIPv4
	C0C0:C0C0:C0C0:C003 C0C0:C0C0:C0C0:C0C0/	See Note 1	remoteIPv6

	64		
Note 1: This IP address is also the address of an IP server able to send a flow of downlink IP packets to the UE. remotelIPv4 applies if the UE has acquired an IPv4 address only, remotelIPv6 applies if the UE has acquired an IPv6 address only, or both an IPv6 and an IPv4 address.			

Table 4.8.2.2-3a: Packet filter list #3a

Derivation Path: TS 24.501, table 9.11.4.13			
Information Element	Value/remark	Comment	Condition
Packet filter list			
Packet filter direction	'11'B	bidirectional	
Packet filter identifier	'1111'B	Id 15	
Component type 1 ID	0 0 0 1 0 0 0 0	IPv4 remote address type	remotelIPv4
	0 0 1 0 0 0 0 1	IPv6 remote address type/prefix length type	remotelIPv6
Component type 1 Value	10.10.10.30 255.255.255.255	See Note 1	remotelIPv4
	C0C0:C0C0:C0C0:C030 C0C0:C0C0:C0C0:C0C0/ 64	See Note 1	remotelIPv6
Note 1: This IP address is also the address of an IP server able to send a flow of downlink IP packets to the UE. remotelIPv4 applies if the UE has acquired an IPv4 address only, remotelIPv6 applies if the UE has acquired an IPv6 address only, or both an IPv6 and an IPv4 address.			

Table 4.8.2.2-4: Packet filter list #4

Derivation Path: TS 24.501, table 9.11.4.13			
Information Element	Value/remark	Comment	Condition
Packet filter list			
Packet filter direction	'11'B	bidirectional	
Packet filter identifier	'0100'B	Id 4	
Component type 1 ID	0 0 0 1 0 0 0 0	IPv4 remote address type	remotelIPv4
	0 0 1 0 0 0 0 1	IPv6 remote address type/prefix length type	remotelIPv6
Component type 1 Value	10.10.10.4 255.255.255.255	See Note 1	remotelIPv4
	C0C0:C0C0:C0C0:C004 C0C0:C0C0:C0C0:C0C0/ 64	See Note 1	remotelIPv6
Note 1: This IP address is also the address of an IP server able to send a flow of downlink IP packets to the UE. remotelIPv4 applies if the UE has acquired an IPv4 address only, remotelIPv6 applies if the UE has acquired an IPv6 address only, or both an IPv6 and an IPv4 address.			

Table 4.8.2.2-5: Packet filter list #5

Derivation Path: TS 24.501, table 9.11.4.13			
Information Element	Value/remark	Comment	Condition
Packet filter list			
Packet filter direction	'11'B	bidirectional	
Packet filter identifier	'0101'B	Id 5	
Component type 1 ID	0 0 0 1 0 0 0 0	IPv4 remote address type	remotelIPv4
	0 0 1 0 0 0 0 1	IPv6 remote address type/prefix length type	remotelIPv6
Component type 1 Value	10.10.10.5	See Note 1	remotelIPv4

	255.255.255.255		
	C0C0:C0C0:C0C0:C005 C0C0:C0C0:C0C0:C0C0/ 64	See Note 1	remotelPv6
Note 1: This IP address is also the address of an IP server able to send a flow of downlink IP packets to the UE. remotelPv4 applies if the UE has acquired an IPv4 address only, remotelPv6 applies if the UE has acquired an IPv6 address only, or both an IPv6 and an IPv4 address.			

Table 4.8.2.2-6: Packet filter list #6

Derivation Path: TS 24.501, table 9.11.4.13			
Information Element	Value/remark	Comment	Condition
Packet filter list			
Packet filter direction	'11'B	bidirectional	
Packet filter identifier	0110'B	Id 6	
Component type 1 ID	0 1 0 1 0 0 0 1	Remote port range type	
Component type 1 Value	media port	SS speech media port as used in the SDP negotiation (RTP remote port); see Note 1	
	media port + 1	RTCP remote port; see Note 1	
Component type 2 ID	0 0 1 1 0 0 0 0	Protocol identifier/Next header type	
Component type 2 Value	17	UDP	
Note 1: According to TS 26.114 [45] and RFC 4566 [46] a "media port" can be understood as the transport port to which a media stream is sent.			

Table 4.8.2.2-7: Packet filter list #7

Derivation Path: TS 24.501, table 9.11.4.13			
Information Element	Value/remark	Comment	Condition
Packet filter list			
Packet filter direction	'11'B	bidirectional	
Packet filter identifier	0111'B	Id 7	
Component type 1 ID	0 1 0 1 0 0 0 1	Remote port range type	
Component type 1 Value	media port	SS video media port as used in the SDP negotiation (RTP remote port); see Note 1	
	media port + 1	RTCP remote port; see Note 1	
Component type 2 ID	0 0 1 1 0 0 0 0	Protocol identifier/Next header type	
Component type 2 Value	17	UDP	
Note 1: According to TS 26.114 [45] and RFC 4566 [46] a "media port" can be understood as the transport port to which a media stream is sent.			

Table 4.8.2.2-8: Packet filter list #8 (MCPTT)

Derivation Path: TS 24.501, table 9.11.4.13			
Information Element	Value/remark	Comment	Condition
Packet filter [1]		Speech	
Packet filter direction	'11'B	bidirectional	
Packet filter identifier	'1000'B	Id 8	

Component type 1 ID	0 1 0 1 0 0 0 1	Remote port range type	
Component type 1 Value	media port	SS speech media port as used in the SDP negotiation (RTP remote port)	
	media port + 1	RTCP remote port	
Component type 2 ID	0 0 1 1 0 0 0 0	Protocol identifier/Next header type	
Component type 2 Value	17	UDP	
Packet filter [2]		Floor control	
Packet filter direction	'11'B	bidirectional	
Packet filter identifier	'1001'B	Id 9	
Component type 1 ID	0 1 0 1 0 0 0 0	Single remote port	
Component type 1 Value	media port	SS floor control port as used in the SDP negotiation	
Component type 2 ID	0 0 1 1 0 0 0 0	Protocol identifier/Next header type	
Component type 2 Value	17	UDP	

Table 4.8.2.2-9: Packet filter list #9 (MCVideo)

Derivation Path: TS 24.501, table 9.11.4.13			
Information Element	Value/remark	Comment	Condition
Packet filter [1]		Speech	
Packet filter direction	'11'B	bidirectional	
Packet filter identifier	'1000'B	Id 8	
Component type 1 ID	0 1 0 1 0 0 0 1	Remote port range type	
Component type 1 Value	media port	SS speech media port as used in the SDP negotiation (RTP remote port)	
	media port + 1	RTCP remote port	
Component type 2 ID	0 0 1 1 0 0 0 0	Protocol identifier/Next header type	
Component type 2 Value	17	UDP	
Packet filter [2]		Video	
Packet filter direction	'11'B	bidirectional	
Packet filter identifier	'1001'B	Id 9	
Component type 1 ID	0 1 0 1 0 0 0 1	Remote port range type	
Component type 1 Value	media port	SS video media port as used in the SDP negotiation (RTP remote port)	
	media port + 1	RTCP remote port	
Component type 2 ID	0 0 1 1 0 0 0 0	Protocol identifier/Next header type	
Component type 2 Value	17	UDP	
Packet filter [3]		Transmission control	
Packet filter direction	'11'B	bidirectional	
Packet filter identifier	'1010'B	Id 10	
Component type 1 ID	0 1 0 1 0 0 0 0	Single remote port	
Component type 1 Value	media port	SS transmission control port as used in the SDP negotiation	

Component type 2 ID	0 0 1 1 0 0 0 0	Protocol identifier/Next header type	
Component type 2 Value	17	UDP	

Table 4.8.2.2-10: Packet filter list #10 (MCData)

Derivation Path: TS 24.501, table 9.11.4.13			
Information Element	Value/remark	Comment	Condition
Packet filter [1]			
Packet filter direction	'11'B	bidirectional	
Packet filter identifier	'1000'B	Id 8	
Component type 1 ID	0 1 0 1 0 0 0 0	Single remote port	
Component type 1 Value	media port	Port used for the data stream (e.g. MSRP)	
Component type 2 ID	0 0 1 1 0 0 0 0	Protocol identifier/Next header type	
Component type 2 Value	6	TCP	

Table 4.8.2.2-11: Packet filter list #11 (RTT)

Derivation Path: TS 24.501, table 9.11.4.13			
Information Element	Value/remark	Comment	Condition
Packet filter list			
Packet filter direction	'11'B	bidirectional	
Packet filter identifier	'1001'B	Id 9	
Component type 1 ID	0 1 0 1 0 0 0 1	Remote port range type	
Component type 1 Value	media port	SS RTT media port as used in the SDP negotiation (RTP remote port); see Note 1	
	media port + 1	RTCP remote port; see Note 1	
Component type 2 ID	0 0 1 1 0 0 0 0	Protocol identifier/Next header type	
Component type 2 Value	17	UDP	
Note 1: According to TS 26.114 [45] and RFC 4566 [46] a "media port" can be understood as the transport port to which a media stream is sent.			

Table 4.8.2.2-12: Packet filter list #12

Derivation Path: TS 24.501, table 9.11.4.13			
Information Element	Value/remark	Comment	Condition
Packet filter list			
Packet filter direction	'11'B	bidirectional	
Packet filter identifier	'1001'B	Id 9	
Component type 1 ID	0 1 0 1 0 0 0 0	Single remote port	
Component type 1 Value	media port	SS application media port as used in the SDP negotiation. (Note 1)	
Component type 2 ID	0 0 1 1 0 0 0 0	Protocol identifier/Next header type	
Component type 2 Value	17	UDP	

Note 1: According to TS 26.114 [45] and RFC 4566 [46] a "media port" can be understood as the transport port to which a media stream is sent.

4.8.2.3 Reference QoS flow descriptions

Table 4.8.2.3-1: Reference QoS flow #1

Derivation Path: TS 24.501, table 9.11.4.12			
Information Element	Value/remark	Comment	Condition
QoS flow descriptions			
QoS flow description			
QFI	'00 0001'B	QFI 1	
Operation code	'001'B	Create new QoS flow description	
E bit	'1'B	Parameters list is included	
Number of parameters	'00 0001'B	1 parameter	
	'00 0010'B	2 parameters	Interworking with EPS
5QI	'0000 1001'B	5QI 9	
EPS bearer identity	Any not yet assigned value different to '5'		Interworking with EPS

Condition	Explanation
Interworking_with_EPS	If this flow is used in the Authorized QoS flow descriptions IE of a PDU SESSION ESTABLISHMENT ACCEPT message or PDU SESSION MODIFICATION COMMAND message also including the Mapped EPS bearer context IE.

Table 4.8.2.3-2: Reference QoS flow #2

Derivation Path: TS 24.501, table 9.11.4.12			
Information Element	Value/remark	Comment	Condition
QoS flow descriptions			
QoS flow description			
QFI	'00 0010'B	QFI 2	
Operation code	'001'B	Create new QoS flow description	
E bit	'1'B	Parameters list is included	
Number of parameters	'00 0001'B	1 parameter	
	'00 0010'B	2 parameters	Interworking with EPS
5QI	'0000 0101'B	5QI 5	
EPS bearer identity	'0101 0000'B	EBI 5	Interworking with EPS
	Any not yet assigned value different from '5'		Emergency Session AND Interworking with EPS

Condition	Explanation
Interworking_with_EPS	If this flow is used in the Authorized QoS flow descriptions IE of a PDU SESSION ESTABLISHMENT ACCEPT message or PDU SESSION MODIFICATION COMMAND message also including the Mapped EPS bearer context IE.
EmergencySession	If this flow is used in the Authorized QoS flow descriptions IE of a PDU Session Establishment Accept message for an emergency PDU session

Table 4.8.2.3-2a: Reference QoS flow #2a

Derivation Path: TS 24.501, table 9.11.4.12			
Information Element	Value/remark	Comment	Condition
QoS flow descriptions			
QoS flow description			
QFI	'00 0100'B	QFI 4	
Operation code	'001'B	Create new QoS flow description	
E bit	'1'B	Parameters list is included	
Number of parameters	'00 0001'B	1 parameter	
5QI	'0000 0101'B	5QI 5	

Table 4.8.2.3-3: Reference QoS flow #3

Derivation Path: TS 24.501, table 9.11.4.12			
Information Element	Value/remark	Comment	Condition
QoS flow descriptions			
QoS flow description			
QFI	'00 0101'B	QFI 5	
Operation code	'001'B	Create new QoS flow description	
E bit	'1'B	Parameters list is included	
Number of parameters	'00 0001'B	1 parameter	
5QI	'0000 0101'B	5QI 5	

Table 4.8.2.3-4: Reference QoS flow #4

Derivation Path: TS 24.501, table 9.11.4.12			
Information Element	Value/remark	Comment	Condition
QoS flow descriptions			
QoS flow description			
QFI	'00 0110'B	QFI 6	
Operation code	'001'B	Create new QoS flow description	
E bit	'1'B	Parameters list is included	
Number of parameters	'00 0001'B	1 parameter	
5QI	'0000 0101'B	5QI 5	

Table 4.8.2.3-5: Reference QoS flow #5

Derivation Path: TS 24.501, table 9.11.4.12			
Information Element	Value/remark	Comment	Condition
QoS flow descriptions			
QoS flow description			
QFI	'00 0111'B	QFI 7	
Operation code	'001'B	Create new QoS flow description	
E bit	'1'B	Parameters list is included	
Number of parameters	'00 0101'B	5 parameters	Interworking with EPS
	'00 0110'B	6 parameters	
5QI	'0000 0001'B	5QI 1	
GFBAR uplink	'040002'H	128 Kbps	
GFBAR downlink	'040002'H	128 Kbps	
MFBR uplink	'040005'H	320 Kbps	
MFBR downlink	'040005'H	320 Kbps	
EPS bearer identity	Any not yet assigned value different to '5'	EBI 6	Interworking with EPS

Condition	Explanation
Interworking_with_EPS	If this flow is used in the Authorized QoS flow descriptions IE of a PDU SESSION ESTABLISHMENT ACCEPT message or PDU SESSION MODIFICATION COMMAND message also including the Mapped EPS bearer context IE.

Table 4.8.2.3-6: Reference QoS flow #6

Derivation Path: TS 24.501, table 9.11.4.12			
Information Element	Value/remark	Comment	Condition
QoS flow descriptions			
QoS flow description			
QFI	'00 1000'B	QFI 8	
Operation code	'001'B	Create new QoS flow description	
E bit	'1'B	Parameters list is included	
Number of parameters	'00 0101'B	5 parameters	
	'00 0110'B	6 parameters	Interworking with_EPS
5QI	'0000 0010'B	5QI 2	
GFBP uplink	'020012'H	72 Kbps	
GFBP downlink	'020012'H	72 Kbps	
MFBR uplink	'030033'H	816 Kbps	
MFBR downlink	'030033'H	816 Kbps	
EPS bearer identity	Any not yet assigned value different to '5'	EBI 7	Interworking with_EPS

Condition	Explanation
Interworking_with_EPS	If this flow is used in the Authorized QoS flow descriptions IE of a PDU SESSION ESTABLISHMENT ACCEPT message or PDU SESSION MODIFICATION COMMAND message also including the Mapped EPS bearer context IE.

Table 4.8.2.3-7: Reference QoS flow #7

Derivation Path: TS 24.501, table 9.11.4.12			
Information Element	Value/remark	Comment	Condition
QoS flow descriptions			
QoS flow description			
QFI	'00 1001'B	QFI 9	
Operation code	'001'B	Create new QoS flow description	
E bit	'1'B	Parameters list is included	
Number of parameters	'00 0001'B	1 parameter	
5QI	'0101 0010'B	5QI 82	

Table 4.8.2.3-8: Reference QoS flow #8

Derivation Path: TS 24.501, table 9.11.4.12			
Information Element	Value/remark	Comment	Condition
QoS flow descriptions			
QoS flow description			
QFI	'00 1001'B	QFI 10	
Operation code	'001'B	Create new QoS flow description	
E bit	'1'B	Parameters list is included	
Number of parameters	'00 0001'B	1 parameter	

5QI	'0101 0010'B	5QI 9	

Table 4.8.2.3-9: Reference QoS flow #9 (MCX signalling)

Derivation Path: TS 24.501, table 9.11.4.12			
Information Element	Value/remark	Comment	Condition
QoS flow descriptions			
QoS flow description			
QFI	'00 1011'B	QFI 11	
Operation code	'001'B	Create new QoS flow description	
E bit	'1'B	Parameters list is included	
Number of parameters	'00 0001'B	1 parameter	
5QI	'0100 0101'B	5QI 69 (MCX signalling according to TS 23.501 [68] Table 5.7.4-1)	

Table 4.8.2.3-10: Reference QoS flow #10 (MCX user plane data)

Derivation Path: TS 24.501, table 9.11.4.12			
Information Element	Value/remark	Comment	Condition
QoS flow descriptions			
QoS flow description			
QFI	'00 1100'B	QFI 12	MCPTT
	'00 1101'B	QFI 13	MCVIDEO
	'00 1110'B	QFI 14	MCDATA
Operation code	'001'B	Create new QoS flow description	
E bit	'1'B	Parameters list is included	
Number of parameters	'00 0001'B	1 parameter	
5QI	'0100 0001'B	5QI 65 (MCPTT user plane according to TS 23.501 [68] Table 5.7.4-1)	MCPTT
	'0100 0011'B	5QI 67 (MCVideo user plane according to TS 23.501 [68] Table 5.7.4-1)	MCVIDEO
	'0100 0110'B	5QI 70 (MCData user plane according to TS 23.501 [68] Table 5.7.4-1)	MCDATA

Table 4.8.2.3-11: Reference QoS flow #11 (RTT)

Derivation Path: TS 24.501, table 9.11.4.12			
Information Element	Value/remark	Comment	Condition
QoS flow descriptions			
QoS flow description			
QFI	'00 1111'B	QFI 15	
Operation code	'001'B	Create new QoS flow description	
E bit	'1'B	Parameters list is included	

Number of parameters	'00 0101'B	5 parameters	
	'00 0110'B	6 parameters	Interworking with EPS
5QI	'0000 0001'B	5QI 1	
GFBF uplink	'010004'H	4 Kbps	
GFBF downlink	'010004'H	4 Kbps	
MFBF uplink	'010004'H	4 Kbps	
MFBF downlink	'010004'H	4 Kbps	
EPS bearer identity	Any not yet assigned value different to '5'	EBI 7	Interworking with EPS

Condition	Explanation
Interworking_with_EPS	If this flow is used in the Authorized QoS flow descriptions IE of a PDU SESSION ESTABLISHMENT ACCEPT message or PDU SESSION MODIFICATION COMMAND message also including the Mapped EPS bearer context IE.

Table 4.8.2.3-12: Reference QoS flow #12

Derivation Path: TS 24.501, table 9.11.4.12			
Information Element	Value/remark	Comment	Condition
QoS flow descriptions			
QoS flow description			
QFI	'01 0000'B	QFI 16	
Operation code	'001'B	Create new QoS flow description	
E bit	'1'B	Parameters list is included	
Number of parameters	'00 0001'B	1 parameter	
	'00 0010'B	2 parameters	Interworking with EPS
5QI	'0000 1001'B	5QI 9	
EPS bearer identity	Any not yet assigned value different to '5'	EBI 8	Interworking with EPS

Condition	Explanation
Interworking_with_EPS	If this flow is used in the Authorized QoS flow descriptions IE of a PDU SESSION ESTABLISHMENT ACCEPT message or PDU SESSION MODIFICATION COMMAND message also including the Mapped EPS bearer context IE.

4.8.3 Common test UICC and USIM parameters

This clause defines default parameters for programming the elementary files of the test UICC when running conformance test cases defined in 3GPP TS 38.523-1[12].

NOTE: GSMA TS 48 [65] defines the default eUICC test profile in alignment with default UICC contents

4.8.3.1 General

See clause 4.9.1 in 3GPP TS 36.508 [2] for the definition of test algorithm for

- authentication via EPC;
- authentication via 5GC using 5G AKA based primary authentication and key agreement procedure.
- authentication via 5GC using EAP-AKA' based primary authentication and key agreement procedure, further the Derivation of MSK, EMSK and other keys shall be as derived as clause 3.3 of IETF RFC 5448 [31], using Key derivation function HMAC-SHA-256 algorithm.

4.8.3.2 Default parameters for the test USIM and ISIM

Same as clause 4.9.2 in 3GPP TS 36.508 [2] for

- authentication via EPC;
- authentication via 5GC using 5G AKA based primary authentication and key agreement procedure.
- authentication via 5GC using EAP-AKA' based primary authentication and key agreement procedure.

4.8.3.3 Default settings for the Elementary Files (EFs)

Same as clause 4.9.3 in 3GPP TS 36.508 [2] for

- authentication via EPC;
- authentication via 5GC using 5G AKA based primary authentication and key agreement procedure
- authentication via 5GC using EAP-AKA' based primary authentication and key agreement procedure.

4.8.3.3.1 Modified contents of the USIM Elementary Files

Table 4.8.3.3.1-1: EF_{UST} (USIM Service Table)

Services		Activated	Version	Condition
Service n°122	5GS Mobility Management Information	Optional		5GC
Service n°123	5GS Security Parameters	Optional		5GC
Service n°124	Subscription identifier privacy support	Optional		5GC
Service n°125	SUCI calculation by the USIM	Optional		5GC
Service n°126	UAC Access Identities Configuration	Optional		5GC
Service n°127	Control plane-based steering of UE in VPLMN	Optional		5GC
Service n°128	Call control on PDU Session by USIM	Optional		
Service n°129	5GS Operator PLMN List	Optional		
Note: Only 5GS related services indicated				

Condition	Explanation
5GC	Authentication via 5GC

4.8.3.3.2 Contents of Elementary Files at the DF_{5GS} level

This clause defines the default contents of Elementary Files (EF) that are specific for 5GS and which are grouped in Data File (DF) structure 5GS.

EF_{5GS3GPPLOCi} (5GS 3GPP location information)

File size: 20 Bytes

Default values: Bytes 1 to 13 (HEX): FF FF FF FF FF FF FF FF FF FF FF FF (5G-GUTI)

Bytes 14 to 19 (HEX): 42 F6 18 FF FF FE (Last visited registered TAI in 5GS for 3GPP access)

Byte 20 (BIN): 00000001 (5GS update status for 3GPP access = "5U2 not updated")

Bytes 14 to 19: TAI-MCC = 246 (bytes 14 to 15) and TAI-MNC = 81 (byte 16) are frequently used. The TAC (bytes 17 to 19) is set to "FF FF FE" since this, in conjunction with byte 20 setting of "01", is used to ensure that the UE performs registration at the beginning of a test.

Bytes in this file (e.g. GUTI in bytes 1 to 13) may be updated as a result of a registration attempt by the UE.

EF_{5GSN3GPPLOCi} (5GS non-3GPP location information)

File size: 20 Bytes

Default values: Bytes 1 to 13 (HEX): FF FF FF FF FF FF FF FF FF FF FF FF FF (5G-GUTI)

Bytes 14 to 19 (HEX): 42 F6 18 FF FF FE (Last visited registered TAI in 5GS for non-3GPP access)

Byte 20 (BIN): 00000001 (5GS update status for non-3GPP access = "5U2 not updated")

Bytes 14 to 19: TAI-MCC = 246 (bytes 14 to 15) and TAI-MNC = 81 (byte 16) are frequently used. The TAC (bytes 17 to 19) is set to "FF FF FE" since this, in conjunction with byte 20 setting of "01", is used to ensure that the UE performs registration at the beginning of a test.

Bytes in this file (e.g. GUTI in bytes 1 to 13) may be updated as a result of a registration attempt by the UE.

EF_{5GS3GPPNSC} (5GS 3GPP Access NAS Security Context)

The programming of this EF follows default parameter written in 3GPP TS 31.102 [33], annex E.

EF_{5GSN3GPPNSC} (5GS non-3GPP Access NAS Security Context)

The programming of this EF follows default parameter written in 3GPP TS 31.102 [33], annex E.

EF_{5GAUTHKEYS} (5G authentication keys)

The programming of this EF follows default parameter written in 3GPP TS 31.102 [33], annex E.

EF_{UAC_AIC} (UAC Access Identities Configuration)

The programming of this EF is a test house option.

EF_{SUCI_Calc_Info} (Subscription Concealed Identifier Calculation Information EF)

The programming of this EF is a test house option.

EF_{OPL5G} (5GS Operator PLMN List)

The programming of this EF follows default parameter written in 3GPP TS 31.102 [33], annex E.

4.8.3.3.3 Default settings of UICC and USIM for V2X

EF_{UST} (USIM Service Table):

Same as clause 4.9.3.4 of TS 36.508 [2].

EF_{VST} (V2X Service Table)

If service n°119 is "available" in the USIM Service Table, this file shall be present. This EF indicates the coding of the V2X management objects and which V2X services are available.

File size: 2 Bytes

Default values: Bytes 1 to 2 (HEX): 01 02

Coding of the V2X management objects is according to 3GPP TS 24.588 [113].

Service n°2 V2X policy configuration data over PC5 is supported.

NOTE: The default value for NR support of V2X services is different from that for LTE V2X in clause 4.9.3.4 of TS 36.508 [2].

EF_{V2XP_PC5} (V2X data policy over PC5)

If service n°2 is "available" in EF_{VST}, this file shall be present. This EF contains V2X in 5GS UE policies over PC5. The format of the V2X in 5GS UE policies over PC5 are specified in 3GPP TS 24.588 [113].

The V2X in 5GS UE policies over PC5 contents:

Table 4.8.3.3.3-1: V2X data policy over PC5

Description	Value	M/O	Length (bytes)
V2X data policy over PC5 Tag	'A0'	M	1
Length	Note 1	M	Note 2
Validity timer	'FF FF FF FF FF FF FF FF FF FF'H	M	X1
Indicator bits	'1000 0000'B	M	1
Served by E-UTRA or served by NR Tag	'80'	M	1
Length	X2	M	Note 2
Served by E-UTRA or served by NR information	See Table 4.7D.2.2-2	M	X2
Not served by E-UTRA and not served by NR Tag	'81'	O	1
Length	X3	O	Note 2
Not served by E-UTRA and not served by NR information	See Table 4.7D.2.2-6	O	X3
V2X service identifier to Tx profiles mapping rules Tag	'82'	O	1
Length	X4	O	Note 2
V2X service identifier to Tx profiles mapping rules information	See Table 4.7D.2.2-12		X4
Privacy config Tag	'83'	O	1
Length	X5	O	Note 2
Privacy config information	See Table 4.7D.2.2-15		X5
V2X communication over PC5 in E-UTRA Tag	'84'	O	1
Length	X6	O	Note 2
V2X communication over PC5 in E-UTRA information	See Table 4.7D.2.2-19	O	X6
V2X communication over PC5 in NR Tag	'85'	O	1
Length	X7	O	Note 2
V2X communication over PC5 in NR Information	See Table 4.7D.2.2-31	O	X7
Note 1: This is the total size of the constructed TLV object.			
Note 2: The length is coded according to ISO/IEC 8825-1 [35].			

4.8.3.3.4 Default settings of UICC and USIM for 5G ProSe

EF_{AD} (Administrative Data)

- Additional information:

Byte 3 (second byte of additional information):

b5 is used to indicate whether the USIM enables the UE to use "operator-managed" radio resources, in the cases described in 3GPP TS 23.304[60].

- b5=1: the UE is authorized to use "operator-managed" radio resources.

EF_{UST} (USIM Service Table):

Services		Activated	Version
Service n°139	5G ProSe	Optional	
Note: Only 5G ProSe related services indicated.			

EF_{5G_PROSE_ST} (5G ProSe Service Table)

If service n°139 is "available" in the USIM Service Table, this file shall be present. This EF indicates which 5G ProSe services are available.

File size: 1 Bytes

Default values: Bytes 1 (HEX): 0F

Service n°1 5G ProSe configuration data for direct discovery is supported.

Service n°2 5G ProSe configuration data for direct communication is supported.

Service n°3 5G ProSe configuration data for UE-to-network relay UE is supported.

Service n°4 5G ProSe configuration data for remote UE is supported.

EF_{5G_PROSE_DD} (5G ProSe configuration data for direct discovery)

If service n°139 is "available" in the USIM Service Table and service n°1 is "available" in EF_{5G_PROSE_ST}, this file shall be present. This EF contains 5G ProSe policy for direct discovery. The format of the 5G ProSe policy for direct discovery are specified in 3GPP TS 24.555[59].

The 5G ProSe configuration data for direct discovery contents:

Table 4.8.3.3.4-1: 5G ProSe policy for direct discovery

Description	Value	M/O	Length (bytes)
5G ProSe configuration data for direct discovery Tag	'A0'	M	1
Length	Note 1	M	Note 2
Validity timer Tag	'85'	M	1
Length	5	M	Note 2
Validity timer information	'FF FF FF FF FF'H	M	5
Served by NG-RAN Tag	'80'	M	1
Length	X1	M	Note 2
Served by NG-RAN information	See Table 4.7C.1.2-2	M	X1
Not served by NG-RAN Tag	'81'	M	1
Length	X2	M	Note 2
Not served by NG-RAN information	See Table 4.7C.1.2-6	M	X2
ProSe direct discovery UE ID Tag	'86'	M	1
Length	3	M	Note 2
ProSe direct discovery UE ID information	'000002'O	M	3
ProSe identifiers Tag	'82'	M	1
Length	X3	M	Note 2
ProSe identifiers information	See Table 4.7C.1.2-14	M	X3
ProSe identifier to default destination layer-2 ID for initial discovery signalling mapping rules Tag	'83'	M	1
Length	X4	M	Note 2
ProSe identifier to default destination layer-2 ID for initial discovery signalling mapping rules information	See Table 4.7C.1.2-15	M	X4
Group member discovery parameters Tag	'84'	O	1
Length	X5	O	Note 2
Group member discovery parameters information	See Table 4.7C.1.2-12	O	X5
HPLMN 5G DDNMF address information Tag	'98'	O	1
Length	X6+1	O	Note 2

HPLMN 5G DDNMF address information type	'03'	O	1
HPLMN 5G DDNMF address information information	Not present	O	X6
Note 1: This is the total size of the constructed TLV object.			
Note 2: The length is coded according to ISO/IEC 8825-1 [35].			

EF5G_PROSE_DC (5G ProSe configuration data for direct communication)

If service n°139 is "available" in the USIM Service Table and service n°2 is "available" in EF5G_PROSE_ST, this file shall be present. This EF contains 5G ProSe policy for direct communication. The format of the 5G ProSe policy for direct communication are specified in 3GPP TS 24.555[59].

The 5G ProSe configuration data for direct communication contents:

Table 4.8.3.3.4-2: 5G ProSe policy for direct communication

Description	Value	M/O	Length (bytes)
5G ProSe configuration data for direct communication Tag	'A0'	M	1
Length	Note 1	M	Note 2
Validity timer Tag	'85'	M	1
Length	5	M	Note 2
Validity timer information	'FF FF FF FF FF'H	M	5
Served by NG-RAN Tag	'80'	M	1
Length	X1	M	Note 2
Served by NG-RAN information	See Table 4.7C.1.3-2	M	X1
Not served by NG-RAN Tag	'81'	O	1
Length	X2	O	Note 2
Not served by NG-RAN information	See Table 4.7C.1.3-5	O	X2
Privacy config Tag	'87'	O	1
Length	X3	O	Note 2
Privacy config information	See Table 4.7C.1.3-11	O	X3
5G ProSe direct communication in NR-PC5 Tag	'88'	O	1
Length	X4	O	Note 2
5G ProSe direct communication in NR-PC5 information	See Table 4.7C.1.3-16	O	X4
ProSe application to path preference mapping rules Tag	'89'	O	1
Length	X5	O	Note 2
ProSe application to path preference mapping rules information	See Table 4.7C.1.3-41	O	X5
ProSe identifiers to NR Tx profile for broadcast and groupcast mapping rules Tag	'91'	O	1
Length	X6	O	Note 2
ProSe identifiers to NR Tx profile for broadcast and groupcast mapping rules information	See Table 4.7C.1.3-43	O	X6
Note 1: This is the total size of the constructed TLV object.			
Note 2: The length is coded according to ISO/IEC 8825-1 [35].			

EF5G_PROSE_U2NRU (5G ProSe configuration data for UE-to-network relay UE)

If service n°139 is "available" in the USIM Service Table and service n°3 is "available" in EF5G_PROSE_ST, this file shall be present. This EF contains 5G ProSe policy for UE-to-network relay UE. The format of the 5G ProSe policy for UE-to-network relay UE are specified in 3GPP TS 24.555[59].

The 5G ProSe configuration data for UE-to-network relay UE contents:

Table 4.8.3.3.4-3: 5G ProSe policy for UE-to-network relay UE

Description	Value	M/O	Length (bytes)
5G ProSe configuration data for UE-to-network relay UE Tag	'A0'	M	1
Length	Note 1	M	Note 2
Validity timer Tag	'85'	M	1
Length	5	M	Note 2
Validity timer information	'FF FF FF FF FF'H	M	5
Served by NG-RAN Tag	'80'	M	1
Length	X1	M	Note 2
Served by NG-RAN information	See Table 4.7C.1.4-2	M	X1
Not served by NG-RAN Tag	'81'	M	1
Length	X2	M	Note 2
Not served by NG-RAN information	See Table 4.7C.1.4-5	M	X2
Default destination layer-2 IDs for sending the discovery signalling for announcement and additional information and for receiving the discovery signalling for solicitation Tag	'8A'	M	1
Length	X3	M	Note 2
Default destination layer-2 IDs for sending the discovery signalling for announcement and additional information and for receiving the discovery signalling for solicitation information	See Table 4.7C.1.4-13	M	X3
User info ID for discovery Tag	'8E'	M	1
Length	6	M	Note 2
User info ID for discovery information	'000001'O	M	6
RSC info list Tag	'8B'	M	1
Length	X4	M	Note 2
RSC info list information	See Table 4.7C.1.4-14	M	X4
5QI to PC5 QoS parameters mapping rules Tag	'8C'	M	1
Length	X5	M	Note 2
5QI to PC5 QoS parameters mapping rules information	See Table 4.7C.1.4-23	M	X5
ProSe identifier to ProSe application server address mapping rules Tag	'8D'	O	1
Length	X6	O	Note 2
ProSe identifier to ProSe application server address mapping rules information	See Table 4.7C.1.4-24	O	X6
Privacy timer Tag	'92'	O	1
Length	X7	O	Note 2
Privacy timer information	'FF FF FF FF FF'O	O	X7
5G PKMF address information Tag	'93'	O	1
Length	X8	O	Note 2
5G PKMF address information information	See Table 4.7C.1.4-28	O	X8
Note 1: This is the total size of the constructed TLV object.			
Note 2: The length is coded according to ISO/IEC 8825-1 [35].			

EF5G_PROSE_RU (5G ProSe configuration data for remote UE)

If service n°139 is "available" in the USIM Service Table and service n°4 is "available" in EF_{5G_PROSE_ST}, this file shall be present. This EF contains 5G ProSe policy for remote UE. The format of the 5G ProSe policy for remote UE are specified in 3GPP TS 24.555[59].

The 5G ProSe configuration data for remote UE contents:

Table 4.8.3.3.4-4: 5G ProSe policy for remote UE

Description	Value	M/O	Length (bytes)
5G ProSe configuration data for remote UE Tag	'A0'	M	1
Length	Note 1	M	Note 2
Validity timer Tag	'85'	M	1
Length	5	M	Note 2
Validity timer information	'FF FF FF FF FF'H	M	5
Served by NG-RAN Tag	'80'	M	1
Length	X1	M	Note 2
Served by NG-RAN information	4.7C.1.5-2	M	X1
Not served by NG-RAN Tag	'81'	M	1
Length	X2	M	Note 2
Not served by NG-RAN information	4.7C.1.5-5	M	X2
Default destination layer-2 IDs for sending the discovery signalling for solicitation and for receiving the discovery signalling for announcement and additional information Tag	'8F'	M	1
Length	X3	M	Note 2
Default destination layer-2 IDs for sending the discovery signalling for solicitation and for receiving the discovery signalling for announcement and additional information information	4.7C.1.5-13	M	X3
User info ID for discovery Tag	'8E'	M	1
Length	6	M	Note 2
User info ID for discovery information	'000001'O	M	6
RSC info list Tag	'8B'	M	1
Length	X4	M	Note 2
RSC info list information	4.7C.1.5-14	M	X4
N3IWF selection information for 5G ProSe layer-3 remote UE Tag	'90'	O	1
Length	X5	O	Note 2
N3IWF selection information for 5G ProSe layer-3 remote UE information	Not present	O	X5
Privacy timer Tag	'92'	O	1
Length	2	O	Note 2
Privacy timer information	'FF FF FF FF FF'O	O	2
5G PKMF address information Tag	'93'	O	1
Length	X6	O	Note 2
5G PKMF address information information	Not present	O	X6
Note 1: This is the total size of the constructed TLV object.			
Note 2: The length is coded according to ISO/IEC 8825-1 [35].			

4.8.4 DNN/APN configurations

The present subclause provides DNN/APN configurations required for flexible PDU/PDN handling. The tables in this clause provide configurations for the types on DNN/APN handled in the present version of the test specification. If in the future new PDU types need to be handled, then new DNN/APN configuration(s) may be added.

Table 4.8.4-1: DNN/APN configurations, first set

Configurations	Config #1	Config #2	Config #3
DNN/APN type	internet	ims	urllc
DNN/APN ID	pc_APN_ID_Internet	pc_APN_ID_IMS	pc_APN_ID_URLLC
5GC QoS rule	Reference QoS rule #1 as specified in subclause 4.8.2.1.	Reference QoS rule #2 as specified in subclause 4.8.2.1.	Reference QoS rule #8 as specified in subclause 4.8.2.1.
EPC default bearer context	Reference default EPS bearer context #1 as specified in TS 36.508 [10], Table 6.6.1-1.	Reference default EPS bearer context #2 as specified in TS 36.508 [10], Table 6.6.1-1.	N/A
EPC dedicated bearer context	Reference dedicated EPS bearer context #1 as specified in TS 36.508 [10], Table 6.6.2-1.	Reference dedicated EPS bearer context #4 as specified in TS 36.508 [10], Table 6.6.2-1.	N/A
IP address allocation	Yes	Yes	Yes
IMS registration	No	Yes NOTE 1	No
SST condition (NOTE 2)	SST_eMBB	SST_eMBB	SST_URLLC
NOTE 1: For PDN establishment the Procedure for IMS signalling according to TS 36.508 [2], subclause 4.5A.3 applies; for PDU establishment the Procedure for IMS signalling according to TS 34.229-5 [47], Annex A.2 applies.			
NOTE 2: The possible values of the SST condition are defined in Table 4.6.0.1-5.			

Table 4.8.4-2: DNN/APN configurations, second set

Configurations	Config #4	Config #5 (NOTE 2)	Config #6	Config #7
DNN/APN type	miot	v2x	ethernet	mbs
DNN/APN ID	pc_APN_ID_MIoT	pc_APN_ID_V2X	pc_APN_ID_Ethernet	pc_APN_ID_MBS
5GC QoS rule	FFS	FFS	Reference QoS rule #1 as specified in subclause 4.8.2.1.	Reference QoS rule #9 as specified in subclause 4.8.2.1.
EPC default bearer context	N/A	N/A	N/A	N/A
EPC dedicated bearer context	N/A	N/A	N/A	N/A
IP address allocation	Yes	Yes	No	Yes
IMS registration	No	No	No	No
SST condition (NOTE 1)	SST_MIoT	SST_V2X	SST_URLLC	SST_eMBB
NOTE 1: The possible values of the SST condition are defined in Table 4.6.0.1-5.				
NOTE 2: This configuration is used for V2X communication over Uu reference point.				

Table 4.8.4-3: DNN/APN configurations, third set

Configurations	Config #8	Config #9	Config #10	Config #11
DNN/APN type	uss	c2	mcx	emergency
DNN/APN ID	pc_APN_ID_USS	pc_APN_ID_C2	pc_APN_ID_MCX	sos (Note 2)
5GC QoS rule	Reference QoS rule #1 as specified in subclause 4.8.2.1.	Reference QoS rule #1 as specified in subclause 4.8.2.1.	Reference QoS rule #10 as specified in subclause 4.8.2.1.	Reference QoS rule #2 as specified in subclause 4.8.2.1.
EPC default bearer context	N/A	N/A	N/A	Reference default EPS bearer context #2 as specified in TS 36.508 [10], Table 6.6.1-1.

EPC dedicated bearer context	N/A	N/A	N/A	Reference dedicated EPS bearer context #4 as specified in TS 36.508 [10], Table 6.6.2-1.
IP address allocation	Yes	Yes	Yes	Yes
IMS registration	No	No	Yes	Yes (Note 3)
SST condition (NOTE 1)	SST eMBB	SST eMBB	SST eMBB	SST eMBB
NOTE 1: The possible values of the SST condition are defined in Table 4.6.0.1-5.				
NOTE 2: APN value as recommended by NG.113 [70] clause 6.4.				
NOTE 3: Emergency IMS registration is needed only if IMS registration has been performed already.				

4.8.5 URSP configurations

4.8.5.1 General

FFS

4.8.5.2 UE Route Selection Policy Rules

Table 4.8.5.2-1: UE Route Selection Policy Rule #1

Derivation Path: TS 24.526, Figure 5.2.1			
Information Element	Value/remark	Comment	Condition
URSP rules	1 entry		
URSP rule			
Rule Precedence	1		
Traffic descriptor			
Traffic descriptor component type identifier	'1000 1000'B	DNN type	
Traffic descriptor component			
Application descriptors	Not present		
IP descriptors	Not present		
Domain descriptors	Not present		
Non-IP descriptors	Not present		
DNN	FFS		
Connection Capabilities	Not present		
List of Route Selection Descriptors	Route Selection Descriptor #1	Table 4.8.5.3-1	

4.8.5.3 Route Selection Descriptors

Table 4.8.5.3-1: Route Selection Descriptor #1

Derivation Path: TS 24.526, Figure 5.2.4			
Information Element	Value/remark	Comment	Condition
Route Selection Descriptor Precedence	1		
Route selection descriptor contents			
Route selection descriptor component type identifier	'0000 0010'B		S-NSSAI type
	'0000 0100'B		DNN type
Route selection descriptor component			
SSC Mode Selection	Not present		
Network Slice Selection	FFS		S-NSSAI type
DNN Selection	FFS		DNN type
PDU Session Type Selection	Not present		
Non-Seamless Offload indication	Not present		
Access Type preference	Not present		

Condition	Explanation
S-NSSAI type	The Route selection descriptor component type is S-NSSAI

DNN type	The Route selection descriptor component type is DNN

4.9 Test procedures

4.9.1 Test procedure to check user plane connectivity on DRB#n

This procedure aims at checking whether the UE User Plane Access Stratum is capable of exchanging data on DRB#n (#n is the DRB Id specified in the test case when the present procedure is called). In case the UE supports IP, it is also checked that the UE IP stack is connected to the UE User Plane Access Stratum.

Table 4.9.1-1: Test procedure sequence

St	Procedure	Message Sequence		TP	Verdict
		U - S	Message/PDU/SDU		
-	EXCEPTION: Steps 1a1 to 1c2 describe behaviour that depends on the UE implementation; the "lower case letter" identifies a step sequence that take place depending on the UE implementation.	-	-	-	-
1a1	IF (pc_IP_Ping = TRUE AND pc_IPv4 = TRUE) THEN, the SS sends an ICMP Echo request to the IPv4 address assigned to the UE on DRB#n. See NOTE 3.	<--	ICMP ECHO REQUEST	-	-
1a2	Check: Does the UE send an ICMP Echo reply on DRB#n?	-->	ICMP ECHO REPLY	-	P
1b1	ELSE IF (pc_IP_Ping = TRUE AND (pc_IPv4 = FALSE AND pc_IPv6 = TRUE)) THEN, the SS sends an ICMPv6 Echo request to the IPv6 address assigned to the UE on DRB#n. See NOTE 3.	<--	ICMPv6 ECHO REQUEST	-	-
1b2	Check: Does the UE send an ICMPv6 Echo reply on DRB#n?	-->	ICMPv6 ECHO REPLY	-	P
1c1	ELSE, the SS transmits one IP Packet to verify data path on DRB#n. See NOTE 1, 2.	-	-	-	-
1c2	Check: Does UE send the IP Packet on DRB#n in the uplink?	-	-	-	P
NOTE 1: A Test Loop is assumed to already have been closed. NOTE 2: When DRB#n is a dedicated bearer, the IP Packet shall match the packet filters as configured for DRB#n. When DRB#n is a default bearer, the IP Packet shall match none of the dedicated bearers associated to DRB#n (if any). (NOTE 4) NOTE 3: When DRB#n is a dedicated bearer, the source address of the ICMP/ICMPv6 ECHO REQUEST shall be the same as the remote address of the DL/UL packet filters. When DRB#n is a default bearer, the source address of the ICMP/ICMPv6 ECHO REQUEST shall be different than the remote address of the DL/UL packet filters for an associated dedicated bearer (if any). (NOTE 4) NOTE 4: For 5GC QoS rules and the associated packet filters are specified in clause 4.8.2. For EPC the TFTs and associated packet filters are specified in clause 6.6.2 of TS 36.508 [2] and the IP packet shall be as according to clause 7.14.2 of TS 36.523-3 [41].					

Table 4.9.1-1A: Test procedure sequence for Data path check for CA tests

St	Procedure	Message Sequence		TP	Verdict
		U - S	Message/PDU/SDU		
-	EXCEPTION: Step 1 is only performed if the SCell is not yet activated.	-	-	-	-
1	The SS transmits an SCell Activation/Deactivation MAC CE to activate the SCell.	<--	MAC PDU (Activation (C ₁ =1))		
-	EXCEPTION: Steps 2a1 to 2c2 describe behaviour that depends on the UE	-	-	-	-

	implementation; the "lower case letter" identifies a step sequence that take place depending on the UE implementation.				
2a1	IF (pc_IP_Ping = TRUE AND pc_IPv4 = TRUE) THEN, the SS sends an ICMP Echo request to the IPv4 address assigned to the UE on DRB#n on the SCell. See NOTE 3.	<--	ICMP ECHO REQUEST	-	-
2a2	Check: Does the UE send an ICMP Echo reply on DRB#n on the SpCell?	-->	ICMP ECHO REPLY	-	P
2b1	ELSE IF (pc_IP_Ping = TRUE AND (pc_IPv4 = FALSE AND pc_IPv6 = TRUE)) THEN, the SS sends an ICMPv6 Echo request to the IPv6 address assigned to the UE on DRB#n on the SCell. See NOTE 3.	<--	ICMPv6 ECHO REQUEST	-	-
2b2	Check: Does the UE send an ICMPv6 Echo reply on DRB#n on the SpCell?	-->	ICMPv6 ECHO REPLY	-	P
2c1	ELSE, the SS transmits one IP Packet to verify data path on DRB#n on the SCell. See NOTE 1, 2.	-	-	-	-
2c2	Check: Does UE send the IP Packet on DRB#n in the uplink on the SpCell?	-	-	-	P
NOTE 1: A Test Loop is assumed to already have been closed. NOTE 2: When DRB#n is a dedicated bearer, the IP Packet shall match the packet filters as configured for DRB#n. When DRB#n is a default bearer, the IP Packet shall match none of the dedicated bearers associated to DRB#n (if any). (NOTE 4) NOTE 3: When DRB#n is a dedicated bearer, the source address of the ICMP/ICMPv6 ECHO REQUEST shall be the same as the remote address of the DL/UL packet filters. When DRB#n is a default bearer, the source address of the ICMP/ICMPv6 ECHO REQUEST shall be different than the remote address of the DL/UL packet filters for an associated dedicated bearer (if any). (NOTE 4) NOTE 4: For 5GC QoS rules and the associated packet filters are specified in clause 4.8.2. For EPC the TFTs and associated packet filters are specified in clause 6.6.2 of TS 36.508 [2] and the IP packet shall be as according to clause 7.14.2 of TS 36.523-3 [41].					

4.9.2 Test procedure to activate UE Beamlock Test Function (UBF)

4.9.2.1 Initiation

UE is operating in FR2 in RRC_CONNECTED state.

4.9.2.2 Procedure

Table 4.9.2.2-1: Test procedure Sequence

St	Procedure	Message Sequence		TP	Verdict
		U - S	Message/PDU/SDU		
1	SS request UE to activate UE beamlock function.	<--	ACTIVATE BEAMLOCK	-	-
2	UE confirms that UE beamlock function is activated	-->	ACTIVATE BEAMLOCK COMPLETE	-	-

4.9.2.3 Specific Message contents

Table 4.9.2.3-1: ACTIVATE BEAMLOCK

Derivation Path: 38.509 clause 6.4.1			
Information Element	Value/remark	Comment	Condition
Protocol discriminator	1 1 1 1		
Skip indicator	0 0 0 0		
Message type	1 0 1 0 0 0 0 0		

UE Beamlock test Function	0 0 0 0 0 0 1		Tx Only
UE Beamlock test Function	0 0 0 0 0 1 0		Rx Only
UE Beamlock test Function	0 0 0 0 0 1 1		Tx and Rx

Condition	Explanation
Tx Only	Activation UE beamlock function for Tx only
Rx Only	Activation UE beamlock function for Rx only
Tx and Rx	Activation UE beamlock function for both Tx and Rx

Table 4.9.2.3-2: ACTIVATE BEAMLOCK COMPLETE

Derivation Path: 38.509 clause 6.4.2			
Information Element	Value/remark	Comment	Condition
Protocol discriminator	1 1 1 1		
Skip indicator	0 0 0 0		
Message type	1 0 1 0 0 0 1		

4.9.3 Test procedure to deactivate UE Beamlock Test Function (UBF)

4.9.3.1 Initiation

UE is operating in FR2 in RRC_CONNECTED state with UE beamlock test function activated.

4.9.3.2 Procedure

Table 4.9.3.2-1: Test procedure Sequence

St	Procedure	Message Sequence		TP	Verdict
		U - S	Message/PDU/SDU		
1	SS request UE to deactivate UE beamlock function.	<--	DEACTIVATE BEAMLOCK	-	-
2	UE confirms that UE beamlock function is activated	-->	DEACTIVATE BEAMLOCK COMPLETE	-	-

4.9.3.3 Specific Message contents

Table 4.9.3.3-1: DEACTIVATE BEAMLOCK

Derivation Path: 38.509 clause 6.4.3			
Information Element	Value/remark	Comment	Condition
Protocol discriminator	1 1 1 1		
Skip indicator	0 0 0 0		
Message type	1 0 1 0 0 0 1 0		

Table 4.9.3.3-2: DEACTIVATE BEAMLOCK COMPLETE

Derivation Path: 38.509 clause 6.4.4			
Information Element	Value/remark	Comment	Condition
Protocol discriminator	1 1 1 1		
Skip indicator	0 0 0 0		
Message type	1 0 1 0 0 0 1 1		

4.9.4 Test procedure to check that UE is in state 5GC RRC_IDLE on a certain NR/NGC cell

4.9.4.1 Scope

This procedure aims at checking whether the UE is in state 5GC RRC_IDLE on a certain cell (as specified in the test case).

4.9.4.2 Procedure description

4.9.4.2.1 Initial conditions

As specified in the TC which calls the procedure in its entirety or refers to parts of it.

4.9.4.2.2 Procedure

Table 4.9.4.2.2-1: Test procedure sequence

St	Procedure	Message Sequence		TP	Verdict
		U - S	Message/PDU/SDU		
1	Step 1 of Generic procedure for bringing the UE in RRC_CONNECTED state with connectivity NR as specified in Table 4.5.4.2-3 is performed.	-	-	-	-
2	Check: Does the UE transmit an <i>RRCSetupRequest</i> message on the cell specified in the test case?	-->	NR RRC: <i>RRCSetupRequest</i>	-	P
3-8	Steps 3-8 of Generic procedure for bringing the UE in RRC_CONNECTED state with connectivity NR as specified in Table 4.5.4.2-3 are performed.	-	-	-	-
-	EXCEPTION: Step 9a1 describes a step sequence depending on procedure parameters; the "lower case letter" identifies a step sequence that take place if a procedure parameter has a particular value	-	-	-	-
9a1	IF ' <i>connected without release</i> ' is not present THEN the SS transmits an <i>RRCRelease</i> message to release RRC connection and move the UE to RRC_IDLE.	<--	NR RRC: <i>RRCRelease</i>	-	-

4.9.4.2.3 Specific Message content

As specified in the TC which calls the procedure in its entirety or refers to parts of it.

4.9.5 Test procedure to check that UE is camped on a new NR/NGC cell belonging to a new TA

4.9.5.1 Scope

This procedure aims at checking whether the UE performs a mobility registration updating (Tracking Area (TA) update) procedure when it camps on a new cell (as specified in the test case) belonging to a new TA.

4.9.5.2 Procedure description

4.9.5.2.1 Initial conditions

As specified in the TC which calls the procedure in its entirety or refers to parts of it.

4.9.5.2.2 Procedure sequence

Table 4.9.5.2.2-1: Test procedure sequence mobility registration updating (TA update)

St	Procedure	Message Sequence		TP	Verdict
		U - S	Message/PDU/SDU		
-	EXCEPTION: Unless otherwise stated all the messages below are transmitted on the cell specified in the test case.	-	-	-	-
1	The UE transmits an <i>RRCSetupRequest</i> message.	-->	NR RRC: <i>RRCSetupRequest</i>	-	-
2	SS transmit an <i>RRCSetup</i> message.	<--	NR RRC: <i>RRCSetup</i>	-	-
3	The UE transmits an <i>RRCSetupComplete</i> message to confirm the successful completion of the connection establishment and a REGISTRATION REQUEST message indicating "mobility registration updating" is sent to update the registration of the actual tracking area.	-->	NR RRC: <i>RRCSetupComplete</i> 5GMM: REGISTRATION REQUEST	-	-
4	SS sends a REGISTRATION ACCEPT message containing a 5G-GUTI. (NOTE 1, NOTE 2)	<--	NR RRC: <i>DLInformationTransfer</i> 5GMM: REGISTRATION ACCEPT	-	-
5	Check: Does the UE send a REGISTRATION COMPLETE?	-->	NR RRC: <i>ULInformationTransfer</i> 5GMM: REGISTRATION COMPLETE	-	P
-	EXCEPTION: Step 6a1 describes a step sequence depending on procedure parameters; the "lower case letter" identifies a step sequence that take place if a procedure parameter has a particular value	-	-	-	-
6a1	IF ' <i>connected without release</i> ' is not present THEN the SS transmits an <i>RRCRelease</i> message to release RRC connection and move the UE to RRC_IDLE.	<--	NR RRC: <i>RRCRelease</i>	-	-
NOTE 1: If a PDU session status IE was included in the REGISTRATION REQUEST message then the SS includes a PDU session status IE in the REGISTRATION ACCEPT message indicating that all the PDU sessions are active.					
NOTE 2: If the UE has indicated S1 mode supported then the SS shall indicate in the 5GS network feature support IE in the REGISTRATION ACCEPT message the IWK N26 bit set to "interworking without N26 not supported". The setting of the "interworking without N26 not supported" has been chosen to ensure that the UE is operating in the single-registration mode allowing for a clearly pre-determined UE behaviour.					

4.9.5.2.3 Specific Message content

As specified in the TC which calls the procedure in its entirety or refers to parts of it.

4.9.6 Test procedures for Switch off / Power off UE

4.9.6.1 Switch off / Power off procedure in RRC_IDLE

Table 4.9.6.1-1: Switch off procedure in RRC_IDLE

Step	Procedure	Message Sequence	
		U - S	Message
-	EXCEPTION: Steps 1a1 to 1b1 describe behaviour that depends on the UE capability; the "lower case letter" identifies a step sequence that take place if [36] <i>pc_SwitchOnOff</i> or [37] <i>pc_USIM_Removal</i> is supported	-	-
1a1	IF <i>pc_SwitchOnOff</i> THEN switch off UE, IF <i>pc_USIM_Removal</i> THEN remove the USIM (Note 1)	-	-

1a2	UE transmits an <i>RRCSetupRequest</i> message.	-->	RRC: <i>RRCSetupRequest</i>
1a3	SS transmit an <i>RRCSetup</i> message.	<--	RRC: <i>RRCSetup</i>
-	EXCEPTION: Steps 1a4Aa1 to 1a4Aa6 specify optional behaviour if the UE has previously performed IMS registration	-	-
1a4Aa1	The UE transmits an <i>RRCSetupComplete</i> message to confirm the successful completion of the connection establishment and to initiate the IMS signalling procedure by including the SERVICE REQUEST message.	-->	RRC: <i>RRCSetupComplete</i> 5GMM: SERVICE REQUEST
1a4Aa2	The SS transmits a <i>SecurityModeCommand</i> message to activate AS security.	<--	RRC: <i>SecurityModeCommand</i>
1a4Aa3	The UE transmits a <i>SecurityModeComplete</i> message and establishes the initial security configuration.	-->	RRC: <i>SecurityModeComplete</i>
1a4Aa4	The SS transmits an <i>RRCReconfiguration</i> message and a SERVICE ACCEPT message to establish SRB2 and DRB.	<--	RRC: <i>RRCReconfiguration</i> 5GMM: SERVICE ACCEPT
-	EXCEPTION: In parallel to the event described in step 1a4Aa5 below, the generic test procedure in TS 34.229-5 [47] Annex A.11 may be performed.	-	-
1a4Aa5	The UE transmits an <i>RRCReconfigurationComplete</i> message.	-->	RRC: <i>RRCReconfigurationComplete</i>
1a4Aa5a1 - 1a4Aa5b1	Void	-	-
1a4Aa6	The UE transmits a DEREGISTRATION REQUEST message	-	5GMM: DEREGISTRATION REQUEST
-	EXCEPTION: Step 1a4Ab1 below specifies the behaviour if the UE has not previously performed IMS registration	-	-
1a4Ab1	The UE transmits an <i>RRCSetupComplete</i> message including the DEREGISTRATION REQUEST message.	-->	RRC: <i>RRCSetupComplete</i> 5GMM: DEREGISTRATION REQUEST
1a4	Void	-	-
1a5	The SS transmits an <i>RRCRelease</i> message	<--	RRC: <i>RRCRelease</i>
1b1	ELSE power off UE (Note 2)	-	-
Note 1: USIM removal is a feasible alternative to switch off UE. Note 2: Power off is used when UE don't support switch off or USIM removal, in which case no UE originated deregistration procedure is expected.			

4.9.6.2 Switch off / Power off procedure in RRC_INACTIVE

4.9.6.2.1 Procedure

Table 4.9.6.2.1-1: Switch off procedure in RRC_INACTIVE

Step	Procedure	Message Sequence	
		U - S	Message
-	EXCEPTION: Steps 1a1 to 1b1 describe behaviour that depends on the UE capability; the "lower case letter" identifies a step sequence that take place if [36] <i>pc_SwitchOnOff</i> or [37] <i>pc_USIM_Removal</i> is supported	-	-
1a1	IF <i>pc_SwitchOnOff</i> THEN switch off UE, IF <i>pc_USIM_Removal</i> THEN remove the USIM (Note 1)	-	-
1a2	UE transmits an <i>RRCResumeRequest</i> message.	-->	NR RRC: <i>RRCResumeRequest</i>
1a3	SS transmit an <i>RRCResume</i> message.	<--	NR RRC: <i>RRCResume</i>

	EXCEPTION: Steps 1a3Aa1 to 1a3Ab1 describe behaviour that depends on the UE implementation; the "lower case letter" identifies a step sequence that take place depending on the UE implementation.		
1a3Aa1	The UE transmits an <i>RRCResumeComplete</i> message to confirm the successful resumption of the RRC connection not including any 5G NAS message	-->	NR RRC: <i>RRCResumeComplete</i>
1a4Aa1-1a4Aa5	Void	-	-
-	EXCEPTION: The generic test procedure in TS 34.229-5 [47] Annex A.11 may be performed depending on UE implementation.	-	-
-	EXCEPTION: Steps 1a3Aa2a1 - 1a3Ab1 may be performed depending on UE implementation	-	-
1a3Aa2a1 - 1a3Aa2a2	Void	-	-
1a3Aa3	The UE transmits a DEREGISTRATION REQUEST message	-	5GMM: DEREGISTRATION REQUEST
1a3Ab1	The UE transmits an <i>RRCResumeComplete</i> message to confirm the successful resumption of the RRC connection, including the DEREGISTRATION REQUEST message	-->	NR RRC: <i>RRCResumeComplete</i> 5GMM : DEREGISTRATION REQUEST
1a4	Void	-	-
1a5	The SS transmits an <i>RRCRelease</i> message	<--	NR RRC: <i>RRCRelease</i>
1b1	ELSE power off UE (Note 2)	-	-
Note 1: USIM removal is a feasible alternative to switch off UE. Note 2: Power off is used when UE don't support switch off or USIM removal, in which case no UE originated deregistration procedure is expected.			

4.9.6.2.2 Specific Message contents

Table 4.9.6.2.2-1: RRCResumeRequest

Derivation Path: TS 38.331 [6], clause 6.2.2			
Information Element	Value/remark	Comment	Condition
RRCResumeRequest ::= SEQUENCE {			
rrcResumeRequest SEQUENCE {			
resumeIdentity	Not checked		
resumeMAC-I	Not checked		
resumeCause	Not checked		
spare	Not checked		
}			
}			

4.9.6.3 Switch off / Power off procedure in RRC_CONNECTED

Table 4.9.6.3-1: Switch off procedure in RRC_CONNECTED

Step	Procedure	Message Sequence	
		U - S	Message
1a1-1a3	Void	-	-
2-4	Void	-	-
-	EXCEPTION: Steps 5a1 to 5b1 describe behaviour that depends on the UE implementation; the "lower case letter"	-	-

	identifies a step sequence that take place if a particular implementation is under test.		
5a1	IF pc_SwitchOnOff THEN switch off UE, IF pc_USIM_Removal THEN remove the USIM (Note 1)		
-	EXCEPTION: Step 5a1Aa1 to 5a2Aa2 below specifies optional behaviour if the UE has previously performed IMS registration	-	-
5a1Aa1	The UE may perform the generic test procedure described in TS 34.229-5 [47] Annex A.11	-	-
5a2Aa1a1 - 5a2Ab1	Void	-	-
5a2Aa2	The UE transmits a DEREGISTRATION REQUEST message.	-->	5GMM: DEREGISTRATION REQUEST
5a3	The SS transmits an RRCRelease message.	<--	NR RRC: <i>RRCRelease</i>
5b1	ELSE power off UE (Note 2)	-	-
Note 1: USIM removal is a feasible alternative to switch off UE.			
Note 2: Power off is used when UE don't support switch off or USIM removal, in which case no UE originated deregistration procedure is expected.			

4.9.6.3A Switch off / Power off procedure in RRC_CONNECTED with T3540 started

Table 4.9.6.3A-1: Switch off procedure in RRC_CONNECTED with T3540 started

Step	Procedure	Message Sequence	
		U - S	Message
1	SS starts timer1 = T3540 (10 sec).	-	-
2	The SS locally releases the RRC connection.	-	-
3	SS waits for Timer1 expires. NOTE: On expiry of T3540 UE shall locally release the established N1 NAS signalling connection	-	-
4	The test procedure as described in Table 4.9.6.1-1: Switch off procedure in RRC_IDLE take place.	-	-

4.9.6.4 Switch off / Power off procedure in State DEREGISTERED

Table 4.9.6.4-1: Switch off procedure in State DEREGISTERED

Step	Procedure	Message Sequence	
		U - S	Message
-	EXCEPTION: Steps 1a1 to 1b1 describe behaviour that depends on the UE capability; the "lower case letter" identifies a step sequence that take place if [36] pc_SwitchOnOff or [37] pc_USIM_Removal is supported	-	-
1a1	IF pc_SwitchOnOff THEN switch off UE (Note 1)	-	-
1b1	ELSE power off UE (Note 2)	-	-
Note 1: USIM removal is a feasible alternative to switch off UE.			
Note 2: Power off is used when UE don't support switch off or USIM removal.			

4.9.6.5 Switch off / Power off procedure in WLAN Ipsec_SA_Established

Table 4.9.6.5-1: Switch off procedure in Ipsec_SA_Established

Step	Procedure	Message Sequence	
		U - S	Message
-	EXCEPTION: Steps 1a1 to 1b1 describe behaviour that depends on the UE capability; the "lower case letter" identifies a step sequence that take place if [30] pc_SwitchOnOff or [31] pc_USIM_Removal is supported	-	-
1a1	IF pc_SwitchOnOff THEN switch off UE (Note 1)	-	-
1a2	The UE transmits a DEREGISTRATION REQUEST message.	-->	5GMM: DEREGISTRATION REQUEST
1a3	The generic procedure for SS-requested IPsec Secure tunnel disconnection, specified in subclause 4.5A.5, takes place performing disconnection of security association	-	-
1b1	ELSE power off UE (Note 2)	-	-
Note 1: USIM removal is a feasible alternative to switch off UE.			
Note 2: Power off is used when UE don't support switch off or USIM removal, in which case no UE originated deregistration procedure is expected.			

4.9.6.6 Switch off / Power off procedure in MA PDU session Established on NR and WLAN

Table 4.9.6.6-1: Switch off procedure in MA PDU session Established

Step	Procedure	Message Sequence	
		U - S	Message
-	EXCEPTION: Steps 1a1 to 1b1 describe behaviour that depends on the UE capability; the "lower case letter" identifies a step sequence that take place if [30] pc_SwitchOnOff or [31] pc_USIM_Removal is supported	-	-
1a1	IF pc_SwitchOnOff THEN switch off UE (Note 1)	-	-
-	EXCEPTION: The Step 5a1Aa1 to 5a3 specified in Table 4.9.6.3-1 may take place on the NR Cell before or after the events described in steps 1a2-1a3 below.	-	-
1a2	The UE transmits a DEREGISTRATION REQUEST message on the WLAN cell.	-->	5GMM: DEREGISTRATION REQUEST
1a3	The generic procedure for SS-requested IPsec Secure tunnel disconnection, specified in subclause 4.5A.5, takes place performing disconnection of security association on the WLAN cell.	-	-
1b1	ELSE power off UE (Note 2)	-	-
Note 1: USIM removal is a feasible alternative to switch off UE.			
Note 2: Power off is used when UE don't support switch off or USIM removal, in which case no UE originated deregistration procedure is expected.			

4.9.7 Test procedure for UE for Tracking area updating / Inter-system change from N1 mode to S1 mode in 5GMM/EMM-IDLE mode

4.9.7.1 Scope

This procedure aims at verifying that the UE performs a Tracking Area Update (TAU) procedure when it performs inter-system change from N1 mode to S1 mode in 5GMM/EMM-IDLE.

This procedure is only relevant when the parameter *Interworking without N26 interface supported* is FALSE.

The procedure provides different security context handling options based on the condition parameters defined in Table 4.9.7.1-1.

Table 4.9.7.1-1: Condition parameters

Condition	Explanation
new security context	When this parameter is present the SS will establish and take into account a new security context.
existing EPS security context	When this parameter is present the SS will take into account an existing EPS security context. A prerequisite for using this condition is the existence of an EPS security context
NOTE 1: If none of the defined condition parameters is present when the procedure is referred to then the SS will apply mapped 5G security context. A prerequisite for using this condition is the existence of 5G security context.	

4.9.7.2 Procedure description

4.9.7.2.1 Initial conditions

System Simulator:

- 1 E-UTRA cell connected to EPC, default parameters, system information combination 31 as defined in TS 36.508 [2], subclause 4.4.3.1.1.

NOTE: Details about the NGC cell from which the UE will move to the E-UTRA cell are to be specified in the test.

User Equipment:

- The Test UICC shall be inserted. It shall provide relevant details on the EPC and 5GC.

All details required shall be explicitly specified in the TC which calls the procedure in its entirety or refers to parts of it.

4.9.7.2.2 Procedure sequence

Table 4.9.7.2.2-1: Test procedure sequence UE Tracking area updating / inter-system change from N1 mode to S1 mode in EMM-IDLE mode

St	Procedure	Message Sequence		TP	Verdict
		U - S	Message/PDU/SDU		
-	EXCEPTION: Unless otherwise stated all the messages below are transmitted on the cell specified in the test case.	-	-	-	-
1	The UE transmits an <i>RRConnectionRequest</i> message on the cell specified in the test case.	-->	RRC: <i>RRConnectionRequest</i>	-	-
2	SS transmits an <i>RRConnectionSetup</i> message.	<--	RRC: <i>RRConnectionSetup</i>	-	-
3	The UE transmits an <i>RRConnectionSetupComplete</i> message to confirm the successful completion of the connection establishment and a TRACKING AREA UPDATE REQUEST message is sent to	-->	RRC: <i>RRConnectionSetupComplete</i> NAS: TRACKING AREA UPDATE REQUEST	-	-

	update the registration of the actual tracking area. For some consequences related to the content of the TRACKING AREA UPDATE REQUEST message see the Notes in Table 4.9.7.2.3-1.				
-	EXCEPTION: Steps 4a1-4b2 describe a step sequence depending on procedure parameters; the "lower case letter" identifies a step sequence that take place if a procedure parameter has a particular value	-	-	-	-
4a1	IF 'new security context' THEN the SS transmits an AUTHENTICATION REQUEST message to initiate the EPS authentication and AKA procedure.	<--	RRC: <i>DLInformationTransfer</i> NAS: AUTHENTICATION REQUEST	-	-
4a2	The UE transmits an AUTHENTICATION RESPONSE message and establishes mutual authentication.	-->	RRC: <i>ULInformationTransfer</i> NAS: AUTHENTICATION RESPONSE	-	-
4a3	The SS transmits a NAS SECURITY MODE COMMAND message to activate NAS security.	<--	RRC: <i>DLInformationTransfer</i> NAS: SECURITY MODE COMMAND	-	-
4a4	The UE transmits a NAS SECURITY MODE COMPLETE message and establishes the initial security configuration.	-->	RRC: <i>ULInformationTransfer</i> NAS: SECURITY MODE COMPLETE	-	-
4b1	IF 'existing EPS security context' THEN the SS transmits a NAS SECURITY MODE COMMAND message to activate NAS security.	<--	RRC: <i>DLInformationTransfer</i> NAS: SECURITY MODE COMMAND	-	-
4b2	The UE transmits a NAS SECURITY MODE COMPLETE message and establishes the initial security configuration.	-->	RRC: <i>ULInformationTransfer</i> NAS: SECURITY MODE COMPLETE	-	-
-	EXCEPTION: If none of the branches 4a or 4b takes place then the SS shall apply mapped 5G security context, otherwise the SS shall apply the security context depending on the branch.	-	-	-	-
5	SS responds with TRACKING AREA UPDATE ACCEPT message.	<--	RRC: <i>DLInformationTransfer</i> NAS: TRACKING AREA UPDATE ACCEPT	-	-
6	Check: Does the UE transmit TRACKING AREA UPDATE COMPLETE?	-->	RRC: <i>ULInformationTransfer</i> NAS: TRACKING AREA UPDATE COMPLETE	-	P
7a1 – 8a1	Void	-	-	-	-
8b1	The generic procedure for UE-requested PDN connection establishment, specified in subclause 4.5A.2B, takes place performing establishment of UE-requested PDN connection(s) with ExpectedNumberOfNewPDNConnections = pc_noOf_PDNsSameConnection with the exception that IF step 2b1, Table 4.5A.2B.2.2-2 takes place THEN the SS shall not assign Fail but continue with the next step in the test sequence not expecting any additional connection establishment to take place (NOTE 2).	-	-	-	-
-	EXCEPTION: Steps 8b2a1 to 8b2b1 describe a step sequence depending on test case scenario; the right-most "lower case letter" identifies a step sequence that take place if the UE performs a specific action.	-	-	-	-
8b2a 1	IF pc_noOf_PDNsNewConnection>0 THEN the SS transmits an <i>RRCConnectionRelease</i> message to release RRC connection and moves the UE to RRC_IDLE.	<--	RRC: <i>RRCConnectionRelease</i>	-	-
8b2a 2	The procedure E-UTRA RRC_IDLE Unrestricted nr PDN Extension as specified in table 4.5.2.2-6 takes place.	-	-	-	-

	IF step 1a1, Table 4.5.2.2-6 takes place THEN the SS shall not assign Fail but end the procedure, not expecting any additional connection establishment to take place. For the referred step 7, Table 4.5.2.2-6, generic procedure for UE-requested PDN connection establishment, specified in subclause 4.5A.2B, IF step 2b1, Table 4.5A.2B.2.2-2 takes place THEN the SS shall not assign Fail but continue with the next step in the test sequence not expecting any additional connection establishment to take place (NOTE 2).				
8b2b 1	ELSE IF <i>connected without release</i> is not present THEN, the SS transmits an <i>RRCCConnectionRelease</i> message to release RRC connection and move to E-UTRA RRC_IDLE (State 2).	<--	RRC: <i>RRCCConnectionRelease</i>	-	-
NOTE 1: Void NOTE 2: Depending on UE implementation and/or NWK behaviour, the UE may transfer some PDU sessions into PDN connections without re-establishing those utilising the relevant mapped QoS provided in the PDU SESSION ESTABLISHMENT ACCEPT message when the UE was on the NR cell. This will result in the number of established PDNs, if any, being lower than the pc_noOf_PDNsSameConnection or the pc_noOf_PDNsNewConnection which the UE will establish upon initial attach to the EPS.					

4.9.7.2.3 Specific Message content

Default message contents as specified in TS 36.508 [2] with the following exceptions.

Table 4.9.7.2.3-1: TRACKING AREA UPDATE REQUEST (Step 3, Table 4.9.7.2.2-1)

Derivation Path: TS 36.508 [2], Table 4.7.2-27, condition NR.			
Information Element	Value/remark	Comment	Condition
EPS update type			
EPS update type Value	'000'B or '001'B or '010'B	'TA updating' or 'combined TA/LA updating' or 'combined TA/LA updating with IMSI attach'	
"Active" flag	Any value		
NAS key set identifier	the eKSI indicating the 5G NAS security context value assigned at the initial registration when the UE entered N1		
Old GUTI	GUTI, mapped from the 5G-GUTI assigned at the initial registration when the UE entered N1		
Additional GUTI	Not present or any allowed value		
Last visited registered TAI	The TAI the last visited E-UTRA Cell belonged to, if any. Not included if the UE does not have last stored EPC TAI.		
UE radio capability information update needed	'1'B	UE radio capability information update needed	First-N1-to-S1
EPS bearer context status	Present, Content not checked	EBI corresponding to active PDN connections (transferred PDU	

		Sessions) need to be set to 1 (NOTE 2)	
Old GUTI type	"Native GUTI"		
UE status	"UE is in 5GMM-REGISTERED state"		
NOTE 1: The message shall be integrity protected using the 5GS security context available in the UE. NOTE 2: There will be no PDN connection establishment nor explicit bearer configuration for the transferred PDU sessions. This means that the UE has created locally the default bearer context and the dedicated bearer context(s) based on the parameters of the mapped bearer contexts or the associations between QoS flow and mapped bearer in the PDU session. Although the contents of the IE is not required to be verified for PASS/FAIL purposes, the provided information shall be taken into account for building any subsequent RRC Reconfiguration message, and can be used e.g. for SS configuration purposes as well.			

Condition	Explanation
First-N1-to-S1	First N1 to S1 transition following UE registration in N1 mode

Table 4.9.7.2.3-2: AUTHENTICATION REQUEST (Step 4a1, Table 4.9.7.2.2-1)

Derivation Path: TS 36.508 [2], Table 4.7.2-7.			
Information Element	Value/remark	Comment	Condition
NAS key set identifier _{ASME}			
NAS key set identifier	An arbitrarily selected value between '000'B and '110'B, different from the valid NAS key set identifier of the UE if such a value exists.	Value shall be different to the 5G NAS security context value if there is one assigned	

Table 4.9.7.2.3-3: SECURITY MODE COMMAND (Step 4a3, Table 4.9.7.2.2-1)

Derivation Path: TS 36.508 [2], Table 4.7.2-19.			
Information Element	Value/remark	Comment	Condition
NAS key set identifier _{ASME}			
NAS key set identifier	The 4G NAS key set identifier assigned in step 4a1.		

Table 4.9.7.2.3-4: SECURITY MODE COMMAND (Step 4b1, Table 4.9.7.2.2-1)

Derivation Path: TS 36.508 [2], Table 4.7.2-19.			
Information Element	Value/remark	Comment	Condition
NAS key set identifier _{ASME}			
NAS key set identifier	The 4G NAS key set identifier assigned in the latest Authentication procedure.		

Table 4.9.7.2.3-5: Void

4.9.8 Test procedure for Registration Reject

4.9.8.1 Scope

The purpose of this procedure is to reject the registration request, with a specific cause value, which may allow fields to be cleared in the USIM.

4.9.8.2 Procedure description

4.9.8.2.1 Initial conditions

As specified in the TC which calls the procedure in its entirety or refers to parts of it.

4.9.8.2.2 Procedure sequence

Table 4.9.8.2.2-1: Procedure for Registration Reject

St	Procedure	Message Sequence	
		U – S	Message
1	The UE transmits an <i>RRCSetupRequest</i> message.	-->	NR RRC: <i>RRCSetupRequest</i>
2	The SS transmits an <i>RRCSetup</i> message.	<--	NR RRC: <i>RRCSetup</i>
3	The UE transmits an <i>RRCSetupComplete</i> message and a REGISTRATION REQUEST message.	-->	NR RRC: <i>RRCSetupComplete</i> 5GMM: REGISTRATION REQUEST
4	The SS transmits an AUTHENTICATION REQUEST message including EAP-Request/AKA'-Challenge or 5G AKA Challenge.	<--	5GMM: AUTHENTICATION REQUEST
5	The UE transmits an AUTHENTICATION RESPONSE message including EAP-Response/AKA'-Challenge or 5G AKA Response.	-->	5GMM: AUTHENTICATION RESPONSE
6	The SS transmits a SECURITY MODE COMMAND message including EAP-Success if EAP-AKA' used.	<--	5GMM: SECURITY MODE COMMAND
7	The UE transmits a SECURITY MODE COMPLETE message.	-->	5GMM: SECURITY MODE COMPLETE
8	The SS transmits a REGISTRATION REJECT message with the cause value set to <i>Reject Cause</i> .	<--	5GMM: REGISTRATION REJECT
9	The SS transmits an <i>RRCRelease</i> message	<--	RRC: <i>RRCRelease</i>
10	Test procedure for Switch off / Power off in State DEREGISTERED as specified in subclause 4.9.6.4		

4.9.8.2.3 Specific message contents

Table 4.9.8.2.3-1: REGISTRATION REJECT

Derivation Path: table 4.7.1-9			
Information Element	Value/remark	Comment	Condition
5GMM cause	Set according to <i>Reject Cause</i>	<i>Reject Cause</i> set to #6 Illegal ME as default	

4.9.9 Test procedure for UE for Tracking area updating / Inter-system change from S1 mode to N1 mode in 5GMM/EMM-IDLE mode

4.9.9.1 Scope

This procedure aims at verifying that the UE performs a Mobility and periodic registration update procedure when it performs inter-system change from S1 mode to N1 mode in 5GMM/EMM-IDLE.

4.9.9.2 Procedure description

4.9.9.2.1 Initial conditions

System Simulator:

- 1 NGC Cell connected to 5GC, default parameters, system information combination NR-6 as defined in subclause 4.4.3.1.2.

NOTE: Details about the E-UTRA cell from which the UE will move to the NGC cell are to be specified in the test.

User Equipment:

- The Test UICC shall be inserted. It shall provide relevant details on the EPC and 5GC.

All details required shall be explicitly specified in the TC which calls the procedure in its entirety or refers to parts of it.

4.9.9.2.2 Procedure sequence

Table 4.9.9.2.2-1: Test procedure sequence UE Tracking area updating / inter-system change from S1 mode to N1 mode in 5GMM/EMM-IDLE mode

St	Procedure	Message Sequence		TP	Verdict
		U - S	Message/PDU/SDU		
-	EXCEPTION: Unless otherwise stated all the messages below are transmitted on the cell specified in the test case.	-	-	-	-
1-3	Steps 1-3 from the mobility and periodic registration update procedure as described in Table 4.9.5.2.2-1 are performed. For some consequences related to the content of the REGISTRATION REQUEST message sent in step 1 see the Notes in Table 4.9.9.2.3-1.	-	-	-	-
4	The SS transmits a DLInformationTransfer message and an AUTHENTICATION REQUEST message.	<--	NR RRC: DLInformationTransfer 5GMM: AUTHENTICATION REQUEST	-	-
5	The UE transmits an ULInformationTransfer message and an AUTHENTICATION RESPONSE message.	-->	NR RRC: ULInformationTransfer 5GMM: AUTHENTICATION RESPONSE	-	-
6	The SS transmits a DLInformationTransfer message and a SECURITY MODE COMMAND message.	<--	NR RRC: DLInformationTransfer 5GMM: SECURITY MODE COMMAND	-	-
7	The UE transmits an ULInformationTransfer message and a SECURITY MODE COMPLETE message.	-->	NR RRC: ULInformationTransfer 5GMM: SECURITY MODE COMPLETE	-	-
8	The SS transmits a SecurityModeCommand message.	<--	NR RRC: SecurityModeCommand	-	-
9	The UE transmits a SecurityModeComplete message.	-->	NR RRC: SecurityModeComplete	-	-
10-11	Steps 4-5 of Table 4.9.5.2.2-1 of the test procedure are performed.	-	-	-	-
12a1	Void	-	-	-	-
- 13a1					
-	EXCEPTION: Steps 14a1 to 14b2b1 describe a step sequence depending on test case scenario; the "lower case letter" identifies a step sequence that take place if the test procedure is called in a particular scenario. (NOTE 1)	-	-	-	-
14a1	IF <i>Interworking without N26 interface supported</i> THEN The generic procedure for UE-requested PDU session establishment, specified in subclause 4.5A.2, takes place performing establishment of UE-requested PDU session(s) with ExpectedNumberOfNewPDUSessions = pc_noOf_PDUsSameConnection. The UE may attempt to transfer some of the existing in S1 PDN connection(s) in which case in the PDU SESSION ESTABLISHMENT	-	-	-	-

	REQUEST message the request type shall be set to "existing PDU session" (NOTE 3).				
-	EXCEPTION: Steps 14a2a1 to 14a2b1 describe a step sequence depending on test case scenario; the "lower case letter" identifies a step sequence that take place if the UE performs a specific action.	-	-	-	-
14a2 a1	IF pc_noOf_PDUsNewConnection > 0 THEN the SS transmits an <i>RRCRelease</i> message to release RRC connection and moves the UE to RRC_IDLE.	<--	NR RRC: <i>RRCRelease</i>	-	-
14a2 a2	The procedure NR RRC_IDLE Extension as specified in table 4.5.2.2-4 takes place.	-	-	-	-
14a2 b1	ELSE IF <i>connected without release</i> is not present THEN, the SS transmits an <i>RRCConnectionRelease</i> message to release RRC connection and move the UE to RRC_IDLE.	<--	NR RRC: <i>RRCRelease</i>	-	-
-	EXCEPTION: In parallel to the events described in step 14b1 below, the steps specified in Table 4.9.9.2.2-2 may take place.	-	-	-	-
14b1	ELSE (i.e. 'Interworking without N26 interface not supported') The generic procedure for UE-requested PDU session establishment, specified in subclause 4.5A.2, takes place performing establishment of UE-requested PDU session(s) with ExpectedNumberOfNewPDUSessions = pc_noOf_PDUsSameConnection with the exception that IF step 2b1, Table 4.5A.2.2.2-2 takes place THEN the SS shall not assign Fail but continue with the next step in the test sequence not expecting any additional session establishment to take place (NOTE 2).	-	-	-	-
-	EXCEPTION: Steps 14b2a1 to 14b2b1 describe a step sequence depending on test case scenario; the "lower case letter" identifies a step sequence that take place if the UE performs a specific action.	-	-	-	-
14b2 a1	IF pc_noOf_PDUsNewConnection > 0 THEN the SS transmits an <i>RRCRelease</i> message to release RRC connection and move the UE to RRC_IDLE.	<--	NR RRC: <i>RRCRelease</i>	-	-
14b2 a2	The procedure NR RRC_IDLE Extension as specified in Table 4.5.2.2-4 takes place. IF step 0Ca1, Table 4.5.2.2-4 takes place THEN the SS shall not assign Fail but end the procedure, not expecting any additional session establishment to take place. For the referred in step 8, Table 4.5.2.2-4, generic procedure for UE-requested PDU session establishment, specified in subclause 4.5A.2, IF step 2b1, Table 4.5A.2.2.2-2 takes place THEN the SS shall not assign Fail but continue with the next step in the test sequence not expecting any additional session establishment to take place (NOTE 2).	-	-	-	-
14b2 b1	ELSE IF <i>connected without release</i> is not present THEN, the SS transmits an <i>RRCRelease</i> message to release RRC connection and move the UE to RRC_IDLE.	<--	NR RRC: <i>RRCRelease</i>	-	-
NOTE 1: The NWK will indicated whether Interworking without N26 interface is supported in the REGISTRATION ACCEPT message, IE '5GS network feature support', IWK N26 bit. Consequently which branch would the procedure sequence go through will depend on the content of the REGISTRATION ACCEPT message applicable to e.g. the test case which calls the present test procedure.					

NOTE 2:	Depending on UE implementation and/or NWK behaviour, the UE may transfer some PDN connections into PDU sessions without re-establishing them with the relevant mapping provided in the ACTIVATE DEFAULT EPS BEARER CONTEXT REQUEST message. This will result in the number of connection modifications, if any, being lower than the pc_noOf_PDUsSameConnection or the pc_noOf_PDUsNewConnection which the UE will establish upon initial attach to the 5GS.
NOTE 3:	Since the MME does not provide the UE with the mapped PDU session for a PDN connection, the UE does not know whether interworking to 5GS is supported for a PDN connection for which the UE assigned a PDU Session identity before attempting to transfer the PDN connection from S1 mode to N1 mode. It is up to UE implementation to decide which PDN connection(s) to be attempted to transfer from S1 mode to N1 mode, e.g. based on UE policy or UE local configuration. (see TS 24.501 [22], subclause 6.1.4.2)

Table 4.9.9.2.2-2: Parallel behaviour

St	Procedure	Message Sequence		TP	Verdict
		U - S	Message		
-	EXCEPTION: Step 1 describe a step sequence depending on test case scenario; the "lower case letter" identifies a step sequence that take place if the UE performs a specific action. NOTE 2, NOTE 3	-	-	-	-
1	IF this is the first time in a test case that the UE moves from S1 to N1 THEN the generic procedure for Procedure for UE-requested PDU session modification after the first S1 to N1 mode change / Single-registration mode with N26, specified in subclause 4.5A.2C, takes place with ExpectedNumberOfPDUSessionModification s=(pc_noOf_PDUsSameConnection+pc_noOf_PDUsNewConnection), with the exception that IF step 2b1, Table 4.5A.2C.2.2-2 takes place THEN the SS shall not assign Fail but continue with the next step in the test sequence not expecting any additional session modifications to take place (NOTE 1).				
NOTE 1: Depending on UE implementation and/or NWK behaviour, the UE may transfer with modification some PDN connections into PDU sessions without re-establishing them with the relevant mapping provided in the ACTIVATE DEFAULT EPS BEARER CONTEXT REQUEST message. This will result in the number of session modifications, if any, being lower than the pc_noOf_PDUsSameConnection+pc_noOf_PDUsNewConnection. NOTE 2: Whether this is the first time in a test case that the UE moves from S1 to N1 depends on the test scenario (including what happens in the preamble of the test). NOTE 3: It is assumed that the PDU session modification for all transferred PDUs will happen on the same connection with the mobility and periodic registration update procedure. NOTE 4: For PDN connections which will be transferred, tests calling the present procedure shall ensure that: - For each PDN connection established during the UE registration to the EPS, the ACTIVATE DEFAULT EPS BEARER CONTEXT REQUEST message which corresponds to the default EPS bearer of the PDN connectivity being activated, contains the Protocol configuration options IE or the Extended protocol configuration options IE with mapped 5GS PDU a session-AMBR and QoS rule(s).					

4.9.9.2.3 Specific Message content

Table 4.9.9.2.3-1: REGISTRATION REQUEST (step 1, Table 4.9.9.2.2-1; step 3, Table 4.9.5.2.2-1)

Derivation Path: Table 4.7.1-6.			
Information Element	Value/remark	Comment	Condition
5GS registration type	'x010'B	mobility registration updating	
		x - not checked	
ngKSI			

NAS key set identifier	KSI _{AMF} that was created when the UE last registered to 5GCN		Registered_Previously_on_5GCN
	'111'B	No key	Not_Registered_Previously_on_5GCN
TSC	'0'B	native security context (for KSI _{AMF})	Registered_Previously_on_5GCN
	Not applicable	TSC does not apply for NAS key set identifier value "111"	Not_Registered_Previously_on_5GCN
5GS mobile identity	5G-GUTI mapped from the 4G-GUTI assigned when the UE last registered to EPC E-UTRA		
Non-current native NAS key set identifier	Not present		
5GMM capability	'1'	S1 mode supported	
Last visited registered TAI	The TAI the last visited NGC Cell belonged to, if any. Not included if the UE does not have last stored 5GC TAI.		
S1 UE network capability			
All octets with the exception of octet 8, bit 8 and octet 9, bit 6	Not checked		
Extended protocol configuration options (ePCO) (octet 8, bit 8)	'1'	Extended protocol configuration options IE supported	
N1 mode supported (N1mode) (octet 9, bit 6)	'1'	N1 mode supported	
PDU session status	Any allowed value	(NOTE 1)	
UE status	"UE is in EMM-REGISTERED state"		
Additional GUTI	5G-GUTI assigned when the UE last registered to 5GCN		Registered_Previously_on_5GCN
	Not present		Not_Registered_Previously_on_5GCN
EPS NAS message container	TRACKING AREA UPDATE REQUEST message	See Table 4.9.9.2.3-2	
	Not checked	-	<i>Interworking without N26 interface supported AND Rel-17 or higher</i>
EPS bearer context status	Not present	(NOTE 2)	
NOTE 1: The UE includes the PDU session status IE indicating the status of the PDU session(s) mapped during the inter-system change from S1 mode to N1 mode from the PDN connection(s) for which the EPS indicated that interworking to 5GS is supported, if any. This means that the UE has created locally the default bearer context and the dedicated bearer context(s) based on the parameters of the mapped bearer contexts or the associations between QoS flow and mapped bearer in the PDN connection. Although the contents of the IE is not required to be verified for PASS/FAIL purposes, the provided information shall be taken into account for building any subsequent RRC Reconfiguration message, and can be used e.g. for SS configuration purposes as well. NOTE 2: The UE is assumed NOT to have locally deactivated EPS bearer context(s) for which interworking to 5GS is supported while the UE was in S1 mode without notifying the network.			

Condition	Explanation
Not_Registered_Previously_on_5GCN	UE has not_registered_previously_on_5GCN. UE does not have valid 5G NAS security context and 5G-GUTI.
Registered_Previously_on_5GCN	UE has registered_previously_on_5GCN. UE have valid 5G NAS security context and 5G-GUTI

Table 4.9.9.2.3-2: TRACKING AREA UPDATE REQUEST (Table 4.9.9.2.3-1)

Derivation Path: TS 36.508 [2], Table 4.7.2-27.			
Information Element	Value/remark	Comment	Condition
EPS update type			
EPS update type Value	'000'B	TA updating	
"Active" flag	'0'B	No Bearer Establishment requested	
NAS key set identifier	the eKSI for the current EPS security context		
TSC	'0'B		Mapped EPS security context
	'1'B		
Old GUTI	4G-GUTI assigned when the UE last registered to EPC E-UTRA		
UE network capability	Not present		
Last visited registered TAI	Not present		
DRX parameter	Not present		
UE radio capability information update needed	Not present		
EPS bearer context status	Not present		
MS network capability	Not present		
Old location area identification	Not present		
TMSI status	Not present		
Mobile station classmark 2	Not present		
Mobile station classmark 3	Not present		
Supported Codecs	Not present		
Additional update type	Not present		
Voice domain preference and UE's usage setting	Not present		
Old GUTI type	Not present		
Device properties	Not present		
MS network feature support	Not present		
TMSI based NRI container	Not present		
T3324 value	Not present		
T3412 extended value	Not present		
Extended DRX parameters	Not present		
UE additional security capability	Not present		
UE status	Not present		
Additional information requested	Not present		
NOTE: The message shall be integrity protected using the current EPS security context.			

Condition	Explanation
Mapped EPS security context	When explicitly specified by the test case in which the message is used.

Table 4.9.9.2.3-3: REGISTRATION ACCEPT (step 10, Table 4.9.9.2.2-1; step 4, Table 4.9.5.2.2-1)

Derivation Path: Table 4.7.1-7.			
Information Element	Value/remark	Comment	Condition
5GS network feature support	The IWK N26 (octet 4, bit 7) set to '1'		<i>Interworking without N26 interface supported</i>

4.9.10 Test procedure to check that the UE is in RRC_CONNECTED state

4.9.10.1 Scope

This procedure aims at checking whether the UE is in the RRC_CONNECTED state.

4.9.10.2 Procedure description

4.9.10.2.1 Initial conditions

As specified in the TC which calls the procedure in its entirety or refers to parts of it.

4.9.10.2.2 Procedure

Table 4.9.10.2.2-1: Test procedure sequence

St	Procedure	Message Sequence		TP	Verdict
		U - S	Message/PDU/SDU		
1	The SS sends <i>UECapabilityEnquiry</i> message to the UE.	<--	NR RRC: <i>UECapabilityEnquiry</i>	-	-
2	Check: Does the UE send a <i>UECapabilityInformation</i> message?	-->	NR RRC: <i>UECapabilityInformation</i>		P

4.9.10.2.3 Specific Message content

None.

4.9.11 Test procedure for IMS Emergency call or eCall over IMS establishment in 5GC with IMS emergency registration

4.9.11.1 Scope

This procedure aims at verifying the UE establishment of IMS Emergency call or an eCall in 5GC when the UE is in 5GMM-IDLE and when IMS emergency registration is required e.g. under Normal Service conditions.

The procedure provides different emergency or eCall establishment options based on the condition parameters defined in Table 4.9.11.1-1.

Table 4.9.11.1-1: Condition parameters

Condition	Explanation
emergency call	When this parameter is present the TC has triggered the UE to initiate an emergency call. (NOTE)
eCall	When this parameter is present the TC has triggered the UE to initiate an eCall.
NOTE: If this generic procedure is referred in test case without any condition, emergency call shall be used as default.	

The trigger to initiate MO call will be part of test case from where the generic procedure is called.

4.9.11.2 Procedure description

4.9.11.2.1 Initial conditions

System Simulator:

- 1 NR Cell connected to 5GC, default parameters.

User Equipment:

- The Test UICC shall be inserted. It shall provide Emergency Numbers.

The procedure assumes that the UE is in test state 1N-A, subclause 4.4A.2 on the NR Cell. All necessary details required shall be explicitly specified in the TC which calls the procedure in its entirety or refers to parts of it.

4.9.11.2.2 Procedure sequence

Table 4.9.11.2.2-1: Test procedure sequence UE IMS Emergency call or eCall over IMS establishment in 5GC with IMS emergency registration

St	Procedure	Message Sequence		TP	Verdict
		U - S	Message/PDU/SDU		
-	EXCEPTION: Unless otherwise stated all the messages below are transmitted on the cell specified in the test case.	-	-	-	-
1	The UE transmits an <i>RRCSetupRequest</i> message with 'establishmentCause' set to 'emergency'.	-->	NR RRC: <i>RRCSetupRequest</i>	-	P
2	The SS transmits an <i>RRCSetup</i> message.	<--	NR RRC: <i>RRCSetup</i>	-	-
3	The UE transmits an <i>RRCSetupComplete</i> message and a SERVICE REQUEST message with 'Service type' set to 'emergency services'.	-->	NR RRC: <i>RRCSetupComplete</i> 5GMM: SERVICE REQUEST	-	P
4	The SS transmits a <i>SecurityModeCommand</i> message.	<--	NR RRC: <i>SecurityModeCommand</i>	-	-
5	The UE transmits a <i>SecurityModeComplete</i> message.	-->	NR RRC: <i>SecurityModeComplete</i>	-	-
6	The SS transmits an <i>RRCReconfiguration</i> message and a SERVICE ACCEPT message to establish SRB2 and DRB.	<--	NR RRC: <i>RRCReconfiguration</i> 5GMM: SERVICE ACCEPT	-	-
-	EXCEPTION: Depending upon UE implementation, steps 7 and 8 can occur in any order.	-	-	-	-
7	The UE transmits an <i>RRCReconfigurationComplete</i> message.	-->	NR RRC: <i>RRCReconfigurationComplete</i>	-	-
8	The UE transmits an UL NAS TRANSPORT message with 'Request type' set to 'initial emergency request', and, a PDU SESSION ESTABLISHMENT REQUEST.	-->	NR RRC: <i>ULInformationTransfer</i> 5GMM: UL NAS TRANSPORT 5GSM: PDU SESSION ESTABLISHMENT REQUEST	-	P
-	EXCEPTION: In parallel to the events described in steps 9-10 below the events specified in steps 1a1 to 2 of Table 4.9.11.2.2-2 take place.	-	-	-	-
9	The SS transmits an <i>RRCReconfiguration</i> message and an PDU SESSION ESTABLISHMENT ACCEPT.	<--	NR RRC: <i>RRCReconfiguration</i> 5GMM: DL NAS TRANSPORT 5GSM: PDU SESSION ESTABLISHMENT ACCEPT	-	-
10	The UE transmits an <i>RRCReconfigurationComplete</i> message.	-->	NR RRC: <i>RRCReconfigurationComplete</i>	-	-
-	EXCEPTION: In parallel to the events described in steps 11-13 below the events specified in steps 3 of Table 4.9.11.2.2-2 take place.	-	-	-	-
11	The SS transmits an <i>RRCReconfiguration</i> message and an PDU SESSION MODIFICATION COMMAND.	<--	NR RRC: <i>RRCReconfiguration</i> 5GMM: DL NAS TRANSPORT 5GSM: PDU SESSION MODIFICATION COMMAND	-	-
-	EXCEPTION: Depending upon UE implementation, steps 12 and 13 can occur in any order.	-	-	-	-
12	The UE transmits an <i>RRCReconfigurationComplete</i> message.	-->	NR RRC: <i>RRCReconfigurationComplete</i>	-	-
13	The UE transmits an <i>ULInformationTransfer</i> message and an PDU SESSION MODIFICATION COMPLETE message.	-->	NR RRC: <i>ULInformationTransfer</i> 5GMM: UL NAS TRANSPORT	-	P

			5GSM: PDU SESSION MODIFICATION COMPLETE		

Table 4.9.11.2.2-2: IMS signalling and Emergency call establishment

St	Procedure	Message Sequence		TP	Verdict
		U - S	Message/PDU/SDU		
-	EXCEPTION: Step 1a1 describes behaviour depending UE implementation; the "lower case letter" identifies a step sequence that take place if the UE performs a specific action.	-	-	-	-
1a1	The generic procedure for IP address allocation in the user plane specified in subclause 4.5A.3 takes place.	-	-	-	-
2	Generic Test Procedure for IMS Emergency registration / 5GS as defined in TS 34.229-5 [47], annex A.3 is performed.	-	-	-	-
-	EXCEPTION: Steps 3a1-3b1 describe a step sequence depending on procedure parameters; the "lower case letter" identifies a step sequence that take place if a procedure parameter has a particular value.	-	-	-	-
3a1	IF 'emergency call' THEN Generic test procedure for setting up IMS Emergency Voice Call / 5G as defined in TS 34.229-5 [47], annex A.6 is performed.	-	-	-	-
3b1	IF 'eCall' THEN Generic test procedure for NR eCall Setup and MSD Update, steps 1-3, as defined in Annex A.23 of TS 34.229-5 [47] is performed.	-	-	-	-

4.9.11.2.3 Specific Message content

All specific message contents shall be according subclause 4.6 and 4.7 with the exceptions below.

Table 4.9.11.2.3-1: SIB1 (at any time prior and during the procedure, Table 4.9.11.2.2-1)

Derivation Path: Table 4.6.1-28.			
Information Element	Value/remark	Comment	Condition
SIB1 ::= SEQUENCE {			
ims-EmergencySupport	Present	true	
}			

Table 4.9.11.2.3-2: RRCSetupRequest (step 1, Table 4.9.11.2.2-1)

Derivation Path: Table 4.6.1-23.			
Information Element	Value/remark	Comment	Condition
RRCSetupRequest ::= SEQUENCE {			
rrcSetupRequest SEQUENCE {			
establishmentCause	emergency		
}			
}			

Table 4.9.11.2.3-3: SERVICE REQUEST (step 3, Table 4.9.11.2.2-1)

Derivation Path: Table 4.7.1-16.			
Information Element	Value/remark	Comment	Condition
Service type	'0011'B	emergency services	

Table 4.9.11.2.3-4: UL NAS TRANSPORT (step 8, Table 4.9.11.2.2-1)

Derivation Path: Table 4.7.1-10, condition INITIAL_PDU_REQUEST.			
Information Element	Value/remark	Comment	Condition
Request type	'011'B	initial emergency request	
S-NSSAI	Not Present		
DNN	Not Present		

Table 4.9.11.2.3-5: PDU SESSION ESTABLISHMENT REQUEST (step 8, Table 4.9.11.2.2-1)

Derivation Path: Table 4.7.2-1.			
Information Element	Value/remark	Comment	Condition
PDU session ID	A value that is not currently being used by another PDU session		
PTI	A value currently not used		
SSC mode	'001'B	SSC mode 1	

Table 4.9.11.2.3-6: DL NAS TRANSPORT (step 9, Table 4.9.11.2.2-1)

Derivation Path: Table 4.7.1-11, condition 5GSM_MESSAGE.			

Table 4.9.11.2.3-7: PDU SESSION ESTABLISHMENT ACCEPT (step 9, Table 4.9.11.2.2-1)

Derivation Path: Table 4.7.2-2.			
Information Element	Value/remark	Comment	Condition
Selected SSC mode	'001'B	SSC mode 1	
Authorized QoS rules	Reference QoS rule #2 as defined in Table 4.8.2.1-2.		
Authorized QoS flow descriptions	Reference QoS flow #2 as defined in Table 4.8.2.3-2.		
DNN	Not Present		

Table 4.9.11.2.3-8: RRCReconfiguration (step 9, Table 4.9.11.2.2-1)

Derivation Path: Table 4.8.1-1: RRCReconfiguration-DRB (1, 0)			

Table 4.9.11.2.3-9: PDU SESSION MODIFICATION COMMAND (step 11, Table 4.9.11.2.2-1)

Derivation Path: Table 4.7.2-2.			
Information Element	Value/remark	Comment	Condition
PDU session ID	Same value as sent in PDU SESSION ESTABLISHMENT REQUEST message.		
Authorized QoS rules	Reference QoS rule #7 as defined in Table 4.8.2.1-7 using condition IMS_VOICE.		
Authorized QoS flow descriptions	Reference QoS flow #5 as defined in Table 4.8.2.3-5.		

Table 4.9.11.2.3-10: RRCReconfiguration (step 11, Table 4.9.11.2.2-1)

Derivation Path: 4.8.1-1C RRCReconfiguration-Speech			

Table 4.9.11.2.3-11: Void

4.9.12 Test procedure for IMS Emergency call establishment in 5GC without IMS emergency registration

4.9.12.1 Scope

This procedure aims at verifying the UE establishment of IMS Emergency call in 5GC without the need for IMS emergency registration to take place beforehand e.g. under Limited Service or SIM/USIM not available, the SIM/USIM is considered invalid by the UE conditions.

4.9.12.2 Procedure description

4.9.12.2.1 Initial conditions

System Simulator:

- 1 NR Cell connected to 5GC, default parameters unless specified otherwise. PLMN/TAI which the cell belongs to, shall be explicitly specified in the TC which calls the procedure in its entirety or refers to parts of it

User Equipment:

- Whether the Test UICC shall be inserted or not, and, its settings e.g. in regard to the provision of Emergency Numbers, shall be explicitly specified in the TC which calls the procedure in its entirety or refers to parts of it.

4.9.12.2.2 Procedure sequence

Table 4.9.12.2.2-1: Test procedure sequence UE IMS Emergency call establishment in 5GC without IMS emergency registration

St	Procedure	Message Sequence		TP	Verdict
		U - S	Message/PDU/SDU		
-	EXCEPTION: Unless otherwise stated all the messages below are transmitted on the cell specified in the test case.	-	-	-	-
1	Check: Does the UE transmits an <i>RRCSetupRequest</i> message with 'establishmentCause' set to 'emergency'?	-->	NR RRC: <i>RRCSetupRequest</i>	-	P
2	The SS transmits an <i>RRCSetup</i> message.	<--	NR RRC: <i>RRCSetup</i>	-	-
3	Check: Does the UE transmits an <i>RRCSetupComplete</i> message and a REGISTRATION REQUEST message with 'Service type' set to 'emergency services'?	-->	NR RRC: <i>RRCSetupComplete</i> 5GMM: REGISTRATION REQUEST	-	P
4	The SS transmits a <i>DLInformationTransfer</i> message and a SECURITY MODE COMMAND message with 'Selected NAS security algorithms' set to "null integrity protection algorithm" (5G-IA0), "null ciphering algorithm" (5G-EA0).	<--	NR RRC: <i>DLInformationTransfer</i> 5GMM: SECURITY MODE COMMAND	-	-
5	The UE transmits a <i>ULInformationTransfer</i> message and a SECURITY MODE COMPLETE message.	-->	NR RRC: <i>ULInformationTransfer</i> 5GMM: SECURITY MODE COMPLETE	-	P
6	The SS transmits a <i>SecurityModeCommand</i> message with cipheringAlgorithm set to 'NULL' ciphering algorithm (nea0) and integrityProtAlgorithm set to 'NULL' integrity protection algorithm (nia0).	<--	NR RRC: <i>SecurityModeCommand</i>	-	-
7	The UE transmits a <i>SecurityModeComplete</i> message.	-->	NR RRC: <i>SecurityModeComplete</i>	-	P

8	The SS transmits a <i>UECapabilityEnquiry</i> message.	<--	NR RRC: <i>UECapabilityEnquiry</i>	-	-
9	The UE transmits a <i>UECapabilityInformation</i> message.	-->	NR RRC: <i>UECapabilityInformation</i>	-	-
10	The SS transmits a <i>DLInformationTransfer</i> message and a REGISTRATION ACCEPT message.	<--	NR RRC: <i>DLInformationTransfer</i> 5GMM: REGISTRATION ACCEPT	-	-
11	The UE transmits an <i>ULInformationTransfer</i> message and a REGISTRATION COMPLETE message.	-->	NR RRC: <i>ULInformationTransfer</i> 5GMM: REGISTRATION COMPLETE	-	-
12	Void	-	-	-	-
13	Check: Does the UE transmits an UL NAS TRANSPORT message with 'Request type' set to 'initial emergency request', and, a PDU SESSION ESTABLISHMENT REQUEST?	-->	NR RRC: <i>ULInformationTransfer</i> 5GMM: UL NAS TRANSPORT 5GSM: PDU SESSION ESTABLISHMENT REQUEST	-	P
-	EXCEPTION: In parallel to the events described in steps 14-15 below the events specified in steps 1a1 of Table 4.9.12.2.2-2 take place.	-	-	-	-
14	The SS transmits an <i>RRCReconfiguration</i> message and an PDU SESSION ESTABLISHMENT ACCEPT to establish SRB2 and DRB.	<--	NR RRC: <i>RRCReconfiguration</i> 5GMM: DL NAS TRANSPORT 5GSM: PDU SESSION ESTABLISHMENT ACCEPT	-	-
15	The UE transmits an <i>RRCReconfigurationComplete</i> message.	-->	NR RRC: <i>RRCReconfigurationComplete</i>	-	-
-	EXCEPTION: In parallel to the events described in steps 16-18 below the events specified in steps 2 of Table 4.9.12.2.2-2 take place.	-	-	-	-
16	The SS transmits an <i>RRCReconfiguration</i> message and an PDU SESSION MODIFICATION COMMAND.	<--	NR RRC: <i>RRCReconfiguration</i> 5GMM: DL NAS TRANSPORT 5GSM: PDU SESSION MODIFICATION COMMAND	-	-
-	EXCEPTION: Depending upon UE implementation, steps 17 and 18 can occur in any order.	-	-	-	-
17	The UE transmits an <i>RRCReconfigurationComplete</i> message.	-->	NR RRC: <i>RRCReconfigurationComplete</i>	-	-
18	Check: Does the UE transmits an <i>ULInformationTransfer</i> message and an PDU SESSION MODIFICATION COMPLETE message?	-->	NR RRC: <i>ULInformationTransfer</i> 5GMM: UL NAS TRANSPORT 5GSM: PDU SESSION MODIFICATION COMPLETE	-	P

Table 4.9.12.2.2-2: IMS signalling and Emergency call establishment

St	Procedure	Message Sequence		TP	Verdict
		U - S	Message/PDU/SDU		
-	EXCEPTION: Step 1a1 describes behaviour depending UE implementation; the "lower case letter" identifies a step sequence that take place if the UE performs a specific action.	-	-	-	-
1a1	The generic procedure for IP address allocation in the user plane specified in subclause 4.5A.3 takes place.	-	-	-	-
2	Generic test procedure for setting up IMS Emergency Voice Call as defined in TS 34.229-5 [47] annex A.6 is performed.	-	-	-	-

4.9.12.2.3 Specific Message content

All specific message contents shall be according subclause 4.6 and 4.7 with the exceptions below.

NOTE: Some of the specific message contents provided below assume that the UE is in the state 5GMM-DEREGISTERED.LIMITED-SERVICE or 5GMM-REGISTERED.LIMITED-SERVICE (e.g. the selected cell over 3GPP access is in a forbidden PLMN or is in a forbidden tracking area respectively), or, in 5GMM-DEREGISTERED.NO-SUPI as defined in TS 24.501 [28], subclauses 5.1.3.2.1.3.3 and 5.1.3.2.1.3.6 respectively. All necessary details required shall be explicitly specified in the TC which calls the procedure in its entirety or refers to parts of it.

Table 4.9.12.2.3-1: SIB1 (at any time prior and during the procedure, Table 4.9.12.2.2-1)

Derivation Path: Table 4.6.1-28.			
Information Element	Value/remark	Comment	Condition
SIB1 ::= SEQUENCE {			
ims-EmergencySupport	Present	true	
}			

Table 4.9.12.2.3-2: RRCSetupRequest (step 1, Table 4.9.12.2.2-1)

Derivation Path: Table 4.6.1-23.			
Information Element	Value/remark	Comment	Condition
RRCSetupRequest ::= SEQUENCE {			
rrcSetupRequest SEQUENCE {			
establishmentCause	emergency		
}			
}			

Table 4.9.12.2.3-3: REGISTRATION REQUEST (step 3, Table 4.9.12.2.2-1)

Derivation Path: Table 4.7.1-6, condition EMERGENCY.			

Table 4.9.12.2.3-4: SECURITY MODE COMMAND (step 4, Table 4.9.12.2.2-1)

Derivation Path: Table 4.7.1-25.			
Information Element	Value/remark	Comment	Condition
Selected NAS security algorithms			
Type of ciphering algorithm	5G-EA0	null ciphering algorithm	
Type of integrity protection algorithm	5G-IA0	null integrity protection algorithm	
ngKSI			
NAS key set identifier	'000'B		

Table 4.9.12.2.3-5: SecurityModeCommand (step 6, Table 4.9.12.2.2-1)

Derivation Path: Table 4.6.1-25.			
Information Element	Value/remark	Comment	Condition
SecurityModeCommand ::= SEQUENCE {			
criticalExtensions CHOICE {			
securityModeCommand SEQUENCE {			
securityConfigSMC SEQUENCE {			
securityAlgorithmConfig SEQUENCE {			
cipheringAlgorithm	nea0	'NULL' ciphering algorithm	
integrityProtAlgorithm	nia0	'NULL' integrity protection algorithm	
}			
}			
}			
}			
}			

Table 4.9.12.2.3-6: REGISTRATION ACCEPT (step 10, Table 4.9.12.2.2-1)

Derivation Path: Table 4.7.1-7, condition EMERGENCY.

Table 4.9.12.2.3-7: UL NAS TRANSPORT (step 13, Table 4.9.12.2.2-1)

Derivation Path: Table 4.7.1-10, condition INITIAL_PDU_REQUEST.			
Information Element	Value/remark	Comment	Condition
Request type	'011'B	initial emergency request	
S-NSSAI	Not Present		
DNN	Not Present		

Table 4.9.12.2.3-8: PDU SESSION ESTABLISHMENT REQUEST (step 13, Table 4.9.12.2.2-1)

Derivation Path: Table 4.7.2-1.			
Information Element	Value/remark	Comment	Condition
PDU session ID	A value that is not currently being used by another PDU session		
PTI	A value currently not used		
SSC mode	'001'B	SSC mode 1	

Table 4.9.12.2.3-9: DL NAS TRANSPORT (step 14, Table 4.9.12.2.2-1)

Derivation Path: Table 4.7.1-11, condition 5GSM_MESSAGE.

Table 4.9.12.2.3-10: PDU SESSION ESTABLISHMENT ACCEPT (step 14, Table 4.9.12.2.2-1)

Derivation Path: Table 4.7.2-2.			
Information Element	Value/remark	Comment	Condition
Selected SSC mode	'001'B	SSC mode 1	
Authorized QoS rules	Reference QoS rule #2 as defined in Table 4.8.2.1-2.		
Authorized QoS flow descriptions	Reference QoS flow #2 as defined in Table 4.8.2.3-2.		

Table 4.9.12.2.3-11: RRCReconfiguration (step 14, Table 4.9.12.2.2-1)

Derivation Path: Table 4.8.1-1: RRCReconfiguration-SRB2-DRB (1, 0)

Table 4.9.12.2.3-12: PDU SESSION MODIFICATION COMMAND (step 16, Table 4.9.12.2.2-1)

Derivation Path: Table 4.7.2-2.			
Information Element	Value/remark	Comment	Condition
PDU session ID	Same value as sent in PDU SESSION ESTABLISHMENT REQUEST message.		
Authorized QoS rules	Reference QoS rule #7 as defined in Table 4.8.2.1-7 using condition IMS_VOICE.		

Authorized QoS flow descriptions	Reference QoS flow #5 as defined in Table 4.8.2.3-5.		

Table 4.9.12.2.3-13: RRCReconfiguration (step 16, Table 4.9.12.2.2-1)

Derivation Path: 4.8.1-1C RRCReconfiguration-Speech

Table 4.9.12.2.3-14: INVITE (step 2, Table 4.9.12.2.2-2)

Derivation Path: TS 34.229-5 [47], Annex A.6, Step 1 with condition A6 instead of A7

Table 4.9.12.2.3-15: 180 Ringing (step 2, Table 4.9.12.2.2-2)

Derivation Path: TS 34.229-5 [47], Annex A.6, Step 3 with condition A7 instead of A8

Table 4.9.12.2.3-16: 200 OK for INVITE (step 2, Table 4.9.12.2.2-2)

Derivation Path: TS 34.229-5 [47], Annex A.6, Step 4 with condition A7 instead of A6

4.9.12A Test procedure for IMS MO Emergency call release

4.9.12A.1 Scope

This procedure aims at verifying the UE initiated release of an ongoing IMS Emergency call in 5GC.

The procedure provides different handling options of the emergency PDU session based on the condition parameter defined in Table 4.9.12A.1-1.

Table 4.9.12A.1-1: Condition parameters

Condition	Explanation
release emergency PDU session	When this parameter is present the SS will release the emergency PDU session even if not requested by the UE after the release of the emergency call.
keep emergency PDU session	When this parameter is present the SS will only release the emergency PDU session if requested by the UE, if not it will release the voice QoS after the release of the emergency call.
NOTE 1: If the defined condition parameter is not present when the procedure is referred to then the default value 'release emergency PDU session' will apply.	

4.9.12A.2 Procedure description

4.9.12A.2.1 Initial conditions

System Simulator:

- 1 NR Cell connected to 5GC, default parameters.

User Equipment:

- The Test UICC shall be inserted. It shall provide Emergency Numbers.

The procedure assumes that the UE is in test state 3N-A, subclause 4.4A.2 on the NR Cell with an active IMS emergency call. All necessary details required shall be explicitly specified in the TC which calls the procedure in its entirety or refers to parts of it.

4.9.12A.2.2 Procedure sequence

Table 4.9.12A.2.2-1: Test procedure sequence IMS MO Emergency call release

St	Procedure	Message Sequence		TP	Verdict
		U - S	Message/PDU/SDU		
1	Generic test procedure for MO Release of Voice Call / 5GS, as defined in Annex A.7 of TS 34.229-5 [47], is performed.	-	-	-	-
2-3	Void	-	-	-	-
3A1	SS starts timer T1 = 5 seconds.	-	-	-	-
-	EXCEPTION: Steps 3Ba1 to 3Bb2b3 describe a transaction that depends on the UE behaviour; the "lower case letter" identifies a step sequence that takes place if a specific behaviour happens.	-	-	-	-
3Ba1	The UE transmits a PDU SESSION RELEASE REQUEST message.	-->	NR RRC: <i>ULInformationTransfer</i> 5GMM: UL NAS TRANSPORT 5GSM: PDU SESSION RELEASE REQUEST	-	-
3Ba2	Stop timer T1.	-	-	-	-
3Ba3	Test procedure for PDU Session Release specified in subclause 4.9.21 takes place.	-	-	-	-
3Bb1	Timer T1 expires.	-	-	-	-
-	EXCEPTION: Steps 3Bb2a1 – 3Bb2b3 describe a step sequence depending on procedure parameters; the "lower case letter" identifies a step sequence that take place if a procedure parameter has a particular value.	-	-	-	-
3Bb2 a1	IF 'release emergency PDU session' THEN test procedure for PDU Session Release specified in subclause 4.9.21 takes place.	-	-	-	-
3Bb2 b1	ELSE (i.e. 'keep emergency PDU session') THEN the SS transmits a RRCReconfiguration message and a PDU SESSION MODIFICATION COMMAND message.	<--	NR RRC: <i>RRCReconfiguration</i> 5GMM: DL NAS TRANSPORT 5GSM: PDU SESSION MODIFICATION COMMAND	-	-
-	EXCEPTION: Steps 3Bb2b2 and 3Bb2b3 can occur in any order.	-	-	-	-
3Bb2 b2	The UE transmits a RRCReconfigurationComplete.	-	NR RRC: <i>RRCReconfigurationComplete</i>	-	-
3Bb2 b3	Check: Does the UE transmit a PDU SESSION MODIFICATION COMPLETE message?	-->	NR RRC: <i>ULInformationTransfer</i> 5GMM: UL NAS TRANSPORT 5GSM: PDU SESSION MODIFICATION COMPLETE	-	P
4-5	Void	-	-	-	-

4.9.12A.2.3 Specific Message content

All specific message contents shall be according subclause 4.6 and 4.7 with the exceptions below.

Table 4.9.12A.2.3-1: RRCReconfiguration (step 3Ba3, step 3Bb2a1, Table 4.9.12A.2.2-1; step 1 Table 4.9.21.2.2-1)

Derivation Path: Table 4.6.1-13.			
Information Element	Value/remark	Comment	Condition
RRCReconfiguration ::= SEQUENCE {			
criticalExtensions CHOICE {			
rrcReconfiguration SEQUENCE {			
radioBearerConfig SEQUENCE {			
drb-ToReleaseList SEQUENCE (SIZE (1..maxDRB)) OF DRB-Identity {	2 entries		
DRB-Identity[1]	DRB-Identity linked to the IMS emergency signalling bearer	entry 1	

DRB-Identity[2]	DRB-Identity linked to the IMS emergency speech bearer	entry 2	
}			
}			
nonCriticalExtension SEQUENCE {			
masterCellGroup SEQUENCE {			
rlc-BearerToReleaseList SEQUENCE (SIZE (1..maxLC-ID)) OF LogicalChannelIdentity {	2 entries		
logicalChannelIdentity[1]	Same value as drb-Identity[1] above	entry 1	
logicalChannelIdentity[2]	Same value as drb-Identity[2] above	entry 2	
}			
}			
}			
}			
}			
}			
}			

Table 4.9.12A.2.3-2: PDU SESSION RELEASE COMMAND (step 3Ba2, step 3Bb2a1, Table 4.9.12A.2.2-1; step 1 Table 4.9.21.2.2-1)

Derivation Path: Table 4.7.1-14.			
Information Element	Value/remark	Comment	Condition
PDU session ID	Set according to the Emergency session ID.		
5GSM cause	'0010 0100'B	Regular deactivation	

Table 4.9.12A.2.3-3: PDU SESSION RELEASE REQUEST (step 3Ba1, Table 4.9.12A.2.2-1)

Derivation Path: Table 4.7.1-14.			
Information Element	Value/remark	Comment	Condition
PDU session ID	Set according to the Emergency session ID.		
PTI	Any value from 1 to 254		

Table 4.9.12A.2.3-4: RRCReconfiguration (step 3Bb2b1, Table 4.9.12A.2.2-1)

Derivation Path: Table 4.6.1-13.			
Information Element	Value/remark	Comment	Condition
RRCReconfiguration ::= SEQUENCE {			
criticalExtensions CHOICE {			
rrcReconfiguration SEQUENCE {			
radioBearerConfig SEQUENCE {			
drb-ToReleaseList SEQUENCE (SIZE (1..maxDRB)) OF DRB-Identity {	1 entry		
DRB-Identity	DRB-Identity linked to the IMS speech bearer		
}			
}			
nonCriticalExtension SEQUENCE {			
masterCellGroup SEQUENCE {			
rlc-BearerToReleaseList SEQUENCE (SIZE (1..maxLC-ID)) OF LogicalChannelIdentity {	1 entry		
LogicalChannelIdentity	Same value as drb-Identity above		
}			
}			
}			
}			
}			

}			

Table 4.9.12A.2.3-5: PDU SESSION MODIFICATION COMMAND (step 3Bb2b1, Table 4.9.12A.2.2-1)

Derivation Path: Table 4.7.2-9.			
Information Element	Value/remark	Comment	Condition
PDU session ID	Set according to the Emergency session ID		
Authorized QoS rules			
QoS rule			
QoS rule identifier	'00000011'B	QoS rule 3	
Rule operation code	'010'B	Delete existing QoS rule	
Authorized QoS flow descriptions			
QoS flow descriptions			
QFI	'00000111'B	QFI 7	
Operation code	'010'B	Delete existing QoS flow	

4.9.12B Test procedure for IMS MT Emergency call release

4.9.12B.1 Scope

This procedure aims at verifying the network initiated release of an ongoing IMS Emergency call in 5GC.

The procedure provides different handling options of the emergency PDU session based on the condition parameter defined in Table 4.9.12B.1-1.

Table 4.9.12B.1-1: Condition parameters

Condition	Explanation
release emergency PDU session	When this parameter is present the SS will release the emergency PDU session after the release of the emergency call.
keep emergency PDU session	When this parameter is present the SS will release the voice QoS, but not release the emergency PDU session after the release of the emergency call.
NOTE 1: If the defined condition parameter is not present when the procedure is referred to then the default value 'release emergency PDU session' will apply.	

4.9.12B.2 Procedure description

4.9.12B.2.1 Initial conditions

System Simulator:

- 1 NR Cell connected to 5GC, default parameters.

User Equipment:

- The Test UICC shall be inserted. It shall provide Emergency Numbers.

The procedure assumes that the UE is in test state 3N-A, subclause 4.4A.2 on the NR Cell with an active IMS emergency call. All necessary details required shall be explicitly specified in the TC which calls the procedure in its entirety or refers to parts of it.

4.9.12B.2.2 Procedure sequence

Table 4.9.12B.2.2-1: Test procedure sequence IMS MT Emergency call release

St	Procedure	Message Sequence	TP	Verdict

		U - S	Message/PDU/SDU		
1-2	Generic test procedure for MT release of speech call, steps 1-2, as defined in Annex A.8 of TS 34.229-5 [47] is performed using condition A9 for the BYE at step 1.	-	-	-	-
-	EXCEPTION: Steps 3a1 – 3b3 describe a step sequence depending on procedure parameters; the "lower case letter" identifies a step sequence that take place if a procedure parameter has a particular value.	-	-	-	-
3a1	IF 'release emergency PDU session' THEN test procedure for PDU Session Release specified in subclause 4.9.21 takes place.	-	-		-
3b1	ELSE (i.e. 'keep emergency PDU session') THEN the SS transmits a RRCReconfiguration message and a PDU SESSION MODIFICATION COMMAND message.	<--	NR RRC: RRCReconfiguration 5GMM: DL NAS TRANSPORT 5GSM: PDU SESSION MODIFICATION COMMAND	-	-
-	EXCEPTION: Steps 3b2 and 3b3 can occur in any order.	-	-	-	-
3b2	The UE transmits a RRCReconfigurationComplete.	-	NR RRC: RRCReconfigurationComplete	-	-
3b3	Check: Does the UE transmit a PDU SESSION MODIFICATION COMPLETE message?	-->	NR RRC: ULInformationTransfer 5GMM: UL NAS TRANSPORT 5GSM: PDU SESSION MODIFICATION COMPLETE	-	P
4	Void	-	-	-	-

4.9.12B.2.3 Specific Message content

All specific message contents shall be according subclause 4.6 and 4.7 with the exceptions below.

Table 4.9.12B.2.3-1: RRCReconfiguration (step 3a1, Table 4.9.12B.2.2-1; step 1 Table 4.9.21.2.2-1)

Derivation Path: Table 4.6.1-13.			
Information Element	Value/remark	Comment	Condition
RRCReconfiguration ::= SEQUENCE {			
criticalExtensions CHOICE {			
rrcReconfiguration SEQUENCE {			
radioBearerConfig SEQUENCE {			
drb-ToReleaseList SEQUENCE (SIZE (1..maxDRB)) OF DRB-Identity {	2 entries		
DRB-Identity[1]	DRB-Identity linked to the IMS emergency signalling bearer	entry 1	
DRB-Identity[2]	DRB-Identity linked to the IMS emergency speech bearer	entry 2	
}			
nonCriticalExtension SEQUENCE {			
masterCellGroup SEQUENCE {			
rlc-BearerToReleaseList SEQUENCE (SIZE (1..maxLC-ID)) OF LogicalChannelIdentity {	2 entries		
LogicalChannelIdentity[1]	Same value as drb-Identity[1] above	entry 1	
LogicalChannelIdentity[2]	Same value as drb-Identity[2] above	entry 2	
}			
}			
}			
}			
}			
}			

Table 4.9.12B.2.3-2: PDU SESSION RELEASE COMMAND (step 3a1, Table 4.9.12B.2.2-1; step 1 Table 4.9.21.2.2-1)

Derivation Path: Table 4.7.1-14.			
Information Element	Value/remark	Comment	Condition
PDU session ID	Set according to the Emergency session ID.		
5GSM cause	'0010 0100'B	Regular deactivation	

Table 4.9.12B.2.3-3: RRCReconfiguration (step 3b1, Table 4.9.12B.2.2-1)

Derivation Path: Table 4.6.1-13.			
Information Element	Value/remark	Comment	Condition
RRCReconfiguration ::= SEQUENCE {			
criticalExtensions CHOICE {			
rrcReconfiguration SEQUENCE {			
radioBearerConfig SEQUENCE {			
drb-ToReleaseList SEQUENCE (SIZE (1..maxDRB)) OF DRB-Identity {	1 entry		
DRB-Identity	DRB-Identity linked to the IMS speech bearer		
}			
}			
nonCriticalExtension SEQUENCE {			
masterCellGroup SEQUENCE {			
rlc-BearerToReleaseList SEQUENCE (SIZE (1..maxLC-ID)) OF LogicalChannelIdentity {	1 entry		
LogicalChannelIdentity	Same value as drb-Identity above		
}			
}			
}			
}			
}			

Table 4.9.12B.2.3-4: PDU SESSION MODIFICATION COMMAND (step 3b1, Table 4.9.12B.2.2-1)

Derivation Path: Table 4.7.2-9.			
Information Element	Value/remark	Comment	Condition
PDU session ID	Set according to the Emergency session ID		
Authorized QoS rules			
QoS rule			
QoS rule identifier	'00000011'B	QoS rule 3	
Rule operation code	'010'B	Delete existing QoS rule	
Authorized QoS flow descriptions			
QoS flow descriptions			
QFI	'00000111'B	QFI 7	
Operation code	'010'B	Delete existing QoS flow	

4.9.13 Test procedure for no response to paging

4.9.13.1 Scope

This procedure aims at checking that the UE ignores paging messages with a specified identity.

4.9.13.2 Procedure description

4.9.13.2.1 Initial conditions

As specified in the TC which calls the procedure in its entirety or refers to parts of it.

4.9.13.2.2 Procedure sequence

Table 4.9.13.2.2-1: Test procedure sequence

St	Procedure	Message Sequence		TP	Verdict
		U - S	Message		
1	The SS transmits a paging message using the NG-5G-S-TMSI which is specified in the referring test step, and on the cell which is specified in the referring test step.	<--	<i>Paging</i>	-	-
2	Check: Does the UE send an <i>RRCSetupRequest</i> message on the cell where the paging was transmitted within the next 3s?	-->	<i>RRCSetupRequest</i>	-	F

4.9.13.3 Specific Message content

None.

4.9.14 Void

4.9.15 Test procedure for IMS MO speech call establishment in 5GC

4.9.15.1 Scope

The purpose of this procedure is to establish an IMS MO speech call.

4.9.15.2 Procedure description

4.9.15.2.1 Initial conditions

System Simulator:

- 1 NR Cell connected to 5GC, default parameters.

User Equipment:

- The UE is in state 1N-A and registered to the IMS.

4.9.15.2.2 Procedure sequence

Table 4.9.15.2.2-1: IMS MO speech call establishment in 5GC

St	Procedure	Message Sequence		TP	Verdict
		U - S	Message		
1	Make the UE attempt an IMS speech call.	-	-	-	-
2	Check: Does the UE transmit an <i>RRCSetupRequest</i> message with 'establishmentCause' set to 'mo-VoiceCall'?	-->	NR RRC: <i>RRCSetupRequest</i>	-	P
3	SS transmit an <i>RRCSetup</i> message.	<--	NR RRC: <i>RRCSetup</i>	-	-
4	Check: Does the UE transmit an <i>RRCSetupComplete</i> message to confirm the successful completion of the connection establishment and to initiate the session	-->	NR RRC: <i>RRCSetupComplete</i> 5GMM: SERVICE REQUEST	-	P

	management procedure by including the SERVICE REQUEST message?				
5	The SS transmits a <i>SecurityModeCommand</i> message to activate AS security.	<--	NR RRC: <i>SecurityModeCommand</i>	-	-
6	Check: Does the UE transmit a <i>SecurityModeComplete</i> message and establish the initial security configuration?	-->	NR RRC: <i>SecurityModeComplete</i>	-	P
7	The SS transmits an <i>RRCReconfiguration</i> message and a SERVICE ACCEPT message to establish SRB2 and DRB(s).	<--	NR RRC: <i>RRCReconfiguration</i> 5GMM: SERVICE ACCEPT	-	-
-	EXCEPTION: In parallel to step 8 below, the steps specified in Table 4.9.15.2.2-2 take place.	-	-	-	-
8	The UE transmits an <i>RRCReconfigurationComplete</i> message.	-->	NR RRC: <i>RRCReconfigurationComplete</i>	-	-
-	EXCEPTION: Steps 9a1 to 9b4 describe behaviour that depends on UE configuration; the "lower case letter" identifies a step sequence that takes place if such configuration was conducted.	-	-	-	-
9a1-9a4	IF the UE is configured to use preconditions THEN steps 2-5 of Annex A.4.1a of TS 34.229-5 [47] take place.	-	-	-	-
9b1-9b4	ELSE steps 2-5 of Annex A.4.2a of TS 34.229-5 [47] take place.	-	-	-	-
10	The SS transmits an <i>RRCReconfiguration</i> message and a PDU SESSION MODIFICATION COMMAND message.	<--	NR RRC: <i>RRCReconfiguration</i> 5GMM: DL NAS TRANSPORT 5GSM: PDU SESSION MODIFICATION COMMAND	-	-
-	EXCEPTION: In parallel to steps 11 and 12 below, step 13a1 or 13b1 occur.	-	-	-	-
11	The UE transmits an <i>RRCReconfigurationComplete</i> message.	-->	NR RRC: <i>RRCReconfigurationComplete</i>	-	-
12	Check: Does the UE transmit an <i>ULInformationTransfer</i> message, an UL NAS TRANSPORT message and a PDU SESSION MODIFICATION COMPLETE message?	-->	NR RRC: <i>ULInformationTransfer</i> 5GMM: UL NAS TRANSPORT 5GSM: PDU SESSION MODIFICATION COMPLETE	-	P
-	EXCEPTION: Steps 13a1 to 13b3 describe behaviour that depends on UE configuration; the "lower case letter" identifies a step sequence that takes place if such configuration was conducted.	-	-	-	-
13a1-13a7	IF the UE is configured to use preconditions THEN steps 6-12 of Annex A.4.1a of TS 34.229-5 [47] take place.	-	-	-	-
13b1-13b3	ELSE steps 6-8 of Annex A.4.2a of TS 34.229-5 [47] take place.	-	-	-	-

Table 4.9.15.2.2-2: Parallel Behaviour

St	Procedure	Message Sequence		TP	Verdict
		U - S	Message		
-	EXCEPTION: Steps 1a1 to 1b1 describe behaviour that depends on UE configuration; the "lower case letter" identifies a step sequence that takes place if such configuration was conducted.	-	-	-	-
1a1	IF the UE is configured to use preconditions THEN step 1 of Annex A.4.1a of TS 34.229-5 [47] takes place.	-	-	-	-
1b1	ELSE step 1 of Annex A.4.2a of TS 34.229-5 [47] takes place.	-	-	-	-

4.9.15.3 Specific message contents

Table 4.9.15.3-1: RRCSetupRequest (step 2, Table 4.9.15.2.2-1)

Derivation Path: Table 4.6.1-23			
Information Element	Value/remark	Comment	Condition
RRCSetupRequest ::= SEQUENCE {			
rrcSetupRequest SEQUENCE {			
establishmentCause	mo-VoiceCall		
}			
}			

Table 4.9.15.3-2: SERVICE REQUEST (step 4, Table 4.9.15.2.2-1)

Derivation Path: Table 4.7.1-16			
Information Element	Value/remark	Comment	Condition
Service type			
Service type value	'0001'B	data	

Table 4.9.15.3-3: PDU SESSION MODIFICATION COMMAND (step 10, Table 4.9.15.2.2-1)

Derivation Path: Table 4.7.2-9			
Information Element	Value/remark	Comment	Condition
PDU session ID	Same value as sent in PDU SESSION ESTABLISHMENT REQUEST message.		
Authorized QoS rules	Reference QoS rule #7 as defined in Table 4.8.2.1-7 using condition IMS_VOICE.		
Authorized QoS flow descriptions	Reference QoS flow #5 as defined in Table 4.8.2.3-5.		

Table 4.9.15.3-4: RRCReconfiguration (step 10, Table 4.9.15.2.2-1)

Derivation Path: Table 4.8.1-1C

4.9.16 Test procedure for IMS MT speech call establishment in 5GC

4.9.16.1 Scope

The purpose of this procedure is to establish an IMS MT speech call.

4.9.16.2 Procedure description

4.9.16.2.1 Initial conditions

System Simulator:

- 1 NR Cell connected to 5GC, default parameters.

User Equipment:

- The UE is in state 1N-A and registered to the IMS.

4.9.16.2.2 Procedure sequence

Table 4.9.16.2.2-1: IMS MT speech call establishment in 5GC

St	Procedure	Message Sequence		TP	Verdict
		U – S	Message		
1	The SS transmits a <i>Paging</i> message.	<--	NR RRC: <i>Paging</i>	-	-
2	Check: Does the UE transmit an <i>RRCSetupRequest</i> message with 'establishmentCause' set to 'mt-Access'?	-->	NR RRC: <i>RRCSetupRequest</i>	-	P
3	The SS transmits an <i>RRCSetup</i> message.	<--	NR RRC: <i>RRCSetup</i>	-	-
4	Check: Does the UE transmit an <i>RRCSetupComplete</i> message and a SERVICE REQUEST message?	-->	NR RRC: <i>RRCSetupComplete</i> 5GMM: SERVICE REQUEST	-	P
5	The SS transmits a <i>SecurityModeCommand</i> message.	<--	NR RRC: <i>SecurityModeCommand</i>	-	-
6	The UE transmits a <i>SecurityModeComplete</i> message.	-->	NR RRC: <i>SecurityModeComplete</i>	-	-
7	The SS transmits an <i>RRCReconfiguration</i> message and a SERVICE ACCEPT message to establish SRB2 and DRB(s). The <i>RRCReconfiguration</i> message is configured using <i>RRCReconfiguration-SRB2-DRB(n, m)</i> where n and m are the number of DRB(s) configured with RLC-AM and RLC-UM respectively.	<--	NR RRC: <i>RRCReconfiguration</i> 5GMM: SERVICE ACCEPT	-	-
8	Check: Does the UE transmit an <i>RRCReconfigurationComplete</i> message?	-->	NR RRC: <i>RRCReconfigurationComplete</i>	-	P
-	EXCEPTION: Steps 9a1 to 9b5 describe behaviour that depends on UE configuration; the "lower case letter" identifies a step sequence that takes place if such configuration was conducted.	-	-	-	-
9a1-9a5	IF the UE is configured to use preconditions THEN steps 1-5 of Annex A.5.1a of TS 34.229-5 [47] take place.	-	-	-	-
9b1-9b5	ELSE steps 1-5 of Annex A.5.2a of TS 34.229-5 [47] take place.	-	-	-	-
10	The SS transmits an <i>RRCReconfiguration</i> message and a PDU SESSION MODIFICATION COMMAND message.	<--	NR RRC: <i>RRCReconfiguration</i> 5GMM: DL NAS TRANSPORT 5GSM: PDU SESSION MODIFICATION COMMAND	-	-
-	EXCEPTION: Depending upon UE implementation, steps 11 and 12 can occur in any order	-	-	-	-
11	The UE transmits an <i>RRCReconfigurationComplete</i> message	-->	NR RRC: <i>RRCReconfigurationComplete</i>	-	-
12	Check: Does the UE transmit a <i>ULInformationTransfer</i> message, an UL NAS TRANSPORT message and an PDU SESSION MODIFICATION COMPLETE message?	-->	NR RRC: <i>ULInformationTransfer</i> 5GMM: UL NAS TRANSPORT 5GSM: PDU SESSION MODIFICATION COMPLETE	-	P
-	EXCEPTION: Steps 13a1 to 13b7 describe behaviour that depends on UE configuration; the "lower case letter" identifies a step sequence that takes place if such configuration was conducted.	-	-	-	-
13a1-13a7	IF the UE is configured to use preconditions THEN steps 6-12 of Annex A.5.1a of TS 34.229-5 [47] take place.	-	-	-	-
13b1-13b5	ELSE steps 6-10 of Annex A.5.2a of TS 34.229-5 [47] take place.	-	-	-	-

4.9.16.3 Specific message contents

Table 4.9.16.3-1: RRCSetupRequest (step 2, Table 4.9.16.2.2-1)

Derivation Path: Table 4.6.1-23			
Information Element	Value/remark	Comment	Condition
RRCSetupRequest ::= SEQUENCE {			
rrcSetupRequest SEQUENCE {			
establishmentCause	mt-Access		
}			
}			

Table 4.9.16.3-2: SERVICE REQUEST (step 4, Table 4.9.16.2.2-1)

Derivation Path: Table 4.7.1-16			
Information Element	Value/remark	Comment	Condition
Service type			
Service type value	'0010'B	Mobile Terminated Services	

Table 4.9.16.3-3: PDU SESSION MODIFICATION COMMAND (step 10, Table 4.9.16.2.2-1)

Derivation Path: Table 4.7.2-2			
Information Element	Value/remark	Comment	Condition
PDU session ID	Same value as sent in PDU SESSION ESTABLISHMENT REQUEST message.		
Authorized QoS rules	Reference QoS rule #7 as defined in Table 4.8.2.1-7 using condition IMS_VOICE.		
Authorized QoS flow descriptions	Reference QoS flow #5 as defined in Table 4.8.2.3-5.		

Table 4.9.16.3-4: RRCReconfiguration (step 10, Table 4.9.16.2.2-1)

Derivation Path: Table 4.8.1-1C

4.9.17 Test procedure for IMS MO call release in 5GC

4.9.17.1 Scope

The purpose of this procedure is to make a UE initiated release of an ongoing IMS call.

4.9.17.2 Procedure description

4.9.17.2.1 Initial conditions

System Simulator:

- 1 NR Cell connected to 5GC, default parameters.

User Equipment:

- The UE is in state 3N-A on the NR Cell with an active IMS call.

4.9.17.2.2 Procedure sequence

Table 4.9.17.2.2-1: IMS MO call release in 5GC

St	Procedure	Message Sequence		TP	Verdict
		U – S	Message		
1-2	Generic test procedure for MO release of speech call, steps 1-2, as defined in annex A.7 of TS 34.229-5 [47] are performed.	-	-	-	-
3	The SS transmits an <i>RRCReconfiguration</i> message and an PDU SESSION MODIFICATION COMMAND	<--	NR RRC: <i>RRCReconfiguration</i> 5GMM: DL NAS TRANSPORT 5GSM: PDU SESSION MODIFICATION COMMAND	-	-
-	EXCEPTION: Steps 4 and 5 can occur in any order.	-	-	-	-
4	The UE transmits an <i>RRCReconfigurationComplete</i> message	-->	NR RRC: <i>RRCReconfigurationComplete</i>	-	-
5	Check: Does the UE transmit a <i>ULInformationTransfer</i> message, an UL NAS TRANSPORT message and an PDU SESSION MODIFICATION COMPLETE message?	-->	NR RRC: <i>ULInformationTransfer</i> 5GMM: UL NAS TRANSPORT 5GSM: PDU SESSION MODIFICATION COMPLETE	-	P

4.9.17.2.3 Specific message contents

Table 4.9.17.2.3-1: *RRCReconfiguration* (step 3, Table 4.9.17.2.2-1)

Derivation Path: Table 4.6.1-13.			
Information Element	Value/remark	Comment	Condition
<i>RRCReconfiguration</i> ::= SEQUENCE {			
criticalExtensions CHOICE {			
rrcReconfiguration SEQUENCE {			
radioBearerConfig SEQUENCE {			
drb-ToReleaseList SEQUENCE (SIZE (1..maxDRB)) OF DRB-Identity {	1 entry		IMS_VOICE
DRB-Identity[1]	DRB-Identity linked to the IMS speech bearer	entry 1	
}			
drb-ToReleaseList SEQUENCE (SIZE (1..maxDRB)) OF DRB-Identity {	2 entries		IMS_VIDEO
DRB-Identity[1]	DRB-Identity linked to the IMS video bearer	entry 1	
DRB-Identity[2]	DRB-Identity linked to the IMS video bearer	entry 2	
}			
drb-ToReleaseList SEQUENCE (SIZE (1..maxDRB)) OF DRB-Identity {	2 entries		IMS_VOICE AND IMS_BDC
DRB-Identity[1]	DRB-Identity linked to the IMS speech bearer	entry 1	
DRB-Identity[2]	DRB-Identity linked to the IMS data channel bearer	entry 2	
}			
drb-ToReleaseList SEQUENCE (SIZE (1..maxDRB)) OF DRB-Identity {	3 entries		IMS_VIDEO AND IMS_BDC
DRB-Identity[1]	DRB-Identity linked to the IMS speech bearer	entry 1	
DRB-Identity[2]	DRB-Identity linked to the IMS video bearer	entry 2	
DRB-Identity[3]	DRB-Identity linked to the IMS data channel bearer	entry 3	
}			
}			

nonCriticalExtension SEQUENCE {			
masterCellGroup SEQUENCE {			
rlc-BearerToReleaseList SEQUENCE (SIZE (1..maxLC-ID)) OF LogicalChannelIdentity {	1 entry		IMS_VOICE
LogicalChannelIdentity[1]	Same value as drb-Identity[1] above	entry 1	
}			
rlc-BearerToReleaseList SEQUENCE (SIZE (1..maxLC-ID)) OF LogicalChannelIdentity {	2 entries		IMS_VIDEO
LogicalChannelIdentity[1]	Same value as drb-Identity[1] above	entry 1	
LogicalChannelIdentity[2]	Same value as drb-Identity[2] above	entry 2	
}			
rlc-BearerToReleaseList SEQUENCE (SIZE (1..maxLC-ID)) OF LogicalChannelIdentity {	2 entries		IMS_VOICE AND IMS_BDC
LogicalChannelIdentity[1]	Same value as drb-Identity[1] above	entry 1	
LogicalChannelIdentity[2]	Same value as drb-Identity[2] above	entry 2	
}			
rlc-BearerToReleaseList SEQUENCE (SIZE (1..maxLC-ID)) OF LogicalChannelIdentity {	3 entries		IMS_VIDEO AND IMS_BDC
LogicalChannelIdentity[1]	Same value as drb-Identity[1] above	entry 1	
LogicalChannelIdentity[2]	Same value as drb-Identity[2] above	entry 2	
LogicalChannelIdentity[3]	Same value as drb-Identity[3] above	entry 3	
}			
}			
}			
}			
}			
}			

Condition	Explanation
IMS_VOICE	If this QoS rule is used to setup an IMS voice session
IMS_VIDEO	If this QoS rule is used to setup an IMS video session
IMS_BDC	If this QoS rule is used to setup an IMS bootstrap data channel session

Table 4.9.17.2.3-2: PDU SESSION MODIFICATION COMMAND (step 3, Table 4.9.17.2.2-1)

Derivation Path: Table 4.7.2-9.			
Information Element	Value/remark	Comment	Condition
PDU session ID	Same value as sent in PDU SESSION ESTABLISHMENT REQUEST message.		
Authorized QoS rules			
QoS rule[1]			IMS_VOICE, IMS_VIDEO
QoS rule identifier	'00000011'B	QoS rule 3	
Rule operation code	'010'B	Delete existing QoS rule	
QoS rule[2]			IMS_VIDEO
QoS rule identifier	'00000100'B	QoS rule 4	
Rule operation code	'010'B	Delete existing QoS rule	
QoS rule[3]			IMS_BDC
QoS rule identifier	'00000101'B	QoS rule 5	

Rule operation code	'010'B	Delete existing QoS rule	
Authorized QoS flow descriptions			
QoS flow descriptions[1]			IMS_VOICE, IMS_VIDEO
QFI	'00000111'B	QFI 7	
Operation code	'010'B	Delete existing QoS flow	
QoS flow descriptions[2]			IMS_VIDEO
QFI	'00001000'B	QFI 8	
Operation code	'010'B	Delete existing QoS flow	
QoS flow descriptions[3]			IMS_BDC
QFI	'00001001'B	QFI 9	
Operation code	'010'B	Delete existing QoS flow	

Condition	Explanation
IMS_VOICE	If this QoS rule is used to setup an IMS voice session
IMS_VIDEO	If this QoS rule is used to setup an IMS video session
IMS_BDC	If this QoS rule is used to setup an IMS bootstrap data channel session

4.9.18 Test procedure for IMS MT call release in 5GC

4.9.18.1 Scope

The purpose of this procedure is to make the network release an ongoing IMS call.

4.9.18.2 Procedure description

4.9.18.2.1 Initial conditions

System Simulator:

- 1 NR Cell connected to 5GC, default parameters.

User Equipment:

- The UE is in state 3N-A on the NR Cell with an active IMS call.

4.9.18.2.2 Procedure sequence

Table 4.9.18.2.2-1: IMS MT call release in 5GC

St	Procedure	Message Sequence		TP	Verdict
		U – S	Message		
1-2	Generic test procedure for MT release of speech call, steps 1-2, as defined in annex A.8 of TS 34.229-5 [47] are performed.	-	-	-	-
3	The SS transmits an <i>RRCReconfiguration</i> message and an PDU SESSION MODIFICATION COMMAND	<--	NR RRC: <i>RRCReconfiguration</i> 5GMM: DL NAS TRANSPORT 5GSM: PDU SESSION MODIFICATION COMMAND	-	-
-	EXCEPTION: Steps 4 and 5 can occur in any order.	-	-	-	-
4	The UE transmits an <i>RRCReconfigurationComplete</i> message	-->	NR RRC: <i>RRCReconfigurationComplete</i>	-	-
5	Check: Does the UE transmit a <i>ULInformationTransfer</i> message, an UL	-->	NR RRC: <i>ULInformationTransfer</i> 5GMM: UL NAS TRANSPORT	-	P

	NAS TRANSPORT message and an PDU SESSION MODIFICATION COMPLETE message?		5GSM: PDU SESSION MODIFICATION COMPLETE		

4.9.18.2.3 Specific message contents

Table 4.9.18.2.3-1: RRCReconfiguration (step 3, Table 4.9.18.2.2-1)

Derivation Path: Table 4.6.1-13.			
Information Element	Value/remark	Comment	Condition
RRCReconfiguration ::= SEQUENCE {			
criticalExtensions CHOICE {			
rrcReconfiguration SEQUENCE {			
radioBearerConfig SEQUENCE {			
drb-ToReleaseList SEQUENCE (SIZE (1..maxDRB)) OF DRB-Identity {	1 entry		IMS_VOICE
DRB-Identity[1]	DRB-Identity linked to the IMS speech bearer	entry 1	
}			
drb-ToReleaseList SEQUENCE (SIZE (1..maxDRB)) OF DRB-Identity {	2 entries		IMS_VIDEO
DRB-Identity[1]	DRB-Identity linked to the IMS video bearer	entry 1	
DRB-Identity[2]	DRB-Identity linked to the IMS video bearer	entry 2	
}			
drb-ToReleaseList SEQUENCE (SIZE (1..maxDRB)) OF DRB-Identity {	2 entries		IMS_VOICE AND IMS_BDC
DRB-Identity[1]	DRB-Identity linked to the IMS speech bearer	entry 1	
DRB-Identity[2]	DRB-Identity linked to the IMS data channel bearer	entry 2	
}			
drb-ToReleaseList SEQUENCE (SIZE (1..maxDRB)) OF DRB-Identity {	3 entries		IMS_VIDEO AND IMS_BDC
DRB-Identity[1]	DRB-Identity linked to the IMS speech bearer	entry 1	
DRB-Identity[2]	DRB-Identity linked to the IMS video bearer	entry 2	
DRB-Identity[3]	DRB-Identity linked to the IMS data channel bearer	entry 3	
}			
}			
nonCriticalExtension SEQUENCE {			
masterCellGroup SEQUENCE {			
rlc-BearerToReleaseList SEQUENCE (SIZE (1..maxLC-ID)) OF LogicalChannelIdentity {	1 entry	entry 1	IMS_VOICE
LogicalChannelIdentity[1]	Same value as drb-Identity[1] above		
}			
rlc-BearerToReleaseList SEQUENCE (SIZE (1..maxLC-ID)) OF LogicalChannelIdentity {	2 entries		IMS_VIDEO
LogicalChannelIdentity[1]	Same value as drb-Identity[1] above	entry 1	
LogicalChannelIdentity[2]	Same value as drb-Identity[2] above	entry 2	
}			
}			
rlc-BearerToReleaseList SEQUENCE (SIZE (1..maxLC-ID)) OF LogicalChannelIdentity {	2 entries		IMS_VOICE AND IMS_BDC
LogicalChannelIdentity[1]	Same value as drb-Identity[1] above	entry 1	

LogicalChannelIdentity[2]	Same value as drb-Identity[2] above	entry 2	
}			
rlc-BearerToReleaseList SEQUENCE (SIZE (1..maxLC-ID)) OF LogicalChannelIdentity {	3 entries		IMS_VIDEO AND IMS_BDC
LogicalChannelIdentity[1]	Same value as drb-Identity[1] above	entry 1	
LogicalChannelIdentity[2]	Same value as drb-Identity[2] above	entry 2	
LogicalChannelIdentity[3]	Same value as drb-Identity[3] above	entry 3	
}			
}			
}			
}			
}			

Condition	Explanation
IMS_VOICE	If this QoS rule is used to setup an IMS voice session
IMS_VIDEO	If this QoS rule is used to setup an IMS video session
IMS_BDC	If this QoS rule is used to setup an IMS bootstrap data channel session

Table 4.9.18.2.3-2: PDU SESSION MODIFICATION COMMAND (step 3, Table 4.9.18.2.2-1)

Derivation Path: Table 4.7.2-9			
Information Element	Value/remark	Comment	Condition
PDU session ID	Same value as sent in PDU SESSION ESTABLISHMENT REQUEST message.		
Authorized QoS rules			
QoS rule			
QoS rule identifier	'00000011'B	QoS rule 3	IMS_VOICE, IMS_VIDEO
Rule operation code	'010'B	Delete existing QoS rule	
QoS rule[2]			IMS_VIDEO
QoS rule identifier	'00000100'B	QoS rule 4	
Rule operation code	'010'B	Delete existing QoS rule	
QoS rule[3]			IMS_BDC
QoS rule identifier	'00000101'B	QoS rule 5	
Rule operation code	'010'B	Delete existing QoS rule	
Authorized QoS flow descriptions			
QoS flow descriptions			
QFI	'00000111'B	QFI 7	IMS_VOICE, IMS_VIDEO
Operation code	'010'B	Delete existing QoS flow	
QoS flow descriptions[2]			IMS_VIDEO
QFI	'00001000'B	QFI 8	
Operation code	'010'B	Delete existing QoS flow	
QoS flow descriptions[3]			IMS_BDC
QFI	'00001001'B	QFI 9	
Operation code	'010'B	Delete existing QoS flow	

Condition	Explanation
IMS_VOICE	If this QoS rule is used to setup an IMS voice session

IMS_VIDEO	If this QoS rule is used to setup an IMS video session
IMS_BDC	If this QoS rule is used to setup an IMS bootstrap data channel session

4.9.19 Test procedure for IMS MO SMS in 5GC

4.9.19.1 Scope

The purpose of this procedure is to transmit an IMS MO SMS.

4.9.19.2 Procedure description

4.9.19.2.1 Initial conditions

System Simulator:

- 1 NR Cell connected to 5GC, default parameters.

User Equipment:

- The UE is in state 1N-A and registered to the IMS.

4.9.19.2.2 Procedure sequence

Table 4.9.19.2.2-1: IMS MO SMS in 5GS

St	Procedure	Message Sequence		TP	Verdict
		U – S	Message		
1	Make the UE attempt an IMS MO SMS	-	-	-	-
2	The UE transmits an <i>RRCSetupRequest</i> message with 'establishmentCause' set to 'mo-SMS'.	-->	NR RRC: <i>RRCSetupRequest</i>	-	P
3	The SS transmits an <i>RRCSetup</i> message.	<--	NR RRC: <i>RRCSetup</i>	-	-
4	The UE transmits an <i>RRCSetupComplete</i> message to confirm the successful completion of the connection establishment and to initiate the session management procedure by including the SERVICE REQUEST message.	-->	NR RRC: <i>RRCSetupComplete</i> 5GMM: SERVICE REQUEST	-	P
5	The SS transmits a <i>SecurityModeCommand</i> message to activate AS security.	<--	NR RRC: <i>SecurityModeCommand</i>	-	-
6	The UE transmits a <i>SecurityModeComplete</i> message and establish the initial security configuration.	-->	NR RRC: <i>SecurityModeComplete</i>	-	P
7	The SS transmits an <i>RRCReconfiguration</i> message and a SERVICE ACCEPT message to establish SRB2 and DRB(s).	<--	NR RRC: <i>RRCReconfiguration</i> 5GMM: SERVICE ACCEPT	-	-
8	The UE transmits an <i>RRCReconfigurationComplete</i> message.	-->	NR RRC: <i>RRCReconfigurationComplete</i>	-	P
9-16	The steps 1-8 from the expected sequence defined in Annex A.13 of TS 34.229-5 [47] of IMS MO SMS / 5GS take place.	-	-	-	-

4.9.19.3 Specific message contents

Table 4.9.19.3-1: *RRCSetupRequest* (step 2, Table 4.9.19.2.2-1)

Derivation Path: Table 4.6.1-23			
Information Element	Value/remark	Comment	Condition
<i>RRCSetupRequest</i> ::= SEQUENCE {			

rrcSetupRequest SEQUENCE {			
establishmentCause	mo-SMS		
}			
}			

Table 4.9.19.3-2: SERVICE REQUEST (step 4, Table 4.9.19.2.2-1)

Derivation Path: Table 4.7.1-16			
Information Element	Value/remark	Comment	Condition
Service type			
Service type value	'0001'B	data	

4.9.20 Test procedure for IMS MT SMS in 5GC

4.9.20.1 Scope

The purpose of this procedure is to receive an IMS MT SMS.

4.9.20.2 Procedure description

4.9.20.2.1 Initial conditions

System Simulator:

- 1 NR Cell connected to 5GC, default parameters.

User Equipment:

- The UE is in state 1N-A and registered to the IMS.

4.9.20.2.2 Procedure sequence

Table 4.9.20.2.2-1: IMS MT SMS in 5GS

St	Procedure	Message Sequence		TP	Verdict
		U – S	Message		
1	The SS transmits a <i>Paging</i> message.	<--	NR RRC: <i>Paging</i>	-	-
2	The UE transmits an <i>RRCSetupRequest</i> message with 'establishmentCause' set to 'mt-Access'.	-->	NR RRC: <i>RRCSetupRequest</i>	-	P
3	The SS transmits an <i>RRCSetup</i> message.	<--	NR RRC: <i>RRCSetup</i>	-	-
4	The UE transmits an <i>RRCSetupComplete</i> message and a SERVICE REQUEST message.	-->	NR RRC: <i>RRCSetupComplete</i> 5GMM: SERVICE REQUEST	-	P
5	The SS transmits a <i>SecurityModeCommand</i> message.	<--	NR RRC: <i>SecurityModeCommand</i>	-	-
6	The UE transmits a <i>SecurityModeComplete</i> message.	-->	NR RRC: <i>SecurityModeComplete</i>	-	-
7	The SS transmits an <i>RRCReconfiguration</i> message and a SERVICE ACCEPT message to establish SRB2 and DRB(s). The RRCReconfiguration message is configured using RRCReconfiguration-SRB2-DRB(n, m) where n and m are the number of DRB(s) configured with RLC-AM and RLC-UM respectively.	<--	NR RRC: <i>RRCReconfiguration</i> 5GMM: SERVICE ACCEPT	-	-
8	The UE transmits an <i>RRCReconfigurationComplete</i> message.	-->	NR RRC: <i>RRCReconfigurationComplete</i>	-	P

9-12	The steps 1-4 from the expected sequence defined in Annex A.14 of TS 34.229-5 [47] IMS MT SMS / 5GS take place.	-	-	-	-

4.9.20.3 Specific message contents

Table 4.9.20.3-1: *RRCSetupRequest* (step 2, Table 4.9.20.2.2-1)

Derivation Path: Table 4.6.1-23			
Information Element	Value/remark	Comment	Condition
<i>RRCSetupRequest</i> ::= SEQUENCE {			
<i>rrcSetupRequest</i> SEQUENCE {			
<i>establishmentCause</i>	mt-Access		
}			
}			

Table 4.9.20.3-2: SERVICE REQUEST (step 4, Table 4.9.20.2.2-1)

Derivation Path: Table 4.7.1-16			
Information Element	Value/remark	Comment	Condition
Service type			
Service type value	'0010'B	Mobile Terminated Services	

4.9.21 Test procedure for PDU Session Release

4.9.21.1 Scope

The purpose of this procedure is to release both the PDU session and the user plane resources.

4.9.21.2 Procedure description

4.9.21.2.1 Initial conditions

The UE is in state 3N-A with PDU SESSION ACTIVE as per Table 4.4A.2-3. If this is a UE triggered PDU Session Release, this will be specified in the test case together with the sending of a PDU SESSION RELEASE REQUEST by the UE.

4.9.21.2.2 Procedure sequence

Table 4.9.21.2.2-1: Procedure for PDU Session Release

St	Procedure	Message Sequence	
		U – S	Message
1	The SS transmits an <i>RRCReconfiguration</i> message and a PDU SESSION RELEASE COMMAND	<--	NR RRC: <i>RRCReconfiguration</i> 5GMM: DL NAS TRANSPORT 5GSM: PDU SESSION RELEASE COMMAND
-	EXCEPTION: Depending upon UE implementation, step 1A and 2 can occur in any order	-	-
1A	The UE transmits a <i>RRCReconfigurationComplete</i>	-	NR RRC: <i>RRCReconfigurationComplete</i>
2	The UE transmits a PDU SESSION RELEASE COMPLETE message	-->	NR RRC: <i>ULInformationTransfer</i> 5GMM: UL NAS TRANSPORT 5GSM: PDU SESSION RELEASE COMPLETE

4.9.21.3 Specific message contents

The NAS message contents will be as specified in the test case.

Table 4.9.21.3-1: RRCReconfiguration (step 1, Table 4.9.21.2.2-1)

Derivation Path: Table 4.6.1-13.			
Information Element	Value/remark	Comment	Condition
RRCReconfiguration ::= SEQUENCE {			
criticalExtensions CHOICE {			
rrcReconfiguration SEQUENCE {			
radioBearerConfig SEQUENCE {			
drb-ToReleaseList SEQUENCE (SIZE (1..maxDRB)) OF DRB-Identity {	1 entry		
DRB-Identity[1]	DRB-Identity linked to the PDU Session to be released		
}			
}			
nonCriticalExtension SEQUENCE {			
masterCellGroup SEQUENCE {			
rlc-BearerToReleaseList SEQUENCE (SIZE (1..maxLC-ID)) OF LogicalChannelIdentity {	1 entry		
logicalChannelIdentity[1]	Same value as drb-Identity[1] above		
}			
}			
}			
}			
}			
}			

4.9.22 Test procedure for establishing unicast mode NR sidelink communication / Initiating UE side

4.9.22.1 Scope

The purpose of this procedure is to establish unicast mode sidelink communication.

4.9.22.2 Procedure description

4.9.22.2.1 Initial conditions

The UE is in state 1N-B, 3N-B or 4-A.

4.9.22.2.2 Procedure sequence

Table 4.9.22.2.2-1: Procedure for establishing unicast mode sidelink communication (Initiating UE side)

St	Procedure	Message Sequence	
		U – S	Message
1	Void	-	-
-	EXCEPTION: Steps 1a1 to 1b2 describe behaviour which depends on procedure parameters; the "lower case letter" identifies a step sequence that takes place if a procedure parameter has a particular value.	-	-
1a1	IF the UE is in state 1N-B or 4-A, the UE is configured by upper layer to establish unicast mode link. NOTE: This can be done by sending AT COMMAND +CCUTLE to close test loop function.	-	-

1b1	ELSE IF the UE is in state 3N-B, the SS transmits a CLOSE UE TEST LOOP message.	<--	TC: CLOSE UE TEST LOOP
1b2	The UE transmits a CLOSE UE TEST LOOP COMPLETE message.	-->	TC: CLOSE UE TEST LOOP COMPLETE
2	The UE sends a DIRECT LINK ESTABLISHMENT REQUEST message.	-->	PC5-S: DIRECT LINK ESTABLISHMENT REQUEST
3	The NR-SS-UE sends a DIRECT LINK SECURITY MODE COMMAND message.	<--	PC5-S: DIRECT LINK SECURITY MODE COMMAND
4	The UE sends a DIRECT LINK SECURITY MODE COMPLETE message.	-->	PC5-S: DIRECT LINK SECURITY MODE COMPLETE
5	The NR-SS-UE sends a DIRECT LINK ESTABLISHMENT ACCEPT message.	<--	PC5-S: DIRECT LINK ESTABLISHMENT ACCEPT
6	The UE sends an RRCReconfigurationSidelink message to establish a unicast mode SL-DRB. NOTE: Unless specifically specified in the test case prose, the UE shall select the DRB parameters as specified in the pre-configured parameters.	-->	PC5-RRC: RRCReconfigurationSidelink
7	The NR-SS-UE sends an RRCReconfigurationCompleteSidelink message.	<--	PC5-RRC: RRCReconfigurationCompleteSidelink
8	Void	-	-
-	EXCEPTION: In parallel with step 8a1 to 8b2, parallel behaviour defined in Table 4.9.22.2.2-2 is executed.	-	-
-	EXCEPTION: Steps 8a1 to 8b2 describe behaviour which depends on procedure parameters; the "lower case letter" identifies a step sequence that takes place if a procedure parameter has a particular value.	-	-
8a1	IF the UE is in state 1N-B or 4-A, the SS sends AT COMMAND +CCUTLE to open test loop function	-	-
8b1	ELSE IF the UE is in state 3N-B, the SS transmits an OPEN UE TEST LOOP message.	<--	TC: OPEN UE TEST LOOP
8b2	The UE transmits an OPEN UE TEST LOOP COMPLETE message.	-->	TC: OPEN UE TEST LOOP COMPLETE

Table 4.9.22.2.2-2: Parallel behaviour

St	Procedure	Message Sequence		TP	Verdict
		U - S	Message		
1	The UE sends SDAP SDUs on slots in the resource pool	-	-	-	-

4.9.22.3 Specific message contents

All specific message contents shall be according subclause 4.6 and 4.7B with the exceptions below.

Table 4.9.22.3-1: +CCUTLE (Table 4.9.22.2.2-1, Step 1)

Derivation Path: Table 4.7B-1 with condition Close and Transmit

Table 4.9.22.3-2: CLOSE UE TEST LOOP (Table 4.9.22.2.2-1, Step 1b1)

Derivation Path: 36.508 [2] Table 4.7A-3 with condition UE TEST LOOP MODE E(V2X Transmission)			
Information Element	Value/remark	Comment	Condition
UE test loop mode E LB setup			
Communication Transmit or Receive	0 0 0 0 0 0 1	'01' indicates V2X UE triggered to transmit NR sidelink communication with single spatial layer.	

Table 4.9.22.3-3: DIRECT LINK ESTABLISHMENT REQUEST (Table 4.9.22.2.2-1, Step 2)

Derivation Path: Table 4.7D.1-7 with condition Tx

Table 4.9.22.3-4: DIRECT LINK SECURITY MODE COMMAND (Table 4.9.22.2.2-1, Step 3)

Derivation Path: Table 4.7D.1-18 with condition Rx

Table 4.9.22.3-5: DIRECT LINK SECURITY MODE COMPLETE (Table 4.9.22.2.2-1, Step 4)

Derivation Path: Table 4.7D.1-19 with condition Tx

Table 4.9.22.3-6: DIRECT LINK ESTABLISHMENT ACCEPT (Table 4.9.22.2.2-1, Step 5)

Derivation Path: Table 4.7D.1-8 with condition Rx

Table 4.9.22.3-7: RRCReconfigurationSidelink (Table 4.9.22.2.2-1, Step 6)

Derivation Path: Table 4.6.1A-3 with condition TX and SL_DRB			
Information Element	Value/remark	Comment	Condition
RRCReconfigurationSidelink ::= SEQUENCE {			
criticalExtensions CHOICE {			
rrcReconfigurationSidelink-r16 SEQUENCE {			
slrb-ConfigToAddModList-r16 SEQUENCE (SIZE (1..maxNrofSLRB-r16)) OF SLRB-Config-r16 {	1 entry		
SLRB-Config-r16[1] SEQUENCE {		entry 1	
sl-SDAP-ConfigPC5-r16 SEQUENCE {			
sl-MappedQoS-FlowsToAddList-r16 SEQUENCE (SIZE (1.. maxNrofSL-QFIsPerDest-r16)) OF SL-PQFI-r16 {	1 entry		
SL-PQFI-r16[1]	(1..63)	entry 1	
}			
sl-MappedQoS-FlowsToReleaseList-r16	Not present		
sl-SDAP-Header-r16	present		
}			
sl-PDCP-ConfigPC5-r16 SEQUENCE {			
sl-PDCP-SN-Size-r16	len12bits		
sl-OutOfOrderDelivery-r16	Not present		
}			
sl-RLC-ConfigPC5-r16 CHOICE {			
sl-AM-RLC-r16 SEQUENCE {			
sl-SN-FieldLengthAM-r16	size12		
}			
}			
sl-MAC-LogicalChannelConfigPC5-r16 SEQUENCE {			
sl-LogicalChannelIdentity-r16	(4..32)		
}			
}			
}			
}			
}			
}			

Table 4.9.22.3-8: RRCReconfigurationCompleteSidelink (Table 4.9.22.2.2-1, Step 7)

Derivation Path: Table 4.6.1A-4 with condition RX

Table 4.9.22.3-9: +CCUTLE (Table 4.9.22.2.2-1, Step 8a1)

Derivation Path: Table 4.7B-1 with condition Open

4.9.23 Test procedure for establishing unicast mode NR sidelink communication / Peer UE side

4.9.23.1 Scope

The purpose of this procedure is to establish unicast mode sidelink communication.

4.9.23.2 Procedure description

4.9.23.2.1 Initial conditions

The UE is in state 1N-B, 3N-B or 4-A.

4.9.23.2.2 Procedure sequence

Table 4.9.23.2.2-1: Procedure for establishing unicast mode sidelink communication (Peer UE side)

St	Procedure	Message Sequence	
		U – S	Message
1	The NR-SS-UE sends a DIRECT LINK ESTABLISHMENT REQUEST message.	<--	PC5-S: DIRECT LINK ESTABLISHMENT REQUEST
2	The UE sends a DIRECT LINK SECURITY MODE COMMAND message.	-->	PC5-S: DIRECT LINK SECURITY MODE COMMAND
3	The NR-SS-UE sends a DIRECT LINK SECURITY MODE COMPLETE message.	<--	PC5-S: DIRECT LINK SECURITY MODE COMPLETE
4	The UE sends a DIRECT LINK ESTABLISHMENT ACCEPT message.	-->	PC5-S: DIRECT LINK ESTABLISHMENT ACCEPT
5	The NR-SS-UE sends an RRCReconfigurationSidelink message to establish a unicast mode SL-DRB.	<--	PC5-RRC: RRCReconfigurationSidelink
6	The UE sends an RRCReconfigurationCompleteSidelink message.	-->	PC5-RRC: RRCReconfigurationCompleteSidelink

4.9.23.3 Specific message contents

All specific message contents shall be according subclause 4.6 and 4.7B.

Table 4.9.23.3-1: DIRECT LINK ESTABLISHMENT REQUEST (Table 4.9.23.2.2-1, Step 1)

Derivation Path: Table 4.7D.1-7 with condition Rx

Table 4.9.23.3-2: DIRECT LINK SECURITY MODE COMMAND (Table 4.9.23.2.2-1, Step 2)

Derivation Path: Table 4.7D.1-18 with condition Tx

Table 4.9.23.3-3: DIRECT LINK SECURITY MODE COMPLETE (Table 4.9.23.2.2-1, Step 3)

Derivation Path: Table 4.7D.1-19 with condition Rx

Table 4.9.23.3-4: DIRECT LINK ESTABLISHMENT ACCEPT (Table 4.9.23.2.2-1, Step 4)

Derivation Path: Table 4.7D.1-8 with condition Tx

Table 4.9.23.3-5: RRCReconfigurationSidelink (Table 4.9.23.2.2-1, Step 5)

Derivation Path: Table 4.6.1A-3 with condition RX and SL_DRB

Table 4.9.23.3-5: RRCReconfigurationCompleteSidelink (Table 4.9.23.2.2-1, Step 6)

Derivation Path: Table 4.6.1A-4 with condition TX

4.9.24 Test procedure for IMS MO Video call establishment in 5GC

4.9.24.1 Scope

The purpose of this procedure is to establish an IMS MO Video call.

4.9.24.2 Procedure description

4.9.24.2.1 Initial conditions

System Simulator:

- 1 NR Cell connected to 5GC, default parameters.

User Equipment:

- The UE is in state 1N-A and registered to the IMS.

4.9.24.2.2 Procedure sequence

Table 4.9.24.2.2-1: IMS MO video call establishment in 5GC

St	Procedure	Message Sequence		TP	Verdict
		U – S	Message		
1	Make the UE attempt an IMS Video call	-	-	-	-
2	Check: Does the UE transmit an <i>RRCSetupRequest</i> message with 'establishmentCause' set to 'mo-VideoCall'?	-->	NR RRC: <i>RRCSetupRequest</i>	-	P
3	SS transmit an <i>RRCSetup</i> message.	<--	NR RRC: <i>RRCSetup</i>	-	-
4	Check: Does the UE transmit an <i>RRCSetupComplete</i> message to confirm the successful completion of the connection establishment and to initiate the session management procedure by including the SERVICE REQUEST message?	-->	NR RRC: <i>RRCSetupComplete</i> 5GMM: SERVICE REQUEST	-	P
5	The SS transmits a <i>SecurityModeCommand</i> message to activate AS security.	<--	NR RRC: <i>SecurityModeCommand</i>	-	-
6	Check: Does the UE transmit a <i>SecurityModeComplete</i> message and establish the initial security configuration?	-->	NR RRC: <i>SecurityModeComplete</i>	-	P
7	The SS transmits a <i>RRCReconfiguration</i> message and a SERVICE ACCEPT message to establish SRB2 and DRB(s).	<--	NR RRC: <i>RRCReconfiguration</i> 5GMM: SERVICE ACCEPT	-	-
-	EXCEPTION: In parallel to step 8 below, the steps specified in Table 4.9.24.2.2-2 take place.	-	-	-	-
8	The UE transmits an <i>RRCReconfigurationComplete</i> message.	-->	NR RRC: <i>RRCReconfigurationComplete</i>	-	-
-	EXCEPTION: Steps 9a1 to 9b4 describe behaviour that depends on UE configuration; the "lower case letter" identifies a step sequence that takes place if such configuration was conducted.	-	-	-	-
9a1-9a4	IF the UE is configured to use preconditions, THEN steps 2-5 of Annex A.15.1a of TS 34.229-5 [47] take place.	-	-	-	-
9b1-9b4	ELSE steps 2-5 of Annex A.15.2a of TS 34.229-5 [47] take place.	-	-	-	-

10	The SS transmits a <i>RRCReconfiguration</i> message and a PDU SESSION MODIFICATION COMMAND.	<--	NR RRC: <i>RRCReconfiguration</i> 5GMM: DL NAS TRANSPORT 5GSM: PDU SESSION MODIFICATION COMMAND	-	-
-	EXCEPTION: Depending upon UE implementation, steps 11 and 12 can occur in any order	-	-	-	-
11	The UE transmits an <i>RRCReconfigurationComplete</i> message	-->	NR RRC: <i>RRCReconfigurationComplete</i>	-	-
12	Check: Does the UE transmit a <i>ULInformationTransfer</i> message, an UL NAS TRANSPORT message and an PDU SESSION MODIFICATION COMPLETE message?	-->	NR RRC: <i>ULInformationTransfer</i> 5GMM: UL NAS TRANSPORT 5GSM: PDU SESSION MODIFICATION COMPLETE	-	P
-	EXCEPTION: Steps 13a1 to 13b8 describe behaviour that depends on UE configuration; the "lower case letter" identifies a step sequence that takes place if such configuration was conducted.	-	-	-	-
13a1 - 13a7	IF the UE is configured to use preconditions, THEN steps 6-12 of Annex A.15.1a of TS 34.229-5 [47] take place.	-	-	-	-
13b1 - 13b3	ELSE steps 6-10 of Annex A.15.2a of TS 34.229-5 [47] take place.	-	-	-	-

Table 4.9.24.2.2-2: Parallel Behaviour

St	Procedure	Message Sequence		TP	Verdict
		U - S	Message		
-	EXCEPTION: Steps 1a1 to 1b1 describe behaviour that depends on UE configuration; the "lower case letter" identifies a step sequence that takes place if such configuration was conducted.	-	-	-	-
1a1	IF the UE is configured to use preconditions, THEN step 1 of Annex A.15.1a of TS 34.229-5 [47] takes place.	-	-	-	-
1b1	ELSE step 1 of Annex A.15.2a of TS 34.229-5 [47] takes place	-	-	-	-

4.9.24.3 Specific message contents

Table 4.9.24.3-1: *RRCSetupRequest* (step 2, Table 4.9.24.2.2-1)

Derivation Path: Table 4.6.1-23.			
Information Element	Value/remark	Comment	Condition
<i>RRCSetupRequest</i> ::= SEQUENCE {			
<i>rrcSetupRequest</i> SEQUENCE {			
<i>establishmentCause</i>	mo-VideoCall		
}			
}			

Table 4.9.24.3-2: SERVICE REQUEST (step 4, Table 4.9.24.2.2-1)

Derivation Path: Table 4.7.1-16			
Information Element	Value/remark	Comment	Condition
Service type			
Service type value	'0001'B	data	

Table 4.9.24.3-3: PDU SESSION MODIFICATION COMMAND (step 10, Table 4.9.24.2.2-1)

Derivation Path: Table 4.7.2-9.			
Information Element	Value/remark	Comment	Condition
PDU session ID	Same value as sent in PDU SESSION ESTABLISHMENT REQUEST message.		
Authorized QoS rules	Reference QoS rule #7 as defined in Table 4.8.2.1-7 using conditions IMS_VOICE and IMS_VIDEO.		
Authorized QoS flow descriptions	Reference QoS flow #5 and QoS flow #6 as defined in Table 4.8.2.3-5 & Table 4.8.2.3-6 respectively.		
Mapped EPS bearer contexts	Not Present		
Mapped EPS bearer contexts			Interworking with EPS
Mapped EPS bearer context			
EPS bearer identity	The same value as the one specified in the Reference QoS flow referred to from the Reference QoS rule indicated in the IE Authorized QoS rules		
Operation code	'001'B	Create new EPS bearer	
E bit	'1'B	Parameters list is included	
Number of EPS parameters	'0010'B	2 parameters	
Mapped EPS QoS parameters	See reference dedicated EPS bearer context #3 and #4 in TS 36.508 table 6.6.2-1		
Traffic Flow Template	See reference dedicated EPS bearer context #3 and #4 in TS 36.508 table 6.6.2-1		

Condition	Explanation
Interworking_with_EPS	If the UE has indicated support of S1, then the SS shall include this IE to provide details for the interworking with EPS being supported for a PDU session. This requirement is set up for the purpose of facilitating the test description. It is not mandatory for the Network to support Mapped EPS bearer contexts.

Table 4.9.24.3-4: RRCReconfiguration (step 10, Table 4.9.24.2.2-1)

Derivation Path: Table 4.8.1-1D

4.9.25 Test procedure for UE Configuration Update for transparent UE Policy delivery

4.9.25.1 Scope

The purpose of this procedure is to transfer UE policy data to the UE.

4.9.25.2 Procedure description

4.9.25.2.1 Initial conditions

N/A

4.9.25.2.2 Procedure sequence

Table 4.9.25.2.2-1: Test procedure for UE Configuration Update for transparent UE Policy delivery

St	Procedure	Message Sequence	
		U – S	Message
1	The SS transmits a DL NAS TRANSPORT message.	<--	5GMM: DL NAS TRANSPORT
2	The UE transmits a UL NAS TRANSPORT message.	-->	5GMM: UL NAS TRANSPORT

4.9.25.3 Specific message contents

Table 4.9.25.3-1: DL NAS TRANSPORT (step 1, Table 4.9.25.2.2-1)

Derivation Path: Table 4.7.1-11			
Information Element	Value/remark	Comment	Condition
Payload container type	'0101'B	UE policy container	
Payload container	Set according toTable 4.7.6-1 using condition URSP		

Table 4.9.25.3-2: UL NAS TRANSPORT (step 2, Table 4.9.25.2.2-1)

Derivation Path: Table 4.7.1-12			
Information Element	Value/remark	Comment	Condition
Payload container type	'0101'B	UE policy container	
Payload container	Set according toTable 4.7.6-2		

4.9.26 Test procedure for IMS MT video call establishment in 5GC

4.9.26.1 Scope

The purpose of this procedure is to establish an IMS MT video call.

4.9.26.2 Procedure description

4.9.26.2.1 Initial conditions

System Simulator:

- 1 NR Cell connected to 5GC, default parameters.

User Equipment:

- The UE is in state 1N-A and registered to the IMS.

4.9.26.2.2 Procedure sequence

Table 4.9.26.2.2-1: IMS MT video call establishment in 5GC

St	Procedure	Message Sequence		TP	Verdict
		U – S	Message		
1	The SS transmits a <i>Paging</i> message.	<--	NR RRC: <i>Paging</i>	-	-
2	Check: Does the UE transmit an <i>RRCSetupRequest</i> message with 'establishmentCause' set to 'mt-Access'?	-->	NR RRC: <i>RRCSetupRequest</i>	-	P
3	The SS transmits an <i>RRCSetup</i> message.	<--	NR RRC: <i>RRCSetup</i>	-	-
4	Check: Does the UE transmit an <i>RRCSetupComplete</i> message and a SERVICE REQUEST message?	-->	NR RRC: <i>RRCSetupComplete</i> 5GMM: SERVICE REQUEST	-	P
5	The SS transmits a <i>SecurityModeCommand</i> message.	<--	NR RRC: <i>SecurityModeCommand</i>	-	-
6	The UE transmits a <i>SecurityModeComplete</i> message.	-->	NR RRC: <i>SecurityModeComplete</i>	-	-
7	The SS transmits an <i>RRCReconfiguration</i> message and a SERVICE ACCEPT message to establish SRB2 and DRB(s). The <i>RRCReconfiguration</i> message is configured using <i>RRCReconfiguration-SRB2-DRB(n, m)</i> where n and m are the number of DRB(s) configured with RLC-AM and RLC-UM respectively.	<--	NR RRC: <i>RRCReconfiguration</i> 5GMM: SERVICE ACCEPT	-	-
8	Check: Does the UE transmit an <i>RRCReconfigurationComplete</i> message?	-->	NR RRC: <i>RRCReconfigurationComplete</i>	-	P
-	EXCEPTION: Steps 9a1 to 9b5 describe behaviour that depends on UE configuration; the "lower case letter" identifies a step sequence that takes place if such configuration was conducted.	-	-	-	-
9a1-9a5	IF the UE is configured to use preconditions THEN steps 1-5 of Annex A.16.1a of TS 34.229-5 [47] take place.	-	-	-	-
9b1-9b5	ELSE steps 1-5 of Annex A.16.2a of TS 34.229-5 [47] take place.	-	-	-	-
10	The SS transmits an <i>RRCReconfiguration</i> message and a PDU SESSION MODIFICATION COMMAND message.	<--	NR RRC: <i>RRCReconfiguration</i> 5GMM: DL NAS TRANSPORT 5GSM: PDU SESSION MODIFICATION COMMAND	-	-
-	EXCEPTION: Depending upon UE implementation, steps 11 and 12 can occur in any order	-	-	-	-
11	The UE transmits an <i>RRCReconfigurationComplete</i> message	-->	NR RRC: <i>RRCReconfigurationComplete</i>	-	-
12	Check: Does the UE transmit a <i>ULInformationTransfer</i> message, an UL NAS TRANSPORT message and an PDU SESSION MODIFICATION COMPLETE message?	-->	NR RRC: <i>ULInformationTransfer</i> 5GMM: UL NAS TRANSPORT 5GSM: PDU SESSION MODIFICATION COMPLETE	-	P
-	EXCEPTION: Steps 13a1 to 13b7 describe behaviour that depends on UE configuration; the "lower case letter" identifies a step sequence that takes place if such configuration was conducted.	-	-	-	-
13a1-13a7	IF the UE is configured to use preconditions THEN steps 6-12 of Annex A.16.1a of TS 34.229-5 [47] take place.	-	-	-	-
13b1-13b5	ELSE steps 6-10 of Annex A.16.2a of TS 34.229-5 [47] take place.	-	-	-	-

4.9.26.3 Specific message contents

Table 4.9.26.3-1: *RRCSetupRequest* (step 2, Table 4.9.26.2.2-1)

Derivation Path: Table 4.6.1-23

Information Element	Value/remark	Comment	Condition
RRCSetupRequest ::= SEQUENCE {			
rrcSetupRequest SEQUENCE {			
establishmentCause	mt-Access		
}			
}			

Table 4.9.26.3-2: SERVICE REQUEST (step 4, Table 4.9.26.2.2-1)

Derivation Path: Table 4.7.1-26			
Information Element	Value/remark	Comment	Condition
Service type			
Service type value	'0010'B	Mobile Terminated Services	

Table 4.9.26.3-3: PDU SESSION MODIFICATION COMMAND (step 10, Table 4.9.26.2.2-1)

Derivation Path: Table 4.7.2-9.			
Information Element	Value/remark	Comment	Condition
PDU session ID	Same value as sent in PDU SESSION ESTABLISHMENT REQUEST message.		
Authorized QoS rules	Reference QoS rule #7 as defined in Table 4.8.2.1-7 using conditions IMS_VOICE and IMS_VIDEO.		
Authorized QoS flow descriptions	Reference QoS flow #5 and QoS flow #6 as defined in Table 4.8.2.3-5 & Table 4.8.2.3-6 respectively.		
Mapped EPS bearer contexts	Not Present		
Mapped EPS bearer contexts			Interworking with EPS
Mapped EPS bearer context			
EPS bearer identity	The same value as the one specified in the Reference QoS flow referred to from the Reference QoS rule indicated in the IE Authorized QoS rules		
Operation code	'001'B	Create new EPS bearer	
E bit	'1'B	Parameters list is included	
Number of EPS parameters	'0001'B	1 parameter	
Mapped EPS QoS parameters	See reference dedicated EPS bearer context #3 and EPS bearer context #4 in TS 36.508 table 6.6.2-1		
Traffic flow Template	See reference dedicated EPS bearer context #3 and EPS bearer context #4 in TS 36.508 table 6.6.2-1		

Condition	Explanation
Interworking_with_EPS	If the UE has indicated support of S1, then the SS shall include this IE to provide details for the interworking with EPS being supported for a

	PDU session. This requirement is set up for the purpose of facilitating the test description. It is not mandatory for the Network to support Mapped EPS bearer contexts.

Table 4.9.26.3-4: RRCReconfiguration (step 10, Table 4.9.26.2.2-1)

Derivation Path: Table 4.8.1-1D

4.9.27 Test procedure for adding video to a speech call in 5GC

4.9.27.1 Scope

The purpose of this procedure is to add video to an established speech call.

4.9.27.2 Procedure description

4.9.27.2.1 Initial conditions

System Simulator:

- 1 NR Cell connected to 5GC, default parameters.

User Equipment:

- The UE is in state 3N-A and registered to the IMS.

4.9.27.2.2 Procedure sequence

Table 4.9.27.2.2-1: IMS video call addition in 5GC

St	Procedure	Message Sequence		TP	Verdict
		U – S	Message		
1	The SS transmits an <i>RRCReconfiguration</i> message and a PDU SESSION MODIFICATION COMMAND message.	<--	NR RRC: <i>RRCReconfiguration</i> 5GMM: DL NAS TRANSPORT 5GSM: PDU SESSION MODIFICATION COMMAND	-	-
-	EXCEPTION: Steps 2 and 3 can occur in any order.	-	-	-	-
2	The UE transmits an <i>RRCReconfigurationComplete</i> message	-->	NR RRC: <i>RRCReconfigurationComplete</i>	-	-
3	Check: Does the UE transmit a <i>ULInformationTransfer</i> message, an UL NAS TRANSPORT message and an PDU SESSION MODIFICATION COMPLETE message?	-->	NR RRC: <i>ULInformationTransfer</i> 5GMM: UL NAS TRANSPORT 5GSM: PDU SESSION MODIFICATION COMPLETE	-	P

4.9.27.3 Specific message contents

Table 4.9.27.3-1: PDU SESSION MODIFICATION COMMAND (step 1, Table 4.9.27.2.2-1)

Derivation Path: Table 4.7.2-9.

Information Element	Value/remark	Comment	Condition
PDU session ID	Same value as sent in PDU SESSION ESTABLISHMENT REQUEST message.		
Authorized QoS rules	Reference QoS rule #7 as defined in Table 4.8.2.1-7 using condition IMS_VIDEO.		

Authorized QoS flow descriptions	Reference QoS flow #6 as defined in Table 4.8.2.3-6 respectively.		
Mapped EPS bearer contexts	Not Present		
Mapped EPS bearer contexts			Interworking with EPS
Mapped EPS bearer context			
EPS bearer identity	The same value as the one specified in the Reference QoS flow referred to from the Reference QoS rule indicated in the IE Authorized QoS rules		
Operation code	'001'B	Create new EPS bearer	
E bit	'1'B	Parameters list is included	
Number of EPS parameters	0010'B	2 parameters	
Mapped EPS QoS parameters	See reference dedicated EPS bearer context #3 in TS 36.508 table 6.6.2-1		
Traffic flow Template	See reference dedicated EPS bearer context#3 in TS 36.508 table 6.6.2-1		

Condition	Explanation
Interworking_with_EPS	If the UE has indicated support of S1, then the SS shall include this IE to provide details for the interworking with EPS being supported for a PDU session. This requirement is set up for the purpose of facilitating the test description. It is not mandatory for the Network to support Mapped EPS bearer contexts.

Table 4.9.27.3-2: RRCReconfiguration (step 1, Table 4.9.27.2.2-1)

Derivation Path: Table 4.6.1-13 with condition NR.			
Information Element	Value/remark	Comment	Condition
RRCReconfiguration ::= SEQUENCE {			
criticalExtensions CHOICE {			
rrcReconfiguration SEQUENCE {			
radioBearerConfig	RadioBearerConfig-AddVideo		
nonCriticalExtension SEQUENCE {			
masterCellGroup	CellGroupConfig-DRB(0,1)	OCTET STRING (CONTAINING CellGroupConfig)	
}			
}			
}			
}			

Table 4.9.27.3-3: RadioBearerConfig-AddVideo (Table 4.9.27.3-2)

Derivation Path: Table 4.6.3-132.			
Information Element	Value/remark	Comment	Condition
RadioBearerConfig ::= SEQUENCE {			
drb-ToAddModList SEQUENCE (SIZE (1..maxDRB)) OF DRB-ToAddMod {	1 entry		
DRB-ToAddMod [1] SEQUENCE {		entry 1	
cnAssociation CHOICE {			
sdap-Config SEQUENCE {	SDAP-Config		
defaultDRB	false		
}			

}			
drb-Identity	j	j is allocated according to internal TTCN mapping	
reestablishPDCP	Not present		
recoverPDCP	Not present		
pdcp-Config	PDCP-Config with condition UM		
}			
}			
}			

4.9.28 Test procedure for removing video from an ongoing call in 5GC

4.9.28.1 Scope

The purpose of this procedure is to remove video from an established speech call.

4.9.28.2 Procedure description

4.9.28.2.1 Initial conditions

System Simulator:

- 1 NR Cell connected to 5GC, default parameters.

User Equipment:

- The UE is in state 3N-A and registered to the IMS.

4.9.28.2.2 Procedure sequence

Table 4.9.28.2.2-1: IMS video removal from established call in 5GC

St	Procedure	Message Sequence		TP	Verdict
		U – S	Message		
1	The SS transmits an <i>RRCReconfiguration</i> message and a PDU SESSION MODIFICATION COMMAND message.	<--	NR RRC: <i>RRCReconfiguration</i> 5GMM: DL NAS TRANSPORT 5GSM: PDU SESSION MODIFICATION COMMAND	-	-
-	EXCEPTION: Steps 2 and 3 can occur in any order.	-	-	-	-
2	The UE transmits an <i>RRCReconfigurationComplete</i> message	-->	NR RRC: <i>RRCReconfigurationComplete</i>	-	-
3	Check: Does the UE transmit a <i>ULInformationTransfer</i> message, an UL NAS TRANSPORT message and an PDU SESSION MODIFICATION COMPLETE message?	-->	NR RRC: <i>ULInformationTransfer</i> 5GMM: UL NAS TRANSPORT 5GSM: PDU SESSION MODIFICATION COMPLETE	-	-

4.9.28.3 Specific message contents

Table 4.9.28.2.3-1: *RRCReconfiguration* (step 1, Table 4.9.28.2.2-1)

Derivation Path: Table 4.6.1-13.			
Information Element	Value/remark	Comment	Condition
<i>RRCReconfiguration</i> ::= SEQUENCE {			
criticalExtensions CHOICE {			
rrcReconfiguration SEQUENCE {			
radioBearerConfig SEQUENCE {			

drb-ToReleaseList SEQUENCE (SIZE (1..maxDRB)) OF DRB-Identity {	1 entry		
DRB-Identity[1]	DRB-Identity linked to the IMS video bearer	entry 1	
}			
}			
nonCriticalExtension SEQUENCE {			
masterCellGroup SEQUENCE {			
rlc-BearerToReleaseList SEQUENCE (SIZE (1..maxLC-ID)) OF LogicalChannelIdentity {	1 entry		
LogicalChannelIdentity[1]	Same value as drb-Identity[1] above	entry 1	
}			
}			
}			
}			
}			
}			
}			

Table 4.9.28.2.3-2: PDU SESSION MODIFICATION COMMAND (step 1, Table 4.9.28.2.2-1)

Derivation Path: Table 4.7.2-9.			
Information Element	Value/remark	Comment	Condition
PDU session ID	Same value as sent in PDU SESSION ESTABLISHMENT REQUEST message.		
Authorized QoS rules			
QoS rule[1]			
QoS rule identifier	'00000100'B	QoS rule 7	
Rule operation code	'010'B	Delete existing QoS rule	
Authorized QoS flow descriptions			
QoS flow descriptions[1]			
QFI	'00001000'B	QFI 8	
Operation code	'010'B	Delete existing QoS flow	

4.9.29 Test Procedure for eCall over IMS establishment in 5GS: eCall Only Support

4.9.29.1 Scope

The purpose of this test procedure is to allow successful completion of eCall over IMS in 5GS when UE is in 5GMM-DEREGISTERED.eCALL-INACTIVE.

The test procedure is applicable for UEs with eCall over IMS support.

Note: The trigger to initiate MO call will be part of test case from where the generic procedure is called.

4.9.29.2 Procedure description

4.9.29.2.1 Initial conditions

System Simulator:

- 1 NR Cell connected to 5GC, default parameters.

User Equipment:

- The Test UICC shall be inserted. It shall provide Emergency Numbers.

The test procedure assumes that the UE is in test state 0-A, subclause 4.4A.2 on the NR Cell. All necessary details required shall be explicitly specified in the TC which calls the procedure in its entirety or refers to parts of it.

4.9.29.2.2 Procedure sequence

The establishment of eCall over IMS in 5GS is assumed to always be mobile originated.

Table 4.9.29.2.2-1: Test procedure sequence for eCall over IMS Emergency establishment in 5GS (eCall Only Support)

St	Procedure	Message Sequence		TP	Verdict
		U - S	Message/PDU/SDU		
-	EXCEPTION: Unless otherwise stated all the messages below are transmitted on the cell specified in the test case.	-	-	-	-
1	The UE is switched on and SS waits 15 sec to allow the UE to camp on the serving cell and enter and remain in substate 5GMM-DEREGISTERED.eCALL-INACTIVE	-	-	-	-
2	Make the UE attempt an eCall (Note)	-	-	-	-
3-16	Steps 2 to 15 of generic procedure 4.5.2.2-2 takes place.	-	-	-	-
17-20	Void	-	-	-	-
	EXCEPTION: Step 20A can occur in parallel with steps 21-26				
20A	The generic procedure for UE-requested PDU session establishment, specified in subclause 4.5A.2, takes place performing establishment of UE-requested PDU session(s) with ExpectedNumberOfNewPDUSessions = 1				
21-26	Steps 8 to 13 of test procedure 4.9.11 takes place with condition 'eCall'.	-	-	-	-
Note: The request to originate a manual or Automatic eCall may be performed by MMI or AT command					

4.9.29.2.3 Specific Message content

All specific message contents shall be according to subclause 4.6 and 4.7 with the exceptions below.

Table 4.9.29.2.3-1: SIB1 (at any time prior and during the procedure, Table 4.9.29.2.2-1)

Derivation Path: Table 4.6.1-28.			
Information Element	Value/remark	Comment	Condition
SIB1 ::= SEQUENCE {			
ims-EmergencySupport	true		
}			

4.9.30 Test procedure for releasing unicast mode NR sidelink communication

4.9.30.1 Scope

The purpose of this procedure is to release unicast mode sidelink communication.

4.9.30.2 Procedure description

4.9.30.2.1 Initial conditions

The UE is in state 1N-B, 3N-B or 4-A with a PC5 unicast mode sidelink communication established.

4.9.30.2.2 Procedure sequence

Table 4.9.30.2.2-1: Procedure for releasing unicast mode NR sidelink communication

St	Procedure	Message Sequence	
		U – S	Message
1	The NR-SS-UE sends a DIRECT LINK RELEASE REQUEST message.	<--	PC5-S: DIRECT LINK RELEASE REQUEST
2	The UE sends a DIRECT LINK RELEASE ACCEPT message.	-->	PC5-S: DIRECT LINK RELEASE ACCEPT

4.9.30.3 Specific message contents

Table 4.9.30.3-1: DIRECT LINK RELEASE REQUEST (Step 1, Table 4.9.30.2.2-1)

Derivation Path: Table 4.7D.1-11 with condition Rx

Table 4.9.30.3-2: DIRECT LINK RELEASE ACCEPT (Step 2, Table 4.9.30.2.2-1)

Derivation Path: Table 4.7D.1-12 with condition Tx

4.9.31 Test procedure to check user plane connectivity on established sidelink DRB

4.9.31.1 Scope

The purpose of this procedure is to check user plane connectivity on established sidelink DRB (broadcast, groupcast or unicast).

- To check transmission and reception on unicast sidelink DRB, procedure in Table 4.9.31.2.2-1 applies;
- To check transmission on broadcast or groupcast sidelink DRB, procedure in Table 4.9.31.2.2-2 applies;
- To check reception on broadcast or groupcast sidelink DRB, procedure in Table 4.9.31.2.2-3 applies;

4.9.31.2 Procedure description

4.9.31.2.1 Initial conditions

The UE is in state 1N-B, 3N-B or 4-A. The PC5 unicast link between the UE and the NR-SS-UE and corresponding AS layer connection (PC5-RRC) have also been established if the sidelink DRB to check is a unicast sidelink DRB.

4.9.31.2.2 Procedure sequence

Table 4.9.31.2.2-1: Procedure to check user plane connectivity on PC5 unicast link

St	Procedure	Message Sequence		TP	Verdict
		U – S	Message		
1	Void	-	-	-	-
-	EXCEPTION: Steps 1a1 to 1b2 describe behaviour which depends on procedure parameters; the "lower case letter" identifies a	-	-	-	-

	step sequence that takes place if a procedure parameter has a particular value.				
1a1	IF the UE is in state 1N-B or 4-A, the SS triggers UE to close UE test loop mode E (Receive Mode). NOTE: Closing of UE test loop mode E may be performed by MMI or AT command (+CCUTLE).	-	-	-	-
1b1	ELSE IF the UE is in state 3N-B, the SS transmits a CLOSE UE TEST LOOP message to close UE test loop mode E (Receive Mode).	<--	TC: CLOSE UE TEST LOOP		
1b2	The UE transmits a CLOSE UE TEST LOOP COMPLETE message.	-->	TC: CLOSE UE TEST LOOP COMPLETE		
2	The NR-SS-UE transmits one SDAP SDU on SL DRB#n NOTE: SL DRB#n is the SL DRB associated with the PC5 unicast link to be verified.	-	-	-	-
3	Void				
-	EXCEPTION: Steps 3a1 to 3b2 describe behaviour which depends on procedure parameters; the "lower case letter" identifies a step sequence that takes place if a procedure parameter has a particular value.	-	-	-	-
3a1	IF the UE is in state 1N-B or 4-A, the SS requests the UE to report the counter of successful reception of SDAP SDU packets. NOTE: Requesting the UE to report the counter of successful reception of SDAP packets may be performed by MMI or AT command (+CUSPCREQ).	-	-	-	-
3a2	Check: Does the reported counters of successful reception of SDAP SDU/PSSCH/PSCCH packets satisfy following conditions? - Counter of SDAP SDU packets equals to 1; - Counter of PSSCH packets is greater than 0; - Counter of PSCCH packets is greater than 0; NOTE: The UE reporting the counter of successful reception of SDAP SDU/PSSCH/PSCCH packets may be performed by MMI or AT command (+CUSPCREQ).	-	-	-	P
3b1	ELSE IF the UE is in state 3N-B, the SS transmits a UE TEST LOOP NR SIDELINK COUNTER REQUEST message to request the UE to report the counter of successful reception of SDAP SDU packets.	<--	TC: UE TEST LOOP NR SIDELINK COUNTER REQUEST	-	-
3b2	Check: Does the reported counters of successful reception of SDAP SDU/PSSCH/PSCCH packets in UE TEST LOOP NR SIDELINK COUNTER RESPONSE message transmitted by the UE satisfy following conditions? - Counter of SDAP SDU packets equals to 1; - Counter of PSSCH packets is greater than 0; - Counter of PSCCH packets is greater than 0;.	-->	TC: UE TEST LOOP NR SIDELINK COUNTER RESPONSE	-	P
4-5	Void	-	-	-	-
-	EXCEPTION: Steps 5a1 to 5b2 describe behaviour which depends on procedure parameters; the "lower case letter" identifies a step sequence that takes place if a procedure parameter has a particular value.	-	-	-	-
5a1	IF the UE is in state 1N-B or 4-A, the SS triggers UE to open UE test loop mode E.	-	-	-	-

	NOTE: Opening of UE test loop mode E may be performed by MMI or AT command (+CCUTLE).				
5b1	ELSE IF the UE is in state 3N-B, the SS transmits an OPEN UE TEST LOOP message to open UE test loop mode E.	<--	TC: OPEN UE TEST LOOP		
5b2	The UE transmits an OPEN UE TEST LOOP COMPLETE message.	-->	TC: OPEN UE TEST LOOP COMPLETE		
6	Void	-	-	-	-
-	EXCEPTION: Steps 6a1 to 6b2 describe behaviour which depends on procedure parameters; the "lower case letter" identifies a step sequence that takes place if a procedure parameter has a particular value.	-	-	-	-
6a1	IF the UE is in state 1N-B or 4-A, the SS triggers UE to close UE test loop mode E (Transmit Mode). NOTE: Closing of UE test loop mode E may be performed by MMI or AT command (+CCUTLE).	-	-	-	-
6b1	ELSE IF the UE is in state 3N-B, the SS transmits a CLOSE UE TEST LOOP message to close UE test loop mode E (Transmit Mode).	<--	TC: CLOSE UE TEST LOOP		
6b2	The UE transmits a CLOSE UE TEST LOOP COMPLETE message.	-->	TC: CLOSE UE TEST LOOP COMPLETE		
7	Check: Does UE continuously send SDAP SDUs on SL DRB#n in the next 5 seconds? NOTE: The UE sends multiple packets. The reception of one of them is sufficient for achieving the Pass verdict.	-	-	-	P
8	Void	-	-	-	-
-	EXCEPTION: Steps 8a1 to 8b2 describe behaviour which depends on procedure parameters; the "lower case letter" identifies a step sequence that takes place if a procedure parameter has a particular value.	-	-	-	-
8a1	The SS triggers UE to open UE test loop mode E. NOTE: Opening of UE test loop mode E may be performed by MMI or AT command (+CCUTLE).	-	-	-	-
8b1	ELSE IF the UE is in state 3N-B, the SS transmits an OPEN UE TEST LOOP message to open UE test loop mode E.	<--	TC: OPEN UE TEST LOOP		
8b2	The UE transmits an OPEN UE TEST LOOP COMPLETE message.	-->	TC: OPEN UE TEST LOOP COMPLETE		

Table 4.9.31.2.2-2: Procedure to check transmission on broadcast or groupcast sidelink DRB

St	Procedure	Message Sequence		TP	Verdict
		U – S	Message		
1a1-3b2	Same as Table 4.9.31.2.2-1 Step 6a1-8b2	-	-	-	-

Table 4.9.31.2.2-3: Procedure to check reception on broadcast or groupcast sidelink DRB

St	Procedure	Message Sequence		TP	Verdict
		U – S	Message		
1a1-5b2	Same as Table 4.9.31.2.2-1 Step 1a1-5b2	-	-	-	-

4.9.31.3 Specific message contents

All specific message contents shall be according subclause 4.6 and 4.7B with the exceptions below.

Table 4.9.31.3-1: +CCUTLE (Table 4.9.31.2.2-1, Step 1a1)

Derivation Path: Table 4.7B-1 with condition Close and Receive

Table 4.9.31.3-2: CLOSE UE TEST LOOP (Table 4.9.31.2.2-1, Step 1b1)

Derivation Path: 36.508 [2] Table 4.7A-3 with condition UE TEST LOOP MODE E (V2X Reception)

Table 4.9.31.3-3: +CUSPCREQ (Table 4.9.31.2.2-1, Step 3a2)

Derivation Path: 36.508[2] Table 4.7I-4			
Field	Value/remark	Comment	Condition
+CUSPCREQ =			
< type1>	2	NR PSCCH transport blocks	
< format >	1		
<length1>	Not Checked		
<counter1>	Checked	Any value greater than 0	
< type2>	2	NR STCH SDAP SDU packets	
< format >	1		
<length2>	Not Checked		
<counter2>	1		
< type3>	2	NR PSSCH transport blocks	
< format >	1		
<length3>	Not Checked		
<counter3>	Checked	Any value greater than 0	

Table 4.9.31.3-4: UE TEST LOOP NR SIDELINK PACKET COUNTER REQUEST (Table 4.9.31.2.2-1, Step 3b1)

Derivation Path: 38.509 clause 6.9.1			
Information Element	Value/remark	Comment	Condition
Protocol discriminator	'1111'B		
Skip indicator	'0000'B		
Message type	'10101010'B		

Table 4.9.31.3-5: UE TEST LOOP NR SIDELINK PACKET COUNTER RESPONSE (Table 4.9.31.2.2-1, Step 3b2)

Derivation Path: 38.509 clause 6.9.2			
Information Element	Value/remark	Comment	Condition
Protocol discriminator	'1111'B		
Skip indicator	'0000'B		
Message type	'10101011'B		
NR Sidelink PSCCH Packet Counter(s) Value			
NR Sidelink PSCCH Packet Counter(s) Value type	'00000001'B		
Length of NR Sidelink PSCCH Packet Counter(s) Value contents in bytes	'00000100'B	4 bytes	
NR Sidelink PSCCH Packet Counter IE #0	Checked	Any value greater than 0	
NR Sidelink STCH Packet Counter(s) Value			
NR Sidelink STCH Packet Counter(s) Value type	'00000010'B		

Length of NR Sidelink STCH Packet Counter(s) Value in bytes	'00000100'B	4 bytes	
NR Sidelink STCH Packet Counter IE #0	'00000000 00000000 00000000 00000001'B		
NR Sidelink PSSCH Packet Counter(s) Value			
NR Sidelink PSSCH Packet Counter(s) Value type	'00000011'B		
Length of NR Sidelink PSSCH Packet Counter(s) Value contents in bytes	'00000100'B	4 bytes	
NR Sidelink PSSCH Packet Counter IE #0	Checked	Any value greater than 0	

Table 4.9.31.3-6: +CCUTLE (Table 4.9.31.2.2-1, Step 5a1 and 8a1)

Derivation Path: Table 4.7B-1 with condition Open

Table 4.9.31.3-7: +CCUTLE (Table 4.9.31.2.2-1, Step 6a1)

Derivation Path: Table 4.7B-1 with condition Close and Transmit

Table 4.9.31.3-8: CLOSE UE TEST LOOP (Table 4.9.31.2.2-1, Step 6b1)

Derivation Path: 36.508 [2] Table 4.7A-3 with condition UE TEST LOOP MODE E(V2X Transmission)			
Information Element	Value/remark	Comment	Condition
UE test loop mode E LB setup			
Communication Transmit or Receive	0 0 0 0 0 0 1	'01' indicates V2X UE triggered to transmit NR sidelink communication with single spatial layer.	

4.9.32 Test procedure to activate UE Power Limit Function (UPLF)

4.9.32.1 Initiation

UE is operating in FR2 in RRC_CONNECTED state with UE power limit test function activated.

4.9.32.2 Procedure

Table 4.9.32.2-1: Test procedure Sequence

St	Procedure	Message Sequence		TP	Verdict
		U - S	Message/PDU/SDU		
1	SS request UE to activate UE Power Limit Function	<--	ACTIVATE POWER LIMIT REQUEST	-	-
2	UE confirms that UE Power Limit Function is activated	-->	ACTIVATE POWER LIMIT RESPONSE	-	-

4.9.32.3 Specific Message contents

Table 4.9.32.3-1: ACTIVATE POWER LIMIT REQUEST

Derivation Path: 38.509 clause 6.11.1			
Information Element	Value/remark	Comment	Condition
Protocol discriminator	1 1 1 1		
Skip indicator	0 0 0 0		

Message type	1 0 1 0 1 1 1 0		
TOTAL NR AGGREGATED BANDWIDTH	0 0 0 0 0 0 1 0		TOT NR AGG BW 100
TOTAL NR AGGREGATED BANDWIDTH	0 0 0 0 0 1 1		TOT NR AGG BW 150
TOTAL NR AGGREGATED BANDWIDTH	0 0 0 0 0 1 0 0		TOT NR AGG BW 200
TOTAL NR AGGREGATED BANDWIDTH	0 0 0 0 0 1 0 1		TOT NR AGG BW 250
TOTAL NR AGGREGATED BANDWIDTH	0 0 0 0 0 1 1 0		TOT NR AGG BW 300
TOTAL NR AGGREGATED BANDWIDTH	0 0 0 0 0 1 1 1		TOT NR AGG BW 350
TOTAL NR AGGREGATED BANDWIDTH	0 0 0 0 1 0 0 0		TOT NR AGG BW 400
TOTAL NR AGGREGATED BANDWIDTH	0 0 0 0 1 0 0 1		TOT NR AGG BW 450
TOTAL NR AGGREGATED BANDWIDTH	0 0 0 0 1 0 1 0		TOT NR AGG BW 500
TOTAL NR AGGREGATED BANDWIDTH	0 0 0 0 1 0 1 1		TOT NR AGG BW 550
TOTAL NR AGGREGATED BANDWIDTH	0 0 0 0 1 1 0 0		TOT NR AGG BW 600
TOTAL NR AGGREGATED BANDWIDTH	0 0 0 0 1 1 0 1		TOT NR AGG BW 650
TOTAL NR AGGREGATED BANDWIDTH	0 0 0 0 1 1 1 0		TOT NR AGG BW 700
TOTAL NR AGGREGATED BANDWIDTH	0 0 0 0 1 1 1 1		TOT NR AGG BW 750
TOTAL NR AGGREGATED BANDWIDTH	0 0 0 1 0 0 0 0		TOT NR AGG BW 800
TOTAL NR AGGREGATED BANDWIDTH	0 0 0 1 0 0 0 1		TOT NR AGG BW 850
TOTAL NR AGGREGATED BANDWIDTH	0 0 0 1 0 0 1 0		TOT NR AGG BW 900
TOTAL NR AGGREGATED BANDWIDTH	0 0 0 1 0 0 1 1		TOT NR AGG BW 950
TOTAL NR AGGREGATED BANDWIDTH	0 0 0 1 0 1 0 0		TOT NR AGG BW 1000
TOTAL NR AGGREGATED BANDWIDTH	0 0 0 1 0 1 0 1		TOT NR AGG BW 1050
TOTAL NR AGGREGATED BANDWIDTH	0 0 0 1 0 1 1 0		TOT NR AGG BW 1100
TOTAL NR AGGREGATED BANDWIDTH	0 0 0 1 0 1 1 1		TOT NR AGG BW 1150
TOTAL NR AGGREGATED BANDWIDTH	0 0 0 1 1 0 0 0		TOT NR AGG BW 1200
TOTAL NR AGGREGATED BANDWIDTH	0 0 0 1 1 0 0 1		TOT NR AGG BW 1250
TOTAL NR AGGREGATED BANDWIDTH	0 0 0 1 1 0 1 0		TOT NR AGG BW 1300
TOTAL NR AGGREGATED BANDWIDTH	0 0 0 1 1 0 1 1		TOT NR AGG BW 1350
TOTAL NR AGGREGATED BANDWIDTH	0 0 0 1 1 1 0 0		TOT NR AGG BW 1400
TOTAL NR AGGREGATED BANDWIDTH	0 0 0 1 1 1 0 1		TOT NR AGG BW 1450
TOTAL NR AGGREGATED BANDWIDTH	0 0 0 1 1 1 1 0		TOT NR AGG BW 1500
TOTAL NR AGGREGATED BANDWIDTH	0 0 0 1 1 1 1 1		TOT NR AGG BW 1550
TOTAL NR AGGREGATED BANDWIDTH	0 0 1 0 0 0 0 0		TOT NR AGG BW 1600
PCELL NR BANDWIDTH	0 0 0 0 0 0 0 1		PCELL NR BW 50
PCELL NR BANDWIDTH	0 0 0 0 0 0 1 0		PCELL NR BW 100

PCELL NR BANDWIDTH	0 0 0 0 0 1 0 0		PCELL NR BW 200
PCELL NR BANDWIDTH	0 0 0 0 1 0 0 0		PCELL NR BW 400

Condition	Explanation
TOT NR AGG BW 100	Total NR aggregated Bandwidth equal to 100 MHz
TOT NR AGG BW 150	Total NR aggregated Bandwidth equal to 150 MHz
TOT NR AGG BW 200	Total NR aggregated Bandwidth equal to 200 MHz
TOT NR AGG BW 250	Total NR aggregated Bandwidth equal to 250 MHz
TOT NR AGG BW 300	Total NR aggregated Bandwidth equal to 300 MHz
TOT NR AGG BW 350	Total NR aggregated Bandwidth equal to 350 MHz
TOT NR AGG BW 400	Total NR aggregated Bandwidth equal to 400 MHz
TOT NR AGG BW 450	Total NR aggregated Bandwidth equal to 450 MHz
TOT NR AGG BW 500	Total NR aggregated Bandwidth equal to 500 MHz
TOT NR AGG BW 550	Total NR aggregated Bandwidth equal to 550 MHz
TOT NR AGG BW 600	Total NR aggregated Bandwidth equal to 600 MHz
TOT NR AGG BW 650	Total NR aggregated Bandwidth equal to 650 MHz
TOT NR AGG BW 700	Total NR aggregated Bandwidth equal to 700 MHz
TOT NR AGG BW 750	Total NR aggregated Bandwidth equal to 750 MHz
TOT NR AGG BW 800	Total NR aggregated Bandwidth equal to 800 MHz
TOT NR AGG BW 850	Total NR aggregated Bandwidth equal to 850 MHz
TOT NR AGG BW 900	Total NR aggregated Bandwidth equal to 900 MHz
TOT NR AGG BW 950	Total NR aggregated Bandwidth equal to 950 MHz
TOT NR AGG BW 1000	Total NR aggregated Bandwidth equal to 1000 MHz
TOT NR AGG BW 1050	Total NR aggregated Bandwidth equal to 1050 MHz
TOT NR AGG BW 1100	Total NR aggregated Bandwidth equal to 1100 MHz
TOT NR AGG BW 1150	Total NR aggregated Bandwidth equal to 1150 MHz
TOT NR AGG BW 1200	Total NR aggregated Bandwidth equal to 1200 MHz
TOT NR AGG BW 1250	Total NR aggregated Bandwidth equal to 1250 MHz
TOT NR AGG BW 1300	Total NR aggregated Bandwidth equal to 1300 MHz
TOT NR AGG BW 1350	Total NR aggregated Bandwidth equal to 1350 MHz
TOT NR AGG BW 1400	Total NR aggregated Bandwidth equal to 1400 MHz
TOT NR AGG BW 1450	Total NR aggregated Bandwidth equal to 1450 MHz
TOT NR AGG BW 1500	Total NR aggregated Bandwidth equal to 1500 MHz
TOT NR AGG BW 1550	Total NR aggregated Bandwidth equal to 1550 MHz
TOT NR AGG BW 1600	Total NR aggregated Bandwidth equal to 1600 MHz
PCELL NR BW 50	PCC NR Bandwidth equal to 50 MHz
PCELL NR BW 100	PCC NR Bandwidth equal to 100 MHz
PCELL NR BW 200	PCC NR Bandwidth equal to 200 MHz
PCELL NR BW 400	PCC NR Bandwidth equal to 400 MHz

Table 4.9.32.3-2: ACTIVATE POWER LIMIT RESPONSE

Derivation Path: 38.509 clause 6.11.2			
Information Element	Value/remark	Comment	Condition
Protocol discriminator	1 1 1 1		
Skip indicator	0 0 0 0		
Message type	1 0 1 0 1 1 1 1		

4.9.33 Test procedure to deactivate UE Power Limit Function (UPLF)

Editor's note: The power limit request message values set by the UPLF test mode is currently applicable to equal PSD (equal channel bandwidths on all component carriers) only. Message values are pending for unequal channel bandwidths

4.9.33.1 Initiation

UE is operating in FR2 in RRC_CONNECTED state.

4.9.33.2 Procedure

Table 4.9.33.2-1: Test procedure Sequence

St	Procedure	Message Sequence		TP	Verdict
		U - S	Message/PDU/SDU		
1	SS request UE to deactivate UE Power Limit Function	<--	DEACTIVATE POWER LIMIT REQUEST	-	-
2	UE confirms that UE Power Limit Function is deactivated	-->	DEACTIVATE POWER LIMIT RESPONSE	-	-

4.9.33.3 Specific Message contents

Table 4.9.33.3-1: DEACTIVATE POWER LIMIT REQUEST

Derivation Path: 38.509 clause 6.11.3			
Information Element	Value/remark	Comment	Condition
Protocol discriminator	1 1 1 1		
Skip indicator	0 0 0 0		
Message type	1 0 1 0 1 1 1 0		

Table 4.9.33.3-2: DEACTIVATE POWER LIMIT RESPONSE

Derivation Path: 38.509 clause 6.11.4			
Information Element	Value/remark	Comment	Condition
Protocol discriminator	1 1 1 1		
Skip indicator	0 0 0 0		
Message type	1 0 1 0 1 1 1 1		

4.9.34 Test procedure for MBS Multicast session join and session establishment

4.9.34.1 Scope

The purpose of this procedure is to establish a multicast MBS session.

4.9.34.2 Procedure description

4.9.34.2.1 Initial conditions

System Simulator:

- 1 NR Cell connected to 5GC, default parameters.

User Equipment:

- The UE is in state 1N-A.

4.9.34.2.2 Procedure sequence

Table 4.9.34.2.2-1: Procedure for MBS Multicast session join and session establishment

St	Procedure	Message Sequence		TP	Verdict
		U - S	Message/PDU/SDU		
-	EXCEPTION: Step 1a1 to 1b12a1 describe behaviour that depends on the UE capability the "lower case letter" identifies a step sequence that take place.	-	-	-	-

1a1	IF pc_Join_MBS_by_PDU_Modification THEN cause the UE to request establishment of associated PDU Session to the MBS DNN.(Note 1)	-	-	-	-
1a2-1a7	Steps 2-7 of expected sequence from Table 4.5.4.2-3 are performed.	-	-	-	-
-	EXCEPTION: Depending upon UE implementation, steps 1a8 and 1a9 can occur in any order	-	-	-	-
1a8	The UE transmits an <i>RRCReconfigurationComplete</i> message.	-->	NR RRC: <i>RRCReconfigurationComplete</i>	-	-
1a9	The UE transmits an UL NAS TRANSPORT message and a PDU SESSION ESTABLISHMENT REQUEST without MBS session ID and join request.	-->	NR RRC: <i>ULInformationTransfer</i> 5GMM: UL NAS TRANSPORT 5GSM: PDU SESSION ESTABLISHMENT REQUEST	-	-
1a10	The SS transmits an <i>RRCReconfiguration</i> message and an PDU SESSION ESTABLISHMENT ACCEPT	<--	NR RRC: <i>RRCReconfiguration</i> 5GMM: DL NAS TRANSPORT 5GSM: PDU SESSION ESTABLISHMENT ACCEPT	-	-
1a11	The UE transmits an <i>RRCReconfigurationComplete</i> message.	-->	NR RRC: <i>RRCReconfigurationComplete</i>	-	-
-	EXCEPTION: Step 1a12a1 describes behaviour depending UE implementation; the "lower case letter" identifies a step sequence that take place if the UE performs a specific action.	-	-	-	-
1a12a1	IF the 'IP address allocation' for the DNN for which the PDU session is established is set to "Yes" in Table 4.8.4-1 THEN, the generic procedure for IP address allocation in the user plane, specified in subclause 4.5A.3, takes place performing IP address allocation in the user plane.	-	-	-	-
1a13	Trigger UE to join MBS Multicast session.	-	-	-	-
1a14	Check: Does UE transmit an <i>ULInformationTransfer</i> message and a PDU SESSION MODIFICATION REQUEST message including MBS session ID and join request?	-->	NR RRC: <i>ULInformationTransfer</i> 5GMM: UL NAS TRANSPORT 5GSM: PDU SESSION MODIFICATION REQUEST	-	P
1a15	The SS transmits an <i>RRCReconfiguration</i> message and a PDU SESSION MODIFICATION COMMAND.	<--	NR RRC: <i>RRCReconfiguration</i> 5GMM: DL NAS TRANSPORT 5GSM: PDU SESSION MODIFICATION COMMAND	-	-
-	EXCEPTION: Depending upon UE implementation, steps 1a16 and 1a17 can occur in any order.	-	-	-	-
1a16	The UE transmits an <i>RRCReconfigurationComplete</i> message.	-->	NR RRC: <i>RRCReconfigurationComplete</i>	-	-
1a17	The UE transmits an <i>ULInformationTransfer</i> message and a PDU SESSION MODIFICATION COMPLETE message.	-->	NR RRC: <i>ULInformationTransfer</i> 5GMM: UL NAS TRANSPORT 5GSM: PDU SESSION MODIFICATION COMPLETE	-	-
1b1	ELSE trigger UE to join MBS Multicast session.	-	-	-	-
1b2-1b7	Steps 2-7 of expected sequence from Table 4.5.4.2-3 are performed.	-	-	-	-
-	EXCEPTION: Depending upon UE implementation, steps 1b8 and 1b9 can occur in any order	-	-	-	-
1b8	The UE transmits an <i>RRCReconfigurationComplete</i> message.	-->	NR RRC: <i>RRCReconfigurationComplete</i>	-	-
1b9	Check: Does UE transmit an UL NAS TRANSPORT message and a PDU SESSION ESTABLISHMENT REQUEST including MBS session ID and join request?	-->	NR RRC: <i>ULInformationTransfer</i> 5GMM: UL NAS TRANSPORT 5GSM: PDU SESSION ESTABLISHMENT REQUEST	-	P

1b10	The SS transmits an <i>RRCReconfiguration</i> message and a PDU SESSION ESTABLISHMENT ACCEPT	<--	NR RRC: <i>RRCReconfiguration</i> 5GMM: DL NAS TRANSPORT 5GSM: PDU SESSION ESTABLISHMENT ACCEPT	-	-
1b11	The UE transmits an <i>RRCReconfigurationComplete</i> message.	-->	NR RRC: <i>RRCReconfigurationComplete</i>	-	-
-	EXCEPTION: Step 1b12a1 describes behaviour depending UE implementation; the "lower case letter" identifies a step sequence that take place if the UE performs a specific action.	-	-	-	-
1b12 a1	IF the 'IP address allocation' for the DNN for which the PDU session is established is set to "Yes" in Table 4.8.4-1 THEN, the generic procedure for IP address allocation in the user plane, specified in subclause 4.5A.3, takes place performing IP address allocation in the user plane.	-	-	-	-
Note 1: This could be done by e.g. MMI or AT command.					

4.9.34.3 Specific message contents

Table 4.9.34.3-1: PDU SESSION ESTABLISHMENT REQUEST (step 1a9, Table 4.9.34.2.2-1)

Derivation Path: Table 4.7.2-1.			
Information Element	Value/remark	Comment	Condition
Requested MBS container	Not present		

Table 4.9.34.3-1A: *RRCReconfiguration* (step 1a10, Table 4.9.34.2.2-1)

Derivation Path: Table 4.6.1-13 and condition NR			
Information Element	Value/remark	Comment	Condition
<i>RRCReconfiguration</i> ::= SEQUENCE {			
criticalExtensions CHOICE {			
rrcReconfiguration ::= SEQUENCE {			
radioBearerConfig	RadioBearerConfig with condition DRBn	n is chosen as the next available number higher or equal to 2	
nonCriticalExtension SEQUENCE {			
masterCellGroup	CellGroupConfig with condition DRBn	n is set to the same value as for the radioBearerConfig IE above	
dedicatedNAS-MessageList SEQUENCE (SIZE(1..maxDRB)) OF DedicatedNAS-Message {}	DedicatedNAS-Message		
}			
}			
}			
}			

Table 4.9.34.3-2: PDU SESSION MODIFICATION REQUEST (step 1a14, Table 4.9.34.2.2-1)

Derivation Path: Table 4.7.2-7.			
Information Element	Value/remark	Comment	Condition
Requested MBS container			
MBS session information			
MBS operation	'01'B	Join MBS session	
Type of MBS session ID	Not checked		

MBS session ID	Present but value not checked, the value is set according to the parameter given in the test case		

Table 4.9.34.3-3: PDU SESSION MODIFICATION COMMAND (step 1a15, Table 4.9.34.2.2-1)

Derivation Path: Table 4.7.2-9.			
Information Element	Value/remark	Comment	Condition
Received MBS container			
Received MBS information			
Rejection cause	'000'B	No additional information provided	
MSAI	'00'B	MBS service area not included	
MD	'010'B	MBS join is accepted	
MSCI	'0'B	MBS security container not included	
MTI	'00'B	No MBS timers included	
IPAE	'0'B	Source and destination IP address information not included	
TMGI			
MBMS Service ID	'000101'H		
MCC	See table 4.4.2-3		
MNC	See table 4.4.2-3		
Source IP address information	Not present		
Destination IP address information	Not present		
MBS service area	Not present		
MBS timers	Not present		
MBS security container	Not present		

Table 4.9.34.3-3A: RRCReconfiguration (step 1a15, Table 4.9.34.2.2-1)

Derivation Path: Table 4.6.1-13 and condition NR			
Information Element	Value/remark	Comment	Condition
RRCReconfiguration ::= SEQUENCE {			
criticalExtensions CHOICE {			
rrcReconfiguration ::= SEQUENCE {			
radioBearerConfig	RadioBearerConfig with condition MRBm and UM PTM	m=1	
nonCriticalExtension SEQUENCE {			
masterCellGroup	CellGroupConfig with condition MRBm and UM PTM	m=1	
dedicatedNAS-MessageList SEQUENCE (SIZE(1..maxDRB)) OF DedicatedNAS-Message {	DedicatedNAS-Message		
}			
}			
}			
}			

Table 4.9.34.3-4: PDU SESSION ESTABLISHMENT REQUEST (step 1b9, Table 4.9.34.2.2-1)

Derivation Path: Table 4.7.2-1.

Information Element	Value/remark	Comment	Condition
Requested MBS container			
MBS session information			
MBS operation	'01'B	Join MBS session	
Type of MBS session ID	Not checked		
MBS session ID	Present but value not checked, the value is set according to the parameter given in the test case.		

Table 4.9.34.3-5: PDU SESSION ESTABLISHMENT ACCEPT (step 1b10, Table 4.9.34.2.2-1)

Derivation Path: Table 4.7.2-2.			
Information Element	Value/remark	Comment	Condition
Received MBS container			
Received MBS information			
Rejection cause	'000'B	No additional information provided	
MSAI	'00'B	MBS service area not included	
MD	'010'B	MBS join is accepted	
MSCI	'0'B	MBS security container not included	
MTI	'00'B	No MBS timers included	
IPAE	'0'B	Source and destination IP address information not included	
TMGI			
MBMS Service ID	'000101'H		
MCC	See table 4.4.2-3		
MNC	See table 4.4.2-3		
Source IP address information	Not present		
Destination IP address information	Not present		
MBS service area	Not present		
MBS timers	Not present		
MBS security container	Not present		

Table 4.9.34.3-6: RRCReconfiguration (step 1b10, Table 4.9.34.2.2-1)

Derivation Path: Table 4.6.1-13 and condition NR			
Information Element	Value/remark	Comment	Condition
RRCReconfiguration ::= SEQUENCE {			
criticalExtensions CHOICE {			
rrcReconfiguration ::= SEQUENCE {			
radioBearerConfig	RadioBearerConfig with condition DRBn and MRBm and UM_PTM	n is chosen as the next available number higher or equal to 2 m=1	
nonCriticalExtension SEQUENCE {			
masterCellGroup	CellGroupConfig with condition MRBm_DRBn and UM_PTM	n is set to the same value as for the radioBearerConfig IE above m=1	

dedicatedNAS-MessageList SEQUENCE (SIZE(1..maxDRB)) OF DedicatedNAS-Message {}	DedicatedNAS-Message		
}			
}			
}			
}			

4.9.35 Test procedure for deleting configured S-NSSAI, default configured S-NSSAI and allowed S-NSSAI

4.9.35.1 Scope

The purpose of this procedure is to delete configured S-NSSAI, default configured S-NSSAI and allowed S-NSSAI from the UE.

4.9.35.2 Procedure description

4.9.35.2.1 Initial conditions

System Simulator:

- 1 NR Cell connected to 5GC, default parameters.

User Equipment:

- The UE is in state 3N-A.

4.9.35.2.2 Procedure sequence

Table 4.9.35.2.2-1: Procedure for configured S-NSSAI, default configured S-NSSAI and allowed S-NSSAI deletion

St	Procedure	Message Sequence		TP	Verdict
		U – S	Message		
1	The SS transmits NSSAI DELETE REQUEST message to delete the Default Configured NSSAI list.	<--	NSSAI DELETE REQUEST	-	-
2	UE transmits NSSAI DELETE RESPONSE message.	-->	NSSAI DELETE RESPONSE	-	-
3	The SS transmits NSSAI DELETE REQUEST message to delete the Configured NSSAI list.	<--	NSSAI DELETE REQUEST	-	-
4	UE transmits NSSAI DELETE RESPONSE message.	-->	NSSAI DELETE RESPONSE	-	-
5	The SS transmits NSSAI DELETE REQUEST message to delete the Allowed NSSAI list.	<--	NSSAI DELETE REQUEST	-	-
6	UE transmits NSSAI DELETE RESPONSE message.	-->	NSSAI DELETE RESPONSE	-	-

4.9.35.3 Specific message contents

Table 4.9.35.3-1: NSSAI DELETE REQUEST (step 1, Table 4.9.35.2.2-1)

Derivation path: TS 38.509 Table 6.7.1			
Information Element	Value/remark	Comment	Condition
Protocol discriminator	1111		
Skip indicator	0000		
Message type	'10100110'B		
Delete NSSAI type	'00000000'B	Delete Default Configured NSSAI	

Table 4.9.35.3-2: NSSAI DELETE REQUEST (step 3, Table 4.9.35.2.2-1)

Derivation path: TS 38.509 Table 6.7.1			
Information Element	Value/remark	Comment	Condition
Protocol discriminator	1111		
Skip indicator	0000		
Message type	'10100110'B		
Delete NSSAI type	'00000001'B	Delete Configured NSSAI	
Configured NSSAI	00000000		

Table 4.9.35.3-3: NSSAI DELETE REQUEST (step 5, Table 4.9.35.2.2-1)

Derivation path: TS 38.509 Table 6.7.1			
Information Element	Value/remark	Comment	Condition
Protocol discriminator	1111		
Skip indicator	0000		
Message type	'10100110'B		
Delete NSSAI type	'00000010'B	Delete Allowed NSSAI	
Allowed NSSAI	00000000		

Table 4.9.35.3-4: NSSAI DELETE RESPONSE (steps 2, 4 and 6, Table 4.9.35.2.2-1)

Derivation path: TS 38.509 Table 6.7.2			
Information Element	Value/remark	Comment	Condition
Protocol discriminator	1111		
Skip indicator	0000		
Message type	'10100111'B		

4.9.36 Test procedure for registration of a MUSIM UE

4.9.36.1 Scope

The purpose of this procedure is to perform initial registration of a MUSIM UE.

4.9.36.2 Procedure description

4.9.36.2.1 Initial conditions

System Simulator:

- NGC Cell A (home PLMN1) and cell G (home PLMN2) are configured according to tables 6.3.2.2-1, 6.3.2.2-3 and with default system information combination as defined in sub-clause 4.4.3.1.2. Any change in the cells and their configurations shall be explicitly specified in the TC which calls the procedure in its entirety or refers to parts of it.

User Equipment:

- The UE is a MUSIM UE.
- The UE is equipped with two USIMs with configuration as defined in Tables 6.4.1-27 and 6.4.1-28.

4.9.36.2.2 Procedure sequence

Table 4.9.36.2.2-1: Test procedure sequence for registration of a MUSIM UE

St	Procedure	Message Sequence		TP	Verdict
		U - S	Message		
1	The SS configures: - NGC Cell A as the "Serving cell". - NGC Cell G as a "Non-Suitable Off cell".	-	-	-	-
2	UE is switched on.	-	-	-	-
-	The following messages are to be observed on NGC Cell A unless explicitly stated otherwise.	-	-	-	-
3	Check: Does UE with USIM configuration 6.4.1-27 transmit REGISTRATION REQUEST message including UE network capability with at least one MUSIM feature is set to "support"?	-->	REGISTRATION REQUEST	-	P
4-19	Steps 5 to 20a1 of the generic procedure for NR RRC_IDLE specified in clause 4.5.2 are performed.	-	-	-	-
20	The SS configures: - NGC Cell G as a "Serving cell".	-	-	-	-
-	The following messages are to be observed on NGC Cell G unless explicitly stated otherwise.	-	-	-	-
21	Check: Does UE with USIM configuration 6.4.1-28 transmit REGISTRATION REQUEST message including UE network capability with at least one MUSIM feature is set to "support"?	-->	REGISTRATION REQUEST	-	P
22-37	Steps 5 to 20a1 of the generic procedure for NR RRC_IDLE specified in clause 4.5.2 are performed.	-	-	-	-

4.9.36.3 Specific message contents

Table 4.9.36.3-1: Message REGISTRATION REQUEST (steps 3 and 21, Table 4.9.36.2.2-1)

Derivation path: Table 4.7.1-6			
Information Element	Value/Remark	Comment	Condition
5GMM capability			
All octets with the exception of octet 6, bit 5 to bit 8	Any allowed value		
N1 NAS signalling connection release (NCR) (octet 6, bit 5)	'1'B	N1 NAS signalling connection release supported	pc_5GC_M USIM_NCR
Paging indication for voice services (PIV) (octet 6, bit 6)	'1'B	paging indication for voice services is supported	pc_5GC_M USIM_PIV
Reject paging request (RPR) (octet 6, bit 7)	'1'B	reject paging request supported	pc_5GC_M USIM_RPR
Paging restriction (PR) (octet 6, bit 8)	'1'B	paging restriction is supported	pc_5GC_M USIM_PR

Table 4.9.36.3-2: Message REGISTRATION ACCEPT (steps 13 and 31, Table 4.9.36.2.2-1)

Derivation path: Table 4.7.1-7			
Information Element	Value/Remark	Comment	Condition
5GS network feature support	'0000 0101 0000 0000 0111 1000'B		

4.9.37 Test procedure for MBS Multicast session release

4.9.37.1 Scope

The purpose of this procedure is to release a multicast MBS session from NW.

4.9.37.2 Procedure description

4.9.37.2.1 Initial conditions

System Simulator:

- 1 NR Cell connected to 5GC, default parameters.

User Equipment:

- The UE is in state 3N-A.

4.9.37.2.2 Procedure sequence

Table 4.9.37.2.2-1: Procedure for MBS Multicast session release

St	Procedure	Message Sequence		TP	Verdict
		U - S	Message/PDU/SDU		
1	The SS transmits an RRCReconfiguration message and a PDU SESSION MODIFICATION COMMAND.	<--	NR RRC: RRCReconfiguration 5GMM: DL NAS TRANSPORT 5GSM: PDU SESSION MODIFICATION COMMAND	-	-
-	EXCEPTION: Depending upon UE implementation, steps 2 and 3 can occur in any order.	-	-	-	-
2	The UE transmits an RRCReconfigurationComplete message.	-->	NR RRC: RRCReconfigurationComplete	-	-
3	The UE transmits an ULInformationTransfer message and a PDU SESSION MODIFICATION COMPLETE message.	-->	NR RRC: ULInformationTransfer 5GMM: UL NAS TRANSPORT 5GSM: PDU SESSION MODIFICATION COMPLETE	-	-

4.9.37.3 Specific message contents

Table 4.9.37.3-1: RRCReconfiguration (step 1, Table 4.9.37.2.2-1)

Derivation Path: Table 4.6.1-13.			
Information Element	Value/remark	Comment	Condition
RRCReconfiguration ::= SEQUENCE {			
criticalExtensions CHOICE {			
rrcReconfiguration SEQUENCE {			
radioBearerConfig SEQUENCE {			
mrbs-ToReleaseList-r17 SEQUENCE (SIZE (1..maxMRB-r17)) OF MRB-Identity-r17	1 entry		
MRB-Identity[1]	MRB-Identity linked to the MBS Session to be released		
}			
}			
nonCriticalExtension SEQUENCE {			
masterCellGroup SEQUENCE {			
rlc-BearerToReleaseList SEQUENCE (SIZE (1..maxLC-ID)) OF LogicalChannelIdentity {	1 entry or 2 entries		
logicalChannelIdentity[1]	logicalChannelIdentity for PTP linked to MRB-Identity [1], if configured	entry 1	

logicalChannelIdentity[2]	logicalChannelIdentity for PTM linked to MRB-Identity [1], if configured	entry 2	
}			
}			
dedicatedNAS-MessageList SEQUENCE (SIZE(1..maxDRB)) OF DedicatedNAS-Message {}	DedicatedNAS-Message		
}			
}			
}			
}			

Table 4.9.37.3-2: PDU SESSION MODIFICATION COMMAND (step 1, Table 4.9.37.2.2-1)

Derivation Path: Table 4.7.2-9.			
Information Element	Value/remark	Comment	Condition
Received MBS container			
Received MBS information			
Rejection cause	'110'B	MBS session is released	
MSAI	'00'B	MBS service area not included	
MD	'100'B	Remove UE from MBS session	
MSCI	'0'B	MBS security container not included	
MTI	'00'B	No MBS timers included	
IPAE	'0'B	Source and destination IP address information not included	
TMGI			
MBMS Service ID	'000101'B		
MCC	See table 4.4.2-3		
MNC	See table 4.4.2-3		
Source IP address information	Not present		
Destination IP address information	Not present		
MBS service area	Not present		
MBS timers	Not present		
MBS security container	Not present		

4.9.38 Test procedure to check TMGI and associated MRB reception in a multicast MBS session

4.9.38.1 Scope

The purpose of this procedure is to check that a TMGI for a multicast MBS session is valid and the MRB associated with the TMGI could be successfully received by UE in the multicast MBS session.

4.9.38.2 Procedure description

4.9.38.2.1 Initial conditions

System Simulator:

- 1 NR Cell connected to 5GC, default parameters.

User Equipment:

- The UE is in state 1N-A.

4.9.38.2.2 Procedure sequence

Table 4.9.38.2.2-1: Procedure to check TMGI and associated MRB reception in a multicast MBS session

St	Procedure	Message Sequence		TP	Verdict
		U - S	Message/PDU/SDU		
1	The SS transmits a <i>Paging</i> message including TMGI.	<--	NR RRC: <i>Paging</i>	-	-
2-8	Steps 2 to 8 of the NR RRC_CONNECTED procedure in Table 4.5.4.2-3 to complete service procedure.	-	-	-	-
9	The SS transmits an <i>RRCReconfiguration</i> message to establish MRB.	<--	NR RRC: <i>RRCReconfiguration</i>	-	-
10	The UE transmits an <i>RRCReconfigurationComplete</i> message.	-->	NR RRC: <i>RRCReconfigurationComplete</i>	-	-
11a1 - 11a2	Steps 9a1 to 9a2 of the NR RRC_CONNECTED procedure in Table 4.5.4.2-3 are executed with condition UE TEST LOOP MODE C and Multicast MRB.	-	-	-	-
12	The SS transmits a MBS Packet on Multicast MRB associated with TMGI in the step 1.	<--	MBS Packet.	-	-
13	The SS transmits an UE TEST LOOP MODE C MBMS PACKET COUNTER REQUEST message.	<--	NR RRC: <i>DLInformationTransfer</i> TC: UE TEST LOOP MODE C MBMS PACKET COUNTER REQUEST	-	-
14	UE responds with UE TEST LOOP MODE C MBMS PACKET COUNTER RESPONSE.	-->	NR RRC: <i>ULInformationTransfer</i> TC: UE TEST LOOP MODE C MBMS PACKET COUNTER RESPONSE	-	-
15	Check: Is the number of reported MBS Packets received on the MRB in step 14 equal to 1?	-	-	-	P

4.9.38.3 Specific message contents

Table 4.9.38.3-1: *Paging* (step 1, Table 4.9.38.2.2-1)

Derivation Path: Table 4.6.1-9 with condition TMGI			
Information Element	Value/remark	Comment	Condition
<i>Paging</i> ::= SEQUENCE {			
<i>pagingRecordList</i>	Not present		
<i>nonCriticalExtension</i> SEQUENCE {			
<i>pagingGroupList-r17</i> SEQUENCE (SIZE(1..maxNrofPageGroup-r17)) OF TMGI-r17 {	1 entry		
TMGI-r17[1]	TMGI	entry 1	
}			
}			
}			

Table 4.9.38.3-2: *RRCReconfiguration* (step 9, Table 4.9.38.2.2-1)

Derivation Path: Table 4.6.1-13 with condition NR			
Information Element	Value/remark	Comment	Condition
<i>RRCReconfiguration</i> ::= SEQUENCE {			
<i>criticalExtensions</i> CHOICE {			
<i>rrcReconfiguration</i> ::= SEQUENCE {			

radioBearerConfig	RadioBearerConfig with condition MRBm and UM_PTM	m=1	
nonCriticalExtension SEQUENCE {			
masterCellGroup	CellGroupConfig with condition MRBm and UM_PTM	m=1	
}			
}			
}			
}			

Table 4.9.38.3-3: CLOSE UE TEST LOOP (step 11a1, Table 4.9.38.2.2-1)

Derivation Path: Clause 4.7A.2, condition UE TEST LOOP MODE C and Multicast MRB

Table 4.9.38.3-4: UE TEST LOOP MODE C MBMS PACKET COUNTER REQUEST (step 13, Table 4.9.38.2.2-1)

Derivation Path: TS 36.508 [2], Table 4.7A-9

4.9.39 Test procedure for establishing unicast mode ProSe Direct communication / Initiating UE side

4.9.39.1 Scope

The purpose of this procedure is for establishing unicast mode ProSe Direct communication / Initiating UE side.

4.9.39.2 Procedure description

4.9.39.2.1 Initial conditions

The UE is in state 1N-B, 3N-B or 4-A.

4.9.39.2.2 Procedure sequence

Table 4.9.39.2.2-1: Procedure for establishing unicast mode ProSe Direct communication / Initiating UE side

St	Procedure	Message Sequence	
		U – S	Message
-	EXCEPTION: Steps 1a1 to 1b2 describe behaviour which depends on procedure parameters; the "lower case letter" identifies a step sequence that takes place if a procedure parameter has a particular value.	-	-
1a1	IF the UE is in state 1N-B or 4-A THEN the UE is configured by upper layer to establish unicast mode link. NOTE: This can be done by sending AT COMMAND +CCUTLE to close test loop function.	-	-
1b1	ELSE IF the UE is in state 3N-B THEN the SS transmits a CLOSE UE TEST LOOP message.	<--	TC: CLOSE UE TEST LOOP
1b2	The UE transmits a CLOSE UE TEST LOOP COMPLETE message.	-->	TC: CLOSE UE TEST LOOP COMPLETE
2	The UE sends a PROSE DIRECT LINK ESTABLISHMENT REQUEST message.	-->	PC5-S: PROSE DIRECT LINK ESTABLISHMENT REQUEST
3	The NR-SS-UE sends a PROSE DIRECT LINK SECURITY MODE COMMAND message.	<--	PC5-S: PROSE DIRECT LINK SECURITY MODE COMMAND
4	The UE sends a PROSE DIRECT LINK SECURITY MODE COMPLETE message.	-->	PC5-S: PROSE DIRECT LINK SECURITY MODE COMPLETE

5	The NR-SS-UE sends a PROSE DIRECT LINK ESTABLISHMENT ACCEPT message.	<--	PC5-S: PROSE DIRECT LINK ESTABLISHMENT ACCEPT
6	The UE sends an RRCReconfigurationSidelink message to establish a unicast mode SL-DRB. NOTE: Unless specifically specified in the test case prose, the UE shall select the DRB parameters as specified in the pre-configured parameters.	-->	PC5-RRC: RRCReconfigurationSidelink
7	The NR-SS-UE sends an RRCReconfigurationCompleteSidelink message.	<--	PC5-RRC: RRCReconfigurationCompleteSidelink
-	EXCEPTION: Steps 8a1 to 8b2 describe behaviour which depends on procedure parameters; the "lower case letter" identifies a step sequence that takes place if a procedure parameter has a particular value.	-	-
8a1	IF the UE is in state 1N-B or 4-A THEN the SS sends AT COMMAND +CCUTLE to open test loop function	-	-
8b1	ELSE IF the UE is in state 3N-B THEN the SS transmits an OPEN UE TEST LOOP message.	<--	TC: OPEN UE TEST LOOP
8b2	The UE transmits an OPEN UE TEST LOOP COMPLETE message.	-->	TC: OPEN UE TEST LOOP COMPLETE

4.9.39.3 Specific message contents

All specific message contents shall be according to subclause 4.6, 4.7 and 4.7B with the exceptions below.

Table 4.9.39.3-1: +CCUTLE (Step 1a1, Table 4.9.39.2.2-1)

Derivation Path: Table 4.7B-1 with condition Close and Transmit

Table 4.9.39.3-2: CLOSE UE TEST LOOP (Step 1b1, Table 4.9.39.2.2-1)

Derivation Path: 36.508 [2] Table 4.7A-3 with condition UE TEST LOOP MODE E(V2X Transmission)			
Information Element	Value/remark	Comment	Condition
UE test loop mode E LB setup			
Communication Transmit or Receive	0 0 0 0 0 0 1	'01' indicates V2X UE triggered to transmit NR sidelink communication with single spatial layer.	

Table 4.9.39.3-3: PROSE DIRECT LINK ESTABLISHMENT REQUEST (Step 2, Table 4.9.39.2.2-1)

Derivation Path: Table 4.7C.3-1 with condition Tx

Table 4.9.39.3-4: PROSE DIRECT LINK SECURITY MODE COMMAND (Step 3, Table 4.9.39.2.2-1)

Derivation Path: Table 4.7C.3-13 with condition Rx

Table 4.9.39.3-5: PROSE DIRECT LINK SECURITY MODE COMPLETE (Step 4, Table 4.9.39.2.2-1)

Derivation Path: Table 4.7C.3-14 with condition Tx

Table 4.9.39.3-6: PROSE DIRECT LINK ESTABLISHMENT ACCEPT (Step 5, Table 4.9.39.2.2-1)

Derivation Path: Table 4.7C.3-2 with condition Rx

Table 4.9.39.3-7: RRCReconfigurationSidelink (Step 6, Table 4.9.39.2.2-1)

Derivation Path: Table 4.6.1A-3 with condition TX

Table 4.9.39.3-8: RRCReconfigurationCompleteSidelink (Step 7, Table 4.9.39.2.2-1)

Derivation Path: Table 4.6.1A-4 with condition RX

Table 4.9.39.3-9: +CCUTLE (Step 8a1, Table 4.9.39.2.2-1)

Derivation Path: Table 4.7B-1 with condition Open

4.9.40 Test procedure for establishing unicast mode ProSe Direct communication / Peer UE side

4.9.40.1 Scope

The purpose of this procedure is for establishing unicast mode ProSe Direct communication / Peer UE side.

4.9.40.2 Procedure description

4.9.40.2.1 Initial conditions

The UE is in state 1N-B, 3N-B or 4-A.

4.9.40.2.2 Procedure sequence

Table 4.9.40.2.2-1: Procedure for establishing unicast mode ProSe Direct communication / Peer UE side

St	Procedure	Message Sequence	
		U – S	Message
1	The NR-SS-UE sends a PROSE DIRECT LINK ESTABLISHMENT REQUEST message.	<--	PC5-S: PROSE DIRECT LINK ESTABLISHMENT REQUEST
2	The UE sends a PROSE DIRECT LINK SECURITY MODE COMMAND message.	-->	PC5-S: PROSE DIRECT LINK SECURITY MODE COMMAND
3	The NR-SS-UE sends a PROSE DIRECT LINK SECURITY MODE COMPLETE message.	<--	PC5-S: PROSE DIRECT LINK SECURITY MODE COMPLETE
4	The UE sends a PROSE DIRECT LINK ESTABLISHMENT ACCEPT message.	-->	PC5-S: PROSE DIRECT LINK ESTABLISHMENT ACCEPT
5	The NR-SS-UE sends an RRCReconfigurationSidelink message to establish a unicast mode SL-DRB.	<--	PC5-RRC: RRCReconfigurationSidelink
6	The UE sends an RRCReconfigurationCompleteSidelink message.	-->	PC5-RRC: RRCReconfigurationCompleteSidelink

4.9.40.3 Specific message contents

All specific message contents shall be according to subclause 4.6 and 4.7B.

Table 4.9.40.3-1: PROSE DIRECT LINK ESTABLISHMENT REQUEST (Step 1, Table 4.9.40.2.2-1)

Derivation Path: Table 4.7C.3-1 with condition Rx

Table 4.9.40.3-2: PROSE DIRECT LINK SECURITY MODE COMMAND (Step 2, Table 4.9.40.2.2-1)

Derivation Path: Table 4.7C.3-13 with condition Tx

Table 4.9.40.3-3: PROSE DIRECT LINK SECURITY MODE COMPLETE (Step 3, Table 4.9.40.2.2-1)

Derivation Path: Table 4.7C.3-14 with condition Rx

Table 4.9.40.3-4: PROSE DIRECT LINK ESTABLISHMENT ACCEPT (Step 4, Table 4.9.40.2.2-1)

Derivation Path: Table 4.7C.3-2 with condition Tx

Table 4.9.40.3-5: RRCReconfigurationSidelink (Step 5, Table 4.9.40.2.2-1)

Derivation Path: Table 4.6.1A-3 with condition RX

Table 4.9.40.3-6: RRCReconfigurationCompleteSidelink (Step 6, Table 4.9.40.2.2-1)

Derivation Path: Table 4.6.1A-4 with condition Tx

4.9.41 Test procedure for 5G ProSe Layer-2 U2N Relay initial access / Relay UE side

4.9.41.1 Scope

The purpose of this procedure is to test relay UE's behaviour during 5G ProSe Layer-2 U2N Relay Initial Access procedure.

4.9.41.2 Procedure description

4.9.41.2.1 Initial conditions

The UE is in state 3N-A.

4.9.41.2.2 Procedure sequence

Table 4.9.41.2.2-1: Procedure for 5G ProSe Layer-2 U2N Relay initial access / Relay UE side

St	Procedure	Message Sequence		TP	Verdict
		U - S	Message		
1	Procedure for The UE initiated 5G ProSe U2N Relay Discovery, procedure specified in subclause 4.9.43 is performed.			-	-
-	EXCEPTION: Steps 2a1 and 2b1 describe the SS sequence depending on procedure parameters; the "lower case letter" identifies a step sequence that take place if a procedure parameter has a particular value.	-	-	-	-
2a1	IF Cast type = Unicast AND UE initiated unicast mode ProSe Direct communication THEN generic procedure specified in subclause 4.9.39 is performed to establish unicast mode sidelink communication between the UE and the NR-SS-UE.	-	-	-	-
2b1	ELSE IF Cast type = Unicast AND NR-SS-UE initiated unicast mode ProSe Direct communication THEN generic procedure specified in subclause 4.9.40 is performed to establish unicast mode sidelink communication between the UE and the NR-SS-UE.	-	-	-	-
3	The NR-SS-UE1 transmits an <i>RRCSetupRequest</i> message via Relay UE.	<--	PC5 Relay RLC Channel: <i>RRCSetupRequest</i>	-	-

4	The UE transmits a <i>SidelinkUEInformationNR</i> message to SS-NW.	-->	NR RRC: <i>SidelinkUEInformationNR</i>	-	-
5	The SS-NW transmits an <i>RRCReconfiguration</i> message to configure the Uu Relay RLC channels and PC5 Relay RLC channels and bearer mapping for relaying of U2N Remote UE's SRB0/1.	<--	NR RRC: <i>RRCReconfiguration</i>	-	-
6	The UE transmits an <i>RRCReconfigurationComplete</i> message	-->	NR RRC: <i>RRCReconfigurationComplete</i>	-	-
7	The UE relays the <i>RRCSetupRequest</i> message received at step 3.	-->	Uu Relay RLC Channel: <i>RRCSetupRequest</i>	-	-
8	The SS-NW transmits an <i>RRCSetup</i> message to L2 U2N Remote UE via Relay UE.	<--	Uu Relay RLC Channel: <i>RRCSetup</i>	-	-
9	The UE relays the <i>RRCSetup</i> message received at step 8 to NR-SS-UE1.	-->	PC5 Relay RLC Channel: <i>RRCSetup</i>	-	-
10	The NR-SS-UE1 transmits an <i>RRCSetupComplete</i> message and a REGISTRATION REQUEST message via Relay UE.	<--	PC5 Relay RLC Channel: <i>RRCSetupComplete</i> 5GMM: REGISTRATION REQUEST	-	-
11	The UE relays the <i>RRCSetupComplete</i> message received at step 10 and a REGISTRATION REQUEST message to SS-NW.	-->	Uu Relay RLC Channel: <i>RRCSetupComplete</i>	-	-
12	The NR-SS-UE1 transmits an <i>RemoteUEInformationSidelink</i> message with sl-PagingInfo-RemoteUE set to release.	<--	PC5 RRC: <i>RemoteUEInformationSidelink</i>	-	-
13	The SS-NW transmits an <i>SecurityModeCommand</i> message to L2 U2N Remote UE via Relay UE.	<--	Uu Relay RLC Channel: <i>SecurityModeCommand</i>	-	-
14	The UE relays the <i>SecurityModeCommand</i> message to NR-SS-UE1.	-->	PC5 Relay RLC Channel: <i>SecurityModeCommand</i>	-	-
15	The NR-SS-UE1 transmits an <i>SecurityModeComplete</i> message via Relay UE.	<--	PC5 Relay RLC Channel: <i>SecurityModeComplete</i>	-	-
16	The UE relays the <i>SecurityModeComplete</i> message to SS-NW.	-->	Uu Relay RLC Channel: <i>SecurityModeComplete</i>	-	-
17	The SS-NW transmits a <i>DLInformationTransfer</i> message and a REGISTRATION ACCEPT message to L2 U2N Remote UE via Relay UE.	<--	Uu Relay RLC Channel: <i>DLInformationTransfer</i> 5GMM: REGISTRATION ACCEPT	-	-
18	The UE relays the <i>DLInformationTransfer</i> message to NR-SS-UE1.	-->	PC5 Relay RLC Channel: <i>DLInformationTransfer</i>	-	-
19	The NR-SS-UE1 transmits an <i>ULInformationTransfer</i> message and a REGISTRATION COMPLETE message via Relay UE.	<--	PC5 Relay RLC Channel: <i>ULInformationTransfer</i>	-	-
20	The UE relays the <i>ULInformationTransfer</i> message to SS-NW.	-->	Uu Relay RLC Channel: <i>ULInformationTransfer</i>	-	-
21	The NR-SS-UE1 transmits <i>ULInformationTransfer</i> message and a PDU SESSION ESTABLISHMENT REQUEST via Relay UE.	-->	PC5 Relay RLC Channel: <i>ULInformationTransfer</i> 5GMM: UL NAS TRANSPORT 5GSM: PDU SESSION ESTABLISHMENT REQUEST	-	-
22	The SS-NW transmits an <i>RRCReconfiguration</i> message to configure SRB2/DRB1 and an PDU SESSION ESTABLISHMENT ACCEPT to L2 U2N Remote UE via Relay UE.	<--	NR RRC: <i>RRCReconfiguration</i> 5GMM: DL NAS TRANSPORT 5GSM: PDU SESSION ESTABLISHMENT ACCEPT	-	-
23	The UE relays the <i>RRCReconfiguration</i> message to NR-SS-UE1.	-->	PC5 Relay RLC Channel: <i>RRCReconfiguration</i>	-	-
24	The NR-SS-UE1 transmits an <i>RRCReconfigurationComplete</i> message via Relay UE.	<--	PC5 Relay RLC Channel: <i>RRCReconfigurationComplete</i>	-	-
25	The UE relays the <i>RRCReconfigurationComplete</i> message to SS-NW.	-->	Uu Relay RLC Channel: <i>RRCReconfigurationComplete</i>	-	-
26	The SS-NW transmits an <i>RRCReconfiguration</i> message to configure the Uu Relay RLC	<--	NR RRC: <i>RRCReconfiguration</i>	-	-

	channels and PC5 Relay RLC channels and bearer mapping for relaying of U2N Remote UE's SRB2/DRB1.				
27	The UE transmits an RRCReconfigurationSidelink message to NR-SS-UE1 to indicate PC5 Relay RLC channel addition?	-->	PC5 RRC: RRCReconfigurationSidelink	-	-
28	NR-SS-UE1 transmits an RRCReconfigurationCompleteSidelink message.	<--	PC5 RRC: RRCReconfigurationCompleteSidelink	-	-
29	The UE transmits an RRCReconfigurationComplete message to SS-NW.	-->	NR RRC: RRCReconfigurationComplete	-	-

4.9.41.3 Specific message contents

Table 4.9.41.3-1: RRCSetupRequest (Steps 3 and 7, Table 4.9.41.2.2-1)

Derivation Path: Table 4.6.1-23 with condition L2RemoteUE

Table 4.9.41.3-2: SidelinkUEInformationNR (Step 4, Table 4.9.41.2.2-1)

Derivation Path: Table 4.6.1-28A with condition L2RelayUE

Table 4.9.41.3-3: RRCReconfiguration (Step 5, Table 4.9.41.2.2-1)

Derivation path: Table 4.6.1-13 with condition L2RelayUE and uuRelaySRB0_SRB1

Table 4.9.41.3-4: RemoteUEInformationSidelink (Step 12, Table 4.9.41.2.2-1)

Derivation Path: Table 4.6.1A-2A with condition Paging_Release

Table 4.9.41.3-5: RRCReconfiguration (Step 26, Table 4.9.41.2.2-1)

Derivation Path: Table 4.6.1-13 with condition L2RelayUE and uuRelaySRB2_DRB1 and PC5RelaySRB2_DRB1

Table 4.9.41.3-6: RRCReconfiguration (Step 22, Table 4.9.41.2.2-1)

Derivation path: Table 4.6.1-13 with condition L2RemoteUE			
Information Element	Value/remark	Comment	Condition
RRCReconfiguration ::= SEQUENCE {			
criticalExtensions CHOICE {			
rrcReconfiguration ::= SEQUENCE {			
radioBearerConfig	RadioBearerConfig with conditions SRB2 and DRB1		
nonCriticalExtension SEQUENCE {			
masterCellGroup	Not present		
dedicatedNAS-MessageList SEQUENCE (SIZE(1..maxDRB)) OF DedicatedNAS-Message {}	DedicatedNAS-Message		
}			
}			
}			
}			

Table 4.9.41.3-7: *RRCReconfigurationSidelink* (Step 27, Table 4.9.41.2.2-1)

Derivation path: TS 38.508-1 [4], Table 4.6.1A-3 with condition TX and L2RelayUE

Table 4.9.41.3-8: *RRCReconfigurationCompleteSidelink* (Step 28, Table 4.9.41.2.2-1)

Derivation path: TS 38.508-1 [4], Table 4.6.1A-4 with condition RX

4.9.42 Test procedure for 5G ProSe Layer-2 U2N Relay initial access / Remote UE side

4.9.42.1 Scope

The purpose of this procedure is to test remote UE behaviour during 5G ProSe Layer-2 U2N Relay Initial Access procedure.

4.9.42.2 Procedure description

4.9.42.2.1 Initial conditions

UE is authorised to perform NR sidelink communication.

4.9.42.2.2 Procedure sequence

Table 4.9.42.2.2-1: Procedure for 5G ProSe Layer-2 U2N Relay initial access / Remote UE side

St	Procedure	Message Sequence		TP	Verdict
		U - S	Message		
1-2	Steps 1a1 to 1A of the generic procedure in Table 4.5.7.2-1 are performed.	-	-	-	-
3	Steps 11a3a1 to 11a3b2 of the procedure for 5G ProSe U2N Relay Discovery specified in subclause 4.9.43 is performed.	-	-	-	-
-	EXCEPTION: Steps 4a1 and 4b1 describe the SS sequence depending on procedure parameters; the "lower case letter" identifies a step sequence that take place if a procedure parameter has a particular value.	-	-	-	-
4a1	IF Cast type = Unicast AND UE initiated unicast mode ProSe Direct communication THEN generic procedure specified in subclause 4.9.39 is performed to establish unicast mode ProSe Direct communication between the UE and the NR-SS-UE.	-	-	-	-
4b1	ELSE IF Cast type = Unicast AND NR-SS-UE initiated unicast mode ProSe Direct communication THEN generic procedure specified in subclause 4.9.40 is performed to establish unicast mode ProSe Direct communication between the UE and the NR-SS-UE.	-	-	-	-
5	The UE transmit an <i>RemoteUEInformationSidelink</i> message including <i>sl-RequestedSIB-List-r17</i> to setup?	-->	PC5 RRC: <i>RemoteUEInformationSidelink</i>	-	-
6	The NR-SS-UE1 transmits a <i>UuMessageTransferSidelink</i> message to deliver SIBs requested at step 5.	<--	PC5 RRC: <i>UuMessageTransferSidelink</i>	-	-
7	The UE transmits an <i>RRCSetupRequest</i> message.	-->	PC5 Relay RLC Channel: <i>RRCSetupRequest</i>	-	-

8	The NR-SS-UE transmits an <i>RRCSetup</i> message.	<--	PC5 Relay RLC Channel: <i>RRCSetup</i>	-	-
-	EXCEPTION: Steps 9 and 10 can be performed in any order.	-	-	-	-
9	The UE transmits an <i>RRCSetupComplete</i> message and a REGISTRATION REQUEST message.	-->	PC5 Relay RLC Channel: <i>RRCSetupComplete</i> 5GMM: REGISTRATION REQUEST	-	-
10	The UE transmit an <i>RemoteUEInformationSidelink</i> message with <i>sl-RequestedSIB-List-r17</i> to the value release?	-->	PC5 RRC: <i>RemoteUEInformationSidelink</i>	-	-
11	The NR-SS-UE transmits a <i>DLInformationTransfer</i> message and an AUTHENTICATION REQUEST message.	<--	PC5 Relay RLC Channel: <i>DLInformationTransfer</i> 5GMM: AUTHENTICATION REQUEST	-	-
12	The UE transmits an <i>ULInformationTransfer</i> message and an AUTHENTICATION RESPONSE message.	-->	PC5 Relay RLC Channel: <i>ULInformationTransfer</i> 5GMM: AUTHENTICATION RESPONSE	-	-
13	The NR-SS-UE transmits a <i>DLInformationTransfer</i> message and a SECURITY MODE COMMAND message.	<--	PC5 Relay RLC Channel: <i>DLInformationTransfer</i> 5GMM: SECURITY MODE COMMAND	-	-
14	The UE transmits an <i>ULInformationTransfer</i> message and a SECURITY MODE COMPLETE message.	-->	PC5 Relay RLC Channel: <i>ULInformationTransfer</i> 5GMM: SECURITY MODE COMPLETE	-	-
15	The NR-SS-UE transmits a <i>SecurityModeCommand</i> message.	<--	PC5 Relay RLC Channel: <i>SecurityModeCommand</i>	-	-
16	The UE transmits a <i>SecurityModeComplete</i> message.	-->	PC5 Relay RLC Channel: <i>SecurityModeComplete</i>	-	-
17	The NR-SS-UE transmits a <i>UECapabilityEnquiry</i> message.	<--	PC5 Relay RLC Channel: <i>UECapabilityEnquiry</i>	-	-
18	The UE transmits a <i>UECapabilityInformation</i> message.	-->	PC5 Relay RLC Channel: <i>UECapabilityInformation</i>	-	-
19	The NR-SS-UE transmits a <i>DLInformationTransfer</i> message and a REGISTRATION ACCEPT message.	<--	PC5 Relay RLC Channel: <i>DLInformationTransfer</i> 5GMM: REGISTRATION ACCEPT	-	-
20	The UE transmits a <i>ULInformationTransfer</i> message and a REGISTRATION COMPLETE message.	-->	PC5 Relay RLC Channel: <i>ULInformationTransfer</i> 5GMM: REGISTRATION COMPLETE	-	-
-	EXCEPTION: Steps 21a1-21a3 describe behaviour depending on UE implementation; the "lower case letter" identifies a step sequence that takes place if the UE performs a specific action.	-	-	-	-
21a1	IF <i>pc_noOf_PDUsSameConnection_Relay</i> > 0 THEN the generic procedure for UE requested PDU session establishment, specified in subclause 4.5A.2, takes place performing establishment of UE-requested PDU session(s) with <i>ExpectedNumberOfNewPDUSessions</i> = <i>pc_noOf_PDUsSameConnection_Relay</i> .	-	-	-	-
21a2	The NR-SS-UE transmits an <i>RRCReconfigurationSidelink</i> message to add a PC5 Relay RLC channel.	<--	PC5 RRC: <i>RRCReconfigurationSidelink</i>	-	-
21a3	The UE sends an <i>RRCReconfigurationCompleteSidelink</i> message.	-->	PC5 RRC: <i>RRCReconfigurationCompleteSidelink</i>	-	-
-	EXCEPTION: Steps 22a1-22a2 depends on the SS sequence depending on procedure parameters; the "lower case letter" identifies a step sequence that takes place if a procedure parameter has a particular value.	-	-	-	-

22a1	IF <i>connected without release</i> is not present THEN, the NR-SS-UE transmits an <i>RRCRelease</i> message.	<--	PC5 Relay RLC Channel: <i>RRCRelease</i>	-	-
22a2	The UE transmit an <i>RemoteUEInformationSidelink</i> message including <i>sl-PagingInfo-RemoteUE</i> to setup with ng-5G-S-TMSI?	-->	PC5 RRC: <i>RemoteUEInformationSidelink</i>	-	-

4.9.42.3 Specific message contents

All specific message contents shall be according subclause 4.6 with the exceptions below.

Table 4.9.42.3-1: *RRCReconfiguration* (Step 21a1, Table 4.9.42.2.2-1)

Derivation path: Table 4.6.1-13 with condition L2RemoteUE			
Information Element	Value/remark	Comment	Condition
<i>RRCReconfiguration</i> ::= SEQUENCE {			
criticalExtensions CHOICE {			
rrcReconfiguration ::= SEQUENCE {			
radioBearerConfig	RadioBearerConfig with conditions SRB2 and DRB1		
nonCriticalExtension SEQUENCE {			
masterCellGroup	Not present		
dedicatedNAS-MessageList SEQUENCE (SIZE(1..maxDRB)) OF DedicatedNAS-Message {	DedicatedNAS-Message		
}			
}			
}			
}			

Table 4.9.42.3-2: *RRCReconfigurationSidelink* (Step 21a2, Table 4.9.42.2.2-1)

Derivation path: TS 38.508-1 [4], Table 4.6.1A-3 with condition RX and L2RelayUE

Table 4.9.42.3-3: *RRCReconfigurationCompleteSidelink* (Step 21a3, Table 4.9.42.2.2-1)

Derivation path: TS 38.508-1 [4], Table 4.6.1A-4 with condition TX

Table 4.9.42.3-4: *RRCRelease* (Step 22a1, Table 4.9.42.2.2-1)

Derivation path: Table 4.6.1-16 with condition L2RemoteUE

4.9.43 Test procedure for 5G ProSe U2N Relay Discovery

4.9.43.1 Scope

The purpose of this procedure is for 5G ProSe U2N Relay Discovery.

4.9.43.2 Procedure description

The HTTP signalling between the UE and the 5G DDNMF is done over TLS i.e. the UE connects to TCP port 443 (HTTPS) and starts TLS handshake.

4.9.43.2.1 Initial conditions

UE is authorised to perform NR sidelink communication.

4.9.43.2.2 Procedure description

Table 4.9.43.2.2-1: Procedure for 5G ProSe U2N Relay Discovery

St	Procedure	Message Sequence		TP	Verdict
		U - S	Message		
1	The UE transmits a ClientHello message including PSK-based ciphersuites.	-->	TLS: ClientHello	-	-
2	The SS transmits the ServerHello, ServerKeyExchange and ServerHelloDone messages indicating GBA as required.	<--	TLS: ServerHello TLS: ServerKeyExchange TLS: ServerHelloDone	-	-
3-6	The generic procedure for GBA authentication according TS 34.229-5 [47] subclause A.22 (steps 1-4) takes place.	-	-	-	-
7	The UE transmits the ClientKeyExchange including a PSK identity, ChangeCipherSpec and Finished messages.	-->	TLS: ClientKeyExchange TLS: ChangeCipherSpec TLS: Finished	-	-
8	The SS transmits the ChangeCipherSpec and Finished messages.	<--	TLS: ChangeCipherSpec TLS: Finished	-	-
9	The UE transmits a DISCOVERY_REQUEST message over the PC3a interface.	-->	HTTP Request containing DISCOVERY_REQUEST	-	-
10	The SS transmits a DISCOVERY_RESPONSE message over the PC3a interface.	<--	HTTP Response containing DISCOVERY_RESPONSE	-	-
-	EXCEPTION: Steps 11a1 to 11b1b2 describe behaviour which depends on procedure parameters; the "lower case letter" identifies a step sequence that take place if a procedure parameter has a particular value.	-	-	-	-
11a1	IF L2RemoteUE THEN The UE transmits a MATCH_REPORT message over the PC3a interface.	-->	HTTP Request containing MATCH_REPORT	-	-
11a2	The SS transmits a MATCH_REPORT_ACK message over the PC3a interface.	<--	HTTP Response containing MATCH_REPORT_ACK	-	-
-	EXCEPTION: Steps 11a3a1 to 11a3b2 describe behaviour which depends on procedure parameters; the "lower case letter" identifies a step sequence that take place if a procedure parameter has a particular value.	-	-	-	-
11a3 a1	IF L2RemoteUE AND Model A THEN The SS transmits PROSE PC5 DISCOVERY message for UE-to-Network Relay Discovery Announcement with RRC container.	<--	PC5-D: PROSE PC5 DISCOVERY (for UE-to-Network Relay Discovery Announcement)	-	-
11a3 b1	IF L2RemoteUE AND Model B THEN The UE transmits a PROSE PC5 DISCOVERY message for UE-to-Network Relay Discovery Solicitation.	-->	PC5-D: PROSE PC5 DISCOVERY (for UE-to-Network Relay Discovery Solicitation)	-	-
11a3 b2	The SS transmits a PROSE PC5 DISCOVERY message for UE-to-Network Relay Discovery Response with RRC container.	<--	PC5-D: PROSE PC5 DISCOVERY (for UE-to-Network Relay Discovery Response)	-	-
-	EXCEPTION: Steps 11b1a1 to 11b1b2 describe behaviour which depends on procedure parameters; the "lower case letter" identifies a step sequence that take place if a procedure parameter has a particular value.	-	-	-	-
11b1 a1	IF L2RelayUE AND Model A THEN The UE transmits PROSE PC5 DISCOVERY message for UE-to-Network Relay Discovery Announcement with RRC container.	-->	PC5-D: PROSE PC5 DISCOVERY (for UE-to-Network Relay Discovery Announcement)	-	-
11b1 b1	IF L2RelayUE AND Model B THEN	<--	PC5-D: PROSE PC5 DISCOVERY (for UE-to-Network Relay Discovery Solicitation)	-	-

	The SS transmits a PROSE PC5 DISCOVERY message for UE-to-Network Relay Discovery Solicitation.				
11b1 b2	The UE transmits a PROSE PC5 DISCOVERY message for UE-to-Network Relay Discovery Response with RRC container.	-->	PC5-D: PROSE PC5 DISCOVERY (for UE-to-Network Relay Discovery Response)	-	-

4.9.43.3 Specific message contents

5G ProSe specific message contents shall be referred to clause 4.7C.

HTTP specific message contents shall be referred to clause 4.7E.

TLS specific message contents shall be referred to clause 4.7F.

Further specific message contents shall be referred to clause 4.6 and 4.7.

4.9.44 Test procedure for UUAA-MM

4.9.44.1 Scope

This procedure aims to cover the UUAA-MM procedure that UEs supporting UAS perform after successful registration.

4.9.44.2 Procedure description

4.9.44.2.1 Initial conditions

User Equipment:

- The UE is capable of UAS operation and has been provisioned with CAA-level UAV ID, the USS addr and the UUAA payload using the AT command +CUUAAPT

NOTE: The +CUUAAPT command is used to request the UE to transport the UUAA parameters to the network. The values to be used for the UUAA parameters shall be the same as those included in the specific message contents.

- The UE has performed steps 1 – 15 of table 4.5.2.2-2.

4.9.44.2.2 Procedure sequence

Table 4.9.44.2.1-1: Test procedure sequence UUAA-MM

St	Procedure	Message Sequence		TP	Verdict
		U - S	Message/PDU/SDU		
-	EXCEPTION: Unless otherwise stated all the messages below are transmitted on the cell specified in the test case.	-	-	-	-
0	Void	-	-	-	-
1	SS sends authentication message based on authentication method used through DL NAS TRANSPORT message to request Authentication. (NOTE 1)	<--	DL NAS TRANSPORT	-	-
2	UE sends authentication message through UL NAS TRANSPORT message in response to authentication request.	-->	UL NAS TRANSPORT	-	-
3	SS sends authentication and authorisation result message through DL NAS TRANSPORT message.	<--	DL NAS TRANSPORT	-	-
4	The SS transmits a CONFIGURATION UPDATE COMMAND message including UAV authorization information.	<--	CONFIGURATION UPDATE COMMAND	-	-

5	UE transmit a CONFIGURATION UPDATE COMPLETE message	-->	CONFIGURATION UPDATE COMPLETE	-	-
6 – 7Ba2	Steps 18 – 19Ba2 of Table 4.5.2.2-2 are performed on NR Cell 1.	-	-	-	-
NOTE 1: The UE may send a PDU SESSION ESTABLISHMENT REQUEST message before receiving the DL NAS TRANSPORT message.					
NOTE 2: Void.					

4.9.44.3 Specific message contents

Table 4.9.44.2.2-1: REGISTRATION REQUEST (Preamble)

Derivation path: Table 4.7.1-6			
Information Element	Value/remark	Comment	Condition
Service-level-AA container	Present		
Service-level-AA parameter		Service-level device ID	
Service-level device ID IEI	'10'H		
Service-level device ID length	'08'H	8 octets	
Service-level device ID	'AABCCDDEEFFAABB'H	configured using AT command	
Service-level-AA parameter		Service-level-AA server address	
Service-level-AA server address IEI	'20'H		
Service-level-AA server address length	'20'H	3 octets	
Service-level-AA server address type	'01'H	IPv4	
Service-level-AA server address	'A B C D'H	2 octets	
Service-level-AA payload type IEI	'40'H		
Service-level-AA payload type length	'01'H	1 octet	
Service-level-AA payload type	'01'H	UUAA payload	
Service-level-AA parameter		Service-level-AA payload	
Service-level-AA payload IEI	'70'H		
Service-level-AA payload length	'0008'H	8 octets	
Service-level-AA payload	'AABCCDDEEFFABAB'H	configured using AT command	

Table 4.9.44.2.2-2: REGISTRATION ACCEPT (Preamble)

Derivation path: Table 4.7.1-7			
Information Element	Value/remark	Comment	Condition
Service-level-AA container			
Service-level-AA pending indication	'1010 0001'B		

Table 4.9.44.2.2-3: UL NAS TRANSPORT (Step 2, Table 4.9.44.2.1-1)

Derivation path: Table 4.7.1-10			
Information Element	Value/remark	Comment	Condition
Payload container type	'1001'B	Service-level-AA container	
Payload container	Present		
Length of payload container contents		4 octets	
Payload container contents			
Service-level-AA container	Present		
Service-level-AA payload type IEI	'40'H		
Service-level-AA payload type length	'01'H	1 octet	
Service-level-AA payload type	'01'H	UUAA payload	
Service-level-AA parameter		Service-level-AA payload	
Service-level-AA payload IEI	'70'H		
Service-level-AA payload length	'0008'H	8 octets	

Service-level-AA payload	'AABBCCDDEEFFABAB' H	configured using AT command	

Table 4.9.44.2.2-4: DL NAS TRANSPORT (Step 1, Step 3, Table 4.9.44.2.1-1)

Derivation path: Table 4.7.1-10			
Information Element	Value/remark	Comment	Condition
Payload container type	'1001'B	Service-level-AA container	
Payload container	Present		
Length of payload container contents		4 octets	
Payload container contents			
Service-level-AA container			Step 1, Step 3
Service-level-AA payload type IEI	'40'H		
Service-level-AA payload type length	'01'H	1 octet	
Service-level-AA payload type	'01'H	UUAA payload	
Service-level-AA parameter		Service-level-AA payload	
Service-level-AA payload IEI	'70'H		
Service-level-AA payload length	'0008'H	8 octets	
Service-level-AA payload	'AABBCCDDEEFFABAB' H	configured using AT command	

Table 4.9.44.2.2-5: CONFIGURATION UPDATE COMMAND (Step 4, Table 4.9.44.2.1-1)

Derivation path: Table 4.7.1-19			
Information Element	Value/remark	Comment	Condition
Configuration update indication	0001	Acknowledgement (ACK) requested	
Service-level-AA container			
Service-level-AA response	'00000001'B	Service level authentication and authorization was successful	

4.9.45 Test procedure to check 5G ProSe L2 U2N Remote UE in RRC_CONNECTED performs an RRC Reestablishment procedure on a certain L2 U2N Relay UE

4.9.45.1 Scope

The purpose aims at checking whether 5G ProSe L2 U2N Remote UE in RRC_CONNECTED performs an RRC Reestablishment procedure on a certain L2 U2N Relay UE (as specified in the test case).

4.9.45.2 Procedure description

4.9.45.2.1 Initial conditions

UE is authorised to perform NR sidelink communication.

4.9.45.2.2 Procedure sequence

Table 4.9.45.2.2-1: Procedure for 5G ProSe Layer-2 U2N Relay / Remote UE RRC Reestablishment / Remote UE side

St	Procedure	Message Sequence		TP	Verdict
		U - S	Message		

1-6	Steps 1 to 6 of the procedure for 5G ProSe Layer-2 U2N Relay initial access / Remote UE side in TS 38.508-1 Table 4.9.42.2.2-1 using parameter Cast Type (Unicast) and NR-SS-UE initiated unicast mode ProSe Direct communication is executed.	-	-	-	-
7	Check: Does the UE transmit an <i>RRCReestablishmentRequest</i> message.	-->	PC5 Relay RLC Channel: <i>RRCReestablishmentRequest</i>	-	P
8	The NR-SS-UE transmits an <i>RRCReestablishment</i> message.	<--	PC5 Relay RLC Channel: <i>RRCReestablishment</i>	-	-
9	The UE transmits an <i>RRCReestablishmentComplete</i> message.	-->	PC5 Relay RLC Channel: <i>RRCReestablishmentComplete</i>	-	-
10	The NR-SS-UE transmits an <i>RRCReconfiguration message to resume existing radio bearer</i> .	<--	PC5 Relay RLC Channel: <i>RRCReconfiguration</i>	-	-
11	The UE transmits an <i>RRCReconfigurationComplete</i> message.	-->	PC5 Relay RLC Channel: <i>RRCReconfigurationComplete</i>	-	-

4.9.45.3 Specific message contents

Table 4.9.45.3-1: *RRCReconfiguration* (Step 10, Table 4.9.45.2.2-1)

Derivation path: Table 4.6.1-13 with condition NR and L2RemoteUE			
Information Element	Value/remark	Comment	Condition
<i>RRCReconfiguration</i> ::= SEQUENCE {			
criticalExtensions CHOICE {			
rrcReconfiguration ::= SEQUENCE {			
radioBearerConfig	RadioBearerConfig with conditions SRB2 and DRB1		
nonCriticalExtension SEQUENCE {			
masterCellGroup	CellGroupConfig with condition SRB2 DRB1		
dedicatedNAS-MessageList SEQUENCE (SIZE(1..maxDRB)) OF DedicatedNAS-Message {}	DedicatedNAS-Message		
}			
}			
}			
}			

4.9.46 Test procedure for adding RTT to a speech call in 5GC

4.9.46.1 Scope

The purpose of this procedure is to add RTT to an established speech call.

4.9.46.2 Procedure description

4.9.46.2.1 Initial conditions

System Simulator:

- 1 NR Cell connected to 5GC, default parameters.

User Equipment:

- The UE is in state 3N-A and registered to the IMS.

4.9.46.2.2 Procedure sequence

Table 4.9.46.2.2-1: IMS RTT call addition in 5GC

St	Procedure	Message Sequence		TP	Verdict
		U – S	Message		
1	The SS transmits an <i>RRCReconfiguration</i> message and a PDU SESSION MODIFICATION COMMAND message.	<--	NR RRC: <i>RRCReconfiguration</i> 5GMM: DL NAS TRANSPORT 5GSM: PDU SESSION MODIFICATION COMMAND	-	-
-	EXCEPTION: Steps 2 and 3 can occur in any order.	-	-	-	-
2	The UE transmits an <i>RRCReconfigurationComplete</i> message	-->	NR RRC: <i>RRCReconfigurationComplete</i>	-	-
3	Check: Does the UE transmit a <i>ULInformationTransfer</i> message, an UL NAS TRANSPORT message and an PDU SESSION MODIFICATION COMPLETE message?	-->	NR RRC: <i>ULInformationTransfer</i> 5GMM: UL NAS TRANSPORT 5GSM: PDU SESSION MODIFICATION COMPLETE	-	P

4.9.46.3 Specific message contents

Table 4.9.46.3-1: PDU SESSION MODIFICATION COMMAND (step 1, Table 4.9.46.2.2-1)

Derivation Path: Table 4.7.2-9.			
Information Element	Value/remark	Comment	Condition
PDU session ID	Same value as sent in PDU SESSION ESTABLISHMENT REQUEST message.		
Authorized QoS rules	Reference QoS rule #7 as defined in Table 4.8.2.1-7 using condition IMS_RTT.		
Authorized QoS flow descriptions	Reference QoS flow #11 as defined in Table 4.8.2.3-11 respectively.		
Mapped EPS bearer contexts			Interworking with EPS
Mapped EPS bearer context			
EPS bearer identity	The same value as the one specified in the Reference QoS flow referred to from the Reference QoS rule indicated in the IE Authorized QoS rules		
Operation code	'001'B	Create new EPS bearer	
E bit	'1'B	Parameters list is included	
Number of EPS parameters	0010'B	2 parameters	
Mapped EPS QoS parameters	See reference dedicated EPS bearer context #11 in TS 36.508 table 6.6.2-1		
Traffic flow Template	See reference dedicated EPS bearer context#11 in TS 36.508 table 6.6.2-1		

Condition	Explanation
Interworking_with_EPS	If the UE has indicated support of S1, then the SS shall include this IE to provide details for the interworking with EPS being supported for a PDU session. This requirement is set up for the purpose of facilitating the test description. It is not mandatory for the Network to support

	Mapped EPS bearer contexts.

Table 4.9.46.3-2: RRCReconfiguration (step 1, Table 4.9.46.2.2-1)

Derivation Path: Table 4.6.1-13 with condition NR.			
Information Element	Value/remark	Comment	Condition
RRCReconfiguration ::= SEQUENCE {			
criticalExtensions CHOICE {			
rrcReconfiguration SEQUENCE {			
radioBearerConfig	RadioBearerConfig-AddRTT		
nonCriticalExtension SEQUENCE {			
masterCellGroup	CellGroupConfig-DRB(0,1)	OCTET STRING (CONTAINING CellGroupConfig)	
}			
}			
}			
}			

Table 4.9.46.3-3: RadioBearerConfig-AddRTT (Table 4.9.46.3-2)

Derivation Path: Table 4.6.3-132 and condition SRB2.			
Information Element	Value/remark	Comment	Condition
RadioBearerConfig ::= SEQUENCE {			
drb-ToAddModList SEQUENCE (SIZE (1..maxDRB)) OF DRB-ToAddMod {	1 entry		
DRB-ToAddMod [1] SEQUENCE {		entry 1	
cnAssociation CHOICE {			
sdap-Config SEQUENCE {	SDAP-Config		
defaultDRB	false		
}			
}			
drb-Identity	j	j is allocated according to internal TTCN mapping	
reestablishPDCP	Not present		
recoverPDCP	Not present		
pdcip-Config	PDCP-Config with condition UM		
}			
}			
}			

4.9.47 Test procedure for IMS Emergency call and RTT

4.9.47.1 Scope

This procedure aims at verifying the UE establishment of IMS Emergency call and RTT.

4.9.47.2 Procedure description

4.9.47.2.1 Initial conditions

System Simulator:

- 1 NR Cell connected to 5GC, default parameters.

User Equipment:

- It shall provide Emergency Numbers.

The procedure assumes that the UE is in test state 1N-A, subclause 4.4A.2 on the NR Cell. All necessary details required shall be explicitly specified in the TC which calls the procedure in its entirety or refers to parts of it.

4.9.47.2.2 Procedure sequence

Table 4.9.47.2.2-1: Test procedure sequence UE IMS Emergency call and RTT

St	Procedure	Message Sequence		TP	Verdict
		U - S	Message/PDU/SDU		
-	EXCEPTION: Unless otherwise stated all the messages below are transmitted on the cell specified in the test case.	-	-	-	-
1	The UE transmits an <i>RRCSetupRequest</i> message with 'establishmentCause' set to 'emergency'.	-->	NR RRC: <i>RRCSetupRequest</i>	-	P
2	The SS transmits an <i>RRCSetup</i> message.	<--	NR RRC: <i>RRCSetup</i>	-	-
3	The UE transmits an <i>RRCSetupComplete</i> message and a SERVICE REQUEST message with 'Service type' set to 'emergency services'.	-->	NR RRC: <i>RRCSetupComplete</i> 5GMM: SERVICE REQUEST	-	P
4	The SS transmits a <i>SecurityModeCommand</i> message.	<--	NR RRC: <i>SecurityModeCommand</i>	-	-
5	The UE transmits a <i>SecurityModeComplete</i> message.	-->	NR RRC: <i>SecurityModeComplete</i>	-	-
6	The SS transmits an <i>RRCReconfiguration</i> message and a SERVICE ACCEPT message to establish SRB2 and DRB.	<--	NR RRC: <i>RRCReconfiguration</i> 5GMM: SERVICE ACCEPT	-	-
-	EXCEPTION: Depending upon UE implementation, steps 7 and 8 can occur in any order.	-	-	-	-
7	The UE transmits an <i>RRCReconfigurationComplete</i> message.	-->	NR RRC: <i>RRCReconfigurationComplete</i>	-	-
8	The UE transmits an UL NAS TRANSPORT message with 'Request type' set to 'initial emergency request', and, a PDU SESSION ESTABLISHMENT REQUEST.	-->	NR RRC: <i>ULInformationTransfer</i> 5GMM: UL NAS TRANSPORT 5GSM: PDU SESSION ESTABLISHMENT REQUEST	-	P
-	EXCEPTION: In parallel to the events described in steps 9-10 below the events specified in steps 1a1 to 2 of Table 4.9.47.2.2-2 take place.	-	-	-	-
9	The SS transmits an <i>RRCReconfiguration</i> message and an PDU SESSION ESTABLISHMENT ACCEPT.	<--	NR RRC: <i>RRCReconfiguration</i> 5GMM: DL NAS TRANSPORT 5GSM: PDU SESSION ESTABLISHMENT ACCEPT	-	-
10	The UE transmits an <i>RRCReconfigurationComplete</i> message.	-->	NR RRC: <i>RRCReconfigurationComplete</i>	-	-
-	EXCEPTION: In parallel to the events described in steps 11-13 below the events specified in steps 3 of Table 4.9.47.2.2-2 take place.	-	-	-	-
11	The SS transmits an <i>RRCReconfiguration</i> message and an PDU SESSION MODIFICATION COMMAND.	<--	NR RRC: <i>RRCReconfiguration</i> 5GMM: DL NAS TRANSPORT 5GSM: PDU SESSION MODIFICATION COMMAND	-	-
-	EXCEPTION: Depending upon UE implementation, steps 12 and 13 can occur in any order.	-	-	-	-
12	The UE transmits an <i>RRCReconfigurationComplete</i> message.	-->	NR RRC: <i>RRCReconfigurationComplete</i>	-	-
13	The UE transmits an <i>ULInformationTransfer</i> message and an PDU SESSION MODIFICATION COMPLETE message.	-->	NR RRC: <i>ULInformationTransfer</i> 5GMM: UL NAS TRANSPORT 5GSM: PDU SESSION MODIFICATION COMPLETE	-	P

Table 4.9.47.2.2-2: IMS signalling and Emergency call establishment

St	Procedure	Message Sequence		TP	Verdict
		U - S	Message/PDU/SDU		
-	EXCEPTION: Step 1a1 describes behaviour depending on UE implementation; the "lower case letter" identifies a step sequence that take place if the UE performs a specific action.	-	-	-	-
1a1	The generic procedure for IP address allocation in the user plane specified in subclause 4.5A.3 takes place.	-	-	-	-
2	Generic Test Procedure for IMS Emergency registration / 5GS as defined in TS 34.229-5 [47], annex A.3 is performed.	-	-	-	-
3	Generic test procedure for setting up IMS Emergency Voice Call and RTT / 5GS as defined in TS 34.229-5 [47], annex A.29 is performed.				

4.9.47.2.3 Specific Message content

All specific message contents shall be according to subclause 4.6 and 4.7 with the exceptions below.

Table 4.9.47.2.3-1: SIB1 (at any time prior and during the procedure, Table 4.9.47.2.2-1)

Derivation Path: Table 4.6.1-28.			
Information Element	Value/remark	Comment	Condition
SIB1 ::= SEQUENCE {			
ims-EmergencySupport	Present	true	
}			

Table 4.9.47.2.3-2: RRCSetupRequest (step 1, Table 4.9.47.2.2-1)

Derivation Path: Table 4.6.1-23.			
Information Element	Value/remark	Comment	Condition
RRCSetupRequest ::= SEQUENCE {			
rrcSetupRequest SEQUENCE {			
establishmentCause	emergency		
}			
}			

Table 4.9.47.2.3-3: SERVICE REQUEST (step 3, Table 4.9.47.2.2-1)

Derivation Path: Table 4.7.1-16.			
Information Element	Value/remark	Comment	Condition
Service type	'0011'B	emergency services	

Table 4.9.47.2.3-4: UL NAS TRANSPORT (step 8, Table 4.9.47.2.2-1)

Derivation Path: Table 4.7.1-10, condition INITIAL_PDU_REQUEST.			
Information Element	Value/remark	Comment	Condition
Request type	'011'B	initial emergency request	
S-NSSAI	Not Present		
DNN	Not Present		

Table 4.9.47.2.3-5: PDU SESSION ESTABLISHMENT REQUEST (step 8, Table 4.9.47.2.2-1)

Derivation Path: Table 4.7.2-1.			
Information Element	Value/remark	Comment	Condition
PDU session ID	A value that is not currently being used by another PDU session		
PTI	A value currently not used		
SSC mode	'001'B	SSC mode 1	

Table 4.9.47.2.3-6: DL NAS TRANSPORT (step 9, Table 4.9.47.2.2-1)

Derivation Path: Table 4.7.1-11, condition 5GSM MESSAGE.

Table 4.9.47.2.3-7: PDU SESSION ESTABLISHMENT ACCEPT (step 9, Table 4.9.47.2.2-1)

Derivation Path: Table 4.7.2-2.			
Information Element	Value/remark	Comment	Condition
Selected SSC mode	'001'B	SSC mode 1	
Authorized QoS rules	Reference QoS rule #2 as defined in Table 4.8.2.1-2.		
Authorized QoS flow descriptions	Reference QoS flow #2 as defined in Table 4.8.2.3-2.		
DNN	Not Present		

Table 4.9.47.2.3-8: RRCReconfiguration (step 9, Table 4.9.47.2.2-1)

Derivation Path: Table 4.8.1-1: RRCReconfiguration-DRB (1, 0)

Table 4.9.47.2.3-9: PDU SESSION MODIFICATION COMMAND (step 11, Table 4.9.11.2.2-1)

Derivation Path: Table 4.7.2-2.			
Information Element	Value/remark	Comment	Condition
PDU session ID	Same value as sent in PDU SESSION ESTABLISHMENT REQUEST message.		
Authorized QoS rules	Reference QoS rule #7 as defined in Table 4.8.2.1-7 using conditions IMS_VOICE and IMS_RTT.		
Authorized QoS flow descriptions	Reference QoS flow #5 and QoS flow #11 as defined in Table 4.8.2.3-5 and Table 4.8.2.3-11 respectively.		
Mapped EPS bearer contexts			Interworking with EPS
Mapped EPS bearer context			
EPS bearer identity	The same value as the one specified in the Reference QoS flow referred to from the Reference QoS rule indicated in the IE Authorized QoS rules		
Operation code	'001'B	Create new EPS bearer	

E bit	'1'B	Parameters list is included	
Number of EPS parameters	0010'B	2 parameters	
Mapped EPS QoS parameters	See reference dedicated EPS bearer context #11 in TS 36.508 Table 6.6.2-1		
Traffic flow Template	See reference dedicated EPS bearer context#11 in TS 36.508 Table 6.6.2-1		

Condition	Explanation
Interworking_with_EPS	If the UE has indicated support of S1, then the SS shall include this IE to provide details for the interworking with EPS being supported for a PDU session. This requirement is set up for the purpose of facilitating the test description. It is not mandatory for the Network to support Mapped EPS bearer contexts.

Table 4.9.47.2.3-10: *RRCReconfiguration* (step 11, Table 4.9.47.2.2-1)

Derivation Path: 4.8.1-1E: RRCReconfiguration-Speech-RTT

4.9.48 Test procedure for removing RTT from an ongoing call in 5GC

4.9.48.1 Scope

The purpose of this procedure is to remove RTT from an established speech call.

4.9.48.2 Procedure description

4.9.48.2.1 Initial conditions

System Simulator:

- 1 NR Cell connected to 5GC, default parameters.

User Equipment:

- The UE is in state 3N-A and registered to the IMS.

4.9.48.2.2 Procedure sequence

Table 4.9.48.2.2-1: IMS RTT removal from established call in 5GC

St	Procedure	Message Sequence		TP	Verdict
		U – S	Message		
1	The SS transmits an <i>RRCReconfiguration</i> message and a PDU SESSION MODIFICATION COMMAND message.	<--	NR RRC: <i>RRCReconfiguration</i> 5GMM: DL NAS TRANSPORT 5GSM: PDU SESSION MODIFICATION COMMAND	-	-
-	EXCEPTION: Steps 2 and 3 can occur in any order.	-	-	-	-
2	The UE transmits an <i>RRCReconfigurationComplete</i> message	-->	NR RRC: <i>RRCReconfigurationComplete</i>	-	-
3	Check: Does the UE transmit a <i>ULInformationTransfer</i> message, an UL NAS TRANSPORT message and an PDU SESSION MODIFICATION COMPLETE message?	-->	NR RRC: <i>ULInformationTransfer</i> 5GMM: UL NAS TRANSPORT 5GSM: PDU SESSION MODIFICATION COMPLETE	-	P

4.9.48.3 Specific message contents

Table 4.9.48.2.3-1: RRCReconfiguration (step 1, Table 4.9.48.2.2-1)

Derivation Path: Table 4.6.1-13.			
Information Element	Value/remark	Comment	Condition
RRCReconfiguration ::= SEQUENCE {			
criticalExtensions CHOICE {			
rrcReconfiguration SEQUENCE {			
radioBearerConfig SEQUENCE {			
drb-ToReleaseList SEQUENCE (SIZE (1..maxDRB)) OF DRB-Identity {	1 entry		
DRB-Identity[1]	DRB-Identity linked to the IMS RTT bearer	entry 1	
}			
}			
nonCriticalExtension SEQUENCE {			
masterCellGroup SEQUENCE {			
rlc-BearerToReleaseList SEQUENCE (SIZE (1..maxLC-ID)) OF LogicalChannelIdentity {	1 entry		
LogicalChannelIdentity[1]	Same value as drb-Identity[1] above	entry 1	
}			
}			
}			
}			
}			
}			

Table 4.9.48.2.3-2: PDU SESSION MODIFICATION COMMAND (step 1, Table 4.9.48.2.2-1)

Derivation Path: Table 4.7.2-9.			
Information Element	Value/remark	Comment	Condition
PDU session ID	Same value as sent in PDU SESSION ESTABLISHMENT REQUEST message.		
Authorized QoS rules			
QoS rule[1]			
QoS rule identifier	'0000 1101'B	QoS rule 13	
Rule operation code	'010'B	Delete existing QoS rule	
Authorized QoS flow descriptions			
QoS flow descriptions[1]			
QFI	'00 1111'B	QFI 15	
Operation code	'010'B	Delete existing QoS flow	

4.9.49 Test procedure for IMS bootstrap data channel establishment in 5GC

4.9.49.1 Scope

The purpose of this procedure is to establish an IMS bootstrap data channel.

4.9.49.2 Procedure description

4.9.49.2.1 Initial conditions

System Simulator:

- 1 NR Cell connected to 5GC, default parameters.

User Equipment:

- The UE is in state 3N-A and 4.9.24 or 4.9.26 or 4.9.15 or 4.9.16 has been executed.

4.9.49.2.2 Procedure sequence

Table 4.9.49.2.2-1: IMS bootstrap data channel establishment in 5GC

St	Procedure	Message Sequence		TP	Verdict
		U – S	Message		
1	The SS transmits an <i>RRCReconfiguration</i> message and a message.	<--	NR RRC: <i>RRCReconfiguration</i> 5GMM: DL NAS TRANSPORT 5GSM: PDU SESSION MODIFICATION COMMAND	-	-
-	EXCEPTION: Steps 2 and 3 can occur in any order.	-	-	-	-
2	The UE transmits an <i>RRCReconfigurationComplete</i> message.	-->	NR RRC: <i>RRCReconfigurationComplete</i>	-	-
3	Check: Does the UE transmit an <i>ULInformationTransfer</i> message, an UL NAS TRANSPORT message and a PDU SESSION MODIFICATION COMPLETE message?	-->	NR RRC: <i>ULInformationTransfer</i> 5GMM: UL NAS TRANSPORT 5GSM: PDU SESSION MODIFICATION COMPLETE	-	P

4.9.49.3 Specific message contents

Table 4.9.49.3-1: PDU SESSION MODIFICATION COMMAND (step 1, Table 4.9.49.2.2-1)

Derivation Path: Table 4.7.2-9			
Information Element	Value/remark	Comment	Condition
PDU session ID	Same value as sent in PDU SESSION ESTABLISHMENT REQUEST message.		
Authorized QoS rules	Reference QoS rule #7 as defined in Table 4.8.2.1-7 using condition IMS_BDC		
Authorized QoS flow descriptions	Reference QoS flow #12 as defined in Table 4.8.2.3-12.		
Mapped EPS bearer contexts	Not Present		
Mapped EPS bearer contexts			Interworking with EPS
Mapped EPS bearer context[1]			
EPS bearer identity	The same value as the one specified in the Reference QoS flow #12 defined in Table 4.8.2.3-12.		
Operation code	'001'B	Create new EPS bearer	
E bit	'1'B	Parameters list is included	
Number of EPS parameters	'0010'B	2 parameters	

Mapped EPS QoS parameters	See reference dedicated EPS bearer context #12 in TS 36.508 table 6.6.2-1B		
Traffic flow Template	See reference dedicated EPS bearer context#12 in TS 36.508 table 6.6.2-1B		

Condition	Explanation
Interworking_with_EPS	If the UE has indicated support of S1, then the SS shall include this IE to provide details for the interworking with EPS being supported for a PDU session. This requirement is set up for the purpose of facilitating the test description. It is not mandatory for the Network to support Mapped EPS bearer contexts.

Table 4.9.49.3-2: *RRCReconfiguration* (step 1, Table 4.9.49.2.2-1)

Derivation Path: Table 4.6.1-13 with condition NR.			
Information Element	Value/remark	Comment	Condition
RRCReconfiguration ::= SEQUENCE {			
criticalExtensions CHOICE {			
rrcReconfiguration SEQUENCE {			
radioBearerConfig	RadioBearerConfig		
nonCriticalExtension SEQUENCE {			
masterCellGroup	CellGroupConfig-DRB(1,0)	OCTET STRING (CONTAINING CellGroupConfig)	
}			
}			
}			
}			

Table 4.9.49.3-3: *RadioBearerConfig* (Table 4.9.49.3-2)

Derivation Path: Table 4.6.3-132.			
Information Element	Value/remark	Comment	Condition
RadioBearerConfig ::= SEQUENCE {			
drb-ToAddModList SEQUENCE (SIZE (1..maxDRB)) OF DRB-ToAddMod {	1 entry		
DRB-ToAddMod [1] SEQUENCE {		entry 1	
cnAssociation CHOICE {			
sdap-Config SEQUENCE {	SDAP-Config		
defaultDRB	false		
}			
}			
drb-Identity	I	I is allocated according to internal TTCN mapping	
reestablishPDCP	Not present		
recoverPDCP	Not present		
pdcp-Config	PDCP-Config with condition AM		
}			
}			
}			

4.10 Reference configuration for Sidelink

4.10.1 Pre-configuration for Sidelink

– SL-PreconfigurationNR

Table 4.10.1-1: SL-PreconfigurationNR

Derivation Path: TS 38.331 [6], clause 9.3			
Information Element	Value/remark	Comment	Condition
SL-PreconfigurationNR-r16 ::= SEQUENCE {			
sidelinkPreconfigNR-r16 SEQUENCE {			
sl-PreconfigFreqInfoList-r16 SEQUENCE (SIZE (1..maxNrofFreqSL-r16)) OF SL-FreqConfigCommon-r16 {	1 entry		
SL-FreqConfigCommon-r16[1]	SL-FreqConfigCommon	entry 1	
	SL-FreqConfigCommon with condition SL_CA	entry 1	SL_CA
}			
sl-PreconfigNR-AnchoredCarrierFreqList-r16	Not present		
sl-PreconfigEUTRA-AnchoredCarrierFreqList-r16	Not present		
sl-RadioBearerPreConfigList-r16 SEQUENCE (SIZE (1..maxNrofSLRB-r16)) OF SL-RadioBearerConfig-r16 {	1 entry		
SL-RadioBearerConfig-r16[1]	SL-RadioBearerConfig	entry 1	
}			
sl-RLC-BearerPreConfigList-r16 SEQUENCE (SIZE (1..maxSL-LCID-r16)) OF SL-RLC-BearerConfig-r16 {	1 entry		
SL-RLC-BearerConfig-r16[1]	SL-RLC-BearerConfig	entry 1	
}			
sl-MeasPreConfig-r16	Not present		
sl-OffsetDFN-r16	Not present		
t400-r16	ms1000		
sl-MaxNumConsecutiveDTX-r16	n32		
sl-SSB-PriorityNR-r16	1		
sl-PreconfigGeneral-r16 SEQUENCE {			
sl-TDD-Configuration-r16	Not present		
reservedBits-r16	00		
}			
sl-UE-SelectedPreConfig-r16 SEQUENCE {			
sl-PSSCH-TxConfigList-r16	SL-PSSCH-TxConfigList for Preconfiguration		
sl-ProbResourceKeep-r16	v0		
sl-ReselectAfter-r16	n9		
sl-CBR-CommonTxConfigList-r16	Not present		
ul-PrioritizationThres-r16	Not present		
sl-PrioritizationThres-r16	Not present		
}			
sl-CSI-Acquisition-r16	Not present		
sl-RoHC-Profiles-r16	Not present		
sl-MaxCID-r16	Not present	default value 15 is used	
sl-DRX-PreConfigGC-BC-r17	Not present		
sl-DRX-PreConfigGC-BC-r17	SL-DRX-ConfigGC-BC		L2RemoteUE
sl-TxProfileList-r17	Not present		
sl-PreconfigDiscConfig-r17	Not present		
sl-PreconfigDiscConfig-r17	SL-RemoteUE-Config		L2RemoteUE
sl-PreconfigFreqInfoListSizeExt-v1800	Not present		
sl-PreconfigFreqInfoListSizeExt-v1800 SEQUENCE (SIZE (1..maxNrofFreqSL-1-r18)) OF SL-FreqConfigCommon-r16 {	1 entry		SL_CA

SL-FreqConfigCommon-r16[1]	SL-FreqConfigCommon with condition SL_CA	entry 1	
}			
sl-RLC-BearerConfigListSizeExt-v1800	Not present		
sl-SyncFreqList-r18	Not present		
sl-SyncTxMultiFreq-r18	Not present		
sl-PreconfigDiscConfig-v1800	Not present		
sl-PreconfigDiscConfig-v1800 SEQUENCE {			U2U
sl-RelayUE-PreconfigU2U-r18	SL-RelayUE-ConfigU2U		
sl-RemoteUE-PreconfigU2U-r18	SL-RemoteUE-ConfigU2U		
}			
sl-PosPreconfigFreqInfoList-r18	Not present		
sl-PosPreconfigFreqInfoList-r18 SEQUENCE (SIZE (1..maxNrofFreqSL-r16)) OF SL-FreqConfigCommon-r16 {	1 entry		SLPP
SL-FreqConfigCommon-r16[1]	SL-FreqConfigCommon	entry 1	
}			
t400-U2U-r18	Not present		
t400-U2U-r18	ms1200		U2U
sl-PreconfigDiscConfig-v1840	Not present		
}			
}			

Condition	Explanation
L2RemoteUE	For L2 U2N Remote UE test cases.
SLPP	To configure SL-PRS resource pool for SLPP test cases
SL_CA	To configure sidelink CA configuration
U2U	For U2U relay test cases.

Table 4.10.1-2: SL-PSSCH-TxConfigList for Preconfiguration (Table 4.10.1-1)

Derivation Path: TS 38.331 [6], clause 6.3.5			
Information Element	Value/remark	Comment	Condition
SL-PSSCH-TxConfigList-r16 ::= SEQUENCE (SIZE (1..maxPSSCH-TxConfig-r16)) OF SL-PSSCH-TxConfig-r16 {	1 entry		
sl-TypeTxSync-r16	Not present	Applicable for all synchronization reference types	
sl-ThresUE-Speed-r16	kmph60		
sl-ParametersAboveThres-r16 SEQUENCE {			
sl-MinMCS-PSSCH-r16	0		
sl-MaxMCS-PSSCH-r16	26		
sl-MinSubChannelNumPSSCH-r16	1		
sl-MaxSubchannelNumPSSCH-r16	27		
sl-MaxTxTransNumPSSCH-r16	4		
sl-MaxTxPower-r16	Not present		
}			
sl-ParametersBelowThres-r16 SEQUENCE {			
sl-MinMCS-PSSCH-r16	0		
sl-MaxMCS-PSSCH-r16	26		
sl-MinSubChannelNumPSSCH-r16	1		
sl-MaxSubchannelNumPSSCH-r16	27		
sl-MaxTxTransNumPSSCH-r16	4		
sl-MaxTxPower-r16	Not present		
}			
}			

4.11 GNSS Requirements for NR sidelink

4.11.1 General

This clause defines the GNSS scenarios and requirements which apply for all NR sidelink test cases that require simulated GNSS signals, unless otherwise specified.

The term SV ID used in this clause is defined as the satellite PRN for GPS and Modernized GPS, as Code Number for Galileo, as the satellite Slot Number for GLONASS and as the Ranging Code Number for BDS.

4.11.2 GNSS Scenarios

The following GNSS scenarios shall be used.

- Rinex navigation data: the required navigation data file(s) available in the GNSS orbital data sig zip file specified in TS 37.571-5 [49] Annex B are given in Table 4.11.2-1.

Table 4.11.2-1: Rinex navigation data files for NR sidelink testing

GNSS supported by UE	Rinex navigation file(s) ⁽¹⁾
GPS	Sig GNSS GPS 2020_9_17 Rinex.txt
GLONASS	Sig GNSS GLONASS 2020_9_17 Rinex.txt
Galileo	Sig GNSS Galileo 2020_9_17 Rinex.txt
BDS	Sig GNSS BDS 2020_9_17 Rinex.txt
Note 1: Where the UE supports more than one GNSS then all the relevant Rinex navigation data files are used	

- UE location(s) and motion:

Latitude: the simulated latitude(s) are given in Table 4.11.2-3

Longitude: the simulated longitude(s) are given in Table 4.11.2-3

Height: the simulated height is 30m

Motion: the simulated motion(s) are given in Table 4.11.2-2

Table 4.11.2-2: UE location(s) and motion(s) for NR sidelink testing

Scenario number and description	Step #	Action (Location details given in Table 4.11.2-3)	Notes
Scenario #1: static in Geographical area #1 Note 1	1	Static at location #1	
Scenario #2: move from inside Geographical area #1 to outside Geographical area #1 Note 1	1	Static at location #1	
	2	Trigger from test case to move in a straight line at 15m/s from current location to next location	Simulation leaves Geographical area #1 after 905 m, 60s after the trigger. An additional 1s is added to allow for UE position accuracy of +/- 15m. An additional 10s is added to allow for UE position update. Total time 71s
	3	Static at location #2	
Note 1: Geographical area #1 is defined in clause 4.7D.2.2-9 and is defined by three points with the following coordinates: Point 1: latitude: 35.753056, longitude: 139.689167 Point 2: latitude: 35.735278, longitude: 139.689167 Point 3: latitude: 35.744167, longitude: 139.709167			

Table 4.11.2-3: Location descriptions for NR sidelink testing

Location number	Description for information only	Latitude (degrees)	Longitude (degrees)
#1	Approximate centre of Geographical area #1	35.74428	139.69916

#2	Approximately 1720m due west of location #1, outside Geographical area #1	35.74428	139.68017

Table 4.11.2-4: Zone id calculations for NR sidelink testing

Description	Latitude (degrees)	Longitude (degrees)	Long distance from 0,0 in m (x) Note 1	Lat distance from 0,0 in m (y) Note 1	Values for zone_id calculation (Note 2, Note 3)
Centre of zone	35.74478	139.70333	11061850	3957225	Zone_id = 2613 $x_1=53, y_1=40$
Note 1: all distances are +/- 1m Note 2: <i>sl-ZoneLength</i> is set to 50m in accordance with Table 4.6.6-36, this allows for the accuracy with which a UE can define its position which is assumed to be +/- 15m. Note 3: zone id is calculated according to TS 38.331 [6] clause 5.8.11.					

- Nominal start time:
17th September 2020 23:40:00 (GPS time) (UTC time: 17th September 2020 23:39:42).
- Visible satellites to be simulated are given in Table 4.11.2-5 and are above 15 degrees elevation with respect to the UE. These satellites have been selected to give a reasonable HDOP for the duration of the test.

Table 4.11.2-5: Satellites to be simulated for NR sidelink testing

GNSS supported by UE	SV IDs of Satellites to be simulated ⁽¹⁾
GPS	3, 4, 6, 17, 19, 28
GLONASS	3, 4, 5, 10, 18, 19
Galileo	3, 5, 13, 15, 21, 27
BDS	38, 40, 42, 43, 59, 60 ⁽²⁾
Note 1: Where the UE supports more than one GNSS then all the relevant satellites are simulated. Note 2: For BDS, the satellite types are as follows: GEO: 59, 60, IGSO: 38, 40, MEO: 42, 43.	

- The levels of the simulated satellites are given in Table 4.11.2-6 and shall be generated with an accuracy of +/- 3dB. These conditions are defined for when there is no GNSS assistance data available at the UE and are specified in TS 38.133 [13] clause B.4.

Table 4.11.2-6: GNSS Reference Signal Power Requirements

System	Parameters	Unit	Value
	Number of generated satellites per system	-	6
GPS ⁽¹⁾	Reference signal power level for all satellites	dBm	-128.5
Galileo	Reference signal power level for all satellites	dBm	-127
GLONASS	Reference signal power level for all satellites	dBm	-131
BDS	Reference signal power level for all satellites	dBm	-133
NOTE 1: "GPS" here means GPS L1 C/A, Modernized GPS, or both, dependent on UE capabilities. NOTE 2: The DUT UE does not need to support all systems. The DUT UE shall support at least one system and will be tested for the supported system(s).			

- Ionospheric model: simulated values are given in Tables 4.11.2-7 and 4.11.2-8.

Table 4.11.2-7: Klobuchar ionospheric model for GPS or GLONASS or BDS if supported by the UE

Model element	Units	Value/remark
alfa0	seconds	4.6566129 10E-9
alfa1	sec/semi-circle	1.4901161 10E-8
alfa2	sec/(semi-circle) ²	-5.96046 10E-8
alfa3	sec/(semi-circle) ³	-5.96046 10E-8
beta0	seconds	79872
beta1	sec/semi-circle	65536
beta2	sec/(semi-circle) ²	-65536
beta3	sec/(semi-circle) ³	-393216

Table 4.11.2-8: neQuick ionospheric model for Galileo if supported by the UE

Model Element	Units	Value/remark
ai0	solar flux unit	64.4
ai1	solar flux unit/degree	0
ai2	solar flux unit/degree ²	0

- Tropospheric model: STANAG with SRI equal to 324.8, as defined in STANAG 4294 [50].

4.12 Radio Information Related to Discovery Message

4.12.1 Access Information for sidelink relay

– *SL-AccessInfo-L2U2N*

Table 4.12.1-1: SL-AccessInfo-L2U2N

Derivation Path: TS 38.331 [6], clause 9.4			
Information Element	Value/remark	Comment	Condition
SL-AccessInfo-L2U2N-r17 ::= SEQUENCE {			
cellAccessRelatedInfo-r17	CellAccessRelatedInfo		
sl-ServingCellInfo-r17	SL-ServingCellInfo-r17		
}			

4.13 Reference Configuration for IDC

The present subclause provides configurations required for IDC mechanism testing and only applies when PICS “pc_IDC_Report” is TRUE.

Table 4.13-1 provides configurations for testing IDC mechanism.

For NR operating band n40, NR Cell 14/NRf4 (2390-2400MHz) is selected as it is the closest frequency available to 2401MHz. WLAN AP1 (Cell 27) with Channel 1 (2401-2423MHz) is configured.

For NR operating band n41, NR Cell 1/NRf1 (2496-2556MHz) is selected as it is the closest frequency available to 2483MHz or in inter-band scenario, NR Cell 10/NRf5 (2496-2556MHz) is selected as it is the closest frequency available to 2483MHz. WLAN AP2 (Cell 27b) with Channel 13 (2461-2483MHz) is configured.

For inter-band CA, the frequency combination CA_n3A-n8A is selected as this combination has inter-modulation order 3 interferes 2.4GHz WLAN.

When “C1” applies, UE does not transmit UEAssistanceInformation message including IDC-Assistance-r16 as UE cannot detect IDC problem with “C1” configuration.

When “C2” applies, UE transmits UEAssistanceInformation with IDC-Assistance-r16 as UE can detect IDC problem with “C2” configuration if it was configured with idc-AssistanceConfig-r16.

When “C3” applies, UE does not transmit UEAssistanceInformation with AffectedCarrierFreqRangeList-r18 as UE cannot detect IDC problem with “C3” configuration.

When “C4” applies, UE transmits UEAssistanceInformation with AffectedCarrierFreqRangeList-r18 in NR Cell 14 as UE can detect IDC problem with “C4” configuration if it was configured with idc-FDM-AssistanceConfig, or UE transmits UEAssistanceInformation with AffectedCarrierFreqRangeList-r18 and idc-TDM-Assistance-r18 in NR Cell 14 as UE can detect IDC problem with “C4” configuration if it was configured with idc-TDM-AssistanceConfig.

When “C5” applies, UE does not transmit UEAssistanceInformation with AffectedCarrierFreqRangeList-r18 as UE cannot detect IDC problem with “C5” configuration.

When “C6” applies, UE transmits UEAssistanceInformation with AffectedCarrierFreqRangeList-r18 in NR Cell 10 as UE can detect IDC problem with “C6” configuration if it was configured with idc-FDM-AssistanceConfig, or UE transmits UEAssistanceInformation with AffectedCarrierFreqRangeList-r18 and idc-TDM-Assistance-r18 in NR Cell 10 as UE can detect IDC problem with “C6” configuration if it was configured with idc-TDM-AssistanceConfig.

When “C7” applies, UE does not transmit UEAssistanceInformation with AffectedCarrierFreqRangeCombList-r18 as there is no inter-modulation with “C7” configuration.

When “C8” applies, UE does not transmit UEAssistanceInformation with AffectedCarrierFreqRangeCombList-r18 as there is no inter-modulation with “C8” configuration.

When “C9” applies, UE transmits UEAssistanceInformation with AffectedCarrierFreqRangeCombList-r18 as there is inter-modulation interfering 2.4GHz WLAN with “C9” configuration.

Table 4.13-1: IDC Configuration of cell power level for FR1

	Parameter	Unit	NR Cell 14/NR Cell 1	WLAN AP 1 (Cell 27) /WLAN AP 2 (Cell 27b)	Remark
C1	SS/PBCH SSS EPRE	dBm/SCS	-88		Cell configuration for non-IDC.
	BeaconRSSI	dBm		Off	
C2	SS/PBCH SSS EPRE	dBm/SCS	-88		Cell configuration for IDC.
	BeaconRSSI	dBm		-80	

Table 4.13-2: Non-CA multiple frequencies IDC Configuration of cell power level for FR1

	Parameter	Unit	NR Cell 14	WLAN AP 1 (Cell 27)	NR Cell 10	WLAN AP 2 (Cell 27b)	Remark
C3	SS/PBCH SSS EPRE	dBm/SCS	-88		Off		Cell configuration for non-IDC.
	BeaconRSSI	dBm		Off		Off	
C4	SS/PBCH SSS EPRE	dBm/SCS	-88		Off		Cell configuration for IDC in NR Cell 14.
	BeaconRSSI	dBm		-80		Off	
C5	SS/PBCH SSS EPRE	dBm/SCS	-88		-79		Cell configuration for non-IDC in NR Cell 10.
	BeaconRSSI	dBm		Off		Off	
C6	SS/PBCH SSS EPRE	dBm/SCS	-88		-79		Cell configuration for IDC in NR Cell 10.
	BeaconRSSI	dBm		Off		-80	

Table 4.13-3: CA IDC Configuration of cell power level for FR1

	Parameter	Unit	NR Cell 1	NR Cell 10	WLAN AP 1 (Cell 27)	Remark
C7	SS/PBCH SSS EPRE	dBm/SCS	-88	Off		Cell configuration for non-IDC.
	BeaconRSSI	dBm			Off	
C8	SS/PBCH SSS EPRE	dBm/SCS	-88	-88		Cell configuration for non-IDC.
	BeaconRSSI	dBm			Off	
C9	SS/PBCH SSS EPRE	dBm/SCS	-88	-88		Cell configuration for IDC of WLAN AP 1.
	BeaconRSSI	dBm			-80	

4.14 Configuration for application layer measurements

The field measConfigAppLayerContainer-r17 includes configuration of application layer measurements according to clauses 16.3 and 16.5 in TS 26.114 [45].

The QoE configuration, encapsulated as XML document according to clause 16.5.2, includes.

- speechMetrics
- videoMetrics
- and an attribute for Sending-Rate as 30s. See clauses 16.3.1 and 16.3.2 for details.

XML document

```
<?xml version="1.0" encoding="utf-8"?>
```

```
<MTSIQualityReporting
```

```
  xmlns="urn:3gpp:metadata:2017:MTSI:qoeconfig"
```

```
  xmlns:sv="urn:3gpp:metadata:2017:MTSI:schemaVersion"
```

```
  xsi:schemaLocation="urn:3gpp:metadata:2017:MTSI:qoeconfig schema.xsd"
```

```
  enabled="true"
```

```
  speechMetrics="3GPP-QoE-Metrics:metrics={Round_Trip_Time};rate=30"
```

```
  videoMetrics="3GPP-QoE-Metrics: metrics={Round_Trip_Time};rate=30"
```

```
</MTSIQualityReporting>
```

5 Test environments for RF test

5.0 General

5.0.1 Single PDU configuration for RF testing

For RF and performance test case execution on 5G SA UE's defined in TS 38.521-1 [14], TS 38.521-2 [15], TS 38.521-4 [17], IMS shall not be considered and UE's shall be able use RRC (IDLE, CONNECTED) preambles defined in TS 38.508-1 clause 4.5. Before entering RRC_CONNECTED or RRC_IDLE state during initial conditions or test procedure, it is recommended that UE is pre-configured with 0 or 1 PDU (non-IMS).

For EN-DC settings the corresponding requirement holds that IMS shall not be considered and it is recommended that UE is pre-configured with 0PDU/0PDN or 1PDU/1 PDN.

5.1 Requirements of test equipment

5.1.1 Requirements for transmission and reception tests

5.1.1.1 Requirements common for conducted and OTA tests

No common RF test environment requirements are specified in addition to the common requirements described in clause 4.2.

5.1.1.2 Requirements for conducted tests

No common RF test environment requirements are specified in addition to the common requirements described in clause 4.2.

5.1.1.3 Requirements for OTA tests

Editor's Note:

- The UE pre-configuration mentioned below to disable UL Tx diversity schemes shall be voided once a test methodology solution to minimize spectral flatness artefacts between TE and UE over all test points is defined.
- The permitted test methods for transmission and reception test are DFF, DFF with simplification for centre of beam measurements, IFF and NFTF and are described in TR 38.810[24]. The minimum requirements for each test setup are described in the following clauses.
- For conformance testing using the OTA test environment, the UE under test shall be pre-configured with UL Tx diversity schemes disabled to account for single polarization System Simulator (SS) in the test environment. The UE under test may transmit with dual polarization.

5.1.1.3.1 DFF and DFF with simplification for centre of beam measurements

- Far-field measurement system in an anechoic chamber.
- The minimum far-field distance R for a traditional far field anechoic chamber can be calculated based on the following equation: $R > \frac{2D^2}{\lambda}$, where D is the diameter of the smallest sphere that encloses the radiating parts of the DUT.
- A positioning system such that the angle between the dual-polarized measurement antenna and the DUT has at least two axes of freedom and maintains a polarization reference.

- For DFF(without simplification), a positioning system such that the angle between the link antenna and the DUT has at least two axes of freedom and maintains a polarization reference; this positioning system for the link antenna is in addition to the positioning system for the measurement antenna and provides for an angular relationship independently controllable from the measurement antenna.
- For setups intended for measurements of UE RF characteristics in non-standalone (NSA) mode with 1 UL configuration, an LTE link antenna is used to provide the LTE link to the DUT. The LTE link antenna provides a stable LTE signal without precise path loss or polarization control.
- For setups intended for measurements in NR CA mode with FR1 and FR2 inter-band NR CA, test setup provides NR FR1 link to the DUT. The NR FR1 link has a stable and noise-free signal without precise path loss or polarization control.
- Maximum permitted test system uncertainty is specified in Annex F in 38.521-2[15].

5.1.1.3.2 IFF

- Indirect Far field of Compact Antenna Test Range(CATR) with quiet zone diameter at least D.
- The CATR system does not require a measurement distance of $R > \frac{2D^2}{\lambda}$ to achieve a plane wave as in a standard far field range.
- A positioning system such that the angle between the dual-polarized measurement antenna and the DUT has at least two axes of freedom and maintains a polarization reference.
- For setups intended for measurements of UE RF characteristics in non-standalone (NSA) mode with 1UL configuration, an LTE link antenna is used to provide the LTE link to the DUT. The LTE link antenna provides a stable LTE signal without precise path loss or polarization control.
- For setups intended for measurements in NR CA mode with FR1 and FR2 inter-band NR CA, test setup provides NR FR1 link to the DUT. The NR FR1 link has a stable and noise-free signal without precise path loss or polarization control.
- Maximum permitted test system uncertainty is specified in Annex F in 38.521-2[15].

5.1.1.3.3 NFTF

- Radiated Near Field UE beam pattern are measured and based on the NFTF mathematical transform, the final metric such as EIRP is the same as the metric for the DFF setup
- A positioning system such as the angle between the dual-polarized measurement/link antenna and the DUT has at least two axes of freedom and maintains a polarization reference
- For setups intended for measurements of UE RF characteristics in non-standalone (NSA) mode with 1UL configuration, an LTE link antenna is used to provide the LTE link to the DUT. The LTE link antenna provides a stable LTE signal without precise path loss or polarization control.
- For setups intended for measurements in NR CA mode with FR1 and FR2 inter-band NR CA, test setup provides NR FR1 link to the DUT. The NR FR1 link has a stable and noise-free signal without precise path loss or polarization control.
- Maximum permitted test system uncertainty is specified in Annex F in 38.521-2[15].

5.1.2 Requirements for performance tests

5.1.2.1 Void

5.1.2.2 Void

5.1.2.3 Requirements for OTA test method

Editor's Note: This subclause is intended to describe the test equipment requirements which are specific to OTA test environment for performance tests.

- The UE pre-configuration mentioned below to disable UL Tx diversity schemes shall be voided once a test methodology solution to minimize spectral flatness artefacts between TE and UE over all test points is defined.
- For conformance testing using the OTA test environment, the UE under test shall be pre-configured with UL Tx diversity schemes disabled to account for single polarization System Simulator (SS) in the test environment. The UE under test may transmit with dual polarization.

5.2 Reference test conditions

5.2.1 Signal levels

5.2.1.1 Signal Levels for conducted testing

For NR FR1 cell, the downlink power settings are specified in TS 38.521-1[14] and TS 38.521-3[16].

The uncertainty value is specified in TS 38.521-1 [14] Annex F or in TS 38.521-3 [16] Annex F.

5.2.1.2 Signal Levels for OTA testing

5.2.1.2.1 Downlink Signal Levels

For E-UTRA cell in EN-DC with FR2 NR, the downlink power settings are specified in clause 4.7 of TS 38.521-3[16].

For FR2 NR cell, the downlink power settings are specified in Annex C.0 of TS 38.521-2[15] and Annex C.0 of TS 38.521-3[16].

The uncertainty value is specified in TS 38.521-2 [15] Annex F or in TS 38.521-3 [16] Annex F.

5.2.2 Test Frequencies

As defined in clause 4.3.1 with the following exceptions for Demodulation test cases

5.2.2.1 NR operating bands in FR1

5.2.2.1.1 Reference test frequencies for NR operating band n1

Table 5.2.2.1-1: Void

Table 5.2.2.1.1-1: Test frequencies for NR operating band n1 and SCS 15 kHz

CBW [MH]	carrierBandwidth [PRBs]	Range	Carrier cent	Carrier cent	point A [MH]	absoluteFrequencyPointA [ARFCN]	offsetToCarrier [Carrier]	SS bl oc	GS CN	absoluteFrequencySSB [ARFCN]	k_{SS}	Offset Carrier CORE	CORE SET#0 Index	offsetTo PointA (SIB1)

z]				tre [M Hz]	re [AR FCN]	z]		PRBs]	k SC S [k Hz]				SET#0 [RBs] Note 2	(Offset [RBs]) Note 1	[PRBs] Note 1
10	52	Dow nlink	M id	214 0	4280 00	213 5.32	427064	0	15	53 44	427490	10	1	0 (0)	1
		Uplin k	M id	195 0	3900 00	194 5.32	389064	0	-	-	-	-	-	-	-
Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-1 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.															
Note 2: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs.															

5.2.2.1.2 Reference test frequencies for NR operating band n2

Table 5.2.2.1.2-1: Test frequencies for NR operating band n2 and SCS 15 kHz

C B W [M H z]	carrier Band width [PRBs]	Range		Ca rri er ce ntre [M Hz]	Ca rri er ce ntre [A R F C N]	po int A [M Hz]	absoluteF requency PointA [ARFCN]	offset ToCa rrier [Carri er PRBs]	S S bl o c k S C S [k H z]	G S C N	absolute Frequen cySSB [ARFCN]	k_{SSB}	Offs et Carri er COR ESE T#0 [RBs] Note 2	COR ESE T#0 Inde x (Offs et [RBs]) Note 1	offset ToPoi ntA (SIB1) [PRBs] Note 1
10	52	Downlink	Mid	1960	392000	1955.32	391064	0	15	4894	391490	10	1	0 (0)	1
			High	1985	397000	1980.32	396064	0		4955	396490	10	1	0 (0)	1
		Uplink	Mid	1880	376000	1875.32	375064	0	-	-	-	-	-	-	-
			High	1905	381000	1900.32	380064	0		-	-	-	-	-	-
20	106	Downlink	Mid	1960	392000	1950.46	390092	0	15	4882	390530	20	0	1 (2)	2
			High	1980	396000	1970.46	394092	0		4932	394590	10	1	1 (2)	3
		Uplink	Mid	1880	376000	1870.46	374092	0	-	-	-	-	-	-	-
			High	1900	380000	1890.46	378092	0		-	-	-	-	-	-
Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-1 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.															
Note 2: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs.															

Table 5.2.2.1.2-2: Test frequencies for NR operating band n2 and SCS 30 kHz

C B W [M H z]	carrier Band width [PRBs]	Range		Carrier centre [M H z]	Carrier centre [A R F C N]	point A [M H z]	absoluteFrequency PointA [ARFCN]	offset ToCarrier [Carrier PRBs]	S S bl o c k S C S [k H z]	G S C N	absoluteFrequencySSB [ARFCN]	k_{SS}	Offset Carrier CORESET#0 [RBs] Note 2	CORESET#0 Index (Offset [RBs]) Note 1	offsetToPointA (SIB1) [PRBs] Note 1
20	51	Downlink	Mid	1960	392000	1950.82	390164	0	15	4888	391010	18	0	1 (6)	12
			High	1980	396000	1970.82	394164	0		4938	395070	14	0	2 (7)	14
		Uplink	Mid	1880	376000	1870.82	374164	0	-	-	-	-	-	-	-
			High	1900	380000	1890.82	378164	0		-	-	-	-	-	-
Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-2 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.															
Note 2: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs.															

5.2.2.1.3 Reference test frequencies for NR operating band n3

Table 5.2.2.1.3-1: Test frequencies for NR operating band n3 and SCS 15 kHz

C B W [M H z]	carrier Bandwidth [PRBs]	Range		Carrier centre [M Hz]	Carrier centre [ARFCN]	point A [M Hz]	absoluteFrequencyPointA [ARFCN]	offsetToCarrier [Carrier PRBs]	S S bl o c k S C S [k H z]	G S C N	absoluteFrequencySSB [ARFCN]	k_{SS}	Offset Carrier CORESET#0 [RBs] Note 2	CORESET#0 Index (Offset [RBs]) Note 1	offsetToPointA (SIB1) [PRBs] Note 1
10	52	Downlink	Mid	1842.5	368500	1837.82	367564	0	15	4598	367930	2	0	0 (0)	0
		Uplink	Mid	1747.5	349500	1742.82	348564	0	-	-	-	-	-	-	-
Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-1 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.															
Note 2: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs.															

5.2.2.1.4 FFS

5.2.2.1.5 Reference test frequencies for NR operating band n5

Table 5.2.2.1.5-1: Test frequencies for NR operating band n5 and SCS 15 kHz

C B W [M H z]	carrier Bandwidth [PRBs]	Range		Carrier centre frequency [M Hz]	Carrier centre frequency [ARFCN]	point A [M Hz]	absoluteFrequency PointA [ARFCN]	offsetToCarrier [Carrier PRBs]	S S block SCS [k H z]	G S C N	absoluteFrequencySSB [ARFCN]	k_{SS}	Offset Carrier CORESET#0 [RBs] Note 2	CORESET#0 Index (Offset [RBs]) Note 1	offsetToPointA (SIB1) [PRBs] Note 1
10	52	Downlink	Mid	881.5	176300	876.82	175364	0	15	2197	175730	2	0	0 (0)	0
		Uplink	Mid	836.5	167300	831.82	166364	0	-	-	-	-	-	-	-
Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-1 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.															
Note 2: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs.															
Note 3: This UE channel bandwidth is applicable only to downlink.															

5.2.2.1.6 FFS

5.2.2.1.7 Reference test frequencies for NR operating band n7

Table 5.2.2.1.7-1: Test frequencies for NR operating band n7 and SCS 15 kHz

C B W [M H z]	carrier Bandwidth [PRBs]	Range		Carrier centre [M Hz]	Carrier centre [ARFCN]	point A [M Hz]	absoluteFrequency PointA [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS [kHz]	GS C N	absoluteFrequencySSB [ARFCN]	k_{SS}	Offset Carrier CORESET#0 [RBs]	Offset Carrier CORESET#0 Index (Offset [RBs])	offsetToPointA (SIB1) [PRBs]
10	52	Downlink	Mid	2655	531000	2650.32	530064	0	15	6630	530430	2	0	0 (0)	0
		Uplink	Mid	2535	507000	2530.32	506064	0	-	-	-	-	-	-	-
Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-1 in TS 38.213 [22]. The value of CORESET#0 Index is controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.															
Note 2: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs.															

5.2.2.1.8 Reference test frequencies for NR operating band n8

Table 5.2.2.1.8-1: Test frequencies for NR operating band n8 and SCS 15 kHz

C B W [M H z]	carrier Bandwidth [PRBs]	Range		Carrier centre [M Hz]	Carrier centre [A RF CN]	point A [M Hz]	absoluteFrequencyPointA [ARFCN]	offsetToCarrier [Carrier PRBs]	S S bl o c k S C S [k H z]	G S C N	absoluteFrequencySSB [ARFCN]	k_{SS}	Offset Carrier CORESE T#0 [RBs] Note 2	CORESE T#0 Index (Offset [RBs]) Note 1	offsetToPointA (SIB1) [PRBs] Note 1
10	52	Dowl ink	M i d	942.5	188500	937.82	187564	0	15	2348	187930	2	0	0 (0)	0
		Upl ink	M i d	897.5	179500	892.82	178564	0	-	-	-	-	-	-	-
Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-1 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.															
Note 2: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs.															

5.2.2.1.9 - 5.2.2.1.11 FFS

5.2.2.1.12 Reference test frequencies for NR operating band n12

Table 5.2.2.1.12-1: Test frequencies for NR operating band n12 and SCS 15 kHz

C B W [M H z]	carrier Bandwidth [PRBs]	Range		Carrier centre [M Hz]	Carrier centre [A RF CN]	point A [M Hz]	absoluteFrequency PointA [ARFCN]	offsetToCarrier [Carrier PRBs]	SSB offset [k H z]	SSC [k H z]	absoluteFrequencySSB [ARFCN]	k_{SS}	Offset Carrier CORESET#0 [RBs] Note 2	CORESET#0 Index (Offset [RBs]) Note 1	offsetToPointA (SIB1) [PRBs] Note 1
10	52	Dwnlink	Mid	737.5	147500	732.82	146564	0	15	1837	146930	2	0	0 (0)	0
		Uplink	Mid	707.5	141500	702.82	140564	0	-	-	-	-	-	-	-
Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-1 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.															
Note 2: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs.															

5.2.2.1.13 Reference test frequencies for NR operating band n13

Table 5.2.2.1.13-1: Test frequencies for NR operating band n13 and SCS 15 kHz

C B W [M H z]	carrier Bandwidth [PRBs]	Range		Carrier centre frequency [M Hz]	Carrier centre frequency [ARFCN]	point A [M Hz]	absoluteFrequency PointA [ARFCN]	offsetToCarrier [Carrier PRBs]	S S block SCS [k H z]	G S C N	absoluteFrequencySSB [ARFCN]	k_{SS}	Offset Carrier CORESET#0 [RBs] Note 2	CORESET#0 Index (Offset [RBs]) Note 1	offsetToPointA (SIB1) [PRBs] Note 1
10	52	Downlink	Mid	751	150200	746.32	149264	0	15	1873	149810	2	1	2 (4)	5
		Uplink	Mid	782	156400	777.32	155464	0	-	-	-	-	-	-	-
Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-1 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcchConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.															
Note 2: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET0Carrier}}$ in Annex C expressed in number of common RBs.															

5.2.2.1.14 Reference test frequencies for NR operating band n14

Table 5.2.2.1.14-1: Test frequencies for NR operating band n14 and SCS 15 kHz

C B W [M H z]	carrier Bandwidth [PRBs]	Range		Carrier centre [M Hz]	Carrier centre [ARFCN]	point A [M Hz]	absoluteFrequency PointA [ARFCN]	offsetToCarrier [Carrier PRBs]	S S bl oc k S C S [k H z]	G S C N	absoluteFrequencySSB [ARFCN]	k_{SS}	Offset Carrier CORESET#0 [RBs] Note 2	CORESET#0 Index (Offset [RBs]) Note 1	offsetToPointA (SIB1) [PRBs] Note 1
10	52	Dwlnk	Mid	763	152600	758.32	151664	0	15	1903	152210	2	1	2 (4)	5
		Uplink	Mid	793	158600	788.32	157664	0	-	-	-	-	-	-	-
Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-1 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcchConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.															
Note 2: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET0Carrier}}$ in Annex C expressed in number of common RBs.															
Note 3: 10 MHz test channel bandwidth is tested with Low range test frequency only. Low range test frequency shall be used instead of Mid range and High range test frequencies.															

5.2.2.1.15 – 5.2.2.1.19 FFS

5.2.2.1.20 Reference test frequencies for NR operating band n20

Table 5.2.2.1.20-1: Test frequencies for NR operating band n20 and SCS 15 kHz

C B W [M H z]	carrier Bandwidth [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequency PointA [ARFCN]	offsetToCarrier [Carrier PRBs]	S S block SCS [kHz]	G S C N	absoluteFrequencySSB [ARFCN]	k_{SS}	Offset Carrier CORESET#0 [RBs] Note 2	CORESET#0 Index (Offset [RBs]) Note 1	offsetToPointA (SIB1) [PRBs] Note 1
10	52	Dwlnk	Mid	806	161200	801.32	160264	0	15	2009	160810	2	1	2 (4)	5
		Uplnk	Mid	847	169400	842.32	168464	0	-	-	-	-	-	-	-
Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-1 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.															
Note 2: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs.															

5.2.2.1.21 – 5.2.2.1.23 FFS

5.2.2.1.24 Reference test frequencies for NR operating band n24

Table 5.2.2.1.24-1: Test frequencies for NR operating band n24 and SCS 15 kHz

ULDL CBW [MHz]	carrier Bandwidth [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absolute Frequency Point A [ARFCN]	offset To Carrier [Carrier PRBs]	SSB block SCS [kHz]	GS C N	absolute Frequency SSB [ARFCN]	k_{SS}	Offset Carrier CORESET#0 [RBs]	CORESET#0 Index (Offset [RBs])	offset To Point A (SIB1) [PRBs]
10/10	52	Dwlink	Mid	15310	306200	152632	305264	0	15	3823	305810	2	1	2 (4)	5
		Uplink	Mid	16325	326500	162782	325564	0	-	-	-	-	-	-	-
Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-1 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.															
Note 2: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs.															

- Note 3: For symmetric CBW combinations, Low and Mid test frequencies are specified using Tx-Rx spacing of -101.5 MHz and High test frequency is specified using Tx-Rx spacing of -120.5 MHz
- Note 4: For asymmetric CBW combination UL=10MHz and DL=5MHz, Low and Mid test frequencies are specified using Tx-Rx spacing of -104 MHz and High test frequency is specified using Tx-Rx spacing of -118 MHz.

5.2.2.1.25 Reference test frequencies for NR operating band n25

Table 5.2.2.1.25-1: Test frequencies for NR operating band n25 and SCS 15 kHz

C B W [M H z]	carrier Bandwidth [PRBs]	Range		Carrier centre [M Hz]	Carrier centre [ARFCN]	point A [M Hz]	absoluteFrequency PointA [ARFCN]	offsetToCarrier [Carrier PRBs]	S S bl o c k S C S [k H z]	G S C N	absoluteFrequencySSB [ARFCN]	k_{SS}	Offset Carrier CORESE T#0 [RBs] Note 2	CORESE T#0 Index (Offset [RBs]) Note 1	offsetToPointA (SIB1) [PRBs] Note 1
10	52	Downlink	Mid	1962.5	392500	1957.82	391564	0	15	4898	391930	2	0	0 (0)	0
		Uplink	Mid	1882.5	376500	1877.82	375564	0	-	-	-	-	-	-	-
Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-1 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.															
Note 2: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs.															

5.2.2.1.26 Reference test frequencies for NR operating band n26

Table 5.2.2.1.26-1: Test frequencies for NR operating band n26 and SCS 15 kHz

C B W [M H z]	carrier Bandwidth [PRBs]	Range		Carrier centre frequency [MHz]	Carrier centre frequency [ARFCN]	point A [MHz]	absolute Frequency Point A [ARFCN]	offset To Carrier [Carrier PRBs]	S S block SCS [kHz]	G S C N	absolute Frequency SSB [ARFCN]	k_{SS}	Offset carrier CORESET#0 [RBs]	Offset carrier CORESET#0 [RBs]	offset To Point A (SIB1) [PRBs]
10	52	Downlink	MID	876.5	175300	871.82	174364	0	15	2183	174730	2	0	0 (0)	0
		Uplink	MID	831.5	166300	826.82	165364	0	-	-	-	-	-	-	-
Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-1 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.															
Note 2: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs.															

5.2.2.1.27 FFS

5.2.2.1.28 Reference test frequencies for NR operating band n28

Table 5.2.2.1.28-1: Test frequencies for NR operating band n28 and SCS 15 kHz

CBW [MHz]	carrier Bandwidth [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absolute Frequency PointA [ARFCN]	offset ToCarrier [Carrier PRBs]	SSB offset [kHz]	GSN	absolute FrequencySSB [ARFCN]	k_{SS}	Offset Carrier CORESET#0 [RBs] Note 3	CORESET#0 Index (Offset [RBs]) Note 1	offset ToPointA (SIB1) [PRBs] Note 1
10	52	Dwlnk	Mid	780.5	156100	775.82	155164	0	15	1943	155530	2	0	0 (0)	0
		Uplnk	Mid	725.5	145100	720.82	144164	0	-	-	-	-	-	-	-
Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-1 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.															
Note 2: Carrier centre frequency moved for Mid Range and CBW=20 MHz due to Note 7 in TS 38.101-1 [7], Table 5.3.5-1.															
Note 3: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs.															
Note 4: No carrier centre frequency specified for Mid Range and CBW=30 MHz due to Note 7 in TS 38.101-1 [7], Table 5.3.5-1. For test cases specifying Mid range and CBW=30 MHz to be tested, use Low range and CBW=30 MHz instead.															

5.2.2.1.29 FFS

5.2.2.1.30 Reference test frequencies for NR operating band n30

Table 5.2.2.1.30-1: Test frequencies for NR operating band n30 and SCS 15 kHz

CBW [MHz]	carrier Bandwidth [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absolute Frequency PointA [ARFCN]	offset ToCarrier [Carrier PRBs]	SSB offset [kHz]	GSN	absolute FrequencySSB [ARFCN]	k_{SS}	Offset Carrier CORESET#0 [RBs] Note 2	CORESET#0 Index (Offset [RBs]) Note 1	offset ToPointA (SIB1) [PRBs] Note 1
10	52	Dowlink	Mid	2355	471000	2350.32	470064	0	15	5880	470430	2	0	0 (0)	0
		Uplink	Mid	2310	462000	2305.32	461064	0	-	-	-	-	-	-	-

Note 1:	The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-1 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.
Note 2:	The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs.

5.2.2.1.31 Reference test frequencies for NR operating band n31

Table 5.2.2.1.31-1: Test frequencies for NR operating band n31 and SCS 15 kHz

CBW [MHz]	carrier Bandwidth [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequency PointA [ARFCN]	offsetToCarrier [Carrier PRBs]	SSB offset [kHz]	SSC	absoluteFrequencySSB [ARFCN]	k_{SS}	Offset Carrier CORESET#0 [RBs] Note 2	CORESET#0 Index (Offset [RBs]) Note 1	offsetToPointA (SIB1) [PRBs] Note 1
5	25	Downlink	Low	465	93000	462.75	92550	0	15	1161	92910	0	0	0 (0)	0
			Mid												
			High												
		Uplink	Low	455	91000	452.75	90550	0	-	-	-	-	-	-	
			Mid												
			High												
Note 1: For 3 MHz CBW, the CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-0 in TS 38.213 [22]. For 5 MHz CBW, the CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-1 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.															
Note 2: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs.															

5.2.2.1.32 – 5.2.2.1.37 FFS

5.2.2.1.38 Reference test frequencies for NR operating band n38

Table 5.2.2.1.38-1: Test frequencies for NR operating band n38 and SCS 15 kHz

FFS

Table 5.2.2.1.38-2: Test frequencies for NR operating band n38 and SCS 30 kHz

C B W [M H z]	carrier Bandw idth [PRBs]	Range		Ca rri er ce nt re [M Hz]	Car rier ce ntr e [A R F C N]	po int A [M Hz]	absoluteF requency PointA [ARFCN]	offset ToCar rier [Carri er PRBs]	S S bl o c k S C S [k H z]	G S C N	absolute Frequen cySSB [ARFCN]	k_{SSB}	Offs et Carri er COR ESE T#0 [RBs] Note 2	COR ESE T#0 Inde x (Offs et [RBs]) Note 1	offset ToPoi ntA (SIB1) [PRB s] Note 1
4 0	106	Downlink & Uplink	M id	25 95	519 000	25 75. 92	515184	0	3 0	64 50	516030	1 8	0	1 (1)	2
Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-4 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2. Note 2: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs.															

5.2.2.1.39 Reference test frequencies for NR operating band n39

Table 5.2.2.1.39-1: Test frequencies for NR operating band n39 and SCS 15 kHz

FFS

Table 5.2.2.1.39-2: Test frequencies for NR operating band n39 and SCS 30 kHz

C B W [M H z]	carrier Bandw idth [PRBs]	Range		Ca rri er ce nt re [M Hz]	Car rier ce ntr e [A R F C N]	po int A [M Hz]	absoluteF requency PointA [ARFCN]	offset ToCar rier [Carri er PRBs]	S S bl o c k S C S [k H z]	G S C N	absolute Frequen cySSB [ARFCN]	k_{SSB}	Offs et Carri er COR ESE T#0 [RBs] Note 2	COR ESE T#0 Inde x (Offs et [RBs]) Note 1	offset ToPoi ntA (SIB1) [PRB s] Note 1
4 0	106	Downlink & Uplink	M id	19 00	380 000	18 80. 92	376184	0	3 0	47 14	377090	1 4	0	2 (2)	4
Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-2 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2. Note 2: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs.															

5.2.2.1.40 Reference test frequencies for NR operating band n40

Table 5.2.2.1.40-1: Test frequencies for NR operating band n40 and SCS 15 kHz

FFS

Table 5.2.2.1.40-2: Test frequencies for NR operating band n40 and SCS 30 kHz

C B W [M H z]	carrier Bandwidth [PRBs]	Range		Carrier centre [M Hz]	Carrier centre [A R F C N]	point A [M Hz]	absolute Frequency PointA [ARFCN]	offset ToCarrier [Carrier PRBs]	S S bl o c k S C S [k H z]	G S C N	absolute FrequencySSB [ARFCN]	k_{SSB}	Offset Carrier CORESET#0 [RBs] Note 2	CORESET#0 Index (Offset [RBs]) Note 1	offset ToPointA (SIB1) [PRBs] Note 1
4 0	106	Downlink & Uplink	Mid	23 50	470 000	23 30. 92	466184	0	3 0	58 39	467090	1 4	0	2 (2)	4
Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-2 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2. Note 2: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs.															

5.2.2.1.41 Reference test frequencies for NR operating band n41

Table 5.2.2.1.41-1: Test frequencies for NR operating band n41, SCS 15 kHz and ΔF_{Raster} 15 kHz

FFS

Table 5.2.2.1.41-2: Test frequencies for NR operating band n41, SCS 30 kHz and ΔF_{Raster} 30 kHz

C B W [M H z]	carrier Bandwidth [PRBs]	Range		Carrier centre [M Hz]	Carrier centre [A R F C N]	point A [M Hz]	absolute Frequency PointA [ARFCN]	offset ToCarrier [Carrier PRBs]	S S bl o c k S C S [k H z]	G S C N	absolute FrequencySSB [ARFCN]	k_{SSB}	Offset Carrier CORESET#0 [RBs] Note 2	CORESET#0 Index (Offset [RBs]) Note 1	offset ToPointA (SIB1) [PRBs] Note 1

40	106	Downlink & Uplink	Mid	2592.99	518598	2573.91	514782	0	30	6444	515550	16	0	0 (0)	0
			High	2670	534000	2650.92	530184	0		6636	530910	2	0	0 (0)	0
60	162	Downlink & Uplink	Mid	2592.99	518598	2563.83	512766	0	30	6420	513630	0	0	2 (2)	4
			High	2659.98	531996	2630.82	526164	0		6588	527070	14	0	2 (2)	4
80	217	Downlink & Uplink	Mid	2592.99	518598	2553.93	510786	0	30	6396	511710	20	0	2 (2)	4
			High	2649.99	529998	2610.93	522186	0		6537	522990	4	0	1 (1)	2
100	273	Downlink & Uplink	Mid	2592.99	518598	2543.85	508770	0	30	6369	509550	20	0	0 (0)	0
			High	2640	528000	2590.86	518172	0		6486	518910	6	0	0 (0)	0
Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-4 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.															
Note 2: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs.															

5.2.2.1.42 – 5.2.2.1.47 FFS

5.2.2.1.48 Reference test frequencies for NR operating band n48

Table 5.2.2.1.48-1: Test frequencies for NR operating band n48 and SCS 15 kHz

FFS

Table 5.2.2.1.48-2: Test frequencies for NR operating band n48 and SCS 30 kHz

CBW [M]	carrier Band width [PRBs]	Range	Carrier centre	Carrier centre	point A [MHz]	absolute Frequency PointA [ARFCN]	offset ToCarrier [Carrier	SSB block	SSB block	absolute FrequencySSB [ARFCN]	k_{SSB}	Offset Carrier COR	CORESET#0 Index	offset ToPointA (SIB1)

[H z]				[M Hz]	[A RF CN]			PRBs]	S C S [k H z]				ESE T#0 [RBs] Note 2	(Offs et [RBs]) Note 1	[PRB s] Note 1
4 0	106	Do wnlink & Uplink	M id	36 24. 99	64 16 66	36 05. 91	640394	0	3 0	79 23	640704	2 2	0	2 (2)	4
Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-4 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.															
Note 2: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs.															
Note 3: For this bandwidth, the minimum requirements are restricted to operation when carrier is configured as a downlink only SCell part of a CA configuration. As the bandwidth is limited to SCell then absence of CORESET#0 is indicated in the MIB by setting $k_{\text{SSB}}=31$, <i>controlResourceSetZero=0</i> and <i>searchSpaceZero = 0</i> (TS 38.213 [22], clause 13).															

5.2.2.1.49 FFS

5.2.2.1.50 Reference test frequencies for NR operating band n50

Table 5.2.2.1.50-1: Test frequencies for NR operating band n50 and SCS 15 kHz

FFS

Table 5.2.2.1.50-2: Test frequencies for NR operating band n50 and SCS 30 kHz

C B W [M H z]	carrier Bandwidth [PRBs]	Range		Carrier centre [M Hz]	Carrier centre [A R F C N]	point A [M Hz]	absoluteFrequencyPointA [ARFCN]	offsetToCarrier [Carrier PRBs]	S S bl o c k S C S [k H z]	G S C N	absoluteFrequencySSB [ARFCN]	k_{SSB}	Offset Carrier CORESET#0 [RBs] Note 2	CORESET#0 Index (Offset [RBs]) Note 1	offsetToPointA (SIB1) [PRBs] Note 1
40	106	Downlink & Uplink	Mid	1474.5	294900	1455.42	291084	0	30	3648	291870	22	0	0 (0)	0
Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-2 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.															

- Note 2: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs.
- Note 3: This UE channel bandwidth is applicable only to downlink (TS 38.101-1 table 5.3.5-1).

5.2.2.1.51 – 5.2.2.1.64 FFS

5.2.2.1.65 Reference test frequencies for NR operating band n65

Table 5.2.2.1.65-1: Test frequencies for NR operating band n65 and SCS 15 kHz

C B W [M H z]	carrier Bandwidth [PRBs]	Range		Carrier centre frequency [M Hz]	Carrier centre frequency [ARFCN]	point A [M Hz]	absoluteFrequencyPointA [ARFCN]	offsetToCarrier [Carrier PRBs]	SSB offset [Carrier PRBs]	SSB offset [kHz]	absoluteFrequencySSB [ARFCN]	k_{SSB}	Offset Carrier CORESET#0 [RBs] Note 2	CORESET#0 Index (Offset [RBs]) Note 1	offsetToPointA (SIB1) [PRBs] Note 1
10	52	Downlink	Mid	2155	431000	2150.32	430064	0	15	5383	430610	2	1	2 (4)	5
		Uplink	Mid	1965	393000	1960.32	392064	0	-	-	-	-	-	-	-
Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-1 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.															
Note 2: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs.															

5.2.2.1.66 Reference test frequencies for NR operating band n66

Table 5.2.2.1.66-1: Test frequencies for NR operating band n66, uplink and downlink channel bandwidth combinations and SCS 15 kHz

UL/DL BW Combination (Asymmetric BCS) Note 3	C B W [MHz]	carrier Bandwidth [PRBs]	Range		Carrier centre frequency [MHz]	Carrier centre frequency [ARFCN]	point A [MHz]	absolute FrequencyPointA [ARFCN]	offset ToCarrier [Carrier PRBs]	SSB offset [Carrier PRBs]	SSB offset [kHz]	absolute FrequencySSB [ARFCN]	k_{SSB}	Offset Carrier CORESET#0 [RBs] Note 2	CORESET#0 Index (Offset [RBs]) Note 1	offset ToPointA (SIB1) [PRBs] Note 1
10/10	10	52	Downlink	Mid	2145	429000	2140.32	428064	0	15	5355	428430	2	0	0 (0)	0

				H i g h	21 75	43 50 00	21 70 .3 2	434064	0		5 4 3 0	434430	2	0	0 (0)	0
	1 0	52	Up lin k	M i d	17 45	34 90 00	17 40 .3 2	348064	0	-	-	-	-	-	-	-
				H i g h	17 75	35 50 00	17 70 .3 2	354064	0		-	-	-	-	-	-
20/2 0	2 0	106	Do wn lin k	M i d	21 45	42 90 00	21 35 .4 6	427092	0	1 5	5 3 4 3	427470	6	0	0 (0)	0
				H i g h	21 70	43 40 00	21 60 .4 6	432092	0		5 4 0 7	432530	2	0	1 (2)	2
	2 0	106	Up lin k	M i d	17 45	34 90 00	17 35 .4 6	347092	0	-	-	-	-	-	-	-
				H i g h	17 70	35 40 00	17 60 .4 6	352092	0		-	-	-	-	-	-
40/4 0	4 0	216	Do wn lin k	M i d	21 45	42 90 00	21 25 .5 6	425112	0	1 5	5 3 1 9	425550	2	0	1 (2)	2
				H i g h	21 60	43 20 00	21 40 .5 6	428112	0		5 3 5 8	428670	6	1	2 (4)	5
	4 0	216	Up lin k	M i d	17 45	34 90 00	17 25 .5 6	345112	0	-	-	-	-	-	-	-
				H i g h	17 60	35 20 00	17 40 .5 6	348112	0		-	-	-	-	-	-
Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-1 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2. Note 2: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs. Note 3: Asymmetric CBW BCS refers to applicable asymmetric UL and DL channel bandwidth combination set as specified in TS 38.101-1 [7], Table 5.3.6-1 for NR band n66.																

Table 5.2.2.1.66-2: Test frequencies for NR operating band n66, uplink and downlink channel bandwidth combinations and SCS 30 kHz

UL/ DL BW Co mbi nati on	C B W [M H z]	carrie rBand width [PRB s]	Range	C ar ri er ce ntr e	Ca rri er ce ntr e	po int A [M Hz]	absolut eFrequ encyPointA [ARFCN]	offse tToC arrier [Carr ier PRB s]	S S bl o c k S	G S C N	absolut eFrequ encySSB [ARFCN]	k_{SSB}	Offs et Carr ier CO RES	CO RES ET# 0 Inde x	offse tToP ointA (SIB1) [PRB s]

(Asymmetric BCS) Note 3					[MHz]	[ARFCN]				CS [kHz]				ET#0 [RBs] Note 2	(Offset [RBs]) Note 1	Note 1	
20/20	20	51	Downlink	Mid	2145	429000	213582	427164	0	15	5349	427950	22	0	0 (5)	10	
				High	2170	434000	216082	432164	0		5413	433010	18	0	1 (6)	12	
	20	51	Uplink	Mid	1745	349000	173582	347164	0	-	-	-	-	-	-		
				High	1770	354000	176082	352164	0	-	-	-	-	-	-		
	40/40	40	106	Downlink	Mid	2145	429000	212592	425184	0	15	5325	426030	18	0	1 (6)	12
					High	2160	432000	214092	428184	0		5361	428910	2	0	0 (5)	10
40		106	Uplink	Mid	1745	349000	172592	345184	0	-	-	-	-	-	-	-	
				High	1760	352000	174092	348184	0		-	-	-	-	-	-	
Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-2 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.																	
Note 2: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs.																	
Note 3: Asymmetric CBW BCS refers to applicable asymmetric UL and DL channel bandwidth combination set as specified in TS 38.101-1 [7], Table 5.3.6-1 for NR band n66.																	

5.2.2.1.67 – 5.2.2.1.69 FFS

5.2.2.1.70 Reference test frequencies for NR operating band n70

Table 5.2.2.1.70-1: Test frequencies for NR operating band n70, default Tx-RX frequency separation 300MHz, uplink and downlink channel bandwidth combinations and SCS 15 kHz

UL/DL Bandwidth	CBW [MHz]	carrier Bandwidth [PRBs]	Range	Carrier frequency	Carrier centre	point A [MHz]	absolute Frequency Point A [ARFCN]	offset to Carrier [Carrier]	SSB block	SSC	absolute Frequency SSB [ARFCN]	k_s	Offset Carrier CORESET	CORESET#0 Index	offset to Point A (SIB1)

combination	H z]				nt re [M H z]	[A R F C N]			PRB s]	S C S [k H z]				ET# 0 [RB s] Not e 2	(Off set [RB s]) Not e 1	[PRB s] Note 1
10/10	1 0	52	Do wn lin k	M i d	20 02 .5	40 05 00	19 97 .8 2	399564	0	1 5	5 0 0 1	400110	2	1	2 (4)	5
	1 0	52	Up lin k	M i d	17 02 .5	34 05 00	16 97 .8 2	339564	0	-	-	-	-	-	-	-
Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-1 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2. Note 2: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs.																

5.2.2.1.71 Reference test frequencies for NR operating band n71

Table 5.2.2.1.71-1: Test frequencies for NR operating band n71 and SCS 15 kHz

C B W [M H z]	carrier Bandwidth [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequency PointA [ARFCN]	offsetToCarrier [Carrier PRBs]	S S block SCS [kHz]	G S C N	absoluteFrequencySSB [ARFCN]	k_{SS}	Offset Carrier CORESET#0 [RBs] Note 2	CORESET#0 Index (Offset [RBs]) Note 1	offsetToPointA (SIB1) [PRBs] Note 1
10	52	Downlink	Mid	634.5	126900	629.82	125964	0	15	81	126510	2	1	2 (4)	5
		Uplink	Mid	680.5	136100	675.82	135164	0	-	-	-	-	-	-	-
Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-1 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.															
Note 2: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs.															

5.2.2.1.72 Reference test frequencies for NR operating band n72

Table 5.2.2.1.72-1: Test frequencies for NR operating band n72 and SCS 15 kHz

C B W [M H z]	carrier Bandw idth [PRBs]	Range	Ca rri er ce ntr e [M Hz]	Car rier ce ntr e [A R F C N]	po int A [M Hz]	absoluteF requency PointA [ARFCN]	offset ToCar rier [Carri er PRBs]	S S bl o c k S C S [k H z]	G S C N	absolute Frequenc ySSB [ARFCN]	k_{SS}	Offs et Carri er COR	COR ESE T#0 Inde x	offset ToPoi ntA (SIB1)

H z]				nt re [M Hz]	[A RF CN]	Hz]		PRBs]	k S C S [k H z]				ESE T#0 [RBs] Note 2	(Offs et [RBs]) Note 1	[PRB s] Note 1
5	25	Do wnl ink	L o w M id H igh	46 3. 5	927 00	46 1. 25	92250	0	1 5	11 58	92670	8	1	0 (0)	1
		Upl ink	L o w M id H igh	45 3. 5	907 00	45 1. 25	90250	0	-	-	-	-	-	-	-
Note 1: For 3 MHz CBW, the CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-0 in TS 38.213 [22]. For 5 MHz CBW, the CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-1 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.															
Note 2: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs.															

5.2.2.1.73 FFS

5.2.2.1.74 Reference test frequencies for NR operating band n74

Table 5.2.2.1.74-1: Test frequencies for NR operating band n74 and SCS 15 kHz

C B W [M H z]	carrier Bandwidth [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequency PointA [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS [kHz]	GS CN	absoluteFrequencySSB [ARFCN]	k_{SSB}	Offset Carrier CORESET#0 [RBs] Note 2	CORESET#0 Index (Offset [RBs]) Note 1	offsetToPointA (SIB1) [PRBs] Note 1
10	52	Dwlink	Mid	1496.5	299300	1491.82	298364	0	15	3736	298850	6	1	1 (2)	3
		Uplink	Mid	1448.5	289700	1443.82	288764	0	-	-	-	-	-	-	-
Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-1 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.															
Note 2: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs.															

5.2.2.1.75 – 5.2.2.1.76 FFS

5.2.2.1.77 Reference test frequencies for NR operating band n77

Table 5.2.2.1.77-1: Test frequencies for NR operating band n77, SCS 15 kHz and ΔF_{Raster} 15 kHz

FFS

Table 5.2.2.1.77-2: Test frequencies for NR operating band n77, SCS 30 kHz and ΔF_{Raster} 30 kHz

C B W [M H z]	carrier Band width [PRBs]	Range		Ca rri er ce ntr e [M Hz]	Ca rri er ce ntr e [A R F C N]	po int A [M Hz]	absoluteF requency PointA [ARFCN]	offset ToCa rrier [Carri er PRBs]	S S bl o c k S C S [k H z]	G S C N	absolute Frequen cySSB [ARFCN]	k_{SSB}	Offs et Carri er COR ESE T#0 [RBs] Note 2	COR ESE T#0 Inde x (Offs et [RBs]) Note 1	offset ToPoi ntA (SIB1) [PRB s] Note 1
4 0	106	Down link & Upl ink	M id	37 50	65 00 00	37 30. 92	648728	0	3 0	80 10	649056	1 6	0	3 (3)	6
Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-4 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2. Note 2: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs.															

5.2.2.1.78 Reference test frequencies for NR operating band n78

Table 5.2.2.1.78-1: Test frequencies for NR operating band n78, SCS 15 kHz and ΔF_{Raster} 15 kHz

FFS

Table 5.2.2.1.78-2: Test frequencies for NR operating band n78, SCS 30 kHz and ΔF_{Raster} 30 kHz

C B W [M H z]	carrier Band width [PRBs]	Range		Ca rri er ce ntr e [M Hz]	Ca rri er ce ntr e [A R F C N]	po int A [M Hz]	absoluteF requency PointA [ARFCN]	offset ToCa rrier [Carri er PRBs]	S S bl o c k S C S [k H z]	G S C N	absolute Frequen cySSB [ARFCN]	k_{SSB}	Offs et Carri er COR ESE T#0 [RBs] Note 2	COR ESE T#0 Inde x (Offs et [RBs]) Note 1	offset ToPoi ntA (SIB1) [PRB s] Note 1

40	106	Downlink & Uplink	Mid	354999	636666	353091	635394	0	30	7871	635712	6	0	3 (3)	6
Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-4 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2. Note 2: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs.															

5.2.2.1.79 Reference test frequencies for NR operating band n79

Table 5.2.2.1.79-1: Test frequencies for NR operating band n79, SCS 15 kHz and ΔF_{Raster} 15 kHz

FFS

Table 5.2.2.1.79-2: Test frequencies for NR operating band n79, SCS 30 kHz and ΔF_{Raster} 30 kHz

C B W [M H z]	carrier Band width [PRBs]	Range		Ca rri er cen tr e [M Hz]	Ca rri er cen tr e [A R F C N]	po int A [M Hz]	absoluteF requency PointA [ARFCN]	offset ToCa rrier [Carri er PRBs]	S S bl o c k S C S [k H z]	G S C N	absolute Frequen cySSB [ARFCN]	k_{SSB}	Offs et Carri er COR ESE T#0 [RBs] Note 2	COR ESE T#0 Inde x (Offs et [RBs]) Note 1	offset ToPoi ntA (SIB1) [PRB s] Note 1
40	106	Downlink & Uplink	Mid	4700.01	713334	4680.93	712062	0	30	8672	712608	18	8	1 (4)	24
Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-6 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.															
Note 2: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs.															

5.2.2.1.80 – 5.2.2.1.84 FFS

5.2.2.1.85 Reference test frequencies for NR operating band n85

Table 5.2.2.1.85-1: Test frequencies for NR operating band n85 and SCS 15 kHz

C B W [MHz]	carrier Bandwidth [PRBs]	Range	Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absolute Frequency PointA [ARFCN]	offset ToCarrier [Carrier PRBs]	SSB offset [kHz]	SSB offset [kHz]	absolute FrequencySSB [ARFCN]	k_{SSB}	Offset Carrier CORESET#0 [RBs]	CORESET#0 Index	offset ToPointA (SIB1) [PRBs]

H z]				[M Hz]	[A RF CN]			PRBs]	S C S [k H z]				ESE T#0 [RBs] Note 2	(Offs et [RBs]) Note 1	Note 1
1 0	52	Do wnl ink	M i d	73 7	147 400	71 3. 96	142792	102		18 35	146890	2	2	1 (2)	106
		Upl ink	M i d	70 7	141 400	61 1. 6	122320	504	-	-	-	-	-	-	-
Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-1 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcchConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.															
Note 2: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET0Carrier}}$ in Annex C expressed in number of common RBs.															

5.2.2.1.86 FFS

5.2.2.1.87 Reference test frequencies for NR operating band n87

Table 5.2.2.1.87-1: Test frequencies for NR operating band n87 and SCS 15 kHz

C B W [M H z]	carrier Bandwidth [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequency PointA [ARFCN]	offsetToCarrier [Carrier PRBs]	S S blk SCS [kHz]	G S C N	absoluteFrequencySSB [ARFCN]	k_{SS}	Offset Carrier CORESET#0 [RBs] Note 2	CORESET#0 Index (Offset [RBs]) Note 1	offsetToPointA (SIB1) [PRBs] Note 1
5	25	Downlink	Low	422.5	84500	420.25	84050	0	15	1057	84530	4	3	0 (0)	3
			Mid												
			High												
		Uplink	Low	412.5	82500	410.25	82050	0	-	-	-	-	-	-	
			Mid												
			High												

Note 1: For 5 MHz CBW, the CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-1 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.

Note 2: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs.

5.2.2.1.88 Reference test frequencies for NR operating band n88

Table 5.2.2.1.88-1: Test frequencies for NR operating band n88 and SCS 15 kHz

CBW [MHz]	carrier Bandwidth [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absolute Frequency PointA [ARFCN]	offset ToCarrier [Carrier PRBs]	SSB offset [kHz]	GSN	absolute FrequencySSB [ARFCN]	k_{SSB}	Offset Carrier CORESET#0 [RBs] Note 2	CORESET#0 Index (Offset [RBs]) Note 1	offset ToPointA (SIB1) [PRBs] Note 1
5	25	Downlink	Low	424.5	84900	422.25	84450	0	15	1062	84990	0	5	0 (0)	5
			Mid												
			High												
		Uplink	Low	414.5	82900	412.25	82450	0	-	-	-	-	-	-	
			Mid												
			High												
Note 1: For 5 MHz CBW, the CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-1 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.															
Note 2: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs.															

5.2.2.1.89 – 5.2.2.1.103 FFS

5.2.2.1.104 Reference test frequencies for NR operating band n104

Table 5.2.2.1.104-1: Test frequencies for NR operating band n104 and SCS 15 kHz

FFS

Table 5.2.2.1.104-2: Test frequencies for NR operating band n104 and SCS 30 kHz

CBW [MHz]	carrier Bandwidth [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absolute Frequency PointA [ARFCN]	offset ToCarrier [Carrier PRBs]	SSB offset [kHz]	GSN	absolute FrequencySSB [ARFCN]	k_{SSB}	Offset Carrier CORESET#0 [RBs] Note 2	CORESET#0 Index (Offset [RBs]) Note 1	offset ToPointA (SIB1) [PRBs] Note 1

40	106	Downlink & Uplink	Mid	677499	851666	675591	850394	0	30	10113	850944	22	8	1 (4)	24
Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-6 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2. Note 2: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs.															

5.2.2.1.105 Reference test frequencies for NR operating band n105

Table 5.2.2.1.105-1: Test frequencies for NR operating band n105 and SCS 15 kHz

CBW [MHz]	carrier Bandwidth [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequency PointA [ARFCN]	offsetToCarrier [Carrier PRBs]	SSB offset [kHz]	GSN	absoluteFrequencySSB [ARFCN]	k_{SSB}	Offset Carrier CORESET#0 [RBs] Note 2	CORESET#0 Index (Offset [RBs]) Note 1	offsetToPointA (SIB1) [PRBs] Note 1
10	52	Downlink	Mid	632	126400	627.32	125464	0	15	1574	126010	2	1	2 (4)	5
		Uplink	Mid	683	136600	678.32	135664	0	-	-	-	-	-	-	-
Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-1 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.															
Note 2: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs.															

5.2.2.1.106 – 5.2.2.1.108 FFS

5.2.2.1.109 Reference test frequencies for NR operating band n109

Table 5.2.2.1.109-1: Test frequencies for NR operating band n109 and SCS 15 kHz

CBW [MHz]	carrier Bandwidth [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequency PointA [ARFCN]	offset ToCarrier [Carrier PRBs]	SSB offset [kHz]	GSN	absoluteFrequencySSB [ARFCN]	k_{SSB}	Offset Carrier CORESET#0 [RBs] Note 2	CORESET#0 Index (Offset [RBs]) Note 1	offset ToPointA (SIB1) [PRBs] Note 1

10	52	Downlink	MID	1474.5	294900	1469.82	293964	0	15	3681	294510	2	3	1(2)	5
		Uplink	MID	718	143600	713.32	142664	0	-	-	-	-	-	-	-

Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-1 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.

Note 2: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs.

5.2.2.1.110 Reference test frequencies for NR operating band n110

Table 5.2.2.1.110-1: Test frequencies for NR operating band n110 and SCS 15 kHz

C B W [M H z]	carrier Bandwidth [PRBs]	Range		Carrier centre [M Hz]	Carrier centre [ARFCN]	point A [M Hz]	absoluteFrequency PointA [ARFCN]	offsetToCarrier [Carrier PRBs]	SSB offset [k H z]	GSN	absoluteFrequencySSB [ARFCN]	k_{SS}	Offset Carrier CORESET#0 [RBs] Note 2	CORESET#0 Index (Offset [RBs]) Note 1	offsetToPointA (SIB1) [PRBs] Note 1
3	15	Downlink	Mid	1433.5	286700	1432.15	286430	0	15	33803	286670	8	0	2 (0)	0
		Uplink	Mid	1393.5	278700	1392.15	278430	0		-	-	-	-	-	-
Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-0 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.															
Note 2: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs.															

5.2.2.2 NR operating bands in FR2

5.2.2.2.1 Reference test frequencies for NR operating band n257

Table 5.2.2.2.1-1: Test frequencies for NR operating band n257, SCS 60 kHz and ΔF_{Raster} 60 kHz

FFS

Table 5.2.2.2.1-2: Test frequencies for NR operating band n257, SCS 120 kHz and ΔF_{Raster} 120 kHz

C B W [MHz]	carrier Bandwidth [PRBs]	Range	Carrier centre	Carrier centre	point A [MHz]	absolute Frequency PointA [ARFCN]	offset ToCarrier [Carrier PRBs]	SSB offset [kHz]	GSN	absolute FrequencySSB [ARFCN]	k_{SS}	Offset Carrier CORESET#0	CORESET#0 Index (Offset)	offset ToPointA (SIB1) [PRBs]

				[M Hz]	[A RF CN]				C S [k H z]				[RBs] Note 2	[RBs) Note 1	Note 1
1 0 0	66	Do wnl ink & Upl ink	M i d	27 99 9.9 6	20 79 16 5	27 95 2.4 4	2078373	0	1 2 0	22 47 2	2078875	1 1	6	1 (4)	20
Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-8 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.															
Note 2: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter ΔF _{OffsetCORESET-0-Carrier} in Annex C expressed in number of common RBs.															

5.2.2.2.2 Reference test frequencies for NR operating band n258

Table 5.2.2.2.2-1: Test frequencies for NR operating band n258, SCS 60 kHz and ΔF_{Raster} 60 kHz

FFS

Table 5.2.2.2.2-2: Test frequencies for NR operating band n258, SCS 120 kHz and ΔF_{Raster} 120 kHz

C B W [M H z]	carrier Band width [PRBs]	Range		Carrier centre [M Hz]	Carrier centre [A RF CN]	point A [M Hz]	absoluteFrequency PointA [ARFCN]	offsetToCarrier [Carrier PRBs]	S S bl oc k S C S [k H z]	G S C N	absoluteFrequencySSB [ARFCN]	k_{SSB}	Offset Carrier CORESE T#0 [RBs] Note 2	CORESE T#0 Index (Offset [RBs]) Note 1	offsetToPointA (SIB1) [PRBs] Note 1
100	66	Downlink & Uplink	Mid	25875	2043749	25827.48	2042957	0	120	22349	2043451	7	6	1 (4)	20
Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-8 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.															
Note 2: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs.															

5.2.2.2.3 Reference test frequencies for NR operating band n259

Table 5.2.2.2.3-1: Test frequencies for NR operating band n260, SCS 60 kHz and ΔF_{Raster} 60 kHz

FFS

Table 5.2.2.2.3-2: Test frequencies for NR operating band n260, SCS 120 kHz and Δ FRaster 120 kHz

C B W [M H z]	carrier Band width [PRBs]	Range		Car rie r ce ntr e [M Hz]	Car rie r ce ntr e [A R F C N]	poi nt A [M Hz]	absoluteF requency PointA [ARFCN]	offset ToCa rrier [Carrier PRBs]	S S bl o c k S C S [k H z]	G S C N	absolute Frequen cySSB [ARFCN]	k_{SS}	Offs et Carrier CORE SET#0 [RBs] Note 2	COR ESE T#0 Index (Offs et [RBs]) Note 1	offset ToPoi ntA (SIB1) [PRB s] Note 1
1 0 0	66	Do wnl ink & Upl ink	M i d	41 49 9.9 6	23 04 16 5	41 45 2.4 4	2303373	102	1 2 0	23 25 3	2303803	1 1	3	1 (4)	14
Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-8 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2. Note 2: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs.															

5.2.2.2.4 Reference test frequencies for NR operating band n260

Table 5.2.2.2.4-1: Test frequencies for NR operating band n260, SCS 60 kHz and Δ FRaster 60 kHz

FFS

Table 5.2.2.2.4-2: Test frequencies for NR operating band n260, SCS 120 kHz and Δ FRaster 120 kHz

C B W [M H z]	carrier Band width [PRBs]	Range		Car rie r ce ntr e [M Hz]	Car rie r ce ntr e [A R F C N]	poi nt A [M Hz]	absoluteF requency PointA [ARFCN]	offset ToCa rrier [Carrier PRBs]	S S bl o c k S C S [k H z]	G S C N	absolute Frequen cySSB [ARFCN]	k_{SS}	Offs et Carrier CORE SET#0 [RBs] Note 2	COR ESE T#0 Index (Offs et [RBs]) Note 1	offset ToPoi ntA (SIB1) [PRB s] Note 1
1 0 0	66	Do wnl ink & Upl ink	M i d	38 49 9.9 6	22 54 16 5	38 45 2.4 4	2253373	0	1 2 0	23 07 9	2253691	3	3	0 (0)	6
Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-8 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2. Note 2: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs.															

5.2.2.2.5 Reference test frequencies for NR operating band n261

Table 5.2.2.2.5-1: Test frequencies for NR operating band n261, SCS 60 kHz and Δ FRaster 60 kHz

FFS

Table 5.2.2.2.5-2: Test frequencies for NR operating band n261, SCS 120 kHz and Δ FRaster 120 kHz

C B W [M H z]	carrier Band width [PRBs]	Range		Ca rrie ce ntr e [M Hz]	Ca rrie ce ntr e [A R F C N]	poi nt A [M Hz]	absoluteF requency PointA [ARFCN]	offset ToCa rrier [Carri er PRBs]	S S bl oc k S C S [k H z]	G S C N	absolute Frequen cySSB [ARFCN]	k_{SSB}	Offs et Carri er CORE SET#0 [RBs] Note 2	COR ESE T#0 Index (Offs et [RBs]) Note 1	offset ToPoi ntA (SIB1) [PRB s] Note 1
1 0 0	66	Do wnl ink & Upl ink	M i d	27 92 4.9 6	20 77 91 5	27 87 7.4 4	2077123	0	1 2 0	22 46 7	2077435	0	3	0 (0)	6
Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-8 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2. Note 2: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs.															

5.2.2.3 NR NTN operating bands

5.2.2.3.1 Reference test frequencies for NR operating band n256

Table 5.2.2.3.1-1: Test frequencies for NR operating band n256 and SCS 15 kHz

C B W [M H z]	carrier Bandwidth [PRBs]	Range		Carrier centre [M Hz]	Carrier centre [ARFCN]	point A [M Hz]	absoluteFrequency PointA [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS [kHz]	GS CN	absoluteFrequencySSB [ARFCN]	k_{SSB}	Offset Carrier CORESET#0 [RBs] Note 2	CORESET#0 Index (Offset [RBs]) Note 1	offsetToPointA (SIB1) [PRBs] Note 1
10	52	Downlink	Mid	2185	437000	2180.32	436064	0	15	5458	436610	2	1	2(4)	5
		Uplink	Mid	1995	399000	1990.32	398064	0	-	-	-	-	-	-	-
Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-1 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.															

Note 2: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs.

5.2.2.3.2 Reference test frequencies for NR operating band n255

Table 5.2.2.3.2-1: Test frequencies for NR operating band n255 with SCS 15 kHz and SSB SCS 15 kHz

C B W [MHz]	carrier Bandwidth [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequencyPointA [ARFCN]	offsetToCarrier [Carrier PRBs]	S S bl o c k S C S [kHz]	G S C N	absoluteFrequencySSB [ARFCN]	k_{SSB}	Offset Carrier CORESET#0 [RBs] Note 2	CORESET#0 Index (Offset [RBs]) Note 1	offsetToPointA (SIB1) [PRBs] Note 1
10	52	Downlink	Mid	1542	308400	153732	307464	0	15	3849	307950	6	1	1(2)	3
		Uplink	Mid	1643.5	328700	163882	327764	0	-	-	-	-	-	-	-
Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-1 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.															
Note 2: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs.															

5.2.2.3.3 Reference test frequencies for NR operating band n254

Table 5.2.2.3.3-1: Test frequencies for NR operating band n254 with SCS 15 kHz and SSB SCS 15 kHz

UL/ DL Bandwidth combination [MHz]	carrier Bandwidth [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequency PointA [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS [kHz]	GS CN	absolute FrequencySSB [ARFCN]	k_{SS}	Offset Carrier CORESET#0 [RBs] Note 2	CORESET#0 Index (Offset [RBs]) Note 1	offsetToPointA (SIB1) [PRBs] Note 1
10/10	52	Dwlnk	Mid	2491.8	498360	2487.12	497424	0	15	6222	497790	2	0	0(0)	0
		Uplnk	Mid	1618.3	323660	1613.62	322724	0	-	-	-	-	-	-	-
Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-1 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.															
Note 2: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs.															

Note 3: 20/35 MHz UL/DL Bandwidth combination is tested with Low range test frequency only. Low range test frequency shall be used instead of Mid range and High range test frequencies.

5.2.2.3.4 FFS

5.2.2.3.5 Reference test frequencies for NR operating band n252

Table 5.2.2.3.5-1: Test frequencies for NR operating band n252 and SCS 15 kHz

C B W [M H z]	carrier Bandwidth [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absolute Frequency Point A [ARFCN]	offset To Carrier [Carrier PRBs]	S S bl o c k S C S [k H z]	G S C N	absolute Frequency SSB [ARFCN]	k_{ss}	Offset Carrier CORESET#0 [RBs] Note 2	CORESET#0 Index (Offset [RBs]) Note 1	offset To Point A (SIB1) [PRBs] Note 1
10	52	Downlink	Mid	2190	438000	2185.32	437064	0	15	5469	437550	6	1	1 (2)	3
		Uplink	Mid	2010	402000	2005.32	401064	0	-	-	-	-	-	-	-
Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-1 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.															
Note 2: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs.															

5.2.2.4 Test frequencies for EN-DC band combinations within FR1

5.2.2.4.1 FFS

5.2.2.4.2 FFS

5.2.2.4.3 Intra-band non-contiguous EN-DC configurations within FR1

5.2.2.4.3.1 FFS

5.2.2.4.3.2 Intra-band non-contiguous EN-DC configurations DC_2_n2

5.2.2.4.3.2.1 DC_2A_n2A

Table 5.2.2.4.3.2.1-1: Test frequencies for EN-DC combination DC_2A_n2A, Max Wgap

Test Frequency ID	NR channel bandwidth [MHz]	NR SCS [kHz]	NR test frequency range (Note 1)	E-UTRA channel bandwidth [MHz]	E-UTRA frequency range (Note 2)
Low with maxWgap (NR – E-UTRA)	5	15	Low	20	High
	10				
	15				
	20				

	25				
	30				
	35				
	40				
High with maxWgap (E-UTRA - NR)	5		High	20	Low
	10				
	15				
	20				
	25				
	30				
	35				
40					
Low with maxWgap (NR – E-UTRA)	10	30	Low	20	High
	15				
	20				
	25				
	30				
	35				
	40				
High with maxWgap (E-UTRA - NR)	10		High	20	Low
	15				
	20				
	25				
	30				
	35				
	40				
Note 1: The NR test frequencies are specified in clause 5.2.2.1.2 for the NR Channel Bandwidth, NR SCS and NR test frequency range as given in the table.					
Note 2: The E-UTRA test frequencies are specified in TS 36.508 [2], clause 4.3.1.1.2 for the E-UTRA channel bandwidth and E-UTRA test frequency range as given in the table.					

5.2.2.4.3.3– 5.2.2.4.3.40 FFS

5.2.2.4.3.41 Intra-band non-contiguous EN-DC configurations DC_41_n41

5.2.2.4.3.41.1 DC_41A_n41A

Table 5.2.2.4.3.41.1-1: Test frequencies for EN-DC combination DC_41A_n41A, Max Wgap

Test Frequency ID	NR channel bandwidth [MHz]	NR SCS [kHz]	NR test frequency range (Note 1)	E-UTRA channel bandwidth [MHz]	E-UTRA frequency range (Note 2)
Low with maxWgap (NR – E-UTRA)	40	30	Low	20	High
	50				
	60				
	80				
	100				
High with maxWgap (E-UTRA - NR)	40	30	High	20	Low
	50				
	60				
	80				
	100				
Low with maxWgap (NR – E-UTRA)	40	60	Low	20	High
	50				
	60				
	80				
	100				
High with maxWgap (E-UTRA - NR)	40	60	High	20	Low
	50				
	60				
	80				
	100				

Note 1:	The NR test frequencies are specified in clause 5.2.2.1.41 for the NR Channel Bandwidth, NR SCS and NR test frequency range as given in the table.
Note 2:	The E-UTRA test frequencies are specified in TS 36.508 [2], clause 4.3.1.2.9 for the E-UTRA channel bandwidth and E-UTRA test frequency range as given in the table.

5.2.2.4.3.41.2 DC_41C_n41A

Table 5.2.2.4.3.41.2-1: Test frequencies for EN-DC combination DC_41C_n41A, SCS=30kHz, Max Wgap

Test Frequency ID	NR channel bandwidth [MHz]	NR SCS [kHz]	NR test frequency range (Note 1)	E-UTRA CC Combo / N _{RB_agg} [MHz]	E-UTRA frequency range (Note 2)	
Low with maxWgap (NR – E-UTRA)	40	30	Low	20 + 20	High	
	50					
	60					
	80					
	100					
High with maxWgap (E-UTRA - NR)	40		High	20 + 20	Low	
	50					
	60					
	80					
	100					
Low with maxWgap (NR – E-UTRA)	40	60	Low	20 + 20	High	
	50					
	60					
	80					
	100					
High with maxWgap (E-UTRA - NR)	40		High	20 + 20	Low	
	50					
	60					
	80					
	100					
Note 1: The NR test frequencies are specified in clause 5.2.2.1.41 for the NR Channel Bandwidth, NR SCS and NR test frequency range as given in the table.						
Note 2: The E-UTRA test frequencies are specified in TS 36.508 [2], clause 4.3.1.2.9A for the E-UTRA CC Combo and E-UTRA test frequency range as given in the table.						

5.2.2.4.3.41.3 DC_41D_n41A

Table 5.2.2.4.3.41.3-1: Test frequencies for EN-DC combination DC_41D_n41A, SCS=30kHz, Max Wgap

Test Frequency ID	NR channel bandwidth [MHz]	NR SCS [kHz]	NR test frequency range (Note 1)	E-UTRA CC Combo / N _{RB_agg} [MHz]	E-UTRA frequency range (Note 2)
Low with maxWgap (NR – E-UTRA)	40	30	Low	20 + 20 + 20	High
	50				
	60				
	80				
	100				
High with maxWgap (E-UTRA - NR)	40		High	20 + 20 + 20	Low
	50				
	60				
	80				
	100				
Low with maxWgap (NR – E-UTRA)	40	60	Low	20 + 20 + 20	High
	50				
	60				
	80				
	100				

High with maxWgap (E-UTRA - NR)	40		High	20 + 20 + 20	Low
	50				
	60				
	80				
	100				
Note 1:	The NR test frequencies are specified in clause 5.2.2.1.41 for the NR Channel Bandwidth, NR scs and NR test frequency range as given in the table.				
Note 2:	The E-UTRA test frequencies are specified in TS 36.508 [2], clause 4.3.1.2.9A for the E-UTRA CC Combo and E-UTRA test frequency range as given in the table.				

5.2.2.4.3.42– 5.2.2.4.3.65 FFS

5.2.2.4.3..66 Intra-band non-contiguous EN-DC configurations DC_66_n66

5.2.2.4.3.66.1 DC_66A_n66A

Table 5.2.2.4.3.66.1-1: Test frequencies for EN-DC combination DC_66A_n66A, Max Wgap

Test Frequency ID	NR channel bandwidth [MHz]	NR SCS [kHz]	NR test frequency range (Note 1)	E-UTRA channel bandwidth [MHz]	E-UTRA frequency range (Note 2)
Low with maxWgap (NR – E-UTRA)	5	15	Low	20	High
	10				
	15				
	20				
	25				
	30				
	40				
	45				
High with maxWgap (E-UTRA - NR)	5		High	20	Low
	10				
	15				
	20				
	25				
	30				
	40				
	45				
Low with maxWgap (NR – E-UTRA)	5	30	Low	20	High
	10				
	15				
	20				
	25				
	30				
	40				
	45				
High with maxWgap (E-UTRA - NR)	5		High	20	Low
	10				
	15				
	20				
	25				
	30				
	40				
	45				
Note 1:	The NR test frequencies are specified in clause 5.2.2.1.66 for the NR Channel Bandwidth, NR SCS and NR test frequency range as given in the table.				
Note 2:	The E-UTRA test frequencies are specified in TS 36.508 [2], clause 4.3.1.1.66 for the E-UTRA channel bandwidth and E-UTRA test frequency range as given in the table.				

5.3 Void

Editor's Note: Reserved for future use.

5.4 Default NG-RAN RRC message and information elements contents

5.4.1 Radio resource control information elements

As defined in clause 4.6.3 with the following exceptions:

For Tx and Rx test cases in which FR1 Power Class 3 UEs verifying Power Class 3 requirements, refer to Table 5.4.1-1;
For Tx and Rx test cases in which FR1 Power Class 2 UEs verifying Power Class 2 requirements, refer to Table 5.4.1-2;
For Tx and Rx test cases in which FR1 Power Class 1.5 UEs verifying Power Class 1.5 requirements, refer to Table 5.4.1-2A.

Table 5.4.1-1: P-Max-PC3

Derivation Path: Table 4.6.3-89			
Information Element	Value/remark	Comment	Condition
P-Max	Not present		SA AND FR1
	23		EN-DC AND FR1

Table 5.4.1-2: P-Max-PC2

Derivation Path: Table 4.6.3-89			
Information Element	Value/remark	Comment	Condition
P-Max	Not present		SA AND FR1
	26		EN-DC AND FR1

Condition	Explanation
SA	NR standalone RF tests cases
EN-DC	EN-DC RF tests cases specified in 38.521-3

Table 5.4.1-2A: P-Max-PC1.5

Derivation Path: Table 4.6.3-89			
Information Element	Value/remark	Comment	Condition
P-Max	Not present		SA AND FR1

Table 5.4.1-3: Void

Table 5.4.1-4: PUSCH-Config

Derivation Path: Clause 4.6.3 Table 4.6.3-118			
Information Element	Value/remark	Comment	Condition
PUSCH-Config ::= SEQUENCE {			
maxRank	2		2TX_UL_MIMO or 2L_UL_MIMO
	4		4TX_UL_MIMO

	1		ULFPTx_Mode1 or ULFPTx_Mode2 or ULFPTx_ModeFull
ul-FullPowerTransmission-r16	Not present		2TX_UL_MIMO or 4TX_UL_MIMO
	fullpowerMode 1		ULFPTx_Mode1
	fullpowerMode 2		ULFPTx_Mode2
	fullpower		ULFPTx_ModeFull
}			

Condition	Explanation
2TX_UL_MIMO	UL-MIMO test cases with 2 Tx antenna ports
4TX_UL_MIMO	UL-MIMO test cases with 4 Tx antenna ports
2L_UL_MIMO	UL-MIMO test cases with 2 layers
ULFPTx_Mode1	UL-MIMO test cases with UEs supporting UL full power transmission Mode-1
ULFPTx_Mode2	UL-MIMO test cases with UEs supporting UL full power transmission Mode-2
ULFPTx_ModeFull	UL-MIMO test cases with UEs supporting UL full power transmission Mode-full power

CSI-RS for Tracking

Table 5.4.1-5: CSI-RS-ResourceMapping for TRS

Derivation Path: Table 4.6.3-45			
Information Element	Value/remark	Comment	Condition
CSI-RS-ResourceMapping ::= SEQUENCE {			
frequencyDomainAllocation CHOICE {			
row1	0001		TRS
}			
firstOFDMSymbolInTimeDomain	6	$l_0 = 6$ for CSI-RS resource 1 and 3	TRS AND FR1
	10	$l_0 = 10$ for CSI-RS resource 2 and 4	TRS AND FR1
	8	$l_0 = 8$ for CSI-RS resource 1	TRS AND FR2
	12	$l_0 = 12$ for CSI-RS resource 2	TRS AND FR2
nrofPorts	p1		TRS
Cdm-Type	noCDM		TRS
Density CHOICE{			
three	Null		TRS
}			
freqBand	CSI-FrequencyOccupation for TRS		TRS
}			

Condition	Explanation
TRS	Tracking-Reference Signal

Table 5.4.1-6: CSI-ResourcePeriodicityAndOffset for TRS

Derivation Path: Table 4.6.3-43			
Information Element	Value/remark	Comment	Condition
CSI-ResourcePeriodicityAndOffset ::= CHOICE {			
slots20	0	SCS 15kHz, CSI-RS resource 1 and 2	TRS AND FR1_15kHz

	1	SCS 15kHz, CSI-RS resource 3 and 4	TRS AND FR1_15kHz
Slots40	1	SCS 30kHz, CSI-RS resource 1 and 2	TRS AND FR1_30kHz
	2	SCS 30kHz, CSI-RS resource 3 and 4	TRS AND FR1_30kHz
Slots80	2	SCS 60kHz, FR1, CSI-RS resource 1 and 2	TRS AND FR1_60kHz
	3	SCS 60kHz, FR1, CSI-RS resource 3 and 4	TRS AND FR1_60kHz
	40	SCS 60kHz, FR2, CSI-RS resource 1 and 2	TRS AND FR2_60kHz
Slots160	80	SCS 120kHz, CSI-RS resource 1 and 2	TRS AND FR2_120kHz
}			

Condition	Explanation
FR1_15kHz	FR1 is used under the test. SCS is set to 15kHz.
FR1_30kHz	FR1 is used under the test. SCS is set to 30kHz.
FR1_60kHz	FR1 is used under the test. SCS is set to 60kHz.
FR2_60kHz	FR2 is used under the test. SCS is set to 60kHz.
FR2_120kHz	FR2 is used under the test. SCS is set to 120kHz.
TRS	Tracking-Reference Signal

Table 5.4.1-7: CSI-MeasConfig for TRS

Derivation Path: TS 38.508-1 Table 4.6.3-38			
Information Element	Value/remark	Comment	Condition
CSI-MeasConfig ::= SEQUENCE {			
nzp-CSI-RS-ResourceToAddModList SEQUENCE (SIZE (1..maxNrofNzp-CSI-RS-Resources)) OF NZP-CSI-RS-Resource {	2 entries in case of FR2 4 entries in case of FR1	2 entries in case of FR2 4 entries in case of FR1	
NZP-CSI-RS-Resource[1]	NZP-CSI-RS-Resource for TRS (1)	entry 1 CSI-RS resource 1	
NZP-CSI-RS-Resource[2]	NZP-CSI-RS-Resource for TRS (2)	entry 2 CSI-RS resource 2	
NZP-CSI-RS-Resource[3]	NZP-CSI-RS-Resource for TRS (3)	entry 3 CSI-RS resource 3	FR1
NZP-CSI-RS-Resource[4]	NZP-CSI-RS-Resource for TRS (4)	entry 4 CSI-RS resource 4	FR1
}			
nzp-CSI-RS-ResourceSetToAddModList SEQUENCE (SIZE (1..maxNrofNzp-CSI-RS-ResourceSets)) OF NZP-CSI-RS-ResourceSet {	1 entry		
NZP-CSI-RS-ResourceSet[1]	NZP-CSI-RS-ResourceSet for TRS	entry 1	
}			
csi-IM-ResourceToAddModList	Not present		
csi-IM-ResourceSetToAddModList	Not present		
csi-SSB-ResourceSetToAddModList	Not present		
csi-ResourceConfigToAddModList SEQUENCE (SIZE (1..maxNrofCSI-ResourceConfigurations)) OF CSI-ResourceConfig {	1 entry		
CSI-ResourceConfig[1]	CSI-ResourceConfig for TRS	entry 1	
}			
reportTriggerSize	Not present		
aperiodicTriggerStateList SetupRelease	Not present		
}			

Table 5.4.1-8: NZP-CSI-RS-Resource for TRS

Derivation Path: 38.508-1 Table 4.6.3-85			
Information Element	Value/remark	Comment	Condition
NZP-CSI-RS-Resource ::= SEQUENCE {			
NZP-CSI-RS-ResourceId	0	CSI-RS resource 1	
	1	CSI-RS resource 2	
	2	CSI-RS resource 3	
	3	CSI-RS resource 4	
CSI-RS-ResourceMapping	CSI-RS-ResourceMapping for TRS		Content conditioned by the CSI-RS resource #
powerControlOffset	0		
powerControlOffsetSS	db0		
scramblingID	ScramblingId		
periodicityAndOffset	CSI-ResourcePeriodicityAndOffset for TRS		Content conditioned by the CSI-RS resource #
qcl-InfoPeriodicCSI-RS	TCI-StateId		
}			

Table 5.4.1-9: NZP-CSI-RS-ResourceSet for TRS

Derivation Path: Table 4.6.3-87			
Information Element	Value/remark	Comment	Condition
NZP-CSI-RS-ResourceSet ::= SEQUENCE {			
nzp-CSI-ResourceSetId	0		
nzp-CSI-RS-Resources SEQUENCE (SIZE (1..maxNrofNZP-CSI-RS-ResourcesPerSet)) OF NZP-CSI-RS-ResourceId {	2 entries in case of FR2 4 entries in case of FR1		
NZP-CSI-RS-ResourceId[1]	0	entry 1 CSI-RS resource 1	
NZP-CSI-RS-ResourceId[2]	1	entry 2 CSI-RS resource 2	
NZP-CSI-RS-ResourceId[3]	2	entry 3 CSI-RS resource 3	FR1
NZP-CSI-RS-ResourceId[4]	3	entry 4 CSI-RS resource 4	FR1
}			
repetition	off		
aperiodicTriggeringOffset	Not present		
trs-Info	true		
}			

Table 5.4.1-10: CSI-ResourceConfig for TRS

Derivation Path: TS 38.508-1 Table 4.6.3-41			
Information Element	Value/remark	Comment	Condition
CSI-ResourceConfig ::= SEQUENCE {			
csi-ResourceConfigId	CSI-ResourceConfigId		
csi-RS-ResourceSetList CHOICE {			
nzp-CSI-RS-SSB SEQUENCE {			
nzp-CSI-RS-ResourceSetList SEQUENCE (SIZE (1..maxNrofNZP-CSI-RS-ResourceSetsPerConfig)) OF NZP-CSI-RS-ResourceSetId {	1 entry		
NZP-CSI-RS-ResourceSetId[1]	0	entry 1	
}			
csi-SSB-ResourceSetList	Not present		

}			
}			
bwp-Id	BWP-Id		
resourceType	periodic		
}			

Table 5.4.1-11: CSI-FrequencyOccupation for TRS

Derivation Path: TS 38.508-1 Table 4.6.3-33			
Information Element	Value/remark	Comment	Condition
CSI-FrequencyOccupation ::= SEQUENCE {			
startingRB	0		
nrofRBs	max(4*ceil(m/4),24)	m is the bandwidth of active BWP	
}			

Table 5.4.1-12: ServingCellConfig

Derivation Path: Table 4.6.3-167			
Information Element	Value/remark	Comment	Condition
ServingCellConfig ::= SEQUENCE {			
csi-MeasConfig CHOICE {			
setup	csi-MeasConfig for TRS		TRS
}			

PDCCH Configuration

PDCCH-config

Table 5.4.1-16: PDCCH ControlResourceSet

Derivation Path: Table 4.6.3-28			
Information Element	Value/remark	Comment	Condition
frequencyDomainResources	11111111 00000000 00000000 00000000 00000000 000000	CORESET to use the least significant 48 RBs of the BWP	RFACS AND AL8
	11111111 11111111 00000000 00000000 00000000 000000	CORESET to use the least significant 96 RBs of the BWP	RFACS AND AL16
pdccch-DMRS-ScramblingID	1008	DMRS scrambling ID different from Physical Cell ID	

Condition	Explanation
RFACS	Used in RF Adjacent Channel Selectivity testing
AL8	PDCCH aggregationLevel 8 is configured
AL16	PDCCH aggregationLevel 16 is configured

Table 5.4.1-17: PDCCH Search Space

Derivation Path: Table 4.6.3-162			
Information Element	Value/remark	Comment	Condition
nrofCandidates SEQUENCE {			
aggregationLevel1	n2		RFACS
aggregationLevel8	n2		RFACS
aggregationLevel16	n2		RFACS
}			

}			

Condition	Explanation
RFACS	Used in RF Adjacent Channel Selectivity testing

PDSCH-ServingCellConfig

Table 5.4.1-18: PDSCH-ServingCellConfig

Derivation Path: Table 4.6.3-102			
Information Element	Value/remark	Comment	Condition
PDSCH-ServingCellConfig ::= SEQUENCE {			
nrofHARQ-ProcessesForPDSCH	Set according to definition in 38.521-1 [14], Table A.3.1-3		FR1 AND CA
}			

PUCCH-Config

Table 5.4.1-19: PUCCH-Config

Derivation Path: Table 4.6.3-112			
Information Element	Value/remark	Comment	Condition
PUCCH-Config ::= SEQUENCE {			
dl-DataToUL-ACK SEQUENCE (SIZE (1..8)) OF INTEGER {	8 entries		FR1 AND CA
INTEGER[1]	2	entry 1	
INTEGER[2]	3	entry 2	
INTEGER[3]	4	entry 3	
INTEGER[4]	5	entry 4	
INTEGER[5]	6	entry 5	
INTEGER[6]	7	entry 6	
INTEGER[7]	8	entry 7	
INTEGER[8]	10	entry 8	
}			
}			

PDSCH-Config

Table 5.4.1-20: PDSCH-Config

Derivation Path: Table 4.6.3-100			
Information Element	Value/remark	Comment	Condition
PDSCH-Config ::= SEQUENCE {			
tci-StatesToAddModList SEQUENCE(SIZE (1..maxNrofTCI-States)) OF TCI-State {	1 entry		
TCI-State[1] SEQUENCE {		entry 1	
tci-StateId	0	TCI-StateId 0	
qcl-type1 SEQUENCE {			
cell	Not present		
bwp-id	Not present		
referenceSignal CHOICE {			
ssb	SSB-Index		
}			
qcl-Type	Type C		
}			
qcl-type2 SEQUENCE {			
cell	Not present		
bwp-id	Not present		
referenceSignal CHOICE {			

ssb	SSB-Index		
}			
qcl-Type	Type D		
}			
}			
}			
}			

5.4.2 Radio resource control information elements for Demodulation Performance and CSI reporting tests

As defined in clause 4.6.3 with the following exceptions: -

Table 5.4.2-1 to 5.4.2.20: Void

5.4.2.0 Parameters common to all Demod and CSI tests

Physical layer parameters

Table 5.4.2.0-1: Physical layer parameters for DCI format 1_1 and DCI format 1_0

Derivation Path: Table 4.3.6.1.2.2-1			
Parameter	Value	Value in binary	Condition
PUCCH resource indicator	<i>PUCCH-ResourceID[1]</i> = 0 in pucch-ResourceSetID[1] or <i>PUCCH-ResourceID[1]</i> = 8 in pucch-ResourceSetID[2] as defined in Table 4.6.3-112 (Mapping as per Table 9.2.3-2 in TS 38.213)	'000'B	FR1
	<i>PUCCH-ResourceID[5]</i> = 12 in pucch-ResourceSetID[2] as defined in Table 4.6.3-112 (Mapping as per Table 9.2.3-2 in TS 38.213)	'100'B	FR2_SCS60kHz
	<i>PUCCH-ResourceID[7]</i> = 14 in pucch-ResourceSetID[2] as defined in Table 4.6.3-112 (Mapping as per Table 9.2.3-2 in TS 38.213)	'110'B	FR2_SCS120kHz
PDSCH-to-HARQ_feedback timing indicator	K ₁ slots as defined in 9.2.3 in TS 38.213. K ₁ value used for the test is specified in the test description of each test case in TS 38.521-4.		

Table 5.4.2.0-1A: Physical layer parameters for DCI format 0_1

Derivation Path: TS 38.508-1 [6], Table 4.3.6.1.1.2-1			
Parameter	Value	Value in binary	Condition
CSI request	Dependent on test parameters 1 bit		

Common Serving Parameters

ServingCellConfigCommon

Table 5.4.2.0-2: ServingCellConfigCommon

Derivation Path: Table 4.6.3-168			
Information Element	Value/remark	Comment	Condition
ServingCellConfigCommon ::= SEQUENCE {			

physCellId	PhysCellId		
downlinkConfigCommon	DownlinkConfigCommon		
ssb-PositionsInBurst CHOICE {			
shortBitmap	1000		FR1 AND SSB#0 AND (1.88GHz<FREQ<=3GHz AND (FDD OR (TDD AND SCS15)) OR FREQ<=1.88GHz)
mediumBitmap	10000000		FR1 AND SSB#0 AND (1.88GHz<FREQ<=3GHz AND (TDD AND SCS30) OR FREQ>3GHz)
}			
ssb-periodicityServingCell	ms20		
dmrs-TypeA-Position	pos2		
subcarrierSpacing	SubcarrierSpacing according to test case id		
tdd-UL-DL-ConfigurationCommon	TDD-UL-DL-ConfigCommon		
	Not present		FR1.30-1A FR2.120-1A FR1.FDD
ss-PBCH-BlockPower	0		
}			

Condition	Explanation
FREQ<=1.88GHz	Frequency range <= 1.88GHz
1.88GHz<FREQ<=3GHz	Frequency range > 1.88GHz and <= 3GHz
FREQ>3GHz	Frequency range > 3GHz
FR1.30-1A	TDD UL-DL pattern FR1.30-1A is used. Ref Annex A.1.2 of TS 38.521-4
FR2.120-1A	TDD UL-DL pattern FR2.120-1A is used. Ref Annex A.1.3 of TS 38.521-4
SSB#N	Cell configured with SSB-Index set to N as defined in Table 4.4.2-2

TDD-UL-DL-Config

Table 5.4.2.0-3: TDD-UL-DL-Config

Derivation Path: Table 4.6.3-192			
Information Element	Value/remark	Comment	Condition
TDD-UL-DL-ConfigCommon ::= SEQUENCE {			
referenceSubcarrierSpacing	SubcarrierSpacing		
pattern1 SEQUENCE {			
dl-UL-TransmissionPeriodicity	ms5		FR1.15-1, FR1.30-1
	ms2p5		FR1.30-2, FR1.30-3
	ms3		FR1.30-4
	ms2		FR1.30-5
	ms1		FR1.30-6
			FR2.60-1
	ms0p625		FR2.120.1
	ms0p5		FR2.120.2

nrofDownlinkSlots	7		FR1.30-1
	3		FR1.15-1 FR1.30-2 FR1.30-3 FR1.30-4 FR2.120.1
	1		FR1.30-5 FR1.30-6
	2		FR2.60-1 FR2.120.2
nrofDownlinkSymbols	6		FR1.30-1 FR1.30-4
	10		FR1.15-1 FR1.30-2 FR1.30-3 FR1.30-6 FR2.120.1
	12		FR1.30-5
	11		FR2.60-1 FR2.120.2
nrofUplinkSlots	2		FR1.30-1 FR1.30-4 FR1.30-5
	1		FR1.15-1 FR1.30-2 FR1.30-3 FR2.60-1 FR2.120.1 FR2.120.2
	0		FR1.30-6
nrofUplinkSymbols	4		FR1.30-1 FR1.30-4 FR1.30-5
	0		FR1.30-6 FR2.60-1 FR2.120.2
	2		FR1.15-1 FR1.30-2 FR1.30-3 FR2.60-1 FR2.120.1 FR2.120.2
}			
pattern2	Not present		FR1.15-1, FR1.30-1 FR1.30-2 FR1.30-5 FR2.60-1 FR2.120.1 FR2.120.2
pattern2 SEQUENCE {			
dl-UL-TransmissionPeriodicity	ms2p5		FR1.30-3
	ms2		FR1.30-4
	ms1		FR1.30-6
nrofDownlinkSlots	2		FR1.30-3
	4		FR1.30-4
	0		FR1.30-6
nrofDownlinkSymbols	10		FR1.30-3
	0		FR1.30-4

	12		FR1.30-6
nrofUplinkSlots	2		FR1.30-3
	0		FR1.30-4
	1		FR1.30-6
	2		FR1.30-3
nrofUplinkSymbols	0		FR1.30-4
			FR1.30-6
}			
}			

Condition	Explanation
FR1.15-1	TDD UL-DL pattern FR1.15-1 is used. Ref Annex A.1.2 of TS 38.521-4
FR1.30-1	TDD UL-DL pattern FR1.30-1 is used. Ref Annex A.1.2 of TS 38.521-4
FR1.30-2	TDD UL-DL pattern FR1.30-2 is used. Ref Annex A.1.2 of TS 38.521-4
FR1.30-3	TDD UL-DL pattern FR1.30-3 is used. Ref Annex A.1.2 of TS 38.521-4
FR1.30-4	TDD UL-DL pattern FR1.30-4 is used. Ref Annex A.1.2 of TS 38.521-4
FR1.30-5	TDD UL-DL pattern FR1.30-5 is used. Ref Annex A.1.2 of TS 38.521-4
FR1.30-6	TDD UL-DL pattern FR1.30-6 is used. Ref Annex A.1.2 of TS 38.521-4
FR2.60-1	TDD UL-DL pattern FR2.60-1 is used. Ref Annex A.1.3 of TS 38.521-4
FR2.120-1	TDD UL-DL pattern FR2.120-1 is used. Ref Annex A.1.3 of TS 38.521-4
FR2.120-2	TDD UL-DL pattern FR2.120-2 is used. Ref Annex A.1.3 of TS 38.521-4

PDCCH Configuration

PDCCH-ConfigCommon

Table 5.4.2.0-4: PDCCH-ConfigCommon

Derivation Path: Table 4.6.3-96			
Information Element	Value/remark	Comment	Condition
PDCCH-ConfigCommon ::= SEQUENCE {			
commonSearchSpaceList SEQUENCE (SIZE (1..4))	1 entry	1 search space for both SA and NSA	
OF SearchSpace {			
SearchSpace [1]	SearchSpace with condition CSS	entry 1	
}			
searchSpaceOtherSystemInformation	Not present		
}			

Condition	Explanation
CSS	Common SearchSpace

ServingCellConfig

Table 5.4.2.0-5: ServingCellConfig

Derivation Path: Table 4.6.3-167			
Information Element	Value/remark	Comment	Condition
ServingCellConfig ::= SEQUENCE {			
csi-MeasConfig CHOICE {			
setup	csi-MeasConfig		

}			

PDCCH-config

Table 5.4.2.0-6: PDCCH-ControlResourceSet

Derivation Path: Table 4.6.3-28			
Information Element	Value/remark	Comment	Condition
ControlResourceSet ::= SEQUENCE {			
controlResourceSetId	ControlResourceSetId		
frequencyDomainResources	Table 5.2-2 for tested channel bandwidth and subcarrier spacing		FR1
frequencyDomainResources	Table 7.2-2 for tested channel bandwidth and subcarrier spacing		FR2
Duration	2	SearchSpace duration of 2 symbols	DEMOM_FR 1, CSI_FR1, CSI_FR2
	1	SearchSpace duration of 1 symbols	DEMOM_FR 2, PDCCH_FR 1, PDCCH_FR 2
cce-REG-MappingType CHOICE {			
nonInterleaved	Null		
}			
precoderGranularity	sameAsREG-bundle		
tci-StatesPDCCH-ToAddList SEQUENCE(SIZE (1..maxNrofTCI-StatesPDCCH)) OF TCI-StateId {	1 entry		
TCI-StateId[1]	1	TCI State #1	
}			
pdcch-DMRS-ScramblingID	1008	DMRS scrambling ID different from Physical Cell ID	
}			

Condition	Explanation
DEMOM_FR1	DEMOM testing in FR1.
DEMOM_FR2	DEMOM testing in FR2.
PDCCH_FR1	PDCCH testing in FR1
PDCCH_FR2	PDCCH testing in FR2
CSI_FR1	CSI testing in FR1
CSI_FR2	CSI testing in FR2

Table 5.4.2.0-7: PDCCH Search Space

Derivation Path: Table 4.6.3-162			
Information Element	Value/remark	Comment	Condition
SearchSpace ::= SEQUENCE {			
monitoringSlotPeriodicityAndOffset CHOICE {			
sl1	NULL		
}			
monitoringSymbolsWithinSlot	10000000000000	Starting symbol 0	
nrofCandidates SEQUENCE {			
aggregationLevel1	n0		
aggregationLevel2	n0		
aggregationLevel4	n0		
aggregationLevel8	n1	AL8	
aggregationLevel16	n0		
}			

searchSpaceType CHOICE {			
ue-Specific SEQUENCE {			USS
dci-Formats	formats0-1-And-1-1	DCI Format 1_1	
}			
}			

Condition	Explanation
USS	UE-Specific SearchSpace

Table 5.4.2.0-7a: PDCCH Search Space Ext

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
SearchSpaceExt-r16 ::= SEQUENCE {			
controlResourceSetId-r16	ControlResourceSetId		
searchSpaceType-r16	Not present		
searchSpaceGroupIdList-r16	Not present		
freqMonitorLocations-r16	Not present		
}			

NZP-CSI-RS for Tracking

NZP-CSI-RS-Resource

Table 5.4.2.0-8: NZP-CSI-RS-Resource for TRS

Derivation Path: Table 4.6.3-85			
Information Element	Value/remark	Comment	Condition
NZP-CSI-RS-Resource ::= SEQUENCE {			
nzp-CSI-RS-ResourceId	0 1 2 3	CSI-RS resource 1 CSI-RS resource 2 CSI-RS resource 3 CSI-RS resource 4	
resourceMapping	CSI-RS-ResourceMapping for TRS		
powerControlOffset	0		
periodicityAndOffset	CSI-ResourcePeriodicityAndOffset for TRS		
qcl-InfoPeriodicCSI-RS	TCI-StateId 0		
}			

CSI-RS-ResourceMapping

Table 5.4.2.0-9: CSI-RS-ResourceMapping for TRS

Derivation Path: Table 4.6.3-45			
Information Element	Value/remark	Comment	Condition
CSI-RS-ResourceMapping ::= SEQUENCE {			
frequencyDomainAllocation CHOICE {			
row1	0001	$k_0=0$ for CSI-RS resource 1,2,3,4	TRS
}			
firstOFDMsymbolInTimeDomain	6 10	$l_0 = 6$ for CSI-RS resource 1 and 3 $l_0 = 10$ for CSI-RS resource 2 and 4	TRS TRS

nrofPorts	p1	1 for CSI-RS resource 1,2,3,4	TRS
Cdm-Type	noCDM		TRS
Density CHOICE{			
three	Null		TRS
}			
freqBand	CSI-FrequencyOccupation		TRS
}			

CSI-ResourcePeriodicityAndOffset

Table 5.4.2.0-10: CSI-ResourcePeriodicityAndOffset for TRS

Derivation Path: Table 4.6.3-43			
Information Element	Value/remark	Comment	Condition
CSI-ResourcePeriodicityAndOffset ::= CHOICE {			
slots20	10	Periodicity 20 slots and offset 10 for CSI-RS resource 1 and 2	SCS 15KHz
slots20	11	Periodicity 20 slots and offset 11 for CSI-RS resource 3 and 4	SCS 15 kHz
Slots40	20	Periodicity 40 slots and offset 20 for CSI-RS resource 1 and 2	SCS 30 kHz
Slots40	21	Periodicity 40 slots and offset 21 for CSI-RS resource 3 and 4	SCS 30 kHz
Slots80	40	Periodicity 80 slots and offset 40 for CSI-RS resource 1 and 2	SCS 60 kHz
Slots80	41	Periodicity 80 slots and offset 41 for CSI-RS resource 3 and 4	SCS 60 kHz
Slots160	80	Periodicity 160 slots and offset 80 for CSI-RS resource 1 and 2	SCS 120 kHz
Slots160	81	Periodicity 160 slots and offset 81 for CSI-RS resource 3 and 4	SCS 120 kHz
}			

CSI-FrequencyOccupation

Table 5.4.2.0-11: CSI-FrequencyOccupation for TRS

Derivation Path: Table 4.6.3-33			
Information Element	Value/remark	Comment	Condition
CSI-FrequencyOccupation ::= SEQUENCE {			
nrofRBs	28	BW 5 MHz SCS 15kHz	TRS
	52	BW 10 MHz SCS 15kHz	TRS
	24	BW 10 MHz SCS 30kHz	TRS
	80	BW 15 MHz SCS 15kHz	TRS
	40	BW 15 MHz SCS 30kHz	TRS

	108	BW 20 MHz SCS 15kHz	TRS
	52	BW 20 MHz SCS 30kHz	TRS
	136	BW 25 MHz SCS 15kHz	TRS
	68	BW 25 MHz SCS 30kHz	TRS
	160	BW 30 MHz SCS 15kHz	TRS
	80	BW 30 MHz SCS 30kHz	TRS
	216	BW 40 MHz SCS 15kHz	TRS
	108	BW 40 MHz SCS 30kHz	TRS
	272	BW 50 MHz SCS 15kHz	TRS
	136	BW 50 MHz SCS 30kHz	TRS
	164	BW 60 MHz SCS 30kHz	TRS
	220	BW 80 MHz SCS 30kHz	TRS
	248	BW 90 MHz SCS 30kHz	TRS
	276	BW 100 MHz SCS 30kHz	TRS
	68	BW 100 MHz SCS 120kHz	TRS
	132	BW 200 MHz SCS 120kHz	TRS
}			

NRP-CSI-RS-ResourceSet

Table 5.4.2.0-12: NRP-CSI-RS-ResourceSet for TRS

Derivation Path: Table 4.6.3-87			
Information Element	Value/remark	Comment	Condition
NRP-CSI-RS-ResourceSet ::= SEQUENCE {			
nzp_CSI_ResourceSetId	0		
nzp-CSI-RS-Resources SEQUENCE (SIZE (1..maxNrofNRP-CSI-RS-ResourcesPerSet)) OF NRP-CSI-RS-ResourceId {	4 entries		FR1, FR2
NRP-CSI-RS-ResourceId[1]	0	entry 1 CSI-RS resource 1	
NRP-CSI-RS-ResourceId[2]	1	entry 2 CSI-RS resource 2	
NRP-CSI-RS-ResourceId[3]	2	entry 3 CSI-RS resource 3	
NRP-CSI-RS-ResourceId[4]	3	entry 4 CSI-RS resource 4	
}			
repetition	off		
aperiodicTriggeringOffset	Not present		
trs-Info	true		
}			

CSI-ResourceConfig

Table 5.4.2.0-13: CSI-ResourceConfig for TRS

Derivation Path: Table 4.6.3-41			
Information Element	Value/remark	Comment	Condition
CSI-ResourceConfig ::= SEQUENCE {			
csi-ResourceConfigId	CSI-ResourceConfigId		
csi-RS-ResourceSetList CHOICE {			
nzp-CSI-RS-SSB SEQUENCE {			
nzp-CSI-RS-ResourceSetList SEQUENCE (SIZE (1..maxNrofNRP-CSI-RS-ResourceSetsPerConfig)) OF NRP-CSI-RS-ResourceSetId {	1 entry		
NRP-CSI-RS-ResourceSetId[1]	0	entry 1	
}			
csi-SSB-ResourceSetList	Not present		
}			
}			

bwp-Id	BWP-Id		
resourceType	periodic		
}			

NZP CSI-RS for CSI Acquisition

NZP-CSI-RS-Resource

Table 5.4.2.0-14: NZP-CSI-RS-Resource

Derivation Path: Table 4.6.3-85			
Information Element	Value/remark	Comment	Condition
NZP-CSI-RS-Resource ::= SEQUENCE {			DEMOD_FR 1 DEMOD_FR 2
nzp-CSI-RS-ResourceId	4	CSI-RS resource 5	
resourceMapping	CSI-RS- ResourceMapping		
powerControlOffset	0		
periodicityAndOffset	CSI- ResourcePeriodicityAnd Offset		
qcl-InfoPeriodicCSI-RS	TCI-State #1		
}			

CSI-RS-ResourceMapping

Table 5.4.2.0-15: CSI-RS-ResourceMapping

Derivation Path: Table 4.6.3-45			
Information Element	Value/remark	Comment	Condition
CSI-RS-ResourceMapping ::= SEQUENCE {			
frequencyDomainAllocation CHOICE {			
row2	000000000001	K0 = 0, 1Tx test cases	
other	000001	K0 = 0, row3, 2Tx test cases	
row4	001	K0 = 0, 4Tx test cases	
}			
nrofPorts	P2	2Tx test cases	
	P4	4Tx test cases	
	P1	1Tx test cases	
firstOFDMsymbolInTimeDomain	12	I0 = 12	
cdm-Type	fd-CDM2	2Tx and 4Tx test cases	
	noCDM	1Tx test cases	
density CHOICE {			
one	NULL		
}			
freqBand	CSI- FrequencyOccupation		
}			

CSI-ResourcePeriodicityAndOffset

Table 5.4.2.0-16: CSI-ResourcePeriodicityAndOffset

Derivation Path: Table 4.6.3-43

Information Element	Value/remark	Comment	Condition
CSI-ResourcePeriodicityAndOffset ::= CHOICE {			
Slots20	0		SCS 15kHz
Slots40	0		SCS 30kHz
Slots80	0		SCS 60kHz
Slots160	0		SCS 120kHz
}			

CSI-FrequencyOccupation

Table 5.4.2.0-17: CSI-FrequencyOccupation for CSI Acquisition

Derivation Path: Table 4.6.3-33			
Information Element	Value/remark	Comment	Condition
CSI-FrequencyOccupation ::= SEQUENCE {			
nrofRBs	52		BW 10 MHz SCS 15kHz
	52		BW 20 MHz SCS 30kHz
	108		BW 40 MHz SCS 30kHz
	68		BW 100MHz SCS 120kHz
	132		BW 200 MHz SCS 120 kHz
}			

NZP-CSI-RS-ResourceSet

Table 5.4.2.0-18: NZP-CSI-RS-ResourceSet for CSI Acquisition

Derivation Path: Table 4.6.3-87			
Information Element	Value/remark	Comment	Condition
NZP-CSI-RS-ResourceSet ::= SEQUENCE {			
nzp_CSI_ResourceSetId	1		
nzp-CSI-RS-Resources SEQUENCE (SIZE (1..maxNrofNZP-CSI-RS-ResourcesPerSet)) OF NZP-CSI-RS-ResourceId {	1 entry		FR1, FR2
NZP-CSI-RS-ResourceId[1]	4	entry 1 CSI-RS resource 5	
}			
repetition	off		
aperiodicTriggeringOffset	Not present		
trs-Info	Not present		
}			

CSI-ResourceConfig

Table 5.4.2.0-19: CSI-ResourceConfig for CSI Acquisition

Derivation Path: Table 4.6.3-41			
Information Element	Value/remark	Comment	Condition
CSI-ResourceConfig ::= SEQUENCE {			
csi-ResourceConfigId	1		
csi-RS-ResourceSetList CHOICE {			
nzp-CSI-RS-SSB SEQUENCE {			
nzp-CSI-RS-ResourceSetList SEQUENCE (SIZE (1..maxNrofNZP-CSI-RS-ResourceSetsPerConfig)) OF NZP-CSI-RS-ResourceSetId {	1 entry		
NZP-CSI-RS-ResourceSetId[1]	1	entry 1	
}			
csi-SSB-ResourceSetList	Not present		
}			

}			
bwp-Id	BWP-Id		
resourceType	periodic		
}			

ZP CSI-RS for CSI Acquisition

ZP-CSI-RS-Resource

Table 5.4.2.0-20: ZP-CSI-RS-Resource

Derivation Path: Table 4.6.3-204			
Information Element	Value/remark	Comment	Condition
ZP-CSI-RS-Resource ::= SEQUENCE {			DEMOD_FR 1 DEMOD_FR 2
zp-CSI-RS-ResourceId	ZP-CSI-RS-ResourceId		
resourceMapping	ZP CSI-RS-ResourceMapping		
periodicityAndOffset	ZP CSI-ResourcePeriodicityAndOffset		
}			

CSI-RS-ResourceMapping

Table 5.4.2.0-21: ZP CSI-RS-ResourceMapping

Derivation Path: Table 4.6.3-45			
Information Element	Value/remark	Comment	Condition
CSI-RS-ResourceMapping ::= SEQUENCE {			
frequencyDomainAllocation CHOICE {			
other	000100	K0 = 4	
}			
nrofPorts	p4		
firstOFDMSymbolInTimeDomain	12	I0 = 12	
cdm-Type	fd-CDM2		
density CHOICE {			
one	NULL		
}			
freqBand	ZP CSI-FrequencyOccupation		
}			

CSI-ResourcePeriodicityAndOffset

Table 5.4.2.0-22: ZP CSI-ResourcePeriodicityAndOffset

Derivation Path: Table 4.6.3-43			
Information Element	Value/remark	Comment	Condition
CSI-ResourcePeriodicityAndOffset ::= CHOICE {			
Slots20	0		SCS 15kHz
Slots40	0		SCS 30kHz
Slots80	0		SCS 60kHz
Slots160	0		SCS 120kHz
}			

CSI-FrequencyOccupation

Table 5.4.2.0-23: ZP CSI-FrequencyOccupation

Derivation Path: Table 4.6.3-33			
Information Element	Value/remark	Comment	Condition
CSI-FrequencyOccupation ::= SEQUENCE {			
nrofRBs	52		BW 10 MHz SCS 15kHz
	52		BW 20 MHz SCS 30kHz
	108		BW 40 MHz SCS 30KHz
	68		BW 100 MHz SCS 120KHz
	132		BW 200 MHz SCS 120kHz
}			

PDSCH DMRS Configuration

DMRS-DownlinkConfig

Table 5.4.2.0-24: DMRS-DownlinkConfig

Derivation Path: Table 4.6.3-50			
Information Element	Value/remark	Comment	Condition
DMRS-DownlinkConfig ::= SEQUENCE {			
dmrs-AdditionalPosition	pos1		
phaseTrackingRS	Not present		DEMOD_FR 1
phaseTrackingRS SEQUENCE {			DEMOD_FR 2
frequencyDensity	frequencyDensity		
timeDensity	timeDensity		
epre-Ratio	0		
resourceElementOffset	Offset10		
}			
}			

Table 5.4.2.0-24a: frequencyDensity

Derivation Path: Table 5.4.2.0-24			
Information Element	Value/remark	Comment	Condition
frequencyDensity ::= SEQUENCE {			
NRB0	1		
NRB1	276		
}			

Table 5.4.2.0-24b: timeDensity

Derivation Path: Table 5.4.2.0-24			
Information Element	Value/remark	Comment	Condition
timeDensity ::= SEQUENCE {			
ptrs-MCS1	0		
ptrs-MCS2	0		
ptrs-MCS3	0		
}			

PDSCH Configuration

PDSCH-ServingCellConfig

Table 5.4.2.0-25: PDSCH-ServingCellConfig

Derivation Path: Table 4.6.3-102			
Information Element	Value/remark	Comment	Condition
PDSCH-ServingCellConfig ::= SEQUENCE {			
codeBlockGroupTransmission	Not present		
xOverhead	Not present		
xOverhead	xOh6		DEMOD_FR 2
nrofHARQ-ProcessesForPDSCH	Set according to the test id	Typically n4 for FDD, n8 for TDD	
pucch-Cell	Not present		
}			

PDSCH-Config

Table 5.4.2.0-26: PDSCH-Config

Derivation Path: Table 4.6.3-100			
Information Element	Value/remark	Comment	Condition
PDSCH-Config ::= SEQUENCE {			
dataScramblingIdentityPDSCH	0		
dmrs-DownlinkForPDSCH-MappingTypeA CHOICE {			
Setup	DMRS-DownlinkConfig		
}			
tcI-StatesToAddModList SEQUENCE(SIZE (1.. maxNrofTCI-States)) OF TCI-State {	2 entries		
TCI-State[1] SEQUENCE {		entry 1	
tcI-StateId	TCI-StateId 0		
qcl-type1 SEQUENCE {	QCL Type is Type1		
Cell	not present		
Bwp-id	Not present	BWP ID	
referenceSignal	Ssb : 0	SSB # 0	
Qcl-Type	Type C		
}			
qcl-type2 SEQUENCE {	QCL Type is Type2		DEMOD_FR 2
Cell	not present		
Bwp-id	Not present	BWP ID	
referenceSignal	Ssb : 0	SSB # 0	
Qcl-Type	Type D		
}			
}			
TCI-State[2] SEQUENCE {		entry 2	
tcI-StateId	TCI-StateId 1		
qcl-type1 {	QCL Type is Type1		
Cell	Not present		
Bwp-id	0	BWP ID	
referenceSignal	csi-rs : 0	CSI-RS # 0	
Qcl-Type	Type A		
}			
qcl-type2 SEQUENCE {	QCL Type is Type2		DEMOD_FR 2
Cell	Not present		
Bwp-id	0	BWP ID	
referenceSignal	csi-rs : 0	CSI-RS # 0	
Qcl-Type	Type D		
}			
}			
}			

}			
vrB-ToPRB-Interleaver	Not present		
resourceAllocation	resourceAllocationType0		
pdsch-AggregationFactor	Not present		
rbg-Size	config2	The UE ignores this field if <i>resourceAllocation</i> is set to <i>resourceAllocationType1</i> (see TS 38.214 [21], clause 5.1.2.2.1).	
prb-BundlingType CHOICE {			
staticBundling SEQUENCE {			
bundleSize	Not present	PRB Bundling size of 2	
}			
}			
ZP-CSI-RS-ResourceToAddModList SEQUENCE (SIZE (1..maxNrofNZP-CSI-RS-Resources)) OF NZP-CSI-RS-Resource {	1 entry		
ZP-CSI-RS-Resource[1]	ZP-CSI-RS-Resource	entry 1	
}			
p-ZP-CSI-RS-ResourceSet	p-ZP-CSI-RS-ResourceSet		
}			

PDSCH-TimeDomainResourceAllocationList

Table 5.4.2.0-27: PDSCH-TimeDomainResourceAllocationList

Derivation Path: Table 4.6.3-103			
Information Element	Value/remark	Comment	Condition
PDSCH-TimeDomainResourceAllocationList ::= SEQUENCE(SIZE(1..maxNrofDL-Allocations)) OF PDSCH-TimeDomainResourceAllocation {	2 entries		FR1
PDSCH-TimeDomainResourceAllocation[1] SEQUENCE {		entry 1	
K0	Not present		
mappingType	typeA		
startSymbolAndLength	44	Start symbol(S)=2, Length(L)=4	For Slot i, if mod(i, 10) = 7 for i from {0,...,39}
}			
PDSCH-TimeDomainResourceAllocation[2] SEQUENCE {		entry 2	
K0	Not present		
mappingType	typeA		
startSymbolAndLength	53	Start symbol(S)=2, Length(L)=12	For Slot i, if mod(i, 10) = {0,1,2,3,4,5,}) for i from {1,...,39}
}			
}			
PDSCH-TimeDomainResourceAllocationList ::= SEQUENCE(SIZE(1..maxNrofDL-Allocations)) OF PDSCH-TimeDomainResourceAllocation {	3 entries		FR2
PDSCH-TimeDomainResourceAllocation[1] SEQUENCE {		entry 1	
K0	Not present		
mappingType	typeA		

startSymbolAndLength	53	Start symbol(S)=2, Length(L)=12	
}			
PDSCH-TimeDomainResourceAllocation[2] SEQUENCE {		entry 2	
K0	Not present		
mappingType	typeA		
startSymbolAndLength	96	Start symbol(S)=1, Length(L)=9	
}			
PDSCH-TimeDomainResourceAllocation[3] SEQUENCE {		entry 3	
K0	Not present		
mappingType	typeA		
startSymbolAndLength	40	Start symbol(S)=1, Length(L)=13	
}			
}			

CRS for Rate Matching

RateMatchPatternLTE-CRS

Table 5.4.2.0-28: RateMatchPatternLTE-CRS

Derivation Path: Table 4.6.3-138			
Information Element	Value/remark	Comment	Condition
RateMatchPatternLTE-CRS ::= SEQUENCE {			TC 5.2.2.1.4-2 and TC 5.2.3.1.4-2 of TS 38.521-4
carrierFreqDL	LTE EARFCN		
carrierBandwidthDL	n50	10MHz	
nrofCRS-Ports	n4		
v-Shift	n0		
}			

CSI-RS for beam refinement

NZP-CSI-RS-Resource

Table 5.4.2.0-29: NZP-CSI-RS-Resource

Derivation Path: Table 4.6.3-85			
Information Element	Value/remark	Comment	Condition
NZP-CSI-RS-Resource ::= SEQUENCE {			DEMOD_FR 2
nzp-CSI-RS-ResourceId	5	CSI-RS resource 6	Beam refinement
	6	CSI-RS resource 7	Beam refinement
resourceMapping	CSI-RS-ResourceMapping		
powerControlOffset	0		
periodicityAndOffset	CSI-ResourcePeriodicityAndOffset		
qcl-InfoPeriodicCSI-RS	TCI-State #1		
}			

CSI-RS-ResourceMapping

Table 5.4.2.0-30: CSI-RS-ResourceMapping

Derivation Path: Table 4.6.3-45			
Information Element	Value/remark	Comment	Condition
CSI-RS-ResourceMapping ::= SEQUENCE {			DEMOD_FR2
frequencyDomainAllocation CHOICE {			
row1	0001	K0 = 0, row1 for resource 1 and 2	
}			
nrofPorts	p1		
firstOFDMSymbolInTimeDomain	8	I0 = 8 for resource 1	
	9	I0 = 9 for resource 2	
cdm-Type	noCDM		
density CHOICE {			
three	NULL		
}			
freqBand	CSI-FrequencyOccupation		
}			

CSI-ResourcePeriodicityAndOffset

Table 5.4.2.0-31: CSI-ResourcePeriodicityAndOffset

Derivation Path: Table 4.6.3-43			
Information Element	Value/remark	Comment	Condition
CSI-ResourcePeriodicityAndOffset ::= CHOICE {			DEMOD_FR2
Slots80	0		SCS 60kHz
Slots160	0		SCS 120kHz
}			

CSI-FrequencyOccupation

Table 5.4.2.0-32: CSI-FrequencyOccupation for beam refinement

Derivation Path: Table 4.6.3-33			
Information Element	Value/remark	Comment	Condition
CSI-FrequencyOccupation ::= SEQUENCE {			DEMOD_FR2
nrofRBs	68		BW 100MHz SCS 120kHz
	132		BW 200MHz SCS 120kHz
}			

NZP-CSI-RS-ResourceSet

Table 5.4.2.0-33: NZP-CSI-RS-ResourceSet for beam refinement

Derivation Path: Table 4.6.3-87			
Information Element	Value/remark	Comment	Condition
NZP-CSI-RS-ResourceSet ::= SEQUENCE {			DEMOD_FR2
nzp_CSI_ResourceSetId	2		

nzp-CSI-RS-Resources SEQUENCE (SIZE (1..maxNrofNZP-CSI-RS-ResourcesPerSet)) OF NZP-CSI-RS-ResourceId {	2 entries		
NZP-CSI-RS-ResourceId[1]	5	entry 1 CSI-RS resource 6	
NZP-CSI-RS-ResourceId[2]	6	entry 1 CSI-RS resource 7	
}			
repetition	off		
aperiodicTriggeringOffset	Not present		
trs-Info	Not present		
}			

CSI-ResourceConfig

Table 5.4.2.0-34: CSI-ResourceConfig for beam refinement

Derivation Path: Table 4.6.3-41			
Information Element	Value/remark	Comment	Condition
CSI-ResourceConfig ::= SEQUENCE {			
csi-ResourceConfigId	2		
csi-RS-ResourceSetList CHOICE {			
nzp-CSI-RS-SSB SEQUENCE {			
nzp-CSI-RS-ResourceSetList SEQUENCE (SIZE (1..maxNrofNZP-CSI-RS-ResourceSetsPerConfig)) OF NZP-CSI-RS-ResourceSetId {	1 entry		
NZP-CSI-RS-ResourceSetId[1]	2	entry 1	
}			
csi-SSB-ResourceSetList	Not present		
}			
}			
bwp-Id	BWP-Id		
resourceType	periodic		
}			

CSI-RS for beam management

NZP-CSI-RS-Resource

Table 5.4.2.0-35: NZP-CSI-RS-Resource for beam management

Derivation Path: Table 4.6.3-85			
Information Element	Value/remark	Comment	Condition
NZP-CSI-RS-Resource ::= SEQUENCE {			PDCCH_FR2
nzp-CSI-RS-ResourceId	4	CSI-RS resource 5	
	5	CSI-RS resource 6	
resourceMapping	CSI-RS-ResourceMapping for beam management		
powerControlOffset	0		
periodicityAndOffset	CSI-ResourcePeriodicityAndOffset for beam management		
qcl-InfoPeriodicCSI-RS	TCI-State #1		
}			

CSI-RS-ResourceMapping

Table 5.4.2.0-36: CSI-RS-ResourceMapping for beam management

Derivation Path: Table 4.6.3-45			
Information Element	Value/remark	Comment	Condition
CSI-RS-ResourceMapping ::= SEQUENCE {			PDCCH_FR2
frequencyDomainAllocation CHOICE {			
row1	0001	K0 = 0, row1 for resource 1 and 2	
}			
nrofPorts	p1		
firstOFDMSymbolInTimeDomain	8	I0 = 8 for resource 1	
	9	I0 = 9 for resource 2	
cdm-Type	noCDM		
density CHOICE {			
three	NULL		
}			
freqBand	CSI-FrequencyOccupation for beam management		
}			

CSI-ResourcePeriodicityAndOffset

Table 5.4.2.0-37: CSI-ResourcePeriodicityAndOffset for beam management

Derivation Path: Table 4.6.3-43			
Information Element	Value/remark	Comment	Condition
CSI-ResourcePeriodicityAndOffset ::= CHOICE {			PDCCH_FR2
Slots80	0		SCS 60kHz
Slots160	0		SCS 120kHz
}			

CSI-FrequencyOccupation

Table 5.4.2.0-38: CSI-FrequencyOccupation for beam management

Derivation Path: Table 4.6.3-33			
Information Element	Value/remark	Comment	Condition
CSI-FrequencyOccupation ::= SEQUENCE {			PDCCH_FR2
nrofRBs	68		BW 100MHz SCS 120kHz
	132		BW 200MHz SCS 120kHz
}			

NZP-CSI-RS-ResourceSet

Table 5.4.2.0-39: NZP-CSI-RS-ResourceSet for beam management

Derivation Path: Table 4.6.3-87			
Information Element	Value/remark	Comment	Condition
NZP-CSI-RS-ResourceSet ::= SEQUENCE {			PDCCH_FR2
nzp_CSI_ResourceSetId	1		
nzp-CSI-RS-Resources SEQUENCE (SIZE (1..maxNrofNZP-CSI-RS-ResourcesPerSet)) OF NZP-CSI-RS-ResourceId {	2 entries		
NZP-CSI-RS-ResourceId[1]	4	entry 1	

		CSI-RS resource 5	
NZP-CSI-RS-ResourceId[2]	5	entry 1 CSI-RS resource 6	
}			
repetition	off		
aperiodicTriggeringOffset	Not present		
trs-Info	Not present		
}			

CSI-ResourceConfig

Table 5.4.2.0-40: CSI-ResourceConfig for beam management

Derivation Path: Table 4.6.3-41			
Information Element	Value/remark	Comment	Condition
CSI-ResourceConfig ::= SEQUENCE {			
csi-ResourceConfigId	1		
csi-RS-ResourceSetList CHOICE {			
nzp-CSI-RS-SSB SEQUENCE {			
nzp-CSI-RS-ResourceSetList SEQUENCE (SIZE (1..maxNrofNZP-CSI-RS-ResourceSetsPerConfig)) OF NZP-CSI-RS-ResourceSetId {	1 entry		
NZP-CSI-RS-ResourceSetId[1]	1	entry 1	
}			
csi-SSB-ResourceSetList	Not present		
}			
}			
bwp-Id	BWP-Id		
resourceType	periodic		
}			

PUCCH-Config

Table 5.4.2.0-41: PUCCH-Config

Derivation Path: Table 4.6.3-112			
Information Element	Value/remark	Comment	Condition
PUCCH-Config ::= SEQUENCE {			
dl-DataToUL-ACK SEQUENCE (SIZE (1..8)) OF INTEGER {	4 entries		FR1.15-1 FR1.30-2 FR2.120-1 FR2.120-1A
INTEGER[1]	2	entry 1	
INTEGER[2]	3	entry 2	
INTEGER[3]	4	entry 3	
INTEGER[4]	6	entry 4	
}			
}			
dl-DataToUL-ACK SEQUENCE (SIZE (1..8)) OF INTEGER {	7 entries		FR1.30-1 FR1.30-1A FR1.30-4
INTEGER[1]	2	entry 1	
INTEGER[2]	3	entry 2	
INTEGER[3]	4	entry 3	
INTEGER[4]	5	entry 4	
INTEGER[5]	6	entry 5	
INTEGER[6]	7	entry 6	
INTEGER[7]	8	entry 7	
}			
}			

dl-DataToUL-ACK SEQUENCE (SIZE (1..8)) OF INTEGER {	4 entries		FR1.30-3
INTEGER[1]	2	entry 1	
INTEGER[2]	3	entry 2	
INTEGER[3]	4	entry 3	
INTEGER[4]	5	entry 4	
}			
}			
dl-DataToUL-ACK SEQUENCE (SIZE (1..8)) OF INTEGER {	2 entries		FR1.30-5 FR1.30-6
INTEGER[1]	2	entry 1	
INTEGER[2]	3	entry 2	
}			
}			
dl-DataToUL-ACK SEQUENCE (SIZE (1..8)) OF INTEGER {	3 entries		FR2.60-1 FR2.120-2
INTEGER[1]	2	entry 1	
INTEGER[2]	3	entry 2	
INTEGER[3]	5	entry 3	
}			
}			
dl-DataToUL-ACK SEQUENCE (SIZE (1..8)) OF INTEGER {	2 entries		FR2.120-1 CSI
INTEGER[1]	3	entry 1	
INTEGER[2]	6	entry 2	
}			
}			
dl-DataToUL-ACK SEQUENCE (SIZE (1..8)) OF INTEGER {	3 entries		FR2.120-2 CSI
INTEGER[1]	6	entry 1	
INTEGER[2]	7	entry 2	
INTEGER[3]	11	entry 3	
}			
}			

Condition	Explanation
FR1.15-1	TDD UL-DL pattern FR1.15-1 is used. Ref Annex A.1.2 of TS 38.521-4
FR1.30-1	TDD UL-DL pattern FR1.30-1 is used. Ref Annex A.1.2 of TS 38.521-4
FR1.30-2	TDD UL-DL pattern FR1.30-2 is used. Ref Annex A.1.2 of TS 38.521-4
FR1.30-3	TDD UL-DL pattern FR1.30-3 is used. Ref Annex A.1.2 of TS 38.521-4
FR1.30-4	TDD UL-DL pattern FR1.30-4 is used. Ref Annex A.1.2 of TS 38.521-4
FR1.30-5	TDD UL-DL pattern FR1.30-5 is used. Ref Annex A.1.2 of TS 38.521-4
FR1.30-6	TDD UL-DL pattern FR1.30-6 is used. Ref Annex A.1.2 of TS 38.521-4
FR2.60-1	TDD UL-DL pattern FR2.60-1 is used. Ref Annex A.1.3 of TS 38.521-4
FR2.120-1	TDD UL-DL pattern FR2.120-1 is used. Ref Annex A.1.3 of TS 38.521-4
FR2.120-2	TDD UL-DL pattern FR2.120-2 is used. Ref Annex A.1.3 of TS 38.521-4
FR2.120-1_CSI	TDD UL-DL pattern FR2.120-1 is used for CSI reporting test cases. Ref Table 8.1.2-1 of TS 38.521-4
FR2.120-2_CSI	TDD UL-DL pattern FR2.120-2 is used for CSI reporting test cases. Ref Table 8.1.2-1 of TS 38.521-4

SearchSpaceZero

Table 5.4.2.0-42: SearchSpaceZero

Derivation Path: Table 4.6.3-164			
Information Element	Value/remark	Comment	Condition
searchSpaceZero	4		FDD FR1.15-1 FR1.30-1 FR1.30-2 FR1.30-3 FR1.30-4

			FR2.60-1 FR2.120-1 FR2.120-2
	2		FR1.30-5 FR1.30-6

5.4.2.1 Message contents for PDSCH Demodulation requirements

ZP CSI-RS for CSI Acquisition

p-ZP-CSI-RS-ResourceSet

Table 5.4.2.1-0: p-ZP-CSI-RS-ResourceSet

Derivation Path: TS 38.331 [6], clause 6.3.2.			
Information Element	Value/remark	Comment	Condition
p-ZP-CSI-RS-ResourceSet CHOICE {			
setup	ZP-CSI-RS-ResourceSet		
}			

Table 5.4.2.1-1: ZP-CSI-RS-ResourceSet

Derivation Path: Table 4.6.3-87			
Information Element	Value/remark	Comment	Condition
p-ZP-CSI-RS-ResourceSet ::= SEQUENCE {			
zp_CSI-RS_ResourceSetId	0		
zp-CSI-RS-ResourceIdList SEQUENCE (SIZE (1..maxNrofZP-CSI-RS-ResourcesPerSet)) OF ZP-CSI-RS-ResourceId {		1 entry	
ZP-CSI-RS-ResourceId[1]	0	entry 1 ZP CSI-RS resource 1	
}			
}			

CSI-MeasConfig

Table 5.4.2.1-2: CSI-MeasConfig

Derivation Path: Table 4.6.3-38			
Information Element	Value/remark	Comment	Condition
CSI-MeasConfig ::= SEQUENCE {			
nzp-CSI-RS-ResourceToAddModList SEQUENCE (SIZE (1..maxNrofNZP-CSI-RS-Resources)) OF NZP-CSI-RS-Resource {	n entries	dependent on test condition	
NZP-CSI-RS-Resource[1]	NZP-CSI-RS-Resource for TRS (1)	entry 1 CSI-RS resource 1	
NZP-CSI-RS-Resource[2]	NZP-CSI-RS-Resource for TRS (2)	entry 2 CSI-RS resource 2	
NZP-CSI-RS-Resource[3]	NZP-CSI-RS-Resource for TRS (3)	entry 3 CSI-RS resource 3	
NZP-CSI-RS-Resource[4]	NZP-CSI-RS-Resource for TRS (4)	entry 4 CSI-RS resource 4	
NZP-CSI-RS-Resource[5]	NZP-CSI-RS-Resource for CSI Acquisition	entry 5 CSI-RS resource 5	

NZP-CSI-RS-Resource[6]	CSI-RS-Resource for beam refinement	entry 5 CSI-RS resource 6	DEMOD_FR 2
NZP-CSI-RS-Resource[7]	CSI-RS-Resource for beam refinement	entry 5 CSI-RS resource 7	DEMOD_FR 2
}			
nzp-CSI-RS-ResourceSetToAddModList SEQUENCE (SIZE (1..maxNrofNZP-CSI-RS-ResourceSets)) OF NZP-CSI-RS-ResourceSetId {	n entries	dependent on test condition	
NZP-CSI-RS-ResourceSet[1]	NZP-CSI-RS-ResourceSet for TRS	entry 1	
NZP-CSI-RS-ResourceSet[2]	NZP-CSI-RS-ResourceSet for CSI Acquisition	entry 2	
NZP-CSI-RS-ResourceSet[3]	CSI-RS-ResourceSet for beam refinement	entry 3	DEMOD_FR 2
}			
csi-IM-ResourceToAddModList	Not present		
csi-IM-ResourceSetToAddModList	Not present		
csi-SSB-ResourceSetToAddModList	Not present		
csi-ResourceConfigToAddModList SEQUENCE (SIZE (1..maxNrofCSI-ResourceConfigurations)) OF CSI-ResourceConfig {	n entries	dependent on test condition	
CSI-ResourceConfig[1]	CSI-ResourceConfig for TRS	entry 1	
CSI-ResourceConfig[2]	CSI-ResourceConfig for CSI Acquisition	entry 2	
CSI-ResourceConfig[2]	CSI-ResourceConfig for beam refinement	entry 3	DEMOD_FR 2
}			
csi-ReportConfigToAddModList	Not present		
reportTriggerSize	Not present		
aperiodicTriggerStateList	Not present		
}			

5.4.2.2 Message contents for PDCCH Demodulation requirements

NZP-CSI-RS for Tracking

CSI-RS-ResourceMapping

Table 5.4.2.2-1: CSI-RS-ResourceMapping for TRS

Derivation Path: Table 4.6.3-45			
Information Element	Value/remark	Comment	Condition
CSI-RS-ResourceMapping ::= SEQUENCE {			
frequencyDomainAllocation CHOICE {			
row1	0001	$k_0=0$ for CSI-RS resource 1,2,3,4	TRS
}			
firstOFDMsymbolInTimeDomain	4	$l_0 = 4$ for CSI-RS resource 1 and 3	TRS
	8	$l_0 = 8$ for CSI-RS resource 2 and 4	TRS
nrofPorts	p1	1 for CSI-RS resource 1,2,3,4	TRS
Cdm-Type	noCDM		TRS
Density CHOICE{			
three	Null		TRS
}			
freqBand	CSI-FrequencyOccupation		TRS
}			

CSI-MeasConfig

Table 5.4.2.2-2: CSI-MeasConfig

Derivation Path: Table 4.6.3-38			
Information Element	Value/remark	Comment	Condition
CSI-MeasConfig ::= SEQUENCE {			
nzp-CSI-RS-ResourceToAddModList SEQUENCE (SIZE (1..maxNrofNZP-CSI-RS-Resources)) OF NZP-CSI-RS-Resource {	n entries	Dependent on test condition	
NZP-CSI-RS-Resource[1]	NZP-CSI-RS-Resource for TRS (1)	entry 1 CSI-RS resource 1	
NZP-CSI-RS-Resource[2]	NZP-CSI-RS-Resource for TRS (2)	entry 2 CSI-RS resource 2	
NZP-CSI-RS-Resource[3]	NZP-CSI-RS-Resource for TRS (3)	entry 3 CSI-RS resource 3	
NZP-CSI-RS-Resource[4]	NZP-CSI-RS-Resource for TRS (4)	entry 4 CSI-RS resource 4	
NZP-CSI-RS-Resource[5]	NZP-CSI-RS-Resource for beam management (5)	entry 4 CSI-RS resource 5	PDCCH_FR 2
NZP-CSI-RS-Resource[6]	NZP-CSI-RS-Resource for beam management (6)	entry 4 CSI-RS resource 6	PDCCH_FR 2
}			
nzp-CSI-RS-ResourceSetToAddModList SEQUENCE (SIZE (1..maxNrofNZP-CSI-RS-ResourceSets)) OF NZP-CSI-RS-ResourceSetId {	1 entry		
NZP-CSI-RS-ResourceSet[1]	NZP-CSI-RS-ResourceSet for TRS	entry 1	
NZP-CSI-RS-ResourceSet[2]	NZP-CSI-RS-ResourceSet for beam management	entry 1	PDCCH_FR 2
}			
csi-IM-ResourceToAddModList	Not present		
csi-IM-ResourceSetToAddModList	Not present		
csi-SSB-ResourceSetToAddModList	Not present		
csi-ResourceConfigToAddModList SEQUENCE (SIZE (1..maxNrofCSI-ResourceConfigurations)) OF CSI-ResourceConfig {	1 entry		
CSI-ResourceConfig[1]	CSI-ResourceConfig	entry 1	
CSI-ResourceConfig[2]	CSI-ResourceConfig for beam management	entry 1	PDCCH_FR 2
}			
csi-ReportConfigToAddModList	Not present		
reportTriggerSize	Not present		
aperiodicTriggerStateList	Not present		
}			

PDSCH Configuration

PDSCH-Config

Table 5.4.2.2-3: PDSCH-Config

Derivation Path: Table 4.6.3-100			
Information Element	Value/remark	Comment	Condition
PDSCH-Config ::= SEQUENCE {			

dataScramblingIdentityPDSCH	0		
dmrs-DownlinkForPDSCH-MappingTypeA CHOICE {			
Setup	DMRS-DownlinkConfig		
}			
tci-StatesToAddModList SEQUENCE(SIZE (1.. maxNrofTCI-States)) OF TCI-State {	2 entries		
TCI-State[1] SEQUENCE {		entry 1	
tci-StateId	TCI-StateId 0		
qcl-type1 SEQUENCE {	QCL Type is Type1		
Cell	Not Present		
Bwp-id	Not present	BWP ID	
referenceSignal	Ssb : 0	SSB # 0	
Qcl-Type	Type C		
}			
qcl-type2 SEQUENCE {	QCL Type is Type2		
Cell	Not Present		
Bwp-id	Not present	BWP ID	
referenceSignal	Ssb : 0	SSB # 0	
Qcl-Type	Type D		
}			
}			
TCI-State[2] SEQUENCE {		entry 2	
tci-StateId	TCI-StateId 1		
qcl-type1 SEQUENCE {	QCL Type is Type1		
Cell	Not Present		
Bwp-id	0	BWP ID	
referenceSignal	csi-rs : 0	CSI-RS # 0	
Qcl-Type	Type A		
}			
qcl-type2 SEQUENCE {	QCL Type is Type2		
Cell	Not Present		
Bwp-id	0	BWP ID	
referenceSignal	csi-rs : 0	CSI-RS # 0	
Qcl-Type	Type D		
}			
}			
}			
vrb-ToPRB-Interleaver	Not present		
resourceAllocation	resourceAllocationType0		
pdsch-AggregationFactor	Not present		
prb-BundlingType CHOICE {			
staticBundling SEQUENCE {			
bundleSize	Not present	PRB Bundling size of 2	
}			
}			
}			
}			

5.4.2.3 Message contents for Sustained downlink data rate requirements

Physical layer parameters

Table 5.4.2.3-1: Physical layer parameters for DCI format 1_1

Derivation Path: Table 5.4.2.0-1

Common Serving Parameters

ServingCellConfigCommon

Table 5.4.2.3-2: ServingCellConfigCommon

Derivation Path: Table 5.4.2.0-2

TDD-UL-DL-Config

Table 5.4.2.3-3: TDD-UL-DL-Config

Derivation Path: Table 5.4.2.0-3

PDCCH Configuration

PDCCH-ConfigCommon

Table 5.4.2.3-4: PDCCH-ConfigCommon

Derivation Path: Table 5.4.2.0-4

ServingCellConfig

Table 5.4.2.3-5: ServingCellConfig

Derivation Path: Table 5.4.2.0-5

PDCCH-config

Table 5.4.2.3-6: PDCCH-ControlResourceSet

Derivation Path: Table 5.4.2.0-6			
Information Element	Value/remark	Comment	Condition
ControlResourceSet ::= SEQUENCE {			
controlResourceSetId	ControlResourceSetId		
frequencyDomainResources	xxxxxxxx xxxxxxxx xxxxxxxx xxxxxxxx xxxxxxxx xxxxxx	TS 38.521-4 Table 5.2-2 for tested channel bandwidth and subcarrier spacing	SDR_FR1
frequencyDomainResources	xxxxxxxx xxxxxxxx xxxxxxxx xxxxxxxx xxxxxxxx xxxxxx	TS 38.521-4 Table 7.2-2 for tested channel bandwidth and subcarrier spacing	SDR_FR2
duration	1	SearchSpace duration of 1 symbol	SDR_FR1, SDR_FR2
cce-REG-MappingType CHOICE {			
nonInterleaved	NULL		
}			
precoderGranularity	sameAsREG-bundle		
tci-StatesPDCCH-ToAddList	Not present	SearchSpace seen from all TCI states	
tci-StatesPDCCH-ToAddList SEQUENCE(SIZE (1..maxNrofTCI-StatesPDCCH)) OF TCI-StateId {	1 entry		MBWP
TCI-StateId[1]	0	QCL ssb 0	

	1	QCL csi-rs 0	
}			
}			

Condition	Explanation
SDR_FR1	SDR testing in FR1.
SDR_FR2	SDR testing in FR2.

Table 5.4.2.3-7: PDCCH Search Space

Derivation Path: Table 5.4.2.0-7			
Information Element	Value/remark	Comment	Condition
SearchSpace ::= SEQUENCE {			
monitoringSlotPeriodicityAndOffset CHOICE {			
sl1	NULL		
}			
duration	Not present	1 slot per default	
monitoringSymbolsWithinSlot	10000000000000	Starting symbol 0	
nrofCandidates SEQUENCE {			
aggregationLevel1	n0		
aggregationLevel2	n2	1 for UL, 1 for DL	CORESET_ ge_24_RBs
	n0		
aggregationLevel4	n2	1 for UL, 1 for DL	CORESET_ ge_48_RBs
	n0		
aggregationLevel8	n2	1 for UL, 1 for DL	CORESET_ ge_96_RBs
	n0		
aggregationLevel16	n0		
}			
searchSpaceType CHOICE {			
ue-Specific SEQUENCE {			USS
dci-Formats	formats0-1-And-1-1	DCI Format 1_1	
}			
}			
}			

Condition	Explanation
CORESET_ge_24_RBs	5MHz in scs15; 10MHz, 15MHz in scs30.
CORESET_ge_48_RBs	10MHz in scs15; 20MHz in scs30.
CORESET_ge_96_RBs	15MHz and above in scs15; 25MHz and above in scs30.

NZIP-CSI-RS for Tracking

NZIP-CSI-RS-Resource

Table 5.4.2.3-8: NZIP-CSI-RS-Resource for TRS

Derivation Path: Table 5.4.2.0-8			
Information Element	Value/remark	Comment	Condition
NZIP-CSI-RS-Resource ::= SEQUENCE {			
nzip-CSI-RS-ResourceId	0	CSI-RS resource 1	
	1	CSI-RS resource 2	
	2	CSI-RS resource 3	
	3	CSI-RS resource 4	
resourceMapping	CSI-RS- ResourceMapping for TRS		
powerControlOffset	0		

periodicityAndOffset	CSI-ResourcePeriodicityAndOffset		
qcl-InfoPeriodicCSI-RS	TCI-StateId 0	QCL ssb 0	
}			

CSI-RS-ResourceMapping

Table 5.4.2.3-9: CSI-RS-ResourceMapping for TRS

Derivation Path: Table 5.4.2.0-9			
Information Element	Value/remark	Comment	Condition
CSI-RS-ResourceMapping ::= SEQUENCE {			
frequencyDomainAllocation CHOICE {			
row1	1000	k ₀ =3, row1	2TX, 4TX
}			
firstOFDMSymbolInTimeDomain	6	l ₀ =6 for CSI-RS resource 1 and 3	
	10	l ₀ =10 for CSI-RS resource 2 and 4	
nrofPorts	p1	1 for CSI-RS resource 1,2,3,4	2TX, 4TX
cdm-Type	noCDM		
density CHOICE{			
three	Null		
}			
freqBand	CSI-FrequencyOccupation for TRS		
}			

CSI-ResourcePeriodicityAndOffset

Table 5.4.2.3-10: CSI-ResourcePeriodicityAndOffset for TRS

Derivation Path: Table 5.4.2.0-10

CSI-FrequencyOccupation

Table 5.4.2.3-11: CSI-FrequencyOccupation for TRS

Derivation Path: Table 5.4.2.0-11			
Information Element	Value/remark	Comment	Condition
CSI-FrequencyOccupation ::= SEQUENCE {			
nrofRBs	52	BW 10MHz SCS 15kHz, BW 20MHz SCS 30kHz	
	108	BW 20MHz SCS 15kHz	
	276	BW 100MHz SCS 30kHz	
}			

NZP-CSI-RS-ResourceSet

Table 5.4.2.3-12: NZP-CSI-RS-ResourceSet for TRS

Derivation Path: Table 5.4.2.0-12

CSI-ResourceConfig

Table 5.4.2.3-13: CSI-ResourceConfig for TRS

Derivation Path: Table 5.4.2.0-13

NZP CSI-RS for CSI Acquisition

NZP-CSI-RS-Resource

Table 5.4.2.3-14: NZP-CSI-RS-Resource for CSI Acquisition

Derivation Path: Table 5.4.2.0-14			
Information Element	Value/remark	Comment	Condition
NZP-CSI-RS-Resource ::= SEQUENCE {			
nzp-CSI-RS-ResourceId	4	CSI-RS resource 5	
resourceMapping	CSI-RS-ResourceMapping		
powerControlOffset	0		
periodicityAndOffset	CSI-ResourcePeriodicityAndOffset		
qcl-InfoPeriodicCSI-RS	TCI-StateId 1	QCL csi-rs 0	
}			

CSI-RS-ResourceMapping

Table 5.4.2.3-15: CSI-RS-ResourceMapping for CSI Acquisition

Derivation Path: Table 4.6.3-45			
Information Element	Value/remark	Comment	Condition
CSI-RS-ResourceMapping ::= SEQUENCE {			
frequencyDomainAllocation CHOICE {			
row2	000000010000	k ₀ =4, row2	1TX
other	000100	k ₀ =4, row3	2TX
row4	010	k ₀ =4, row4	4TX
}			
nrofPorts	p2		2TX
	p4		4TX
	p1		1TX
firstOFDMsymbolInTimeDomain	12	l ₀ =12	
cdm-Type	fd-CDM2		2TX, 4Tx
	noCDM		1TX
density CHOICE {			
one	NULL		
}			
freqBand	CSI-FrequencyOccupation for CSI Acquisition		
}			

CSI-ResourcePeriodicityAndOffset

Table 5.4.2.3-16: CSI-ResourcePeriodicityAndOffset

Derivation Path: Table 5.4.2.0-16

CSI-FrequencyOccupation

Table 5.4.2.3-17: CSI-FrequencyOccupation for CSI Acquisition

Derivation Path: Table 5.4.2.0-17			
Information Element	Value/remark	Comment	Condition
CSI-FrequencyOccupation ::= SEQUENCE {			
nrofRBs	52		BW 10MHz SCS 15kHz, BW 20MHz SCS 30kHz
	108		BW 20MHz SCS 15kHz
	276		BW 100MHz SCS 30kHz
}			

NZP-CSI-RS-ResourceSet

Table 5.4.2.3-18: NZP-CSI-RS-ResourceSet for CSI Acquisition

Derivation Path: Table 5.4.2.0-18

CSI-ResourceConfig

Table 5.4.2.3-19: CSI-ResourceConfig for CSI Acquisition

Derivation Path: Table 5.4.2.0-19

ZP CSI-RS for CSI Acquisition

ZP-CSI-RS-Resource

Table 5.4.2.3-20: ZP-CSI-RS-Resource

Derivation Path: Table 5.4.2.0-20			
Information Element	Value/remark	Comment	Condition
ZP-CSI-RS-Resource ::= SEQUENCE {			
zp-CSI-RS-ResourceId	ZP-CSI-RS-ResourceId		
resourceMapping	ZP CSI-RS-ResourceMapping		
periodicityAndOffset	ZP CSI-ResourcePeriodicityAndOffset		
qcl-InfoPeriodicCSI-RS	TCI-StateId 1	QCL csi-rs 0	
}			

CSI-RS-ResourceMapping

Table 5.4.2.3-21: ZP CSI-RS-ResourceMapping

Derivation Path: Table 5.4.2.0-21			
Information Element	Value/remark	Comment	Condition
CSI-RS-ResourceMapping ::= SEQUENCE {			
frequencyDomainAllocation CHOICE {			
row4	001	k ₀ =0, row4	2TX, 4TX
}			
nrofPorts	p4		2TX, 4TX
firstOFDMSymbolInTimeDomain	12	l ₀ =12	
cdm-Type	fd-CDM2		
density CHOICE {			
one	NULL		
}			

freqBand	ZP CSI-FrequencyOccupation		
}			

CSI-ResourcePeriodicityAndOffset

Table 5.4.2.3-22: ZP CSI-ResourcePeriodicityAndOffset

Derivation Path: Table 5.4.2.0-22

CSI-FrequencyOccupation

Table 5.4.2.3-23: ZP CSI-FrequencyOccupation

Derivation Path: Table 5.4.2.0-23			
Information Element	Value/remark	Comment	Condition
CSI-FrequencyOccupation ::= SEQUENCE {			
nrofRBs	52		BW 10MHz SCS 15kHz, BW 20MHz SCS 30kHz
	108		BW 20MHz SCS 15kHz
	276		BW 100MHz SCS 30kHz
}			

PDSCH DMRS Configuration

DMRS-DownlinkConfig

Table 5.4.2.3-24: DMRS-DownlinkConfig

Derivation Path: Table 5.4.2.0-24

PDSCH Configuration

PDSCH-ServingCellConfig

Table 5.4.2.3-25: PDSCH-ServingCellConfig

Derivation Path: Table 5.4.2.0-25

PDSCH-Config

Table 5.4.2.3-26: PDSCH-Config

Derivation Path: Table 5.4.2.0-26			
Information Element	Value/remark	Comment	Condition
PDSCH-Config ::= SEQUENCE {			
dataScramblingIdentityPDSCH	0		
dmrs-DownlinkForPDSCH-MappingTypeA CHOICE {			
setup	DMRS-DownlinkConfig		
}			
tci-StatesToAddModList SEQUENCE(SIZE (1.. maxNrofTCI-States)) OF TCI-State {	2 entries		
TCI-State[1] SEQUENCE {		entry 1	
tci-StateId	0	TCI-StateId 0	
qcl-type1 SEQUENCE {			
cell	Not present		

bwp-id	Not present	BWP_ID	
referenceSignal	ssb		
ssb	0		
qcl-Type	typeC		
}			
qcl-type2 SEQUENCE {			SDR_FR2
cell	Not present		
bwp-id	Not present	BWP_ID	
referenceSignal	ssb		
ssb	0		
qcl-Type	typeD		
}			
}			
TCI-State[2] SEQUENCE {		entry 2	
tcid-StateId	1	TCI-StateId 1	
qcl-type1 {			
cell	Not present		
bwp-id	0	BWP ID	
referenceSignal	csi-rs		
csi-rs	0		
qcl-Type	typeA		
}			
qcl-type2 SEQUENCE {			SDR_FR2
cell	Not present		
bwp-id	0	BWP ID	
referenceSignal	csi-rs		
csi-rs	0		
qcl-Type	typeD		
}			
}			
}			
vrb-ToPRB-Interleaver	Not present		
resourceAllocation	resourceAllocationType0		
pdsch-AggregationFactor	Not present		
rbg-Size	config1	The UE ignores this field if <i>resourceAllocation</i> is set to <i>resourceAllocationType1</i> (see TS 38.214 [21], clause 5.1.2.2.1).	
prb-BundlingType CHOICE {			
staticBundling SEQUENCE {			
bundleSize	wideband		SDR_FR1, SDR_FR2
}			
}			
ZP-CSI-RS-ResourceToAddModList SEQUENCE (SIZE (1..maxNrofNZP-CSI-RS-Resources)) OF NZP-CSI-RS-Resource {	1 entry		
ZP-CSI-RS-Resource[1]	ZP-CSI-RS-Resource	entry 1	
}			
p-ZP-CSI-RS-ResourceSet	p-ZP-CSI-RS-ResourceSet		
}			

PDSCH-TimeDomainResourceAllocationList

Table 5.4.2.3-27: PDSCH-TimeDomainResourceAllocationList

Derivation Path: Table 5.4.2.0-27			
Information Element	Value/remark	Comment	Condition

PDSCH-TimeDomainResourceAllocationList ::= SEQUENCE(SIZE(1..maxNrofDL-Allocations)) OF PDSCH-TimeDomainResourceAllocation {	2 entries		
PDSCH-TimeDomainResourceAllocation[1] SEQUENCE {		entry 1	
k0	Not present		
mappingType	typeA		
startSymbolAndLength	44	Start symbol(S)=2, Length(L)=4	SDR_FR1
	96	Start symbol(S)=1, Length(L)=9	SDR_FR2
}			
PDSCH-TimeDomainResourceAllocation[2] SEQUENCE {		entry 2	
k0	Not present		
mappingType	typeA		
	40	Start symbol(S)=1, Length(L)=13	SDR_FR1, SDR_FR2
}			
}			

– *SecurityAlgorithmConfig*

Table 5.4.2.3-A1: SecurityAlgorithmConfig

Derivation Path: Table 4.6.3-165			
Information Element	Value/remark	Comment	Condition
SecurityAlgorithmConfig ::= SEQUENCE {			
cipheringAlgorithm	nea0		SDR_FR1, SDR_FR2
integrityProtAlgorithm	nia2		
}			

– *Security mode command*

Table 5.4.2.3-A2: SECURITY MODE COMMAND

Derivation Path: Table 4.7.1-25			
Information Element	Value/remark	Comment	Condition
Selected NAS security algorithms			
Type of ciphering algorithm	'0000'B	5G encryption algorithm 5G EAO (null ciphering algorithm)	SDR_FR1, SDR_FR2
Type of integrity protection algorithm	Set according to PIXIT px_NAS_5GC_IntegrityProtAlgorithm for default integrity protection algorithm	This value should not be equal to the null integrity algorithm.	
Selected EPS NAS security algorithms	Not Present		
Selected EPS NAS security algorithms			UE_S1_SU PPOR TED
Type of ciphering algorithm	'0000'B	EPS encryption algorithm EEA0 (null ciphering algorithm)	SDR_FR1, SDR_FR2
Type of integrity protection algorithm	Set according to PIXIT px_NAS_IntegrityProtAlgorithm for default integrity protection algorithm		

5.4.2.4 Message contents for CQI reporting requirements

NZP-CSI-RS for Tracking

CSI-RS-ResourceMapping

Table 5.4.2.4-1: CSI-RS-ResourceMapping for TRS

Derivation Path: Table 4.6.3-45			
Information Element	Value/remark	Comment	Condition
CSI-RS-ResourceMapping ::= SEQUENCE {			
frequencyDomainAllocation CHOICE {			
row1	0001	$k_0=0$ for CSI-RS resource 1,2,3,4	TRS
}			
firstOFDMSymbolInTimeDomain	4	$l_0 = 4$ for CSI-RS resource 1 and 3	TRS
	8	$l_0 = 8$ for CSI-RS resource 2 and 4	TRS
nrofPorts	p1	1 for CSI-RS resource 1,2,3,4	TRS
Cdm-Type	noCDM		TRS
Density CHOICE{			
three	Null		TRS
}			
freqBand	CSI-FrequencyOccupation		TRS
}			

NZP CSI-RS for CSI Acquisition

CSI-RS-ResourceMapping

Table 5.4.2.4-2: CSI-RS-ResourceMapping

Derivation Path: Table 4.6.3-45			
Information Element	Value/remark	Comment	Condition
CSI-RS-ResourceMapping ::= SEQUENCE {			
frequencyDomainAllocation CHOICE {			
other	001000	$K_0 = 6$, row3,	2Tx test cases
row1	0001	$K_0 = 0$, row1	1Tx test cases
row4	001	$K_0 = 0$, row4	4Tx test cases
}			
nrofPorts	P2		2Tx test cases
	P4		4Tx test cases
	P1		1Tx test cases
firstOFDMSymbolInTimeDomain	13	$l_0 = 13$	
cdm-Type	fd-CDM2		2Tx and 4Tx test cases
	noCDM		1Tx test cases
density CHOICE {			
one	NULL		2Tx and 4Tx test cases
three	NULL		1Tx test cases
}			
freqBand	CSI-FrequencyOccupation		
}			

CSI-ResourcePeriodicityAndOffset

Table 5.4.2.4-2a: NZP CSI-ResourcePeriodicityAndOffset

Derivation Path: Table 4.6.3-43			
Information Element	Value/remark	Comment	Condition
CSI-ResourcePeriodicityAndOffset ::= CHOICE {			
slots5	1		FR1_FDD
slot10	1		FR1_TDD
slot8	1		FR2
}			

ZP CSI-RS for CSI Acquisition

CSI-RS-ResourceMapping

Table 5.4.2.4-3: ZP CSI-RS-ResourceMapping

Derivation Path: Table 4.6.3-45			
Information Element	Value/remark	Comment	Condition
CSI-RS-ResourceMapping ::= SEQUENCE {			
frequencyDomainAllocation CHOICE {			
other	000100	K0 = 4	FR1
row4	100	K0=8	FR2
}			
nrofPorts	P4		
firstOFDMSymbolInTimeDomain	9	I0 = 9	FR1
	13	I0 = 13	FR2
cdm-Type	fd-CDM2		
density CHOICE {			
one	NULL		
}			
freqBand	ZP CSI-FrequencyOccupation		
}			

CSI-ResourcePeriodicityAndOffset

Table 5.4.2.4-4: ZP CSI-ResourcePeriodicityAndOffset

Derivation Path: Table 4.6.3-43			
Information Element	Value/remark	Comment	Condition
CSI-ResourcePeriodicityAndOffset ::= CHOICE {			
slots5	1		FR1_FDD
slot10	1		FR1_TDD
slot8	1		FR2
}			

p-ZP-CSI-RS-ResourceSet

Table 5.4.2.4-5: p-ZP-CSI-RS-ResourceSet

Derivation Path: Table 4.6.3-87			
Information Element	Value/remark	Comment	Condition
p-ZP-CSI-RS-ResourceSet ::= SEQUENCE {			
zp_CSI-RS_ResourceSetId	0		
zp-CSI-RS-ResourceIdList SEQUENCE (SIZE (1..maxNrofZP-CSI-RS-ResourcesPerSet)) OF ZP-CSI-RS-ResourceId{	1 entry		
ZP-CSI-RS-ResourceId[1]	0	entry 1	

		ZP CSI-RS resource 1	
}			
}			

CSI-IM Configuration

CSI-IM-Resource

Table 5.4.2.4-6: CSI-IM-Resource

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
CSI-IM-Resource ::= SEQUENCE {			
csi-IM-ResourceId	CSI-IM-ResourceId		
csi-IM-ResourceElementPattern CHOICE {			
pattern0 SEQUENCE {			FR1
subcarrierLocation-p0	s4		
symbolLocation-p0	9		
}			
pattern1 SEQUENCE {			FR2
subcarrierLocation-p1	s8		
symbolLocation-p1	13		
}			
}			
freqBand	CSI- FrequencyOccupation		
periodicityAndOffset	CSI- ResourcePeriodicityAnd Offset		
}			

CSI-FrequencyOccupation

Table 5.4.2.4-6a: CSI-FrequencyOccupation for CSI-IM-Resource

Derivation Path: Table 4.6.3-33			
Information Element	Value/remark	Comment	Condition
CSI-FrequencyOccupation ::= SEQUENCE {			
nrofRBs	52		BW 10 MHz SCS 15kHz
	52		BW 20 MHz SCS 30kHz
	108		BW 40 MHz SCS 30kHz
	68		BW 100MHz SCS 120kHz
	132		BW 200 MHz SCS 120 kHz
}			

CSI-IM-ResourceId

Table 5.4.2.4-7: CSI-IM-ResourceId

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
CSI-IM-ResourceId	0		

CSI-IM-ResourceSet

Table 5.4.2.4-8: CSI-IM-ResourceSet

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
CSI-IM-ResourceSet ::= SEQUENCE {			
csi-IM-ResourceSetId	CSI-IM-ResourceSetId		
csi-IM-Resources SEQUENCE (SIZE(1..maxNrofCSI-IM-ResourcesPerSet)) {	1 entry		
CSI-IM-ResourceId[1]	CSI-IM-ResourceId	entry 1	
}			
}			

CSI-IM-ResourceSetId

Table 5.4.2.4-9: CSI-IM-ResourceSetId

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
CSI-IM-ResourceSetId	0		

CSI-IM-ResourceConfig

Table 5.4.2.4-10: CSI-IM-ResourceConfig

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
CSI-ResourceConfig ::= SEQUENCE {			
csi-ResourceConfigId	2		
csi-RS-ResourceSetList CHOICE {			
csi-IM-ResourceSetList SEQUENCE (SIZE (1..maxNrofCSI-IM-ResourceSetsPerConfig)) OF CSI-IM-ResourceSetId {	1 entry		
csi-IM-ResourceSetId[0]	0	entry 1	
}			
}			
bwp-Id	BWP-Id		
resourceType	periodic		
}			

CSI-MeasConfig

Table 5.4.2.4-11: CSI-MeasConfig

Derivation Path: Table 4.6.3-38			
Information Element	Value/remark	Comment	Condition
CSI-MeasConfig ::= SEQUENCE {			
nzp-CSI-RS-ResourceToAddModList SEQUENCE (SIZE (1..maxNrofNZP-CSI-RS-Resources)) OF NZP-CSI-RS-Resource {	n entries	n=5 for FR1 n=7 for FR2	
NZP-CSI-RS-Resource[1]	NZP-CSI-RS-Resource for TRS (1)	entry 1 CSI-RS resource 1	
NZP-CSI-RS-Resource[2]	NZP-CSI-RS-Resource for TRS (2)	entry 2 CSI-RS resource 2	
NZP-CSI-RS-Resource[3]	NZP-CSI-RS-Resource for TRS (3)	entry 3 CSI-RS resource 3	

NZP-CSI-RS-Resource[4]	NZP-CSI-RS-Resource for TRS (4)	entry 4 CSI-RS resource 4	
NZP-CSI-RS-Resource[5]	NZP-CSI-RS-Resource for CSI Acquisition	entry 5 CSI-RS resource 5	
NZP-CSI-RS-Resource[6]	CSI-RS-Resource for beam refinement	entry 6 CSI-RS resource 6	FR2
NZP-CSI-RS-Resource[7]	CSI-RS-Resource for beam refinement	entry 7 CSI-RS resource 7	FR2
}			
nzp-CSI-RS-ResourceSetToAddModList SEQUENCE (SIZE (1..maxNrofNZP-CSI-RS-ResourceSets)) OF NZP-CSI-RS-ResourceSet {	n entries	n=2 for FR1 n=3 for FR2	
NZP-CSI-RS-ResourceSet[1]	NZP-CSI-RS-ResourceSet for TRS	entry 1	
NZP-CSI-RS-ResourceSet[2]	NZP-CSI-RS-ResourceSet for CSI Acquisition	entry 2	
NZP-CSI-RS-ResourceSet[3]	NZP-CSI-RS-ResourceSet for beam refinement	entry 3	FR2
}			
csi-IM-ResourceToAddModList SEQUENCE (SIZE (1..maxNrofCSI-IM-Resources)) OF CSI-IM-Resource {	1 entry		
CSI-IM-Resource[1]	CSI-IM-Resource		
}			
csi-IM-ResourceSetToAddModList SEQUENCE (SIZE (1..maxNrofCSI-IM-ResourceSets)) OF CSI-IM-ResourceSet {	1 entry		
CSI-IM-ResourceSet[1]	CSI-IM-ResourceSet	entry 1	
}			
csi-SSB-ResourceSetToAddModList	Not present		
csi-ResourceConfigToAddModList SEQUENCE (SIZE (1..maxNrofCSI-ResourceConfigurations)) OF CSI-ResourceConfig {	n entries	n=3 for FR1 n=4 for FR2	
CSI-ResourceConfig[1]	CSI-ResourceConfig for TRS	entry 1	
CSI-ResourceConfig[2]	CSI-ResourceConfig for CSI Acquisition	entry 2	
CSI-ResourceConfig[3]	CSI-IM-ResourceConfig	entry 3	
CSI-ResourceConfig[4]	CSI-ResourceConfig for beam refinement	entry 4	FR2
}			
}			

CSI-ReportConfig

Table 5.4.2.4-12: CSI-ReportConfig

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
CSI-ReportConfig ::= SEQUENCE {			
reportConfigId	CSI-ReportConfigId		
carrier	ServCellIndex		
resourcesForChannelMeasurement	CSI-ResourceConfigId for CSI Acquisition		
csi-IM-ResourcesForInterference	CSI-ResourceConfigId for CSI-IM		
nzp-CSI-RS-ResourcesForInterference	not present		
reportConfigType CHOICE {			
periodic SEQUENCE {			

reportSlotConfig	CSI-ReportPeriodicityAndOffset		
pucch-CSI-ResourceList SEQUENCE (SIZE (1..maxNrofBWPs)) OF PUCCH-CSI-Resource {	2 entry		
PUCCH-CSI-Resource [1]	PUCCH-CSI-Resource	entry 1	
}			
}			
reportQuantity CHOICE {			
cri-RI-PMI-CQI	NULL		FR1, FR2
}			
reportFreqConfiguration SEQUENCE {			
cqi-FormatIndicator	widebandCQI		
pmi-FormatIndicator	widebandPMI		
csi-ReportingBand CHOICE {			
subbands7	'1111111'B		FR1
subbands9	'111111111'B		FR2
}			
}			
timeRestrictionForChannelMeasurements	notConfigured		
timeRestrictionForInterferenceMeasurements	notConfigured		
codebookConfig	CodebookConfig		
dummy	Not present		
groupBasedBeamReporting CHOICE {			
disabled SEQUENCE {			
nrofReportedRS	not present		
}			
}			
cqi-Table	table2		FR1
	table1		FR2
subbandSize	value2		
non-PMI-PortIndication	Not present		
}			

CSI-ReportPeriodicityAndOffset

Table 5.4.2.4-13: CSI-ReportPeriodicityAndOffset

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
CSI-ReportPeriodicityAndOffset ::= CHOICE {			
slots10	9		FR1_TDD
slots5	0		FR1_FDD
slot8	3		FR2
}			

PUCCH-CSI-Resource

Table 5.4.2.4-14: PUCCH-CSI-Resource

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
PUCCH-CSI-Resource ::= SEQUENCE {			
uplinkBandwidthPartId	BWP-id		FR1, FR2
pucch-Resource	8		FR1
	14		FR2
}			

CodebookConfig

Table 5.4.2.4-15: CodebookConfig

Derivation Path: Table 4.6.3-25			
Information Element	Value/remark	Comment	Condition
CodebookConfig ::= SEQUENCE {			
codebookType CHOICE {			
type1 SEQUENCE {			
subType CHOICE {			
type1-SinglePanel SEQUENCE {			
nrOfAntennaPorts CHOICE {			
two SEQUENCE {			2Tx test cases
twoTX-CodebookSubsetRestriction	'010000'B		
}			
moreThanTwo SEQUENCE {			4Tx test cases
n1-n2 CHOICE {			
two-one-Type1-SinglePanel-Restriction	'00010001'B		
}			
}			
}			
type1-SinglePanel-ri-Restriction	'11111111'B		
}			
}			
codebookMode	1		
}			
}			
}			

Physical layer parameters

Table 5.4.2.4-16: Physical layer parameters for DCI format 1_1

Derivation Path: Table 4.3.6.1.2.2-1			
Parameter	Value	Value in binary	Condition
PUCCH resource indicator	PUCCH-ResourceID[1] = 8 in pucch-ResourceSetID[2] as defined in Table 4.6.3-112 (Mapping as per Table 9.2.3-2 in TS 38.213)	'110'B	SUBBAND_CQI

PUSCH-TimeDomainResourceAllocationList

Table 5.4.2.4-17: PUSCH-TimeDomainResourceAllocationList

Derivation Path: Table 5.4.2.0-27			
Information Element	Value/remark	Comment	Condition
PUSCH-TimeDomainResourceAllocationList ::= SEQUENCE (SIZE(1..maxNrofUL-Allocations)) OF PUSCH-TimeDomainResourceAllocation {	2 entries		APERIODIC_CQI
PUSCH-TimeDomainResourceAllocation[1] SEQUENCE {		entry 1	
startSymbolAndLength	55	Start symbol(S)=0, Length(L)=12	
}			
PUSCH-TimeDomainResourceAllocation[2] SEQUENCE {		entry 2	
startSymbolAndLength	55	Start symbol(S)=0, Length(L)=12	

}			
}			

Condition	Explanation
APERIODIC_CQI	For aperiodic CQI reporting test cases

CSI-ResourceConfig

Table 5.4.2.4-18: CSI-ResourceConfig for CSI Acquisition

Derivation Path: Table 5.4.2.0-19			
Information Element	Value/remark	Comment	Condition
CSI-ResourceConfig ::= SEQUENCE {			
csi-ResourceConfigId	1		
csi-RS-ResourceSetList CHOICE {			
nzp-CSI-RS-SSB SEQUENCE {			
nzp-CSI-RS-ResourceSetList SEQUENCE (SIZE (1..maxNrofNZP-CSI-RS-ResourceSetsPerConfig))	1 entry		
OF NZP-CSI-RS-ResourceSetId {			
NZP-CSI-RS-ResourceSetId[1]	1	entry 1	
}			
csi-SSB-ResourceSetList	Not present		
}			
}			
bwp-Id	BWP-Id		
resourceType	periodic		
}			

PDSCH-Config

Table 5.4.2.4-19: PDSCH-Config

Derivation Path: Table 4.6.3-100			
Information Element	Value/remark	Comment	Condition
PDSCH-Config ::= SEQUENCE {			
resourceAllocation	resourceAllocationType1		eRedCap
}			

5.4.2.5 Message contents for PMI reporting requirements

NZP-CSI-RS for Tracking

CSI-RS-ResourceMapping

Table 5.4.2.5-1: CSI-RS-ResourceMapping for TRS

Derivation Path: Table 4.6.3-45			
Information Element	Value/remark	Comment	Condition
CSI-RS-ResourceMapping ::= SEQUENCE {			
frequencyDomainAllocation CHOICE {			
row1	0001	$k_0=0$ for CSI-RS resource 1,2,3,4	TRS
}			
firstOFDMsymbolInTimeDomain	4	$l_0 = 4$ for CSI-RS resource 1 and 3	TRS

	8	$l_0 = 8$ for CSI-RS resource 2 and 4	TRS
nrofPorts	p1	1 for CSI-RS resource 1,2,3,4	TRS
cdm-Type	noCDM		TRS
density CHOICE{			
three	Null		TRS
}			
freqBand	CSI-FrequencyOccupation		TRS
}			

NZP CSI-RS for CSI Acquisition

CSI-RS-ResourceMapping

Table 5.4.2.5-2: CSI-RS-ResourceMapping

Derivation Path: Table 4.6.3-45			
Information Element	Value/remark	Comment	Condition
CSI-RS-ResourceMapping ::= SEQUENCE {			
frequencyDomainAllocation CHOICE {			
row3	001000	$K_0 = 6$, row3	2Tx
row4	001	$K_0 = 0$, row4	4Tx
other	001100	$K_0 = 4$, $K_1 = 6$, row8	8Tx
	011110	$K_0 = 2$, row 12	16Tx
	011110	$K_0 = 2$, row 17	32Tx
}			
nrofPorts	p2		2Tx
	p4		4Tx
	p8		8Tx
	p16		16Tx
	p32		32Tx
firstOFDMSymbolInTimeDomain	13	$l_0 = 13$	2Tx, 4Tx
	5	$l_0 = 5$	8Tx, 16Tx, 32Tx
firstOFDMSymbolInTimeDomain2	12		32Tx
cdm-Type	fd-CDM2		2Tx, 4Tx
	cdm4-FD2-TD2		8Tx, 16Tx, 32Tx
density CHOICE {			
one	NULL		
}			
freqBand	CSI-FrequencyOccupation		
}			

NZP-CSI-RS-Resource

Table 5.4.2.5-2A: NZP-CSI-RS-Resource for CSI Acquisition

Derivation Path: Table 5.4.2.0-14			
Information Element	Value/remark	Comment	Condition
NZP-CSI-RS-Resource ::= SEQUENCE {			
nzp-CSI-RS-ResourceId	4	CSI-RS resource 5	
resourceMapping	CSI-RS-ResourceMapping		
powerControlOffset	0		
periodicityAndOffset	Not present		
qcl-InfoPeriodicCSI-RS	Not present		

}			

Condition	Explanation
2Tx	For test cases using 2 CSI-RS ports for NZP-CSI-RS for CSI acquisition.
4Tx	For test cases using 4 CSI-RS ports for NZP-CSI-RS for CSI acquisition.
8Tx	For test cases using 8 CSI-RS ports for NZP-CSI-RS for CSI acquisition.
16Tx	For test cases using 16 CSI-RS ports for NZP-CSI-RS for CSI acquisition.
32Tx	For test cases using 32 CSI-RS ports for NZP-CSI-RS for CSI acquisition.

ZP CSI-RS for CSI Acquisition

CSI-RS-ResourceMapping

Table 5.4.2.5-3: ZP CSI-RS-ResourceMapping

Derivation Path: Table 4.6.3-45			
Information Element	Value/remark	Comment	Condition
CSI-RS-ResourceMapping ::= SEQUENCE {			
frequencyDomainAllocation CHOICE {			
other	000100	K0 = 4	FR1
row4	100	K0 = 8	FR2
}			
nrofPorts	p4		
firstOFDMSymbolInTimeDomain	9	I0 = 9	FR1
	13	I0 = 13	FR2
cdm-Type	fd-CDM2		
density CHOICE {			
one	NULL		
}			
freqBand	ZP CSI-FrequencyOccupation		
}			

Table 5.4.2.5-4: Void

CSI-ResourcePeriodicityAndOffset

Table 5.4.2.5-4A: ZP CSI-ResourcePeriodicityAndOffset

Derivation Path: Table 4.6.3-43			
Information Element	Value/remark	Comment	Condition
CSI-ResourcePeriodicityAndOffset ::= CHOICE {			
slots5	1		FR1_FDD
slot10	1		FR1_TDD
slot8	1		FR2
}			

ZP-CSI-RS-Resource

Table 5.4.2.5-4B: ZP-CSI-RS-Resource

Derivation Path: Table 4.6.3-204

Information Element	Value/remark	Comment	Condition
ZP-CSI-RS-Resource ::= SEQUENCE {			
zp-CSI-RS-ResourceId	ZP-CSI-RS-ResourceId		
resourceMapping	CSI-RS-ResourceMapping		
periodicityAndOffset	ZP CSI-ResourcePeriodicityAndOffset		2Tx, 4Tx, 8Tx, 16Tx, 32Tx
}			

Table 5.4.2.5-5: Void

p-ZP-CSI-RS-ResourceSet

Table 5.4.2.5-5A: p-ZP-CSI-RS-ResourceSet

Derivation Path: Table 4.6.3-87			
Information Element	Value/remark	Comment	Condition
p-ZP-CSI-RS-ResourceSet ::= SEQUENCE {			
zp_CSI-RS_ResourceSetId	0		
zp-CSI-RS-ResourceIdList SEQUENCE (SIZE (1..maxNrofZP-CSI-RS-ResourcesPerSet)) OF ZP-CSI-RS-ResourceId{	1 entry		
ZP-CSI-RS-ResourceId[1]	0	entry 1 ZP CSI-RS resource 1	
}			
}			

Aperiodic-ZP-CSI-RS-ResourceSetsToAddModList

Table 5.4.2.5-5B: aperiodic-ZP-CSI-RS-ResourceSetsToAddModList

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
aperiodic-ZP-CSI-RS-ResourceSetsToAddModList ::= SEQUENCE {			
zp_CSI-RS_ResourceSetId	1		
zp-CSI-RS-ResourceIdList SEQUENCE (SIZE (1..maxNrofZP-CSI-RS-ResourcesPerSet)) OF ZP-CSI-RS-ResourceId{	1 entry		
ZP-CSI-RS-ResourceId[1]	0	entry 1 ZP CSI-RS resource 1	
}			
}			

CSI-ResourceConfig

Table 5.4.2.5-6: CSI-ResourceConfig for CSI Acquisition

Derivation Path: Table 4.6.3-41			
Information Element	Value/remark	Comment	Condition
CSI-ResourceConfig ::= SEQUENCE {			
csi-ResourceConfigId	1		
csi-RS-ResourceSetList CHOICE {			
nzp-CSI-RS-SSB SEQUENCE {			

nzp-CSI-RS-ResourceSetList SEQUENCE (SIZE (1..maxNrofNZP-CSI-RS-ResourceSetsPerConfig)) OF NZP-CSI-RS-ResourceSetId {	1 entry		
NZP-CSI-RS-ResourceSetId[1]	1	entry 1	
}			
csi-SSB-ResourceSetList	Not present		
}			
}			
bwp-Id	BWP-Id		
resourceType	aperiodic		
}			

CSI-IM Configuration

CSI-IM-Resource

Table 5.4.2.5-7: CSI-IM-Resource

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
CSI-IM-Resource ::= SEQUENCE {			
csi-IM-ResourceId	CSI-IM-ResourceId		
csi-IM-ResourceElementPattern CHOICE {			
pattern0 SEQUENCE {			FR1
subcarrierLocation-p0	s4		
symbolLocation-p0	9		
}			
pattern1 SEQUENCE {			FR2
subcarrierLocation-p1	s8		
symbolLocation-p1	13		
}			
}			
freqBand	CSI-FrequencyOccupation		
periodicityAndOffset	Not present		
}			

CSI-IM-ResourceId

Table 5.4.2.5-8: CSI-IM-ResourceId

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
CSI-IM-ResourceId	0		

CSI-IM-ResourceSet

Table 5.4.2.5-9: CSI-IM-ResourceSet

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
CSI-IM-ResourceSet ::= SEQUENCE {			
csi-IM-ResourceSetId	CSI-IM-ResourceSetId		
csi-IM-Resources SEQUENCE (SIZE(1..maxNrofCSI-IM-ResourcesPerSet)) {	1 entry		
CSI-IM-ResourceId[1]	CSI-IM-ResourceId	entry 1	
}			
}			

CSI-IM-ResourceSetId

Table 5.4.2.5-10: CSI-IM-ResourceSetId

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
CSI-IM-ResourceSetId	0		

CSI-IM-ResourceConfig

Table 5.4.2.5-11: CSI-IM-ResourceConfig

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
CSI-ResourceConfig ::= SEQUENCE {			
csi-ResourceConfigId	2		
csi-RS-ResourceSetList CHOICE {			
csi-IM-ResourceSetList SEQUENCE (SIZE (1..maxNrofCSI-IM-ResourceSetsPerConfig)) OF CSI-IM-ResourceSetId {	1 entry		
csi-IM-ResourceSetId[0]	0	entry 1	
}			
}			
bwp-Id	BWP-Id		
resourceType	aperiodic		
}			

CSI-MeasConfig

Table 5.4.2.5-12: CSI-MeasConfig

Derivation Path: Table 4.6.3-38			
Information Element	Value/remark	Comment	Condition
CSI-MeasConfig ::= SEQUENCE {			
nzp-CSI-RS-ResourceToAddModList SEQUENCE (SIZE (1..maxNrofNZP-CSI-RS-Resources)) OF NZP-CSI-RS-Resource {	n entries	n=5 for FR1 n=7 for FR2	
NZP-CSI-RS-Resource[1]	NZP-CSI-RS-Resource for TRS (1)	entry 1 CSI-RS resource 1	
NZP-CSI-RS-Resource[2]	NZP-CSI-RS-Resource for TRS (2)	entry 2 CSI-RS resource 2	
NZP-CSI-RS-Resource[3]	NZP-CSI-RS-Resource for TRS (3)	entry 3 CSI-RS resource 3	
NZP-CSI-RS-Resource[4]	NZP-CSI-RS-Resource for TRS (4)	entry 4 CSI-RS resource 4	
NZP-CSI-RS-Resource[5]	NZP-CSI-RS-Resource for CSI Acquisition	entry 5 CSI-RS resource 5	
NZP-CSI-RS-Resource[6]	CSI-RS-Resource for beam refinement	entry 6 CSI-RS resource 6	FR2
NZP-CSI-RS-Resource[7]	CSI-RS-Resource for beam refinement	entry 7 CSI-RS resource 7	FR2
}			
nzp-CSI-RS-ResourceSetToAddModList SEQUENCE (SIZE (1..maxNrofNZP-CSI-RS-ResourceSets)) OF NZP-CSI-RS-ResourceSet {	n entries	n=2 for FR1 n=3 for FR2	

NZP-CSI-RS-ResourceSet[1]	NZP-CSI-RS-ResourceSet for TRS	entry 1	
NZP-CSI-RS-ResourceSet[2]	NZP-CSI-RS-ResourceSet for CSI Acquisition	entry 2	
NZP-CSI-RS-ResourceSet[3]	NZP-CSI-RS-ResourceSet for beam refinement	entry 3	FR2
}			
csi-IM-ResourceToAddModList SEQUENCE (SIZE (1..maxNrofCSI-IM-Resources)) OF CSI-IM-Resource {	1 entry		
CSI-IM-Resource[1]	CSI-IM-Resource		
}			
csi-IM-ResourceSetToAddModList SEQUENCE (SIZE (1..maxNrofCSI-IM-ResourceSets)) OF CSI-IM-ResourceSet {	1 entry		
CSI-IM-ResourceSet[1]	CSI-IM-ResourceSet		
}			
csi-SSB-ResourceSetToAddModList	Not present		
csi-ResourceConfigToAddModList SEQUENCE (SIZE (1..maxNrofCSI-ResourceConfigurations)) OF CSI-ResourceConfig {	n entries	n=3 for FR1 n=4 for FR2	
CSI-ResourceConfig[1]	CSI-ResourceConfig for TRS	entry 1	
CSI-ResourceConfig[2]	CSI-ResourceConfig for CSI Acquisition	entry 2	
CSI-ResourceConfig[3]	CSI-IM-ResourceConfig	entry 3	
CSI-ResourceConfig[4]	CSI-ResourceConfig for beam refinement	entry 4	FR2
}			
csi-ReportConfigToAddModList SEQUENCE (SIZE (1..maxNrofCSI-ReportConfigurations)) OF CSI-ReportConfig {		1 entry	
CSI-ReportConfig[1]	CSI-ReportConfig		
}			
reportTriggerSize	1		
aperiodicTriggerStateList CHOICE {			
setup	CSI-AperiodicTriggerStateList	Table 5.4.2.5-15	
}			
}			

CSI-ReportConfig

Table 5.4.2.5-13: CSI-ReportConfig

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
CSI-ReportConfig ::= SEQUENCE {			
reportConfigId	CSI-ReportConfigId		
carrier	ServCellIndex		
resourcesForChannelMeasurement	CSI-ResourceConfigId for CSI Acquisition		
csi-IM-ResourcesForInterference	CSI-ResourceConfigId for CSI-IM		
nzp-CSI-RS-ResourcesForInterference	not present		
reportConfigType CHOICE {			
aperiodic SEQUENCE {			
reportSlotOffsetList SEQUENCE {	2 entries		
reportSlotOffsetList[1]	4	entry 1	FR1_FDD_4 Tx, FR1_FDD_RedCap_2R x,

			FR1_FDD_e RedCap_2R x
	5		FR1_FDD_8 Tx, FR1_FDD_1 6Tx, FR1_FDD_3 2Tx
	8		FR1_TDD
	3		FR1_FDD_ RedCap_1R x, FR1_FDD_e RedCap_1R x
	6		FR2
reportSlotOffsetList[2]	4	entry 2	FR1_FDD_4 Tx, FR1_FDD_ RedCap_2R x, FR1_FDD_e RedCap_2R x
	5		FR1_FDD_8 Tx, FR1_FDD_1 6Tx, FR1_FDD_3 2Tx
	8		FR1_TDD
	3		FR1_FDD_ RedCap_1R x, FR1_FDD_e RedCap_1R x
	6		FR2
}			
}			
}			
reportQuantity CHOICE {			
cri-RI-PMI-CQI	NULL		
}			
reportFreqConfiguration SEQUENCE {			
cqi-FormatIndicator	widebandCQI		
pmi-FormatIndicator	widebandPMI		
	subbandPMI		16Tx AND not E_TYPEII
	Not present		E_TYPEII
csi-ReportingBand CHOICE {			FR1
subbands7	'1111111'B		
subbands13	'1111111111111'B		E_TYPEII AND FDD
subbands14	'11111111111111'B		E_TYPEII AND TDD
}			
csi-ReportingBand CHOICE {			FR2
subbands9	'111111111'B		
}			
}			
timeRestrictionForChannelMeasurements	notConfigured		
timeRestrictionForInterferenceMeasurements	notConfigured		
codebookConfig	CodebookConfig		
	Not present		E_TYPEII

dummy	Not present		
groupBasedBeamReporting CHOICE {			
disabled SEQUENCE {			
nrofReportedRS	Not present		
}			
}			
cqi-Table	table1		
subbandSize	value2		
	value1		E_TYPEII
non-PMI-PortIndication	Not present		
codebookConfig-r16	Not present		
	CodebookConfig-r16		E_TYPEII
}			

Condition	Explanation
E_TYPEII	PMI enhanced Type II codebook test cases.

CodebookConfig

Table 5.4.2.5-14: CodebookConfig

Derivation Path: Table 4.6.3-25			
Information Element	Value/remark	Comment	Condition
CodebookConfig ::= SEQUENCE {			
codebookType CHOICE {			
type1 SEQUENCE {			Not TYPEII
subType CHOICE {			
type1-SinglePanel SEQUENCE {			
nrOfAntennaPorts CHOICE {			
two SEQUENCE {			2Tx
twoTX-CodebookSubsetRestriction	'001111'B		
}			
moreThanTwo SEQUENCE {			4Tx, 8Tx
n1-n2 CHOICE {			
two-one-Type1-SinglePanel-Restriction	'11111111'B		4Tx
four-one-Type1-SinglePanel-Restriction	FFFF		8Tx
four-two-Type1-SinglePanel-Restriction	FFFF FFFF FFFF FFFF FFFF FFFF FFFF FFFF		16Tx
four-four-Type1-SinglePanel-Restriction	FFFF FFFF FFFF FFFF FFFF FFFF FFFF FFFF FFFF FFFF FFFF FFFF FFFF FFFF FFFF FFFF		32Tx
}			
type1-SinglePanel- codebookSubsetRestriction-i2	Not present		
}			
}			
type1-SinglePanel-ri-Restriction	'11111111'B '00000001'B '00000010'B		2Tx 4Tx 8Tx, 16Tx, 32Tx
}			
codebookMode	1		
}			
type2 SEQUENCE {			TYPEII
subType CHOICE {			
typeII SEQUENCE {			
n1-n2-codebookSubsetRestriction CHOICE {			
four-two	7FF FFFF FFFF FFFF FFFF		
}			
typeII-RI-Restriction	'10'B		
}			

}			
phaseAlphabetSize	8		
subbandAmplitude	True		
numberOfBeams	2		
}			
}			
}			

Condition	Explanation
TYPEII	PMI Type II codebook test cases.

CSI-AperiodicTriggerStateList

Table 5.4.2.5-15: CSI-AperiodicTriggerStateList

Derivation Path: Table 4.6.3-32			
Information Element	Value/remark	Comment	Condition
CSI-AperiodicTriggerStateList ::= SEQUENCE (SIZE (1..maxNrOfCSI-AperiodicTriggers)) OF CSI-AperiodicTriggerState {	1 entry		
CSI-AperiodicTriggerState[1] SEQUENCE {		entry 1	
associatedReportConfigInfoList SEQUENCE (SIZE(1..maxNrOfReportConfigPerAperiodicTrigger)) OF CSI-AssociatedReportConfigInfo {	1 entry		
CSI-AssociatedReportConfigInfo[1] SEQUENCE {		entry 1	
reportConfigId	0		
resourcesForChannel CHOICE {			
nzp-CSI-RS SEQUENCE {			
resourceSet	1		
qcl-info SEQUENCE (SIZE(1..maxNrOfAP-CSI-RS-ResourcesPerSet)) OF TCI-StateId {	1 entry		
TCI-StateId[1]	1	entry 1	
}			
}			
}			
csi-IM-ResourcesforInterference	1		
nzp-CSI-RS-ResourcesforInterference	Not present		
}			
}			
}			
}			

Physical layer parameters

Table 5.4.2.5-16: Physical layer parameters for DCI format 1_1

Derivation Path: Table 5.4.2.0-1			
Parameter	Value	Value in binary	Condition
PUCCH resource indicator	<i>PUCCH-ResourceId</i> [7] = 6 in <i>pucch-ResourceSetId</i> [1] or <i>PUCCH-ResourceId</i> [7] = 14 in <i>pucch-ResourceSetId</i> [2] as defined in Table 4.6.3-112 (Mapping as per Table 9.2.3-2 in TS 38.213)	'110'B	

PUSCH-TimeDomainResourceAllocationList

Table 5.4.2.5-17: PUSCH-TimeDomainResourceAllocationList

Derivation Path: Table 5.4.2.0-27

Information Element	Value/remark	Comment	Condition
PUSCH-TimeDomainResourceAllocationList ::= SEQUENCE (SIZE(1..maxNrofUL-Allocations)) OF PUSCH-TimeDomainResourceAllocation {	2 entries		
PUSCH-TimeDomainResourceAllocation[1] SEQUENCE {		entry 1	
startSymbolAndLength	55	Start symbol(S)=0, Length(L)=12	
}			
PUSCH-TimeDomainResourceAllocation[2] SEQUENCE {		entry 2	
startSymbolAndLength	55	Start symbol(S)=0, Length(L)=12	
}			
}			

PDSCH-Config

Table 5.4.2.5-18: PDSCH-Config

Derivation Path: Table 4.6.3-100			
Information Element	Value/remark	Comment	Condition
PDSCH-Config ::= SEQUENCE {			
resourceAllocation	resourceAllocationType1		eRedCap
p-ZP-CSI-RS-ResourceSet	p-ZP-CSI-RS-ResourceSet		2Tx, 4Tx, 8Tx, 16Tx, 32Tx
}			

CodebookConfig-r16

Table 5.4.2.5-19: CodebookConfig-r16

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
CodebookConfig-r16 ::= SEQUENCE {			
codebookType CHOICE {			
type2 SEQUENCE {			
subType CHOICE {			
typeI-r16 SEQUENCE {			
N1-n2-codebookSubsetRestriction-r16			
Four-two	0x 7FF FFFF FFFF FFFF FFFF		
}			
typeII-RI-Restriction-r16	0010		
}			
}			
numberOfPMI-SubbandsPerCQI-Subband-r16	1		
paramCombinatin-r16	6	(L =4, p _v =1/2, β=1/2)	
}			
}			
}			

Table 5.4.2.5-20

Table 5.4.2.5-21: CodebookConfig-r18

Derivation Path: TS 38.331 clause 6.3.2			
Information Element	Value/remark	Comment	Condition

CodebookConfig-r18 ::= SEQUENCE {			
codebookType CHOICE {			
type2 CHOICE {			
type1-Doppler-r18 SEQUENCE {			
n1-n2-codebookSubsetRestrictionList-r18	N1-N2-CBSR-r18		
paramCombination-Doppler-r18	7		
td-dd-config-r18	TD-DD-Config-r18		
numberOfPMI-SubbandsPerCQI-Subband-r18	1		
predictionDelay-r18	n1		
type1-RI-Restriction-r18	0010		
}			
}			
}			
}			

Table 5.4.2.5-22: N1-N2-CBSR-r18

Derivation Path: TS 38.331 clause 6.3.2			
Information Element	Value/remark	Comment	Condition
N1-N2-CBSR-r18 ::= CHOICE {			
four-two-r18 CHOICE {			
cbsr-r18	0x 7FF FFFF FFFF		
}			
}			

Table 5.4.2.5-23: TD-DD-Config-r18

Derivation Path: TS 38.331 clause 6.3.2			
Information Element	Value/remark	Comment	Condition
TD-DD-Config-r18 ::= SEQUENCE {			
vectorLengthDD-r18	n1		
unitDurationDD-r18	m1		
aperiodicResourceOffset-r18	2		
tdCQI-r18	Not present		
}			

5.4.2.6 Message contents for RI reporting requirements

NZP-CSI-RS for Tracking

CSI-RS-ResourceMapping

Table 5.4.2.6-1: CSI-RS-ResourceMapping for TRS

Derivation Path: Table 4.6.3-45			
Information Element	Value/remark	Comment	Condition
CSI-RS-ResourceMapping ::= SEQUENCE {			
frequencyDomainAllocation CHOICE {			
row1	0001	k ₀ =0 for CSI-RS resource 1,2,3,4	TRS
}			
firstOFDMSymbolInTimeDomain	4	l ₀ = 4 for CSI-RS resource 1 and 3	TRS
	8	l ₀ = 8 for CSI-RS resource 2 and 4	TRS
nrofPorts	p1	1 for CSI-RS resource 1,2,3,4	TRS
cdm-Type	noCDM		TRS
density CHOICE{			
three	Null		TRS
}			

freqBand	CSI-FrequencyOccupation		TRS
}			

NZP CSI-RS for CSI Acquisition

CSI-RS-ResourceMapping

Table 5.4.2.6-2: CSI-RS-ResourceMapping

Derivation Path: Table 4.6.3-45			
Information Element	Value/remark	Comment	Condition
CSI-RS-ResourceMapping ::= SEQUENCE {			
frequencyDomainAllocation CHOICE {			
row4	001	K0 = 0, row4	4Tx
other	001000	K0 = 6, row3	2Tx
}			
nrofPorts	p4		4Tx
	p2		2Tx
firstOFDMSymbolInTimeDomain	13	I0 = 13	2Tx, 4Tx
cdm-Type	fd-CDM2		2Tx, 4Tx
density CHOICE {			
one	NULL		
}			
freqBand	CSI-FrequencyOccupation		
}			

Condition	Explanation
2Tx	For test cases using 2 CSI-RS ports for NZP-CSI-RS for CSI acquisition.
4Tx	For test cases using 4 CSI-RS ports for NZP-CSI-RS for CSI acquisition.

Table 5.4.2.6-3: CSI-ResourcePeriodicityAndOffset for CSI Acquisition

Derivation Path: Table 4.6.3-43			
Information Element	Value/remark	Comment	Condition
CSI-ResourcePeriodicityAndOffset ::= CHOICE {			
Slots5	1		FR1_FDD
Slots10	1		FR1_TDD
}			

ZP CSI-RS for CSI Acquisition

CSI-RS-ResourceMapping

Table 5.4.2.6-4: ZP CSI-RS-ResourceMapping

Derivation Path: Table 4.6.3-45			
Information Element	Value/remark	Comment	Condition
CSI-RS-ResourceMapping ::= SEQUENCE {			
frequencyDomainAllocation CHOICE {			
other	000100	K0 = 4, row5	FR1
row4	100	K0 = 8, row4	FR2
}			
nrofPorts	p4		
firstOFDMSymbolInTimeDomain	9	I0 = 9	FR1
	13	I0 = 13	FR2

cdm-Type	fd-CDM2		
density CHOICE {			
one	NULL		
}			
freqBand	ZP CSI-FrequencyOccupation		
}			

CSI-ResourcePeriodicityAndOffset

Table 5.4.2.6-5: ZP CSI-ResourcePeriodicityAndOffset

Derivation Path: Table 4.6.3-43			
Information Element	Value/remark	Comment	Condition
CSI-ResourcePeriodicityAndOffset ::= CHOICE {			
Slots5	1		FR1 FDD
Slots10	1		FR1 TDD
Slots8	1		FR2
}			

PDSCH-Config

Table 5.4.2.6-6: PDSCH-Config

Derivation Path: Table 4.6.3-100			
Information Element	Value/remark	Comment	Condition
PDSCH-Config ::= SEQUENCE {			
p-ZP-CSI-RS-ResourceSetsToAddModList	p-ZP-CSI-RS-ResourceSet		
}			

p-ZP-CSI-RS-ResourceSet

Table 5.4.2.6-7: p-ZP-CSI-RS-ResourceSet

Derivation Path: Table 4.6.3-87			
Information Element	Value/remark	Comment	Condition
p-ZP-CSI-RS-ResourceSetsToAddModList ::= SEQUENCE {			
zp_CSI-RS_ResourceSetId	0		
zp-CSI-RS-ResourceIdList SEQUENCE (SIZE (1..maxNrofZP-CSI-RS-ResourcesPerSet)) OF ZP-CSI-RS-ResourceId{	1 entry		
ZP-CSI-RS-ResourceId[1]	0	entry 1 ZP CSI-RS resource 1	
}			
}			

CSI-ResourceConfig

Table 5.4.2.6-8: CSI-ResourceConfig for CSI Acquisition

Derivation Path: Table 4.6.3-41			
Information Element	Value/remark	Comment	Condition
CSI-ResourceConfig ::= SEQUENCE {			
csi-ResourceConfigId	1		
csi-RS-ResourceSetList CHOICE {			
nzp-CSI-RS-SSB SEQUENCE {			

nzp-CSI-RS-ResourceSetList SEQUENCE (SIZE (1..maxNrofNZP-CSI-RS-ResourceSetsPerConfig)) OF NZP-CSI-RS-ResourceSetId {	1 entry		
NZP-CSI-RS-ResourceSetId[1]	1	entry 1	
}			
csi-SSB-ResourceSetList	Not present		
}			
}			
bwp-Id	BWP-Id		
resourceType	periodic		FR1
	aperiodic		FR2
}			

Table 5.4.2.6-8A: CSI-ResourceConfig for beam refinement

Derivation Path: Table 4.6.3-41			
Information Element	Value/remark	Comment	Condition
CSI-ResourceConfig ::= SEQUENCE {			FR2
csi-ResourceConfigId	3		
csi-RS-ResourceSetList CHOICE {			
nzp-CSI-RS-SSB SEQUENCE {			
nzp-CSI-RS-ResourceSetList SEQUENCE (SIZE (1..maxNrofNZP-CSI-RS-ResourceSetsPerConfig)) OF NZP-CSI-RS-ResourceSetId {	1 entry		
NZP-CSI-RS-ResourceSetId[1]	2	entry 1	
}			
csi-SSB-ResourceSetList	Not present		
}			
}			
bwp-Id	BWP-Id		
resourceType	periodic		
}			

CSI-IM Configuration

CSI-IM-Resource

Table 5.4.2.6-9: CSI-IM-Resource

Derivation Path: Table 4.6.3-34			
Information Element	Value/remark	Comment	Condition
CSI-IM-Resource ::= SEQUENCE {			
csi-IM-ResourceId	CSI-IM-ResourceId		
csi-IM-ResourceElementPattern CHOICE {			
Pattern0 SEQUENCE {			
subcarrierLocation-p0	s4		FR1
	s8		FR2
symbolLocation-p0	9		FR1
	13		FR2
}			
}			
freqBand	CSI-FrequencyOccupation		
periodicityAndOffset	CSI-ResourcePeriodicityAndOffset		FR1
	Not present		FR2
}			

Table 5.4.2.6-10: CSI-ResourcePeriodicityAndOffset

Derivation Path: Table 4.6.3-43			
Information Element	Value/remark	Comment	Condition
CSI-ResourcePeriodicityAndOffset ::= CHOICE {			
Slots5	1		FR1_FDD
Slots10	1		FR1_TDD
}			

CSI-IM-ResourceId

Table 5.4.2.6-11: CSI-IM-ResourceId

Derivation Path: Table 4.6.3-35			
Information Element	Value/remark	Comment	Condition
CSI-IM-ResourceId	0		

CSI-IM-ResourceSet

Table 5.4.2.6-12: CSI-IM-ResourceSet

Derivation Path: Table 4.6.3-36			
Information Element	Value/remark	Comment	Condition
CSI-IM-ResourceSet ::= SEQUENCE {			
csi-IM-ResourceSetId	CSI-IM-ResourceSetId		
csi-IM-Resources SEQUENCE (SIZE(1..maxNrofCSI-IM-ResourcesPerSet)) {	1 entry		
CSI-IM-ResourceId[1]	CSI-IM-ResourceId	entry 1	
}			
}			

CSI-IM-ResourceSetId

Table 5.4.2.6-13: CSI-IM-ResourceSetId

Derivation Path: Table 4.6.3-37			
Information Element	Value/remark	Comment	Condition
CSI-IM-ResourceSetId	0		

CSI-IM-ResourceConfig

Table 5.4.2.6-14: CSI-IM-ResourceConfig

Derivation Path: Table 4.6.3-41			
Information Element	Value/remark	Comment	Condition
CSI-ResourceConfig ::= SEQUENCE {			
csi-ResourceConfigId	2		
csi-RS-ResourceSetList CHOICE {			
csi-IM-ResourceSetList SEQUENCE (SIZE (1..maxNrofCSI-IM-ResourceSetsPerConfig)) OF CSI-IM-ResourceSetId {	1 entry		
csi-IM-ResourceSetId[0]	0		
}			
}			
bwp-Id	BWP-Id		
resourceType	periodic		FR1
	aperiodic		FR2
}			

CSI-MeasConfig

Table 5.4.2.6-15: CSI-MeasConfig

Derivation Path: Table 4.6.3-38			
Information Element	Value/remark	Comment	Condition
CSI-MeasConfig ::= SEQUENCE {			
nzp-CSI-RS-ResourceToAddModList SEQUENCE (SIZE (1..maxNrofNZP-CSI-RS-Resources)) OF NZP-CSI-RS-Resource {	n entries	n=5 for FR1 n=7 for FR2	
NZP-CSI-RS-Resource[1]	NZP-CSI-RS-Resource for TRS (1)	entry 1 CSI-RS resource 1	
NZP-CSI-RS-Resource[2]	NZP-CSI-RS-Resource for TRS (2)	entry 2 CSI-RS resource 2	
NZP-CSI-RS-Resource[3]	NZP-CSI-RS-Resource for TRS (3)	entry 3 CSI-RS resource 3	
NZP-CSI-RS-Resource[4]	NZP-CSI-RS-Resource for TRS (4)	entry 4 CSI-RS resource 4	
NZP-CSI-RS-Resource[5]	NZP-CSI-RS-Resource for CSI Acquisition	entry 5 CSI-RS resource 5	
NZP-CSI-RS-Resource[6]	NZP-CSI-RS-Resource for beam refinement	entry 6 CSI-RS resource 6	FR2
NZP-CSI-RS-Resource[7]	NZP-CSI-RS-Resource for beam refinement	entry 7 CSI-RS resource 7	FR2
}			
nzp-CSI-RS-ResourceSetToAddModList SEQUENCE (SIZE (1..maxNrofNZP-CSI-RS-ResourceSets)) OF NZP-CSI-RS-ResourceSet {	n entries	n=2 for FR1 n=3 for FR2	
NZP-CSI-RS-ResourceSet[1]	NZP-CSI-RS-ResourceSet for TRS	entry 1	
NZP-CSI-RS-ResourceSet[2]	NZP-CSI-RS-ResourceSet for CSI Acquisition	entry 2	
NZP-CSI-RS-ResourceSet[3]	NZP-CSI-RS-ResourceSet for beam refinement	entry 3	FR2
}			
csi-IM-ResourceToAddModList SEQUENCE (SIZE (1..maxNrofCSI-IM-Resources)) OF CSI-IM-Resource {	1 entry		
CSI-IM-Resource[1]	CSI-IM-Resource		
}			
csi-IM-ResourceSetToAddModList SEQUENCE (SIZE (1..maxNrofCSI-IM-ResourceSets)) OF CSI-IM-ResourceSet {	1 entry		
CSI-IM-ResourceSet[1]	CSI-IM-ResourceSet		
}			
csi-SSB-ResourceSetToAddModList	Not present		
csi-ResourceConfigToAddModList SEQUENCE (SIZE (1..maxNrofCSI-ResourceConfigurations)) OF CSI-ResourceConfig {	n entries	n=3 for FR1 n=4 for FR2	
CSI-ResourceConfig[1]	CSI-ResourceConfig for TRS	entry 1	
CSI-ResourceConfig[2]	CSI-ResourceConfig for CSI Acquisition	entry 2	
CSI-ResourceConfig[3]	CSI-IM-ResourceConfig	entry 3	
CSI-ResourceConfig[4]	CSI-ResourceConfig for beam refinement	entry 4	FR2
}			
}			

CSI-ReportConfig

Table 5.4.2.6-16: *CSI-ReportConfig*

Derivation Path: Table 4.6.3-39			
Information Element	Value/remark	Comment	Condition
CSI-ReportConfig ::= SEQUENCE {			
reportConfigId	CSI-ReportConfigId		
carrier	ServCellIndex		
resourcesForChannelMeasurement	CSI-ResourceConfigId for CSI Acquisition		
csi-IM-ResourcesForInterference	CSI-ResourceConfigId for CSI-IM		
nzp-CSI-RS-ResourcesForInterference	not present		
reportConfigType CHOICE {			
periodic SEQUENCE {			FR1
reportSlotConfig	CSI-ReportPeriodicityAndOffset		
pucch-CSI-ResourceList SEQUENCE (SIZE (1..maxNrofBWPs)) OF PUCCH-CSI-Resource {			
PUCCH-CSI-Resource [1]	PUCCH-CSI-Resource		
}			
aperiodic SEQUENCE {			FR2
reportSlotOffsetList SEQUENCE {			
reportSlotOffsetList[1]	6		
reportSlotOffsetList[2]	6		
}			
}			
reportQuantity CHOICE {			
cri-RI-PMI-CQI	NULL,		
}			
reportFreqConfiguration SEQUENCE {			
cqi-FormatIndicator	widebandCQI		
pmi-FormatIndicator	widebandPMI		
csi-ReportingBand CHOICE {			FR1
subbands7	'1111111'B		
}			
csi-ReportingBand CHOICE {			FR2
subbands9	'111111111'B		
}			
}			
timeRestrictionForChannelMeasurements	notConfigured		
timeRestrictionForInterferenceMeasurements	notConfigured		
codebookConfig	CodebookConfig		
dummy	Not present		
groupBasedBeamReporting CHOICE {			
disabled SEQUENCE {			
nrofReportedRS	not present		
}			
}			
cqi-Table	table2		FR1
	table1		FR2
subbandSize	value2		
non-PMI-PortIndication	Not present		
}			

CodebookConfig

Table 5.4.2.6-17: CodebookConfig

Derivation Path: Table 4.6.3-25			
Information Element	Value/remark	Comment	Condition
CodebookConfig ::= SEQUENCE {			
codebookType CHOICE {			
type1 SEQUENCE {			
subType CHOICE {			
type1-SinglePanel SEQUENCE {			
nrOfAntennaPorts CHOICE {			
two SEQUENCE {			2Tx
twoTX-CodebookSubsetRestriction	'010000'B		Fixed rank2, 2x2, 2x4
	'010011'B		Follow rank, 2x2, 2x4
	'000011'B		Fixed rank1, 2x2, 2x4
}			
moreThanTwo SEQUENCE {			4Tx
n1-n2 CHOICE {			
two-one-Type1-SinglePanel-Restriction	'11111111'B		4x4
}			
}			
type1-SinglePanel-ri-Restriction	'11111111'B		2x2, 2x4
	'00000010'B		Fixed rank2, 4x4
	'00001111'B		Follow RI, 4x4
}			
}			
codebookMode	1		
}			
}			
}			

CSI-ReportPeriodicityAndOffset

Table 5.4.2.6-18: CSI-ReportPeriodicityAndOffset

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
CSI-ReportPeriodicityAndOffset ::= CHOICE {			
slots10	9		FR1_TDD
slots5	0		FR1_FDD
}			

PUCCH-CSI-Resource

Table 5.4.2.6-19: PUCCH-CSI-Resource

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
PUCCH-CSI-Resource ::= SEQUENCE {			
uplinkBandwidthPartId	BWP-id		FR1
pucch-Resource	8		FR1
}			

PUSCH-TimeDomainResourceAllocationList

Table 5.4.2.6-20: PUSCH-TimeDomainResourceAllocationList

Derivation Path: Table 5.4.2.0-27			
Information Element	Value/remark	Comment	Condition
PUSCH-TimeDomainResourceAllocationList ::= SEQUENCE (SIZE(1..maxNrofUL-Allocations)) OF PUSCH-TimeDomainResourceAllocation {	2 entries		FR2
PUSCH-TimeDomainResourceAllocation[1]		entry 1	
SEQUENCE {			
startSymbolAndLength	55	Start symbol(S)=0, Length(L)=12	
}			
PUSCH-TimeDomainResourceAllocation[2]		entry 2	
SEQUENCE {			
startSymbolAndLength	55	Start symbol(S)=0, Length(L)=12	
}			
}			

5.4.3 Sidelink information elements for Demodulation Performance tests

As defined in clause 4.6.3 with the following exceptions:

SL-ResourcePool

Table 5.4.3-1: SL-ResourcePool

Derivation Path: Table 4.6.6-25 with condition SL_HARQ			
Information Element	Value/remark	Comment	Condition
SL-ResourcePool-r16 ::= SEQUENCE {			
sl-PSFCH-Config-r16 CHOICE {			
setup SEQUENCE {			
sl-PSFCH-RB-Set-r16	ones(1,50)	All "1" sequence with a length of 50 bits	BW = 20MHz
	ones(1,100)	All "1" sequence with a length of 100 bits	BW = 40MHz
sl-NumMuxCS-Pair-r16	n1		
sl-MinTimeGapPSFCH-r16	sl3		
sl-PSFCH-CandidateResourceType-r16	allocSubCH		
}			
}			
sl-NumSubchannel-r16	5		BW = 20MHz
	10		BW = 40MHz
sl-RB-Number-r16	50		BW = 20MHz
	100		BW = 40MHz
sl-TimeResource-r16	one(1,160)	All "1" sequence with a length of 160 bits	
}			

SL-Thres-RSRP-List

Table 5.4.3-2: SL-Thres-RSRP-List

Derivation Path: Table 4.6.6-32			
Information Element	Value/remark	Comment	Condition
SL-Thres-RSRP-List-r16 ::= SEQUENCE (SIZE (64)) OF INTEGER {	64 entries		
INTEGER[k, k=1..64]	66	entry k corresponds to infinity dBm	
}			

5.5 Common procedures for RF testing

5.5.1 Procedure to configure SCC for NR RF CA testing

5.5.1.1 Scope

The purpose of this procedure is to establish one or more SCC for NR CA testing.

5.5.1.2 Procedure description

5.5.1.2.1 Initial conditions

UE is operating in NR RRC_CONNECTED state on NR Cell 1 without any SCell configured.

System Simulator:

- SS configures the number of SCells used by the test case using NR parameters for NR Cell 2 for SCC1, NR Cell 3 for SCC2, NR Cell 4 for SCC3 etc. as specified in Table 4.4.2-2.
- System information combination NR-2 as defined in clause 4.4.3.1.2 is used in all NR cells.

5.5.1.2.2 Procedure sequence

Table 5.5.1.2.2-1: Procedure to configure SCC

St	Procedure	Message Sequence		TP	Verdict
		U - S	Message		
1	The SS transmits an RRCReconfiguration message including sCellToAddModList with SCell addition for the SCC under test.	<--	NR RRC: RRCReconfiguration	-	-
2	The UE transmits an RRCReconfigurationComplete message.	-->	NR RRC: RRCReconfigurationComplete	-	-

5.5.1.2.3 Specific message contents

Table 5.5.1.2.3-1: RRCReconfiguration-SCell(n)

Derivation Path: Table 4.6.1-13 with condition SCell_add			
Information Element	Value/remark	Comment	Condition
RRCReconfiguration ::= SEQUENCE {			
criticalExtensions CHOICE {			
rrcReconfiguration ::= SEQUENCE {			
nonCriticalExtension SEQUENCE {			
masterCellGroup	CellGroupConfig-SCell(n)	n is number of SCC to be added.	
}			

}			
}			
}			

Table 5.5.1.2.3-2: CellGroupConfig-SCell(n) (Table 5.5.1.2.3-1)

Derivation Path: Table 4.6.3-19 with condition SCell_add			
Information Element	Value/remark	Comment	Condition
CellGroupConfig ::= SEQUENCE {			
sCellToAddModList SEQUENCE (SIZE (1..maxNrofSCells)) OF SCellConfig {	n entries	n the number of SCC to be added	
SCellConfig[k, k=1..n] SEQUENCE {		entry (1..n)	
sCellIndex			
sCellConfigCommon	ServingCellConfigCommon with condition SCell_add		
}			
}			

5.5.2 Procedure to configure SCC for EN-DC RF CA testing

5.5.2.1 Scope

The purpose of this procedure is to establish one or more SCC for EN-DC CA testing.

5.5.2.2 Procedure description

5.5.2.2.1 Initial conditions

The UE is in RRC_CONNECTED state.

5.5.2.2.2 Procedure sequence

Table 5.5.2.2-1: Procedure to configure SCC

St	Procedure	Message Sequence		TP	Verdict
		U - S	Message		
1	The SS transmits an <i>RRCCConnectionReconfiguration</i> message using n.	<--	RRC: <i>RRCCConnectionReconfiguration</i>	-	-
2	The UE transmits an <i>RRCCConnectionReconfigurationComplete</i> message.	-->	RRC: <i>RRCCConnectionReconfigurationComplete</i>	-	-
-	EXCEPTION: Steps 3a1 to 3a3 describe the SS sequence depending on procedure parameters; the "lower case letter" identifies a step sequence that take place if a procedure parameter has a particular value	-	-	-	-
3a1-3a3	IF E-UTRA SCC > 0, same as TS 36.508 [2] table 5.2A.4-1, steps 1-3.	-	-	-	-

Note 1: n > 0 in step 1.

5.5.2.2.3 Specific message contents

Table 5.5.2.2.3-1: RRCReconfiguration (step 1, Table 5.5.2.2-1)

Derivation Path: Table 4.6.1-13 with condition EN-DC_SCell_add			
Information Element	Value/remark	Comment	Condition
RRCReconfiguration ::= SEQUENCE {			
criticalExtensions CHOICE {			

rrcReconfiguration ::= SEQUENCE {			
secondaryCellGroup	CellGroupConfig (n)	n is number of SCC to be added.	
}			
}			
}			

Table 5.5.2.2.3-2: CellGroupConfig (n) (Table 5.5.2.2.3-1)

Derivation Path: Table 4.6.1-13 with condition SCell_add			
Information Element	Value/remark	Comment	Condition
CellGroupConfig ::= SEQUENCE {			
sCellToAddModList SEQUENCE (SIZE (1..maxNrofSCells)) OF SCellConfig {	n entries	n is equal to the number of SCCs to be added	
SCellConfig[k, k=1..n]		entry (1..n)	
sCellIndex			
sCellConfigCommon	ServingCellConfigComm on with condition SCell_add		
sCellConfigDedicated	ServingCellConfig		
}			
}			
}			

5.6 Test environment for NTN testing

This section defines the test environment which applies to all RF and DEMOD test cases executed for NR NTN UEs, unless otherwise specified.

5.6.1 UE location

UE shall determine its location during the test using any of the following means.

1. UE location for the test shall be provided to the UE via pre-configured means. During the test the UE location is not expected to change unless explicitly stated as a requirement for the test.
2. Other options such as providing UE location via AT command are not precluded.

UE location provided to the UE before the start of the test is as follows for RF Tx/Rx and DEMOD test cases for both GSO and NGSO config is as follows:

Longitude: 121.56076999

Latitude: 25.08439333 (NGSO satellites), 55.0 (GSO satellites)

Altitude: 0

5.6.2 Ephemeris Information

Ephemeris information in this section has been generated as described in clause 5 in TR38.905 [69].

5.6.2.0 Assumptions for Ephemeris generation

This section provides the assumptions used to generate Ephemeris information for GSO and NGSO orbits:

1. Ephemeris files are generated for 3 types of satellites: GSO (inclination equal to 7°), LEO-600 and LEO-1200.
2. UE location is as defined in section 5.6.1.

3. PositionVelocity state vectors are used for EphemerisInfo signaling.
4. For GSO, an altitude of 35,786 km is considered. For NGSO, 2 different altitudes are considered: 600 km and 1200 km.
5. One-way delay between UE and satellite to be in the range of 119.375 ms to 128.79 ms for GSO and between 2 ms (lowest value for LEO orbit 600 km) and 6.67 ms (highest value for LEO orbit 1200 km)
6. Doppler (frequency) shift up to [0.93] ppm for GSO and up to 24ppm for NGSO (LEO-600).

5.6.2.1 Ephemeris for zero Doppler conditions

All NR NTN test cases defined in sections 6, 7 and 8 in TS 38.521-5 [57], unless otherwise stated, shall use the ephemeris configuration in tables 5.6.2.1-1 to 5.6.2.1-3, corresponding to zero Doppler and constant delay with no timing drift for the type of satellite under test, keeping such information constant throughout the duration of each measurement in the test:

- In case UE supports only NGSO satellites, ephemeris values in Table 5.6.2.1-3 shall be used except for test cases 8.2.1.2, where ephemeris values in Table 5.6.1.2.1-2 shall be used.
- In case UE supports both GSO and NGSO satellites, ephemeris values in Table 5.6.1.2.1-1 shall be used except for test cases 8.2.1.2, where ephemeris values in Table 5.6.1.2.1-2 shall be used.

Table 5.6.2.1-1: SIB19- NR NTN Ephemeris information for GSO satellites (zero Doppler conditions)

Derivation Path: Table 5.6.3.1-1			
Information Element	Value/remark	Comment	Condition
SIB19-r17 ::= SEQUENCE {			
ntn-Config-r17 SEQUENCE {			
epochTime-r17	Not present		
ephemerisInfo-r17 CHOICE {			
positionVelocity-r17 SEQUENCE {			
positionX-r17	-16944523		
positionY-r17	27362209		
positionZ-r17	4019393		
velocityVX-r17	-336		
velocityVY-r17	-208		
velocityVZ-r17	1		
}			
}			
}			
}			
NOTE 1: Satellite-UE elevation angle equal to 35.04 degrees, one-way delay equal to 127.3300539ms and Doppler equal to 0 ppm			

Table 5.6.2.1-2: SIB19- NR NTN Ephemeris information for NGSO (LEO-600) satellites (zero Doppler conditions)

Derivation Path: Table 5.6.3.1-1			
Information Element	Value/remark	Comment	Condition
SIB19-r17 ::= SEQUENCE {			
ntn-Config-r17 SEQUENCE {			
epochTime-r17	Not present		
ephemerisInfo-r17 CHOICE {			
positionVelocity-r17 SEQUENCE {			
positionX-r17	-2550081		
positionY-r17	4151097		
positionZ-r17	2263034		
velocityVX-r17	21970		
velocityVY-r17	-48164		
velocityVZ-r17	114109		
}			
}			
}			
}			

}			
}			
}			
NOTE 1: Satellite-UE elevation angle equal to 89.61 degrees, one-way delay equal to 2.0313334ms and Doppler equal to 0.01280 ppm			

Table 5.6.2.1-3: SIB19- NR NTN Ephemeris information for NGSO (LEO1200) satellites (zero Doppler conditions)

Derivation Path: Table 5.6.3.1-1			
Information Element	Value/remark	Comment	Condition
SIB19-r17 ::= SEQUENCE {			
ntn-Config-r17 SEQUENCE {			
epochTime-r17	Not present		
ephemerisInfo-r17 CHOICE {			
positionVelocity-r17 SEQUENCE {			
positionX-r17	-2771542		
positionY-r17	4509243		
positionZ-r17	2455572		
velocityVX-r17	20837		
velocityVY-r17	-46176		
velocityVZ-r17	109528		
}			
}			
}			
}			
NOTE 1: Satellite-UE elevation angle equal to 89.54 degrees, one-way delay equal to 4.0391206ms and Doppler equal to 0.00365 ppm			

5.6.2.2 Ephemeris for non-zero Doppler conditions

The non-zero Doppler ephemeris configuration of frequency error test cases corresponds to an elevation angle with constant non-zero Doppler and constant delay with no timing drift for the type of satellite under test.

5.6.3 NR NTN message contents for RF Tx/Rx, Demodulation tests

5.6.3.1 SIB19 IE values

The ntn-config-r17 values including the EphemerisInfo-r17 values in SIB19 shall be periodically signalled to the UE during test based on the Ephemeris information in clause 5.6.2 (kept constant throughout the duration of each measurement in the test).

Table 5.6.3.1-1: SIB19 for RF tests

Derivation Path: Table 4.6.2-18C			
Information Element	Value/remark	Comment	Condition
SIB19-r17 ::= SEQUENCE {			
ntn-Config-r17 ::= SEQUENCE {			
epochTime-r17	Not present		
ntn-UISyncValidityDuration-r17	s240		
cellSpecificKoffset-r17	258		GSO
	14		NGSO
kmac-r17	Not present		
ta-Info-r17 SEQUENCE {			
ta-Common-r17	0		
ta-CommonDrift-r17	0		
ta-CommonDriftVariant-r17	0		
}			
ntn-PolarizationDL-r17	Not present		

ntn-PolarizationUL-r17	Not present		
ephemerisInfo-r17	See cl 5.6.2		
}			
ta-Report-r17	Not present		
}			
}			

Condition	Explanation
GSO	Geosynchronous Orbit scenario
NGSO	Non-geosynchronous Orbit scenario

5.6.4 FFS

5.7 Test environment for ATG testing

This section defines the test environment which applies to all RF and DEMOD test cases executed for NR ATG UEs, unless otherwise specified.

5.7.1 NR ATG message contents for RF Tx/Rx, Demodulation tests

5.7.1.1 *atg-Config-r18* values in SIB22

The *atg-Config-r18* values including the atg gNB location information, cell Specific Koffset and TA Report indication values in SIB22 shall be periodically signalled to the UE during test (kept constant throughout the duration of each measurement in the test).

5.7.2 UE location

UE shall determine its location during the test using any of the following means.

1. UE location for the test shall be provided to the UE via pre-configured means. During the test the UE location is not expected to change unless explicitly stated as a requirement for the test.
2. Other options such as providing UE location via AT command are not precluded.

UE location provided to the UE before the start of the test is as follows for RF Tx/Rx and DEMOD test cases is as follows:

Latitude: 24.08439333

Longitude: 121.56076999

Altitude: 10000

6 Test environments for Signalling test

6.1 Requirements of test equipment

6.1.1 Requirements common for conducted and OTA tests

The requirements of test equipment specified in this subclause apply to Signalling test cases defined in TS 38.523-1 [12], in addition to the common requirements of test equipment specified in clause 4.2 of this specification.

Test equipment shall be able to simulate cells of Radio Access Technologies NR, E-UTRA, UTRA, and GERAN. The number of cells to be simulated simultaneously by the test equipment shall not exceed the resources specified in Table 6.1-1

Table 6.1-1: Maximum resources in terms of number / configuration of cells to be simulated simultaneously in a test setup

Simulation of	Max. number of cells (NR)			Max. number of cells (E-UTRA)		Max. number of cells (UTRA)		Max. number of cells (GERAN)	
	Conducted	OTA(FR1+FR2)	OTA(FR2)	Conducted	OTA	Conducted	OTA	Conducted	OTA
NR single-mode networks (FDD or TDD)	4 cells	4 cells	4 cells	n/a	n/a	n/a	n/a	n/a	n/a
NR dual-mode networks (FDD and TDD)	4 cells	4 cells	4 cells	n/a	n/a	n/a	n/a	n/a	n/a
NR networks involving Carrier Aggregation	4 cells	4 cells	4 cells	n/a	n/a	n/a	n/a	n/a	n/a
NR dual connectivity (NR-DC)	4 cells	4 cells	4 cells	n/a	n/a	n/a	n/a	n/a	n/a
NR dual connectivity (EN-DC)	4 cells	4 cells	4 cells	2 cells	2 cells	n/a	n/a	n/a	n/a
NR dual connectivity (EN-DC) involving Carrier Aggregation	4 cells	4 cells	4 cells	2 cells	2 cells	n/a	n/a	n/a	n/a
Mixed E-UTRA / NR networks	4 cells	4 cells	4 cells	2 cells	2 cells	n/a	n/a	n/a	n/a
Mixed UTRA / NR networks	4 cells	4 cells	4 cells	n/a	n/a	2 cells	2 cells	n/a	n/a
Mixed GERAN / NR networks	4 cells	4 cells	4 cells	n/a	n/a	n/a	n/a	2 cells	2 cells
Note 1:	No differentiation between cell configuration types (as defined in clause 6.3.1) here, because these types are only relevant to specific test cases and their TTCN-3 implementation.								
Note 2:	Only network scenarios specified in clauses 4.4.1 and 6.3.2.1 have been covered.								
Note 3:	In case of Carrier Aggregation, each cell can act as a SpCell, an SCell, or a standalone cell (not used as a CA component carrier).								
Note 4:	In order to support test case requirements for conducted and OTA test methods, the number of active cells at any given time should be minimised in order to ensure maximum re use of SS Tx/Rx resources.								

Exceptions to the requirements outlined above are possible but need special evidence to be provided explicitly in the test case prose and should be allowed only if the test case purpose cannot be met otherwise.

Due to limited power level range for FR2 OTA test methods, when defining test cases requirements, care shall be taken to ensure that the number of active cells is minimised as this has an impact to have distinguishable power level difference. Cells that are used in initial parts of test cases and are no longer required for the rest of the procedure shall be clearly defined as Non-suitable "Off" cell to facilitate re use of SS Tx/Rx resources.

NR FR2 signal levels are defined along with a calibration procedure as well as uncertainty. Therefore, maximum 4 FR2 OTA Cells can be configured and activated including the test cases involving idle or connected mode measurements.

NR FR1+FR2 OTA calibration procedure is undefined which does not restrict to configure maximum 4 FR1+FR2 OTA cells. However, caution must be taken as specified in clause 6.2.2.2.3.

E-UTRA OTA calibration procedure is undefined which does not restrict to configure maximum 2 E-UTRA OTA cells. However, caution must be taken as specified in clause 6.2.2.2.4.

UTRA OTA calibration procedure is undefined which does not restrict to configure maximum 2 UTRA OTA cells. However, caution must be taken as specified in clause 6.2.2.2.5.

GERAN OTA calibration procedure is undefined which does not restrict to configure maximum 2 GERAN OTA cells. However, caution must be taken as specified in clause 6.2.2.2.6.

6.1.2 Requirements for conducted test method

No requirements are specified in addition to the common requirements described in clause 4.2 and clause 6.1.1.

6.1.3 Requirements for OTA test method

6.1.3.1 General

Editor's Note: The UE pre-configuration mentioned below to disable UL Tx diversity schemes shall be voided once a test methodology solution to minimize spectral flatness artefacts between TE and UE over all test points is defined.

The DFF or IFF based OTA test methodologies, defined in Annex B.1 should be used for Signalling test.

NOTE: For single cell test cases, usage of NF test methodology is not precluded.

Clause 6.1.3.2 describes a sample OTA measurement test setup and clause 6.1.3.3 describes approaches to select a UE orientation.

For conformance testing using the OTA test environment, the UE under test shall be pre-configured with UL Tx diversity schemes disabled to account for single polarization System Simulator (SS) in the test environment. The UE under test may transmit with dual polarization. This approach also applies to calibration stage..

6.1.3.2 Sample OTA Measurement Test Setup

Please refer to Figure 6.1.3.2-1 for a sample OTA measurement test setup.

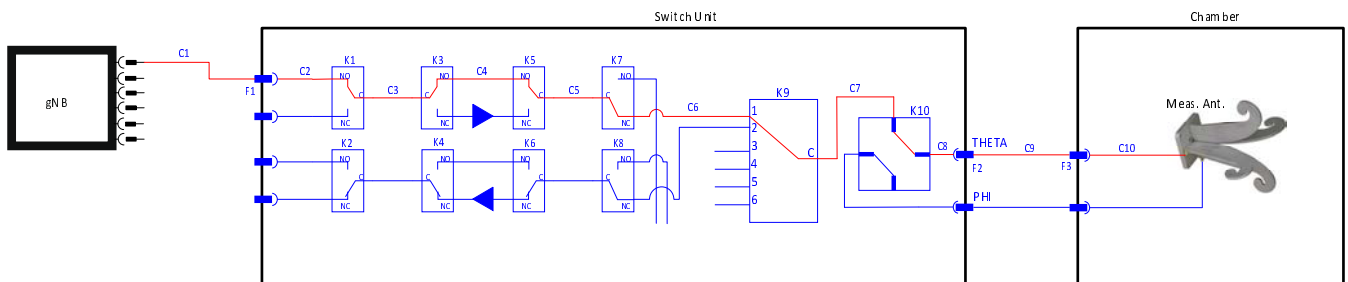


Figure 6.1.3.2-1: Sample OTA measurement setup

NOTE: Figure 6.1.3.2-1 is for illustrative purposes only.

For 5G NR signalling test cases, depending on the dynamic range of measurements the system complexity can be reduced. In the switch unit, as shown in Figure 6.1.3.2-1, the switches K7, K8, K9, K10 can be removed. The amplifier (PA/LNA) is optional. For the "single cell" and "multiple cell" test cases, the gNB emulator can be directly connected to the feed horn.

6.1.3.3 Procedure for selecting UE Orientation and for calibration

Set calibrated power level at the centre of the quiet zone for each polarization individually [FFS].

Before starting the test, the UE orientation with which the test system can provide a wide enough dynamic range to perform the test scenarios needs to be identified in order to obtain sufficient link budget.

The UE orientation can be determined by either of the approaches below:

- Approach 1: UE vendor declares the direction in which the measurement has to be made. In this case, the declaration confirms that the Rx Beam peak conditions in FR2 specified in TS 38.133 [13] Annex B are met
- Approach 2: Perform an Rx-beam peak search

For Approach 2 an Rx beam peak search needs to be performed as per the procedure in TS 38.521-2 [15] Annex K, which finds the direction in which Rx Beam peak conditions in FR2 specified in TS 38.133 [13] Annex B are met.

RSRP measurements can be configured by SS in X2NR meas configurations using FFS preambles in NSA (Ex - RRC_Connected with connectivity parameter E-UTRA with MCG Only bearer established and meas config enabled for event B1 (Ex-per TC 8.2.3.1.1 of TS 38.523-1)) and FFS preambles in SA modes.

When signal level calibrated with a reference antenna (only applicable to single-cell test cases without thresholds):

- The RSRP reported from the DUT is within $[\pm \text{FFSdB}]$ of expected RSRP mentioned in Table 6.2.2.2-1.

When signal level calibrated with the RSRP-based calibration:

- Before starting the tests, Rx-beam peak directions need to be determined using Approach 1 or Approach 2 above. Rx beam peak direction may depend on the operating band under test. If Rx-beam peak directions for all the operating bands required for test scenarios are identical, three different levels in Table 6.2.2.2-2 can be used in the test scenarios.
- Rx-beam peak directions are decided to be 'identical', if the detected beam peak positions are direct neighbours on the measurement grid.

If Rx-beam peak directions are identical:

1. Position the UE so that the Rx beam peak direction is aligned towards the measurement antenna.
2. Make the UE report SS-RSRP at each frequency used in the test scenarios, while setting the downlink SS power at the centre of the quiet zone to -82dBm/SCS. Here, the SS-RSRP reported levels are denoted as $P_{\text{RSRP}}(f)$.
3. Calculate 'Delta(NRf)' for each carrier frequency used in the test case, using the equation: $\text{Delta}(\text{NRf}) = P_{\text{RSRP}}(f) + 82$.

6.1.3.4 Handling of Thresholds

Where a threshold value is specified in the test case (value identified as $\text{TH}_{\text{test case}}$) it is signalled to the UE with a value TH_{sig} according to table 6.1.3.4-1.

Table 6.1.3.4-1: Handling of signalled threshold values

Type of Threshold	Signalled value	Comment
Absolute	$\text{TH}_{\text{sig}}(f) = \text{TH}_{\text{test case}} + \text{Delta}(\text{NRf})$	Delta(NRf) value according to the frequency of the cell being compared to the threshold
Relative, intra-frequency	$\text{TH}_{\text{sig}}(f) = \text{TH}_{\text{test case}}$	
Relative, inter-frequency	$a3\text{-Offset}_{\text{sig}} = a3\text{-Offset}_{\text{test case}} + \text{Delta}(\text{NRf}_n) - \text{Delta}(\text{NRf}_p)$	Delta(NRf _p) is the Delta value for the SpCell frequency Delta(NRf _n) is the Delta value for the neighbour cell frequency
Relative, inter-frequency, Event A6	$a6\text{-Offset}_{\text{sig}} = a6\text{-Offset}_{\text{test case}} + \text{Delta}(\text{NRf}_n) - \text{Delta}(\text{NRf}_s)$	Delta(NRf _s) is the Delta value for the SCell frequency Delta(NRf _n) is the Delta value for the neighbour cell frequency

6.1.4 Requirements for timer tolerances

The timer tolerances specified for the test environment in this subclause apply to all Signalling test cases defined in TS 38.523-1 [12] unless otherwise specified.

All the timers used during testing are within a tolerance margin given by the equation below. If for a specific test a different tolerance value is required, then this should be specified in the relevant test document (i.e. the document where the test is described).

Timer tolerance = 10%.

6.2 Reference test conditions

6.2.1 Physical Channel Allocations

6.2.1.1 Antennas

If the UE has two or more Rx antennas, the same downlink signal is applied to each one, except if MIMO is tested. All UE Rx antennas shall be connected.

If the UE has one Rx antenna, the downlink signal is applied to it.

6.2.1.2 Downlink physical channels and physical signals

In general for signalling test cases the power allocation for downlink physical channels and signals is specified in relation to a reference cell power.

Unless specifically specified otherwise in a signalling test case prose, all cells use only one beam.

In case of only one beam per cell this reference cell power is the EPRE of the secondary synchronization signal (SSS) and referred to as “SS/PBCH SSS EPRE”.

In case of more than one beam per cell the power levels of the different SS/PBCH blocks may be different what makes it difficult to specify the EPREs of other physical channels and signals relative to the EPRE of any SSS. Therefore for multiple beams test cases the power levels are specified relative to the reference cell power.

For single beam per cell test cases the power allocation of downlink physical channels for signalling test cases is specified in table 6.2.1.2-1, for multiple beams per cell test cases the power allocation is specified in table 6.2.1.2-2.

Table 6.2.1.2-1: Power allocation for OFDM symbols and reference signals for signalling test cases (single beam)

Parameter	Unit	Value	Comment
SSS transmit power	dBm/SCS	Test specific (Note 1, Note 2)	referred to as “SS/PBCH SSS EPRE”
EPRE ratio of PSS to SSS	dB	0	
EPRE ratio of PBCH DMRS to SSS	dB	0	
EPRE ratio of PBCH to PBCH DMRS	dB	0	
EPRE ratio of PDCCH DMRS to SSS	dB	0	
EPRE ratio of PDCCH to PDCCH DMRS	dB	0	
EPRE ratio of PDSCH DMRS to SSS	dB	0	
EPRE ratio of PDSCH to PDSCH DMRS	dB	-3	To reduce interference from PDSCH of intra-frequency neighbour cells.
EPRE ratio of PTRS to PDSCH	dB	3	i.e. the EPRE ratio of PTRS to SSS is 0dB
EPRE ratio of PRS to SSS	dB	0	
Note 1: Power level chosen to align with cell power level as specified in clause 6.2.2.			
Note 2: The power level of CD-SSB and NCD-SSB with same SSB index is the same.			

Table 6.2.1.2-2: Power allocation for OFDM symbols and reference signals for signalling test cases (multiple beam)

Parameter	Unit	Value	Comment
Reference cell power $EPRE_{CellRef}$	dBm/SCS	Test specific (Note 1)	
EPRE ratio of $SSS_{SSB\#N}$ to $EPRE_{CellRef}$	dB	Test specific (Note 2, Note 4)	power of SSS within SSB with index N
EPRE ratio of $PSS_{SSB\#N}$ to $SSS_{SSB\#N}$	dB	0	power of PSS within SSB with index N
EPRE ratio of $PBCH\ DMRS_{SSB\#N}$ to $SSS_{SSB\#N}$	dB	0	power of PBCH DMRS within SSB with index N

EPRE ratio of PBCH _{SSB#N} to PBCH DMRS _{SSB#N}	dB	0	power of PBCH within SSB with index N
EPRE ratio of PDCCH DMRS to EPRE _{CellRef}	dB	0	(Note 3)
EPRE ratio of PDCCH to PDCCH DMRS	dB	0	
EPRE ratio of PDSCH DMRS to EPRE _{CellRef}	dB	0	(Note 3)
EPRE ratio of PDSCH to PDSCH DMRS	dB	-3	To reduce interference from PDSCH of intra-frequency neighbour cells.
EPRE ratio of PTRS to PDSCH	dB	3	i.e. the EPRE ratio of PTRS to EPRE _{CellRef} is 0dB
EPRE ratio of CSI-RS _N to EPRE _{CellRef}	dB	Test specific (Note 2)	power of CSI-RS with index N; CSI-RS configured if required by a test case in TS 38.523-1 [12]
EPRE ratio of PRS to EPRE _{CellRef}	dB	0 (Note 4)	
Note 1: Power level chosen to align with cell power level as specified in clause 6.2.2. Note 2: Test cases may specify "OFF" in which case the attenuation shall result in an absolute EPRE value being equal or less than the power level specified for a non-suitable "Off" cell in clause 6.2.2. Note 3: In general the UE cannot distinguish from which beam DL data is sent ⇒ PDCCH and PDSCH are considered as cell specific rather than beam specific. Note 4: PRS resources independent from number of SSB(s) configured within the Cell. Hence, reference cell power is sufficient to allocate power to PRS Note 5: The power level of CD-SSB and NCD-SSB with same SSB index is the same.			

6.2.1.3 Sidelink physical channels and physical signals

In general for signalling test cases the power allocation for sidelink physical channels and signals is specified in relation to a reference NR-SS-UE power.

The power allocation of sidelink physical channels for signalling test cases is specified in table 6.2.1.3-1.

Table 6.2.1.3-1: Power allocation for OFDM symbols and reference signals for signalling test cases

Parameter	Unit	Value	Comment
Reference NR-SS-UE power EPRE _{NRSSUERef}	dBm/SCS	Test specific (Note 1)	
EPRE ratio of S-SSS to EPRE _{NRSSUERef}	dB	Test specific (Note 2)	Power of S-SSS within S-SSB S-SSB configured if required by a test case in TS 38.523-1 [12]
EPRE ratio of S-PSS to S-SSS	dB	0	Power of S-PSS within S-SSB S-SSB configured if required by a test case in TS 38.523-1 [12]
EPRE ratio of PSBCH DMRS to S-SSS	dB	0	Power of PSBCH DMRS within S-SSB S-SSB configured if required by a test case in TS 38.523-1 [12]
EPRE ratio of PSBCH to PSBCH DMRS	dB	0	Power of PSBCH within S-SSB S-SSB configured if required by a test case in TS 38.523-1 [12]
EPRE ratio of PSCCH DMRS to EPRE _{NRSSUERef}	dB	0	
EPRE ratio of PSCCH to PSCCH DMRS	dB	0	
EPRE ratio of PSSCH DMRS to EPRE _{NRSSUERef}	dB	0	
EPRE ratio of PSSCH to PSSCH DMRS	dB	0	
EPRE ratio of PSFCH to PSSCH	dB	0	
EPRE ratio of SL CSI-RS to EPRE _{NRSSUERef}	dB	Test specific (Note 2)	Power of SL CSI-RS; SL CSI-RS configured if required by a test case in TS 38.523-1 [12]
EPRE ratio of SL PT-RS to PSSCH	dB	0	
EPRE ratio of SL-PRS to EPRE _{NRSSUERef}	dB	0	
Note 1: Power level chosen to align with NR-SS-UE power level as specified in clause 6.2.2. Note 2: Test cases may specify "OFF" in which case the attenuation shall result in an absolute EPRE value being equal or less than the power level specified for a "Off" NR-SS-UE in clause 6.2.2.			

6.2.2 Signal levels

6.2.2.1 Signal Levels for conducted testing

This section applies to the test cases, which use conducted testing for each configured cell or each configured NR-SS-UE.

For NR FR1 cell, the downlink power settings in Table 6.2.2.1-1 and 6.2.2.1-2 are used unless otherwise specified in a test case.

Table 6.2.2.1-1: Default Downlink power levels for FR1 NR cell (5MHz – 25MHz)

	SCS(kHz)	Unit	Channel bandwidth				
			5MHz	10MHz	15MHz	20MHz	25MHz
Channel BW Power	15	dBm	-63	-60	-58	-57	-56
	30	dBm	-67	-63	-61	-60	-59
	60	dBm	N/A	-67	-65	-63	-62
SS/PBCH SSS EPRE	All	dBm/SCS (Note 3)	-88	-88	-88	-88	-88
Note 1: The channel bandwidth powers are informative, based on -88 dBm/SCS(SubCarrier Spacing) SS/PBCH SSS EPRE, then scaled according to the number of RBs and rounded to the nearest integer dBm value. Full RE allocation with no boost or deboost is assumed. Note 2: The power level is specified at each UE Rx antenna. Note 3: DL level is applied for any of the Subcarrier Spacing configuration (μ) with the same power spectrum density of -88 dBm/SCS(SubCarrier Spacing).							

Table 6.2.2.1-2: Default Downlink power levels for FR1 NR cell (30MHz – 100MHz)

	SCS(kHz)	Unit	Channel bandwidth						
			30MHz	40MHz	50MHz	60MHz	80MHz	90MHz	100MHz
Channel BW Power	15	dBm	-55	-54	-53	N/A	N/A	N/A	N/A
	30	dBm	-58	-57	-56	-55	-54	-53	-53
	60	dBm	-61	-60	-59	-58	-57	-56	-56
SS/PBCH SSS EPRE	All	dBm/SCS (Note 3)	-88	-88	-88	-88	-88	-88	-88
Note 1: The channel bandwidth powers are informative, based on -88dBm/SCS(SubCarrier Spacing) SS/PBCH SSS EPRE, then scaled according to the number of RBs and rounded to the nearest integer dBm value. Full RE allocation with no boost or deboost is assumed. Note 2: The power level is specified at each UE Rx antenna. Note 3: DL level is applied for any of the Subcarrier Spacing configuration (μ) with a power spectrum density of -88dBm/SCS(SubCarrier Spacing).									

With simultaneous transmission of 24 RBs, a maximum of -78dBm/SCS SS/PBCH SSS EPRE can be allocated as cell power level.

The default settings of suitable cells and non-suitable cells for NR are specified in table 6.2.2.1-3.

Cells which are expected to be undetectable for UE under test shall fulfil the condition of non-suitable "Off" cell in table 6.2.2.1-3.

Table 6.2.2.1-3: Default settings of suitable / non-suitable cells

Power level type	NR (Note 1-3)		E-UTRAN	UTRAN	GERAN
	Unit	Power level			
Serving cell	dBm/S CS	-88	Table 6.2.2.1-1 [2]	Table 6.1.1 (FDD) [52]	Table 6.1.10 [52]
Suitable neighbour intra-frequency cell	dBm/S CS	-94	Table 6.2.2.1-1 [2]	Table 6.1.2 (FDD) [52]	n/a
Suitable neighbour inter-frequency cell	dBm/S CS	-99	Table 6.2.2.1-1 [2]	Table 6.1.2 (FDD) [52]	Table 6.1.10 [52]
Non-suitable cell	dBm/S CS	-115	Table 6.2.2.1-1 [2]	Table 6.1.3 (FDD) [52]	Table 6.1.11 [52]
Non-suitable "Off" cell	dBm/S CS	≤ -145	Table 6.2.2.1-1 [2]	Table 6.1.4 (FDD) [52]	Cell is switched-off
Note 1: The power level is specified in terms of SS/PBCH SSS EPRE instead of RSRP as RSRP is a measured value and cannot be directly controlled by the Full RE allocation with no boost or deboost is assumed. SS. Note 2: The power level is specified at each UE Rx antenna. Note 3: DL level is applied for any of the Subcarrier Spacing configuration (μ) with the same power spectrum density of -88dBm/SCS. Note 4: The default settings assume that the UE is making relative measurements of neighbour cells compared to the serving cell.					

The default signal level uncertainty is specified in table 6.2.2.1-4 for any level specified, unless a tighter uncertainty is specified by a test case in TS 38.523-1 [12].

Table 6.2.2.1-4: SS signal level uncertainty

	Absolute signal level uncertainty for each cell	Relative signal level uncertainty between multiple cells
Intra-frequency	+/-3 dB at each test port	+/-3 dB
Inter-frequency	+/-3 dB at each test port	See Note 1
Note 1: For Inter-frequency cells the relative signal level uncertainty between multiple cells is determined by the absolute uncertainty of each cell, and does not have any additional constraint.		

SS/PBCH SSS EPRE setting should be equal to or higher than -115 dBm except for Non-suitable "Off" cell. The figure is chosen to ensure that for all bands the DL signal is within the RSRP measurement range specified in TS 38.133 [13], taking into account the SS default absolute signal level uncertainty.

NOTE: (The power spectral density of a white noise source; specified in TS 38.133 [13]) can be assumed to be -Infinity [dBm/SCS] for all intra and inter frequency test cases. It is applicable to both idle mode and connected mode in TS 38.523-1 [12], unless otherwise specified in specific test cases.

For NR-SS-UE, the sidelink power settings in Table 6.2.2.1-5 is used unless otherwise specified in a test case.

Table 6.2.2.1-5: Default settings of NR-SS-UE power and signal level uncertainty

Power level type	NR-SS-UE (Note 1)		Absolute signal level uncertainty for each NR-SS- UE
	Unit	Power level	
NR-SS-UE (default value)	dBm/15kHz	-85	+/-3 dB
NR-SS-UE ("Off")	dBm/15kHz	≤ -145	+/-3 dB
Note 1: The power level is specified at each Rx antenna of the UE under test.			

6.2.2.1.1 Measurement accuracy and side conditions

RSRP measurement accuracy in RRC_CONNECTED state is specified in table 6.2.2.1.1-1, derived from TS 38.133 [13] clauses 10.1.2 and 10.1.4 selecting Normal condition with maximum I_o less than -50 dBm/BW_{Channel}. The ranges and side conditions in TS 38.133 [13] clauses 10.1.2 and 10.1.4 apply. This measurement accuracy is applicable to connected mode test cases specified in TS 38.523-1 [12]. For the serving cell and suitable neighbour cells, the following side conditions shall be satisfied including the effect of signal level uncertainty.

- RSRP $\geq$ -124 dBm
- RSRP $\hat{E}_s/I_{ot} >$ -6 dB
- I_o : 117.5 dBm/SCS for 15kHz SCS and -114.5 dBm/SCS for 15kHz SCS dBm/SCS ... -50 dBm/BW_{Channel} (for absolute and relative RSRP measurement accuracy).

RSRP measurement accuracy in RRC_CONNECTED state is specified in table 6.2.2.1.1-1, derived from TS 38.133 [13] clauses 10.1.2 and 10.1.4 selecting Normal condition.

Table 6.2.2.1.1-1: RSRP measurement accuracy in RRC_CONNECTED state

	Absolute RSRP measurement accuracy	Relative RSRP measurement accuracy
Intra-frequency	+/-8 dB	+/-3 dB
Inter-frequency	+/-8 dB	+/-4.5 dB

6.2.2.2 Signal Levels for OTA testing

6.2.2.2.1 General

This section applies to the test cases, which require at least one of the configured cells to be a FR2 NR cell.

The following assumption is made for OTA testing:

- AWGN is not configured in the test case

6.2.2.2.2 Signal Levels for FR2 OTA NR cells

For NR FR2 cell, the downlink power settings in Table 6.2.2.2.2-1 are used unless otherwise specified in a test case.

Table 6.2.2.2.2-1: Default Downlink power levels for FR2 NR cell (50MHz - 400MHz)

	SCS(kHz)	Unit	Channel bandwidth			
			50MHz	100MHz	200MHz	400MHz
Channel BW Power	60	dBm	FFS	FFS	FFS	FFS
	120	dBm	-57	-57	-57	-57
SS/PBCH SSS EPRE	All	dBm/SCS	-82	-82	-82	-82
Note 1: The channel bandwidth powers are informative, based on -82 dBm/SCS SS/PBCH SSS EPRE, then scaled according to the number of RBs and rounded to the nearest integer dBm value. A maximum RE allocation of 24 simultaneously transmitted RBs with no boost or deboost is assumed. Note 2: The power level is specified at the centre of quiet zone.						

The default settings of suitable cells and non-suitable cells for NR FR2 are specified in table 6.2.2.2.2-2.

NR FR2 cells which are expected to be undetectable for UE under test shall fulfil the condition of non-suitable "Off" cell in table 6.2.2.2.2-2.

Table 6.2.2.2-2: Default settings of suitable / non-suitable FR2 NR cells

Power level type	NR (Note 1-3)	
	Unit	Power level
Serving cell	dBm/SCS	-82
Suitable neighbour intra-frequency cell	dBm/SCS	-91
Suitable neighbour inter-frequency cell	dBm/SCS	-91
Non-suitable cell	dBm/SCS	-100
Non-suitable "Off" cell	dBm/SCS	≤ -139
Note 1: The power level is specified in terms of SS/PBCH SSS EPRE instead of RSRP as RSRP is a measured value and cannot be directly controlled by the SS.		
Note 2: The power level is specified at the centre of quiet zone.		
Note 3: DL level is applied for any of the Subcarrier Spacing configuration (μ) with the same power spectrum density in dBm/SCS (SubCarrier Spacing).		

The test system default signal level uncertainty is specified in tables 6.2.2.2-3 and 6.2.2.2-4 for any level specified, unless a tighter uncertainty is specified by a test case in TS 38.523-1 [12].

Table 6.2.2.2-3: SS Absolute FR2 NR signal level uncertainty

	Absolute signal level uncertainty
At each frequency	± 6 dB at centre of the quiet zone

Table 6.2.2.2-4: SS Relative FR2 NR signal level uncertainty

	Relative signal level uncertainty between any two SS EPRE levels at the same frequency
At each frequency	± 2.0 dB

6.2.2.2.3 Signal Levels for FR1 OTA NR cell(s) with FR2 OTA NR cell(s)

For NR cell in FR1 with FR2 NR, since the NR FR1 OTA link is uncalibrated in the signalling test setup, -88dBm/SCS should be applied as defined in the table 6.2.2.1-1 and table 6.2.2.1-2. -88dBm/SCS is suggested value and it is left to the TE vendor to ensure that NR cell power level fulfils the cell selection criteria.

The default settings of suitable cells and non-suitable cells for NR in FR1 with FR2 NR are specified in table 6.2.2.2-7.

NR Cells in FR1 with FR2 NR which are expected to be undetectable for UE under test shall fulfil the condition of non-suitable "Off" cell in table 6.2.2.2-3-1.

Table 6.2.2.2-3-1: Default settings of suitable / non-suitable NR cells in FR1 with NR FR2

Power level type	NR (Note 1-2)	
	Unit	Power level
Serving cell or Suitable neighbour cell	dBm/SCS	-88
Non-suitable "Off" cell	dBm/SCS	≤ -156
Note 1: The power level is specified in terms of SS/PBCH SSS EPRE instead of RSRP as RSRP is a measured value and cannot be directly controlled by the SS.		
Note 2: The power level is specified at the centre of quiet zone.		

The following assumptions are considered for the test cases configuring at least one FR1 OTA NR cell:

- Multiple inter-frequency FR1 OTA NR cells can be configured.
- Only two power levels are allowed: (Serving cell power level or Suitable neighbour cell power level) and Non-suitable "Off" cell power level (as defined in Table 6.2.2.2-3-1)

- If FR1 OTA NR cell does not require:
 - Cell Reselection measurements and
 - Connected Mode measurements and
 - Cell Selection between two active cells and
 - Multiple Signal Levels
 - Multiple FR1 OTA NR cells can be activated.
- Else
 - No more than one FR1 OTA NR cell is activated.

6.2.2.2.4 Signal Levels for OTA E-UTRA cell(s) with FR2 OTA NR cell(s)

For E-UTRA cell with FR2 NR, since the LTE OTA link is uncalibrated in the signalling test setup, the table 6.2.2.2.4-1 provides only suggestive value. It is left to the TE vendor to ensure that LTE cell power level fulfils the cell selection criteria.

Table 6.2.2.2.4-1: Default Downlink power levels for E-UTRA cells with NR FR2

	Unit	Channel bandwidth					
		1.4 MHz	3 MHz	5 MHz	10 MHz	15 MHz	20 MHz
Number of RBs		6	15	25	50	75	100
Channel BW Power	dBm	-77	-73	-71	-68	-66	-65
RS EPRE	dBm/15kHz	-96	-96	-96	-96	-96	-96
Note 1: The channel bandwidth powers are informative, based on -96 dBm/15kHz RS EPRE, then scaled according to the number of RBs and rounded to the nearest integer dBm value. Full RE allocation with no boost or deboost is assumed.							
Note 2: The power level is specified at the centre of quiet zone.							

The default setting of suitable cells for E-UTRA with FR2 NR are specified in table 6.2.2.2.4-2.

E-UTRA Cells with FR2 NR which are expected to be undetectable for UE under test shall fulfil the condition of non-suitable "Off" cell in table 6.2.2.2.4-2.

Table 6.2.2.2.4-2: Default settings of suitable / non-suitable E-UTRA cells with NR FR2

Power level type	E-UTRAN (Note 1-2)	
	Unit	Power level
Serving cell or Suitable neighbour cell	dBm/15KHz	-96
Non-suitable "Off" cell	dBm/15KHz	≤-156
Note 1: The power level is specified in terms of cell-specific RS EPRE instead of RSRP as RSRP is a measured value and cannot be directly controlled by the SS.		
Note 2: The power level is specified at the centre of quiet zone.		

The following assumptions are considered for the test cases configuring at least one OTA E-UTRA cell:

- Multiple inter-frequency OTA E-UTRA cells can be configured.
- Only two power levels are allowed: (Serving cell power level or Suitable neighbour cell power level) and Non-suitable "Off" cell power level (as defined in Table 6.2.2.2.4-2)
- If OTA E-UTRA cell does not require:
 - Cell Reselection measurements and
 - Connected Mode measurements and

- Cell Selection between two active cells and
- Multiple Signal Levels,
 - Multiple OTA E-UTRA cells can be activated.
- Else
 - No more than one OTA E-UTRA cell is activated.

6.2.2.2.5 Signal Levels for OTA UTRA cell(s) with FR2 OTA NR cell(s)

For UTRA OTA cell with FR2 NR, the UTRA OTA link is uncalibrated in the signalling test setup.

UTRA Cells with FR2 NR which are expected to be undetectable for UE under test shall fulfil the condition of non-suitable "Off" cell in table 6.2.2.2.5-1.

Table 6.2.2.2.5-1: Default settings of suitable / non-suitable UTRA cells with NR FR2

Power level type	UTRAN (Note 1-2)	
	Unit	Power level
Serving cell or Suitable neighbour cell	dBm/3.84 MHz	-60
Non-suitable "Off" cell	dBm/3.84 MHz	≤-132
Note 1: The power level is specified in terms of CPICH_Ec instead of CPICH_RSCP as RSCP is a receiver measurement and only CPICH_Ec can be directly controlled by the SS.		
Note 2: The power level is specified at the centre of quiet zone.		

The following assumptions are considered for the test cases configuring at least one OTA UTRA cell:

- Multiple inter-frequency OTA UTRA cells can be configured.
- Only two power levels are allowed: (Serving cell power level or Suitable neighbour cell power level) and Non-suitable "Off" cell power level (as defined in Table 6.2.2.2.5-1)
- If OTA UTRA cell does not require:
 - Cell Reselection measurements and
 - Connected Mode measurements and
 - Cell Selection between two active cells and
 - Multiple Signal Levels,
 - Multiple OTA UTRA cells can be activated.
- Else
 - No more than one OTA UTRA cell is activated.

6.2.2.2.6 Signal Levels for OTA GERAN cell(s) with FR2 OTA NR cell(s)

For GERAN OTA cell with FR2 NR, the GERAN OTA link is uncalibrated in the signalling test setup.

GERAN Cells with FR2 NR which are expected to be undetectable for UE under test shall fulfil the condition of non-suitable "Off" cell in table 6.2.2.2.6-1.

Table 6.2.2.2.6-1: Default settings of suitable / non-suitable GERAN cells with NR FR2

Power level type	GERAN (Note 1)

	Unit	Power level
Serving cell or Suitable Neighbour cell	dBm	-48
Non-suitable "Off" cell	dBm	≤ -100
Note 1: The power level is specified at the centre of quiet zone.		

The following assumptions are considered for the test cases configuring at least one OTA GERAN cell:

- Multiple inter-frequency OTA GERAN cells can be configured.
- Only two power levels are allowed: (Serving cell power level or Suitable Neighbour cell power level) and Non-suitable "Off" cell power level (as defined in Table 6.2.2.6-1)
- If OTA GERAN cell does not require:
 - Cell Reselection measurements and
 - Connected Mode measurements and
 - Cell Selection between two active cells and
 - Multiple Signal Levels,
 - Multiple OTA GERAN cells can be activated.
- Else
 - No more than one OTA GERAN cell is activated.

6.2.3 Default test frequencies

Editor's note: For FR2 test frequencies using 100 MHz default channel bandwidth it is FFS if 100MHz channel bandwidth can be used for FR2 multicell protocol testing.

6.2.3.1 Test frequencies for NR standalone signalling testing

The default channel bandwidth for signalling test is specified per NR band. The test frequencies are defined so that no frequency overlapping takes place, in order to avoid unnecessary inter-frequency interference.

For signalling test cases, the mapping of frequency ranges to NR test frequencies are as follows:

- for band with only one test frequency (e.g. n51): Low Range (NRf1);
- for band with up to two test frequencies: Low Range (NRf1) and High Range (NRf2);
- for band with up to three test frequencies: Low Range (NRf1), Mid Range (NRf2) and High Range (NRf3);
- for band with up to four test frequencies: Low Range (NRf1), Mid Low Range (NRf2), Mid High Range (NRf3) and High Range (NRf4);

The signalling test frequencies NRf5, NRf6, NRf7 are mapped respectively as NRf1, NRf2, NRf3 on the operating band for inter-band.

The test frequencies, subcarrier spacing, default channel bandwidth, SS/PBCH block and CORESET#0 parameters for signalling is specified in Table 6.2.3.1-0 (FDD FR1 BW 3MHz), Table 6.2.3.1-1 (FDD FR1 BW 5MHz), Table 6.2.3.1-2 (FDD FR1 BW 10MHz), Table 6.2.3.1-3 (TDD FR1 BW 5MHz), Table 6.2.3.1-4 (TDD FR1 BW 10MHz), Table 6.2.3.1-4A (TDD FR1 BW 60MHz), Table 6.2.3.1-4B (TDD FR1 BW 20MHz for RedCap UE), Table 6.2.3.1-5 (TDD FR1 BW 100MHz), Table 6.2.3.1-5A (TDD FR1 BW 20MHz for RedCap UE), Table 6.2.3.1-6 (TDD FR2 BW 100MHz) and Table 6.2.3.1-7 (NR FDD FR1 SUL bands).

For signalling test cases requiring an additional BWP without CORESET#0, the test frequencies for Low Range (NRf1), subcarrier spacing, highest mandatory UL and DL channel bandwidth, SS/PBCH block for CD-SSB and NCD-SSB, and BWP without CORESET#0 parameters is specified in Table 6.2.3.1-8 (FR1), Table 6.2.3.1-9 (FR2)

Table 6.2.3.1-0: Test frequencies for NR FDD FR1 bands using 3 MHz channel bandwidth

NR Band	SCS [kHz]	CBW [MHz]	carrier Bandwidth [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absolute Frequency PointA [ARFCN]	offsetTo Carrier [Carrier PRBs]	SS block SCS [kHz]	GSCN	absolute FrequencySSB [ARFCN]	k_{SSB}	Offset Carrier CORE SET#0 [RBs]	CORE SET#0 Index (Offset [RBs]) Note 1	offsetTo PointA (SIB1) [PRBs] Note 1
n106	15	3	15	Downlink	Low	938.0	187600	936.65	187330	0	15	31329	187750	8	0	2 (0)	0
				Uplink	Low	899.0	179800	897.65	179530	0	-	-	-	-	-	-	-
n110	15	3	15	Downlink	Low	1433.5	286700	1432.15	286430	0	15	33803	286670	8	0	2 (0)	0
				Uplink	Low	1391.5	278300	1390.15	278030	0	-	-	-	-	-	-	-

Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-0 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.

Table 6.2.3.1-1: Test frequencies for NR FDD FR1 bands using 5 MHz channel bandwidth

NR Band	SCS [kHz]	CBW [MHz]	carrierBandwidth [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequencyPointA [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS [kHz]	GSCN	absoluteFrequencySSB [ARFCN]	k _{SSB}	Offset Carrier CORE SET#0 [RBs]	CORE SET#0 Index (Offset [RBs]) Note 1	offsetToPointA (SIB1) [PRBs] Note 1
n5	15	5	25	Downlink	Low, High	Same values as for Low and High range in clause 4.3.1.1.15 for bandwidth=5 MHz and SCS=15 kHz.											
					Mid-Low	878.2	175640	873.79	174758	12	15	2197	175730	0	1	2 (4)	17
					Mid-High	884.8	176960	878.23	175646	24		2212	176930	8	1	0 (0)	25
				Uplink	Low, High	Same values as for Low and High range in clause 4.3.1.1.1.5 for bandwidth=5 MHz and SCS=15 kHz.											
					Mid-Low	833.2	166640	824.47	164894	36	-	-	-	-	-	-	-
					Mid-High	839.8	167960	817.03	163406	114	-	-	-	-	-	-	-
n8	15	5	25	Downlink	Low, High	Same values as for Low and High range in clause 4.3.1.1.1.8 for bandwidth=5 MHz and SCS=15 kHz.											
					Mid-Low	937.5	187500	933.09	186618	12	15	2343	187470	8	1	0 (0)	13
					Mid-High	947.5	189500	940.93	188186	24		2368	189410	0	0	0 (0)	24
				Uplink	Low, High	Same values as for Low and High range in clause 4.3.1.8 for bandwidth=5 MHz and SCS=15 kHz.											
					Mid-Low	892.5	178500	883.77	176754	36	-	-	-	-	-	-	-
					Mid-High	902.5	180500	879.73	175946	114	-	-	-	-	-	-	-
n12	15	5	25	Downlink	Low, Mid, High	Same values as for Low, Mid and High range in clause 4.3.1.1.1.12 for bandwidth=5 MHz and SCS=15 kHz.											

				Uplink	Low, Mid, High	Same values as for Low, Mid and High range in clause 4.3.1.1.1.12 for bandwidth=5 MHz and SCS=15 kHz.											
n13	15	5	25	Downlink	Low, High	Same values as for Low and High range in clause 4.3.1.1.1.13 for bandwidth=5 MHz and SCS=15 kHz.											
				Uplink	Low, High	Same values as for Low and High range in clause 4.3.1.1.1.13 for bandwidth=5 MHz and SCS=15 kHz.											
n14	15	5	25	Downlink	Low, High	Same values as for Low and High range in clause 4.3.1.1.1.14 for bandwidth=5 MHz and SCS=15 kHz.											
				Uplink	Low, High	Same values as for Low and High range in clause 4.3.1.1.1.14 for bandwidth=5 MHz and SCS=15 kHz.											
n20	15	5	25	Downlink	Low, High	Same values as for Low and High range in clause 4.3.1.1.1.20 for bandwidth=5 MHz and SCS=15 kHz.											
					Mid-Low	801.8	160360	797.39	159478	12	15	2003	160330	8	1	0 (0)	13
					Mid-High	810.2	162040	803.63	160726	24		2024	162010	8	1	0 (0)	25
				Uplink	Low, High	Same values as for Low and High range in clause 4.3.1.1.1.20 for bandwidth=5 MHz and SCS=15 kHz.											
					Mid-Low	842.8	168560	834.07	166814	36	-	-	-	-	-	-	-
					Mid-High	851.2	170240	828.43	165686	114	-	-	-	-	-	-	-
n24	15	5	25	Downlink	Low, High	Same values as for Low and High range in clause 4.3.1.1.1.24 for DL bandwidth=5 MHz, UL bandwidth=5 MHz and SCS=15 kHz											
				Uplink	Low, High	Same values as for Low and High range in clause 4.3.1.1.1.24 for DL bandwidth=5 MHz, UL bandwidth=5 MHz and SCS=15 kHz											
n26	15	5	25	Downlink	Low, High	Same values as for Low and High range in clause 4.3.1.1.1.26 for bandwidth=5 MHz and SCS=15 kHz.											
					Mid-Low	871.5	174300	867.09	173418	12	15	2178	174270	8	1	0 (0)	13
					Mid-High	881.5	176300	874.93	174986	24		2203	176210	0	0	0 (0)	24
				Uplink	Low, High	Same values as for Low and High range in clause 4.3.1.1.1.26 for bandwidth=5 MHz and SCS=15 kHz.											
					Mid-Low	826.5	165300	817.77	163554	36	-	-	-	-	-	-	-
					Mid-High	836.5	167300	813.73	162746	114		-	-	-	-	-	-
n29	15	5	25	Downlink (SDL)	Low, High	Same values as for Low and High range in clause 4.3.1.1.1.29 for bandwidth=5 MHz and SCS=15 kHz.											
n30	15	5	25	Downlink	Low, High	Same values as for Low and High range in clause 4.3.1.1.1.30 for bandwidth=5 MHz and SCS=15 kHz.											
				Uplink	Low, High	Same values as for Low and High range in clause 4.3.1.1.1.30 for bandwidth=5 MHz and SCS=15 kHz.											
n31	15	5	25	Downlink	Low	Same values as for Low range in clause 4.3.1.1.1.31 for bandwidth=5 MHz and SCS=15 kHz.											
				Uplink	Low	Same values as for Low range in clause 4.3.1.1.1.31 for bandwidth=5 MHz and SCS=15 kHz.											
n70	15	5	25	Downlink	Low, Mid, High	Same values as for Low, Mid and High range in clause 4.3.1.1.1.70 for DL bandwidth=5 MHz, UL bandwidth=5 MHz and SCS=15 kHz.											
				Uplink	Low, Mid, High	Same values as for Low, Mid and High range in clause 4.3.1.1.1.70 for DL bandwidth=5 MHz, UL bandwidth=5 MHz and SCS=15 kHz.											
n71	15	5	25	Downlink	Low, High	Same values as for Low and High range in clause 4.3.1.1.1.71 for bandwidth=5 MHz and SCS=15 kHz.											

					Mid-Low	629.5	125900	625.09	125018	12	15	1573	125810	0	0	0 (0)	12
					Mid-High	639.5	127900	632.93	126586	24		1598	127930	4	1	1 (2)	27
					Uplink	Low, High	Same values as for Low and High range in clause 4.3.1.1.1.71 for bandwidth=5 MHz and SCS=15 kHz.										
					Mid-Low	675.5	135100	666.77	133354	36	-	-	-	-	-	-	-
n72	15	5	25	Mid-High	685.5	137100	662.73	132546	114	-	-	-	-	-	-	-	-
				Downlink	Low	Same values as for Low range in clause 4.3.1.1.1.72 for bandwidth=5 MHz and SCS=15 kHz.											
				Uplink	Low	Same values as for Low range in clause 4.3.1.1.1.72 for bandwidth=5 MHz and SCS=15 kHz.											
n76	15	5	25	Downlink (SDL)	Low	Same values as for Low range in clause 4.3.1.1.1.76 for bandwidth=5 MHz and SCS=15 kHz.											
n85	15	5	25	Downlink	Low, Mid, High	Same values as for Low, Mid and High range in clause 4.3.1.1.1.85 for bandwidth=5 MHz and SCS=15 kHz.											
				Uplink	Low, Mid, High	Same values as for Low, Mid and High range in clause 4.3.1.1.1.85 for bandwidth=5 MHz and SCS=15 kHz.											
n87	15	5	25	Downlink	Low	Same values as for Low range in clause 4.3.1.1.1.87 for bandwidth=5 MHz and SCS=15 kHz.											
				Uplink	Low	Same values as for Low range in clause 4.3.1.1.1.87 for bandwidth=5 MHz and SCS=15 kHz.											
n88	15	5	25	Downlink	Low	Same values as for Low range in clause 4.3.1.1.1.88 for bandwidth=5 MHz and SCS=15 kHz.											
				Uplink	Low	Same values as for Low range in clause 4.3.1.1.1.88 for bandwidth=5 MHz and SCS=15 kHz.											
n91	15	5	25	Downlink	Low	Same values as for Low range in clause 4.3.1.1.1.91 for bandwidth=5 MHz and SCS=15 kHz.											
				Uplink	Low	Same values as for Low range in clause 4.3.1.1.1.91 for bandwidth=5 MHz and SCS=15 kHz.											
n92	15	5	25	Downlink	Low, Mid, High	Same values as for Low, Mid and High range in clause 4.3.1.1.1.92 for bandwidth=5 MHz and SCS=15 kHz.											
				Uplink	Low, Mid, High	Same values as for Low, Mid and High range in clause 4.3.1.1.1.92 for bandwidth=5 MHz and SCS=15 kHz.											
n93	15	5	25	Downlink	Low	Same values as for Low range in clause 4.3.1.1.1.93 for bandwidth=5 MHz and SCS=15 kHz.											
				Uplink	Low	Same values as for Low range in clause 4.3.1.1.1.93 for bandwidth=5 MHz and SCS=15 kHz.											
n100	15	5	25	Downlink	Low, Mid, High	Same values as for Low, Mid and High range in clause 4.3.1.1.1.100 for bandwidth=5 MHz and SCS=15 kHz.											
				Uplink	Low, Mid, High	Same values as for Low, Mid and High range in clause 4.3.1.1.1.100 for bandwidth=5 MHz and SCS=15 kHz.											
n105	15	5	25	Downlink	Low, High	Same values as for Low and High range in clause 4.3.1.1.1.105 for bandwidth=5 MHz and SCS=15 kHz.											
					Mid-Low	627	125400	622.59	124518	12	15	1566	125310	0	0	0 (0)	12
					Mid-High	637	127400	630.43	126086	24		1597	127730	8	7	2 (4)	35
				Uplink	Low, High	Same values as for Low and High range in clause 4.3.1.1.1.105 for bandwidth=5 MHz and SCS=15 kHz.											
					Mid-Low	678	135600	669.27	133854	36	-	-	-	-	-	-	-
					Mid-High	688	137600	665.23	133046	114	-	-	-	-	-	-	-
Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-1 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.																	

Table 6.2.3.1-2: Test frequencies for NR FDD FR1 bands using 10 MHz channel bandwidth

NR Band	SCS [kHz]	CBW [MHz]	carrierBandwidth [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequencyPointA [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS [kHz]	GSCN	absoluteFrequencySSB [ARFCN]	k_{SSB}	Offset Carrier CORE SET#0 [RBs]	CORE SET#0 Index (Offset [RBs]) Note 1	offsetToPointA (SIB1) [PRBs] Note 1
n1	15	10	52	Downlink	Low, High	Same values as for Low and High range in clause 4.3.1.1.1.1 for bandwidth=10 MHz and SCS=15 kHz.											
					Mid-Low	2131.7	426340	2124.86	424972	12	15	5321	425770	2	0	0 (0)	12
					Mid-High	2148.3	429660	2139.3	427860	24		5364	429150	10	1	0 (0)	25
				Uplink	Low, High	Same values as for Low and High range in clause 4.3.1.1.1.1 for bandwidth=10 MHz and SCS=15 kHz.											
					Mid-Low	1941.7	388340	1930.54	386108	36	-	-	-	-	-	-	-
					Mid-High	1958.3	391660	1933.1	386620	114	-	-	-	-	-	-	-
n2	15	10	52	Downlink	Low, High	Same values as for Low and High range in clause 4.3.1.1.1.2 for bandwidth=10 MHz and SCS=15 kHz.											
					Mid-Low	1951.7	390340	1944.86	388972	12	15	4871	389770	2	0	0 (0)	12
					Mid-High	1968.3	393660	1959.3	391860	24		4914	393150	10	1	0 (0)	25
				Uplink	Low, High	Same values as for Low and High range in clause 4.3.1.1.1.2 for bandwidth=10 MHz and SCS=15 kHz.											
					Mid-Low	1871.7	374340	1860.54	372108	36	-	-	-	-	-	-	-
					Mid-High	1888.3	377660	1863.1	372620	114	-	-	-	-	-	-	-
n3	15	10	52	Downlink	Low, High	Same values as for Low and High range in clause 4.3.1.1.1.3 for bandwidth=10 MHz and SCS=15 kHz.											
					Mid-Low	1831.7	366340	1824.86	364972	12	15	4571	365770	2	0	0 (0)	12
					Mid-High	1853.3	370660	1844.3	368860	24		4625	370090	2	0	0 (0)	24
				Uplink	Low, High	Same values as for Low and High range in clause 4.3.1.1.1.3 for bandwidth=10 MHz and SCS=15 kHz.											
					Mid-Low	1736.7	347340	1725.54	345108	36	-	-	-	-	-	-	-
					Mid-High	1758.3	351660	1733.1	346620	114	-	-	-	-	-	-	-
n7	15	10	52	Downlink	Low, High	Same values as for Low and High range in clause 4.3.1.1.1.7 for bandwidth=10 MHz and SCS=15 kHz.											
					Mid-Low	2645	529000	2638.16	527632	12	15	6605	528490	10	1	0 (0)	13
					Mid-High	2665	533000	2656	531200	24		6658	532610	2	1	2 (4)	29
				Uplink	Low, High	Same values as for Low and High range in clause 4.3.1.1.1.7 for bandwidth=10 MHz and SCS=15 kHz.											
					Mid-Low	2525	505000	2513.84	502768	36	-	-	-	-	-	-	-
					Mid-High	2545	509000	2519.8	503960	114	-	-	-	-	-	-	-
n25	15	10	52	Downlink	Low, High	Same values as for Low and High range in clause 4.3.1.25 for bandwidth=10 MHz and SCS=15 kHz.											
					Mid-Low	1953.3	390660	1946.46	389292	12	15	4878	390270	2	1	2 (4)	17
					Mid-High	1971.7	394340	1962.7	392540	24		4924	393890	6	1	1 (2)	27

				Uplink	Low, High	Same values as for Low and High range in clause 4.3.1.1.1.25 for bandwidth=10 MHz and SCS=15 kHz.											
					Mid-Low	1873.3	374660	1862.14	372428	36	-	-	-	-	-	-	
					Mid-High	1891.7	378340	1866.5	373300	114	-	-	-	-	-	-	
n28 (Note 3)	15	10	52	Downlink	Low, High	Same values as for Low and High range in clause 4.3.1.1.1.28 for bandwidth=10 MHz and SCS=15 kHz.											
					Mid-Low	774.7	154940	767.86	153572	12	15	1930	154370	2	0	0 (0)	12
					Mid-High	786.3	157260	777.3	155460	24		1959	156750	10	1	0 (0)	25
				Uplink	Low, High	Same values as for Low and High range in clause 4.3.1.1.1.28 for bandwidth=10 MHz and SCS=15 kHz.											
					Mid-Low	719.7	143940	708.54	141708	36	-	-	-	-	-	-	-
					Mid-High	731.3	146260	706.1	141220	114	-	-	-	-	-	-	-
n65	15	10	52	Downlink	Low, High	Same values as for Low and High range in clause 4.3.1.65 for bandwidth=10 MHz and SCS=15 kHz.											
					Mid-Low	2141.7	428340	2134.86	426972	12	15	5349	427950	2	1	2 (4)	17
					Mid-High	2168.3	433660	2159.3	431860	24		5414	433210	6	1	1 (2)	27
				Uplink	Low, High	Same values as for Low and High range in clause 4.3.1.65 for bandwidth=10 MHz and SCS=15 kHz.											
					Mid-Low	1951.7	390340	1940.54	388108	36	-	-	-	-	-	-	-
					Mid-High	1978.3	395660	1953.1	390620	114	-	-	-	-	-	-	-
n66	15	10	52	Downlink	Low, High	Same values as for Low and High range in clause 4.3.1.1.1.66 for DL bandwidth=10 MHz, UL bandwidth=10 MHz and SCS=15 kHz.											
					Mid-Low	2141.7	428340	2134.86	426972	12	15	5349	427950	2	1	2 (4)	17
					Mid-High	2168.3	433660	2159.3	431860	24		5414	433210	6	1	1 (2)	27
				Uplink	Low, High	Same values as for Low and High range in clause 4.3.1.1.1.66 for DL bandwidth=10 MHz, UL bandwidth=10 MHz and SCS=15 kHz.											
					Mid-Low	1741.7	348340	1730.54	346108	36	-	-	-	-	-	-	-
					Mid-High	1768.3	353660	1743.1	348620	114	-	-	-	-	-	-	-
n74	15	10	52	Downlink	Low, High	Same values as for Low and High range in clause 4.3.1.1.1.74 for bandwidth=5 MHz and SCS=15 kHz.											
					Mid-Low	1491	298200	1484.16	296832	12	15	3720	297630	2	0	0 (0)	12
					Mid-High	1502	300400	1493	298600	24		3749	300010	2	1	2 (4)	29
				Uplink	Low, High	Same values as for Low and High range in clause 4.3.1.1.1.74 for bandwidth=5 MHz and SCS=15 kHz.											
					Mid-Low	1443	288600	1431.84	286368	36	-	-	-	-	-	-	-
					Mid-High	1454	290800	1428.8	285760	114	-	-	-	-	-	-	-
n75	15	10	52	Downlink (SDL) Note 2	Low, High	Same values as for Low and High range in clause 4.3.1.1.1.75 for bandwidth=10 MHz and SCS=15 kHz.											
					Mid-Low	1462	292400	1455.16	291032	12	15	-	291824	31	-	0	-
					Mid-High	1487	297400	1478	295600	24		-	296824	31	-	0	-
n94	15	10	52	Downlink	Low, Mid, High	Same values as for Low, Mid and High range in clause 4.3.1.1.1.94 for bandwidth=10 MHz and SCS=15 kHz.											

				Uplink	Low, Mid, High	Same values as for Low, Mid and High range in clause 4.3.1.1.1.94 for bandwidth=10 MHz and SCS=15 kHz.											
n109	15	10	52	Downlink	Low, High	Same values as for Low and High range in clause 4.3.1.1.1.109 for bandwidth=5 MHz and SCS=15 kHz.											
					Mid-Low	1462	292400	1455.16	291032	12	15	3649	291890	10	1	0 (0)	13
					Mid-High	1487	297400	1478	295600	24		3710	296890	10	1	0 (0)	25
				Uplink	Low, High	Same values as for Low and High range in clause 4.3.1.1.1.109 for bandwidth=5 MHz and SCS=15 kHz.											
					Mid-Low	714.7	142940	703.54	140708	36	-	-	-	-	-	-	-
					Mid-High	721.3	144260	696.1	139220	114	-	-	-	-	-	-	-
Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-1 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.																	
Note 2: FR1 carrier without any coreset is indicated in the MIB by setting $k_{SSB}=31$, <i>controlResourceSetZero</i> =0 and <i>searchSpaceZero</i> = 0 (TS 38.213 [22], clause 13).																	
Note 3: For the case of EN-DC configuration DC_21A_n28A the test frequencies in band n28 is restricted to 728 - 738 MHz for the UL and 783 - 793 MHz for the DL (Reference: TS 38.101-3 [9], Table 5.5B.4.1-1 for DC_21A_n28 and Note 17). Thus is only Low range as specified in Table 4.3.1.1.1.28-1A applicable for n28 when used with DC_21A_n28A.																	

Table 6.2.3.1-3: Test frequencies for NR TDD FR1 bands using 5 MHz channel bandwidth

NR Band	SCS [kHz]	CBW [MHz]	carrie rBandwidth [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequency PointA [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS [kHz]	GSCN	absoluteFrequencySSB [ARFCN]	k_{SSB}	Offset Carrier CORE SET#0 [RBs]	CORE SET#0 Index (Offset [RBs]) Note 1	offsetToPointA (SIB1) [PRBs] Note 1
n34	15	5	25	Downlink & Uplink	Low, Mid, High	Same values as for Low, Mid and High range in clause 4.3.1.1.1.34 for bandwidth=5 MHz and SCS=15 kHz.											
n51	15	5	25	Downlink & Uplink	Low	Same values as for Low range in clause 4.3.1.1.1.51 for bandwidth=5 MHz and SCS=15 kHz.											
n53	15	5	25	Downlink & Uplink	Low, High	Same values as for Low and High range in clause 4.3.1.1.1.53 for bandwidth=5 MHz and SCS=15 kHz.											
n54	15	5	25	Downlink & Uplink	Low	Same values as for Low range in clause 4.3.1.1.1.54 for bandwidth=5 MHz and SCS=15 kHz.											
n101	15	5	25	Downlink & Uplink	Low, Mid, High	Same values as for Low, Mid and High range in clause 4.3.1.1.1.101 for bandwidth=5 MHz and SCS=15 kHz.											
Note 1: For TDD FR1 bands typically the default SCS=30kHz is chosen. For n34 and n53 where SCS=30kHz would limit test coverage to one cell scenarios, SCS=15kHz and 5MHz CBW have been chosen to enable testing of scenarios with up to two cells.																	

Table 6.2.3.1-4: Test frequencies for NR TDD FR1 bands using 10 MHz channel bandwidth

NR Band	SCS [kHz]	CBW [MHz]	carrierBandwidth [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequencyPointA [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS [kHz]	GSCN	absoluteFrequencySSB [ARFCN]	k_{SSB}	Offset Carrier CORE SET#0 [RBs]	CORE SET#0 Index (Offset [RBs]) Note 1	offsetToPointA (SIB1) [PRBs] Note 1
n38	30	10	24	Downlink & Uplink	Low, High	Same values as for Low and High range in clause 4.3.1.1.1.38 for bandwidth=10 MHz and SCS=30 kHz.											
					Mid-Low	2588.3	517660	2579.66	515932	12	30	6470	517690	10	0	2 (2)	28
					Mid-High	2601.7	520340	2588.74	517748	24		6505	520370	10	0	2 (2)	52
n39	30	10	24	Downlink & Uplink	Low, High	Same values as for Low and High range in clause 4.3.1.1.1.39 for bandwidth=10 MHz and SCS=30 kHz.											
					Mid-Low	1895	379000	1886.36	377272	12	30	4736	378970	14	0	1 (1)	26
					Mid-High	1905	381000	1892.04	378408	24		4761	380910	18	0	0 (0)	48
n40	30	10	24	Downlink & Uplink	Low, High	Same values as for Low and High range in clause 4.3.1.1.1.40 for bandwidth=10 MHz and SCS=30 kHz.											
					Mid-Low	2335	467000	2326.36	465272	12	30	5839	467090	6	0	3 (3)	30
					Mid-High	2365	473000	2352.04	470408	24		5914	473090	6	0	3 (3)	54
n48	30	10	24	Downlink & Uplink	Low, High	Same values as for Low and High range in clause 4.3.1.48 for bandwidth=10 MHz and SCS=30 kHz.											
					Mid-Low	3601.65	640110	3593.01	639534	12	30	7917	640128	18	0	2 (2)	28
					Mid-High	3648.33	643222	3635.37	642358	24		7949	643200	2	0	1 (1)	50
n50	30	10	24	Downlink & Uplink	Low, High	Same values as for Low and High range in clause 4.3.1.1.1.50 for bandwidth=10 MHz and SCS=30 kHz.											
					Mid-Low	1462	292400	1453.36	290672	12	30	3655	292370	14	0	1 (1)	26
					Mid-High	1487	297400	1474.04	294808	24		3716	297370	14	0	1 (1)	50
Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-4 in TS 38.213 [22] for all bands in the table. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.																	

Table 6.2.3.1-4A: Test frequencies for NR TDD FR1 bands using 60 MHz channel bandwidth for non-(e)RedCap UE

NR Band	SCS [kHz]	CBW [MHz]	carrier Bandwidth [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absolute Frequency PointA [ARFCN]	offsetTo Carrier [Carrier PRBs]	SS block SCS [kHz]	GSCN	absolute FrequencySSB [ARFCN]	k_{SSB}	Offset Carrier CORE SET#0 [RBs]	CORE SET#0 Index (Offset [RBs]) Note 1	offsetTo PointA (SIB1) [PRBs] Note 1
n41	30	60	162	Downlink & Uplink	Low, Mid, High	Same values as for Low, Mid and High range in clause 4.3.1.1.1.41 for bandwidth=60 MHz and SCS=30 kHz.											

Table 6.2.3.1-4B: Test frequencies for NR TDD FR1 bands using 20 MHz channel bandwidth for (e)RedCap UE

NR Band	SCS [kHz]	CBW [MHz]	carrier Bandwidth [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absolute Frequency PointA [ARFCN]	offsetTo Carrier [Carrier PRBs]	SS block SCS [kHz]	GSCN	absolute FrequencySSB [ARFCN]	k_{SSB}	Offset Carrier CORE SET#0 [RBs]	CORE SET#0 Index (Offset [RBs]) Note 1	offsetTo PointA (SIB1) [PRBs] Note 1
n41	30	20	51	Downlink & Uplink	Low, Mid, High	Same values as for Low, Mid and High range in clause 4.3.1.1.1.41 for bandwidth=20 MHz and SCS=30 kHz.											

Table 6.2.3.1-4C: Test frequencies for NR TDD FR1 bands using 20 MHz channel bandwidth for non-(e)RedCap UE

NR Band	SCS [kHz]	CBW [MHz]	carrierBandwidth [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequencyPointA [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS [kHz]	GSCN	absoluteFrequencySSB [ARFCN]	k_{SSB}	Offset Carrier CORE SET#0 [RBs]	CORE SET#0 Index (Offset [RBs]) Note 1	offsetToPointA (SIB1) [PRBs] Note 1
n46	30	20	51	Downlink & Uplink	Low, High	Same values as for Low and High range in clause 4.3.1.1.1.46 for bandwidth=20 MHz and SCS=30 kHz.											
					Mid-Low	5340	756000	5326.5	755100	12	30	9121	755712	12	0	3 (3)	30
					Mid-High	5659.98	777332	5642.16	776144	24		9343	777024	16	0	2 (2)	52
n96	30	20	51	Downlink & Uplink	Low, High	Same values as for Low and High range in clause 4.3.1.1.1.96 for bandwidth=20 MHz and SCS=30 kHz.											
					Mid-Low	5340	756000	5326.5	755100	12	30	9121	755712	22	0	0 (0)	24
					Mid-High	5659.98	777332	5642.16	776144	24		9343	777024	22	0	0 (0)	48

Table 6.2.3.1-5: Test frequencies for NR TDD FR1 bands using 100 MHz channel bandwidth for non-(e)RedCap UE

NR Band	SCS [kHz]	CBW [MHz]	carrierBandwidth [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequencyPointA [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS [kHz]	GSCN	absoluteFrequencySSB [ARFCN]	k_{SSB}	Offset Carrier CORE SET#0 [RBs]	CORE SET#0 Index (Offset [RBs]) Note 1	offsetToPointA (SIB1) [PRBs] Note 1
n77	30	100	273	Downlink & Uplink	Low, High	Same values as for Low and High range in clause 4.3.1.1.1.77 for bandwidth=100 MHz and SCS=30 kHz.											
					Mid-Low	3616.68	641112	3563.22	637548	12	30	7896	638112	12	0	1 (1)	26
					Mid-High	3883.32	658888	3825.54	655036	24		8081	655872	20	0	0 (0)	48
n78	30	100	273	Downlink & Uplink	Low, High	Same values as for Low and High range in clause 4.3.1.1.1.78 for bandwidth=100 MHz and SCS=30 kHz.											
					Mid-Low	3483.33	632222	3429.87	628658	12	30	7804	629280	22	0	3 (3)	30
					Mid-High	3616.68	641112	3558.9	637260	24		7896	638112	12	0	1 (1)	50
n79	30	100	273	Downlink & Uplink	Low, High	Same values as for Low and High range in clause 4.3.1.1.1.79 for bandwidth=100 MHz and SCS=30 kHz.											
					Mid-Low	4616.67	707778	4563.21	704214	12	30	8592	704928	18	6	1 (4)	38
					Mid-High	4783.35	718890	4725.57	715038	24		8720	717216	18	54	1 (4)	160
n104	30	100	273	Downlink & Uplink	Low, High	Same values as for Low and High range in clause 4.3.1.1.1.104 for bandwidth=100 MHz and SCS=30 kHz.											
					Mid-Low	6675.00	845000	6621.54	841436	12	30	10022	842208	4	6	1 (4)	44
					Mid-High	6875.01	858334	6817.23	854482	24		10162	855648	14	10	1 (4)	76
Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-4 in TS 38.213 [22] for all bands in the table except for band n79 and n104 where Table 13-6 apply. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.																	

Table 6.2.3.1-5A: Test frequencies for NR TDD FR1 bands using 20 MHz channel bandwidth for (e)RedCap UE

NR Band	SCS [kHz]	CBW [MHz]	carrierBandwidth [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequencyPointA [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS [kHz]	GSCN	absoluteFrequencySSB [ARFCN]	k_{SSB}	Offset Carrier CORE SET#0 [RBs]	CORE SET#0 Index (Offset [RBs]) Note 1	offsetToPointA (SIB1) [PRBs] Note 1
n77	30	20	51	Downlink & Uplink	Low, High	Same values as for Low and High range in clause 4.3.1.1.1.77 for bandwidth=20 MHz and SCS=30 kHz.											
					Mid-Low	3603.33	640222	3589.83	639322	12	30	7915	639936	14	0	3 (3)	30
					Mid-High	3896.67	659778	3878.85	658590	24		8118	659424	18	0	0 (0)	48
n78	30	20	51	Downlink & Uplink	Low, High	Same values as for Low and High range in clause 4.3.1.1.1.78 for bandwidth=20 MHz and SCS=30 kHz.											
					Mid-Low	3470.01	631334	3456.51	630434	12	30	7822	631008	22	0	1 (1)	26

				Uplink	Mid-High	3630	642000	3612.18	640812	24		7933	641664	12	0	1 (1)	50
n79	30	20	51	Downlink	Low, High	Same values as for Low and High range in clause 4.3.1.1.1.79 for bandwidth=20 MHz and SCS=30 kHz.											
				&	Mid-Low	4603.35	706890	4589.85	705990	12	30	8609	706560	18	1	0 (0)	26
				Uplink	Mid-High	4796.67	719778	4778.85	718590	24		8743	719424	18	0	0 (0)	48
n104	30	20	51	Downlink	Low, High	Same values as for Low and High range in clause 4.3.1.1.1.104 for bandwidth=20 MHz and SCS=30 kHz.											
				&	Mid-Low	6661.65	844110	6648.15	843210	12	30	10043	844224	6	16	4 (4)	64
				Uplink	Mid-High	6888.33	859222	6870.51	858034	24		10197	859008	14	2	4 (4)	60
Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-4 in TS 38.213 [22] for all bands in the table except for band n79 and n104 where Table 13-6 apply. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.																	

Table 6.2.3.1-6: Test frequencies for NR TDD FR2 bands using 100 MHz channel bandwidth

NR Band	SCS [kHz]	CBW [MHz]	carrier Bandwidth [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absolute Frequency Point A [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS [kHz]	GSCN	absolute Frequency SSB [ARFCN]	k_{SSB}	Offset Carrier CORESET#0 [RBs]	CORE SET#0 Index (Offset [RBs]) Note 1	offsetToPointA (SIB1) [PRBs] Note 1
n257	120	100	66	Downlink	Low, High	Same values as for Low and High range in clause 4.3.1.2.1.1 for bandwidth=100 MHz and SCS=120 kHz.											
				&	Mid-Low	27516.6	2071109	27451.8	2070029	12	120	22444	2070811	7	6	1 (4)	44
				Uplink	Mid-High	28483.32	2087221	28401.24	2085853	24		22500	2086939	3	7	1 (4)	70
n258	120	100	66	Downlink	Low, High	Same values as for Low and High range in clause 4.3.1.2.1.2 for bandwidth=100 MHz and SCS=120 kHz.											
				&	Mid-Low	25350	2034999	25285.2	2033919	12	120	22318	2034523	2	3	0 (0)	30
				Uplink	Mid-High	26400	2052499	26317.92	2051131	24		22379	2052091	0	2	1 (4)	60
n259	120	100	66	Downlink	Low, High	Same values as for Low and High range in clause 4.3.1.2.1.3 for bandwidth=100 MHz and SCS=120 kHz.											
				&	Mid-Low	40850.04	2293333	40785.24	2292253	12	120	23215	2292859	3	3	0 (0)	30
				Uplink	Mid-High	42150	2314999	42067.92	2313631	24		23290	2314459	6	0	0 (0)	48
n260	120	100	66	Downlink	Low, High	Same values as for Low and High range in clause 4.3.1.2.1.4 for bandwidth=100 MHz and SCS=120 kHz.											
				&	Mid-Low	38016.6	2246109	37951.8	2245029	12	120	23051	2245627	11	2	0 (0)	28

				Uplink	Mid-High	38983.32	2262221	38901.24	2260853	24		23107	2261755	7	3	0 (0)	54
n261	120	100	66	Downlink	Low, High	Same values as for Low and High range in clause 4.3.1.2.1.5 for bandwidth=100 MHz and SCS=120 kHz.											
				&	Mid-Low	27800.04	2075833	27735.24	2074753	12	120	22460	2075419	9	1	1 (4)	34
				Uplink	Mid-High	28050	2079999	27967.92	2078631	24		22474	2079451	2	0	0 (0)	48
Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-8 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.																	

Table 6.2.3.1-7: Test frequencies for NR FR1 SUL bands

NR Band	SCS [kHz]	CBW [MHz]	carrier Bandwidth [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	Absolute Frequency Point A [ARFCN]	offsetToCarrier [Carrier PRBs]
n80	15	10	52	Uplink	Low, Mid, High	Same values as for Low, Mid and High range in table 4.3.1.1.1.80-1 for bandwidth=10 MHz and SCS=15 kHz.				
n81	15	10	52	Uplink	Low, Mid, High	Same values as for Low, Mid and High range in table 4.3.1.1.1.81-1 for bandwidth=10 MHz and SCS=15 kHz.				
n82	15	10	52	Uplink	Low, Mid, High	Same values as for Low, Mid and High range in table 4.3.1.1.1.82-1 for bandwidth=10 MHz and SCS=15 kHz.				
n83	15	10	52	Uplink	Low, Mid, High	Same values as for Low, Mid and High range in table 4.3.1.1.1.83-1 for bandwidth=10 MHz and SCS=15 kHz.				
n84	15	10	52	Uplink	Low, Mid, High	Same values as for Low, Mid and High range in table 4.3.1.1.1.84-1 for bandwidth=10 MHz and SCS=15 kHz.				
n86	15	10	52	Uplink	Low, Mid, High	Same values as for Low, Mid and High range in table 4.3.1.1.1.86-1 for bandwidth=10 MHz and SCS=15 kHz.				
n97	15	10	52	Uplink	Low, Mid, High	Same values as for Low, Mid and High range in table 4.3.1.1.1.97-1 for bandwidth=10 MHz and SCS=15 kHz.				

n98	15	10	52	Uplink	Low, Mid, High	Same values as for Low, Mid and High range in table 4.3.1.1.1.98-1 for bandwidth=10 MHz and SCS=15 kHz.
n99	15	10	52	Uplink	Low, High	Same values as for Low and High range in clause 4.3.1.1.1.99-1 for bandwidth=10 MHz and SCS=15 kHz.

Table 6.2.3.1-8: Test frequencies for NR FR1 bands configuring a BWP without CORESET#0

NR Band	SCS [kHz] Note 2	CBW [MHz] Note 3	carrier Bandwidth [PRBs]	Range		Carrier centre [MHz]	point A [MHz]	offsetToCarrier [Carrier PRBs]	SS block SCS [kHz] Note 4	absolute FrequencySSB [ARFCN] Note 5	k_{SSB}	CORE SET#0 Index (Offset [RBs]) Note 1	offsetToPointA (SIB1) [PRBs] Note 1	absoluteFrequencySSB for NCD-SSB [ARFCN]	Rbstart of BWP	LRB of BWP	location AndBandwidth of BWP
n5	15	20	106	Downlink	Low	Same values as for Low range in clause 4.3.1.1.1.5 for bandwidth=20 MHz and SCS=15 kHz.								177312	80	25	6680
				Uplink	Low	Same values as for Low range in clause 4.3.1.1.1.5 for bandwidth=20 MHz and SCS=15 kHz.								-	80	25	6680
n8	15	20	106	Downlink	Low	Same values as for Low range in clause 4.3.1.1.1.8 for bandwidth=20 MHz and SCS=15 kHz.								188512	80	25	6680
				Uplink	Low	Same values as for Low range in clause 4.3.1.1.1.8 for bandwidth=20 MHz and SCS=15 kHz.								-	80	25	6680
n12	15	15	79	Downlink	Low	Same values as for Low range in clause 4.3.1.1.1.12 for bandwidth=15 MHz and SCS=15 kHz.								148362	54	25	6654
				Uplink	Low	Same values as for Low range in clause 4.3.1.1.1.12 for bandwidth=15 MHz and SCS=15 kHz.								-	54	25	6654
n13	15	10	52	Downlink	Low	Same values as for Low range in clause 4.3.1.1.1.13 for bandwidth=10 MHz and SCS=15 kHz.								151668	24	25	6624
				Uplink	Low	Same values as for Low range in clause 4.3.1.1.1.13 for bandwidth=10 MHz and SCS=15 kHz.								-	24	25	6624
n14	15	10	52	Downlink	Low	Same values as for Low range in clause 4.3.1.1.1.14 for bandwidth=10 MHz and SCS=15 kHz.								153068	24	25	6624
				Uplink	Low	Same values as for Low range in clause 4.3.1.1.1.14 for bandwidth=10 MHz and SCS=15 kHz.								-	24	25	6624
n20	15	20	106	Downlink	Low	Same values as for Low range in clause 4.3.1.1.1.20 for bandwidth=20 MHz and SCS=15 kHz.								161712	80	25	6680
				Uplink	Low	Same values as for Low range in clause 4.3.1.1.1.20 for bandwidth=20 MHz and SCS=15 kHz.								-	80	25	6680
n24	15	10	52	Downlink	Low	Same values as for Low range in clause 4.3.1.1.1.24 for bandwidth=10 MHz and SCS=15 kHz.								306668	24	25	6624

				Uplink	Low	Same values as for Low range in clause 4.3.1.1.1.24 for bandwidth=10 MHz and SCS=15 kHz.	-	24	25	6624
n26	15	20	106	Downlink	Low	Same values as for Low range in clause 4.3.1.1.1.26 for bandwidth=20 MHz and SCS=15 kHz.	175312	80	25	6680
				Uplink	Low	Same values as for Low range in clause 4.3.1.1.1.26 for bandwidth=20 MHz and SCS=15 kHz.	-	80	25	6680
n29	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
n30	15	10	52	Downlink	Low	Same values as for Low range in clause 4.3.1.1.1.30 for bandwidth=10 MHz and SCS=15 kHz.	471468	24	25	6624
				Uplink	Low	Same values as for Low range in clause 4.3.1.1.1.30 for bandwidth=10 MHz and SCS=15 kHz.	-	24	25	6624
n70	15	15	79	Downlink	Low	Same values as for Low range in clause 4.3.1.1.1.70 for bandwidth=15 MHz and SCS=15 kHz.	401562	54	25	6654
				Uplink	Low	Same values as for Low range in clause 4.3.1.1.1.70 for bandwidth=15 MHz and SCS=15 kHz.	-	54	25	6654
n71	15	20	106	Downlink	Low	Same values as for Low range in clause 4.3.1.1.1.71 for bandwidth=20 MHz and SCS=15 kHz.	126912	80	25	6680
				Uplink	Low	Same values as for Low range in clause 4.3.1.1.1.71 for bandwidth=20 MHz and SCS=15 kHz.	-	80	25	6680
n76	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
n91	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
n92	15	20	106	Downlink	Low	Same values as for Low range in clause 4.3.1.1.1.92 for bandwidth=20 MHz and SCS=15 kHz.	289912	80	25	6680
				Uplink	Low	Same values as for Low range in clause 4.3.1.1.1.92 for bandwidth=20 MHz and SCS=15 kHz.	-	80	25	6680
n93	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
n100	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
n1	15	50	270	Downlink	Low	Same values as for Low range in clause 4.3.1.1.1.1 for bandwidth=50 MHz and SCS=15 kHz.	431500	218	52	14243
				Uplink	Low	Same values as for Low range in clause 4.3.1.1.1.1 for bandwidth=50 MHz and SCS=15 kHz.	-	218	52	14243
n2	15	40	216	Downlink	Low	Same values as for Low range in clause 4.3.1.1.1.2 for bandwidth=40 MHz and SCS=15 kHz.	393456	162	52	14187
				Uplink	Low	Same values as for Low range in clause 4.3.1.1.1.2 for bandwidth=40 MHz and SCS=15 kHz.	-	162	52	14187
n3	15	50	270	Downlink	Low	Same values as for Low range in clause 4.3.1.1.1.3 for bandwidth=50 MHz and SCS=15 kHz.	370500	218	52	14243
				Uplink	Low	Same values as for Low range in clause 4.3.1.1.1.3 for bandwidth=50 MHz and SCS=15 kHz.	-	218	52	14243
n7	15	50	270	Downlink	Low	Same values as for Low range in clause 4.3.1.1.1.7 for bandwidth=50 MHz and SCS=15 kHz.	533500	218	52	14243
				Uplink	Low	Same values as for Low range in clause 4.3.1.1.1.7 for bandwidth=50 MHz and SCS=15 kHz.	-	218	52	14243

n25	15	40	216	Downlink	Low	Same values as for Low range in clause 4.3.1.1.1.25 for bandwidth=40 MHz and SCS=15 kHz.	393456	162	52	14187
				Uplink	Low	Same values as for Low range in clause 4.3.1.1.1.25 for bandwidth=40 MHz and SCS=15 kHz.	-	162	52	14187
n28	15	30	160	Downlink	Low	Same values as for Low range in clause 4.3.1.1.1.28 for bandwidth=30 MHz and SCS=15 kHz.	157120	108	52	14133
				Uplink	Low	Same values as for Low range in clause 4.3.1.1.1.28 for bandwidth=30 MHz and SCS=15 kHz.	-	108	52	14133
n65	15	20	106	Downlink	Low	Same values as for Low range in clause 4.3.1.1.1.65 for bandwidth=20 MHz and SCS=15 kHz.	425548	54	52	14079
				Uplink	Low	Same values as for Low range in clause 4.3.1.1.1.65 for bandwidth=20 MHz and SCS=15 kHz.	-	54	52	14079
n66	15	40	216	Downlink	Low	Same values as for Low range in clause 4.3.1.1.1.66 for bandwidth=40 MHz and SCS=15 kHz.	429456	162	52	14187
				Uplink	Low	Same values as for Low range in clause 4.3.1.1.1.66 for bandwidth=40 MHz and SCS=15 kHz.	-	162	52	14187
n74	15	20	106	Downlink	Low	Same values as for Low range in clause 4.3.1.1.1.74 for bandwidth=20 MHz and SCS=15 kHz.	298548	54	52	14079
				Uplink	Low	Same values as for Low range in clause 4.3.1.1.1.74 for bandwidth=20 MHz and SCS=15 kHz.	-	54	52	14079
n75	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
n94	15	20	106	Downlink	Low	Same values as for Low range in clause 4.3.1.1.1.94 for bandwidth=20 MHz and SCS=15 kHz.	289948	54	52	14079
				Uplink	Low	Same values as for Low range in clause 4.3.1.1.1.94 for bandwidth=20 MHz and SCS=15 kHz.	-	54	52	14079
n109	15	30	160	Downlink	Low	Same values as for Low range in clause 4.3.1.1.1.109 for bandwidth=30 MHz and SCS=15 kHz.	288050	108	52	14133
				Uplink	Low	Same values as for Low range in clause 4.3.1.1.1.109 for bandwidth=30 MHz and SCS=15 kHz.	-	108	52	14133
n34	15	15	79	Downlink & Uplink	Low	Same values as for Low range in clause 4.3.1.1.1.34 for bandwidth=15 MHz and SCS=15 kHz.	404562	54	25	6654
n51	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
n53	15	10	52	Downlink & Uplink	Low	Same values as for Low range in clause 4.3.1.1.1.53 for bandwidth=10 MHz and SCS=15 kHz.	498168	24	25	6624
n54	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
n101	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
n38	30	40	106	Downlink & Uplink	Low	Same values as for Low range in clause 4.3.1.1.1.38 for bandwidth=40 MHz and SCS=30 kHz.	520952	80	24	6405
n39	30	40	106	Downlink & Uplink	Low	Same values as for Low range in clause 4.3.1.1.1.39 for bandwidth=40 MHz and SCS=30 kHz.	382952	80	24	6405
n40	30	80	217	Downlink & Uplink	Low	Same values as for Low range in clause 4.3.1.1.1.40 for bandwidth=80 MHz and SCS=30 kHz.	475020	192	24	6517
n48	30	40	106	Downlink & Uplink	Low	Same values as for Low range in clause 4.3.1.1.1.48 for bandwidth=40 MHz and SCS=30 kHz.	638984	80	24	6405

n50	30	60	162	Downlink & Uplink	Low	Same values as for Low range in clause 4.3.1.1.1.50 for bandwidth=60 MHz and SCS=30 kHz.	297512	138	24	6463
n41	30	100	273	Downlink & Uplink	Low	Same values as for Low range in clause 4.3.1.1.1.41 for bandwidth=100 MHz and SCS=30 kHz.	518310	222	51	13972
n77	30	100	273	Downlink & Uplink	Low	Same values as for Low range in clause 4.3.1.1.1.77 for bandwidth=100 MHz and SCS=30 kHz.	626370	222	51	13972
n78	30	100	273	Downlink & Uplink	Low	Same values as for Low range in clause 4.3.1.1.1.78 for bandwidth=100 MHz and SCS=30 kHz.	626370	222	51	13972
n79	30	100	273	Downlink & Uplink	Low	Same values as for Low range in clause 4.3.1.1.1.79 for bandwidth=100 MHz and SCS=30 kHz.	699704	222	51	13972
n104	30	100	273	Downlink & Uplink	Low	Same values as for Low range in clause 4.3.1.1.1.104 for bandwidth=100 MHz and SCS=30 kHz.	834704	222	51	13972
Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-1 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2. Note 2: Subcarrier spacing is configured according to Table 6.2.3.1-1 to 6.2.3.1-5. Note 3: Channel bandwidth is configured according to highest mandatory UL and DL channel bandwidth in clause 4.3.1. Note 4: SS block SCS for both CD-SSB and NCD-SSB. Note 5: AbsoluteFrequencySSB for CD-SSB Note 6: n29,n75,n76 are SDL band Note 7: The maximum carrierBandwidth for n91,n93,n100,n51 and n101 with signalling test SCS in 6.2.3.1-1 to 6.2.3.1-5 are no more than 25RB										

Table 6.2.3.1-9: Test frequencies for NR FR2 bands configuring a BWP without CORESET#0

NR Band	SCS [kHz] Note 2	CBW [MHz] Note 3	carrier Bandwidth [PRBs]	Range		Carrier centre [MHz]	point A [MHz]	offsetToCarrier [Carrier PRBs]	SS block SCS [kHz] Note 4	absolute FrequencySSB [ARFCN] Note 5	k_{SSB}	CORE SET#0 Index (Offset [RBs]) Note 1	offsetToPointA (SIB1) [PRBs] Note 1	absolute FrequencySSB for NCD-SSB [ARFCN]	Rbstart of BWP	LRB of BWP	location AndBandwidth of BWP
n257	120	200	264	Downlink & Uplink	Low	Same values as for Low range in clause 4.3.1.2.1.1 for bandwidth=200 MHz and SCS=120 kHz.								2178712	66	66	17941
n258	120	200	264	Downlink & Uplink	Low	Same values as for Low range in clause 4.3.1.2.1.2 for bandwidth=200 MHz and SCS=120 kHz.								2028712	66	66	17941
n259	120	200	264	Downlink & Uplink	Low	Same values as for Low range in clause 4.3.1.2.1.3 for bandwidth=200 MHz and SCS=120 kHz.								3045376	66	66	17941
n260	120	200	264	Downlink & Uplink	Low	Same values as for Low range in clause 4.3.1.2.1.4 for bandwidth=200 MHz and SCS=120 kHz.								2878712	66	66	17941
n261	120	200	264	Downlink & Uplink	Low	Same values as for Low range in clause 4.3.1.2.1.5 for bandwidth=200 MHz and SCS=120 kHz.								2245376	66	66	17941
Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-1 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.																	

Note 2:	Subcarrier spacing is configured according to Table 6.2.3.1-6.
Note 3:	Channel bandwidth is configured according to highest mandatory UL and DL channel bandwidth in clause 4.3.1.
Note 4:	SS block SCS for both CD-SSB and NCD-SSB.
Note 5:	AbsoluteFrequencySSB for CD-SSB

6.2.3.2 Test frequencies for EN-DC band combinations for signalling testing

6.2.3.2.1 General

The default channel bandwidths for EN-DC signalling test are specified per NR and E-UTRA band. The test frequencies are defined so that no frequency overlapping takes place, in order to avoid unnecessary inter-frequency interference.

6.2.3.2.2 E-UTRA 1CC and NR 1CC

For EN-DC Inter-band case with E-UTRA 1CC and NR 1CC (one E-UTRA band and one NR band) the EN-DC configurations are specified in clause 4.3.1.4.1.2 for EN-DC with NR FR1 and 4.3.1.5.1.2 for EN-DC with NR FR2.

The E-UTRA and NR test frequencies are specified in TS 36.508 [2], clause 6.2.3.1 for the E-UTRA band (E-UTRA f1, f2, f3 and f4); and in clause 6.2.3.1 for the NR band (NRf1, NRf2, NRf3, NRf4) and for the secondary NR band (NRf5, NRf6, NRf7) of the secondary EN-DC inter-band configuration.

For EN-DC Intra-band Contiguous case with E-UTRA 1CC and NR 1CC the EN-DC configurations and the test frequencies are specified in Table 6.2.3.2-1.

For EN-DC Intra-band Non-Contiguous with E-UTRA 1CC and NR 1CC case the EN-DC configurations and test frequencies are specified in Table 6.2.3.2-2.

For EN-DC Intra-Band Contiguous and EN-DC Intra-Band Non-Contiguous cases with E-UTRA 1CC and NR 1CC the mapping of frequency ranges to NR test frequencies NRf1, NRf2, NRf3, and NRf4 to PSCell; and to E-UTRA test frequencies f1, f2, f3, and f4 for PCell are as follows:

- for band combinations with only one test frequency: Low Range (NRf1, f1);
- for band combinations with up to two frequencies: Low Range (NRf1, f1), High Range (NRf2, f2);
- for band combinations with up to three frequencies: Mid Range (NRf3, f3), Low Range (NRf1, f1) and High Range (NRf2, f2);
- for band combinations with up to four frequencies: Mid-Low Range (NRf3, f3), High Range (NRf2, f2), Low Range (NRf1, f1) and Mid-High Range (NRf4, f4).

Table 6.2.3.2.2-1: Test frequencies for EN-DC Intra-band Contiguous configurations with E-UTRA 1CC and NR 1CC

EN-DC channel bandwidth combination	CC	Bandwidth [MHz]	carrierBandwidth [PRBs]	Range		Carrier centre [MHz] Note 2	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequencyPointA [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS [kHz]	GS CN	absoluteFrequencySSB [ARFCN]	k_{SSB}	Offset Carrier CORESET#0 [RBs]	CORESET#0 Index (Offset [RBs])	offsetToPointA (SIB1) [PRBs]
DC_(n) 41AA	E-UTRA CC 1	20	100	Dow nlink & Uplink	Lo w, Hi gh	Same values as for Low and High range values in Table 4.3.1.4.2.41.1-2 (SCS 30 kHz, 30 kHz NR raster and NR CC at the band edges) and EN-DC channel bandwidth combination “E-UTRA: 20MHz + NR: 60MHz”.											
	NR CC 1	60	162	Dow nlink & Uplink	Lo w, Hi gh												
DC_(n) 71AA	E-UTRA	5	25	Dow nlink	Lo w, Mi d, Hi gh	Same values as for Low, Mid and High range values in Table 4.3.1.4.2.71.1-1 (SCS 15 kHz, 100 kHz NR raster and NR CC at the band edges) and EN-DC channel bandwidth combination “E-UTRA: 5MHz + NR: 5MHz”.											
	CC 1			Uplink	Lo w, Mi d, Hi gh												
	NR	5	25	Dow nlink	Lo w, Mi d, Hi gh												
	CC 1			Uplink	Lo w, Mi d, Hi gh												

Table 6.2.3.2-2: Test frequencies for EN-DC Intra-Band Non-Contiguous configurations with E-UTRA 1CC and NR 1CC

EN-DC channel bandwidth combination	CC	Bandwidth [MHz]	carrierBandwidth [PRBs]	Range		Carrier centre [MHz] Note 2	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequencyPointA [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS [kHz]	GS CN	absoluteFrequencySSB [ARFCN]	k_{SSB}	Offset Carrier CORE SET#0 [RBs]	CORE SET#0 Index (Offset [RBs])	offsetToPointA (SIB1) [PRBs]
DC_2A_n2A	E-UTRA CC 1	20	100	Downlink	Low	Same values as for Test Frequency ID = "Low with maxWgap (NR – E-UTRA)" in Table 4.3.1.4.3.2.1-1 with NR SCS=15 kHz and CBW=10MHz; and E-UTRA CBW=20 MHz.											
				Uplink	Low												
	NR CC 1	10	52	Downlink	Low												
				Uplink	Low												
DC_41A_n41A	E-UTRA CC 1	20	100	Downlink & Uplink	Low	Same values as for Test Frequency ID = "Low with maxWgap (NR – E-UTRA)" in Table 4.3.1.4.41.1-1 with NR SCS=30 kHz and CBW=60MHz; and E-UTRA CBW=20 MHz.											
	NR CC 1	60	162	Downlink & Uplink	Low												
DC_66A_n66A	E-UTRA CC 1	20	100	Downlink	Low	Same values as for Test Frequency ID = "Low with maxWgap (NR – E-UTRA)" in Table 4.3.1.4.3.66.1-1 with NR SCS=15 kHz and CBW=10MHz; and E-UTRA CBW=20 MHz using paired high.											
				Uplink	Low												
	NR CC 1	10	52	Downlink	Low												
				Uplink	Low												

6.2.3.2.3 E-UTRA 1CC and NR CA 2CC

For EN-DC Inter-band case with E-UTRA 1CC and NR CA 2CC the EN-DC configurations are specified in clauses 4.3.1.4.1.2 (two bands) and 4.3.1.4.1.3 (three bands) for EN-DC and NR CA 2CC with FR1 bands, 4.3.1.5.1.2 (two bands) and 4.3.1.5.1.3 (three bands) for EN-DC with NR CA 2CC with FR2 bands and 4.3.1.6.1.2 for EN-DC and NR CA 2CC with FR1 and FR2 bands.

For EN-DC Inter-band case (3 bands), the E-UTRA test frequencies are specified in TS 36.508 [2], clause 6.2.3.1 for the E-UTRA band (E-UTRA f1) and the NR test frequencies are specified in clause 6.2.3.1 for the NR band used as PSCell (NRf1, NRf2, NRf3, NRf4) and for the NR band used as SCell (NRf5, NRf6, NRf7).

For EN-DC Inter-band case (2 bands) with NR Intra-band contiguous CA 2CC and NR Intra-band non-contiguous CA 2CC, the E-UTRA test frequencies are specified in TS 36.508 [2], clause 6.2.3.1 for the E-UTRA band (E-UTRA f1) and the NR test frequencies are specified in clause 6.2.3.4 for the NR CA CC1 used as PSCell (NRf1, NRf3) and for the NR CA CC2 used as SCell (NRf2, NRf4).

For EN-DC Intra-band Contiguous case with E-UTRA 1CC and NR CA 2CC the EN-DC configurations and the test frequencies are specified in Table 6.2.3.2.3-1.

For EN-DC Intra-band Non-Contiguous case with E-UTRA 1CC and NR 2CC the EN-DC configurations and test frequencies are specified in Table 6.2.3.2.3-2.

For EN-DC Intra-Band Contiguous and EN-DC Intra-Band Non-Contiguous cases with E-UTRA 1CC and NR CA 2CC the mapping of frequency ranges to NR test frequencies NRf1 for PSCell (CC1) and NRf2 for SCell (CC2); and to E-UTRA test frequency f1 for PCell is:

- for band combinations with only one test frequency: Low Range (NRf1=CC1, NRf2=CC2, f1); and
- for band combinations with up to two frequencies: Low Range (NRf1=CC1, NRf2=CC2, f1), High Range (NRf3=CC1, NRf4=CC2, f2).

Editor's note: No EN-DC Intra-band Contiguous configurations with NR CA 2CC have yet been introduced in TS 38.101-3.

Table 6.2.3.2.3-1: Test frequencies for EN-DC Intra-band Contiguous configurations with E-UTRA 1CC and NR CA 2CC

FFS

Editor's note: No EN-DC Intra-band Non-Contiguous configurations with NR CA 2CC have yet been introduced in TS 38.101-3.

Table 6.2.3.2.3-2: Test frequencies for EN-DC Intra-Band Non-Contiguous configurations with E-UTRA 1CC and NR CA 2CC

FFS

6.2.3.2a Test frequencies for NE-DC band combinations for signalling testing

6.2.3.2a.1 General

The default channel bandwidths for NE-DC signalling test are specified per NR and E-UTRA band. The test frequencies are defined so that no frequency overlapping takes place, in order to avoid unnecessary inter-frequency interference.

6.2.3.2a.2 NR 1CC and E-UTRA 1CC

For NE-DC Inter-band case with NR 1CC and E-UTRA 1CC (one NR band and one E-UTRA band) the NE-DC configurations are specified in clause 4.3.1.4a.1.2 for NE-DC with NR FR1.

The NR and E-UTRA test frequencies are specified in clause 6.2.3.1 for the NR band (NRf1, NRf2, NRf3, NRf4) and for the secondary NR band (NRf5, NRf6, NRf7) of the secondary NE-DC inter-band configuration; and in TS 36.508 [2], clause 6.2.3.1 for the E-UTRA band (E-UTRA f1, f2, f3 and f4).

6.2.3.3 Test frequencies for NR and E-UTRA Inter-RAT signalling testing

For NR and E-UTRA Inter-RAT testing, it is assumed that the NR and E-UTRA bands under test are different in order to avoid unnecessary interferences:

- for NR bands, the frequencies NRf1, NRf2, NRf3 and NRf4 are mapped as per clause 6.2.3.1
- for E-UTRA bands, the signalling test frequencies E-UTRA f1, E-UTRA f2, E-UTRA f3 and E-UTRA f4 are mapped respectively on f1, f2, f3 and f4 as per TS 36.508 [2] clause 6.2.3.1.

6.2.3.4 Test frequencies for NR CA configurations for signalling testing

The default channel bandwidths for NR CA signalling test are specified per NR band. The test frequencies are defined so that no frequency overlapping takes place, in order to avoid unnecessary inter-frequency interference.

For NR CA Inter-band case (2 bands) the NR CA configurations are specified in clause 4.3.1.1.2 for NR CA within FR1, in clause 4.3.1.2.2 for NR CA within FR2 and in clause 4.3.1.3.1 for NR CA between FR1 and FR2. NR test frequencies are specified in clause 6.2.3.1 except for those listed in Table 6.2.3.4-0 for the NR band used as PCell (NRf1, NRf2, NRf3, NRf4) and for the NR band used as SCell (NRf5, NRf6, NRf7).

For NR CA Intra-band Contiguous case (2 CCs) the NR CA configurations and the test frequencies are specified in Table 6.2.3.4-1 for FR1 and in Table 6.2.3.4-2 for FR2. For NR CA Intra-band Non-Contiguous (2 CCs) case the NR CA configurations and test frequencies are specified in Table 6.2.3.4-3 for FR1 and in Table 6.2.3.4-4 for FR2.

For NR CA Intra-Band Contiguous case (2 CCs) and NR CA Intra-Band Non-Contiguous case (2 CCs) the mapping of frequency ranges to NR test frequencies NRf1, NRf2, NRf3, and NRf4 and PCell (CC1) and SCell (CC2) are as follows:

- for Intra-band configurations with only one test frequency: Low Range (NRf1=CC1 and NRf2=CC2); and
- for Intra-band configurations with up to two frequencies: Low Range (NRf1=CC1 and NRf2=CC2), High Range (NRf3=CC1 and NRf4=CC2)

For NR CA Intra-band Contiguous case (3 CCs) the NR CA configurations and the test frequencies are specified in Table 6.2.3.4-1a for FR1 and in Table 6.2.3.4-2a for FR2.

For NR CA Intra-Band Contiguous case (3CCs) the mapping of frequency ranges to NR test frequencies NRf1, NRf2, and NRf3 and PCell (CC1) and SCell (CC2, CC3) are as follows:

- For Intra-band configurations with up to three frequencies: Low Range (NRf1=CC1, NRf2=CC2, NRf3=CC3)

Table 6.2.3.4-0: Test frequencies for NR bands used as PCell or SCell with in FR1

NR band configuration	CC	CBW [MHz]	carrier bandwidth [PRBs]	Range	carrier centre [MHz]	carrier centre [ARFCN]	point A [MHz]	absolute frequency point A [ARFCN]	offset to carrier [Carrier PRBs]	SSB offset [kHz]	SSB offset [MHz]	absolute frequency SSB [ARFCN]	k_{SS}	Offset Carrier CO RES ET# 0 [RBs]	CO RES ET# 0 Index (Offset [RBs])	offset to point A (SIB 1) [PRBs]
n77	CC 1/ CC 2	20	51	Low, High	Same values as for Low and High in Table 4.3.1.1.1.77-2.											
				Mid-L	3603.33	6402.22	3589.83	639322	12	30	7915	639936	14	0	3 (3)	30

				o w												
				Mi d- Hi g h	38 96 .6 7	65 97 78	38 78 .8 5	658590	24		8 1 1 8	659424	1 8	0	0 (0)	48
n78	CC 1/ CC 2	2 0	51	L o w, Hi g h	Same values as for Low and High in Table 4.3.1.1.1.78-2.											
				Mi d- L o w	34 70 .0 1	63 13 34	34 56 .5 1	630434	12	3 0	7 8 2 2	631008	2 2	0	1 (1)	26
				Mi d- Hi g h	36 30	64 20 00	36 12 .1 8	640812	24		7 9 3 3	641664	1 2	0	1 (1)	50
n79	CC 1/ CC 2	2 0	51	L o w, Hi g h	Same values as for Low and High in Table 4.3.1.1.1.79-2.											
				Mi d- L o w	46 03 .3 5	70 68 90	45 89 .8 5	705990	12	3 0	8 6 0 9	706560	1 8	1	0 (0)	26
				Mi d- Hi g h	47 96 .6 7	71 97 78	47 78 .8 5	718590	24		8 7 4 3	719424	1 8	0	0 (0)	48

Table 6.2.3.4-1: Test frequencies for NR CA Intra-band Contiguous configurations with FR1 (2CC)

NR CA configuration	C C	CB W [MHz]	carrierBandwidth [PRBs]	Range	Carrier centre [MHz] Note 2	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequencyPointA [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS [kHz]	GS CN	absoluteFrequencySSB [ARFCN]	k_{SSE}	Offset Carrier CORESET#0 [RBs]	CORESET#0 Index (Offset [RBs])	offsetToPointA (SIB1) [PRBs]
CA_n5B	C C1	5	25	Low	Same values as for Low CC1/CC2 in Table 4.3.1.1.3.5.1-1 for CBW combination 5+5 and SCS=15 kHz.											
	C C2	5	25	High												
CA_n41 C	C C1	60	162	Low	Same values as for Low CC1/CC2 and High CC1/CC2 ranges in 4.3.1.1.3.41.1-1 for CBW combination 60+60 and SCS=30 kHz.											
	C C2	60	162	High												
CA_n48 B	C C1	10	24	Low	Same values as for Low CC1/CC2 and High CC1/CC2 ranges in Table 4.3.1.1.3.48.1-2 for CBW combination 10+10 and SCS=30 kHz.											
	C C2	10	24	High												
CA_n48 C	C C1	10	24	Low	Same values as for Low CC1/CC2 and High CC1/CC2 ranges in Table 4.3.1.1.3.48.2-1 for CBW combination 10+100 and SCS=30 kHz.											
	C C2	100	273	High												
CA_n66 B	C C1	10	52	Low	Same values as for Low CC1/CC2 and High CC1/CC2 ranges in Table 4.3.1.1.3.66.1-1 for CBW combination 10+15 and SCS=15 kHz.											
	C C2	15	79	High												
CA_n71 B	C C1	10	52	Low	Same values as for Low CC1/CC2 and High CC1/CC2 ranges in Table 4.3.1.1.3.71.2-1 for CBW combination 10+15 and SCS=15 kHz.											
	C C2	15	79	High												
CA_n77 C	C C1	60	162	Low	Same values as for Low CC1/CC2 and High CC1/CC2 ranges in Table 4.3.1.1.3.77.1-1 for CBW combination 60+60 and SCS=30 kHz.											
	C C2	60	162	High												
CA_n78 C	C C1	60	162	Low	Same values as for Low CC1/CC2 and High CC1/CC2 ranges in Table 4.3.1.1.3.78.1-1 for CBW combination 60+60 and SCS=30 kHz.											
	C C2	60	162	High												
CA_n79 C	C C1	60	162	Low	Same values as for Low and High ranges in Table 4.3.1.1.3.79.1-1 for CBW combination 60+60 and SCS=30 kHz.											

	C C2	60	162	Hig h												

Table 6.2.3.4-1a: Test frequencies for NR CA Intra-band Contiguous configurations with FR1 (3CC)

NR CA configur ation	C C	CB W [M Hz]	carrierBan dwidth [PRBs]	Ran ge	Carri er cent re [MH z] Not e 2	Carri er centr e [ARF CN]	poi nt A [M Hz]	absoluteFreque ncyPointA [ARFCN]	offsetToC arrier [Carrier PRBs]	SS blo ck SC S [kH z]	GS CN	absoluteFreque ncySSB [ARFCN]	k_{SSB}	Offset Carrier CORES ET#0 [RBs]	CORES ET#0 Index (Offset [RBs])	offsetToP ointA (SIB1) [PRBs]
CA_n78 D	C C1	100	273	Low	Same values as for Low range in Table 4.3.1.1.3.78.3-1 for CBW combination 100+100+100 and SCS=30 kHz.											
	C C2	100	273													
	C C3	100	273													

Table 6.2.3.4-2: Test frequencies for NR CA Intra-band Contiguous configurations with FR2 (2CC)

NR CA configur ation	C C	CBW [MHz]	carrierBan dwidth [PRBs]	Ran ge	Carri er cent re [MH z] Not e 2	Carri er centr e [ARF CN]	poi nt A [M Hz]	absoluteFreque ncyPointA [ARFCN]	offsetTo Carrier [Carrier PRBs]	SS blo ck SC S [kH z]	GS CN	absoluteFreque ncySSB [ARFCN]	k_{SSB}	Offset Carrier CORES ET#0 [RBs]	CORES ET#0 Index (Offset [RBs])	offsetTo PointA (SIB1) [PRBs]
CA_n25 7G	C C1 C C2	100+ 100	66+66	Low , Hig h	Same values as for Low CC1/CC2 and High CC1/CC2 ranges in Table 4.3.1.2.3.1.6-4 for CBW combination 100+100 and SCS=120 kHz.											
CA_n25 8G	C C1 C C2	100+ 100	66+66	Low , Hig h	Same values as for Low CC1/CC2 and High CC1/CC2 ranges in Table 4.3.1.2.3.2.6-2 for CBW combination 100+100 and SCS=120 kHz.											
CA_n26 0G	C C1 C C2	100+ 100	66+66	Low , Hig h	Same values as for Low CC1/CC2 and High CC1/CC2 ranges in Table 4.3.1.2.3.4.6-2 for CBW combination 100+100 and SCS=120 kHz.											

CA_n26 1G	C C1 C C2	100+ 100	66+66	Low , High	Same values as for Low CC1/CC2 and High CC1/CC2 ranges in Table 4.3.1.2.3.5.6-2 for CBW combination 100+100 and SCS=120 kHz.

Table 6.2.3.4-2a: Test frequencies for NR CA Intra-band Contiguous configurations with FR2 (3CC)

NR CA configu ration	C C	CBW [MHz]	carrierBand width [PRBs]	Range	Carrier centre [MHz] Note 2	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequencyPointA [ARFCN]	offsetTo Carrier [Carrier PRBs]	SS block SCS [kHz]	GS CN	absoluteFrequencySSB [ARFCN]	k_{SSB}	Offset Carrier CORESET#0 [RBs]	CORESET#0 Index (Offset [RBs])	offsetTo PointA (SIB1) [PRBs]
CA_n25 7H	C C1 C C2 C C3	100+100+100	66+66+66	Low	Same values as for Low range in Table 4.3.1.2.3.1.7-4 for CBW combination 100+100+100 and SCS=120 kHz.											
CA_n25 8H	C C1 C C2 C C3	100+100+100	66+66+66	Low	Same values as for Low range in Table 4.3.1.2.3.2.7-2 for CBW combination 100+100+100 and SCS=120 kHz.											
CA_n26 0H	C C1 C C2 C C3	100+100+100	66+66+66	Low	Same values as for Low range in Table 4.3.1.2.3.4.7-1 for CBW combination 100+100+100 and SCS=120 kHz.											

CA_n26 1H	C C 1 C C 2 C C 3	100+10 0+100	66+66+66	Low	Same values as for Low range in Table 4.3.1.2.3.5.7-2 for CBW combination 100+100+100 and SCS=120 kHz.

Table 6.2.3.4-3: Test frequencies for NR CA Intra-Band Non-Contiguous configurations with FR1

NR CA configuration	S B	CB W [M Hz]	carrierBandwidth [PRBs]	Range	Carrier centre [MHz] Note 2	Carrier centre [ARFCN]	point A [M Hz]	absoluteFrequencyPointA [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS [kHz]	GS CN	absoluteFrequencySSB [ARFCN]	k_{SSE}	Offset Carrier CORESET#0 [RBs]	CORESET#0 Index (Offset [RBs])	offsetToPointA (SIB1) [PRBs]
CA_n41(2A)	S B1 S B2	40+40	216+216	Low	Same values as for Low for CC1 and High for CC2 ranges in Table 4.3.1.1.5.41.1-1 for CBW combination 40+40 and SCS=15 kHz.											
CA_n48(2A)	S B1 S B2	10+10	24+24	Low	Same values as for Low for CC1 and High for CC2 ranges in Table 4.3.1.1.5.48.1-2 for CBW combination 10+10 and SCS=30 kHz.											
CA_n66(2A)	S B1 S B2	10+10	52+52	Low	Same values as for Low for CC1 and High for CC2 ranges in Table 4.3.1.1.5.66.1-1 for CBW combination 10+10 and SCS=15 kHz.											
CA_n71(2A)	S B1	10+10	52+52	Low	Same values as for Low for CC1 and High for CC2 ranges in Table 4.3.1.1.5.71.1-1 for CBW combination 10+10 and SCS=15 kHz.											
	S B2															
CA_n77(2A)	S B1	20+20	51+51	Low	Same values as for Low for CC1 and High for CC2 ranges in Table 4.3.1.1.5.77.1-2 for CBW combination 20+20 and SCS=30 kHz.											
	S B2															
CA_n78(2A)	S B1 S B2	50+50	133+ 133	Low	Same values as for Low for CC1 and High for CC2 ranges in Table 4.3.1.1.5.78.1-2 for CBW combination 50+50 and SCS=30 kHz.											

Table 6.2.3.4-4: Test frequencies for NR CA Intra-Band Non-Contiguous configurations with FR2

NR CA configuration	C C	CB W [M Hz]	carrierBandwidth [PRBs]	Range	Carrier centre [MHz]	Carrier centre [ARFCN]	point A [M Hz]	absoluteFrequencyPointA [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS [kHz]	GS CN	absoluteFrequencySSB [ARFCN]	k_{SSE}	Offset Carrier CORESET#0 [RBs]	CORESET#0 Index (Offset [RBs])	offsetToPointA (SIB1) [PRBs]

					Not e 2											
CA_n26 1(2A)	C C1 C C2	100 100	66 66	Low	Same values as for Low for CC1 and High for CC2 ranges in Table 4.3.1.2.4.5.1-1 for CBW combination 100+100 and SCS=120 kHz.											

6.2.3.5 Test frequencies for MFBI signalling testing

For signalling test cases, the mapping of MFBI frequency ranges to NR test frequencies are as follows: Low Range (NRf1), Mid Range (NRf2) and High Range (NRf3).

The test frequencies, subcarrier spacing, default channel bandwidth, SS/PBCH block and CORESET#0 parameters for signalling are specified in Table 6.2.3.5-1 and Table 6.2.3.5-1A(for RedCap UE).

Table 6.2.3.5-1: Test frequencies for MFBI NR bands in FR1 for non-(e)RedCap UE

NR Band	MFBI overlapping NR Band	SCS [kHz]	Band width [MHz]	carrier Bandwidth [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absolute Frequency PointA [ARFCN]	offsetTo Carrier [Carrier PRBs]	SS block SCS [kHz]	GS CN	absolute Frequency SSB [ARFCN]	k_{SSB}	Offset Carrier CORESET#0 [RBs]	CORESET#0 Index (Offset [RBs])	offsetTo Point A (SIB1) [PRBs]
n2	n25	15	10	52	Downlink	Low, Mid, High	Same values as for Low, Mid and High range in clause 4.3.1.1.1.2 for bandwidth=10 MHz and SCS=15 kHz.											
					Uplink	Low, Mid, High	Same values as for Low, Mid and High range in clause 4.3.1.1.1.2 for bandwidth=10 MHz and SCS=15 kHz.											
n25	n2	15	10	52	Downlink	Low, Mid, High	Same values as for Low, Mid and High range in clause 4.3.1.1.1.2 for bandwidth=10 MHz and SCS=15 kHz.											
					Uplink	Low, Mid, High	Same values as for Low, Mid and High range in clause 4.3.1.1.1.2 for bandwidth=10 MHz and SCS=15 kHz.											
n38	n41	15	10	52	Downlink & Uplink	Low, Mid, High	Same values as for Low, Mid and High range in clause 4.3.1.1.1.38 for bandwidth=10 MHz and SCS=15 kHz.											
n41	n38	15	10	52	Downlink & Uplink	Low, Mid, High	Same values as for Low, Mid and High range in clause 4.3.1.1.1.38 for bandwidth=10 MHz and SCS=15 kHz.											
n77	n78	30	100	273	Downlink & Uplink	Low, Mid, High	Same values as for Low, Mid and High range in clause 4.3.1.1.1.78 for bandwidth=100 MHz and SCS=30 kHz.											
n78	n77	30	100	273	Downlink & Uplink	Low, Mid, High	Same values as for Low, Mid and High range in clause 4.3.1.1.1.78 for bandwidth=100 MHz and SCS=30 kHz.											

Table 6.2.3.5-1A: Test frequencies for MFBI NR bands in FR1 for (e)RedCap UE

NR Band	MFBI overlappin g NR Band	SCS [kHz]	Band width [MHz]	carrie rBand width h [PRBs]	Range		Carrier centre [MHz]	Carri er centr e [ARF CN]	point A [MHz]	absolu teFreq uency PointA [ARFC N]	offsetTo Carrier [Carrier PRBs]	SS block SCS [kHz]	GS CN	absolu teFreq uency SSB [ARFC N]	k_{ss}	Offset Carrier CORE SET#0 [RBs]	COR ESET #0 Index (Offs et [RBs])	offsetT oPoint A (SIB1) [PRBs]
n2	n25	Same values as in Table 6.2.3.5-1																
n25	n2	Same values as in Table 6.2.3.5-1																
n38	n41	Same values as in Table 6.2.3.5-1																
n41	n38	Same values as in Table 6.2.3.5-1																
n77	n78	30	20	51	Downlink & Uplink	Low, Mid, High	Same values as for Low, Mid and High range in clause 4.3.1.1.1.78 for bandwidth=20 MHz and SCS=30 kHz.											
n78	n77	30	20	51	Downlink & Uplink	Low, Mid, High	Same values as for Low, Mid and High range in clause 4.3.1.1.1.78 for bandwidth=20 MHz and SCS=30 kHz.											

Table 6.2.3.5-2: Test frequencies for MFBI NR bands in FR2

NR Band	MFBI overlapping NR Band	SCS [kHz]	Bandwidth [MHz]	carrierBandwidth [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absolute FrequencyPoint A[ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS [kHz]	GSCN	absolute FrequencySSB [ARFCN]	k_{SSB}	Offset Carrier CORESET #0 [RBs] Note 2	CORESET #0 Index (Offset [RBs]) Note 1	offsetToPointA (SIB1) [PRBs] Note 1
n257	n258	120	100	66	Downlink & Uplink	Low	26557.08	2055117	26509.56	2054325	0	120	22388	2054683	0	1 (4)	1	8
						Mid	27006.36	2062605	26811.96	2059365	102		22414	2062171	0	1 (4)	1	212
						High	27438.36	2069805	26665.08	2056917	504		22439	2069371	0	1 (4)	1	1016
n257	n261	120	100	66	Downlink & Uplink	Low, Mid, High	Same values as for Low, Mid and High range in clause 4.3.1.2.1.5 for bandwidth=100 MHz and SCS=120 kHz.											
n258	n257	120	100	66	Downlink	Low	26557.08	2055117	26509.56	2054325	0	120	22388	2054683	11	0	1 (4)	8
						Mid	27006.36	2062605	26811.96	2059365	102		22414	2062171	11	0	1 (4)	212

					& Uplink	High	27438.36	2069805	26665.08	2056917	504		22439	2069371	11	0	1 (4)	1016
n261	n257	120	100	66	Downlink & Uplink	Low, Mid, High	Same values as for Low, Mid and High range in clause 4.3.1.2.1.5 for bandwidth=100 MHz and SCS=120 kHz.											
Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-1 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.																		
Note 2: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs.																		

6.2.3.6 Test frequencies for NR DC configurations for signalling testing

The default channel bandwidths for NR DC signalling test are specified per NR band. The test frequencies are defined so that no frequency overlapping takes place, in order to avoid unnecessary inter-frequency interference.

For NR DC in FR1 (2 bands, 2CC) the NR DC configurations are specified in clause 4.3.1.1.7.1 for 1CC FR1 and 1CC FR1. NR test frequencies are specified in clause 6.2.3.1 for the NR band used as PCell (NRf1, NRf2, NRf3, NRf4) and for the NR band used as PSCell (NRf5, NRf6, NRf7).

For NR DC between FR1 and FR2 (2 bands, 2CC) the NR DC configurations are specified in clause 4.3.1.3.2.1 for 1CC FR1 and 1CC FR2. NR test frequencies are specified in clause 6.2.3.1 for the NR band used as PCell (NRf1, NRf2, NRf3, NRf4) and for the NR band used as PSCell (NRf5, NRf6, NRf7).

For NR DC between FR1 and FR2 with NR intra-band contiguous CA (2 bands, 3CC) the NR DC configurations are specified in clause 4.3.1.3.2.1 for 1CC FR1 and 2CC FR2. NR test frequencies are specified in clause 6.2.3.1 for the NR FR1 band used as PCell (NRf1) and in Table 6.2.3.4-2 for NR intra-band contiguous CA as PSCell (CC1, NRf5) and SCell (CC2, NRf6).

6.2.3.7 Test frequencies for NR sidelink configurations for signalling testing

The default channel bandwidths for NR sidelink signalling test are specified per NR sidelink operation band. The test frequencies are defined so that no frequency overlapping takes place, in order to avoid unnecessary inter-frequency interference.

For signalling test cases, the mapping of frequency ranges to NR sidelink test frequencies are as follows:

- for band with only one test frequency: Low Range (NRf1);
- for band with up to two test frequencies: Low Range (NRf1) and High Range (NRf2);
- for band with up to three test frequencies: Low Range (NRf1), Mid Range (NRf2) and High Range (NRf3);

The test frequencies, subcarrier spacing, default channel bandwidth and S-SSB parameters for signalling is specified in Table 6.2.3.7-1 for PC5-only operations.

For concurrent operation case the operation configurations are specified in clause 4.3.1.8.2.1 for inter-band concurrent cases. The test frequencies for signalling are specified in Table 6.2.3.7-1 for PC5 carrier and in clause 6.2.3.1 for Uu carrier.

For concurrent operation case the operation configurations are specified in Table 6.2.3.7-2 and Table 6.2.3.7-3 for intra-band concurrent cases.

For tests which need NR PC5 carrier and NR Uu carrier but not concurrent operation case, the test frequencies for signalling are specified in Table 6.2.3.7-1 for PC5 carrier in clause 6.2.3.1 for Uu carrier.

Table 6.2.3.7-1: Test frequencies for NR Sidelink operating bands using 10 MHz channel bandwidth

NR Band	SCS [kHz]	CBW [MHz]	carrierBandwidth [PRBs]	Range	Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	sl-absoluteFrequencyPointA [ARFCN]	offsetToCarrier [Carrier PRBs]	frequencyInfoSL [ARFCN]	sl-absoluteFrequencySSB [ARFCN]
n47	30	10	24	Low, Mid, High	Same values as for Low, Mid and High range in clause 4.3.1.8.1.2 for bandwidth=10 MHz and SCS=30 kHz. For <i>sl-absoluteFrequencySSB</i> , same value as for S-SSB Low in clause 4.3.1.8.1.2 for bandwidth=10 MHz and SCS=30 kHz is used.						
n79	30	10	24	Low, Mid, High	Same values as for Low, Mid and High range in clause 4.3.1.8.1.3 for bandwidth=10 MHz and SCS=30 kHz. For <i>sl-absoluteFrequencySSB</i> , same value as for S-SSB Low in clause 4.3.1.8.1.3 for bandwidth=10 MHz and SCS=30 kHz is used.						

Table 6.2.3.7-2: V2X Intra-band concurrent operation, SCS 30 kHz (NR CC)

V2X Intra-band concurrent operation	CBW [MHz]	carrier Bandwidth [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequencyPointA [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS [kHz]	GS CN	absoluteFrequencySSB [ARFCN]	k_s	Offset Carrier CORESET #0 [RBs] Note 2	CORESET#0 Index (Offset [RBs]) Note 1	offsetToPointA (SIB1) [PRBs] Note 1
V2X_n79B	40	106	Downlink & Uplink	Low, high	Same values as in Table 4.3.1.8.2.2.1.1-3 for CBW 40MHz and SCS=30kHz.											

Table 6.2.3.7-3: V2X Intra-band concurrent operation, SCS 30 kHz (SL CC)

V2X Intra-band concurrent operation	CBW [MHz]	carrier Bandwidth [PRBs]	Range	Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	sl-absoluteFrequencyPointA [ARFCN]	offsetToCarrier [Carrier PRBs]	frequencyInfoSL [ARFCN]	sl-absoluteFrequencySSB [ARFCN]
V2X_n79B	10	52	Low	Same values as in Table 4.3.1.8.2.2.1.1-4 for CBW 10MHz and SCS=30kHz. For <i>sl-absoluteFrequencySSB</i> , same value as for S-SSB Low in Table 4.3.1.8.2.2.1.1-4 for CBW 10MHz and SCS=30kHz is used.						

6.2.3.8 Test frequencies for NR NTN configurations for signalling testing

The default channel bandwidths for NR NTN signalling test are specified per NR NTN operation band.

For signalling test cases, the mapping of frequency ranges to NR NTN test frequencies are as follows:

- for band with only one test frequency: Low Range (NRf1);
- for band with up to two test frequencies: Low Range (NRf1) and High Range (NRf2);
- for band with up to three test frequencies: Low Range (NRf1), Mid Range (NRf2) and High Range (NRf3);

The test frequencies, subcarrier spacing, default channel bandwidth and S-SSB parameters for signalling are specified in Table 6.2.3.8-1 for NR NTN operations with default Tx-Rx frequency separation and Table 6.2.3.8-2 for flexible Tx-Rx frequency separation. Unless otherwise specified in a test case, the default Tx-Rx frequency separation as per Table 6.2.3.8-1 is applied.

Table 6.2.3.8-1: Test frequencies for NR NTN operating band using 5 MHz channel bandwidth

NR Band	SCS [kHz]	CBW [MHz]	carrierBandwidth [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequencyPointA [ARFCN]	offsetToCarrier [Carrier PRBs]	SSB block SCS [kHz]	GS CN	absoluteFrequencySSB [ARFCN]	k_{SS}	Offset Carrier CORESET #0 [RBs]	CORESET #0 Index (Offset [RBs]) Note 1	offsetToPoint A (SIB 1) [PRBs] Note 1
n254	15	5	25	Downlink	Low, Mid, High	Same values as for Low, Mid and High range in table 4.3.1.9.1.3-1 for bandwidth=5 MHz and SCS=15 kHz.											
				Uplink	Low, Mid, High	Same values as for Low, Mid and High range in table 4.3.1.9.1.3-1 for bandwidth=5 MHz and SCS=15 kHz.											
n255	15	5	25	Downlink	Low, Mid, High	Same values as for Low, Mid and High range in table 4.3.1.9.1.2-1 for bandwidth=5 MHz and SCS=15 kHz.											
				Uplink	Low, Mid, High	Same values as for Low, Mid and High range in table 4.3.1.9.1.2-1 for bandwidth=5 MHz and SCS=15 kHz.											
n256	15	5	25	Downlink	Low	Same values as for Low, Mid and High range in table 4.3.1.9.1.1-1 for bandwidth=5 MHz and SCS=15 kHz.											

					M i d , H i g h	
				Up lin k	L o w , M i d , H i g h	Same values as for Low, Mid and High range in table 4.3.1.9.1.1-1 for bandwidth=5 MHz and SCS=15 kHz.
Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-1 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2. Note 2: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs.						

Table 6.2.3.8-2: Test frequencies for NR NTN operating band with flexible Tx-Rx separation using 5 MHz channel bandwidth

NR Band	SCS [kHz]	CBW [MHz]	carrierBandwidth [PRBs]	Range		Carrier centre [ARFCN]	point A [MHz]	absoluteFrequencyPointA [ARFCN]	offsetToCarrier [Carrier PRBs]	SSB Location SCS [kHz]	GSN	absoluteFrequencySSB [ARFCN]	k_{SS}	Offset Carrier CORESET#0 [RBs]	CORESET#0 Index (Offset [RBs]) Note 1	offsetToPoint A (SIB1) [PRBs] Note 1
n255	15	5	25	Downlink	Low, Mid, High	Same values as for Low, Mid and High range in table 4.3.1.9.1.2a-1 for bandwidth=5 MHz and SCS=15 kHz.										
				Uplink	Low, Mid, High	Same values as for Low, Mid and High range in table 4.3.1.9.1.2a-1 for bandwidth=5 MHz and SCS=15 kHz.										

					g h	
n 2 5 6	1 5	5	25	Do wn lin k	L o w , M i d , H i g h	Same values as for Low, Mid and High range in table 4.3.1.9.1.1a-1 for bandwidth=5 MHz and SCS=15 kHz.
				Up lin k	L o w , M i d , H i g h	Same values as for Low, Mid and High range in table 4.3.1.9.1.1a-1 for bandwidth=5 MHz and SCS=15 kHz.
Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-1 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2. Note 2: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs.						

6.3 Reference system configurations

6.3.1 Default System Information configurations

6.3.1.1 Intra-frequency neighbouring cell list in SIB3 for NR cells

Intra-frequency neighbouring cell list for signalling test cases is defined in table 6.3.1.1-1. This table is referred to in the default contents of IE *intraFreqNeighCellList* in *SIB3* defined in table 4.6.2-2.

Table 6.3.1.1-1: Intra-frequency neighbouring cell lists for NR cells

cell ID	Test Frequency	intra-frequency neighbouring cell list			
		number of entries	physCellId[n]		
			1	1	3
NR Cell 1	NRf1	3	NR Cell 2	NR Cell 4	NR Cell 11
NR Cell 2	NRf1	3	NR Cell 1	NR Cell 4	NR Cell 11
NR Cell 4	NRf1	3	NR Cell 1	NR Cell 2	NR Cell 11
NR Cell 11	NRf1	3	NR Cell 1	NR Cell 2	NR Cell 4
NR Cell 3	NRf2	1	NR Cell 23	-	-
NR Cell 23	NRf2	1	NR Cell 3	-	-

Editor's Note: The intra-frequency NR neighbouring cell list for signalling NAS test cases when cells are on same PLMN is FFS.

6.3.1.2 Inter-frequency carrier frequency list in SIB4 for NR cells

Inter-frequency NR carrier frequency list for signalling test cases is defined in table 6.3.1.2-1. This table is referred to in the default contents of IE *interFreqCarrierFreqList* in *SIB4* defined in table 4.6.2-3.

Table 6.3.1.2-1: Inter-frequency carrier frequency lists for NR cells

cell ID	Test Frequency	interFreqCarrierFreqList			
		number of entries	dl-CarrierFreq[n]		
			1	2	3
NR Cell 1 NR Cell 2 NR Cell 4 NR Cell 11	NRf1 (Note 2)	3	NRf2	NRf3	NRf5
NR Cell 3 NR Cell 23	NRf2 (Note 2)	3	NRf1	NRf3	NRf5
NR Cell 6	NRf3 (Note 2)	3	NRf1	NRf2	NRf5
NR Cell 10	NRf5 (Note 3)	3	NRf1	NRf2	NRf3
Note 1: Depending on the Band under test, NRf3 may not be applicable. Note 2: In case of Test frequency NRf1, NRf2 and NRf3, dl-CarrierFreq NRf5 as part of inter-frequency list is applicable only in case of multi-band scenarios. Note 3: Test frequency NRf5 is applicable only in case of multi-band scenarios.					

Editor's Note: The inter-frequency NR carrier frequency list for signalling NAS test cases when cells are on same PLMN is FFS.

6.3.1.3 E-UTRA carrier frequency list in SIB5 for NR cells

The frequency mapping of E-UTRA cells are defined as per TS 36.508 [2] clause 4.4.2 and TS 36.508 [2] clause 6.3.2 for NGC NAS test cases, E-UTRA frequency mapping is according to clause 6.2.3.3. E-UTRA carrier frequency list for

signalling test cases is defined in table 6.3.1.3-1. This table is referred to in the default contents of IE *carrierFreqListEUTRA* in *SIB5* defined in table 4.6.2-4.

Table 6.3.1.3-1: E-UTRA carrier frequency lists for NR cells

interFreqCarrierFreqList	
number of entries	carrierFreq[n]
	1
1	E-UTRA f1
2	E-UTRA f2
3	E-UTRA f3
4	E-UTRA f4
Note 1: E-UTRAf1, E-UTRAf2, E-UTRAf3, E-UTRAf4 are according to clause 6.2.3.3	
Note 2: Depending on the Band under test, E-UTRA f2 or E-UTRA f3 or E-UTRA f4 may not be applicable.	

Table 6.3.1.3-2: Void

6.3.2 Default configurations for NAS test cases

The default configurations specified in this subclause apply only to NAS test cases. They apply to all NAS test cases unless otherwise specified.

6.3.2.1 Simulated network scenarios for NAS test cases

Simulated network scenarios for NAS test cases to be tested are specified in the pre-test conditions of each individual test case.

Any combination is allowed with the following restrictions:

- a maximum 3 cells on the same frequency can be used, i.e. only 3 cells out of NGC Cell A, NGC Cell B, NGC Cell C and NGC Cell D may be used simultaneously in each individual test case when cells in the test case are in different PLMNs (refer to Table 6.3.2.2-3).

6.3.2.2 Simulated NAS cells

Simulated NAS cells and default NAS parameters are specified in Table 6.3.2.2-1. Unless otherwise specified in a test case, default radio parameters of the NAS cells are specified as per Table 6.3.2.2-2.

Unless otherwise specified, the default parameters specified in clause 4.4.2 will also apply to all NAS cells.

Table 6.3.2.2-1: Default NAS parameters for simulated NAS cells

NAS cell ID	Tracking Area			TA# list (Note 1)	5G-GUTI (Note 2)			5G-TMSI	
	TA#	PLMN			TAC	AMF Identifier			
		MCC	MNC			AMF Region ID	AMF Set ID		AMF Pointer
NGC Cell A	TAI-1	(Note 3)		1	TAI-1	254	1	Arbitrarily selected according to TS 23.003 subclause 2.10.1 [26].	
NGC Cell B	TAI-2	(Note 3)		2	TAI-2	254	1		
NGC Cell C	TAI-3	(Note 3)		3	TAI-3	252	1		
NGC Cell D	TAI-4	(Note 3)		4	TAI-4	252	1		
NGC Cell E	TAI-12	002	101	3	TAI-12	244	1		
NGC Cell F	TAI-11	003	101	2	TAI-11	239	1		
NGC Cell G	TAI-7	(Note 4)	02	1	TAI-7	238	1		

NGC Cell H	TAI-8	(Note 4)	02	2	TAI-8	237	1	1	
NGC Cell I	TAI-9	002	101	1	TAI-9	244	1	1	
NGC Cell J	TAI-10	003	101	1	TAI-10	236	1	1	
Note 1:	The value(s) in the column TA# list indicates TAI(s) included in the response messages of the registration procedure for initial access or mobility (REGISTRATION ACCEPT) when the UE performs the registration procedure on a corresponding cell.								
Note 2:	The value in the column 5G-GUTI indicates GUTI included in the response messages of the registration procedure (REGISTRATION ACCEPT) when the UE performs the registration procedure on a corresponding cell.								
Note 3:	Set to the same Mobile Country Code and Mobile Network Code stored in EF _{IMSI} on the test USIM card (subclause 4.8.3).								
Note 4:	Set to the same Mobile Country Code stored in EF _{IMSI} on the test USIM card (subclause 4.8.3).								

Table 6.3.2.2-2: Default radio parameters for simulated NAS cells when cells are in same PLMN and access stratum is NR

NAS cell ID	Frequency	NR cell ID (Note 1)
NGC Cell A	NRf1	NR Cell 1
NGC Cell B	NRf1	NR Cell 2
NGC Cell C	NRf1	NR Cell 4
NGC Cell D	NRf1	NR Cell 11
NGC Cell E	NA	NA
NGC Cell F	NRf2	NR Cell 3
NGC Cell G	NA	NA
NGC Cell H	NA	NA
NGC Cell I	NA	NA
NGC Cell J	NRf2	NR Cell 12
Note 1: Default NR parameters for simulated NR cells are as specified in Table 4.4.2-2. Note 2: Simultaneous co-existence of active NGC cells defined on the same frequency and same SSB-Index is not recommended (in line with Table 4.4.2-2 Note 3).		

Table 6.3.2.2-3: Default PLMN and radio parameters for simulated NAS cells when cells are in different PLMNs and access stratum is NR

NAS cell ID	PLMN	Frequency	NR cell ID (Note 1)
NGC Cell A	MCC/MNC=MCC/MNC in USIM	NRf1	NR Cell 1
NGC Cell B	MCC/MNC=MCC/MNC in USIM	NRf1	NR Cell 2
NGC Cell C	MCC/MNC=MCC/MNC in USIM	NRf1	NR Cell 4
NGC Cell D	MCC/MNC=MCC/MNC in USIM	NRf1	NR Cell 11
NGC Cell E	MCC=002 MNC=101	NRf2	NR Cell 3
NGC Cell F	MCC=003 MNC=101	NRf4	NR Cell 14
NGC Cell G	MCC = MCC in USIM MNC=02	NRf2	NR Cell 12
NGC Cell H	MCC = MCC in USIM MNC=02	NRf2	NR Cell 23
NGC Cell I	MCC=002 MNC=101	NRf3	NR Cell 6
NGC Cell J	MCC=002 MNC=101	NRf3	NR Cell 13
Note 1: Default NR parameters for simulated NR cells are as specified in Table 4.4.2-2 Note 2: Simultaneous co-existence of active NGC cells defined on the same frequency and same SSB-Index is not recommended (in line with Table 4.4.2-2 Note 3).			

6.3.3 Cell configuration types

6.3.3.1 Introduction

For the purpose of test equipment resource management, different types of cell configurations are defined with different capabilities.

For E-UTRA cells, please refer to TS 36.508 [2] clauses 6.3.3 and 6.3.4.

The default NR cell configuration type is Full Cell: this NR cell configuration has, in minimum, all DL and UL physical channels and physical signals configured, as defined in subclause 4.2.2.

When not mentioned explicitly in a test case prose, an NR cell is of type Full Cell. The following subclauses define different NR cell types with lower capabilities than the Full Cell.

6.3.3.2 SCell types

When testing NR CA, the following NR SCell types may be specifically mentioned in the test case prose:

- Active SCell: An NR cell that may become an SCell at any point of time during the test case and which, while being an SCell, may be activated.
- Inactive SCell: An NR cell that may become an SCell at any point of time during the test case but is never activated while being an SCell.

SCell activation is defined as SS sending an SCell Activation/Deactivation MAC CE to the UE to activate the SCell.

Note that an Active SCell will not become an Inactive SCell if the SCell is deactivated via an SCell Activation/Deactivation MAC CE or after the *sCellDeactivationTimer* timer expires.

6.3.4 Satellite assistance information for NTN

6.3.4.1 GSO scenario

The position of GSO satellite is defined in Table 4.6.3-56C for NTN with below assumption:

- Inclination: 0
- Eccentricity: 0
- Latitude: 0
- Longitude: 121.56076999
- Altitude: 35786 km
- Speed: 0 km/s

In case of multi-cell NTN GSO scenario, a maximum of 3 NTN cells can be used. The relevant assistance information for satellite positioning and timing adjustment calculations is defined in Table 6.3.4.1-1 unless otherwise specified in a test case.

Table 6.3.4.1-1: Satellite assistance information in multi-cell NTN GSO scenario

Cell type (Note 1)	positionX	positionY	positionZ	velocityVX/Y/Z	nta- Common	cellSpecificKoffset
First	-16976014	27636499	0	0	65896378	550
Second	-23550424	22301093	0	0	66485757	550
Third	-14502736	29010891	0	0	66485757	550

Note 1: First Cell is the cell defined as default serving cell in the test case at the end of the preamble. Second Cell and third Cell are used in multi-cell test cases with Second Cell being defined as the 1st neighbour cell and Third Cell being defined as the 2nd neighbour cell. For example, in TS 38.523-1[12] TC 9.4.1.1 running in GSO scenario, NGC Cell A is the serving cell in the preamble, so it uses the satellite assistance information of First Cell, while NGC Cell G uses the satellite assistance information of Second Cell.

6.3.4.2 NGSO scenario

The position of NGSO satellite is defined in Table 4.6.3-56C for NTN with below assumption:

- Inclination: 90
- Eccentricity: 0
- Longitude: 121.56076999
- Altitude: 600 km
- Speed: 7.56 km/s

The UE position defined in clause 4.5.C is the projection position from one of the satellite information to the ground.

All NTN test cases defined in TS 38.523-1 [12], unless otherwise stated, shall use the first row of Table 6.3.4.2-1 as the assistance information for configuration of the serving cell with a specific location, corresponding to zero Doppler and constant delay for NGSO scenario, keeping such information constant throughout the duration of each measurement in the test.

In case of multi-cell NTN NGSO scenario, a maximum of 3 NTN cells can be used. The satellite assistance information for satellite positioning and timing adjustment calculations is defined in Table 6.3.4.2-1 unless otherwise specified in a test case, keeping such information constant throughout the duration of each measurement in the test.

Table 6.3.4.2-1: Satellite assistance information in multi-cell NTN NGSO scenario

Cell type (Note 1)	position X	position Y	position Z	velocityV X	velocityV Y	velocityV Z	kMa c	cellSpecifickOff set	Fd (Note 2)
First	- 2550081	4151097	2263034	21970	-48164	114109	3	5	0.013
Second	- 2654549	4386991	1594205	14581	-34487	120182	4	8	19.83
Third	- 2401021	3830217	2907041	28879	-61410	105774	4	8	- 19.95
Note 1: First Cell is the cell defined as default serving cell in the test case at the end of the preamble. Second Cell and Third Cell are used in multi-cell test cases with Second Cell being defined as the 1st neighbour cell and Third Cell being defined as the 2nd neighbour cell. For example, in TS 38.523-1[12] TC 9.4.1.1 running in NGSO scenario, NGC Cell A is the serving cell in the preamble, so it uses the satellite assistance information of First Cell, while NGC Cell G uses the satellite assistance information of Second Cell. Note 2: Fd is the frequency Doppler in the service link, unit is ppm. The values are not broadcasted but resemble those that are calculated at the UE based on the corresponding cell satellite assistance information. They need to be considered for UL & DL transmission in SS side.									

6.4 Signalling Test Case specific USIM Configurations

6.4.1 General

The default USIM fields are specified in section 4.8.3. Specific USIM fields are set according to the USIM configuration specified in the tables below. PLMN settings are defined in TS 36.523-1 [42] Table 6.0.1-1.

Note: Changes to any existing USIM configuration can be done only if the change WILL NOT HAVE IMPACT on any of the tests which are referring to the configuration! To establish whether this might be the case, the test case author needs to review all tests in all RAN5 test specifications, which refer to the particular USIM configuration e.g. all test cases in TS 38.523-1 [12].

Table 6.4.1-1: USIM Configuration 1

USIM field	Priority	Value	Access Technology Identifier
EF _{IMSI}		The HPLMN (MCC+MNC) of the IMSI is set to PLMN1.	
EF _{PLMNwAcT}	1 2 3	Default PLMN17 PLMN16 Remaining mandatory entries use default values	Default All specified NG-RAN
EF _{OPLMNwAcT}	1	PLMN15 Remaining defined entries use default values	All specified
EF _{HPLMNwAcT}	1	PLMN1	NG-RAN
EF _{UST}		Services 20, 42, 43 and 74 are supported. Service 71 is not supported (there is no EHPLMN list).	
EF _{HPPLMN}		1 (6 minutes)	

Table 6.4.1-2: USIM Configuration 2

USIM field	Priority	Value	Access Technology Identifier
EF _{5GS3GPPLOC}		PLMN4	
EF _{PLMNwAcT}		Empty	
EF _{IMSI}		The HPLMN (MCC+MNC) of the IMSI is set to PLMN1.	
EF _{UST}		Service n°71, n°74 and n°122 are "available"	
EF _{EHPLMN}	1 2	PLMN15 PLMN1	
EF _{LRPLMNSI}		01	

Table 6.4.1-3: USIM Configuration 3

USIM field	Priority	Value	Access Technology Identifier
EF _{5GS3GPPLOC}		PLMN4	
EF _{PLMNwAcT}		Empty	
EF _{IMSI}		The HPLMN (MCC+MNC) of the IMSI is set to PLMN1.	
EF _{UST}		Service n°74 and n°122 are "available"	
EF _{EHPLMN}		Empty	
EF _{LRPLMNSI}		01	

Table 6.4.1-4: USIM configuration 4

USIM field	Priority	Value	Access Technology Identifier
EF _{EHPLMN}	1	PLMN1	

		Remaining mandatory entries use default values	
EF _{PLMNwAcT}	1	PLMN2 Remaining mandatory entries use default values	NG-RAN
EF _{OPLMNwAcT}	1	PLMN3 Remaining mandatory entries use default values	NG-RAN
EF _{UST}		Services 20, 42, 71, 85 and 122 are supported.	
EF _{5GS3GPPLOCi}		FF FF...FF FE 01 (20 Bytes)	
EF _{EPSLOCi}		FF FF...FF FE 01 (18 Bytes)	
EF _{PSLOCi}		FF FF...FE FF 01 (14 Bytes)	
EF _{LOCi}		FF FF...FE FF 01 (11 Bytes)	
Note: LOCI fields of this USIM configuration may get overwritten upon execution of test cases using a UICC loaded with this USIM configuration. The test operator shall ensure that USIM contents are as per this table before each execution of a test case that requires this USIM configuration.			

Table 6.4.1-5: USIM configuration 5

USIM field	Priority	Value	Access Technology Identifier
EF _{5GS3GPPLOCi}		PLMN4 (See preamble)	
EF _{PLMNwAcT}		Empty	
EF _{IMSI}		The HPLMN (MCC+MNC) of the IMSI is set to PLMN1.	
EF _{UST}		Service 71 is not supported Service 74 and 122 are supported.	
EF _{LRPLMNSI}		00	
EF _{EHPLMN}		0xFF..FF	

Table 6.4.1-6: USIM configuration 6

USIM field	Priority	Value	Access Technology Identifier
EF _{5GS3GPPLOCi}		PLMN1 (See preamble)	
EF _{IMSI}		The HPLMN (MCC+MNC) of the IMSI is set to PLMN3.	
EF _{PLMNwAcT}	1	PLMN1 Remaining mandatory entries use default values	NG-RAN
EF _{OPLMNwAcT}	1 2	PLMN2 PLMN4 Remaining defined entries use default values	NG-RAN NG-RAN
EF _{UST}		Service 71 is not supported Service 20, 42 and 122 are supported.	

Table 6.4.1-7: USIM configuration 7

USIM field	Priority	Value	Access technology	Comment
E.F _{PLMNwAcT}	1	PLMN13	NG-RAN	
	2	PLMN13	E-UTRAN	
EF _{OPLMNwAcT}	1	PLMN2	All	
	2	PLMN14	E-UTRAN	
	3	PLMN13	NG-RAN	
EF _{UST}		Service n°20, n°42, n°85 and n°122 are "available"		
EF _{5GS3GPPLOCi}		FF FF...FF FE 01 (20 Bytes)		

EF _{EPSLOCI}		FF FF...FF FE 01 (18 Bytes)		
EF _{PSLOCI}		FF FF...FE FF 01 (14 Bytes)		
EF _{LOCI}		FF FF...FE FF 01 (11 Bytes)		
Note: LOCI fields of this USIM configuration may get overwritten upon execution of test cases using a UICC loaded with this USIM configuration. The test operator shall ensure that USIM contents are as per this table before each execution of a test case that requires this USIM configuration.				

Table 6.4.1-8: USIM configuration 8

USIM field	Priority	Value	Access technology	Comment
EF _{OPLMNwAcT}	1	PLMN15	NG-RAN	
	2	PLMN15	E-UTRAN	
	3	PLMN17	E-UTRAN	
	4	PLMN16	NG-RAN	
EF _{5GS3GPPLOCI}		FF FF...FF FE 01 (20 Bytes)		
EF _{EPSLOCI}		FF FF...FF FE 01 (18 Bytes)		
EF _{PSLOCI}		FF FF...FE FF 01 (14 Bytes)		
EF _{LOCI}		FF FF...FE FF 01 (11 Bytes)		
EF _{UST}		Service n°127 is not "available" Service n°42, n°85 and n°122 are "available"		
Note: LOCI fields of this USIM configuration may get overwritten upon execution of test cases using a UICC loaded with this USIM configuration. The test operator shall ensure that USIM contents are as per this table before each execution of a test case that requires this USIM configuration.				

Table 6.4.1-9: USIM configuration 9

USIM field	Priority	Value	Access technology	Comment
EF _{PLMNwAcT}	1	PLMN1	NG-RAN	
	2	PLMN15	E-UTRAN	
EF _{HPLMN}		1(=6 min)		The HPLMN Search Period on the USIM shall be set to 6 minutes.
EF _{UST}		Service n°20 is "available"		

Table 6.4.1-10: USIM configuration 10

USIM field	Priority	Value	Access Technology Identifier
EF _{OPLMNwAcT}	1	PLMN14	NG-RAN
	2	PLMN13	NG-RAN
	3	PLMN2	NG-RAN
		Remaining defined entries use default values	
EF _{UST}		Service n°42, n°85, n°122 and n°127 are "available"	
EF _{HPLMN}		1(=6 min)	
EF _{5GS3GPPLOCI}		FF FF...FF FE 01 (20 Bytes)	
EF _{EPSLOCI}		FF FF...FF FE 01 (18 Bytes)	
EF _{PSLOCI}		FF FF...FE FF 01 (14 Bytes)	
EF _{LOCI}		FF FF...FE FF 01 (11 Bytes)	

Note: LOCI fields of this USIM configuration may get overwritten upon execution of test cases using a UICC loaded with this USIM configuration. The test operator shall ensure that USIM contents are as per this table before each execution of a test case that requires this USIM configuration.

Table 6.4.1-11: USIM configuration 11

USIM field	Priority	Value	Access Technology Identifier
EF _{5GS3GPPLOCI}		PLMN15 (See preamble)	
EF _{IMSI}		The HPLMN (MCC+MNC) of the IMSI is set to PLMN1	
EF _{PLMNwAcT}	1	Default	Default
	2	PLMN16	NG-RAN
		Remaining defined entries use default values	Default
EF _{OPLMNwAcT}	1	PLMN15	NG-RAN
		Remaining defined entries use default values	Default
EF _{HPLMNwAcT}	1	PLMN1	NG-RAN
EF _{UST}		Services 20, 42, 43, 74 ,96 and 122 are supported. Service 71 is not supported (there is no EHPLMN list)	
EF _{HPPLMN}		1 (6 minutes)	
EF _{NASCONFIG}		MinimumPeriodicSearchTimer set to 7 minutes	

Table 6.4.1-12: USIM configuration 12

USIM field	Priority	Value	Access technology	Comment
EF _{PLMNwAcT}		3GPP TS 31.102, Annex E		The EF is empty.
EF _{OPLMNwAcT}	1	PLMN2	NG-RAN	
	2	PLMN13	E-UTRAN	
	3	PLMN13	NG-RAN	
EF _{UST}		Service n°127 is not "available" Service n°20, n°42, n°85 and n°122 are "available"		
EF _{5GS3GPPLOCI}		FF FF...FF FE 01 (20 Bytes)		
EF _{EPSLOCI}		FF FF...FF FE 01 (18 Bytes)		
EF _{PSLOCI}		FF FF...FE FF 01 (14 Bytes)		
EF _{LOCI}		FF FF...FE FF 01 (11 Bytes)		
Note: LOCI fields of this USIM configuration may get overwritten upon execution of test cases using a UICC loaded with this USIM configuration. The test operator shall ensure that USIM contents are as per this table before each execution of a test case that requires this USIM configuration.				

Table 6.4.1-13: USIM configuration 13

USIM field	Priority	Value	Access technology	Comment
EF _{OPLMNwAcT}	1	PLMN2	NG-RAN	
	2	PLMN2	E-UTRAN	
	3	PLMN13	NG-RAN	
EF _{UST}		Service n°42 is "available"		

Table 6.4.1-14: Void

Table 6.4.1-15: USIM Configuration 15

USIM field	Priority	Value	Access Technology Identifier
EF _{IMSI}		The HPLMN (MCC+MNC) of the IMSI is set to PLMN1.	
EF _{FPLMN}		PLMN2	

Table 6.4.1-16: Void

Table 6.4.1-17: USIM Configuration 17

USIM field	Priority	Value	Access Technology Identifier
EF _{IMSI}		The HPLMN (MCC+MNC) of the IMSI is set to PLMN1.	
EF _{PLMNwAcT}	1	PLMN1	NG-RAN
EF _{UST}		Service n°20, n°71 and n°126 are "available".	
EF _{EHPLMN}		PLMN1	
EF _{UAC_AIC} and EF _{ACC}		For Bits b4 and b8 in byte 1 of EF _{ACC} (defined in TS 31.102 clause 4.2.15), only single bit is set to 1. Bits b1 and b2 in byte 1 of EF _{UAC_AIC} (defined in TS 31.102 clause 4.4.11.7), and all remaining bits of EF _{ACC} and EF _{UAC_AIC} are set to 0.	

Table 6.4.1-18: USIM Configuration 18

USIM field	Priority	Value	Access Technology Identifier
EF _{IMSI}		The HPLMN (MCC+MNC) of the IMSI is set to PLMN1.	
EF _{PLMNwAcT}	1	PLMN2	NG-RAN
EF _{HPLMNwAcT}	1	PLMN1	NG-RAN
EF _{UST}		Service n°20, n°43 and n°126 (for UAC Access Identities Configuration) defined in TS 31.102 clause 4.2.8 are declared "available"	
EF _{UAC_AIC}		Bit b1 in byte 1 defined in TS 31.102 clause 4.4.11.7 is set to 1 and bit b2 in byte 1 is set to 0.	

Table 6.4.1-19: USIM Configuration 19

USIM field	Priority	Value	Access Technology Identifier
EF _{IMSI}		The HPLMN (MCC+MNC) of the IMSI is set to PLMN1.	
EF _{PLMNwAcT}	1	PLMN2	NG-RAN
EF _{HPLMNwAcT}	1	PLMN1	NG-RAN
EF _{UST}		Service n°20, n°43 and n°126 (for UAC Access Identities Configuration) defined in TS 31.102 clause 4.2.8 are declared "available"	
EF _{UAC_AIC}		Bit b2 in byte 1 defined in TS 31.102 clause 4.4.11.7 is set to 1 and bit b1 in byte 1 is set to 0.	

Table 6.4.1-20: USIM Configuration 20

USIM field	Priority	Value	Access Technology Identifier
EF _{ECC}		144, 117	

Table 6.4.1-21: USIM configuration 21

USIM field	Priority	Value	Access Technology Identifier
EF _{OPLMNWACT}	1 2 3	PLMN14 PLMN13 PLMN2 Remaining defined entries use default values	NG-RAN NG-RAN NG-RAN
EF _{UST}		Service n°127 is not "available" Service n°42, n°85 and n°122 are "available"	
EF _{HPPLMN}		1(=6 min)	
EF _{5GS3GPPLOCI}		FF FF...FF FE 01 (20 Bytes)	
EF _{EPSLOCI}		FF FF...FF FE 01 (18 Bytes)	
EF _{PSLOCI}		FF FF...FE FF 01 (14 Bytes)	
EF _{LOCI}		FF FF...FE FF 01 (11 Bytes)	
Note: LOCI fields of this USIM configuration may get overwritten upon execution of test cases using a UICC loaded with this USIM configuration. The test operator shall ensure that USIM contents are as per this table before each execution of a test case that requires this USIM configuration.			

Table 6.4.1-22: USIM Configuration 22

USIM field	Priority	Value	Access Technology Identifier
EF _{UST}		Service n°19 and n°51 defined in TS 31.102 clause 4.2.8 is declared "service not available"	

Table 6.4.1-23: USIM Configuration 23

USIM field	Priority	Value	Access Technology Identifier
EF _{UST}		Service n°4 Service Dialling Numbers (SDN), Service n°99 URI support by UICC, Service n°89 eCall Data and Service n°112 eCall Data over IMS are available	
EF _{EST}		Services n°1 Fixed Dialling Numbers (FDN) is disabled	
EF _{SDN}		Last two entries of SDNs, eCall Test Number (123456) and eCall reconfiguration number (345678)	
EF _{SDNURI}		Last two entries of SDNs, eCall Test Number (tel:123456) and eCall reconfiguration number (tel:345678)	

Table 6.4.1-24: USIM Configuration 24

USIM field	Priority	Value	Access Technology Identifier
EF _{UST}		Service n°2 Fixed Dialling Numbers (FDN), Service n°99 URI support by UICC, Service n°89 eCall Data and Service n°112 eCall Data over IMS are available	
EF _{EST}		Service n°1 Fixed Dialling Numbers (FDN) is enabled	
EF _{FDN}		Two entries of FDNs, eCall Test Number (123456) and eCall reconfiguration number (345678)	
EF _{FDNURI}		Two entries of FDNs, eCall Test Number (tel:123456) and eCall reconfiguration number (tel:345678)	

Table 6.4.1-25: USIM Configuration 25

USIM field	Priority	Value	Access Technology Identifier

EF _{IMSI}		The HPLMN (MCC+MNC) of the IMSI is set to PLMN15.	

Table 6.4.1-26: USIM Configuration 26

USIM field	Priority	Value	Access Technology Identifier
EF _{UST}		Service n°2 Fixed Dialling Numbers (FDN), Service n°99 URI support by UICC, Service n°89 eCall Data and Service n°112 eCall Data over IMS are available	
EF _{EST}		Service n°1 Fixed Dialling Numbers (FDN) is enabled	
EF _{FDN}		Two entries of FDNs, eCall Test Number (123456) and eCall reconfiguration number (345678)	
EF _{FDNURI}		Two entries of FDNs, eCall Test Number (tel:123456) and eCall reconfiguration number (tel:345678)	
EF _{FPLMN}		004-31	

Table 6.4.1-27: USIM Configuration 27

USIM field	Priority	Value	Access Technology Identifier
EF _{IMSI}		The HPLMN (MCC+MNC) of the IMSI is set to 001-01.	
EF _{FPLMN}		001-02	

Table 6.4.1-28: USIM Configuration 28

USIM field	Priority	Value	Access Technology Identifier
EF _{IMSI}		The HPLMN (MCC+MNC) of the IMSI is set to 001-02.	
EF _{FPLMN}		001-01	

6.4.2 USIM Configurations for 5G ProSe

The default USIM fields are specified in section 4.8.3. Specific USIM fields are set according to the USIM configuration specified in the tables below.

Table 6.4.2-1: USIM Configuration for 5G ProSe Remote UE test cases

USIM field	Priority	Value	Access Technology Identifier
EF _{UST}		Service n°139 5G ProSe is "available"	
EF _{5G_PROSE_ST}		Service n°1, n°2 and n°4 are "available"	
EF _{5G_PROSE_DD}		As per clause 4.8.3.3.4	
EF _{5G_PROSE_DC}		As per clause 4.8.3.3.4	
EF _{5G_PROSE_RU}		As per clause 4.8.3.3.4	

Table 6.4.2-2: USIM Configuration for 5G ProSe Relay UE test cases

USIM field	Priority	Value	Access Technology Identifier
EF _{UST}		Service n°139 5G ProSe is "available"	
EF _{5G_PROSE_ST}		Service n°1, n°2 and n°3 are "available"	

EF _{5G_PROSE_DD}		As per clause 4.8.3.3.4	
EF _{5G_PROSE_DC}		As per clause 4.8.3.3.4	
EF _{5G_PROSE_U2NRU}		As per clause 4.8.3.3.4	

7 Test environments for RRM tests

7.0 General

7.0.1 Single PDU configuration for RRM testing

For RRM test case execution on 5G SA UEs defined in TS 38.533 [18] 7.1 Requirements, IMS shall not be considered and UE's shall be able use RRC (IDLE, CONNECTED) preambles defined in TS 38.508-1 Section 4.5. Before entering RRC_CONNECTED or RRC_IDLE state during initial conditions or test procedure, it is recommended that UE is pre-configured with 0 or 1 PDU (non-IMS).

For EN-DC settings the corresponding requirement holds that IMS shall not be considered and it is recommended that UE is pre-configured with 0PDU/0PDN or 1PDU/1 PDN.

7.1 Test equipment requirements

7.1.1 Void

7.1.2 Void

7.1.3 Requirements for OTA test method

7.1.3.1 General

Editor's Note:

- The UE pre-configuration mentioned below to disable UL Tx diversity schemes shall be voided once a test methodology solution to minimize spectral flatness artefacts between TE and UE over all test points is defined.

For conformance testing using the OTA test environment, the UE under test shall be pre-configured with UL Tx diversity schemes disabled to account for single polarization System Simulator (SS) in the test environment. The UE under test may transmit with dual polarization.

7.1.3.2 RRM baseline setup

The RRM baseline setup shall fulfil the capabilities detailed in this section.

The following permitted test setups are considered for OTA RRM testing:

- DFF test setup as described in Clause B.2.2.
- Simplified DFF test setup as described in Clause B.2.3.
- IFF test setup as described in Clause B.2.4.
- Enhanced IFF test setup based in the IFF test setup described in Clause B.2.6, with the enhancements described in this clause.
- IFF+DFF Hybrid test setup as described in Clause B.7.2, with the enhancements described in this clause.

7.1.3.2.1 General description

TRxPs and Cells:

- Up to 2 NR transmission reception points TRxPs are emulated.

Support of interworking scenarios

- For test scenarios involving both, LTE and NR FR2 carriers, the test setup shall be capable to provide LTE link to the DUT. The emulated LTE cell provides a stable LTE signal without precise propagation modelling or path loss control between it and the DUT. No performance verification for and relative to LTE carriers is supported.
- For test scenarios involving both, NR FR1 and NR FR2 carriers, the test setup shall be capable to provide NR FR1 link to the DUT. The NR FR1 link has a stable and noise-free signal without precise path loss or polarization control. No performance verification for and relative to NR FR1 carriers is supported.

Antennas, polarization, simultaneously active AoAs:

- N dual-polarized antennas transmitting the signals from the emulated gNB sources to the DUT.
- The antennas transmit into the test zone in such a way that signal polarization does not prevent the DUT receiving a consistent, predictable power level.
- $N \geq N_{\text{MAX\_AoAs}}$, where $N_{\text{MAX\_AoAs}}$ is the maximum number of simultaneously active (emulating signal) angles of arrival AoAs. The $N_{\text{MAX\_AoAs}}$ for the different permitted test methods is:
 - For UE RRM baseline measurement setup based on DFF, the supported $N_{\text{MAX\_AoAs}} = 2$.
 - For UE RRM baseline measurement setup based on simplified DFF, the supported $N_{\text{MAX\_AoAs}} = 1$.
 - For UE RRM baseline measurement setup based on IFF, the supported $N_{\text{MAX\_AoAs}} = 1$.
 - For UE RRM baseline measurement setup based on enhanced IFF, the supported $N_{\text{MAX\_AoAs}} = 2$.
 - For UE RRM baseline measurement setup based on IFF+DFF, the supported $N_{\text{MAX\_AoAs}} = 2$.

Angular Relationship:

- A positioning system such that an angular relationship with two axes of freedom is provided between the DUT and the test system antennas (or the setup should provide equivalent functionality).
- For $N_{\text{MAX\_AoAs}} = 2$ the setup shall enable following relative angular relationships between the $N_{\text{MAX\_AoAs}}$ simultaneously active AoAs: 30°, 60°, 90°, 120° and 150°.
- For single active probe scenarios, in case that step change of AoA is required, the setup shall enable following relative angular change between initial and target AoA: 30°, 60°, 90°, 120° and 150°.

Wanted and noise (AWGN) signals can be transmitted from one or both active probes. Test description will define the exact signal/noise/SNR/SINR level per TRxP at the reference point.

Multiple DL transmission antenna ports:

- In case of multiple DL transmission antenna ports are required for RRM testing, the different antenna ports are mapped to different polarizations.

Measurement Uncertainty:

- The threshold MU for the equivalence framework for RRM will be based on direct far field (DFF) test method for $D \leq 5$ cm and on indirect far field (IFF) test method for $D > 5$ cm. If the MTSU for the IFF test method for $D \leq 5$ cm is finalized before DFF, the IFF MTSU shall be used as provisional threshold MU until DFF is completed.

7.1.3.2.2 Applicability criteria

The applicability criteria for the RRM measurement setup based on DFF is described in B.2.2.1.

The applicability criteria for the RRM measurement setup based on simplified DFF is described in B.2.3.1.

The applicability criteria for the RRM measurement setup based on IFF is described in B.2.4.1.

The applicability criteria for the RRM measurement setup based on enhanced IFF is described in B.2.6.1:

The applicability criteria for the RRM measurement setup based on IFF+DFF follows DFF as described in B.2.7.1:

7.1.3.2.3 Measurement distance and quiet zone

For RRM baseline measurement setup based on DFF:

- The measurement distance defined for the DFF UE RF test method described in B.2.2.4 applies.
- A DFF measurement setup has the centre of the Quiet Zone (QZ) located at the centre of the rotational axes (of DUT and measurement antenna). For the RRM measurement baseline setup based on DFF, the vertices of the N probes have to be aligned to the resulting centre of the QZ. The centre of the QZ is taken as the reference point for MU definition for each probe. The same QZ size as for DFF UE RF test method described in B.2.2.2 applies.

For RRM baseline measurement setup based on simplified DFF:

- The measurement distance defined for the simplified DFF UE RF test method described in B.2.3.4 applies.
- The same QZ size and definition as for simplified DFF UE RF test method described in B.2.3.2 applies.

For RRM baseline measurement setup based on IFF:

- The measurement distance defined for the IFF UE RF test method described in B.2.4.4 applies.
- The Quiet Zone definition for the IFF UE RF test method described in B.2.4.2 applies.

For RRM baseline measurement setup based on enhanced IFF:

- The measurement distance defined for the IFF UE RF test method described in B.2.6.4 applies.
- An IFF measurement setup has the centre of the Quiet Zone (QZ) located at the centre of the rotational axes (of DUT). For the RRM measurement baseline setup based on IFF, the reflectors have to be aligned to transmit a plane wave to the resulting centre of the QZ. The centre of the QZ is taken as the reference point for MU definition for each reflector. The QZ is a sphere of radius R. The size of the QZ defined in B.2.6.2 applies.

For RRM baseline measurement setup based on IFF+DFF:

- For IFF TRxPs, the measurement distance defined for the IFF UE RF test method described in B.2.4.4 applies.
- For DFF TRxPs, the measurement distance defined for the DFF UE RF test method described in B.2.2.4 applies.
- An IFF+DFF measurement setup has the centre of the Quiet Zone (QZ) located at the centre of the rotational axes (of DUT). For the RRM measurement baseline setup based on IFF+DFF, IFF reflectors have to be aligned to transmit a plane wave to the resulting centre of the QZ, and the vertices of the DFF probes have to be aligned to the resulting centre of the QZ. The centre of the QZ is taken as the reference point for MU definition for each reflector or probe. The QZ is a sphere of radius R. The size of the QZ is defined in B.2.7.2.

7.1.3.2.4 Quality of the quiet zone

For RRM, the quality of the quiet zone validation defined in Annex O of TS 38.521-2 [15] needs to assess only the single-directional EIRP and EIS metrics. For measurement setups with multiple probes, the QoQZ procedure needs to be performed with all probes present and in the conditions used for RRM testing.

The quality of the quiet zone for the RRM measurement setup based on DFF is described in B.2.2.3. The QoQZ validation needs to be performed only with the reference probe P0.

The quality of the quiet zone for the RRM measurement setup based on simplified DFF is described in B.2.3.3.

The quality of the quiet zone for the RRM measurement setup based on IFF is described in B.2.4.3.

The quality of the quiet zone for the RRM measurement setup based on enhanced IFF is described in B.2.6.3. The QoQZ validation needs to be performed only with the reference reflector, P0, if same sized IFF reflectors are used..

The quality of the quiet zone for the RRM measurement setup based on IFF+DFF is described in B.2.7.3. The QoQZ validation needs to be performed only with the one probe among all DFF probes and one probe among all IFF probes.

7.2 Reference test conditions

7.2.1 Signal levels

7.2.1.1 Void

7.2.1.2 Void

7.2.2 Physical layer parameters

7.2.2.1 Downlink physical layer parameters

As defined in clause 4.3.6 with the following exceptions:

Table 7.2.2.1-1: Physical layer parameters for DCI format 1_1

Derivation Path: Table 4.3.6.1.2.2-1			
Parameter	Value	Value in binary	Condition
PUCCH resource indicator	$PUCCH-ResourceID[1] = 0$ in pucch-ResourceSetID[1] as defined in Table 4.6.3-112 (Mapping as per Table 9.2.3-2 in TS 38.213 [22])	"000"	
PDSCH-to-HARQ_feedback timing indicator	corresponding to K1 slots as per Table 9.2.3-1 in TS 38.213 [22] and dl-DataToUL-ACK in Table 4.6.3-112 For 120KHz SCS K1 = 4 if $\text{mod}(i,5) = 0$ K1 = 3 if $\text{mod}(i,5) = 1$ K1 = 7 if $\text{mod}(i,5) = 2$ where i is slot index per frame; i = {0,...,79}	-	FR2
PDSCH-to-HARQ_feedback timing indicator	corresponding to K1 slots as per Table 9.2.3-1 in TS 38.213 [22] and dl-DataToUL-ACK in Table 4.6.3-112 K1 = 6 if $\text{mod}(i,10) = 8$ K1 = 5 if $\text{mod}(i,10) = 0$ K1 = 5 if $\text{mod}(i,10) = 1$ K1 = 5 if $\text{mod}(i,10) = 2$ K1 = 5 if $\text{mod}(i,10) = 9$ where i is slot index per frame; i = {0,...,19}		TDDConf.2.1
PDSCH-to-HARQ_feedback timing indicator	corresponding to K1 slots as per Table 9.2.3-1 in TS 38.213 [22] and dl-DataToUL-ACK in Table 4.6.3-112 For FDD K1 = 2		FDD
PDSCH-to-HARQ_feedback timing indicator	corresponding to K1 slots as per Table 9.2.3-1 in TS 38.213 [22] and dl-DataToUL-ACK in Table 4.6.3-112 K1 = 2 if $\text{mod}(i,5) = 0$ K1 = 3 if $\text{mod}(i,5) = 4$ where i is slot index per frame; i = {0,...,9}		TDDConf.1.1 AND SR.1.1 TDD

PDSCH-to-HARQ_feedback timing indicator	corresponding to K1 slots as per Table 9.2.3-1 in TS 38.213 [22] and dl-DataToUL-ACK in Table 4.6.3-112 K1 = 2 if mod(i,5) = 0 K1 = 2 if mod(i,5) = 1 K1 = 3 if mod(i,5) = 4 where i is slot index per frame; i = {0,...,9}		TDDConf.1.1 AND SR.1.2 TDD

Condition	Explanation
TDDConf.2.1	TDD UL/DL configuration for SCS=30kHz
TDDConf.1.1	TDD UL/DL configuration for SCS=15kHz
SR.1.1 TDD	PDSCH RMC SR.1.1 TDD defined in TS 38.533 Annex A.1.1
SR.1.2 TDD	PDSCH RMC SR.1.2 TDD defined in TS 38.533 Annex A.1.1

Table 7.2.2.1-2: Physical layer parameters for DCI format 1_0

Parameter	Value	Value in binary
PDSCH-to-HARQ_feedback timing indicator	corresponding to K1 slots as per Table 9.2.3-1 in TS 38.213 [22] and dl-DataToUL-ACK in Table 4.6.3-112 For FDD K1 = 2	

7.2.3 Default test frequencies

7.2.3.1 Default test frequencies FR1 NR operating bands

For FR1 NR operating bands the test frequencies for RRM testing are specified in clause 4.3.1.1.

7.2.3.2 Default test frequencies FR2 operating bands

7.2.3.2.1

Reference test frequencies for NR operating band n257

Table 7.2.3.2.1-1: Test frequencies for NR operating band n257 (SCS 120 kHz, ΔF_{Raster} 120 kHz, SSB SCS=120kHz, kSSB=0 and Offset(RBs)=0)

C B W [MHz]	carrier Band width [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absolute FrequencyPointA [ARFCN]	offset ToCarrier [Carrier PRBs]	SSB offset [kHz]	GSN	absolute FrequencySSB [ARFCN]	k_{SSB}	Offset Carrier CORESET#0 [RBs] Note 2	CORESET#0 Index (Offset [RBs]) Note 1	offset ToPointA (SIB1) [PRBs] Note 1
100	66	Downlink & Uplink	Mid	28015.68	2079427	27968.16	2078635	0	120	22472	2078875	0	0	0 (0)	0
100	66	Downlink & Uplink	Adjacent inter-frequency cell	28119.36	2081155	28071.84	2080363	0	120	22478	2080603	0	0	0 (0)	0

Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-8 in TS 38.213 [22]. The value of CORESET#0 Index is signalled controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.

Note 2: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs.

Table 7.2.3.2.1-2: Test frequencies for NR operating band n257 (SCS 120 kHz, ΔF_{Raster} 120 kHz, SSB SCS=240kHz, kSSB=0 and Offset(RBs)=0)

C B W [MHz]	carrier Band width [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absolute FrequencyPointA [ARFCN]	offset ToCarrier [Carrier PRBs]	SSB offset [kHz]	GSN	absolute FrequencySSB [ARFCN]	k_{SSB}	Offset Carrier CORESET#0 [RBs] Note 2	CORESET#0 Index (Offset [RBs]) Note 1	offset ToPointA (SIB1) [PRBs] Note 1
100	66	Downlink & Uplink	Mid	28001.28	2079187	27953.76	2078395	0	240	22472	2078875	0	0	2 (0)	0
100	66	Downlink & Uplink	Adjacent inter-	28104.96	2080915	28057.44	2080123	0	240	22478	2080603	0	0	0 (0)	0

		Uplink	frequency cell												
Note 1:	The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-10 in TS 38.213 [22]. The value of CORESET#0 Index is signalled controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.														
Note 2:	The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs.														

7.2.3.2.2

Reference test frequencies for NR operating band n258

Table 7.2.3.2.2-1: Test frequencies for NR operating band n258 (SCS 120 kHz, ΔF_{Raster} 120 kHz SSB SCS=120kHz, kSSB=0 and Offset(RBs)=0)

C B W [M H z]	carrier Band width [PRBs]	Range		Carrier centre [M H z]	Carrier centre [A R F C N]	point A [M H z]	absolute FrequencyPointA [ARFCN]	offset ToCarrier [Carrier PRBs]	S S b l o c k S C S [k H z]	G S C N	absolute FrequencySSB [ARFCN]	k_{SSB}	Offset Carrier CORESET#0 [RB s] Note 2	CORESET#0 Index (Offset [RB s]) Note 1	offset ToPointA (SIB1) [PRBs] Note 1
1 0 0	66	Downlink & Uplink	Mid	25 89 0.2 4	20 44 00 3	25 84 2.7 2	2043211	0	1 2 0	2 2 3 4 9	2043451	0	0	0 (0)	0
1 0 0	66	Downlink & Uplink	Adjacent inter-frequency cell	25 99 3.9 2	20 45 73 1	25 94 6.4	2044939	0	1 2 0	2 3 5 5	2045179	0	0	0 (0)	0

Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-8 in TS 38.213 [22]. The value of CORESET#0 Index is signalled controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.

Note 2: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs.

Table 7.2.3.2.2-2: Test frequencies for NR operating band n258 (SCS 120 kHz, ΔF_{Raster} 120 kHz, SSB SCS=240kHz, kSSB=0 and Offset(RBs)=0)

C B W [M H z]	carrier Band width [PRBs]	Range		Carrier centre [M H z]	Carrier centre [A R F C N]	point A [M H z]	absolute FrequencyPointA [ARFCN]	offset ToCarrier [Carrier PRBs]	S S b l o c k S C S [k H z]	G S C N	absolute FrequencySSB [ARFCN]	k_{SSB}	Offset Carrier CORESET#0 [RB s] Note 2	CORESET#0 Index (Offset [RB s]) Note 1	offset ToPointA (SIB1) [PRBs] Note 1
1 0 0	66	Downlink & Uplink	Mid	25 89 3.1 2	20 44 05 1	25 84 5.6	2043259	0	2 4 0	2 2 3 5 0	2043739	0	0	2 (0)	0
1 0 0	66	Downlink & Uplink	Adjacent inter-	25 99 6.8	20 45 77 9	25 94 9.2 8	2044987	0	2 4 0	2 3 5 6	2045467	0	0	0 (0)	0

		Uplink	frequency cell												
Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-10 in TS 38.213 [22]. The value of CORESET#0 Index is signalled controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2. Note 2: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs.															

7.2.3.2.3

Reference test frequencies for NR operating band n259

Table 7.2.3.2.3-1: Test frequencies for NR operating band n259 (SCS 120 kHz, ΔF_{Raster} 120 kHz SSB SCS=120kHz, kSSB=0 and Offset(RBs)=0)

C B W [MHz]	carrier Band width [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absolute FrequencyPointA [ARFCN]	offset ToCarrier [Carrier PRBs]	S S bl o c k S C S [kHz]	G S C N	absolute FrequencySSB [ARFCN]	k_{SSB}	Offset Carrier CORESET#0 [RBs] Note 2	CORESET#0 Index (Offset [RBs]) Note 1	offset ToPointA (SIB1) [PRBs] Note 1
100	66	Downlink & Uplink	Mid	4151.36	230435	41463.84	2303563	0	120	23	2303803	0	0	0 (0)	0
100	66	Downlink & Uplink	Adjacent interference frequency cell	4161.54	230608	41567.52	2305291	0	120	23	2305531	0	0	0 (0)	0
Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-8 in TS 38.213 [22]. The value of CORESET#0 Index is signalled controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2. Note 2: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs.															

Table 7.2.3.2.3-2: Test frequencies for NR operating band n259 (SCS 120 kHz, ΔF_{Raster} 120 kHz, SSB SCS=240kHz, kSSB=0 and Offset(RBs)=0)

C B W [MHz]	carrier Band width [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absolute FrequencyPointA [ARFCN]	offset ToCarrier [Carrier PRBs]	S S bl o c k S C S	G S C N	absolute FrequencySSB [ARFCN]	k_{SSB}	Offset Carrier CORESET#0 [RBs]	CORESET#0 Index (Offset [RBs])	offset ToPointA (SIB1) [PRBs] Note 1

									[k H z]				Note 2	Note 1	
1 0 0	66	Do wnl ink & Upl ink	Mid	41 51 4.2 4	23 04 40 3	41 46 6.7 2	2303611	0	2 4 0	2 3 2 5 4	2304091	0	0	2 (0)	0
1 0 0	66	Do wnl ink & Upl ink	Adj ace nt inte r- fre que ncy cell	41 61 7.9 2	23 06 13 1	41 57 0.4	2305339	0	2 4 0	2 3 2 6 0	2305819	0	0	0 (0)	0
Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-10 in TS 38.213 [22]. The value of CORESET#0 Index is signalled controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.															
Note 2: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs.															

7.2.3.2.4

Reference test frequencies for NR operating band n260

Table 7.2.3.2.4-1: Test frequencies for NR operating band n260 (SCS 120 kHz, ΔF_{Raster} 120 kHz SSB SCS=120kHz, kSSB=0 and Offset(RBs)=0)

CBW [MHz]	carrier Band width [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absolute Frequency PointA [ARFCN]	offset ToCarrier [Carrier PRBs]	SSB offset [kHz]	GSN	absolute FrequencySSB [ARFCN]	k_{SSB}	Offset Carrier CORESET#0 [RBs] Note 2	CORESET#0 Index (Offset [RBs]) Note 1	offset ToPointA (SIB1) [PRBs] Note 1
1 0 0	66	Downlink & Uplink	Mid	38 50 4.6 4	22 54 24 3	38 45 7.1 2	2253451	0	1 2 0	2 3 0 7 9	2253691	0	0	0 (0)	0
1 0 0	66	Downlink & Uplink	Adjacent inter- frequency cell	38 60 8.3 2	22 55 97 1	38 56 0.8	2255179	0	1 2 0	2 3 0 8 5	2255419	0	0	0 (0)	0
Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-8 in TS 38.213 [22]. The value of CORESET#0 Index is signalled controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2. Note 2: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs.															

Table 7.2.3.2.4-2: Test frequencies for NR operating band n260 (SCS 120 kHz, ΔF_{Raster} 120 kHz, SSB SCS=240kHz, kSSB=0 and Offset(RBs)=0)

C B W [M H z]	carrier Band width [PRBs]	Range		Ca rri er ce ntr e [M Hz]	Ca rri er ce ntr e [A R F C N]	poi nt A [M Hz]	absolute Frequenc yPointA [ARFCN]	offset ToCa rrier [Carri er PRBs]	S S bl o c k S C S [k H z]	G S C N	absolute Frequen cySSB [ARFCN]	k_{SSB}	Off set Carr ier CORE SET#0 [RB s] Note 2	COR ESE T#0 Inde x (Off set [RB s]) Note 1	offset ToPo intA (SIB1) [PRB s] Note 1
1 0 0	66	Do wnl ink & Upl ink	Mid	38 50 7.5 2	22 54 29 1	38 46 0	2253499	0	2 4 0	2 3 0 8 0	2253979	0	0	2 (0)	0
1 0 0	66	Do wnl ink & Upl ink	Adj ace nt inte r- fre que ncy cell	38 61 1.2	22 56 01 9	38 56 3.6 8	2255227	0	2 4 0	2 3 0 8 6	2255707	0	0	0 (0)	0
Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-10 in TS 38.213 [22]. The value of CORESET#0 Index is signalled controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2. Note 2: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs.															

7.2.3.2.5

Reference test frequencies for NR operating band n261

Table 7.2.3.2.5-1: Test frequencies for NR operating band n261 (SCS 120 kHz, ΔF_{Raster} 120 kHz SSB SCS=120kHz, kSSB=0 and Offset(RBs)=0)

C B W [M H z]	carrier Band width [PRBs]	Range		Carrier centre [M Hz]	Carrier centre [A R F C N]	point A [M Hz]	absolute FrequencyPointA [ARFCN]	offset ToCarrier [Carrier PRBs]	S S b l o c k S C S [k H z]	G S C N	absolute FrequencySSB [ARFCN]	k_{SSB}	Offset Carrier CORESET#0 [RBs] Note 2	CORESET#0 Index (Offset [RBs]) Note 1	offset ToPointA (SIB1) [PRBs] Note 1
100	66	Downlink & Uplink	Mid	27929.28	2077987	27881.76	2077195	0	120	22467	2077435	0	0	0 (0)	0
100	66	Downlink & Uplink	Adjacent inter-frequency cell	28032.96	2079715	27985.44	2078923	0	120	2473	2079163	0	0	0 (0)	0
Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-8 in TS 38.213 [22]. The value of CORESET#0 Index is signalled controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2. Note 2: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs.															

Table 7.2.3.2.5-2: Test frequencies for NR operating band n261 (SCS 120 kHz, ΔF_{Raster} 120 kHz, SSB SCS=240kHz, kSSB=0 and Offset(RBs)=0)

C B W [M H z]	carrier Band width [PRBs]	Range		Carrier centre [M Hz]	Carrier centre [A R F C N]	point A [M Hz]	absolute FrequencyPointA [ARFCN]	offset ToCarrier [Carrier PRBs]	S S b l o c k S C S [k H z]	G S C N	absolute FrequencySSB [ARFCN]	k_{SSB}	Offset Carrier CORESET#0 [RBs] Note 2	CORESET#0 Index (Offset [RBs]) Note 1	offset ToPointA (SIB1) [PRBs] Note 1
100	66	Downlink & Uplink	Mid	27932.16	2078035	27884.64	2077243	0	240	22468	2077723	0	0	2 (0)	0
100	66	Downlink & Uplink	Adjacent inter-	28035.84	2079763	27988.32	2078971	0	240	2474	2079451	0	0	0 (0)	0

		Uplink	frequency cell											
Note 1:	The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-10 in TS 38.213 [22]. The value of CORESET#0 Index is signalled controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.													
Note 2:	The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs.													

7.2.3.3 NR inter-band CA configurations in FR2

Editor's note: further testability analysis for RRM inter-band CA configurations might be required.

For FR2 NR operating bands the test frequencies for RRM testing are specified in clause 4.3.1.2.2.

7.2.3.4 NR intra-band contiguous CA configurations in FR2

7.2.3.4.1 NR Intra-band contiguous CA configurations for CA_n257

7.2.3.4.1.1 CA_n257B

Editor's note: CA_n257B Test frequencies are FFS.

7.2.3.4.1.2 CA_n257C

Editor's note: CA_n257C Test frequencies are FFS.

7.2.3.4.1.3 CA_n257D

Editor's note: CA_n257D Test frequencies are FFS.

7.2.3.4.1.4 CA_n257E

Editor's note: CA_n257E Test frequencies are FFS.

7.2.3.4.1.5 CA_n257F

Editor's note: CA_n257F Test frequencies are FFS.

7.2.3.4.1.6 CA_n257G

Table 7.2.3.4.1.6-1: NR Intra-Band contiguous CA configuration CA_n257G, SCS=60 kHz, ΔF_{Raster} 60 kHz, nominal channel spacing

FFS

Table 7.2.3.4.1.6-2: NR Intra-Band contiguous CA configuration CA_n257G, SCS=120 kHz, ΔF_{Raster} 120 kHz, nominal channel spacing

CBW combination	CCN2	CBW [MHz]	SCS [kHz]	carrierBandwidth [PRBs]	Range	Carrier centre frequency	Carrier bandwidth [AR]	pointA [MHz]	absoluteFrequencyPointA [ARFCN]	offsetToCarrier [Carrier PRBs]	SSB block	GS CN	absoluteFrequencySSB [ARFCN]	k_s	Offset Carrier CORESE	CORESET#0 Index	offsetToPointA (SIB1) [PRBs]

						[M H z] N o t e 2	F C N]				C S [k H z]				[R B s] N o t e 3	fse t [R B s]) N o t e 4	Not e 4
100 +10 0	C C 1	1 0 0	1 2 0	66	D o w n l i n k &						12 0						
					M i d	27 96 3. 84	20 78 56 3	27 91 6. 32	207777 1	0		2 2 4 6 9	2078011	0	0	0 (0)	0
					U p l i n k												
	Channel spacing CC1-CC2=99.96 MHz (Note 1)																
	C C 2	1 0 0	1 2 0	66	D o w n l i n k &						12 0						
M i d	28 06 3. 80	20 80 22 9	28 01 6. 28	207943 7	0	2 2 4 7 5	2079739	7	0	0 (0)		0					
U p l i n k																	
Note 1: Corresponds to nominal channel spacing in accordance with TS 38.101-2 [8], clause 5.4A.1 for the channel bandwidths of the two respective NR component carriers.																	
Note 2: CCs are specified in increasing frequency order. CC1 is used as PCell if nothing else is specified in the test case.																	
Note 3: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter ΔF _{OffsetCORESET-0-Carrier} in Annex C expressed in number of common RBs.																	
Note 4: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-8 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.																	

7.2.3.4.1.7 CA_n257H

Editor's note: CA_n257H Test frequencies are FFS.

7.2.3.4.1.8 CA_n257I

Editor's note: CA_n257I Test frequencies are FFS.

7.2.3.4.1.9 CA_n257J

Editor's note: CA_n257J Test frequencies are FFS.

7.2.3.4.1.10 CA_n257K

Editor's note: CA_n257K Test frequencies are FFS.

7.2.3.4.1.11 CA_n257L

Editor's note: CA_n257L Test frequencies are FFS.

7.2.3.4.1.12 CA_n257M

Editor's note: CA_n257M Test frequencies are FFS.

7.2.3.4.2 NR Intra-band contiguous CA configurations for CA_n258

7.2.3.4.2.1 CA_n258B

Editor's note: CA_n258B Test frequencies are FFS.

7.2.3.4.2.2 CA_n258C

Editor's note: CA_n258C Test frequencies are FFS.

7.2.3.4.2.3 CA_n258D

Editor's note: CA_n258D Test frequencies are FFS.

7.2.3.4.2.4 CA_n258E

Editor's note: CA_n258E Test frequencies are FFS.

7.2.3.4.2.5 CA_n258F

Editor's note: CA_n258F Test frequencies are FFS.

7.2.3.4.2.6 CA_n258G

Table 7.2.3.4.2.6-1: NR Intra-Band contiguous CA configuration CA_n258G, SCS=60 kHz, ΔF_{Raster} 60 kHz, nominal channel spacing

FFS

Table 7.2.3.4.2.6-2: NR Intra-Band contiguous CA configuration CA_n258G (PCC=CC1 and SCC=CC2), SCS=120 kHz, nominal channel spacing

CBW combination	CC	CBW [MHz]	SCS [kHz]	carrier Bandwidth [PRBs]	Range	Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absolute Frequency Point A [ARFCN]	offset to Carrier [Carrier PRBs]	SSB block SCS [kHz]	GSN	absolute Frequency SSB [ARFCN]	k_{SS}	Offset Carrier CORESET#0 [RBs]	Offset Carrier CORESET#0 [RBs]	offset to Point A (SIB1) [PRBs]
100+100	CC1	100	120	66	Downlink												

					&	M i d	25 83 8. 40	20 42 91 5	25 79 0. 88	2042347	0		2 2 3 4 6	204258 7	0	0	0 (0)	0
					U p l i n k													
Channel spacing CC1-CC2=99.96 MHz (Note 1)																		
C C 2	1 0 0	1 2 0	66	D o w n l i n k &														
				M i d	25 93 8. 36	20 44 80 5	25 89 0. 84	2044013	0				2 2 3 5 2	204431 5	7	0	0 (0)	0
				U p l i n k														
Note 1: Corresponds to nominal channel spacing in accordance with TS 38.101-2 [8], clause 5.4A.1 for the channel bandwidths of the two respective NR component carriers. Note 2: CCs are specified in increasing frequency order. CC1 is used as PCell if nothing else is specified in the test case. Note 3: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs. Note 4: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-8 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.																		

7.2.3.4.2.7 CA_n258H

Editor's note: CA_n258H Test frequencies are FFS.

7.2.3.4.2.8 CA_n258I

Editor's note: CA_n258I Test frequencies are FFS.

7.2.3.4.2.9 CA_n258J

Editor's note: CA_n258J Test frequencies are FFS.

7.2.3.4.2.10 CA_n258K

Editor's note: CA_n258K Test frequencies are FFS.

7.2.3.4.2.11 CA_n258L

Editor's note: CA_n258L Test frequencies are FFS.

7.2.3.4.2.12 CA_n258M

Editor's note: CA_n258M Test frequencies are FFS.

7.2.3.4.3 NR Intra-band contiguous CA configurations for CA_n259

FFS

7.2.3.4.4 NR Intra-band contiguous CA configurations for CA_n260

FFS

7.2.3.4.5 NR Intra-band contiguous CA configurations for CA_n261

7.2.3.4.5.1 CA_n261B

Editor's note: CA_n261B Test frequencies are FFS.

7.2.3.4.5.2 CA_n261C

Editor's note: CA_n261C Test frequencies are FFS.

7.2.3.4.5.3 CA_n261D

Editor's note: CA_n261D Test frequencies are FFS.

7.2.3.4.5.4 CA_n261E

Editor's note: CA_n261E Test frequencies are FFS.

7.2.3.4.5.5 CA_n261F

Editor's note: CA_n261F Test frequencies are FFS.

7.2.3.4.5.6 CA_n261G

Table 7.2.3.4.5.6-1: NR Intra-Band contiguous CA configuration CA_n261G, SCS=60 kHz, ΔF_{Raster} 60 kHz, nominal channel spacing

FFS

Table 7.2.3.4.5.6-2: NR Intra-Band contiguous CA configuration CA_n261G (PCC=CC1 and SCC=CC2), SCS=120 kHz, nominal channel spacing

CBW combination	CC	CBW [MHz]	SCS [kHz]	carrier Bandwidth [PRBs]	Range	Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absolute Frequency Point A [ARFCN]	offset To Carrier [Carrier PRBs]	SSB block SCS [kHz]	GS CN	absolute Frequency SSB [ARFCN]	k_{SSB}	Offset Carrier CORESET#0 [RBs] Note 3	CORESET#0 Index (Offset [RBs]) Note 4	offset To Point A (SIB1) [PRBs] Note 4
100+100	CC1	100	120	66	Downlink & MIB												
						27877.44	2077123	27829.92	2076331	0		22464	2076571	0	0	0 (0)	0

7.2.3.4.5.12 CA_n261Q

Editor's note: CA_n261 Test frequencies are FFS.

7.2.3.5 NR intra-band non-contiguous CA configurations in FR2

Editor's note: further testability analysis for RRM intra-band non-contiguous CA configurations might be required.

For FR2 NR operating bands the test frequencies for RRM testing are specified in clause 4.3.1.2.4.

7.3 Default NG-RAN RRC message and information elements contents for RRM

7.3.0 General definitions

This section defines general concepts and conditions used in the RRM message contents in clause 7.3:

- CSI-RS for Tracking, CSI reporting and beam management

Table 7.3.0-1: Definitions of CSI-RS for Tracking, CSI reporting and beam management

Type	Short version	Explanation
CSI-RS for tracking	TRS	Corresponds to TRS.X.Y FDD/TDD RMCs in TS 38.533 [18]
CSI-RS for BM	BM	Corresponds to CSI-RS.X.2 FDD/TDD RMCs in TS 38.533 [18]
CSI-RS for CSI reporting	CSI	Corresponds to CSI-RS.X.1 FDD/TDD RMCs in TS 38.533 [18]
CSI-RS for IM	CSI-IM	CSI-IM resources for CSI reporting. Needed when CSI-RS.X.1 FDD/TDD RMCs are configured.

Editor's Note: The message contents for CSI-RS.X.3/4 FDD/TDD RMCs in TS 38.533 [18] are not yet defined.

7.3.1 Radio resource control information elements for RRM

As defined in clause 4.6.3 with the following exceptions:

- *TDD-UL-DL-ConfigCommon*

Table 7.3.1-1: TDD-UL-DL-ConfigCommon

Derivation Path: Table 4.6.3-192			
Information Element	Value/remark	Comment	Condition
TDD-UL-DL-ConfigCommon ::= SEQUENCE {			
referenceSubcarrierSpacing	SubcarrierSpacing		
pattern1 SEQUENCE {			
dl-UL-TransmissionPeriodicity	msOp625		TDDConf.3.1
	ms2		TDDConf.2.2
nrofDownlinkSlots	3		TDDConf.2.1, TDDConf.3.1
	1		TDDConf.1.1, TDDConf.2.2
nrofDownlinkSymbols	10		TDDConf.1.1, TDDConf.3.1
	6		TDDConf.2.1
	11		TDDConf.2.2
nrofUplinkSlots	2		TDDConf.1.1, TDDConf.2.2
	1		TDDConf.3.1
	4		TDDConf.2.1

nrofUplinkSymbols	4		TDDConf.2.1
	2		TDDConf.1.1, TDDConf.2.2, TDDConf.3.1
dl-UL-TransmissionPeriodicity-v1530	Not present		
	ms4		TDDConf.1.1, TDDConf.2.1
}			
pattern2	Not present		
pattern2 SEQUENCE {			TDDConf.1.1, TDDConf.2.1
dl-UL-TransmissionPeriodicity	ms1		TDDConf.1.1, TDDConf.2.1
nrofDownlinkSlots	1		TDDConf.1.1
	2		TDDConf.2.1
nrofDownlinkSymbols	0		TDDConf.1.1, TDDConf.2.1
nrofUplinkSlots	0		TDDConf.1.1, TDDConf.2.1
nrofUplinkSymbols	0		TDDConf.1.1, TDDConf.2.1
}			
}			

Condition	Explanation
TDDConf.1.1	TDD UL/DL configuration for SCS=15kHz
TDDConf.2.X	TDD UL/DL configuration for SCS=30kHz
TDDConf.3.1	TDD UL/DL configuration for SCS=120kHz

– *FilterCoefficient*

Table 7.3.1-2: FilterCoefficient

Derivation Path: Table 4.6.3-57			
Information Element	Value/remark	Comment	Condition
FilterCoefficient	fc0	L3 filtering is not used	

– *SSB-MTC*

Table 7.3.1-3: SSB-MTC

Derivation Path: Table 4.6.3-185			
Information Element	Value/remark	Comment	Condition
SSB-MTC ::= SEQUENCE {			
periodicityAndOffset CHOICE {			
sf10	0		SMTC.8
sf20	0		SMTC.1, SMTC.2
	5		SMTC.7
	10		SMTC.4, SMTC.5
	17		SMTC.6
	13		SMTC.9
sf40	0		SMTC.1 RedCap
	20		SMTC.3 RedCap
sf80	0		SMTC.2 RedCap SMTC.4 RedCap
	0		SMTC.3
}			
duration	sf1		SMTC.1, SMTC.3, SMTC.4, SMTC.8,

			SMTC.9, SMTC.1 RedCap SMTC.2 RedCap SMTC.3 RedCap
	sf5		SMTC.2, SMTC.5 SMTC.6, SMTC.7 SMTC.4 RedCap
}			

Condition	Explanation
SMTC.n	SMTC pattern n as defined in 38.533 Annex A.4
SMTC.n RedCap	RedCap-specific SMTC pattern n as defined in 38.533 Annex A.4A

– *SubcarrierSpacing*

Table 7.3.1-3a: SubcarrierSpacing

Derivation Path: Table 4.6.3-188			
Information Element	Value/remark	Comment	Condition
ssbSubcarrierSpacing	kHz15		SSB.1 FR1 SSB.3 FR1 SSB.5 FR1 SSB.4 RedCap FR1 SSB.6 RedCap FR1
	kHz30		SSB.2 FR1 SSB.4 FR1 SSB.6 FR1 SSB.1 RedCap FR1 SSB.2 RedCap FR1 SSB.3 RedCap FR1 SSB.5 RedCap FR1 SSB.7 RedCap FR1
	kHz120		SSB.1 FR2 SSB.3 FR2 SSB.5 FR2 SSB.7 FR2 SSB.1 RedCap FR2 SSB.2 RedCap FR2 SSB.3 RedCap FR2
	kHz240		SSB.2 FR2 SSB.4 FR2 SSB.6 FR2 SSB.8 FR2 SSB.4 RedCap FR2 SSB.5 RedCap FR2

Condition	Explanation
SSB.n FR1	SSB RMC n for FR1 as defined in 38.533 Annex A.3.1
SSB.n FR2	SSB RMC n for FR2 as defined in 38.533 Annex A.3.2
SSB.n RedCap FR1	RedCap specific SSB RMC n for FR1 as defined in 38.533 Annex A.3A.1
SSB.n RedCap FR2	RedCap specific SSB RMC n for FR2 as defined in 38.533 Annex A.3A.2

	'1111 0000'B		4SSB
}			
}			

Condition	Explanation
2SSB	For configuration with 2 SS Blocks
3SSB	For configuration with 3 SS Blocks
4SSB	For configuration with 4 SS Blocks

- CSI-MeasConfig

Table 7.3.1-6: CSI-MeasConfig for RRM

Derivation Path: Table 4.6.3-38			
Information Element	Value/remark	Comment	Condition
CSI-MeasConfig ::= SEQUENCE { nzp-CSI-RS-ResourceToAddModList SEQUENCE (SIZE (1..maxNrofNZP-CSI-RS-Resources)) OF NZP- CSI-RS-Resource {	$n_1+n_2+n_3+n_4+n_5$ entries	$n_1=1$ if CSI-RS for CSI is configured in test case, $n_1=0$ otherwise; $n_2=0$ if CSI-RS for BM is not configured in the test case. If CSI-RS for BM is configured in the test case, $n_2 = 2$ if 2SSB, $n_2 = 1$ otherwise $n_3=4$ if TRS is configured in test case, $n_3=0$ otherwise; $n_4=4$ if second resource set of TRS is configured in test case, $n_4=0$ otherwise; $n_5=2$ if aperiodic CSI-RS for BM is configured in test case, $n_5=0$ otherwise;	
NZP-CSI-RS-Resource[k, k=1.. n_1]	NZP-CSI-RS-Resource for CSI	entry 1	$n_1>0$
NZP-CSI-RS-Resource[k, k= n_1+1 .. n_1+n_2]	NZP-CSI-RS-Resource for BM (k- n_1-1)	entry ...	$n_2>0$
NZP-CSI-RS-Resource[k, k= n_1+n_2+1 .. $n_1+n_2+n_3$]	NZP-CSI-RS-Resource for TRS (k- n_1-n_2)	entry ...	$n_3>0$
NZP-CSI-RS-Resource[k, k= $n_1+n_2+n_3+1$.. $n_1+n_2+n_3+n_4$]	NZP-CSI-RS-Resource for TRS (k- $n_1-n_2-n_3$) with condition SECOND_SET	entry ...	$n_4>0$
NZP-CSI-RS-Resource[k, k= $n_1+n_2+n_3+n_4+1$.. $n_1+n_2+n_3+n_4+n_5$]	NZP-CSI-RS-Resource for BM (k- $n_1-n_2-n_3-n_4$) with condition APERIODIC	entry ...	$n_5>0$
}			
nzp-CSI-RS-ResourceSetToAddModList SEQUENCE (SIZE (1..maxNrofNZP-CSI-RS-ResourceSets)) OF NZP-CSI-RS-ResourceSet {	$m_1+m_2+m_3+m_4+m_5$ entries	$m_i=1$ if $n_i>0$, $m_i=0$ otherwise	

NZP-CSI-RS-ResourceSet[k, k=1..m ₁]	NZP-CSI-RS-ResourceSet for CSI	entry 1	n ₁ >0
NZP-CSI-RS-ResourceSet[k, k=m ₁ +1.. m ₁ +m ₂]	NZP-CSI-RS-ResourceSet for BM	entry ...	n ₂ >0
NZP-CSI-RS-ResourceSet[k, k= m ₁ +m ₂ +1.. m ₁ +m ₂ +m ₃]	NZP-CSI-RS-ResourceSet for TRS	entry ...	n ₃ >0
NZP-CSI-RS-ResourceSet[k, k= m ₁ +m ₂ +m ₃ +1.. m ₁ +m ₂ +m ₃ +m ₄]	NZP-CSI-RS-ResourceSet for TRS with condition SECOND_SET	entry ...	n ₄ >0
NZP-CSI-RS-ResourceSet[k, k= m ₁ +m ₂ +m ₃ +m ₄ +1.. m ₁ +m ₂ +m ₃ +m ₄ +m ₅]	NZP-CSI-RS-ResourceSet for BM with condition APERIODIC	entry ...	n ₅ >0
}			
csi-IM-ResourceToAddModList SEQUENCE (SIZE (1..maxNrofCSI-IM-Resources)) OF CSI-IM-Resource {	1 entry		n ₁ >0
CSI-IM-Resource[1]	CSI-IM-Resource-RRM	entry 1	
}			
csi-IM-ResourceToAddModList	Not present		n ₁ =0
csi-IM-ResourceSetToAddModList SEQUENCE (SIZE (1..maxNrofCSI-IM-ResourceSets)) OF CSI-IM-ResourceSet {	1 entry		n ₁ >0
CSI-IM-ResourceSet[1]	CSI-IM-ResourceSet-RRM	entry 1	
}			
csi-IM-ResourceSetToAddModList	Not present		n ₁ =0
csi-SSB-ResourceSetToAddModList	Not present		
csi-ResourceConfigToAddModList SEQUENCE (SIZE (1..maxNrofCSI-ResourceConfigurations)) OF CSI-ResourceConfig {	p ₁ +m ₂ +m ₃ +m ₄ +m ₅ entries	p ₁ =m ₁ +1 if n ₁ >0, p ₁ =0 otherwise.	
CSI-ResourceConfig[k, k=1..m ₁]	CSI-ResourceConfig for CSI	entry 1	n ₁ >0
CSI-ResourceConfig[k, k=p ₁]	CSI-ResourceConfig for CSI-IM	entry ...	n ₁ >0
CSI-ResourceConfig[k, k=p ₁ +1.. p ₁ +m ₂]	CSI-ResourceConfig for BM	entry ...	n ₂ >0
CSI-ResourceConfig[k, k= p ₁ +m ₂ +1.. p ₁ +m ₂ +m ₃]	CSI-ResourceConfig for TRS	entry ...	n ₃ >0
CSI-ResourceConfig[k, k= p ₁ +m ₂ +m ₃ +1.. p ₁ +m ₂ +m ₃ +m ₄]	CSI-ResourceConfig for TRS with condition SECOND_SET	entry ...	n ₄ >0
CSI-ResourceConfig[k, k= p ₁ +m ₂ +m ₃ +m ₄ +1.. p ₁ +m ₂ +m ₃ +m ₄ +m ₅]	CSI-ResourceConfig for BM with condition APERIODIC	entry ...	n ₅ >0
}			
csi-ReportConfigToAddModList SEQUENCE (SIZE (1..maxNrofCSI-ReportConfigurations)) OF CSI-ReportConfig {	r ₁ +r ₂ +r ₅ +s ₁ entries	r ₁ = 1 if CSI Reporting for CSI is configured in test case, r ₁ = 0 otherwise; r ₂ = 1 if CSI Reporting for BM is configured in test case, r ₂ = 0 otherwise; r ₅ = 1 if aperiodic CSI Reporting for BM is configured in test case, r ₅ = 0 otherwise; s ₁ = 1 if: - this CSI-MeasConfig is	

		configured on NR SpCell, and, - CSI-RS for CSI is configured on SCell in TC, and, - SCell is not a PUCCH-SCell Otherwise $s_1 = 0$.	
CSI-ReportConfig[k, k=1..r ₁]	CSI-ReportConfig for CSI	entry 1	r ₁ >0
CSI-ReportConfig[k, k=r ₁ +1.. r ₁ +r ₂]	CSI-ReportConfig for BM	entry ...	r ₂ >0
CSI-ReportConfig[k, k=r ₁ +r ₂ +1.. r ₁ +r ₂ +r ₅]	CSI-ReportConfig for BM with condition APERIODIC	entry ...	r ₅ >0
CSI-ReportConfig[k, k=r ₁ +r ₂ +r ₅ +1.. r ₁ +r ₂ +r ₅ +s ₁ +1]	CSI-ReportConfig for CSI with condition SCELL_CSI_ON_SPCELL	entry ...	s ₁ >0
}			
reportTriggerSize	Not present		
	1		n ₅ >0
aperiodicTriggerStateList CHOICE {	Not present		
setup	CSI-AperiodicTriggerStateList		n ₅ >0
}			
sCellActivationRS-ConfigToAddModList-r17	Not present		
sCellActivationRS-ConfigToAddModList-r17 SEQUENCE (SIZE (1.. maxNrofSCellActRS-r17)) OF SCellActivationRS-Config-r17 {	1 entry		FastActivation_SCell
SCellActivationRS-Config-r17	SCellActivationRS-Config-r17		
}			
sCellActivationRS-ConfigToReleaseList-r17	Not present		
}			

Condition	Explanation
2SSB	For configuration with 2 SS Blocks
FastActivation_SCell	For fast activation of the SCell

– SCellActivationRS-Config

Table 7.3.1-6A: SCellActivationRS-Config

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
SCellActivationRS-Config-r17 ::= SEQUENCE {			
sCellActivationRS-Id-r17	SCellActivationRS-Id-r17		
resourceSet-r17	NZP-CSI-RS-ResourceSetId-AperiodicTRS N NZP-CSI-RS-ResourceSetId-AperiodicTRS with condition SECOND_SET		SECOND_SET_A
gapBetweenBursts-r17	Not present		
qcl-Info-r17	TCI-StateId		
}			
}			

Condition	Explanation
SECOND_SET_A	For the second resource set for Aperiodic TRS configured in test

– SCellActivationRS-Id-r17

Table 7.3.1-6B: SCellActivationRS-Id-r17

Derivation Path: Table 4.6.3-42			
Information Element	Value/remark	Comment	Condition
SCellActivationRS-Id-r17	n	n is the SCellActivationRS-Id-r17 allocated for resource config of Aperiodic TRS. Value of n is left to internal implementation	

– NZP-CSI-RS-Resource for TRS

Table 7.3.1-7: NZP-CSI-RS-Resource for TRS(Id)

Derivation Path: Table 4.6.3-45			
Information Element	Value/remark	Comment	Condition
NZP-CSI-RS-Resource ::= SEQUENCE {			
NZP-CSI-RS-ResourceId	NZP-CSI-RS-ResourceId for TRS(Id)		
	NZP-CSI-RS-ResourceId for TRS(Id) with Condition SECOND_SET		SECOND_SET
CSI-RS-ResourceMapping	CSI-RS-ResourceMapping for TRS(Id)		
	CSI-RS-ResourceMapping for TRS(Id) with condition SECOND_SET		SECOND_SET
powerControlOffset	0		
powerControlOffsetSS	db0		
scramblingID	PhysCellId	PCI of the cell sending the TRS	
periodicityAndOffset	CSI-ResourcePeriodicityAndOffset for TRS(Id)		
qcl-InfoPeriodicCSI-RS	TCI-StateId-RRM(0)		
	TCI-StateId-RRM(1)		SECOND_SET
}			

Condition	Explanation
SECOND_SET	For resource belong to the second resource set for TRS, only applies to FR2 test

– NZP-CSI-RS-Resource for Aperiodic TRS

Table 7.3.1-7AA: NZP-CSI-RS-Resource for AperiodicTRS(Id)

Derivation Path: Table 4.6.3-45			
Information Element	Value/remark	Comment	Condition
NZP-CSI-RS-Resource ::= SEQUENCE {			
NZP-CSI-RS-ResourceId	NZP-CSI-RS-ResourceId for AperiodicTRS(Id)		

	NZP-CSI-RS-ResourceId for AperiodicTRS(Id) with Condition SECOND_SET		SECOND_SET_A
CSI-RS-ResourceMapping	CSI-RS-ResourceMapping for TRS(Id)		
	CSI-RS-ResourceMapping for TRS(Id) with condition SECOND_SET		SECOND_SET_A
powerControlOffset	0		
powerControlOffsetSS	db0		
scramblingID	PhysCellId	PCI of the cell sending the Aperiodic TRS	
}			

Condition	Explanation
SECOND_SET_A	For the second resource set for Aperiodic TRS configured in test

– NZP-CSI-RS-Resource for CSI

Table 7.3.1-7A: NZP-CSI-RS-Resource for CSI

Derivation Path: Table 4.6.3-45			
Information Element	Value/remark	Comment	Condition
NZP-CSI-RS-Resource ::= SEQUENCE {			
nzp-CSI-RS-ResourceId	NZP-CSI-RS-ResourceId for CSI		
resourceMapping	CSI-RS-ResourceMapping for CSI		
powerControlOffset	0		
powerControlOffsetSS	db0		
scramblingID	0		
periodicityAndOffset	CSI-ResourcePeriodicityAndOffset for CSI		
qcl-InfoPeriodicCSI-RS	TCI-StateId-RRM(0)		
}			

– NZP-CSI-RS-Resource for BM

Table 7.3.1-7B: NZP-CSI-RS-Resource for BM(Id)

Derivation Path: Table 4.6.3-45			
Information Element	Value/remark	Comment	Condition
NZP-CSI-RS-Resource ::= SEQUENCE {			
nzp-CSI-RS-ResourceId	NZP-CSI-RS-ResourceId for BM (Id)		
	NZP-CSI-RS-ResourceId for BM (Id) with condition APERIODIC		APERIODIC
resourceMapping	CSI-RS-ResourceMapping for BM (Id)		
powerControlOffset	0		
powerControlOffsetSS	db0		
scramblingID	0		

periodicityAndOffset	CSI-ResourcePeriodicityAndOffset for BM		
	Not present		APERIODIC
qcl-InfoPeriodicCSI-RS	TCI-StateId-RRM(Id)		
	Not present		APERIODIC
}			

Condition	Explanation
APERIODIC	For aperiodic CSI-RS resources

– NZP-CSI-RS-ResourceId for TRS

Table 7.3.1-7C: NZP-CSI-RS-ResourceId for TRS(Id)

Derivation Path: Table 4.6.3-86			
Information Element	Value/remark	Comment	Condition
NZP-CSI-RS-ResourceId	n+Id-1	n is the first NZP-CSI-RS-ResourceId allocated for TRS resource set. Value of n is left to internal implementation Id = 1,2,3,4	
	n+Id+3		SECOND_SET

Condition	Explanation
SECOND_SET	For the second TRS resource set configured in test, only applies to FR2 test

– NZP-CSI-RS-ResourceId for Aperiodic TRS

Table 7.3.1-7CA: NZP-CSI-RS-ResourceId for Aperiodic TRS(Id)

Derivation Path: Table 4.6.3-86			
Information Element	Value/remark	Comment	Condition
NZP-CSI-RS-ResourceId	n+Id-1	n is the first NZP-CSI-RS-ResourceId allocated for aperiodic TRS resource set. Value of n is left to internal implementation Id = 1,2,3,4	
	n+Id+3		SECOND_SET_A

Condition	Explanation
SECOND_SET_A	For the second resource set for Aperiodic TRS configured in test

– NZP-CSI-RS-ResourceId for CSI

Table 7.3.1-7D: NZP-CSI-RS-ResourceId for CSI

Derivation Path: Table 4.6.3-86			
Information Element	Value/remark	Comment	Condition

NZP-CSI-RS-ResourceId	n	n is the NZP-CSI-RS-ResourceId allocated for CSI-RS for CSI report. Value of n is left to internal implementation	

– NZP-CSI-RS-ResourceId for BM

Table 7.3.1-7E: NZP-CSI-RS-ResourceId for BM(Id)

Derivation Path: Table 4.6.3-86			
Information Element	Value/remark	Comment	Condition
NZP-CSI-RS-ResourceId	n+Id	n is the first NZP-CSI-RS-ResourceId allocated for CSI-RS for BM. Value of n is left to internal implementation Id = 0,1	
	m+Id	m is the first NZP-CSI-RS-ResourceId allocated for aperiodic CSI-RS for BM. Value of m is left to internal implementation Id = 0,1	APERIODIC

Condition	Explanation
APERIODIC	For aperiodic CSI-RS resources

– CSI-RS-ResourceMapping for TRS

Table 7.3.1-8: CSI-RS-ResourceMapping for TRS(Id)

Derivation Path: Table 4.6.3-45 with condition TRS			
Information Element	Value/remark	Comment	Condition
CSI-RS-ResourceMapping ::= SEQUENCE {			
frequencyDomainAllocation CHOICE {			
row1	0001	k ₀ =0 for CSI-RS resource 1,2,3,4	
}			
firstOFDMSymbolInTimeDomain	5	l ₀ = 5 for CSI-RS resource 1 and 3	(Id = 1 or 3) AND FR1
	9	l ₀ = 9 for CSI-RS resource 2 and 4	(Id = 2 or 4) AND FR1
	1		(Id = 1 or 3) AND FR2
	2		(Id = 1 or 3) AND FR2 AND

			SECOND_S ET
	5		(Id = 2 or 4) AND FR2
	6		(Id = 1 or 3) AND FR2 AND SECOND_S ET
nrofPorts	p1	1 for CSI-RS resource 1,2,3,4	
freqBand	CSI- FrequencyOccupation- RRM		
}			

Condition	Explanation
SECOND_SET	For the second resource set for TRS configured in test, only applies to FR2 test

– *CSI-RS-ResourceMapping for CSI*

Table 7.3.1-8A: CSI-RS-ResourceMapping for CSI

Derivation Path: Table 4.6.3-45			
Information Element	Value/remark	Comment	Condition
CSI-RS-ResourceMapping ::= SEQUENCE {			
frequencyDomainAllocation CHOICE {			
other	000001		
}			
nrofPorts	p2		
firstOFDMSymbolInTimeDomain	5		NOT SCS15
	4		SCS15
freqBand	CSI- FrequencyOccupation- RRM		
}			

– *CSI-RS-ResourceMapping for BM*

Table 7.3.1-8B: CSI-RS-ResourceMapping for BM (Id)

Derivation Path: Table 4.6.3-45			
Information Element	Value/remark	Comment	Condition
CSI-RS-ResourceMapping ::= SEQUENCE {			
frequencyDomainAllocation CHOICE {			
row1	0001		
}			
nrofPorts	p1		
firstOFDMSymbolInTimeDomain	6		Id = 0
	10		Id = 1
cdm-Type	noCDM		
density CHOICE {			
three	NULL		
}			
freqBand	CSI- FrequencyOccupation- RRM		
}			

– *CSI-RS-ResourceMapping for ZP-CSI-RS*

Table 7.3.1-8C: CSI-RS-ResourceMapping-ZP-CSI-RS

Derivation Path: Table 4.6.3-45			
Information Element	Value/remark	Comment	Condition
CSI-RS-ResourceMapping ::= SEQUENCE {			
frequencyDomainAllocation CHOICE {			
row4	100	$k_0 = 8$	
}			
nrofPorts	p4		
firstOFDMSymbolInTimeDomain	4		
cdm-Type	fd-CDM2		
density CHOICE {			
one	NULL		
}			
freqBand	CSI-FrequencyOccupation-RRM		
}			

– *CSI-ResourcePeriodicityAndOffset for TRS*

Table 7.3.1-9: CSI-ResourcePeriodicityAndOffset for TRS(Id)

Derivation Path: Table 4.6.3-43			
Information Element	Value/remark	Comment	Condition
CSI-ResourcePeriodicityAndOffset ::= CHOICE {			
slots80	40		(Id = 1 or 2) AND SCS120
	41		(Id = 3 or 4) AND SCS120
slots40	20	Periodicity 40 slots and offset 20 for CSI-RS resource 1 and 2	(Id = 1 or 2) AND SCS30
	21	Periodicity 40 slots and offset 21 for CSI-RS resource 3 and 4	(Id = 3 or 4) AND SCS30
slots20	10	Periodicity 20 slots and offset 10 for CSI-RS resource 1 and 2	(Id = 1 or 2) AND SCS15
	11	Periodicity 20 slots and offset 11 for CSI-RS resource 3 and 4	(Id = 3 or 4) AND SCS15
}			

– *CSI-ResourcePeriodicityAndOffset for CSI*

Table 7.3.1-9A: CSI-ResourcePeriodicityAndOffset for CSI

Derivation Path: Table 4.6.3-43			
Information Element	Value/remark	Comment	Condition
CSI-ResourcePeriodicityAndOffset ::= CHOICE {			
slots5	1		SCS15
slots10	2		SCS30
slots40	8		SCS120
}			

– *CSI-ResourcePeriodicityAndOffset for BM*

Table 7.3.1-9B: CSI-ResourcePeriodicityAndOffset for BM

Derivation Path: Table 4.6.3-43			
Information Element	Value/remark	Comment	Condition
CSI-ResourcePeriodicityAndOffset ::= CHOICE {			
slots10	1		SCS15
slots20	2		SCS30
slots80	16		SCS120
}			

– *CSI-FrequencyOccupation*

Table 7.3.1-10: CSI-FrequencyOccupation-RRM

Derivation Path: Table 4.6.3-33			
Information Element	Value/remark	Comment	Condition
CSI-FrequencyOccupation ::= SEQUENCE {			
startingRB	$4 \cdot \text{floor}(n/4)$	n is the start RB of active BWP floor() means rounding down to the nearest integer startingRB can only be multiple of 4	
nrofRBs	$\max(4 \cdot \text{ceil}(n/4 - \text{floor}(n/4) + m/4), 24)$	m is the bandwidth of active BWP ceil() means rounding up to the nearest integer Bandwidth of CSI-RS used in RRM test is required to be same as active BWP according to 38.133. nrofRBs shall be no less than 24 and shall be multiple of 4	
}			

– N郑-C SI-R S-ResourceSet for TRS

Table 7.3.1-11: N郑-C SI-R S-ResourceSet for TRS

Derivation Path: Table 4.6.3-87 with Condition TRS			
Information Element	Value/remark	Comment	Condition
N郑-C SI-R S-ResourceSet ::= SEQUENCE {			
n郑-C SI-R S-ResourceSetId	N郑-C SI-R S-ResourceSetId-TRS		
	N郑-C SI-R S-ResourceSetId-TRS with condition SECOND_SET		SECOND_SET
n郑-C SI-R S-Resources SEQUENCE (SIZE (1..maxNrofN郑-C SI-R S-ResourcesPerSet)) OF N郑-C SI-R S-ResourceId {	4 entries		
N郑-C SI-R S-ResourceId[1]	N郑-C SI-R S-ResourceId for TRS(1)	entry 1	
N郑-C SI-R S-ResourceId[2]	N郑-C SI-R S-ResourceId for TRS(2)	entry 2	
N郑-C SI-R S-ResourceId[3]	N郑-C SI-R S-ResourceId for TRS(3)	entry 3	
N郑-C SI-R S-ResourceId[4]	N郑-C SI-R S-ResourceId for TRS(4)	entry 4	
}			
n郑-C SI-R S-Resources SEQUENCE (SIZE (1..maxNrofN郑-C SI-R S-ResourcesPerSet)) OF N郑-C SI-R S-ResourceId {	4 entries		SECOND_SET
N郑-C SI-R S-ResourceId[1]	N郑-C SI-R S-ResourceId for TRS(1) with condition SECOND_SET	entry 1	
N郑-C SI-R S-ResourceId[2]	N郑-C SI-R S-ResourceId for TRS(2) with condition SECOND_SET	entry 2	
N郑-C SI-R S-ResourceId[3]	N郑-C SI-R S-ResourceId for TRS(3) with condition SECOND_SET	entry 3	
N郑-C SI-R S-ResourceId[4]	N郑-C SI-R S-ResourceId for TRS(4) with condition SECOND_SET	entry 4	
}			
}			

Condition	Explanation
SECOND_SET	For the second TRS resource set configured in test, only applies to FR2 test

– N郑-C SI-R S-ResourceSet for Aperiodic TRS

Table 7.3.1-11AA: N郑-C SI-R S-ResourceSet for Aperiodic TRS

Derivation Path: Table 4.6.3-87 with Condition TRS			
Information Element	Value/remark	Comment	Condition
N郑-C SI-R S-ResourceSet ::= SEQUENCE {			
n郑-C SI-R S-ResourceSetId	N郑-C SI-R S-ResourceSetId-AperiodicTRS		
	N郑-C SI-R S-ResourceSetId-AperiodicTRS with condition SECOND_SET		SECOND_SET_A
n郑-C SI-R S-Resources SEQUENCE (SIZE (1..maxNrofN郑-C SI-R S-ResourcesPerSet)) OF N郑-C SI-R S-ResourceId {	4 entries		
N郑-C SI-R S-ResourceId[1]	N郑-C SI-R S-ResourceId for AperiodicTRS(1)	entry 1	

NZP-CSI-RS-ResourceId[2]	NZP-CSI-RS-ResourceId for AperiodicTRS(2)	entry 2	
NZP-CSI-RS-ResourceId[3]	NZP-CSI-RS-ResourceId for AperiodicTRS(3)	entry 3	
NZP-CSI-RS-ResourceId[4]	NZP-CSI-RS-ResourceId for AperiodicTRS(4)	entry 4	
}			
nzp-CSI-RS-Resources SEQUENCE (SIZE (1..maxNrofNZP-CSI-RS-ResourcesPerSet)) OF NZP-CSI-RS-ResourceId {	4 entries		SECOND_SET_A
NZP-CSI-RS-ResourceId[1]	NZP-CSI-RS-ResourceId for AperiodicTRS(1) with condition SECOND_SET	entry 1	
NZP-CSI-RS-ResourceId[2]	NZP-CSI-RS-ResourceId for AperiodicTRS(2) with condition SECOND_SET	entry 2	
NZP-CSI-RS-ResourceId[3]	NZP-CSI-RS-ResourceId for AperiodicTRS(3) with condition SECOND_SET	entry 3	
NZP-CSI-RS-ResourceId[4]	NZP-CSI-RS-ResourceId for AperiodicTRS(4) with condition SECOND_SET	entry 4	
}			
trs-Info	true		
aperiodicTriggeringOffsetL2-r17	2		
}			

Condition	Explanation
SECOND_SET_A	For the second resource set for Aperiodic TRS configured in test

– NZP-CSI-RS-ResourceSet for CSI

Table 7.3.1-11A: NZP-CSI-RS-ResourceSet for CSI

Derivation Path: Table 4.6.3-87			
Information Element	Value/remark	Comment	Condition
NZP-CSI-RS-Resource ::= SEQUENCE {			
nzp_CSI_ResourceSetId	NZP-CSI-RS-ResourceSetId-CSI		
nzp-CSI-RS-Resources SEQUENCE (SIZE (1..maxNrofNZP-CSI-RS-ResourcesPerSet)) OF NZP-CSI-RS-ResourceId {	1 entry		
NZP-CSI-RS-ResourceId[1]	NZP-CSI-RS-ResourceId for CSI	entry 1	
}			
repetition	Not present		
}			

– NZP-CSI-RS-ResourceSet for BM

Table 7.3.1-11B: NZP-CSI-RS-ResourceSet for BM

Derivation Path: Table 4.6.3-87			
Information Element	Value/remark	Comment	Condition
NZP-CSI-RS-ResourceSet ::= SEQUENCE {			
nzp-CSI-ResourceSetId	NZP-CSI-RS-ResourceSetId-BM		
	NZP-CSI-RS-ResourceSetId-BM with condition APERIODIC		APERIODIC

nzp-CSI-RS-Resources SEQUENCE (SIZE (1..maxNrofNZP-CSI-RS-ResourcesPerSet)) OF NZP-CSI-RS-ResourceId {	2 entries		
NZP-CSI-RS-ResourceId[1]	NZP-CSI-RS-ResourceId for BM (0)	entry 1	
	NZP-CSI-RS-ResourceId for BM (0) with condition APERIODIC		APERIODIC
NZP-CSI-RS-ResourceId[2]	NZP-CSI-RS-ResourceId for BM (1)	entry 2	
	NZP-CSI-RS-ResourceId for BM (1) with condition APERIODIC		APERIODIC
}			
aperiodicTriggeringOffset	4		APERIODIC
	0		APERIODIC AND FR1
}			

Condition	Explanation
APERIODIC	For aperiodic CSI-RS resources

– NZP-CSI-RS-ResourceSetId for TRS

Table 7.3.1-11C: NZP-CSI-RS-ResourceSetId-TRS

Derivation Path: Table 4.6.3-88			
Information Element	Value/remark	Comment	Condition
NZP-CSI-RS-ResourceSetId	n	n is the first NZP-CSI-RS-ResourceSetId allocated for TRS resource set. Value of n is left to internal implementation	
	n+1		SECOND_SET

Condition	Explanation
SECOND_SET	For the second TRS resource set configured in test, only applies to FR2 test

– NZP-CSI-RS-ResourceSetId for Aperiodic TRS

Table 7.3.1-11CA: NZP-CSI-RS-ResourceSetId-AperiodicTRS

Derivation Path: Table 4.6.3-88			
Information Element	Value/remark	Comment	Condition
NZP-CSI-RS-ResourceSetId	n	n is the first NZP-CSI-RS-ResourceSetId allocated for aperiodic TRS resource set. Value of n is left to internal implementation	
	n+1		SECOND_SET A

Condition	Explanation
SECOND_SET_A	For the second resource set for Aperiodic TRS configured in test

– NZP-CSI-RS-ResourceSetId for CSI

Table 7.3.1-11D: NZP-CSI-RS-ResourceSetId-CSI

Derivation Path: Table 4.6.3-88			
Information Element	Value/remark	Comment	Condition
NZP-CSI-RS-ResourceSetId	n	n is the NZP-CSI-RS-ResourceSetId allocated for resource set of CSI-RS for CSI reporting. Value of n is left to internal implementation	

– NZP-CSI-RS-ResourceSetId for BM

Table 7.3.1-11E: NZP-CSI-RS-ResourceSetId-BM

Derivation Path: Table 4.6.3-88			
Information Element	Value/remark	Comment	Condition
NZP-CSI-RS-ResourceSetId	n	n is the NZP-CSI-RS-ResourceSetId allocated for resource set of CSI-RS for BM. Value of n is left to internal implementation	
	m	m is the NZP-CSI-RS-ResourceSetId allocated for resource set of aperiodic CSI-RS for BM. Value of m is left to internal implementation	APERIODIC

Condition	Explanation
APERIODIC	For aperiodic CSI-RS resources

– CSI-ResourceConfig for TRS

Table 7.3.1-12: CSI-ResourceConfig for TRS

Derivation Path: TS 38.508-1 Table 4.6.3-41			
Information Element	Value/remark	Comment	Condition
CSI-ResourceConfig ::= SEQUENCE {			

csi-ResourceConfigId	CSI-ResourceConfigId-TRS		
csi-RS-ResourceSetList CHOICE {			
nzp-CSI-RS-SSB SEQUENCE {			
nzp-CSI-RS-ResourceSetList SEQUENCE (SIZE (1..maxNrofNZP-CSI-RS-ResourceSetsPerConfig)) OF NZP-CSI-RS-ResourceSetId {	1 entry		
NZP-CSI-RS-ResourceSetId[1]	NZP-CSI-RS-ResourceSetId-TRS		
	NZP-CSI-RS-ResourceSetId-TRS with condition SECOND_SET		SECOND_SET
}			
}			
bwp-Id	BWP-Id of active BWP		
}			
}			

Condition	Explanation
SECOND_SET	For the second resource set for TRS configured in test, only applies to FR2 test

– CSI-ResourceConfig for CSI

Table 7.3.1-12A: CSI-ResourceConfig for CSI

Derivation Path: TS 38.508-1 Table 4.6.3-41			
Information Element	Value/remark	Comment	Condition
CSI-ResourceConfig ::= SEQUENCE {			
csi-ResourceConfigId	CSI-ResourceConfigId-CSI		
csi-RS-ResourceSetList CHOICE {			
nzp-CSI-RS-SSB SEQUENCE {			
nzp-CSI-RS-ResourceSetList SEQUENCE (SIZE (1..maxNrofNZP-CSI-RS-ResourceSetsPerConfig)) OF NZP-CSI-RS-ResourceSetId {	1 entry		
NZP-CSI-RS-ResourceSetId[1]	NZP-CSI-RS-ResourceSetId-CSI	entry 1	
}			
}			
}			
bwp-Id	BWP-Id of active BWP		
}			

– CSI-ResourceConfig for BM

Table 7.3.1-12B: CSI-ResourceConfig for BM

Derivation Path: Table 4.6.3-41			
Information Element	Value/remark	Comment	Condition
CSI-ResourceConfig ::= SEQUENCE {			
csi-ResourceConfigId	CSI-ResourceConfigId-BM		
	CSI-ResourceConfigId-BM with condition APERIODIC		APERIODIC
csi-RS-ResourceSetList CHOICE {			
nzp-CSI-RS-SSB SEQUENCE {			
nzp-CSI-RS-ResourceSetList SEQUENCE (SIZE (1..maxNrofNZP-CSI-RS-ResourceSetsPerConfig)) OF NZP-CSI-RS-ResourceSetId {	1 entry		
NZP-CSI-RS-ResourceSetId[1]	NZP-CSI-RS-ResourceSetId-BM		

	NZP-CSI-RS-ResourceSetId-BM with condition APERIODIC		APERIODIC
}			
}			
}			
bwp-Id	BWP-Id of active BWP		
resourceType	aperiodic		APERIODIC
	periodic		PERIODIC
}			

Condition	Explanation
APERIODIC	For aperiodic CSI-RS resources
PERIODIC	For periodic CSI-RS resources

– CSI-ResourceConfig for CSI-IM

Table 7.3.1-12BA: CSI-ResourceConfig for CSI-IM

Derivation Path: Table 4.6.3-41			
Information Element	Value/remark	Comment	Condition
CSI-ResourceConfig ::= SEQUENCE {			
csi-ResourceConfigId	CSI-ResourceConfigId-CSI-IM		
csi-RS-ResourceSetList CHOICE {			
csi-IM-ResourceSetList SEQUENCE (SIZE (1..maxNrofCSI-IM-ResourceSetsPerConfig)) OF CSI-IM-ResourceSetId {	1 entry		
CSI-IM-ResourceSetId[1]	CSI-IM-ResourceSetId-RRM	entry 1	
}			
}			
bwp-Id	BWP-Id		
resourceType	periodic		
}			

– CSI-ResourceConfigId for TRS

Table 7.3.1-12C: CSI-ResourceConfigId-TRS

Derivation Path: Table 4.6.3-42			
Information Element	Value/remark	Comment	Condition
CSI-ResourceConfigId	n	n is the CSI-ResourceConfigId allocated for resource config of TRS. Value of n is left to internal implementation	

– CSI-ResourceConfigId for CSI

Table 7.3.1-12D: CSI-ResourceConfigId-CSI

Derivation Path: Table 4.6.3-42			
Information Element	Value/remark	Comment	Condition
CSI-ResourceConfigId	n	n is the CSI-ResourceConfigId	

		allocated for resource config of CSI-RS for CSI reporting. Value of n is left to internal implementation	

– *CSI-ResourceConfigId for BM*

Table 7.3.1-12E: CSI-ResourceConfigId-BM

Derivation Path: Table 4.6.3-42			
Information Element	Value/remark	Comment	Condition
CSI-ResourceConfigId	n	n is the CSI-ResourceConfigId allocated for resource config of CSI-RS for BM. Value of n is left to internal implementation	
	m	m is the CSI-ResourceConfigId allocated for resource config of aperiodic CSI-RS for BM. Value of m is left to internal implementation	APERIODIC

Condition	Explanation
APERIODIC	For aperiodic CSI-RS resources

– *CSI-ResourceConfigId-CSI-IM*

Table 7.3.1-12EA: CSI-ResourceConfigId-CSI-IM

Derivation Path: Table 4.6.3-39			
Information Element	Value/remark	Comment	Condition
CSI-ResourceConfigId	n	n is the first CSI-ResourceConfigId allocated for CSI-IM resource configuration Value of n is left to internal implementation	

– *CSI-ReportConfig for CSI*

Table 7.3.1-12F: CSI-ReportConfig for CSI

Derivation Path: Table 4.6.3-39			
Information Element	Value/remark	Comment	Condition
CSI-ReportConfig ::= SEQUENCE {			

reportConfigId	CSI-ReportConfigId-CSI		
	CSI-ReportConfigId-CSI with condition SCELL_CSI_ON_SPCELL		SCELL_CSI_ON_SPCELL
carrier	Not present	indicates the same serving cell as this report configuration	
	ServCellIndex of the SCell		SCELL_CSI_ON_SPCELL
resourcesForChannelMeasurement	CSI-ResourceConfigId-CSI		
csi-IM-ResourcesForInterference	CSI-ResourceConfigId-CSI-IM		
nzp-CSI-RS-ResourcesForInterference	Not present		
reportConfigType CHOICE {			
periodic SEQUENCE {			
reportSlotConfig CHOICE {			
slots5	2		SCS15
slots10	4		SCS30
slots40	4		SCS120
}			
pucch-CSI-ResourceList SEQUENCE (SIZE (1..maxNrofBWPs)) OF PUCCH-CSI-Resource {	1 entry		
PUCCH-CSI-Resource [1] SEQUENCE {		entry 1	
uplinkBandwidthPartId	BWP-Id of active UL BWP		
pucch-Resource	8	The first format 2 PUCCH resource configured in Table 4.6.3-112 is used	
	8	The first format 2 PUCCH resource configured in Table 4.6.3-112 is used	SCELL_CSI_ON_SPCELL
}			
}			
}			
}			
reportQuantity CHOICE {			
cri-RI-PMI-CQI	null		
}			
reportFreqConfiguration SEQUENCE {			
csi-ReportingBand CHOICE {			
subbands3	'111'B		MORE_THAN_24_PRBS AND SUBBANDS 3
subbands4	'1111'B		MORE_THAN_24_PRBS AND SUBBANDS 4
subbands5	'11111'B		MORE_THAN_24_PRBS AND SUBBANDS 5
subbands6	'111111'B		MORE_THAN_24_PRBS AND

			SUBBANDS 6
subbands7	'1111111'B		MORE_THA N_24_PRBS AND SUBBANDS 7
subbands8	'11111111'B		MORE_THA N_24_PRBS AND SUBBANDS 8
subbands9	'111111111'B		MORE_THA N_24_PRBS AND SUBBANDS 9
subbands10	'1111111111'B		MORE_THA N_24_PRBS AND SUBBANDS 10
subbands11	'11111111111'B		MORE_THA N_24_PRBS AND SUBBANDS 11
subbands12	'111111111111'B		MORE_THA N_24_PRBS AND SUBBANDS 12
subbands13	'1111111111111'B		MORE_THA N_24_PRBS AND SUBBANDS 13
subbands14	'11111111111111'B		MORE_THA N_24_PRBS AND SUBBANDS 14
subbands15	'111111111111111'B		MORE_THA N_24_PRBS AND SUBBANDS 15
subbands16	'1111111111111111'B		MORE_THA N_24_PRBS AND SUBBANDS 16
subbands17	'11111111111111111'B		MORE_THA N_24_PRBS AND SUBBANDS 17
subbands18	'111111111111111111'B		MORE_THA N_24_PRBS AND SUBBANDS 18
}			
}			
codebookConfig	CodebookConfig-CSI		
}			

Condition	Explanation
SCell_CSI_ON_SPCell	For SCell CSI reporting on NR SpCell
MORE_THAN_24_PRBS	Total number of PRBs in the active BWP higher than 24
SUBBANDS[N]	N number of subbands as defined in [21] clause 5.2.1.4

– *CSI-ReportConfig for BM*

Table 7.3.1-12G: CSI-ReportConfig for BM

Derivation Path: Table 4.6.3-39			
Information Element	Value/remark	Comment	Condition
CSI-ReportConfig ::= SEQUENCE {			
reportConfigId	CSI-ReportConfigId-BM		
	CSI-ReportConfigId-BM with condition APERIODIC		APERIODIC
carrier	Not present		
resourcesForChannelMeasurement	CSI-ResourceConfigId-BM		
	CSI-ResourceConfigId-BM with condition APERIODIC		APERIODIC
csi-IM-ResourcesForInterference	Not present		
nzp-CSI-RS-ResourcesForInterference	Not present		
reportConfigType CHOICE {			
periodic			
reportSlotConfig ::= CHOICE {			
slots80	2		SCS15
slots80	4		SCS30 OR SCS120
}			
pucch-CSI-ResourceList SEQUENCE (SIZE (1..maxNrofBWPs)) OF {			
PUCCH_CSI_Resource[0] SEQUENCE {			
uplinkBandwidthPartId	BWP-Id		
pucch_Resource	9		
}			
}			
aperiodic SEQUENCE {			APERIODIC
reportSlotOffsetList SEQUENCE (SIZE (1..maxNrofUL-Allocations)) OF {	1 entry		
INTEGER[1]	8		
}			
}			
reportQuantity CHOICE {			
cri-RSRP	NULL		
}			
reportFreqConfiguration SEQUENCE {			
csi-ReportingBand CHOICE {			
subbands3	'111'B		MORE_THAN_24_PRBS AND SUBBANDS 3
subbands4	'1111'B		MORE_THAN_24_PRBS AND SUBBANDS 4
subbands5	'11111'B		MORE_THAN_24_PRBS AND SUBBANDS 5

subbands6	'111111'B		MORE_THAN_24_PRBS AND SUBBANDS 6
subbands7	'1111111'B		MORE_THAN_24_PRBS AND SUBBANDS 7
subbands8	'11111111'B		MORE_THAN_24_PRBS AND SUBBANDS 8
subbands9	'111111111'B		MORE_THAN_24_PRBS AND SUBBANDS 9
subbands10	'1111111111'B		MORE_THAN_24_PRBS AND SUBBANDS 10
subbands11	'11111111111'B		MORE_THAN_24_PRBS AND SUBBANDS 11
subbands12	'111111111111'B		MORE_THAN_24_PRBS AND SUBBANDS 12
subbands13	'1111111111111'B		MORE_THAN_24_PRBS AND SUBBANDS 13
subbands14	'11111111111111'B		MORE_THAN_24_PRBS AND SUBBANDS 14
subbands15	'111111111111111'B		MORE_THAN_24_PRBS AND SUBBANDS 15
subbands16	'1111111111111111'B		MORE_THAN_24_PRBS AND SUBBANDS 16
subbands17	'11111111111111111'B		MORE_THAN_24_PRBS AND SUBBANDS 17
subbands18	'111111111111111111'B		MORE_THAN_24_PRBS AND SUBBANDS 18
}			
}			
codebookConfig	Not present		

}			

Condition	Explanation
APERIODIC	For aperiodic CSI-RS resources
MORE_THAN_24_PRBS	Total number of PRBs in the active BWP higher than 24
SUBBANDS[N]	N number of subbands as defined in [21] clause 5.2.1.4

– *CSI-ReportConfigId for CSI*

Table 7.3.1-12H: CSI-ReportConfigId-CSI

Derivation Path: Table 4.6.3-40			
Information Element	Value/remark	Comment	Condition
CSI-ReportConfigId	n	n is the CSI-ReportConfigId allocated for report config of CSI-RS for CSI. Value of n is left to internal implementation	
	m	m is the CSI-ReportConfigId allocated for report config of SCell CSI on SpCell. Value of m is left to internal implementation	SCell_CSI_ON_SPCELL

Condition	Explanation
SCell_CSI_ON_SPCELL	For SCell CSI reporting on NR SpCell

– *CSI-ReportConfigId for BM*

Table 7.3.1-12I: CSI-ReportConfigId-BM

Derivation Path: Table 4.6.3-40			
Information Element	Value/remark	Comment	Condition
CSI-ReportConfigId	n	n is the CSI-ReportConfigId allocated for report config of CSI-RS for BM. Value of n is left to internal implementation	
	m	m is the CSI-ReportConfigId allocated for report config of aperiodic CSI-RS for BM. Value of m is left to internal implementation	APERIODIC

Condition	Explanation
APERIODIC	For aperiodic CSI-RS resources

– *CSI-AperiodicTriggerStateList*

Table 7.3.1-12J: CSI-AperiodicTriggerStateList

Derivation Path: Table 4.6.3-32			
Information Element	Value/remark	Comment	Condition
CSI-AperiodicTriggerStateList ::= SEQUENCE (SIZE (1..maxNrOfCSI-AperiodicTriggers)) OF SEQUENCE {	1 entry		
associatedReportConfigInfoList[1] SEQUENCE (SIZE(1..maxNrofReportConfigPerAperiodicTrigger)) OF SEQUENCE {	1 entry		
reportConfigId[1]	CSI-ReportConfigId-BM with condition APERIODIC		
resourcesForChannel[1] CHOICE {			
nzp-CSI-RS SEQUENCE {			
resourceSet	NZP-CSI-RS-ResourceSetId-BM with condition APERIODIC		
qcl-info SEQUENCE (SIZE(1..maxNrofAP-CSI-RS-ResourcesPerSet)) OF {	2 entries		
TCI-StateId[1]	TCI-StateId-RRM(0)	QCL Type C+D to SSB #0	
TCI-StateId[2]	TCI-StateId-RRM(1)	QCL Type C+D to SSB #1	
}			
}			
}			
csi-IM-ResourcesForInterference[1]	Not present		
nzp-CSI-RS-ResourcesForInterference[1]	Not present		
}			
}			

– *RACH-ConfigCommon*

Table 7.3.1-13: RACH-ConfigCommon

Derivation Path: TS 38.508-1 Table 4.6.3-128			
Information Element	Value/remark	Comment	Condition
RACH-ConfigCommon ::= SEQUENCE {			
rach-ConfigGeneric	RACH-ConfigGeneric		
totalNumberOfRA-Preambles	48		
ssb-perRACH-OccasionAndCB-PreamblesPerSSB CHOICE {			
oneFourth	n48		
}			
ra-ContentionResolutionTimer	sf48		
rsrp-ThresholdSSB	51		
prach-RootSequenceIndex CHOICE {			
l139	0		
}			
}			

– *RACH-ConfigCommonTwoStepRA*

Table 7.3.1-13A: RACH-ConfigCommonTwoStepRA

Derivation Path: Table 4.6.3-128A			
Information Element	Value/remark	Comment	Condition
RACH-ConfigCommonTwoStepRA-r16 ::= SEQUENCE {			
rach-ConfigGenericTwoStepRA-r16 SEQUENCE {			
msgA-PRACH-ConfigurationIndex-r16	Not present	Same value in RACH-ConfigGeneric will be used	
msgA-RO-FDM-r16	Not present		
msgA-RO-FrequencyStart-r16	Not present		
msgA-ZeroCorrelationZoneConfig-r16	Not present		
msgA-PreamblePowerRampingStep-r16	Not present		
msgA-PreambleReceivedTargetPower-r16	Not present		
msgB-ResponseWindow-r16	sl10		
preambleTransMax-r16	Not present		
}			
msgA-TotalNumberOfRA-Preambles-r16	Not present	Same value in RACH-ConfigCommon will be used	
msgA-SSB-PerRACH-OccasionAndCB-PreamblesPerSSB-r16	Not present		
msgA-CB-PreamblesPerSSB-PerSharedRO-r16	16		
msgA-RSRP-Threshold-r16	0	To ensure that UE always chooses MsgA transmission in 2-step RACH TCs	
msgA-RSRP-ThresholdSSB-r16	To be specified in test		
ra-ContentionResolutionTimer-r16	Not present		
}			

– *RACH-ConfigGeneric*

Table 7.3.1-14: RACH-ConfigGeneric

Derivation Path: TS 38.508-1 Table 4.6.3-130			
Information Element	Value/remark	Comment	Condition
RACH-ConfigGeneric ::= SEQUENCE {			
prach-ConfigurationIndex	102		FR1
	190		FR2
msg1-FDM	one		
msg1-FrequencyStart	0		
zeroCorrelationZoneConfig	11		
preambleReceivedTargetPower	-120		
preambleTransMax	n6		
	n200		PRACH.4 FR1 or PRACH.4 FR2
powerRampingStep	dB2		
ra-ResponseWindow	sl10		
	sl1		PRACH.4 FR1 or
	sl40		PRACH.4 FR2
}			

Condition	Explanation
PRACH.4 FR1	When PRACH reference configuration PRACH.4 FR1 is used in test case
PRACH.4 FR2	When PRACH reference configuration PRACH.4 FR2 is used in test case

– *MsgA-PUSCH-Config*

Table 7.3.1-14A: MsgA-PUSCH-Config

Derivation Path: Table 4.6.3-81B			
Information Element	Value/remark	Comment	Condition
MsgA-PUSCH-Config-r16 ::= SEQUENCE {			
msgA-PUSCH-ResourceGroupA-r16 SEQUENCE {			
msgA-PUSCH-TimeDomainOffset-r16	1		
nrofPRBs-PerMsgA-PO-r16	2		
msgA-IntraSlotFrequencyHopping-r16	Not present		
msgA-HoppingBits-r16	Not present		
msgA-DMRS-Config-r16 SEQUENCE {			
msgA-DMRS-AdditionalPosition-r16	pos1		
msgA-PUSCH-NrofPorts-r16	0		
}			
nrofDMRS-Sequences-r16	1		
msgA-Alpha-r16	alpha1		
interlaceIndexFirstPO-MsgA-PUSCH-r16	not present		
nrofInterlacesPerMsgA-PO-r16	not present		
}			
msgA-TransformPrecoder-r16	Not present		
msgA-DeltaPreamble-r16	1	Actual value = 2dB	
}			

– *ControlResourceSet*

Table 7.3.1-15: ControlResourceSet

Derivation Path: Table 4.6.3-28			
Information Element	Value/remark	Comment	Condition
ControlResourceSet ::= SEQUENCE {			
controlResourceSetId	ControlResourceSetId		
frequencyDomainResources	11111111 00000000 00000000 00000000 00000000 00000		CCR.3.7 OR SCS240
duration	1		CCR.3.x
cce-REG-MappingType CHOICE {			
interleaved ::= SEQUENCE {			CCR.X.Y
reg-BundleSize	n6		
interleaverSize	n2		
shiftIndex	0		
}			
tci-StatesPDCCH-ToAddList	Not present		
tci-StatesPDCCH-ToAddList SEQUENCE(SIZE (1..maxNrofTCI-StatesPDCCH)) OF TCI-StateId {	1 entry		
TCI-StateId[1]	TCI-StateId-RRM(2)	TCI State #2, QCLed to TRS resource #4 in the first resource set entry 1	TRS
TCI-StateId[1]	TCI-StateId-RRM(3)	TCI State #3, QCLed to TRS resource #4 in the second resource set entry 1	SECOND_S ET
}			
pdcch-DMRS-ScramblingID	1008 + n	DMRS scrambling ID different from Physical Cell ID Value of n is left to internal implementation to	

		ensure no overlapping across different control resource sets	
}			

Condition	Explanation
CCR.x.y	Refers to CCR.x.y as defined in A.1.3 of TS 38.533 [18]
TRS	When at least one TRS resource set is configured.
SECOND_SET	Two resource sets for TRS are configured in test, only applies to FR2.

- *SchedulingRequestResourceConfig*

Table 7.3.1-16: SchedulingRequestResourceConfig

Derivation Path: Table 4.6.3-157			
Information Element	Value/remark	Comment	Condition
SchedulingRequestResourceConfig ::= SEQUENCE {			
periodicityAndOffset CHOICE {			
sl10	7	With SCS = kHz15 results in repetition every 10 ms	SCS_15kHz
sl20	7	With SCS = kHz30 results in repetition every 10 ms	SCS_30kHz
sl80	79	With SCS = kHz15 results in repetition every 80 ms	SCS_15kHz AND GSO AND RRM
}			
}			

Condition	Explanation
SCS_15kHz	SCS=15kHz for frequency of the cell according to clause 6.2.3 for signalling test cases and clause 4.3.1 otherwise
SCS_30kHz	SCS=30kHz for frequency of the cell according to clause 6.2.3 for signalling test cases and clause 4.3.1 otherwise
GSO	Geosynchronous Orbit Scenario

- *SearchSpace*

Table 7.3.1-17: SearchSpace

Derivation Path: Table 4.6.3-162			
Information Element	Value/remark	Comment	Condition
SearchSpace ::= SEQUENCE {			
monitoringSlotPeriodicityAndOffset CHOICE {			
sl10	1		SISS
sl160	0		(CCR.3.1 OR CCR.3.2 OR CCR.3.4 OR CCR.3.5 OR CCR.3.7) AND NOT_CONT _PDCCH

	80		(CCR.3.3 OR CCR.3.6) AND NOT_CONT _PDCCH
}			
monitoringSymbolsWithinSlot	11000000000000		(CCR.3.1 OR CCR.3.3 OR CCR.3.4 OR CCR.3.6 OR CCR.3.7) AND NOT_CONT _PDCCH
	00110000000000		(CCR.3.2 OR CCR.3.5) AND NOT_CONT _PDCCH
}			

Condition	Explanation
SISS	SearchSpace for SI
CCR.x.y	Refers to CCR.x.y as defined in A.1.3 of TS 38.533 [18]
NOT_CONT_PDCCH	The cell shall be configured with the default CCR.3.x settings and not transmit PDCCH continuously

– PDSCH-Config

Table 7.3.1-18: PDSCH-Config

Derivation Path: Table 4.6.3-100			
Information Element	Value/remark	Comment	Condition
PDSCH-Config ::= SEQUENCE { tci-StatesToAddModList SEQUENCE(SIZE (1.. maxNrofTCI-States)) OF TCI-State {	1+n ₁ +n ₂ +n ₃ entries	n ₁ = 1 if SSB configuration used in test case contains two SSBs in a burst, n ₁ = 0 otherwise n ₂ = 1 if TRS is configured in test case, n ₁ = 0 otherwise n ₃ = 1 if two resource sets of TRS are configured in test case, n ₃ = 0 otherwise	
TCI-State[1]	TCI-State(0)	entry 1 QCLed to SSB index #0	
TCI-State[k, k=2..1+n ₁]	TCI-State(1)	entry ... QCLed to SSB index #1	SECOND_S SB
TCI-State[k, k=2+n ₁ ..1+n ₁ +n ₂]	TCI-State(2)	entry ... QCLed to TRS resource #4 in the first resource set	TRS

TCI-State[k, k=2+n ₁ +n ₂ ..1+n ₁ +n ₂ +n ₃]	TCI-State(3)	entry ... QCLed to TRS resource #4 in the second resource set	SECOND_S ET
}			
zp-CSI-RS-ResourceToAddModList SEQUENCE (SIZE (1..maxNrofZP-CSI-RS-Resources)) OF ZP- CSI-RS-Resource {	1 entry		
ZP-CSI-RS-Resource[1]	ZP-CSI-RS-Resource- RRM	entry 1	
}			
p-ZP-CSI-RS-ResourceSet CHOICE {			CSI
setup	ZP-CSI-RS- ResourceSet-RRM		
}			
}			

Condition	Explanation
SECOND_SSB	SSB configuration used in test case contain two SSBs in a burst
TRS	One resource set for TRS is configured in test case
SECOND_SET	Two resource sets for TRS are configured in test case, only applies to FR2.
CSI	CSI-RS for CSI reporting are configured in test case

– TCI-State

Table 7.3.1-19: TCI-State(Id)

Derivation Path: Table 4.6.3-190			
Information Element	Value/remark	Comment	Condition
TCI-State ::= SEQUENCE {			
tci-StateId	TCI-StateId-RRM(Id)		
qcl-Type1 SEQUENCE {			
bwp-Id	BWP-Id of the active BWP		Id = 2 or 3
referenceSignal CHOICE {			
ssb	SSB-Index of SSB #0		Id = 0
	SSB-Index of SSB #1		Id = 1
csi-rs	NZP-CSI-RS-ResourceId for TRS (4)		Id = 2
	NZP-CSI-RS-ResourceId for TRS (4) with condition SECOND SET		Id = 3
}			
qcl-Type	typeC		Id = 0 or 1
	typeA		Id = 2 or 3
}			
qcl-Type2	Not present		
qcl-Type2 SEQUENCE {			FR2
cell	Not present		
bwp-Id	Not present		Id = 0 or 1
	BWP-Id of the active BWP		Id = 2 or 3
referenceSignal CHOICE {			
ssb	SSB-Index of SSB #0		Id = 0
	SSB-Index of SSB #1		Id = 1
csi-rs	NZP-CSI-RS-ResourceId for TRS (4)		Id = 2
	NZP-CSI-RS-ResourceId for TRS (4) with condition SECOND SET		Id = 3
}			
qcl-Type	typeD		
}			

}			

– *TCI-StateId*

Table 7.3.1-20: *TCI-StateId*(Id)

Derivation Path: Table 4.6.3-191			
Information Element	Value/remark	Comment	Condition
TCI-StateId	n+Id	n is the first TCI-StateId allocated for TCI-State configured in RRM test. Value of n is left to internal implementation Id = 0,1,2,3	

– *PUSCH-Config*

Table 7.3.1-21: *PUSCH-Config*

Derivation Path: Table 4.6.3-118			
Information Element	Value/remark	Comment	Condition
PUSCH-Config ::= SEQUENCE {			
pusch-TimeDomainAllocationList CHOICE {			APERIODIC
setup	PUSCH-TimeDomainResourceAllocationList-BM		
}			
}			
}			

Condition	Explanation
APERIODIC	For aperiodic CSI-RS resources

– *PUSCH-TimeDomainResourceAllocationList*

Table 7.3.1-22: *PUSCH-TimeDomainResourceAllocationList-BM*

Derivation Path: Table 4.6.3-122			
Information Element	Value/remark	Comment	Condition
PUSCH-TimeDomainResourceAllocationList ::= SEQUENCE (SIZE(1..maxNrofUL-Allocations)) OF PUSCH-TimeDomainResourceAllocation {	1 entry	same number of entries as reportSlotOffsetList in Table 7.3.1-12G	
PUSCH-TimeDomainResourceAllocation[1] SEQUENCE {		entry 1	
k2	4	Same with k2 configured in reportSlotOffsetList in Table 7.3.1-12G	FR1
}			
}			

– ServingCellConfig

Table 7.3.1-23: ServingCellConfig

Derivation Path: Table 4.6.3-167			
Information Element	Value/remark	Comment	Condition
ServingCellConfig ::= SEQUENCE {			
csi-MeasConfig CHOICE {			
setup	csi-MeasConfig		
}			

– CSI-IM-Resource-RRM

Table 7.3.1-24: CSI-IM-Resource-RRM

Derivation Path: Table 4.6.3-34			
Information Element	Value/remark	Comment	Condition
CSI-IM-Resource ::= SEQUENCE {			
csi-IM-ResourceId	CSI-IM-ResourceId-RRM		
csi-IM-ResourceElementPattern CHOICE {			
pattern1 SEQUENCE {			
subcarrierLocation-p1	s8		
symbolLocation-p1	4		
}			
}			
freqBand	CSI-FrequencyOccupation-RRM		
periodicityAndOffset	CSI-ResourcePeriodicityAndOffset for CSI		
}			

– CSI-IM-ResourceId-RRM

Table 7.3.1-25: CSI-IM-ResourceId-RRM

Derivation Path: Table 4.6.3-35			
Information Element	Value/remark	Comment	Condition
CSI-IM-ResourceId	n	n is the first CSI-IM-ResourceId allocated for CSI-IM resource. Value of n is left to internal implementation	

– CSI-IM-ResourceSet-RRM

Table 7.3.1-26: CSI-IM-ResourceSet-RRM

Derivation Path: Table 4.6.3-36			
Information Element	Value/remark	Comment	Condition
CSI-IM-ResourceSet ::= SEQUENCE {			
csi-IM-ResourceSetId	CSI-IM-ResourceSetId-RRM		
csi-IM-Resources SEQUENCE (SIZE (1..maxNrofCSI-IM-ResourcesPerSet)) OF CSI-IM-ResourceId {	1 entry		
CSI-IM-ResourceId[1]	CSI-IM-ResourceId-RRM	entry 1	

}			
}			

– *CSI-IM-ResourceSetId-RRM*

Table 7.3.1-27: CSI-IM-ResourceSetId-RRM

Derivation Path: Table 4.6.3-37			
Information Element	Value/remark	Comment	Condition
CSI-IM-ResourceSetId	n	n is the first CSI-IM-ResourceSetId allocated for CSI-IM resource set. Value of n is left to internal implementation	

– *SSB-Index*

Table 7.3.1-28: SSB-Index

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
SSB-Index	0		
	1		SECOND_SSB

Condition	Explanation
SECOND_SSB	SSB configuration used in test case contain two SSBs in a burst

– *CSI-SSB-ResourceSet*

Table 7.3.1-29: CSI-SSB-ResourceSet

Derivation Path: Table 4.6.3-47			
Information Element	Value/remark	Comment	Condition
CSI-SSB-ResourceSet ::= SEQUENCE {			
csi-SSB-ResourceSetId	CSI-SSB-ResourceSetId		
csi-SSB-Resource SEQUENCE (SIZE (1..maxNrofCSI-SSB-ResourcePerSet)) OF SSB-Index {	1 entry		
SSB-Index[1]	SSB-Index	entry 1	
}			
csi-SSB-Resource SEQUENCE (SIZE (1..maxNrofCSI-SSB-ResourcePerSet)) OF SSB-Index {	2 entries		SECOND_SSB
SSB-Index[1]	SSB-Index	entry 1	
SSB-Index[2]	SSB-Index with condition SECOND_SSB	entry 2	
}			
csi-SSB-Resource SEQUENCE (SIZE (1..maxNrofCSI-SSB-ResourcePerSet)) OF SSB-Index {	3 entries		3SSB
SSB-Index[1]	0		
SSB-Index[2]	2		
SSB-Index[3]	3		
}			
csi-SSB-Resource SEQUENCE (SIZE (1..maxNrofCSI-SSB-ResourcePerSet)) OF SSB-Index {	4 entries		4SSB

SSB-Index[1]	0		
SSB-Index[2]	1		
SSB-Index[3]	2		
SSB-Index[4]	3		
}			
}			

Condition	Explanation
SECOND_SSB	SSB configuration used in test case contain two SSBs in a burst
3SSB	For configuration with 3 SS Blocks
4SSB	For configuration with 4 SS Blocks

– *SCS-SpecificCarrier*

Table 7.3.1-30: SCS-SpecificCarrier

Derivation Path: Table 4.6.3-160			
Information Element	Value/remark	Comment	Condition
SCS-SpecificCarrier ::= SEQUENCE {			
offsetToCarrier	offsetToCarrier as defined for the DL frequency of the cell	See 7.2.3.2	FR2 and DL_PointA
	offsetToCarrier as defined for the UL frequency of the cell	See 7.2.3.2	FR2 and UL_PointA
	offsetToCarrier as defined for the SL frequency	See 7.2.3.2	FR2 and SL_PointA
subcarrierSpacing	SubcarrierSpacing		
carrierBandwidth	carrierBandwidth as defined for the frequency of the cell	See 7.2.3.2	FR2
	24		Reduced_BW and SCS120 (for SSB)
	48		Reduced_BW and SCS240 (for SSB)
}			

Condition	Explanation
DL_PointA	IE absoluteFrequencyPointA for downlink
UL_PointA	IE absoluteFrequencyPointA for uplink
SL_PointA	IE absoluteFrequencyPointA for sidelink
Reduced_BW	Reduced RB allocation

– *SSB-ToMeasure*

Table 7.3.1-31: SSB-ToMeasure

Derivation Path: Table 4.6.3-187			
Information Element	Value/remark	Comment	Condition
SSB-ToMeasure ::= CHOICE {			
shortBitmap	1000		((1.88GHz < FREQ <= 3G Hz AND SCS15) OR FREQ <= 1.8 8GHZ) AND NOT

			SECOND_S SB
mediumBitmap	10000000		(1.88GHz<F REQ<=3GH z AND (TDD AND SCS30) OR FREQ>3GH z) AND NOT SECOND_S SB
longBitmap	10000000 00000000 00000000 00000000 00000000 00000000 00000000 00000000		FR2 AND NOT SECOND_S SB
	01000000 00000000 00000000 00000000 00000000 00000000 00000000 00000000		SSB.7 FR2 OR SSB.8 FR2
}			

Condition	Explanation
FREQ<=1.88GHz	Frequency range <= 1.88GHz
1.88GHz<FREQ<=3GHz	Frequency range > 1.88GHz and <= 3GHz
FREQ>3GHz	Frequency range > 3GHz
SECOND_SSB	SSB configuration used in test case contain two SSBs in a burst

– *CodebookConfig-CSI*

Table 7.3.1-32: CodebookConfig-CSI

Derivation Path: Table 4.6.3-25			
Information Element	Value/remark	Comment	Condition
CodebookConfig ::= SEQUENCE {			
codebookType CHOICE {			
type1 SEQUENCE {			
subType CHOICE {			
type1-SinglePanel SEQUENCE {			
nrOfAntennaPorts CHOICE {			
two SEQUENCE {			
twoTX-CodebookSubsetRestriction	111111		
}			
}			
}			
}			
}			
}			
}			
}			

– *PRB-Id*

Table 7.3.1-33: Void

– *ZP-CSI-RS-Resource-RRM*

Table 7.3.1-34: ZP-CSI-RS-Resource-RRM

Derivation Path: Table 4.6.3-204			
Information Element	Value/remark	Comment	Condition

ZP-CSI-RS-Resource ::= SEQUENCE {			
zp-CSI-RS-ResourceId	ZP-CSI-RS-ResourceId-RRM		
resourceMapping	CSI-RS-ResourceMapping-ZP-CSI-RS		
periodicityAndOffset	CSI-ResourcePeriodicityAndOffset for CSI		
}			

Table 7.3.1-35: ZP-CSI-RS-ResourceId-RRM

Derivation Path: Table 4.6.3-204A			
Information Element	Value/remark	Comment	Condition
ZP-CSI-RS-ResourceId	n	n is the first ZP-CSI-RS-ResourceId allocated for ZP CSI-RS resource. Value of n is left to internal implementation	

– *ZP-CSI-RS-ResourceSet-RRM*

Table 7.3.1-36: ZP-CSI-RS-ResourceSet-RRM

Derivation Path: Table 4.6.3-205			
Information Element	Value/remark	Comment	Condition
ZP-CSI-RS-ResourceSet ::= SEQUENCE {			
zp-CSI-RS-ResourceSetId	ZP-CSI-RS-ResourceSetId-RRM		
zp-CSI-RS-ResourceIdList SEQUENCE (SIZE(1..maxNrofZP-CSI-RS-ResourcesPerSet)) OF ZP-CSI-RS-ResourceId {	1 entry		
ZP-CSI-RS-ResourceId[1]	ZP-CSI-RS-ResourceId-RRM	entry 1	
}			
}			

– *ZP-CSI-RS-ResourceSetId-RRM*

Table 7.3.1-37: ZP-CSI-RS-ResourceSetId-RRM

Derivation Path: Table 4.6.3-206			
Information Element	Value/remark	Comment	Condition
ZP-CSI-RS-ResourceSetId	n	n is the first ZP-CSI-RS-ResourceSetId allocated for ZP-CSI-RS resource set. Value of n is left to internal implementation	

7.3.2 Sidelink information elements for RRM

As defined in clause 4.6.6 with the following exceptions:

– *SL-BWP-ConfigCommon*

Table 7.3.2-1: *SL-BWP-ConfigCommon*

Derivation Path: Table 4.6.6-2			
Information Element	Value/remark	Comment	Condition
SL-BWP-ConfigCommon-r16 ::= SEQUENCE {			
sl-BWP-PoolConfigCommon-r16	SL-BWP-PoolConfigCommon-r16	Table 7.3.2-2	
}			

– *SL-BWP-PoolConfigCommon*

Table 7.3.2-2: *SL-BWP-PoolConfigCommon*

Derivation Path: Table 4.6.6-4 with condition RXPOOL and SELECTED			
Information Element	Value/remark	Comment	Condition
SL-BWP-PoolConfigCommon-r16 ::= SEQUENCE {			
sl-RxPool-r16 SEQUENCE (SIZE (1..maxNrofRXPool-r16)) OF SL-ResourcePool-r16 {	1 entry		
SL-ResourcePool-r16[1]	SL-ResourcePool-r16	entry 1 Table 7.3.2-3	
}			
sl-TxPoolSelectedNormal-r16 SEQUENCE (SIZE (1..maxNrofTXPool-r16)) OF SL-ResourcePoolConfig-r16 {	1 entry		
SL-ResourcePoolConfig-r16[1] SEQUENCE {		entry 1	
sl-ResourcePool-r16	SL-ResourcePool-r16	Table 7.3.2-3	
}			
}			
}			

– *SL-ResourcePool*

Table 7.3.2-3: *SL-ResourcePool*

Derivation Path: Table 4.6.6-25			
Information Element	Value/remark	Comment	Condition
SL-ResourcePool-r16 ::= SEQUENCE {			
sl-NumSubchannel-r16	1		
sl-UE-SelectedConfigRP-r16 SEQUENCE {			
sl-ThresPSSCH-RSRP-List-r16	Set according to the configuration in specific test cases		
sl-SelectionWindowList-r16 SEQUENCE (SIZE (8)) OF SL-SelectionWindowConfig-r16 {	8 entries		
SL-SelectionWindowConfig-r16[k, k=1..8] SEQUENCE {		entry k	
sl-Priority-r16	k		
sl-SelectionWindow-r16	n20		
}			
}			
sl-PreemptionEnable-r16	enabled		
sl-MinMaxMCS-List-r16 SEQUENCE (SIZE (1..3)) OF SL-MinMaxMCS-Config-r16 {	1 entry		
SL-MinMaxMCS-Config-r16[1] SEQUENCE {		entry 1	

sl-MCS-Table-r16	qam64		
sl-MinMCS-PSSCH-r16	0		
sl-MaxMCS-PSSCH-r16	28		
}			
sl-TimeResource-r16	11111111111111111111		
}			

– SL-PSSCH-TxConfigList

Table 7.3.2-4: SL-PSSCH-TxConfigList

Derivation Path: Table 4.6.6-19			
Information Element	Value/remark	Comment	Condition
SL-PSSCH-TxConfigList-r16 ::= SEQUENCE (SIZE (1..maxPSSCH-TxConfig-r16)) OF SL-PSSCH-TxConfig-r16 {	1 entry		
sl-ThresUE-Speed-r16	kmph200		
sl-ParametersAboveThres-r16 SEQUENCE {			
sl-MaxSubchannelNumPSSCH-r16	1		
sl-MaxTxTransNumPSSCH-r16	1		
}			
sl-ParametersBelowThres-r16 SEQUENCE {			
sl-MinMCS-PSSCH-r16	4		
sl-MaxMCS-PSSCH-r16	25		
sl-MaxSubchannelNumPSSCH-r16	1		
sl-MaxTxTransNumPSSCH-r16	1		
}			
}			

– SL-UE-SelectedConfig

Table 7.3.2-5: SL-UE-SelectedConfig

Derivation Path: Table 4.6.6-35			
Information Element	Value/remark	Comment	Condition
SL-UE-SelectedConfig-r16 ::= SEQUENCE {			
sl-PSSCH-TxConfigList-r16	SL-PSSCH-TxConfigList-r16	Table 7.3.2-4	
sl-ProbResourceKeep-r16	v0dot8		
sl-ReselectAfter-r16	n1		
}			

7.4 FFS

Void.

7.5 Common procedures for RRM testing

7.5.1 Procedure to configure SCC(s) for NR RRM CA testing

Same procedure as described in clause 5.5.1.

7.5.2 Procedure to configure SCC(s) for EN-DC RRM CA testing

Same procedure as described in clause 5.5.1.

7.6 Test environment for NTN testing

This section defines the test environment which applies to all RRM test cases executed for NR NTN UEs, unless otherwise specified.

7.6.1 UE location

Same as in section 5.6.1.

7.6.2 Ephemeris Information

Ephemeris information in this section has been generated as described in clause 5 in TR38.905 [69].

7.6.2.0 Assumptions for Ephemeris generation

Same as in section 5.6.2.0.

7.6.2.1 Ephemeris for elevation angle 30°

All NR NTN test cases defined in in section 14 in TS 38.533 [18], unless otherwise stated, shall use ephemeris configuration in tables 7.6.2.1-1a to 7.6.2.1-3b, corresponding to an elevation angle of 30° with constant non-zero Doppler and constant delay with no timing drift for the type of satellite under test, keeping such information constant throughout the duration of the test:

- In case UE supports only NGSO satellites, ephemeris values in Table 7.6.2.1-3a or 7.6.2.1-3b shall be used.

Table 7.6.2.1-1a: SIB19- NR NTN serving cell Ephemeris information (stateVectors format) for GSO satellites (serving cell 30° elevation angle conditions)

Derivation Path: Table 7.6.3.1-2			
Information Element	Value/remark	Comment	Condition
SIB19-r17 ::= SEQUENCE {			
ntn-Config-r17 SEQUENCE {			
epochTime-r17	Not present		
ephemerisInfo-r17 CHOICE {			
positionVelocity-r17 SEQUENCE {			
positionX-r17	-17129898		
positionY-r17	27505094		
positionZ-r17	1413939		
velocityVX-r17	116		
velocityVY-r17	378		
velocityVZ-r17	-5944		
}			
}			
}			
}			
NOTE 1: Satellite-UE elevation angle equal to 30 degrees, one-way delay equal to 128.7702617ms and Doppler equal to -0.15533 ppm.			
NOTE 2: stateVectors ephemeris format shall be used in NR NTN RRM test cases listed in Table A.3.36.3-1 in TS38.133 [13].			

Table 7.6.2.1-1b: SIB19- NR NTN serving cell Ephemeris information (orbitalParameters format) for GSO satellites (serving cell 30° elevation angle conditions)

Derivation Path: Table 7.6.3.1-2			
Information Element	Value/remark	Comment	Condition
SIB19-r17 ::= SEQUENCE {			
ntn-Config-r17 SEQUENCE {			
epochTime-r17	Not present		

ephemerisInfo-r17 CHOICE {			
orbital-r17 SEQUENCE {			
semiMajorAxis-r17	8393368589		
eccentricity-r17	1257		
periapsis-r17	260802122		
longitude-r17	240339872		
inclination-r17	5306937		
meanAnomaly-r17	126437178		
}			
}			
}			
}			
NOTE 1: Satellite-UE elevation angle equal to 30 degrees, one-way delay equal to 128.7702617ms and Doppler equal to -0.15533 ppm.			
NOTE 2: orbitalParameters ephemeris format shall be used in NR NTN RRM test cases listed in Table A.3.36.3-2 in TS38.133 [13].			

Table 7.6.2.1-1c: SIB19- NR NTN neighbour cells Ephemeris information (stateVectors format) for GSO satellites (serving cell 30° elevation angle conditions)

Derivation Path: Table 7.6.3.1-1 and Table 7.6.3.1-2			
Information Element	Value/remark	Comment	Condition
SIB19-r17 ::= SEQUENCE {			
ntn-NeighCellConfigList-r17 SEQUENCE (SIZE(1..maxCellIntN-r17)) OF NTN-NeighCellConfig-r17{	1 entry for test cases requiring only one neighbour cell 2 entries in test cases requiring two neighbour cells		2CELLS OR 3CELLS
NTN-NeighCellConfig-r17 [1] SEQUENCE {		entry 1	2CELLS OR 3CELLS
epochTime-r17	Not present		
ephemerisInfo-r17 CHOICE {			
positionVelocity-r17 SEQUENCE {			
positionX-r17	-25235934		
positionY-r17	20178903		
positionZ-r17	2814664		
velocityVX-r17	298		
velocityVY-r17	-241		
velocityVZ-r17	4398		
}			
}			
}			
NTN-NeighCellConfig-r17 [2] SEQUENCE {		entry 2	3CELLS
epochTime-r17	Not present		
ephemerisInfo-r17 CHOICE {			
positionVelocity-r17 SEQUENCE {			
positionX-r17	-6457459		
positionY-r17	31531426		
positionZ-r17	4004156		
velocityVX-r17	-387		
velocityVY-r17	-66		
velocityVZ-r17	-104		
}			
}			
}			
}			
NOTE 1: Neighbour cell 1 Satellite-UE elevation angle equal to 30 degrees, one-way delay equal to 128.775521ms and Doppler equal to +0.11173 ppm. Neighbour cell 2 Satellite-UE elevation angle equal to 32.17 degrees, one-way delay equal to 128.1430182ms and Doppler equal to 0 ppm.			

NOTE 2: stateVectors ephemeris format shall be used in NR NTN RRM test cases listed in Table A.3.36.3-1 in TS38.133 [13].

Condition	Explanation
2CELLS	Test cases where one serving cell and one neighbour cell are required
3CELLS	Test cases where one serving cell and two neighbour cells are required

Table 7.6.2.1-1d: SIB19- NR NTN neighbour cells Ephemeris information (orbitalParameters format) for GSO satellites (serving cell 30° elevation angle conditions)

Derivation Path: Table 7.6.3.1-1 and Table 7.6.3.1-2			
Information Element	Value/remark	Comment	Condition
SIB19-r17 ::= SEQUENCE { ntn-NeighCellConfigList-r17 SEQUENCE (SIZE(1..maxCellINTN-r17)) OF NTN-NeighCellConfig-r17 {	1 entry for test cases requiring only one neighbour cell 2 entries in test cases requiring two neighbour cells		2CELLS OR 3CELLS
NTN-NeighCellConfig-r17 [1] SEQUENCE {		entry 1	2CELLS OR 3CELLS
epochTime-r17	Not present		
ephemerisInfo-r17 CHOICE {			
orbital-r17 SEQUENCE {			
semiMajorAxis-r17	8393276102		
eccentricity-r17	1898		
periapsis-r17	163688732		
longitude-r17	71760192		
inclination-r17	5226759		
meanAnomaly-r17	-129902267		
}			
}			
}			
NTN-NeighCellConfig-r17 [2] SEQUENCE {		entry 2	3CELLS
epochTime-r17	Not present		
ephemerisInfo-r17 CHOICE {			
orbital-r17 SEQUENCE {			
semiMajorAxis-r17	8393723250		
eccentricity-r17	1261		
periapsis-r17	65621150		
longitude-r17	7921238		
inclination-r17	5287833		
meanAnomaly-r17	2180338		
}			
}			
}			
}			
NOTE 1: Neighbour cell 1 Satellite-UE elevation angle equal to 30 degrees, one-way delay equal to 128.775521ms and Doppler equal to +0.11173 ppm. Neighbour cell 2 Satellite-UE elevation angle equal to 32.17 degrees, one-way delay equal to 128.1430182ms and Doppler equal to 0 ppm.			
NOTE 2: orbitalParameters ephemeris format shall be used in NR NTN RRM test cases listed in Table A.3.36.3-2 in TS38.133 [13].			

Condition	Explanation
2CELLS	Test cases where one serving cell and one neighbour cell are required
3CELLS	Test cases where one serving cell and two neighbour cells are required

Table 7.6.2.1-2a: Void

Table 7.6.2.1-2b: Void

Table 7.6.2.1-3a: SIB19- NR NTN serving cell Ephemeris information (stateVectors format) for NGSO (LEO-1200) satellites (serving cell 30° elevation angle conditions)

Derivation Path: Table 7.6.3.1-2			
Information Element	Value/remark	Comment	Condition
SIB19-r17 ::= SEQUENCE {			
ntn-Config-r17 SEQUENCE {			
epochTime-r17	Not present		
ephemerisInfo-r17 CHOICE {			
positionVelocity-r17 SEQUENCE {			
positionX-r17	-2935552		
positionY-r17	4895460		
positionZ-r17	1188458		
velocityVX-r17	8506		
velocityVY-r17	-23314		
velocityVZ-r17	118253		
}			
}			
}			
}			
NOTE 1: Satellite-UE elevation angle equal to 30.03 degrees, one-way delay equal to 6.6726842ms and Doppler equal to 17.54711 ppm.			
NOTE 2: stateVectors ephemeris format shall be used in NR NTN RRM test cases listed in Table A.3.36.3-1 in TS38.133 [13].			

Table 7.6.2.1-3b: SIB19- NR NTN serving cell Ephemeris information (orbitalParameters format) for NGSO (LEO-1200) satellites (serving cell 30° elevation angle conditions)

Derivation Path: Table 7.6.3.1-2			
Information Element	Value/remark	Comment	Condition
SIB19-r17 ::= SEQUENCE {			
ntn-Config-r17 SEQUENCE {			
epochTime-r17	Not present		
ephemerisInfo-r17 CHOICE {			
orbital-r17 SEQUENCE {			
semiMajorAxis-r17	273617934		
eccentricity-r17	768959		
periapsis-r17	822470		
longitude-r17	89184517		
inclination-r17	62370124		
meanAnomaly-r17	7827202		
}			
}			
}			
}			
NOTE 1: Satellite-UE elevation angle equal to 30.03 degrees, one-way delay equal to 6.6726842ms and Doppler equal to 17.54711 ppm.			
NOTE 2: orbitalParameters ephemeris format shall be used in NR NTN RRM test cases listed in Table A.3.36.3-2 in TS38.133 [13].			

Table 7.6.2.1-3c: SIB19- NR NTN neighbour cells Ephemeris information (stateVectors format) for NGSO (LEO-1200) satellites (serving cell 30° elevation angle conditions)

Derivation Path: TS 38.508-1 [12], Table 4.6.2-18C, Table 7.6.3.1-1 and Table 7.6.3.1-2

Information Element	Value/remark	Comment	Condition
SIB19-r17 ::= SEQUENCE { ntn-NeighCellConfigList-r17 SEQUENCE (SIZE(1..maxCellIntN-r17)) OF NTN-NeighCellConfig-r17{	1 entry for test cases requiring only one neighbour cell 2 entries in test cases requiring two neighbour cells		2CELLS OR 3CELLS
NTN-NeighCellConfig-r17 [1] SEQUENCE {		entry 1	2CELLS or 3CELLS
epochTime-r17	Not present		
ephemerisInfo-r17 CHOICE {			
positionVelocity-r17 SEQUENCE {			
positionX-r17	-2470752		
positionY-r17	3858366		
positionZ-r17	3624634		
velocityVX-r17	31542		
velocityVY-r17	-67516		
velocityVZ-r17	94597		
}			
}			
}			
NTN-NeighCellConfig-r17 [2] SEQUENCE {		entry 2	3CELLS
epochTime-r17	Not present		
ephemerisInfo-r17 CHOICE {			
positionVelocity-r17 SEQUENCE {			
positionX-r17	-2771542		
positionY-r17	4509243		
positionZ-r17	2455572		
velocityVX-r17	20837		
velocityVY-r17	-46176		
velocityVZ-r17	109528		
}			
}			
}			
}			
NOTE 1: Neighbour cell 1 Satellite-UE elevation angle equal to 150.02 degrees, one-way delay equal to 6.7883454ms and Doppler equal to -17.65191 ppm. Neighbour cell 2 Satellite-UE elevation angle equal to 89.54 degrees, one-way delay equal to 4.0391205ms and Doppler equal to 0 ppm.			
NOTE 2: stateVectors ephemeris format shall be used in NR NTN RRM test cases listed in Table A.3.36.3-1 in TS38.133 [13].			

Condition	Explanation
2CELLS	Test cases where one serving cell and one neighbour cell are required
3CELLS	Test cases where one serving cell and two neighbour cells are required

Table 7.6.2.1-3d: SIB19- NR NTN neighbour cells Ephemeris information (orbitalParameters format) for NGSO (LEO-1200) satellites (serving cell 30° elevation angle conditions)

Derivation Path: TS 38.508-1 [12], Table 4.6.2-18C, Table 7.6.3.1-1 and Table 7.6.3.1-2			
Information Element	Value/remark	Comment	Condition
SIB19-r17 ::= SEQUENCE {			

ntn-NeighCellConfigList-r17 SEQUENCE (SIZE(1..maxCellINTN-r17)) OF NTN-NeighCellConfig-r17{	1 entry for test cases requiring only one neighbour cell 2 entries in test cases requiring two neighbour cells		2CELL S OR 3CELL S
NTN-NeighCellConfig-r17 [1] SEQUENCE {		entry 1	2CELL S OR 3CELL S
epochTime-r17	Not present		
ephemerisInfo-r17 CHOICE {			
orbital-r17 SEQUENCE {			
semiMajorAxis-r17	272202365		
eccentricity-r17	715387		
periapsis-r17	335728		
longitude-r17	87666392		
inclination-r17	62368169		
meanAnomaly-r17	27926093		
}			
}			
}			
NTN-NeighCellConfig-r17 [2] SEQUENCE {		entry 2	3CELL S
epochTime-r17	Not present		
ephemerisInfo-r17 ::= CHOICE {			
orbital-r17 SEQUENCE {			
semiMajorAxis-r17	273071393		
eccentricity-r17	745494		
periapsis-r17	1155622		
longitude-r17	88436606		
inclination-r17	62369223		
meanAnomaly-r17	17161259		
}			
}			
}			
}			
NOTE 1: Neighbour cell 1 Satellite-UE elevation angle equal to 150.02 degrees, one-way delay equal to 6.7883454ms and Doppler equal to -17.65191 ppm. Neighbour cell 2 Satellite-UE elevation angle equal to 89.54 degrees, one-way delay equal to 4.0391205ms and Doppler equal to 0 ppm. NOTE 2: orbitalParameters ephemeris format shall be used in NR NTN RRM test cases listed in Table A.3.36.3-2 in TS38.133 [13].			

Condition	Explanation
2CELLS	Test cases where one serving cell and one neighbour cell are required
3CELLS	Test cases where one serving cell and two neighbour cells are required

7.6.2.2 Ephemeris for NR NTN RRM UL timing accuracy test cases

The ephemeris configuration in tables 7.6.2.2-1 to 7.6.2.2-6 corresponds to an elevation angle with constant non-zero Doppler and constant delay with no timing drift for the type of satellite under test.

Table 7.6.2.2-1: SIB19- NR NTN serving cell Ephemeris information for GSO satellites (minimum Doppler)

Derivation Path: Table 7.6.3.1-2			
Information Element	Value/remark	Comment	Condition
SIB19-r17 ::= SEQUENCE {			
ntn-Config-r17 SEQUENCE {			
epochTime-r17	Not present		

ephemerisInfo-r17 CHOICE {			
positionVelocity-r17 SEQUENCE {			
positionX-r17	-16944523		
positionY-r17	27362209		
positionZ-r17	4019393		
velocityVX-r17	-336		
velocityVY-r17	-208		
velocityVZ-r17	1		
}			
}			
}			
}			
NOTE 1: Satellite-UE elevation angle equal to 35.04 degrees, one-way delay equal to 127.3300539ms and Doppler equal to 4.89E-06 ppm			

Table 7.6.2.2-2: SIB19- NR NTN serving cell Ephemeris information for NGSO (LEO-1200) satellites (minimum Doppler)

Derivation Path: Table 7.6.3.1-2			
Information Element	Value/remark	Comment	Condition
SIB19-r17 ::= SEQUENCE {			
ntn-Config-r17 SEQUENCE {			
epochTime-r17	Not present		
ephemerisInfo-r17 CHOICE {			
positionVelocity-r17 SEQUENCE {			
positionX-r17	-2771542		
positionY-r17	4509243		
positionZ-r17	2455572		
velocityVX-r17	20837		
velocityVY-r17	-46176		
velocityVZ-r17	109528		
}			
}			
}			
}			
NOTE 1: Satellite-UE elevation angle equal to 89.54 degrees, one-way delay equal to 4.0391205ms and Doppler equal to 3.65147E-3 ppm.			

Table 7.6.2.2-3: SIB19- NR NTN serving cell Ephemeris information for GSO satellites (maximum positive Doppler)

Derivation Path: Table 7.6.3.1-2			
Information Element	Value/remark	Comment	Condition
SIB19-r17 ::= SEQUENCE {			
ntn-Config-r17 SEQUENCE {			
epochTime-r17	Not present		
ephemerisInfo-r17 CHOICE {			
positionVelocity-r17 SEQUENCE {			
positionX-r17	-16989970		
positionY-r17	27591785		
positionZ-r17	1413211		
velocityVX-r17	390		
velocityVY-r17	-65		
velocityVZ-r17	5945		
}			
}			
}			
}			
NOTE 1: Satellite-UE elevation angle equal to 30 degrees, one-way delay equal to 128.770428ms and Doppler equal to 0.15538 ppm			

Table 7.6.2.2-4: SIB19- NR NTN serving cell Ephemeris information for NGSO (LEO-600) satellites (maximum positive Doppler)

Derivation Path: Table 7.6.3.1-2			
Information Element	Value/remark	Comment	Condition
SIB19-r17 ::= SEQUENCE {			
ntn-Config-r17 SEQUENCE {			
epochTime-r17	Not present		
ephemerisInfo-r17 CHOICE {			
positionVelocity-r17 SEQUENCE {			
positionX-r17	-2654549		
positionY-r17	4386991		
positionZ-r17	1594205		
velocityVX-r17	14581		
velocityVY-r17	-34487		
velocityVZ-r17	120182		
}			
}			
}			
}			
NOTE 1: Satellite-UE elevation angle equal to 30.11 degrees, one-way delay equal to 3.5999171ms and Doppler equal to 19.83492 ppm.			
NOTE 2: Void			

Table 7.6.2.2-5: SIB19- NR NTN serving cell Ephemeris information for GSO satellites (maximum negative Doppler)

Derivation Path: Table 7.6.3.1-2			
Information Element	Value/remark	Comment	Condition
SIB19-r17 ::= SEQUENCE {			
ntn-Config-r17 SEQUENCE {			
epochTime-r17	Not present		
ephemerisInfo-r17 CHOICE {			
positionVelocity-r17 SEQUENCE {			
positionX-r17	-17129898		
positionY-r17	27505094		
positionZ-r17	1413939		
velocityVX-r17	116		
velocityVY-r17	378		
velocityVZ-r17	-5944		
}			
}			
}			
}			
NOTE 1: Satellite-UE elevation angle equal to 30 degrees, one-way delay equal to 128.7702617ms and Doppler equal to -0.15533 ppm.			
NOTE 2: This configuration can be skipped as it is the same as default 30° elevation angle.			

Table 7.6.2.2-6: SIB19- NR NTN serving cell Ephemeris information for NGSO (LEO-600) satellites (maximum negative Doppler)

Derivation Path: Table 7.6.3.1-2			
Information Element	Value/remark	Comment	Condition
SIB19-r17 ::= SEQUENCE {			
ntn-Config-r17 SEQUENCE {			
epochTime-r17	Not present		
ephemerisInfo-r17 CHOICE {			
positionVelocity-r17 SEQUENCE {			
positionX-r17	-2401021		
positionY-r17	3830217		
positionZ-r17	2907041		
velocityVX-r17	28879		
velocityVY-r17	-61410		
velocityVZ-r17	105774		
}			
}			
}			

}			
}			
}			
}			
NOTE 1: Satellite-UE elevation angle equal to 149.91 degrees, one-way delay equal to 3.6597416ms and Doppler equal to -19.94953 ppm			

7.6.3 NR NTN message contents for RRM tests

7.6.3.1 SIB19 IE values

The ntn-config-r17 values including the EphemerisInfo-r17 values in SIB19 shall be periodically signalled to the UE during test based on the Ephemeris information in clause 7.6.2 (kept constant throughout the duration of each the test).

Table 7.6.3.1-1: SIB19 for RRM tests

Derivation Path: Table 4.6.2-18C			
Information Element	Value/remark	Comment	Condition
SIB19-r17 ::= SEQUENCE {			
ntn-Config-r17	NTN-Config-r17	Serving NTN-Config, Table 7.6.3.1-2	1CELL or 2CELLS or 3CELLS
t-Service-r17	Not present		
referenceLocation-r17	Not present		
distanceThresh-r17	Not present		
ntn-NeighCellConfigList-r17	Not present		1CELL
ntn-NeighCellConfigList-r17 SEQUENCE {			
ntn-NeighCellConfig-r17[1] SEQUENCE {			2CELLS
ntn-Config-r17	NTN-Config-r17	Cell2 NTN-Config, Table 7.6.3.1-2	
carrierFreq-r17	ARFCN-ValueNR	Freq of Cell2	
physCellId-r17	PhysCellId	PCI of Cell2	
}			
ntn-NeighCellConfig-r17 [2] SEQUENCE {	See cl. 7.6.2		3CELLS
ntn-Config-r17	NTN-Config-r17	Cell3 NTN-Config, Table 7.6.3.1-2	
carrierFreq-r17	ARFCN-ValueNR	Freq of Cell3	
physCellId-r17	PhysCellId	PCI of Cell3	
}			
}			
}			

Condition	Explanation
1CELL	Test cases where only one cell (serving cell) is required
2CELLS	Test cases where one serving cell and one neighbour cell are required
3CELLS	Test cases where one serving cell and two neighbour cells are required

Table 7.6.3.1-2: NTN-Config for RRM tests

Derivation Path: Table 4.6.3-84C			
Information Element	Value/remark	Comment	Condition
NTN-Config-r17 ::= SEQUENCE {			
epochTime-r17	Not present		
ntn-UISyncValidityDuration-r17	s900		GSO
	s5		NGSO
cellSpecificKoffset-r17	258		GSO
	14		NGSO
kmac-r17	Not present		
ta-Info-r17 SEQUENCE {			
ta-Common-r17	0		
ta-CommonDrift-r17	0		
ta-CommonDriftVariant-r17	0		

}			
ntn-PolarizationDL-r17	linear		
ntn-PolarizationUL-r17	linear		
ephemerisInfo-r17 CHOICE {			
positionVelocity-r17 SEQUENCE {			TC EF SV
positionX-r17	See cl. 7.6.2		1CELL or 2CELLS or 3CELLS
positionY-r17	See cl. 7.6.2		1CELL or 2CELLS or 3CELLS
positionZ-r17	See cl. 7.6.2		1CELL or 2CELLS or 3CELLS
velocityVX-r17	See cl. 7.6.2		1CELL or 2CELLS or 3CELLS
velocityVY-r17	See cl. 7.6.2		1CELL or 2CELLS or 3CELLS
velocityVZ-r17	See cl. 7.6.2		1CELL or 2CELLS or 3CELLS
}			
orbital-r17 SEQUENCE {			TC EF OP
semiMajorAxis-r17	See cl. 7.6.2		1CELL or 2CELLS or 3CELLS
eccentricity-r17	See cl. 7.6.2		1CELL or 2CELLS or 3CELLS
periapsis-r17	See cl. 7.6.2		1CELL or 2CELLS or 3CELLS
longitude-r17	See cl. 7.6.2		1CELL or 2CELLS or 3CELLS
inclination-r17	See cl. 7.6.2		1CELL or 2CELLS or 3CELLS
meanAnomaly-r17	See cl. 7.6.2		1CELL or 2CELLS or 3CELLS
}			
}			
ta-Report-r17	Not present		
}			

Condition	Explanation
TC EF SV	Test cases using ephemeris with Position Velocity format according to section 7.6.2
TC EF OP	Test cases using ephemeris with Orbital format according to section 7.6.2
GSO	Geosynchronous Orbit scenario
NGSO	Non-geosynchronous Orbit scenario
1CELL	Test cases where only one cell (serving cell) is required
2CELLS	Test cases where one serving cell and one neighbour cell are required
3CELLS	Test cases where one serving cell and two neighbour cells are required

7.7 Test environment for ATG testing

This section defines the test environment which applies to all RRM test cases executed for NR ATG UEs, unless otherwise specified.

7.7.1 NR ATG message contents for RRM tests

7.7.1.1 *atg-Config-r18* values in SIB22

The *atg-Config-r18* values including the atg gNB location information, cell Specific Koffset and TA Report indication values in SIB22 shall be periodically signalled to the UE during test (kept constant throughout the duration of each measurement in the test).

7.7.2 UE location

Same as in section 5.7.2.

Annex A (informative): Connection Diagrams

A.1 Definition of Terms

System Simulator or SS – A device or system, that is capable of generating simulated Node B signalling and analysing UE signalling responses on one or more RF channels, in order to create the required test environment for the UE under test. It will also include the following capabilities:

1. Measurement and control of the UE Tx output power through TPC commands
2. Measurement of Throughput
3. Measurement of signalling timing and delays
4. Ability to simulate UTRAN and/or E-UTRAN and/or GERAN signalling

Test System – A combination of devices brought together into a system for the purpose of making one or more measurements on a UE in accordance with the test case requirements. A test system may include one or more System Simulators if additional signalling is required for the test case. The following diagrams are all examples of Test Systems.

NOTE 1: The above terms are logical definitions to be used to describe the test methods used in the documents TS 38.521-1, TS 38.521-2, TS 38.521-3, TS 38.523-1 and TS 38.533 in practice, real devices called 'System Simulators' may also include additional measurement capabilities or may only support those features required for the test cases they are designed to perform.

NOTE 2: Components in the connection diagrams:

The components in the connection diagrams represent ideal components. They are intended to display the wanted signal flow. They don't mandate real implementations.

Connection: Each connection is displayed as a one or two sided arrow, showing the intended signal flow. In some cases, for some tests, some connections shown may not be necessary (for example UL RX connection for a second cell).

Circulator: The signal, entering one port, is conducted to the adjacent port, indicated by the arrow. The attenuation among the above mentioned ports is ideally 0 and the isolation among the other ports is ideally ∞ .

Splitter: a splitter has one input and 2 or more outputs. The signal at the input is equally divided to the outputs. The attenuation from input to the outputs is ideally 0 and the isolation between the outputs is ideally ∞ .

Combiner: a combiner has one output and 2 or more inputs. The signals at the inputs are conducted to the output, all with the same, ideally 0 attenuation. The isolation between the inputs is ideally ∞ .

Switch: contacts a sink (or source) alternatively to two or more sources (or sinks).

Fader: The fader has one input and one output. The MIMO fading channel is represented by several single faders (e.g. 8 in case of a MIMO antenna configuration 4x2) The correlation among the faders is described in TS 36.521-1 clause B.2.2. In some cases, for some tests, diagrams with fader(s) are referenced when no fading is required; in this case the fader(s) is omitted.

Attenuator: TBD

Test Equipment Part (TE): is the section of the connection diagram focused including a combination of devices to perform one or several measurements on a UE depending on the test requirements specified in 3GPP TS 38.101-1 [7], 3GPP TS 38.101-2 [8] and 3GPP TS 38.101-3 [9]. The basic TE is the system simulator to enable the connection between the gNB (and the eNB, if NSA mode) and the DUT. The number of cells, the number of streams per cell and how to combine them, channel and propagations conditions, etc. are also part of the TE. Other instruments as external spectrum analyser, interferer generators, external faders or external AWGN generators can be also considered part of the TE, as these instruments allow to measure a test requirement or to set the UE under certain conditions.

DUT Part (UE): for conducted measurement this section is focused on the number of physical antenna connectors and how to combine in the DUT. For radiated measurement this section shows the connections needed to translate the UL/DL streams to the radiated part.

GNSS System Simulator or GSS: A device or system, that is capable of generating simulated GNSS satellite transmissions in order to create the required test environment for the UE under test. It will also include the following capabilities:

1. Control of the output power of individual satellites and the simulation of atmospheric delays.
2. Ability to synchronize with NR timing in the SS.

A.2 General Considerations on Connections Diagram

In order to improve the maintainability and the readability of this section and to make easy to identify the whole connection diagram to use per each test case, several considerations have been used for this section:

- The whole connection diagram to use for a specific test has been split in Test Equipment (TE) and User Equipment (UE) parts.
- The same connection diagram will be used for SA and NSA, where the LTE link is specified in each connection diagram (TE and UE) with a dashed line (and this part will be only used for NSA).
- To obtain the whole connection diagram required per each test case is necessary to specify the TE part required for each measurement and the UE part will depend on the UE antenna implementation.

A.3 Setup Diagrams

A.3.1 Test Equipment Parts for Conducted Measurements

A.3.1.1 Basic Transmitter/Receiver tests

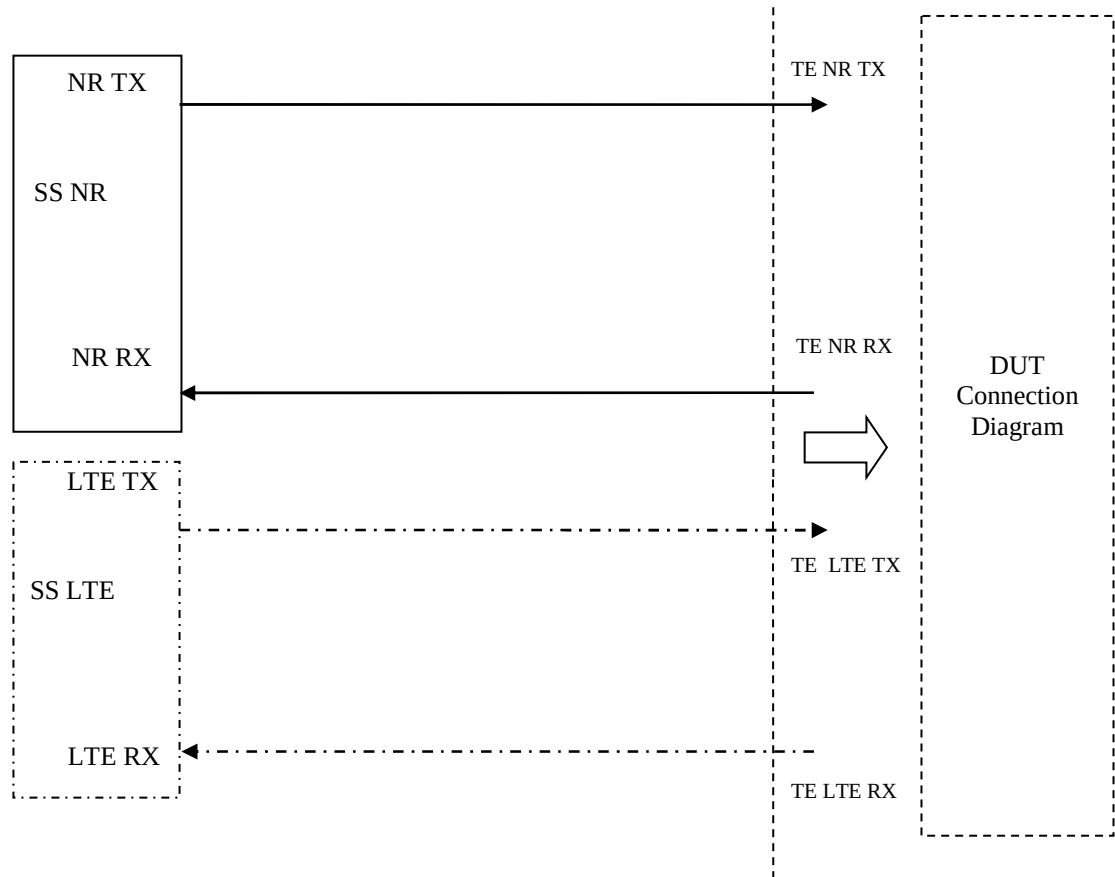


Figure A.3.1.1.1: Test Equipment connection for basic single cell, RX and TX tests

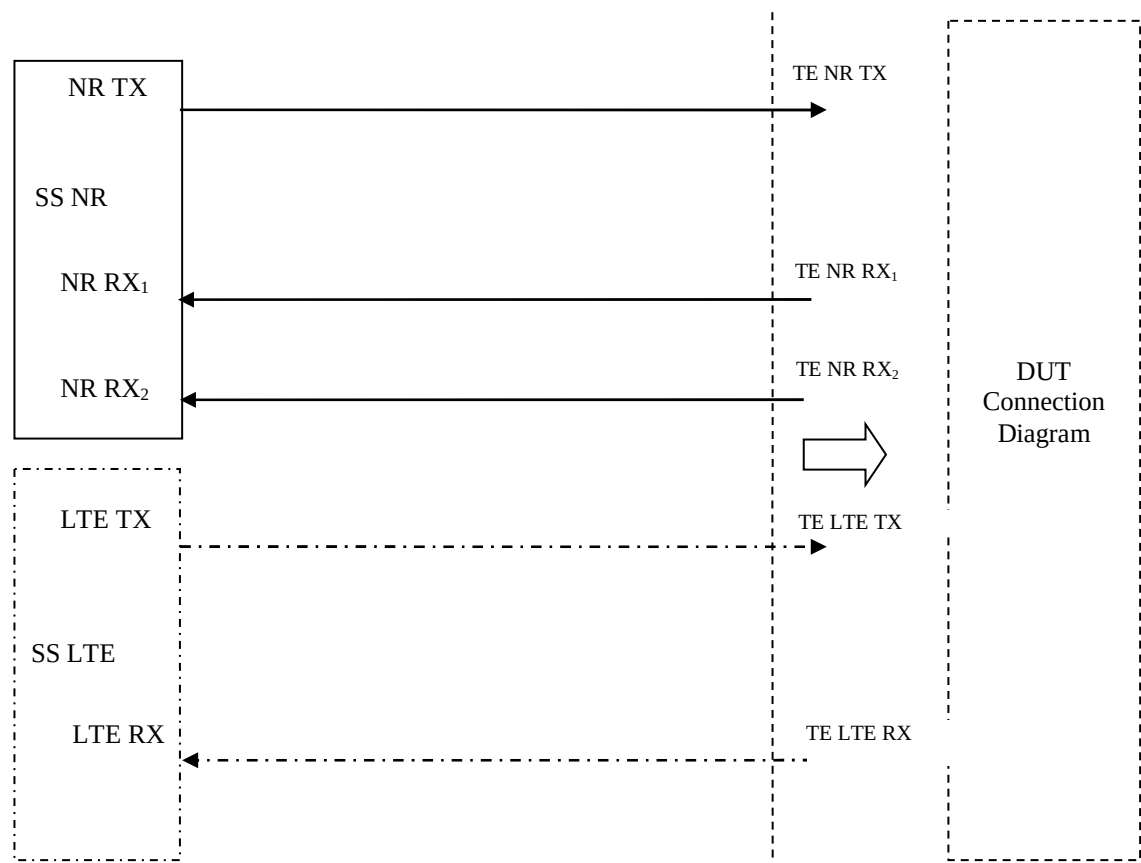


Figure A.3.1.1.2: Test Equipment connection for single cell, RX and TX tests for NR 2Tx UL MIMO or NR 2Tx Tx diversity

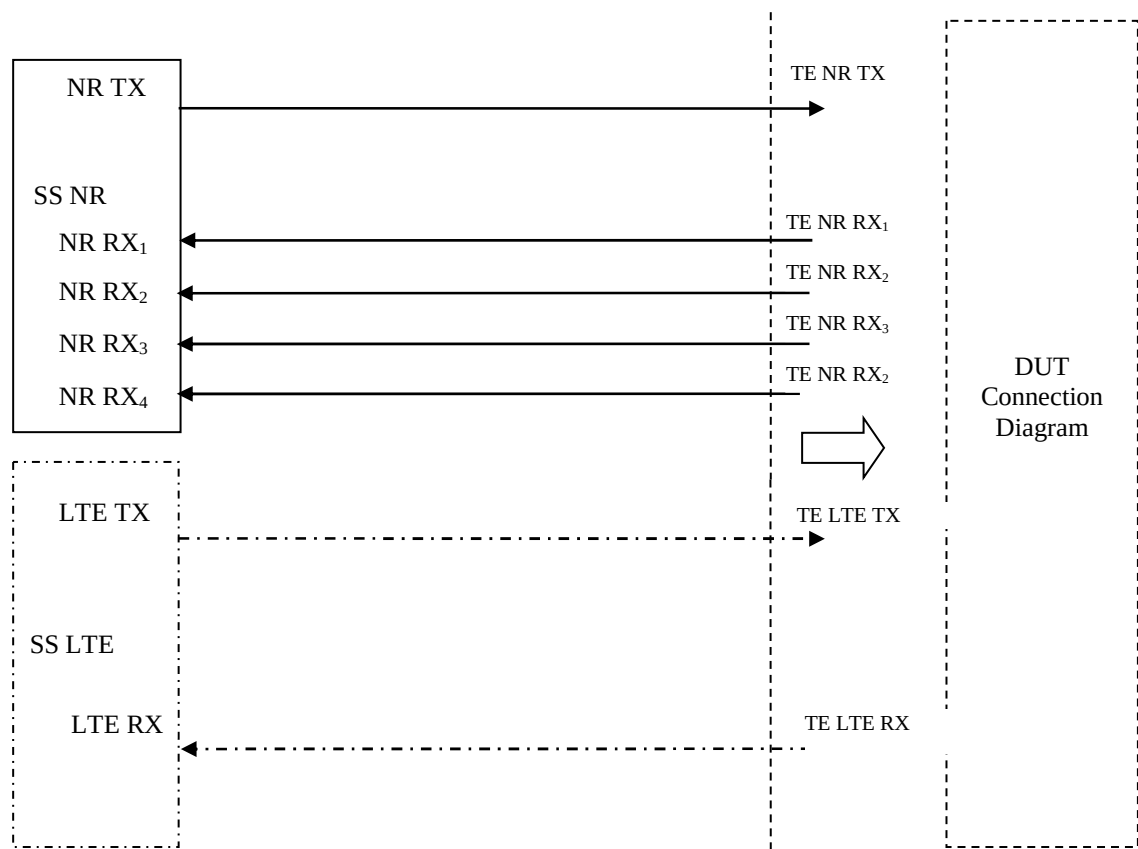


Figure A.3.1.1.2a: Test Equipment connection for single cell, RX and TX tests for NR 4Tx UL MIMO or NR 4Tx Tx diversity

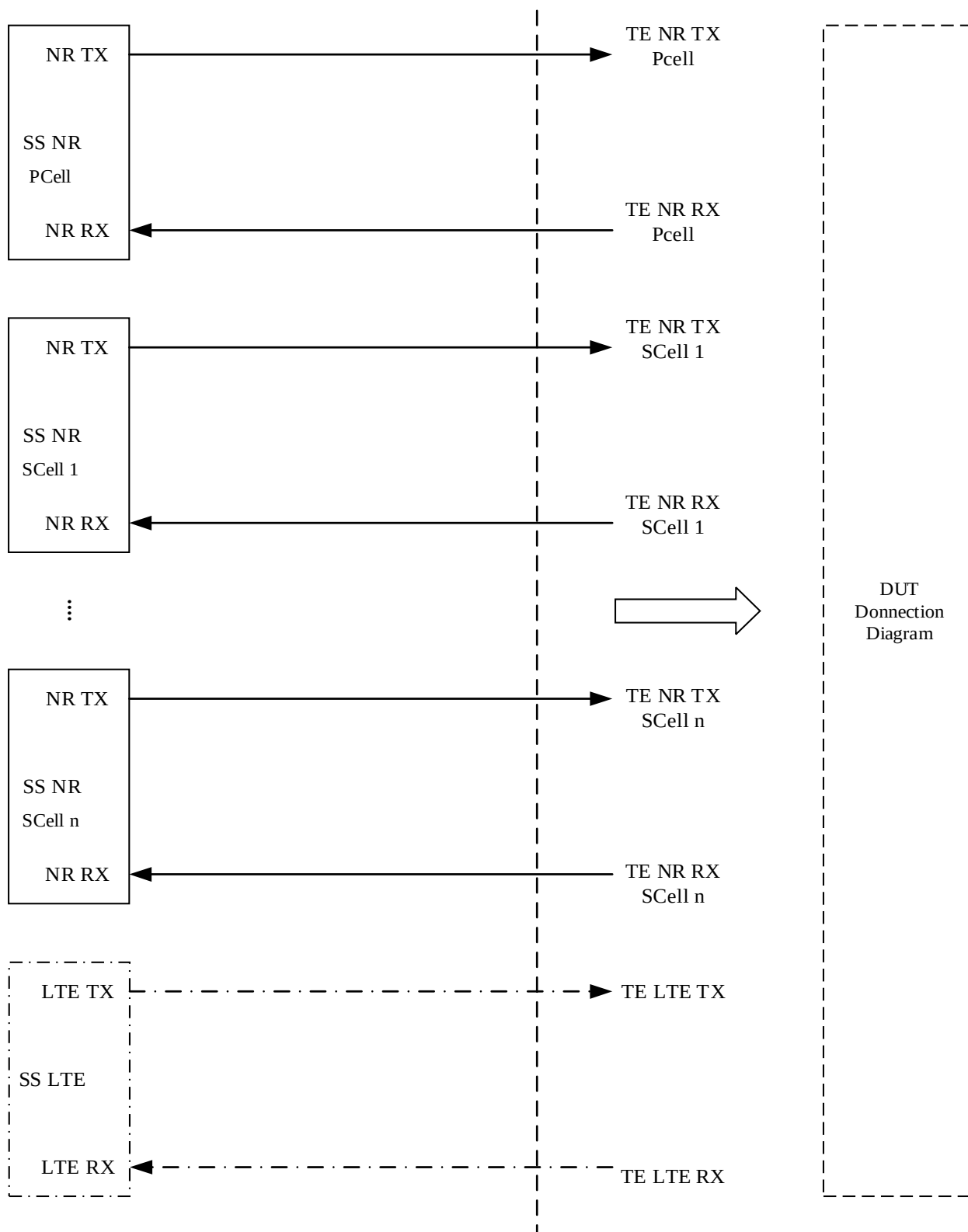


Figure A.3.1.1.3: Test Equipment connection for NR CA and NR-DC, basic RX and TX tests

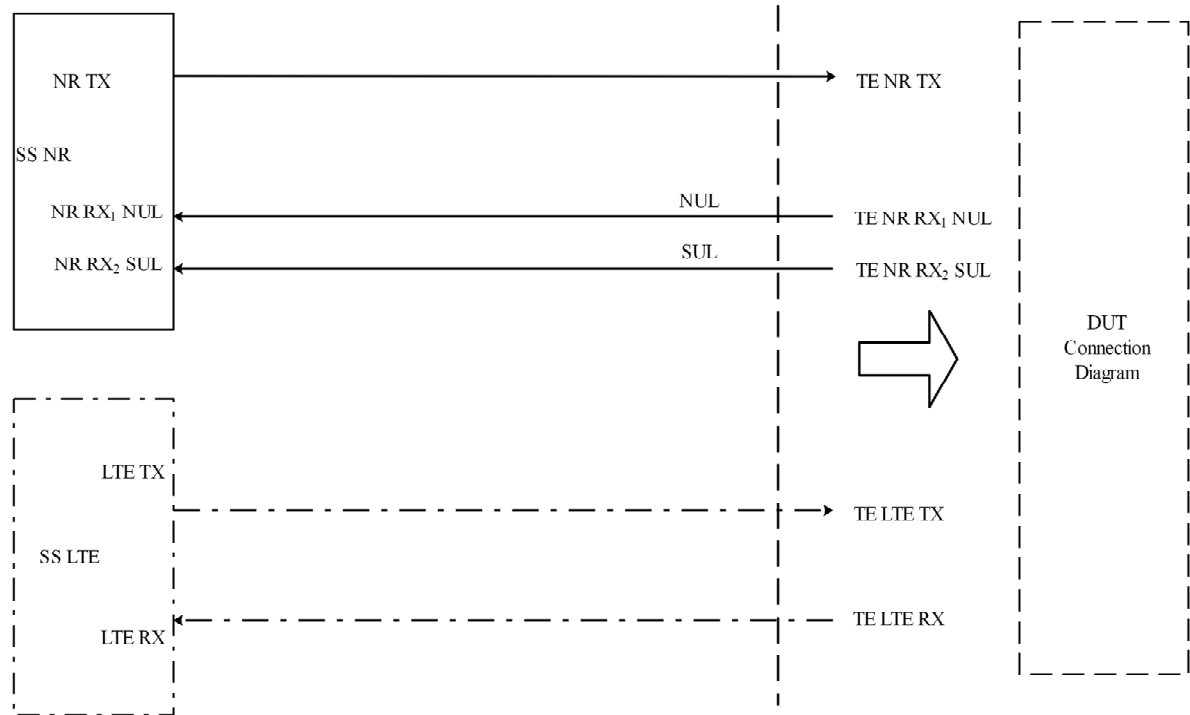


Figure A.3.1.1.4: Test Equipment connection for NR SUL, basic RX and TX tests

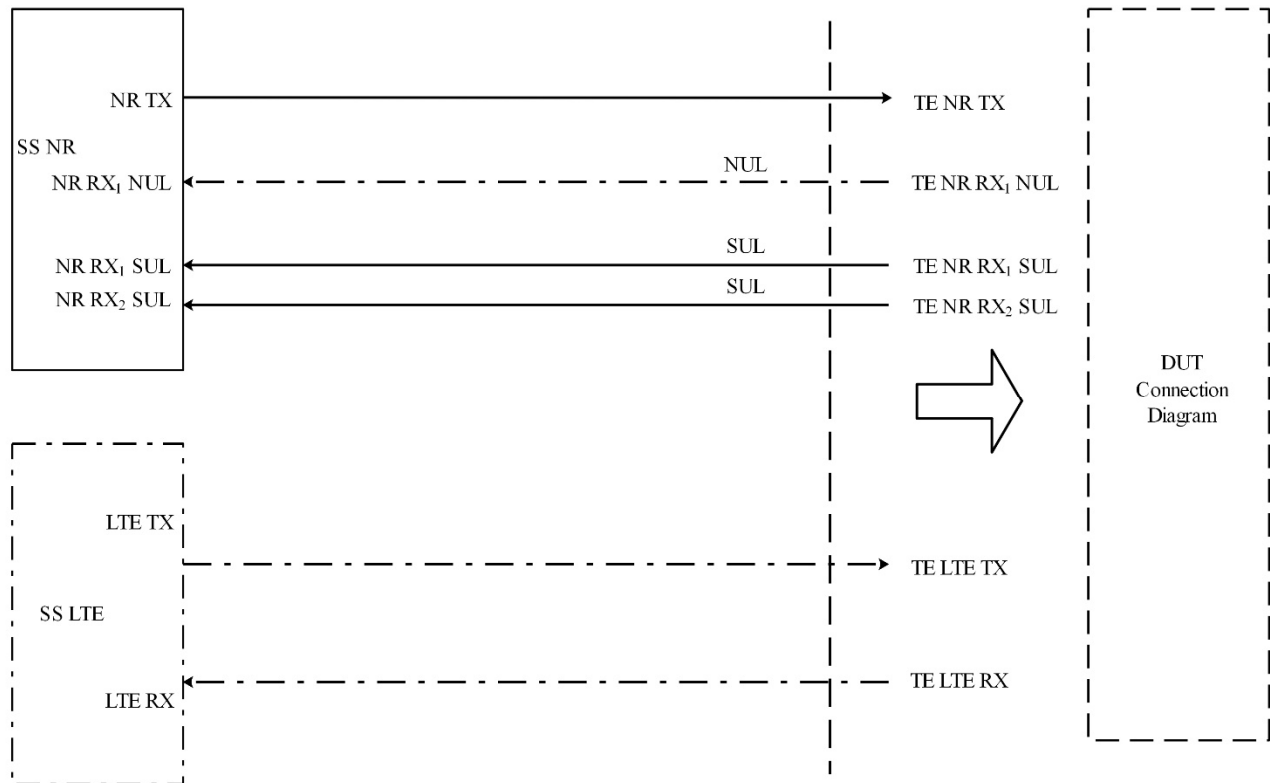


Figure A.3.1.1.5: Test Equipment connection for UL MIMO on SUL band, basic RX and TX tests

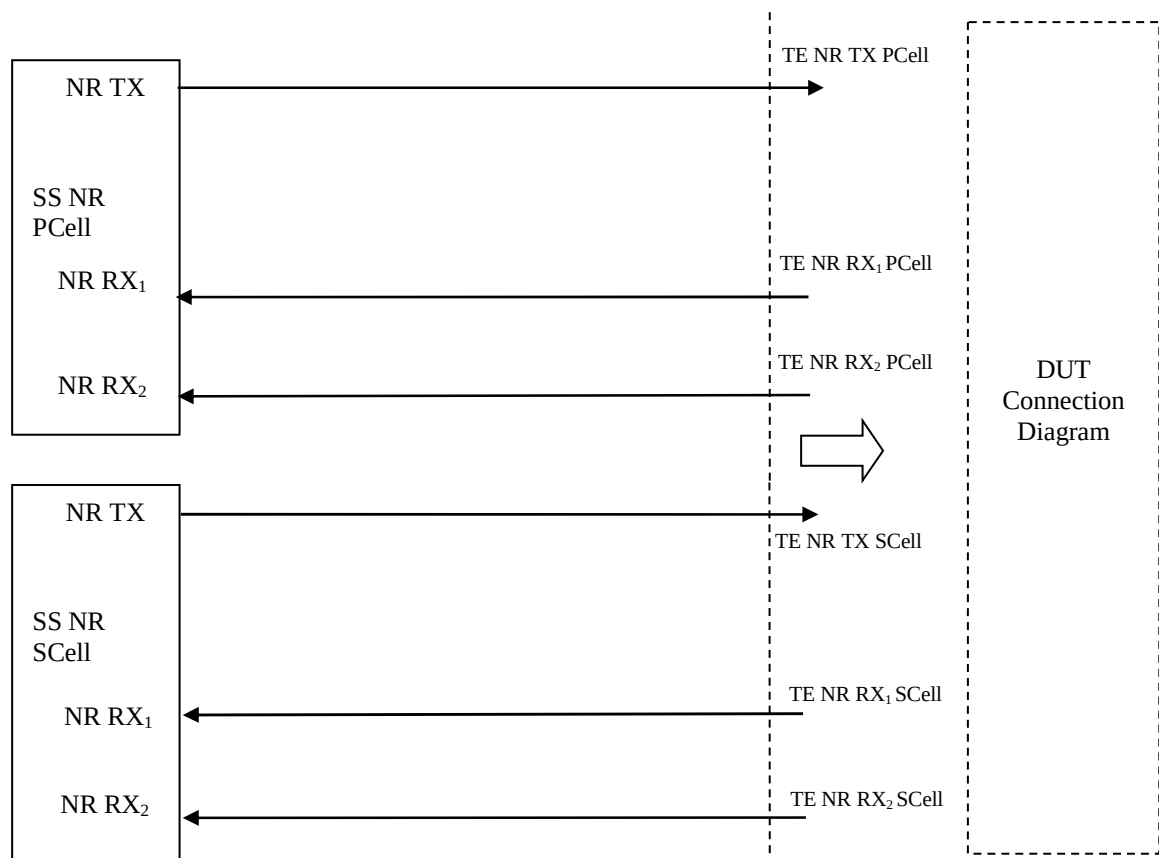


Figure A.3.1.1.6: Test Equipment connection for NR intra-band UL contiguous CA with UL MIMO or Tx diversity

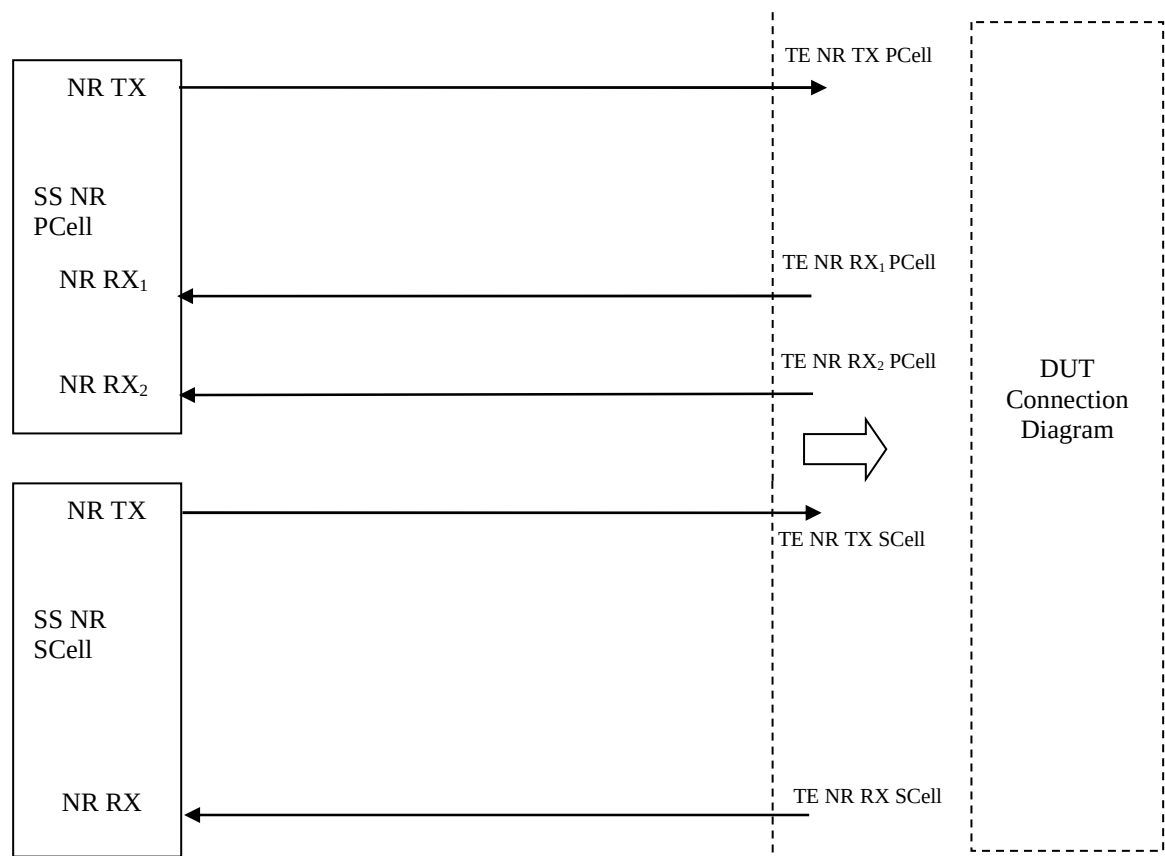


Figure A.3.1.1.7: Test Equipment connection for NR inter-band UL CA with UL MIMO or Tx Diversity

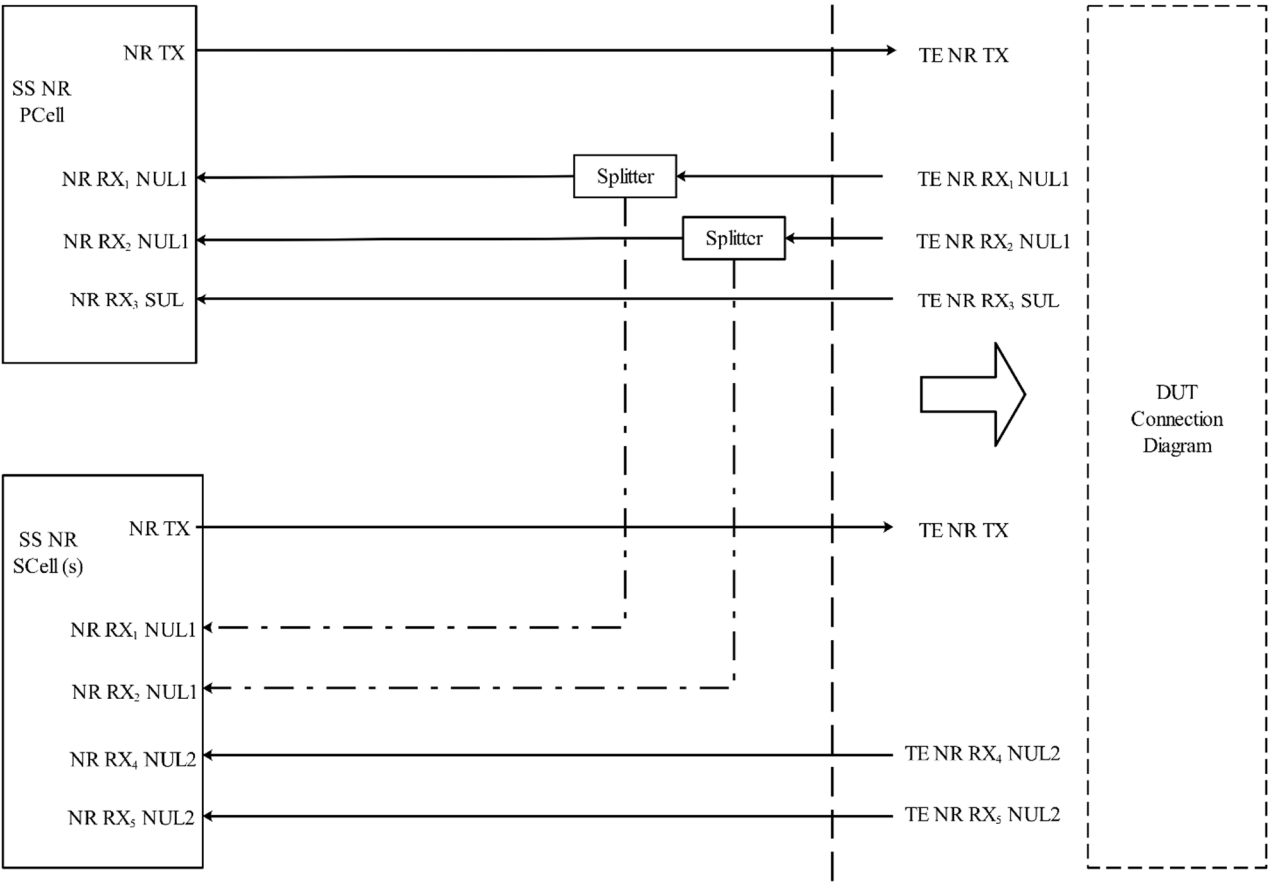


Figure A.3.1.1.8: Test Equipment connection for SUL configuration with inter-band UL CA

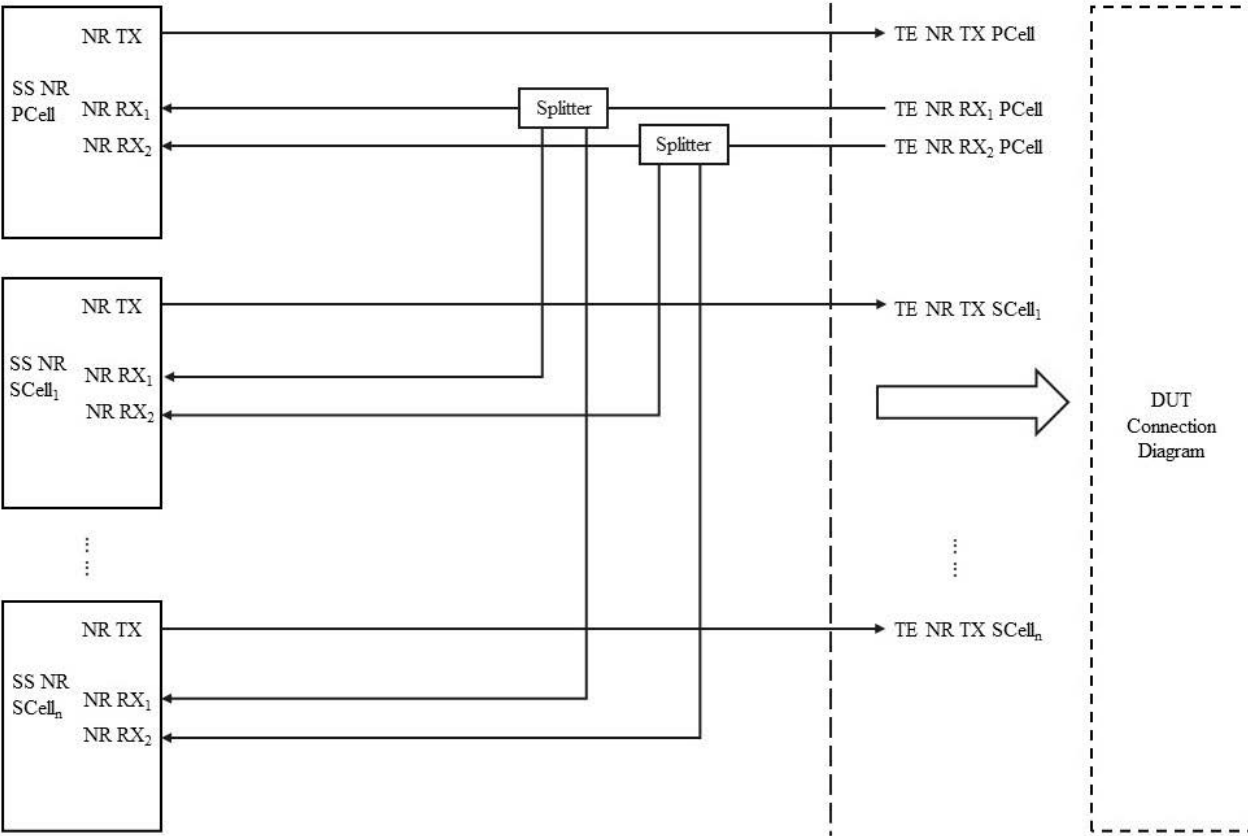


Figure A.3.1.1.9: Test Equipment connection for inter-band UL CA for UL Tx Switching

A.3.1.2 Transmitter tests using Spectrum Analyser

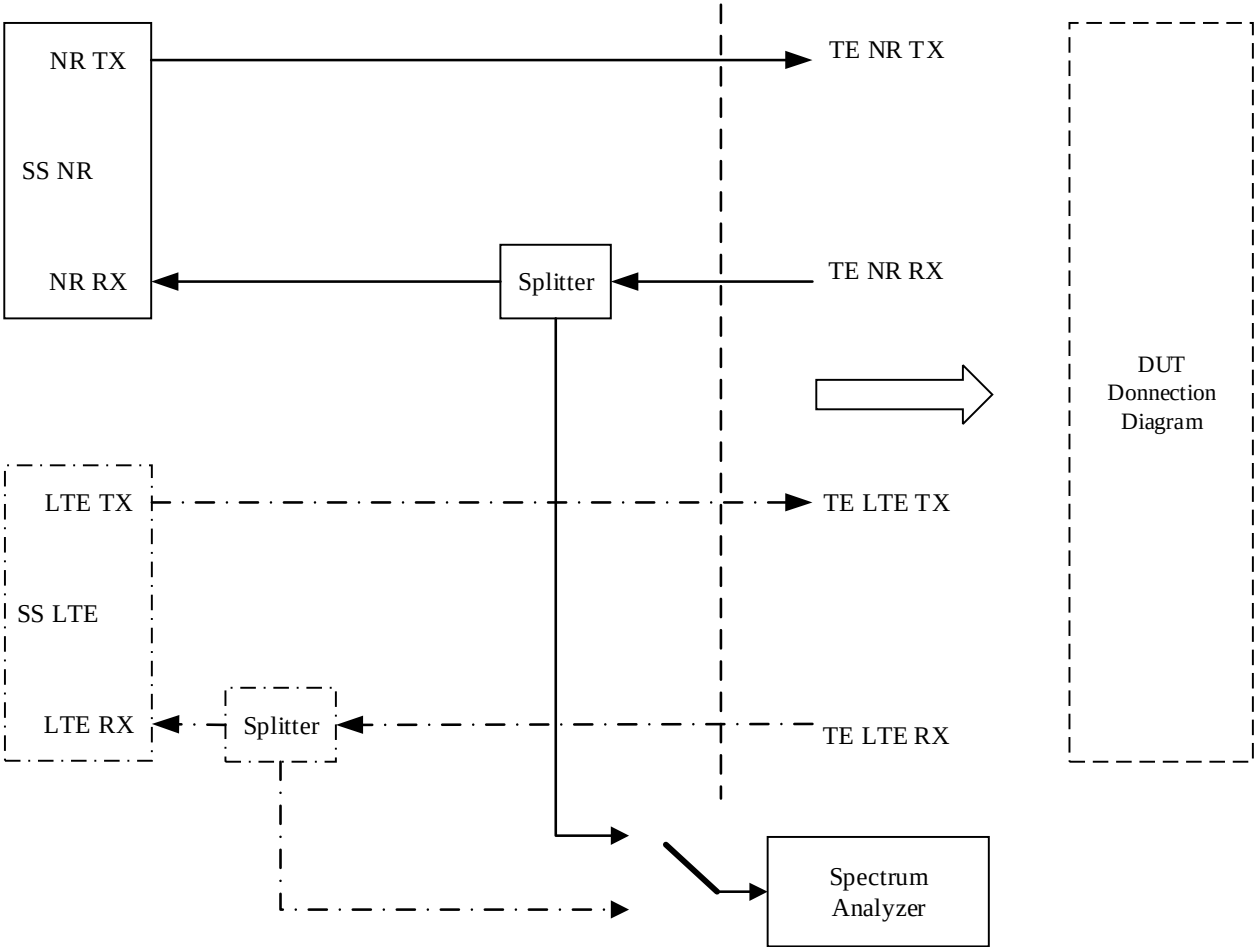


Figure A.3.1.2.1: Test Equipment connection for TX-tests with additional Spectrum Analyzer

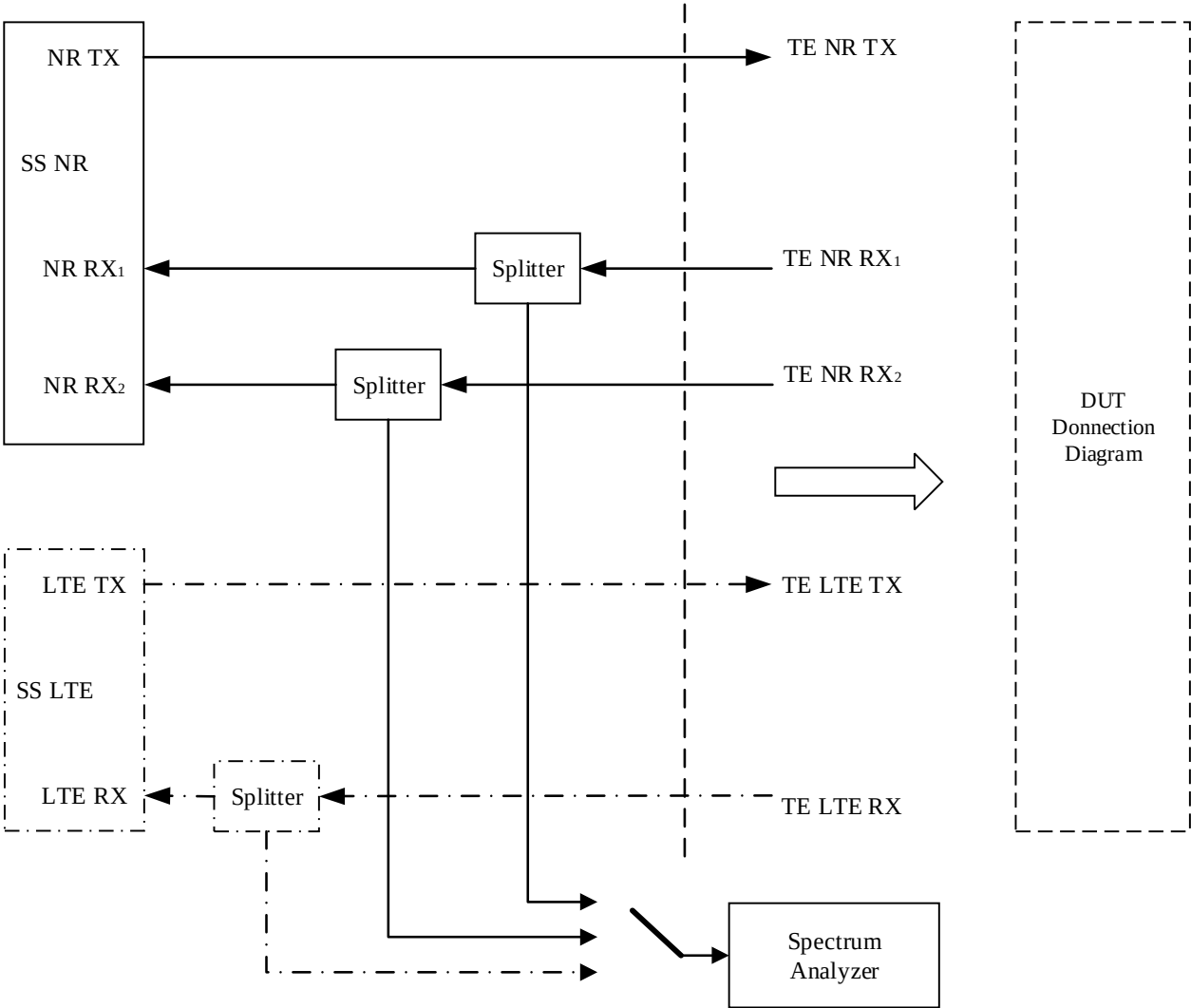


Figure A.3.1.2.2: Test Equipment connection for TX-tests for 2Tx UL MIMO or NR 2Tx Tx diversity with additional Spectrum Analyser

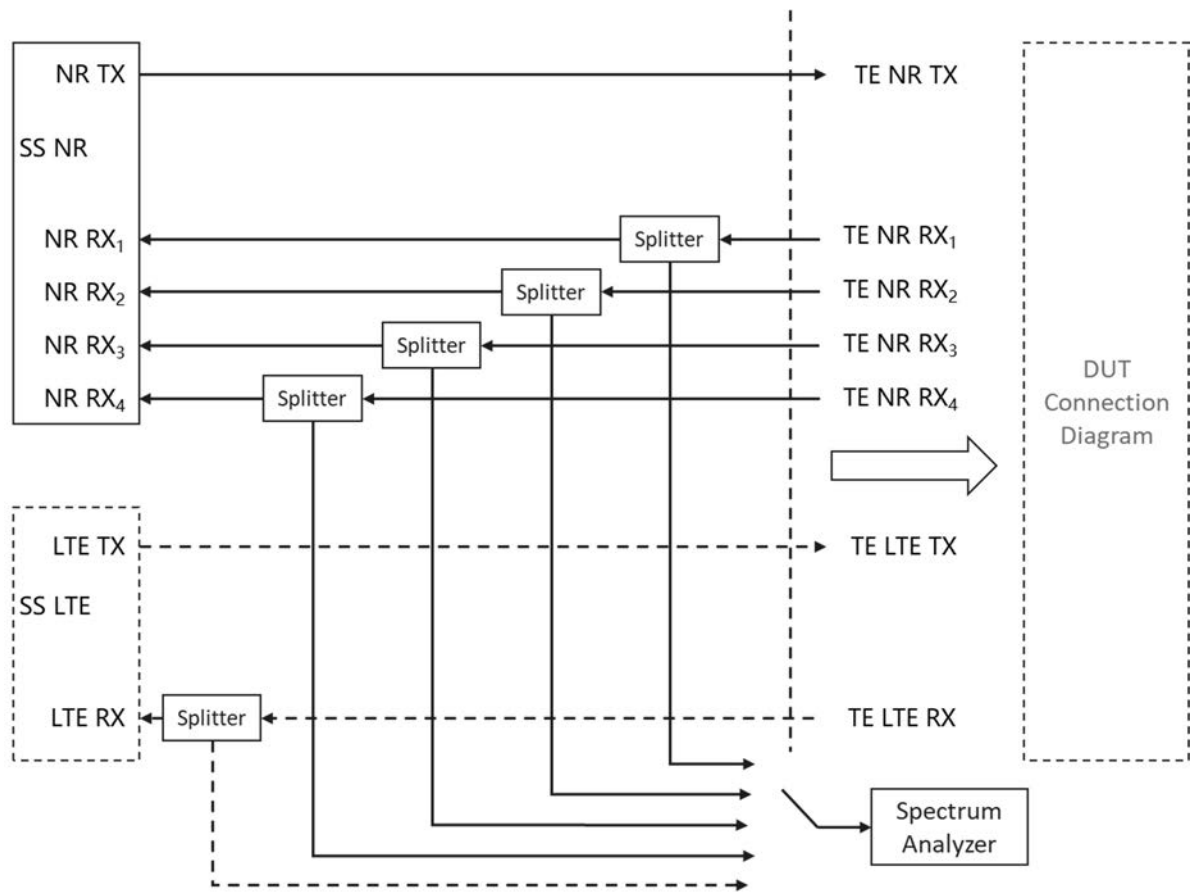


Figure A.3.1.2.2a: Test Equipment connection for TX-tests for NR 4Tx UL MIMO or NR 4Tx Tx diversity with additional Spectrum Analyser

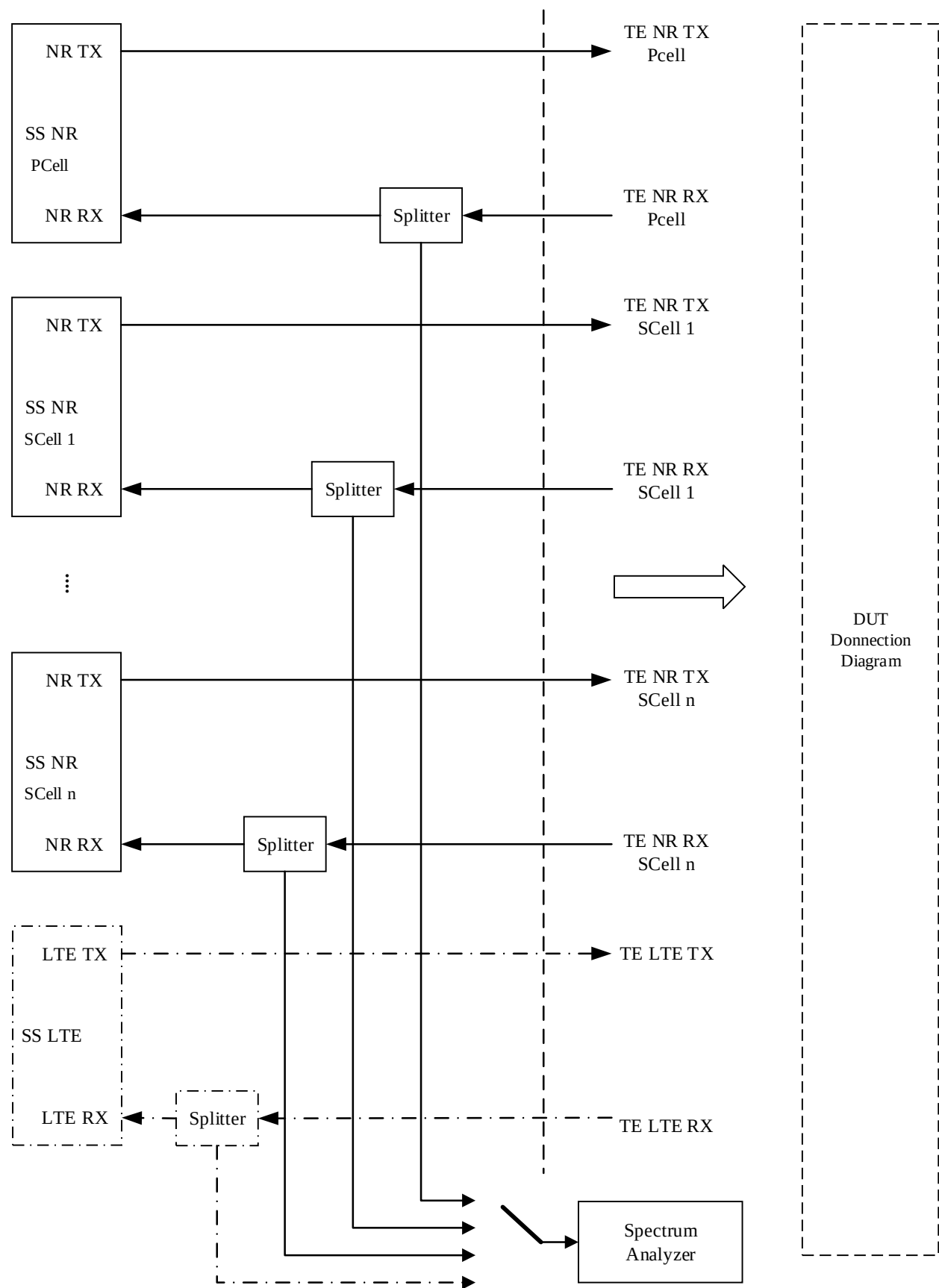


Figure A.3.1.2.3: Test Equipment connection for NR CA TX-tests with additional Spectrum Analyser

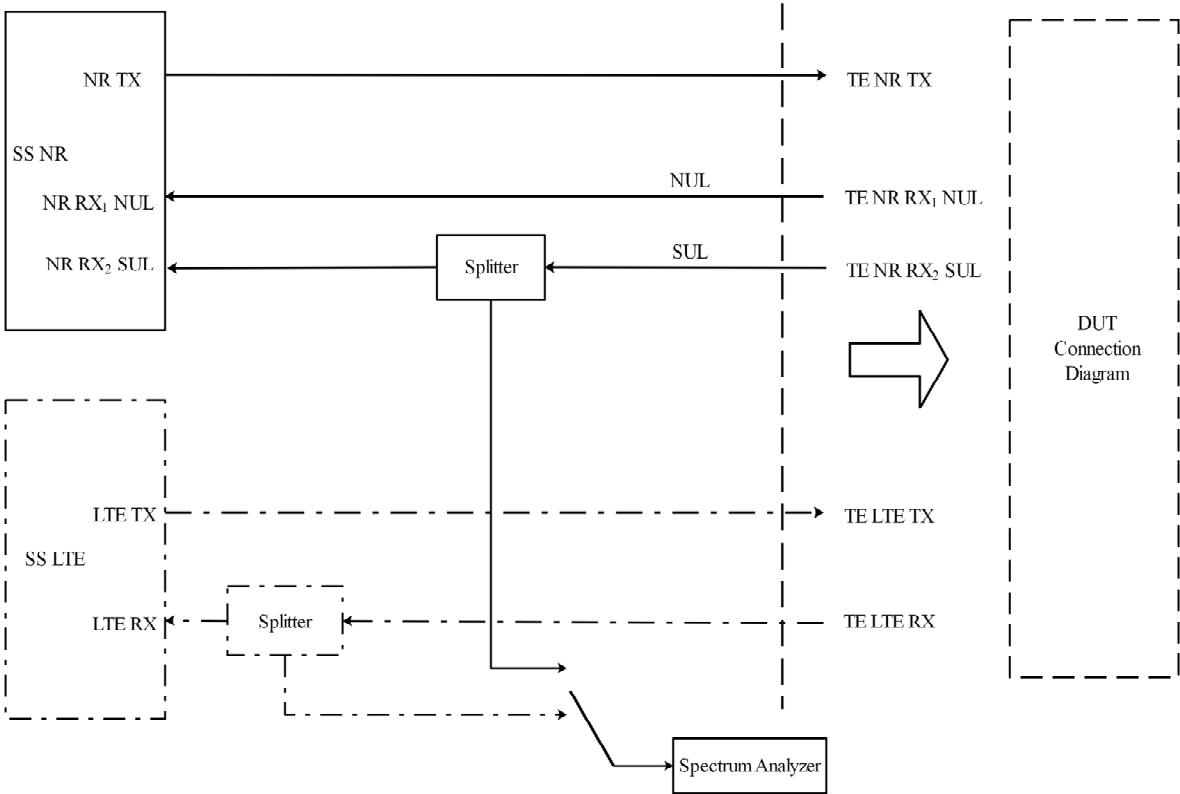


Figure A.3.1.2.4: Test Equipment connection for NR SUL TX-tests with additional Spectrum Analyzer

A.3.1.3 Transmitter tests using Spectrum Analyser and Signal Generator

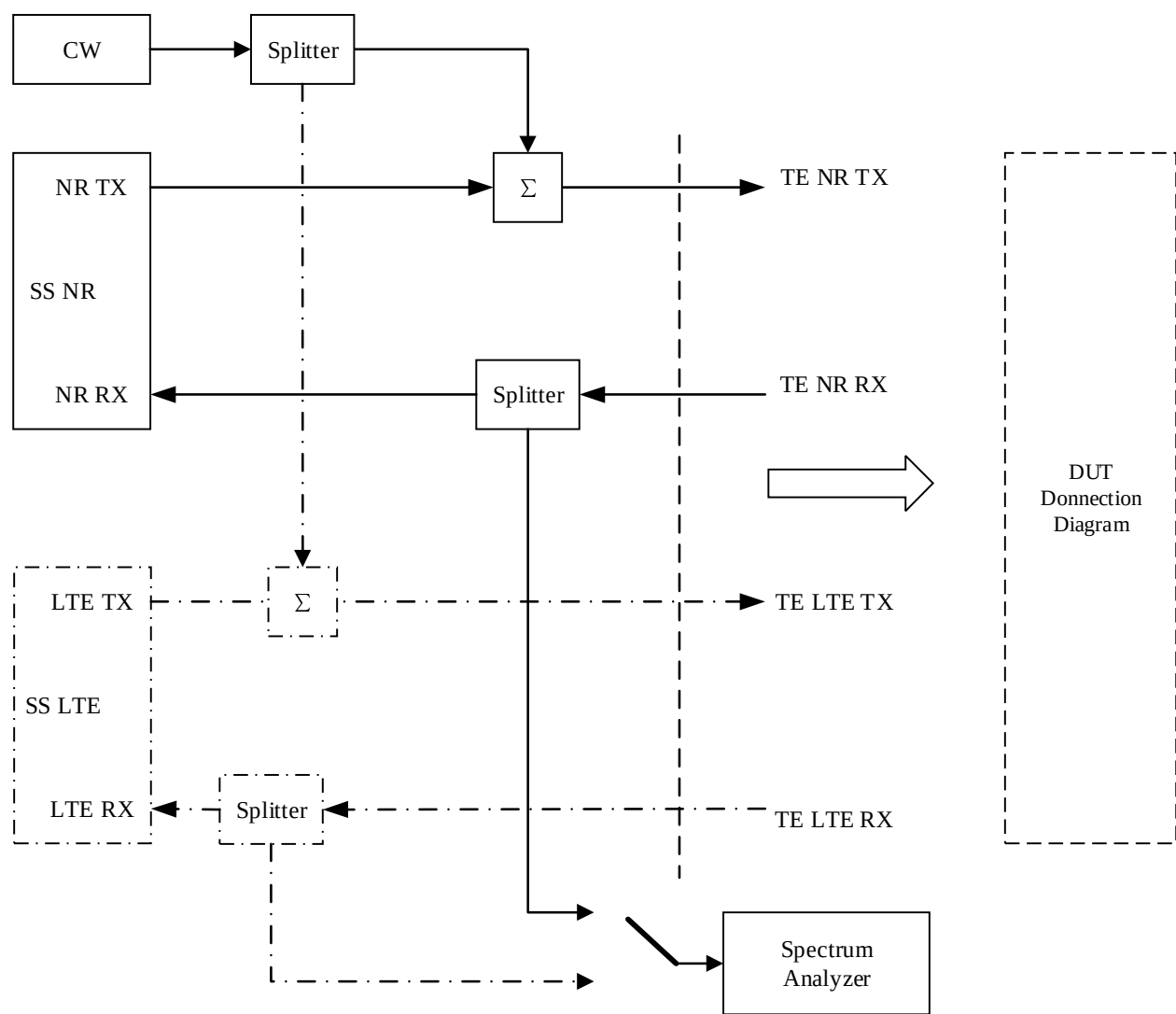


Figure A.3.1.3.1: Test Equipment connection for Transmitter tests with CW Interference and spectrum analyser

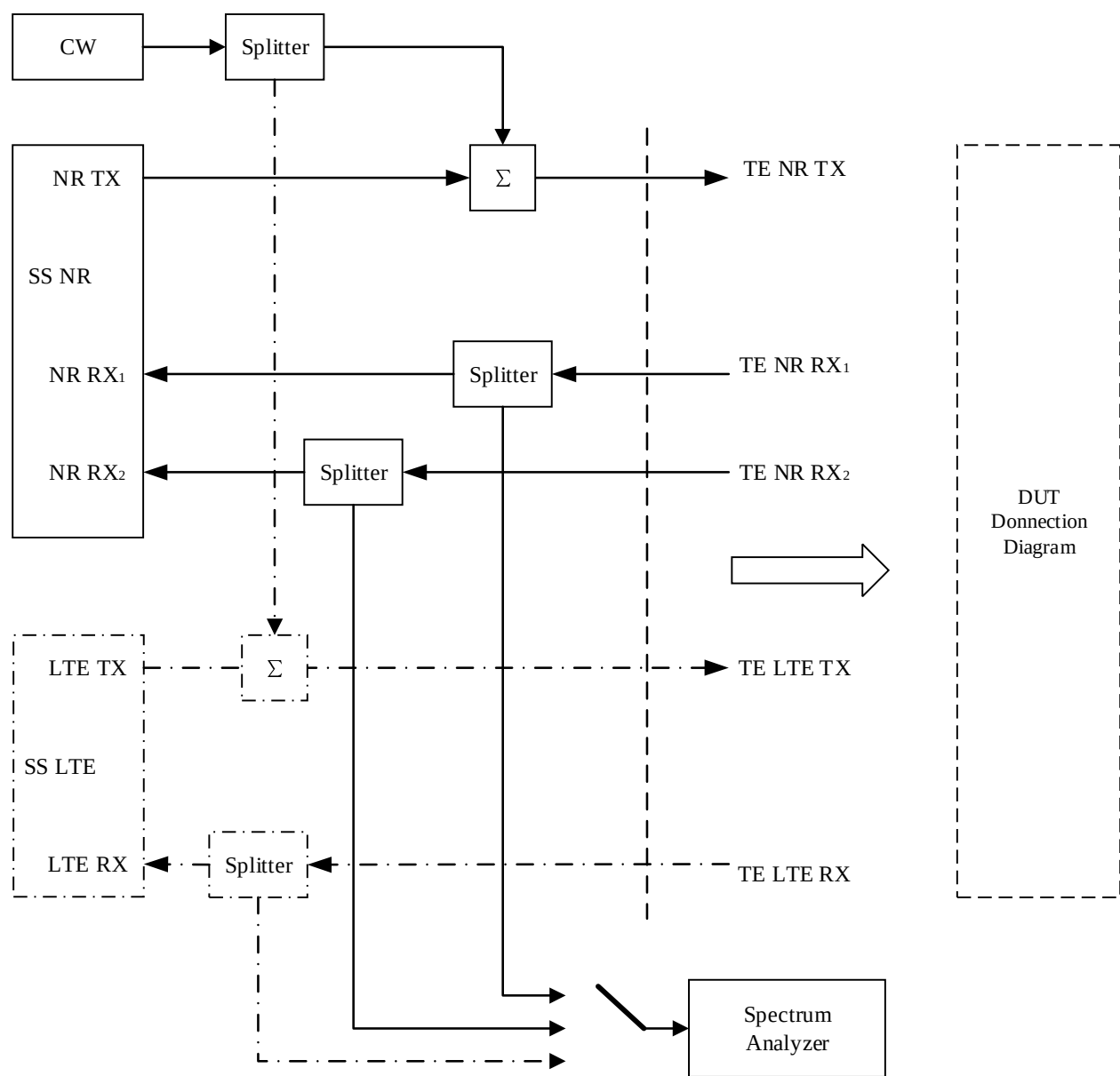


Figure A.3.1.3.2: Test Equipment connection for Transmitter tests for 2Tx UL MIMO or NR 2Tx Tx diversity with CW Interference and spectrum analyser

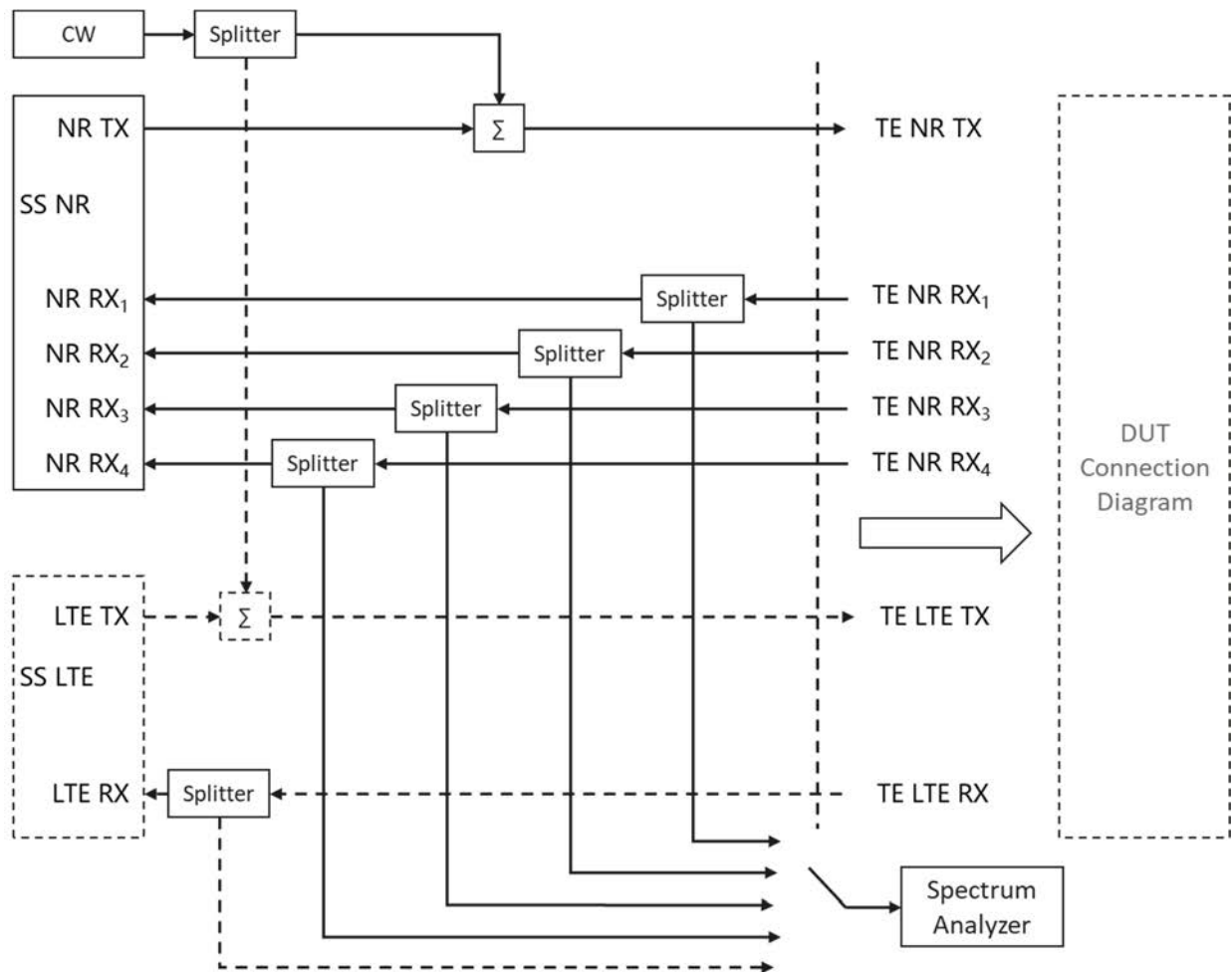


Figure A.3.1.3.2a: Test Equipment connection for Transmitter tests for NR 4Tx UL MIMO or NR 4Tx Tx diversity with CW Interference and spectrum analyser

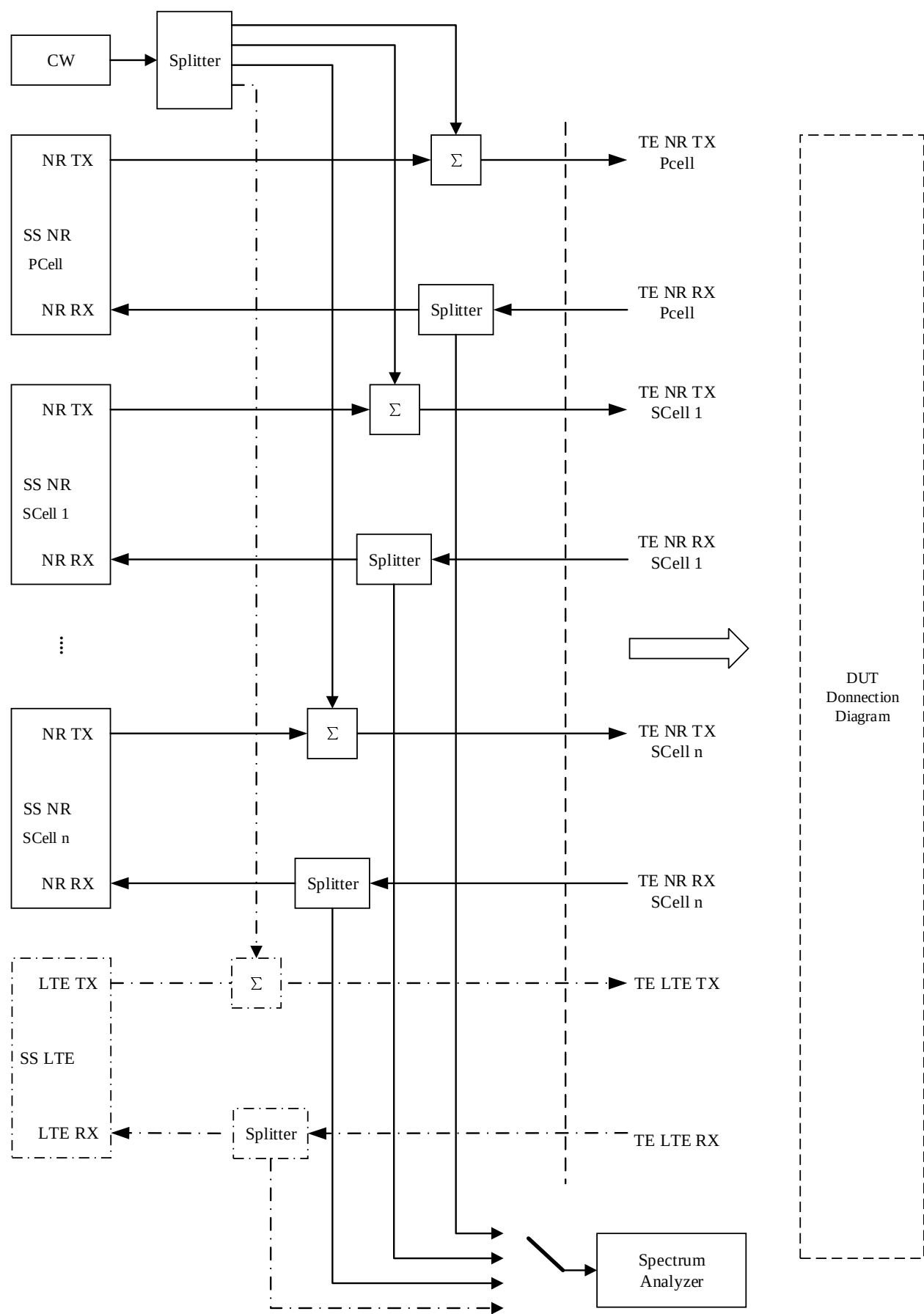


Figure A.3.1.3.3: Test Equipment connection for NR CA Transmitter tests with CW Interference and spectrum analyser

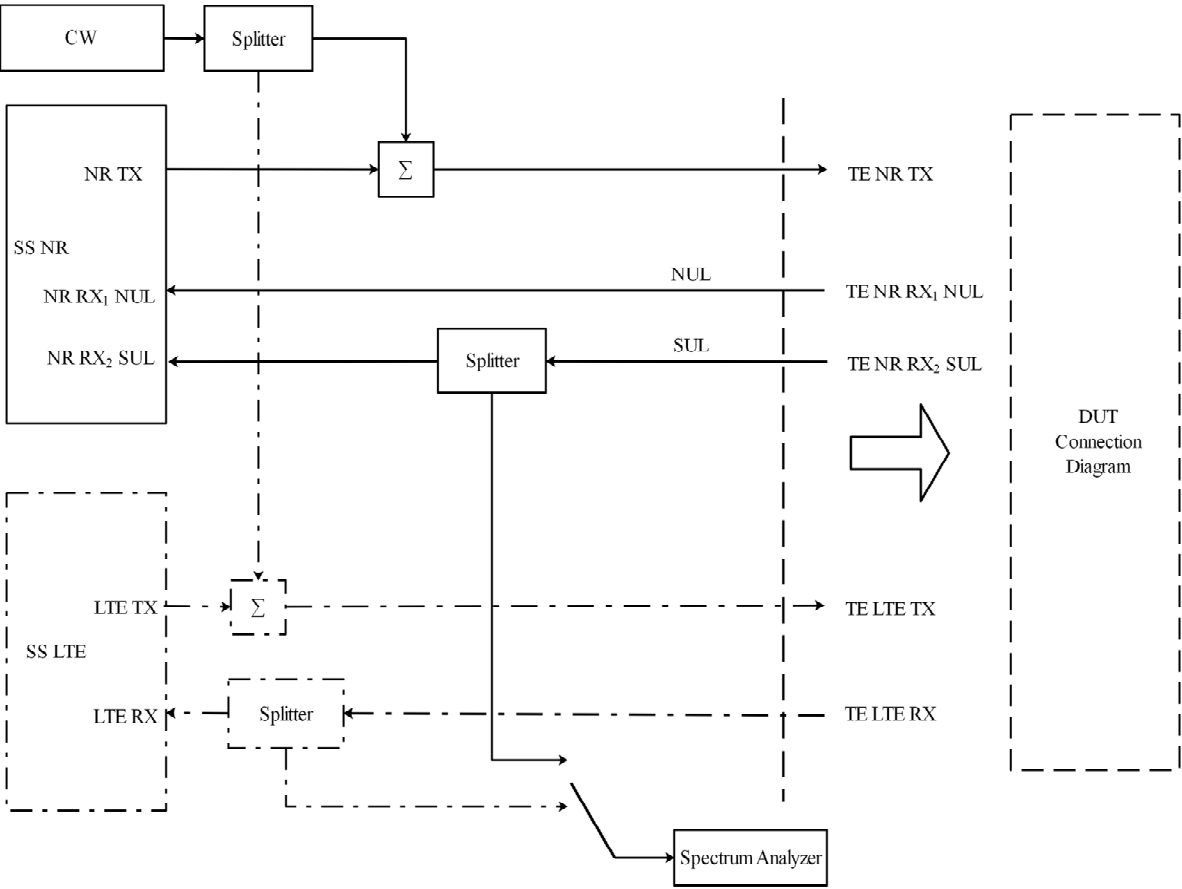


Figure A.3.1.3.4: Test Equipment connection for Transmitter tests for SUL with CW Interference and spectrum analyzer

A.3.1.4 Receiver tests using Signal Generator

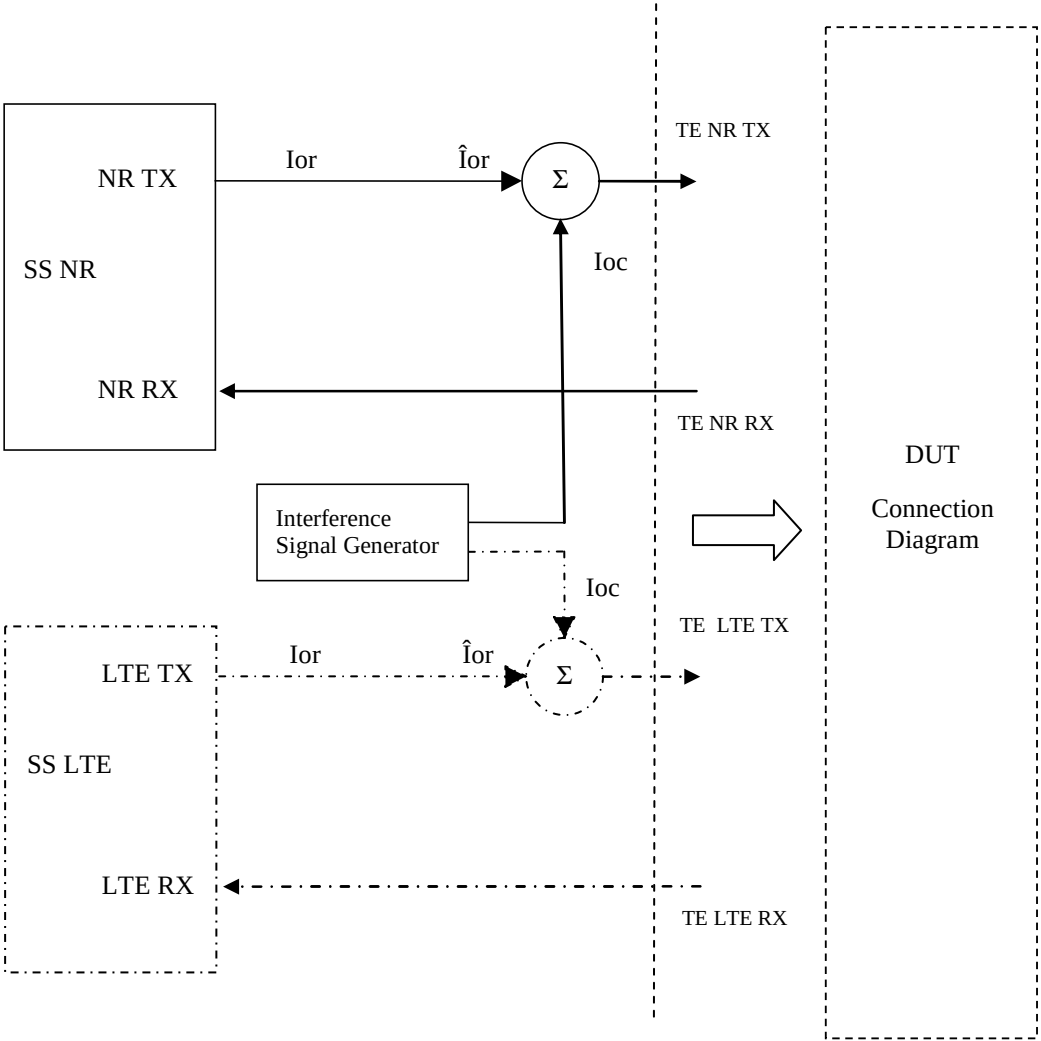


Figure A.3.1.4.1: Test Equipment connection for Receiver tests with Modulated Interference

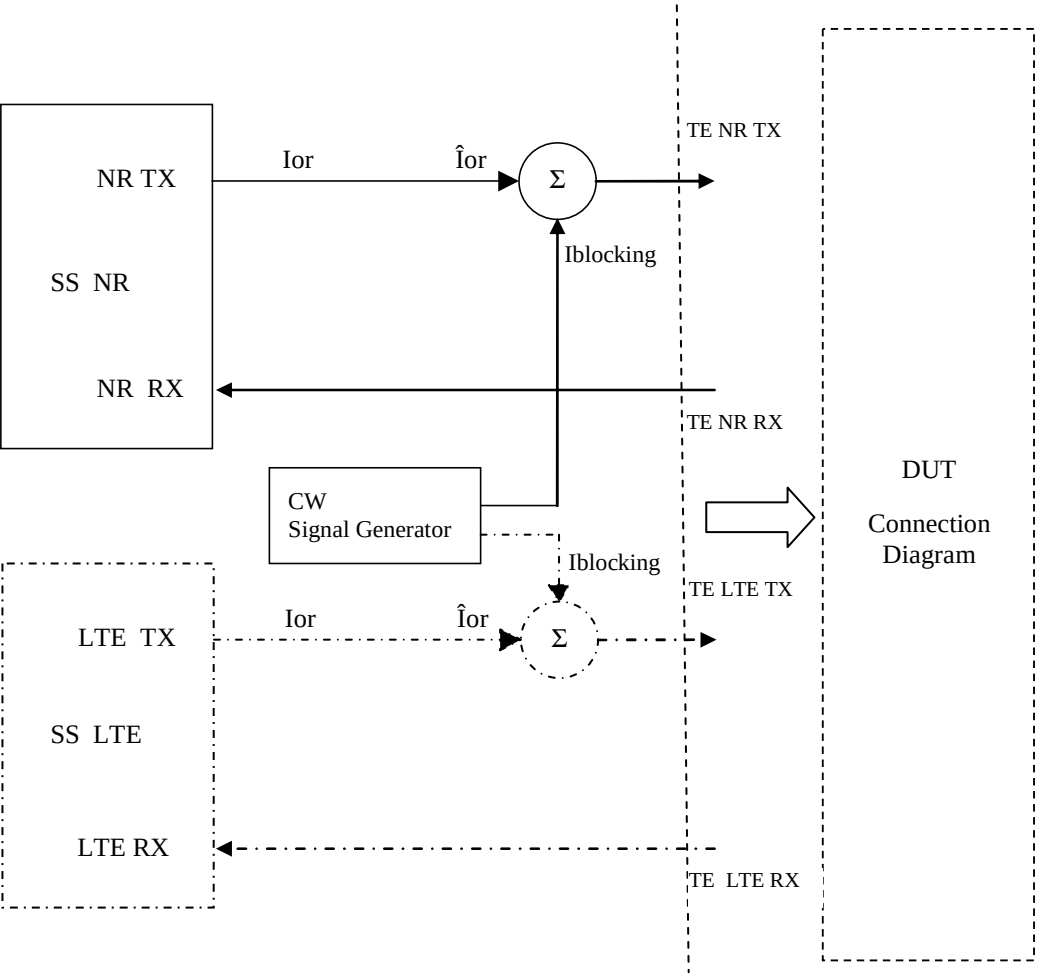


Figure A.3.1.4.2: Test Equipment connection for Receiver tests with CW Interference

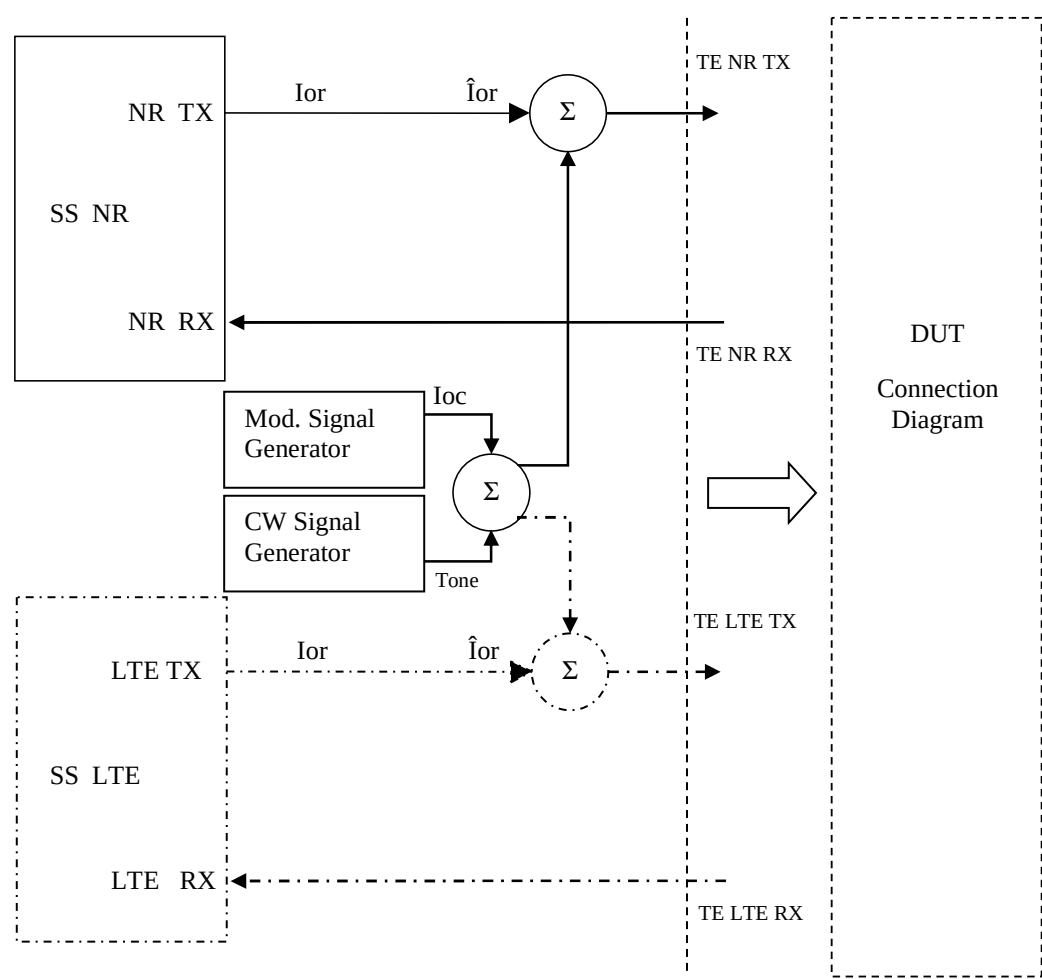


Figure A.3.1.4.3: Test Equipment connection for Receiver tests both Modulated and additional CW Interference signal

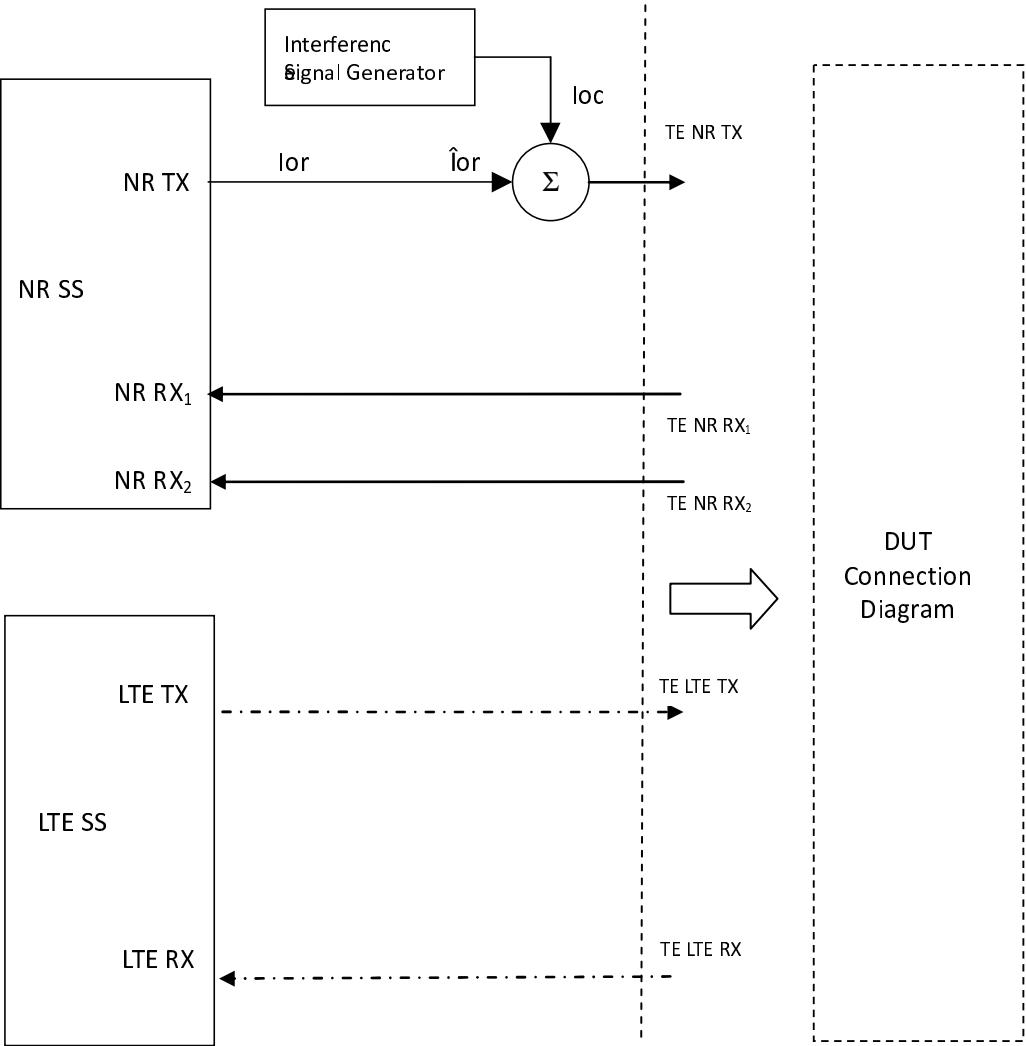


Figure A.3.1.4.4: Test Equipment connection for Receiver tests for 2Tx UL MIMO or NR 2Tx Tx diversity with Modulated Interference

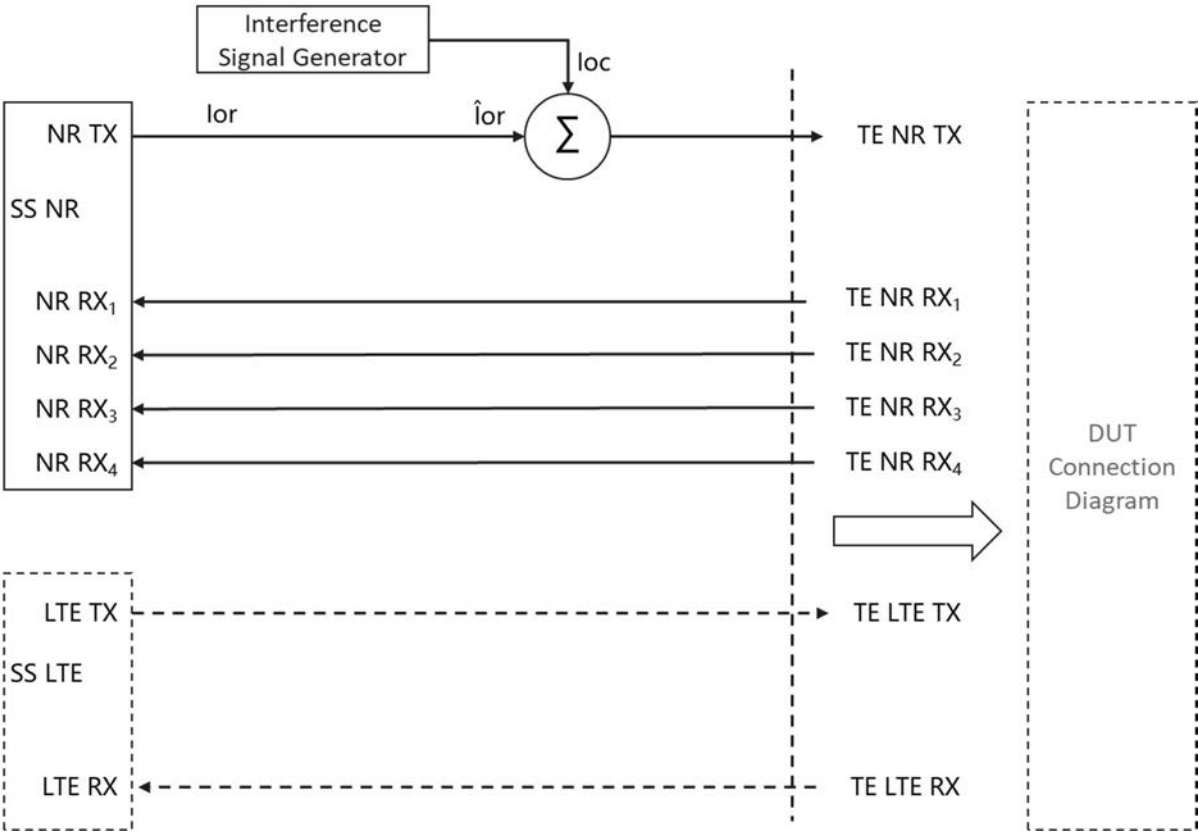


Figure A.3.1.4.4a: Test Equipment connection for Receiver tests for NR 4Tx UL MIMO or NR 4Tx Tx diversity with Modulated Interference

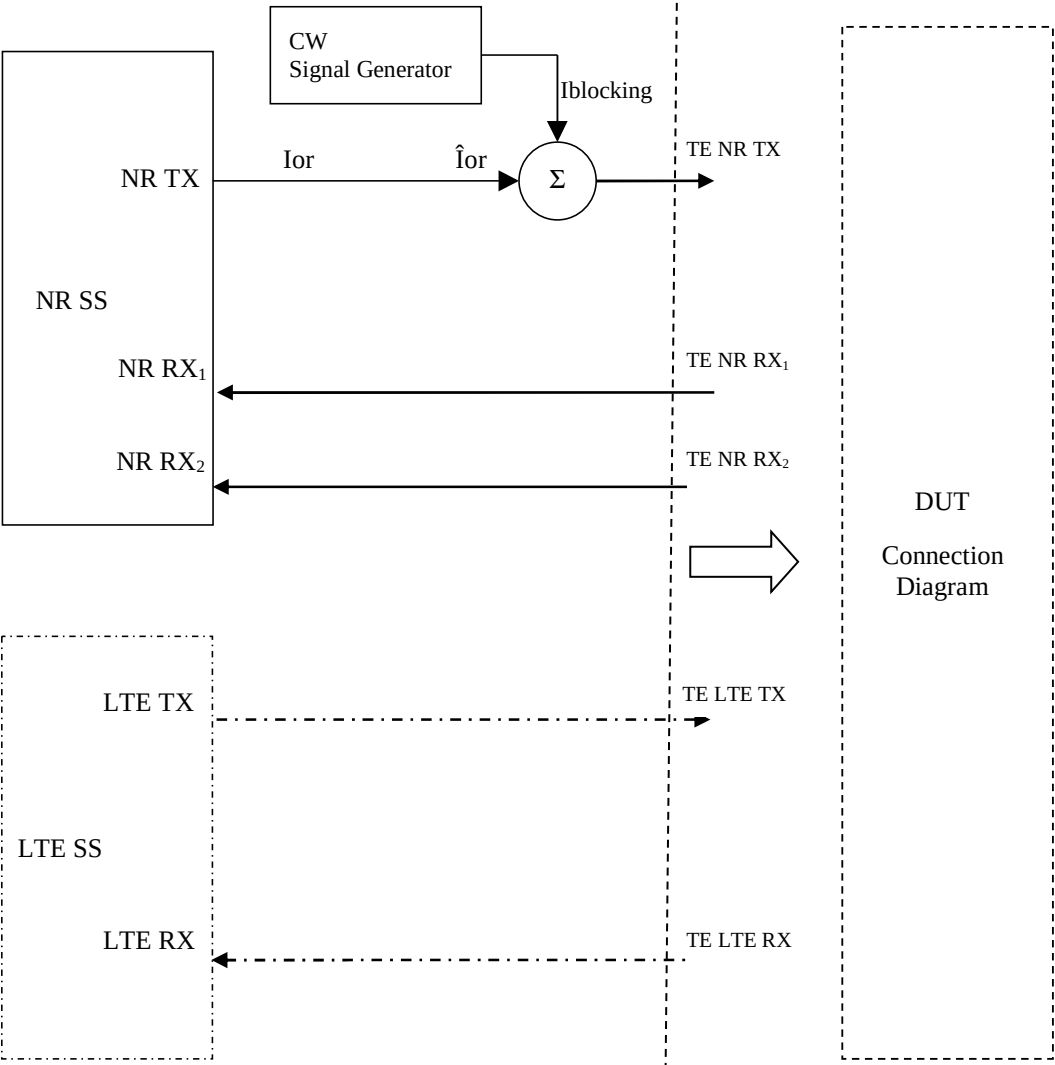


Figure A.3.1.4.5: Test Equipment connection for Receiver tests for 2Tx UL MIMO or NR 2Tx Tx diversity with CW Interference

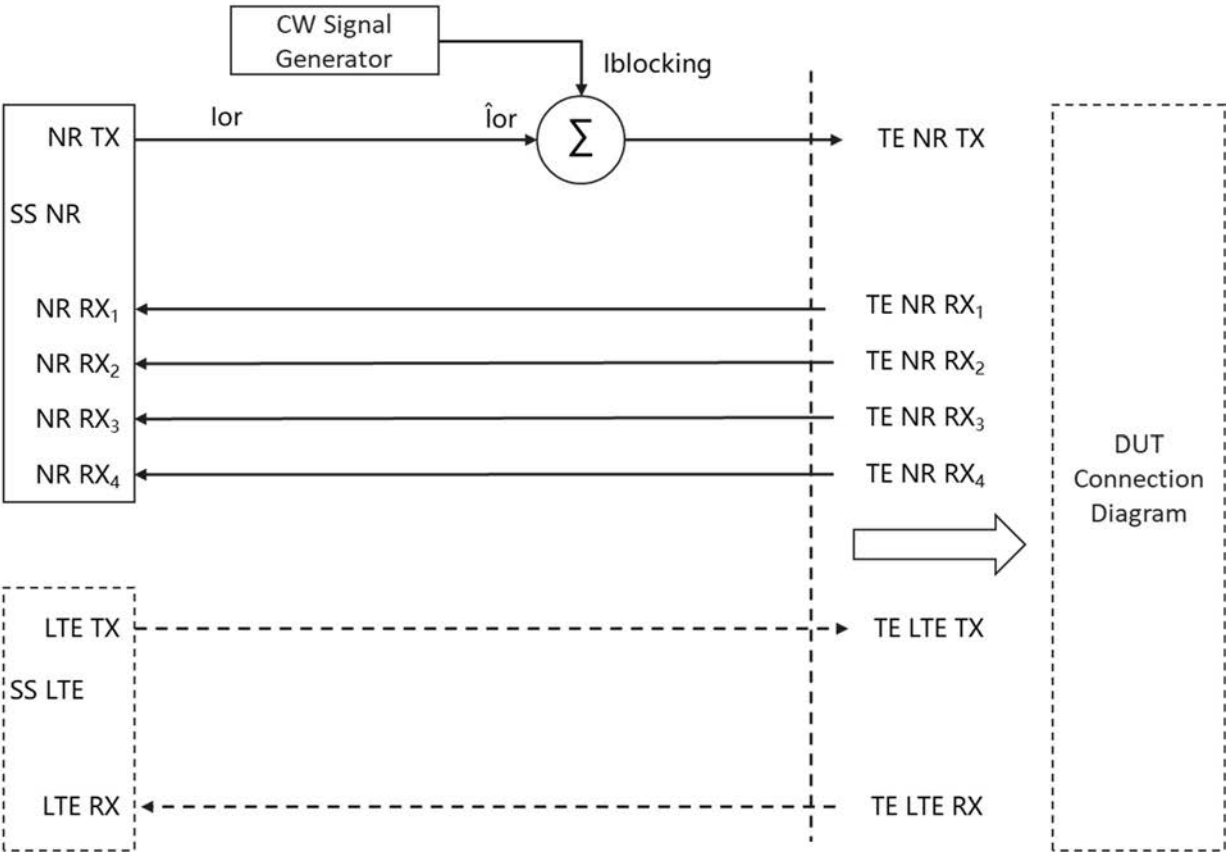


Figure A.3.1.4.5a: Test Equipment connection for Receiver tests for NR 4Tx UL MIMO or NR 4Tx Tx diversity with CW Interference

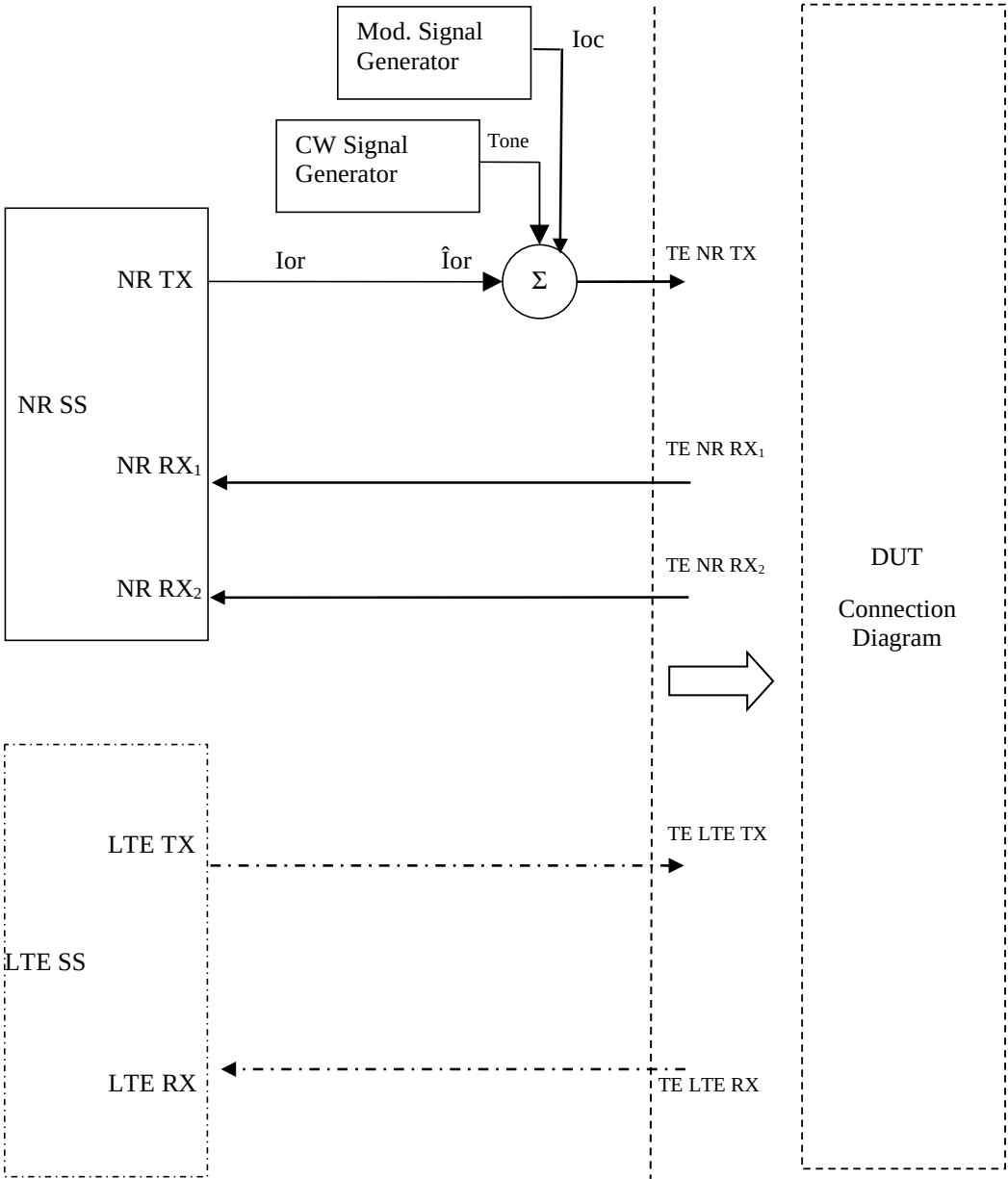


Figure A.3.1.4.6: Test Equipment connection for Receiver tests for 2Tx UL MIMO or NR 2Tx Tx diversity with both Modulated and additional CW Interference signal

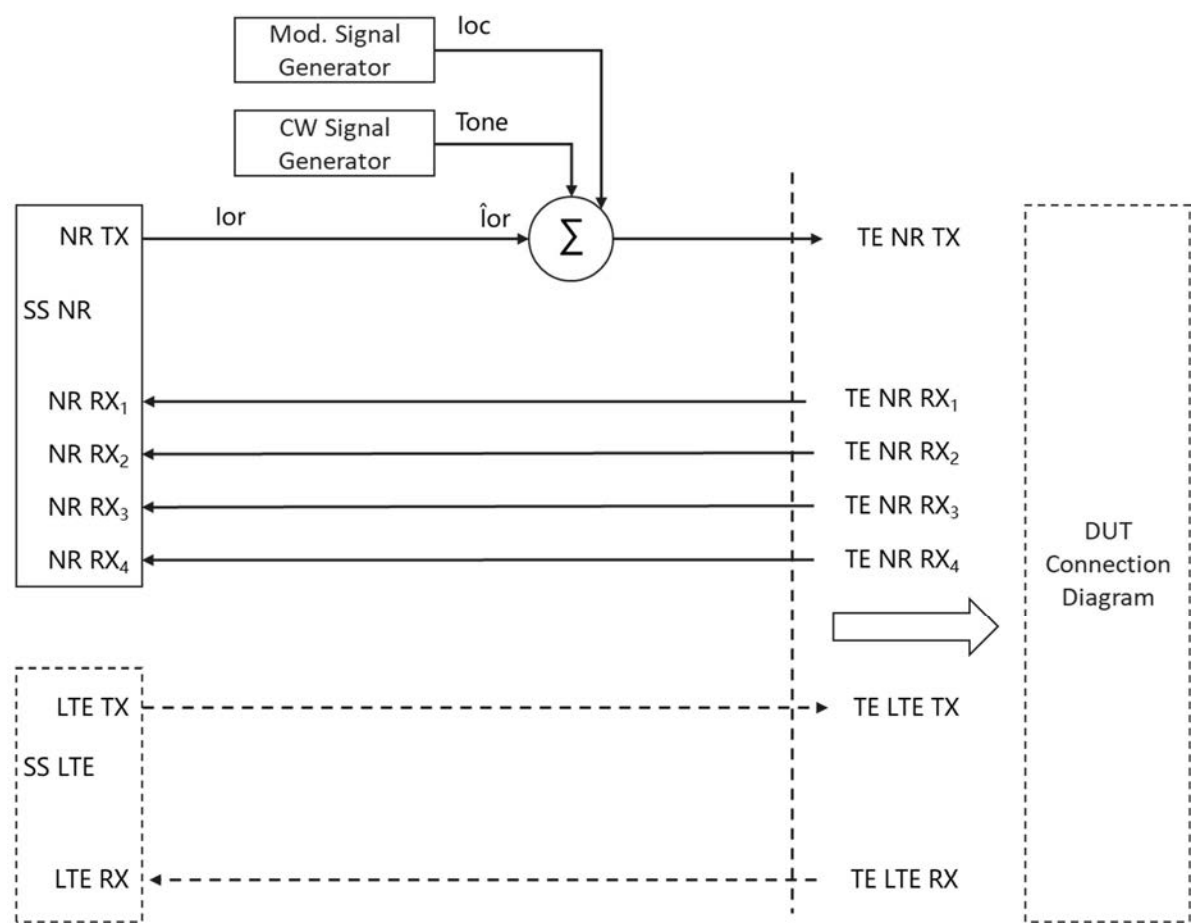


Figure A.3.1.4.6a: Test Equipment connection for Receiver tests for NR 4Tx UL MIMO or NR 4Tx Tx diversity with both Modulated and additional CW Interference signal

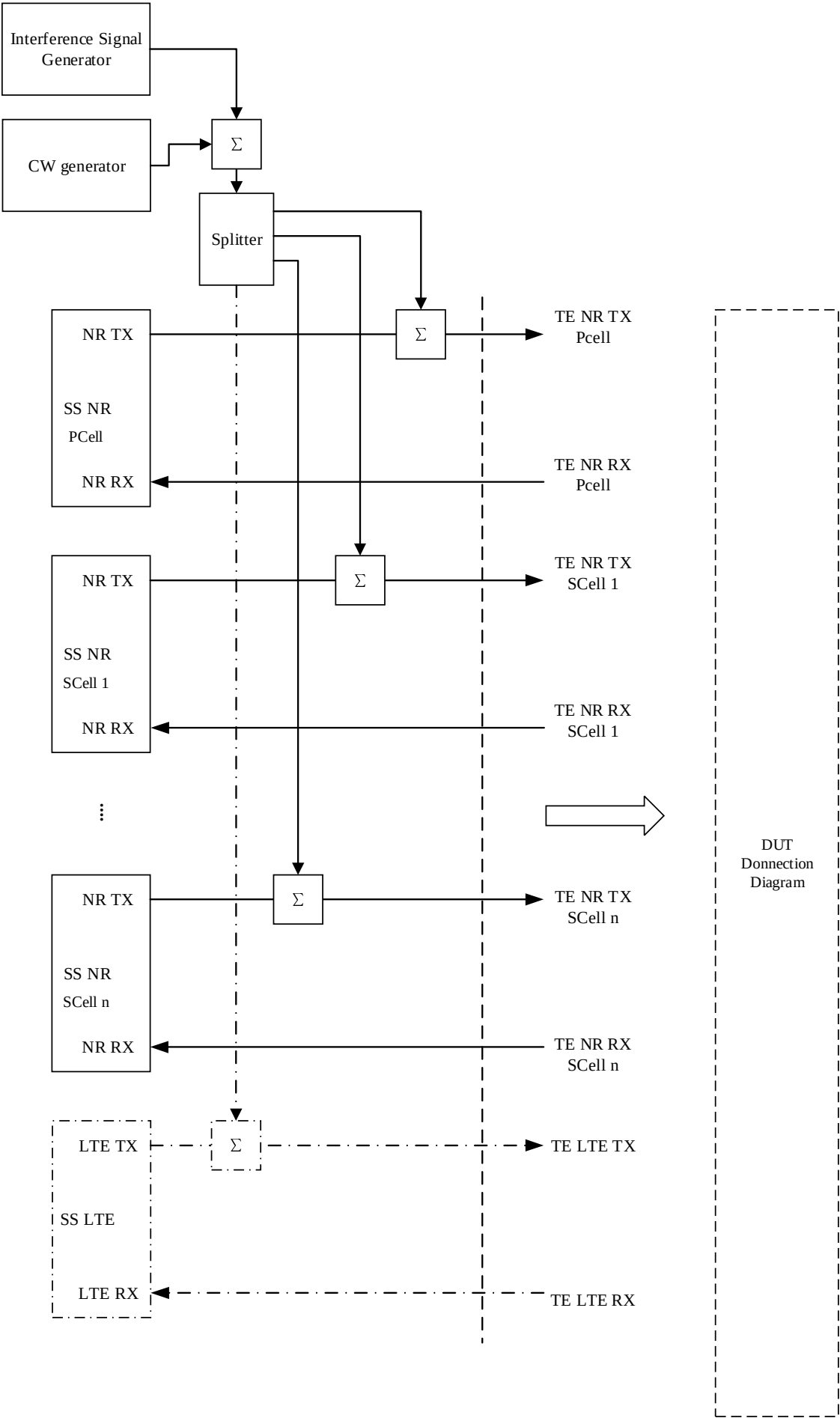


Figure A.3.1.4.7: Test Equipment connection for NR CA Receiver tests with additional Modulated Interference signal and/or CW Interference signal

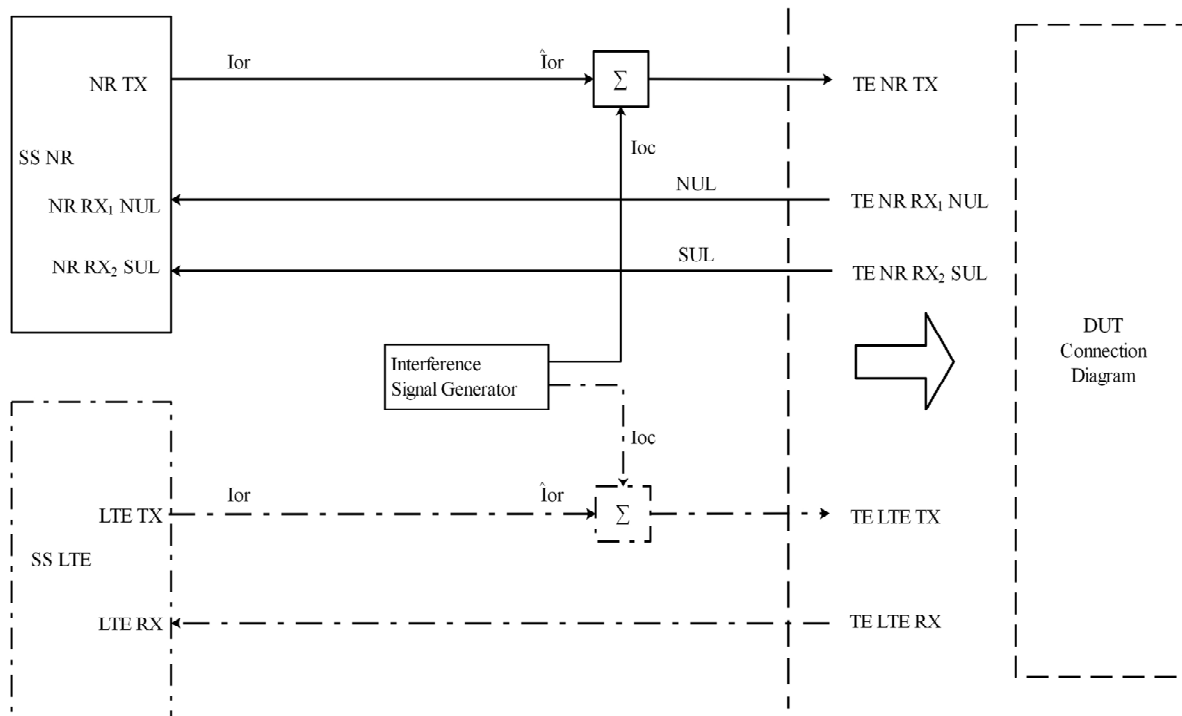


Figure A.3.1.4.8: Test Equipment connection for NR SUL Receiver tests with Modulated Interference

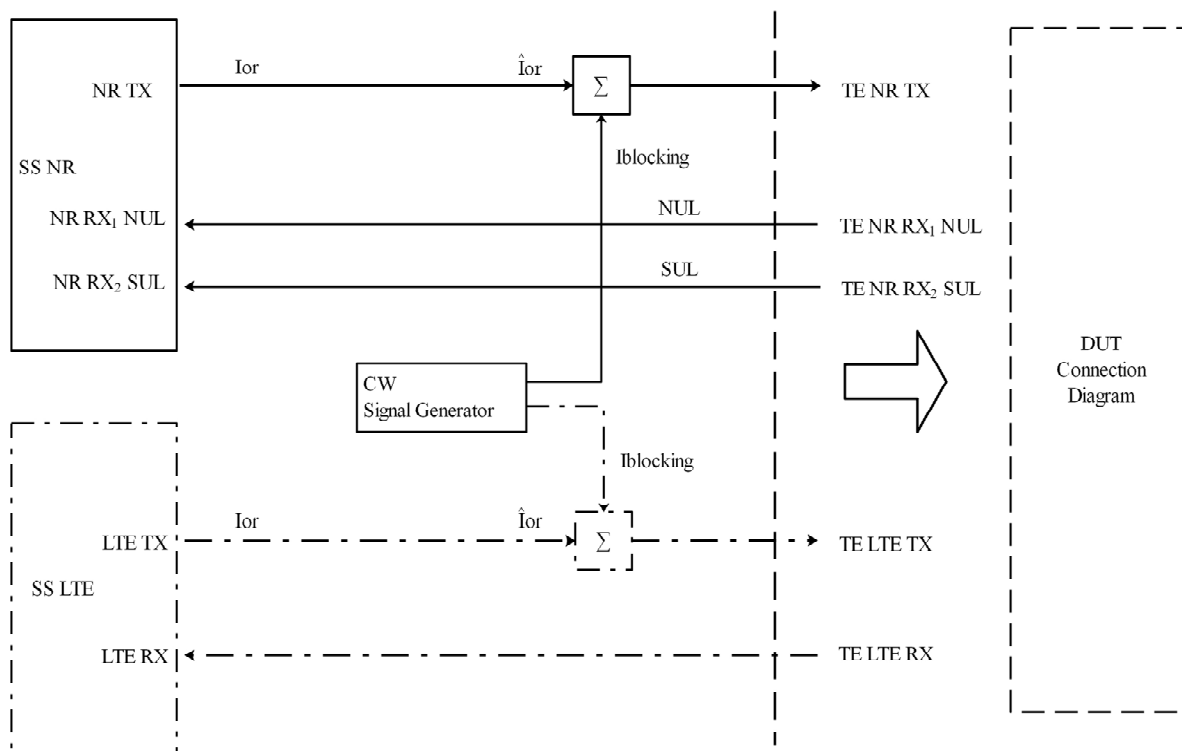


Figure A.3.1.4.9: Test Equipment connection for NR SUL Receiver tests with CW Interference

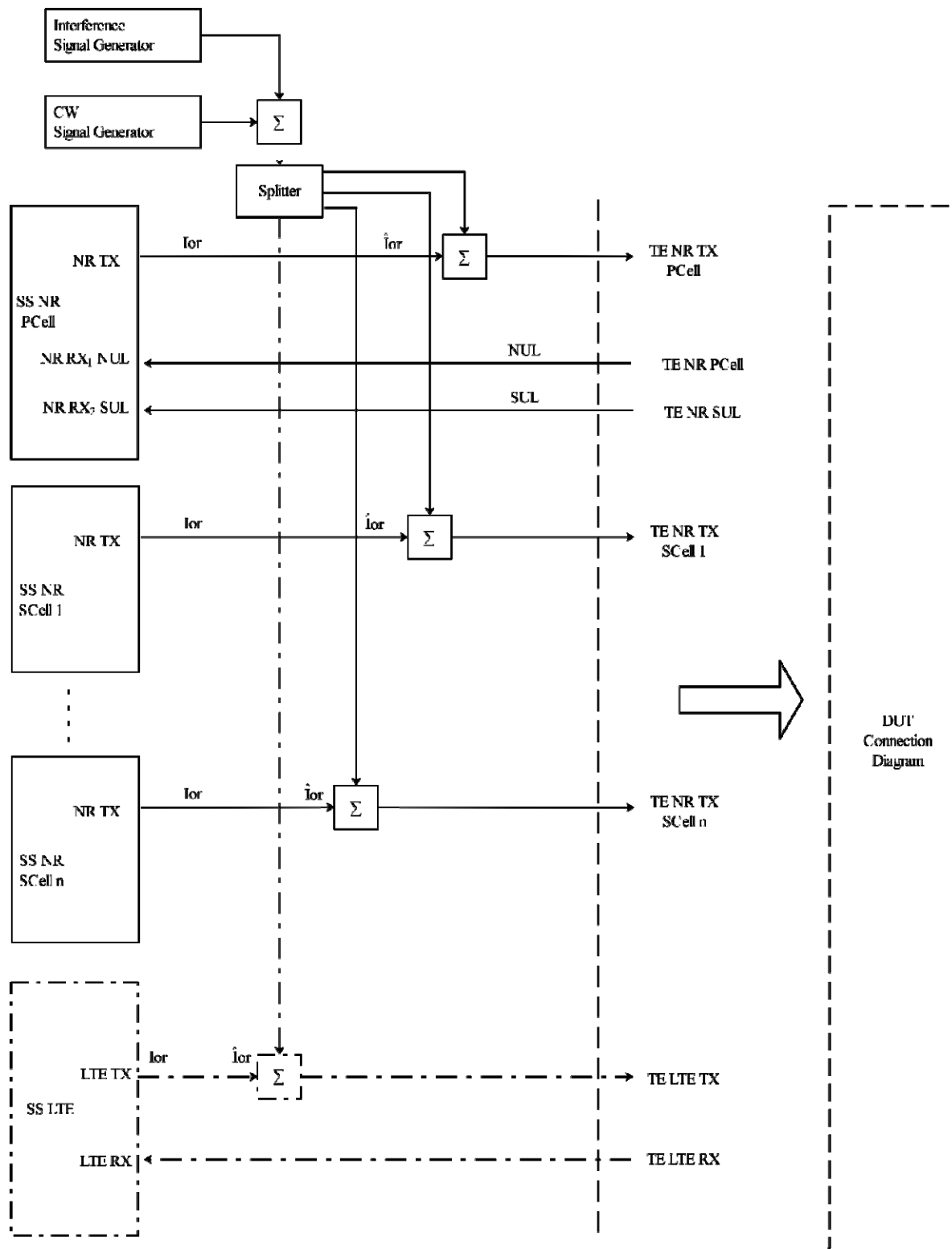


Figure A.3.1.4.10: Test Equipment connection for NR SUL with DL CA Receiver tests with additional Modulated Interference and/or CW Interference signal

A.3.1.5 Receiver tests using Spectrum Analyser

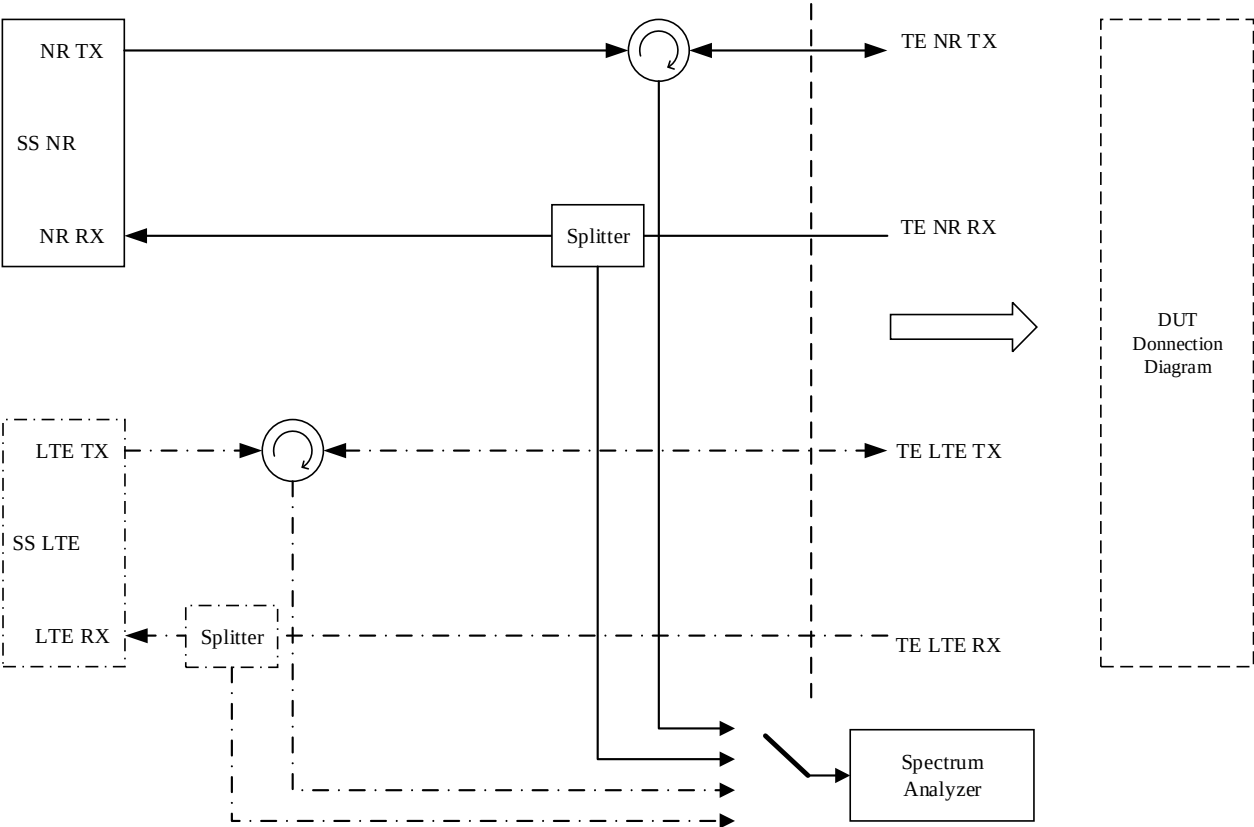


Figure A.3.1.5.1: Test Equipment connection for RX-tests with additional Spectrum Analyzer

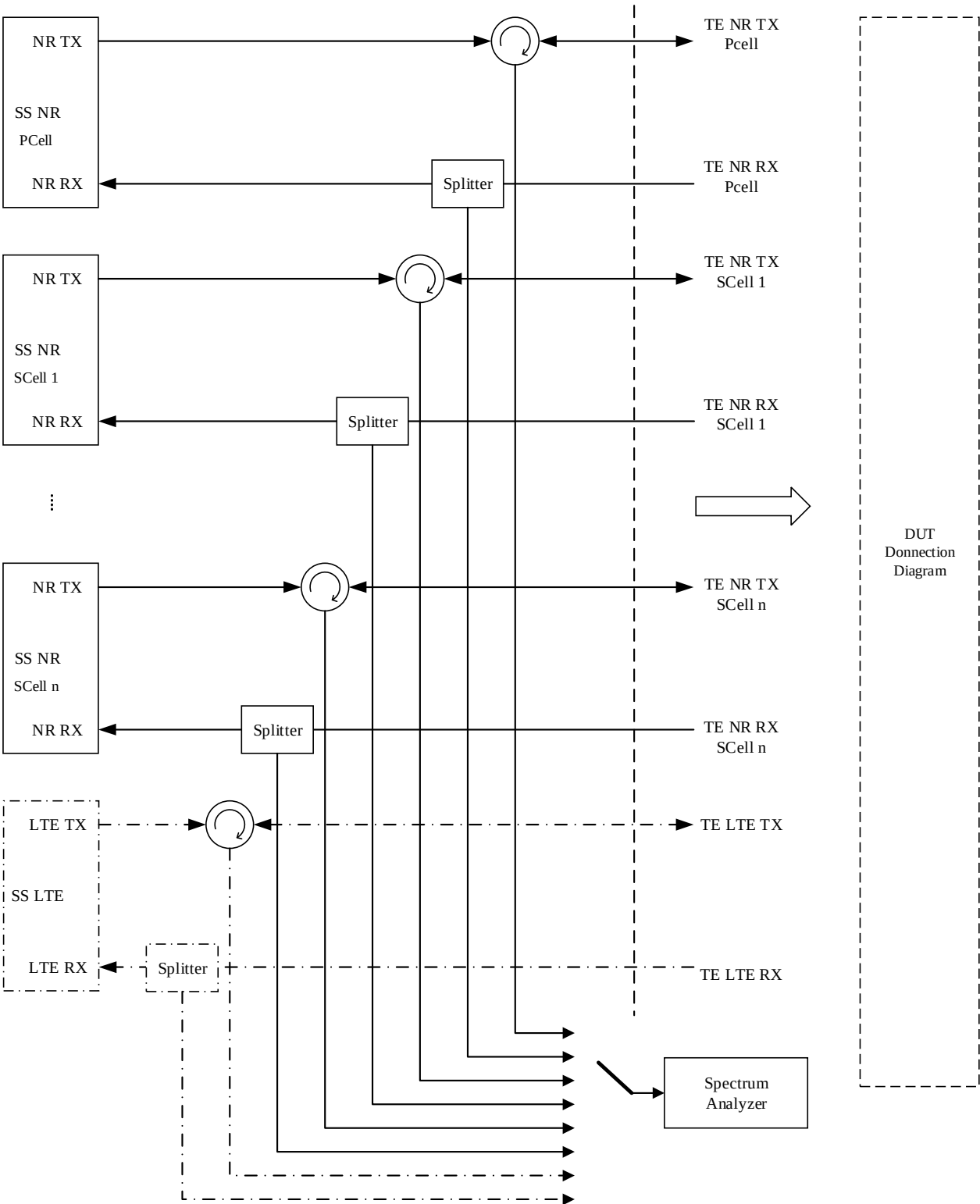


Figure A.3.1.5.2: Test Equipment connection for NR CA RX-tests with additional Spectrum Analyzer

A.3.1.6 Receiver Performance tests

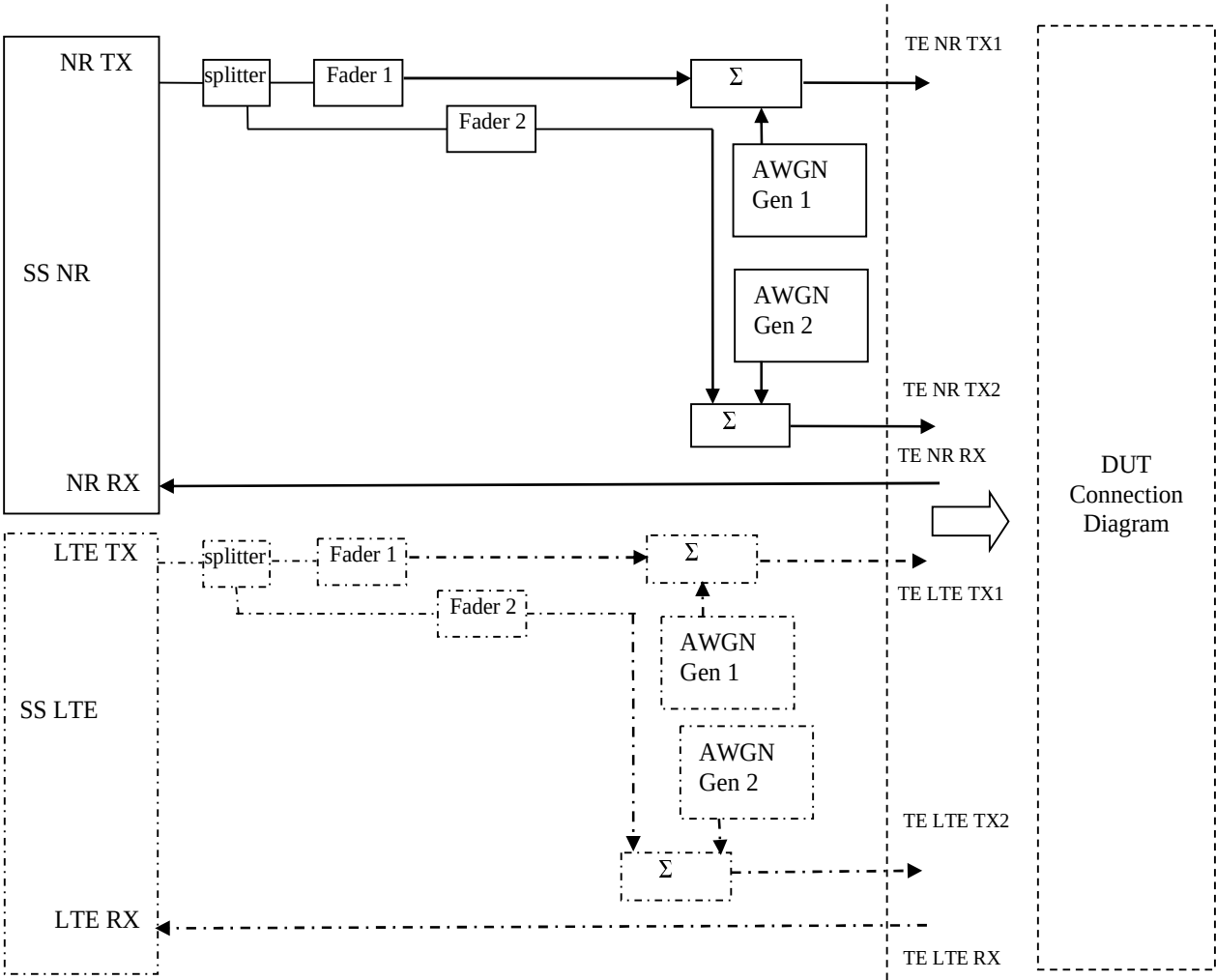


Figure A.3.1.6.1: Test Equipment connection for Receiver Performance tests with antenna configuration 1x2

A.3.1.7 Demodulation Performance and CSI reporting tests

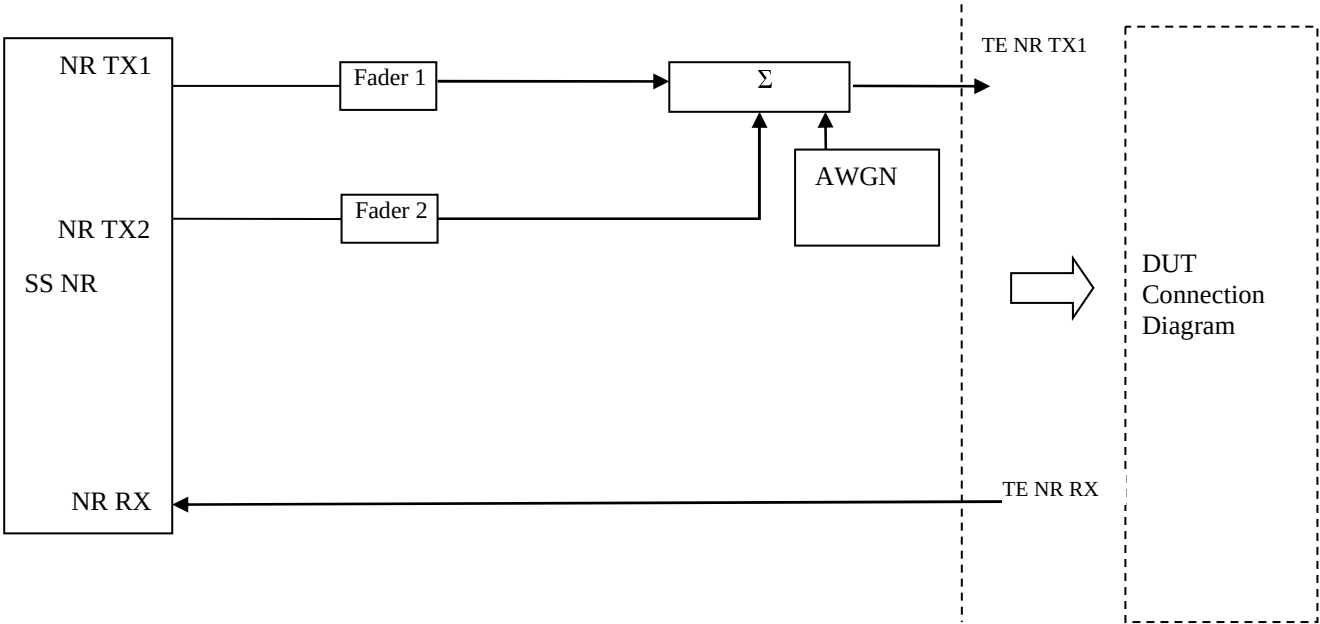


Figure A.3.1.7.0: Test Equipment connection for Demodulation Performance and CSI reporting tests with antenna configuration 2x1

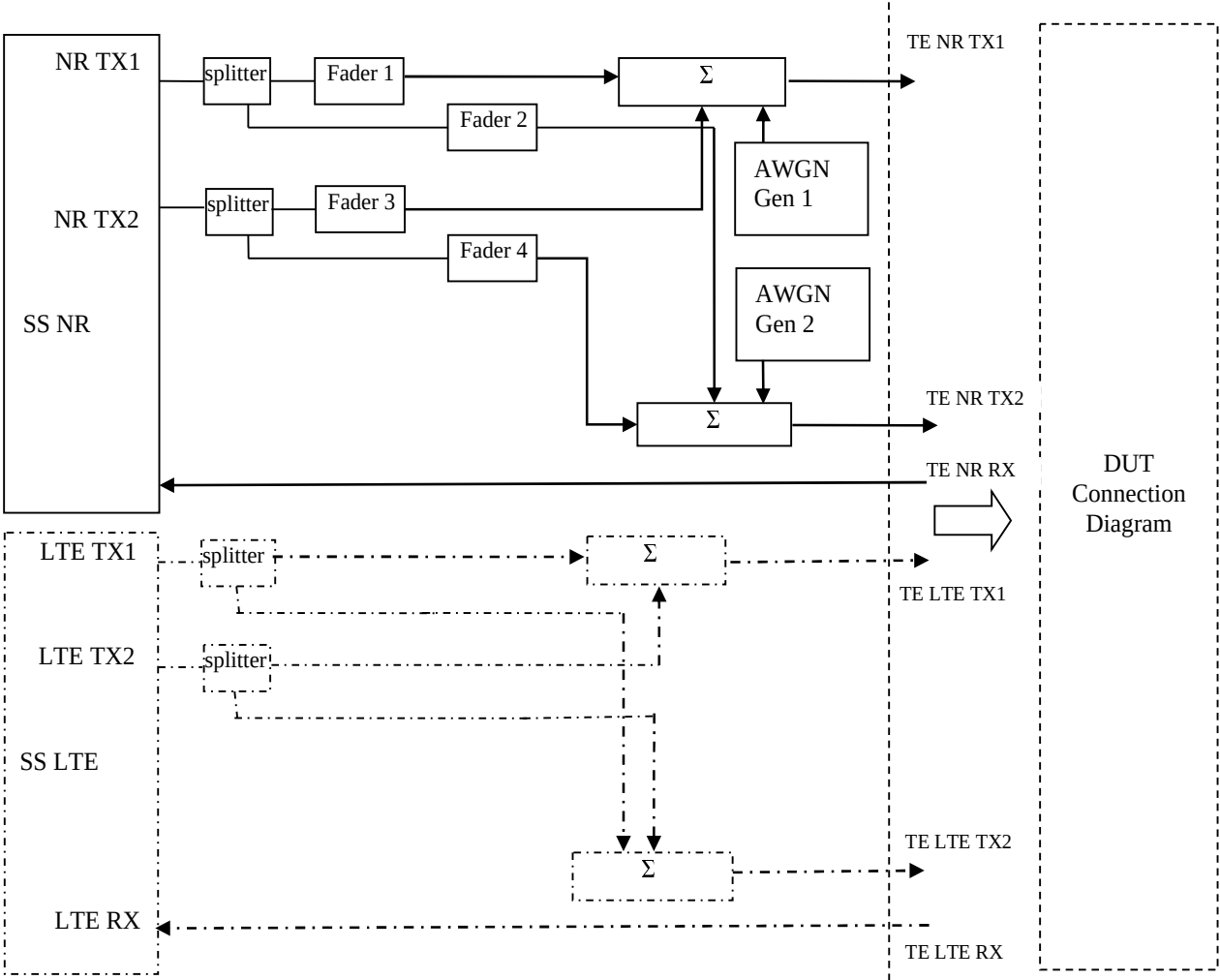


Figure A.3.1.7.1: Test Equipment connection for Demodulation Performance and CSI reporting tests with antenna configuration 2x2

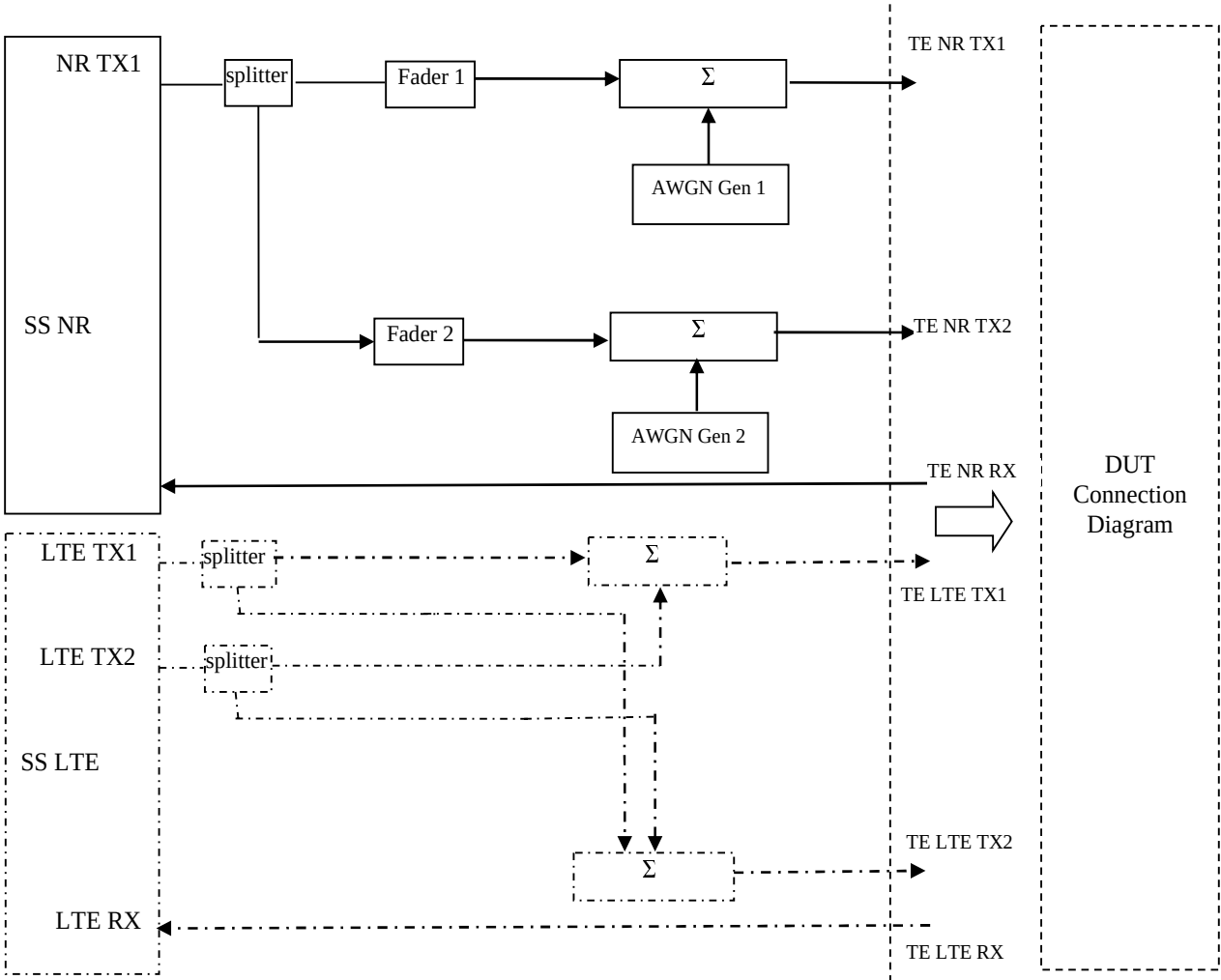


Figure A.3.1.7.2: Test Equipment connection for Demodulation Performance and CSI reporting tests with antenna configuration 1x2

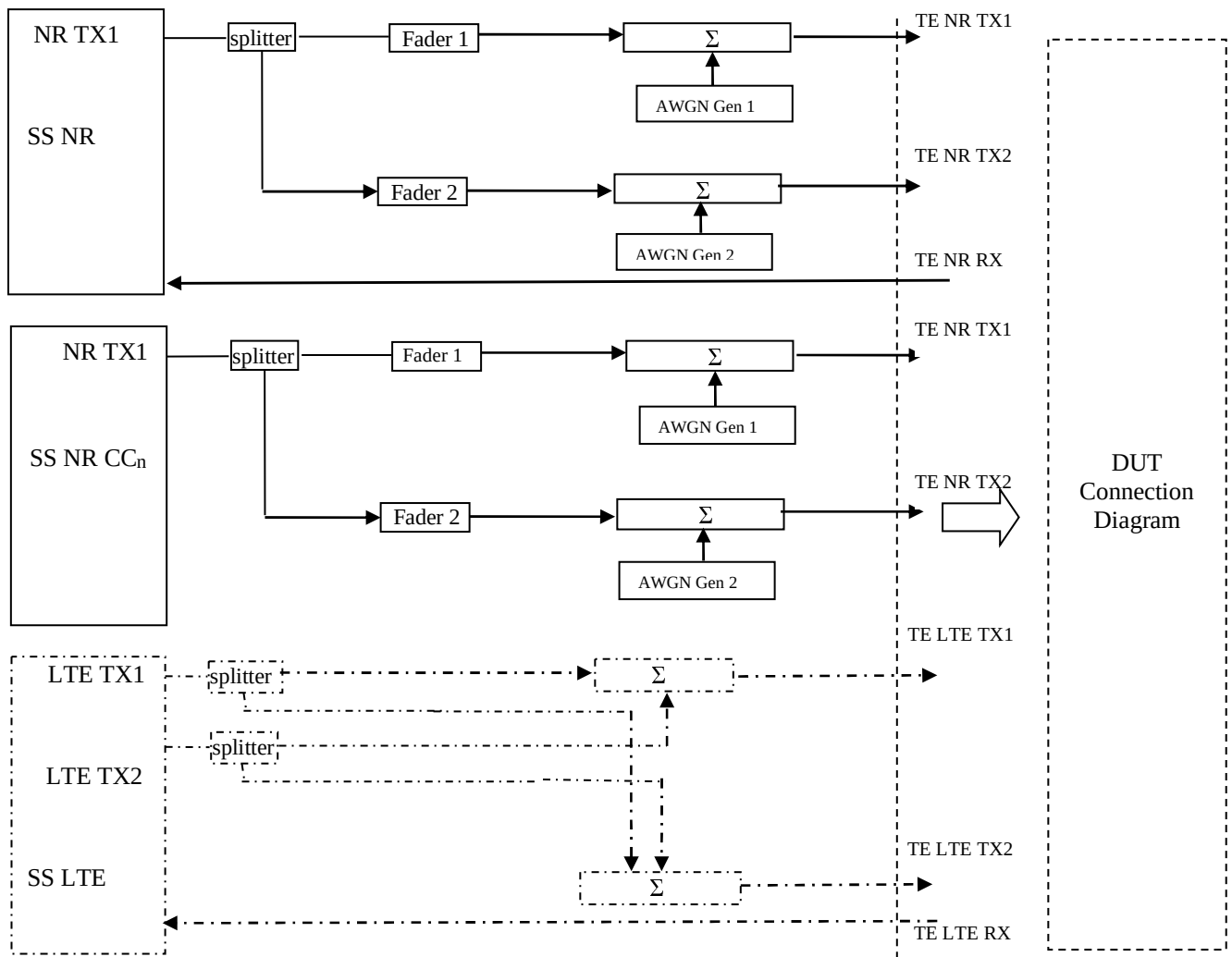


Figure A.3.1.7.2A: Test Equipment connection for Demodulation Performance and CSI reporting tests with antenna configuration 1x2 for nDLCA

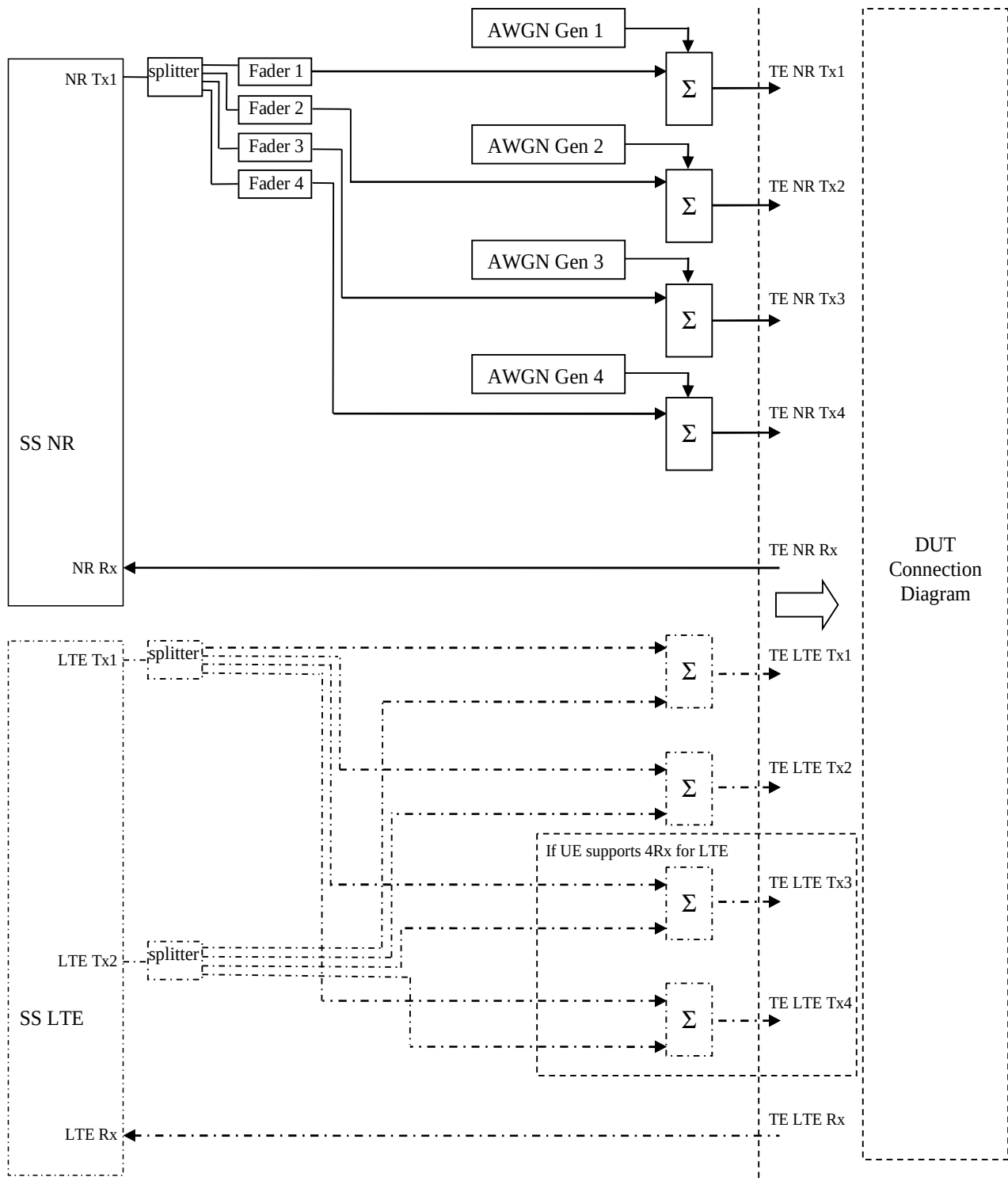


Figure A.3.1.7.3: Test Equipment connection for Demodulation Performance and CSI reporting tests with antenna configuration 1x4

Note: LTE can be 2Rx or 4Rx and not dependent on NR #Rx

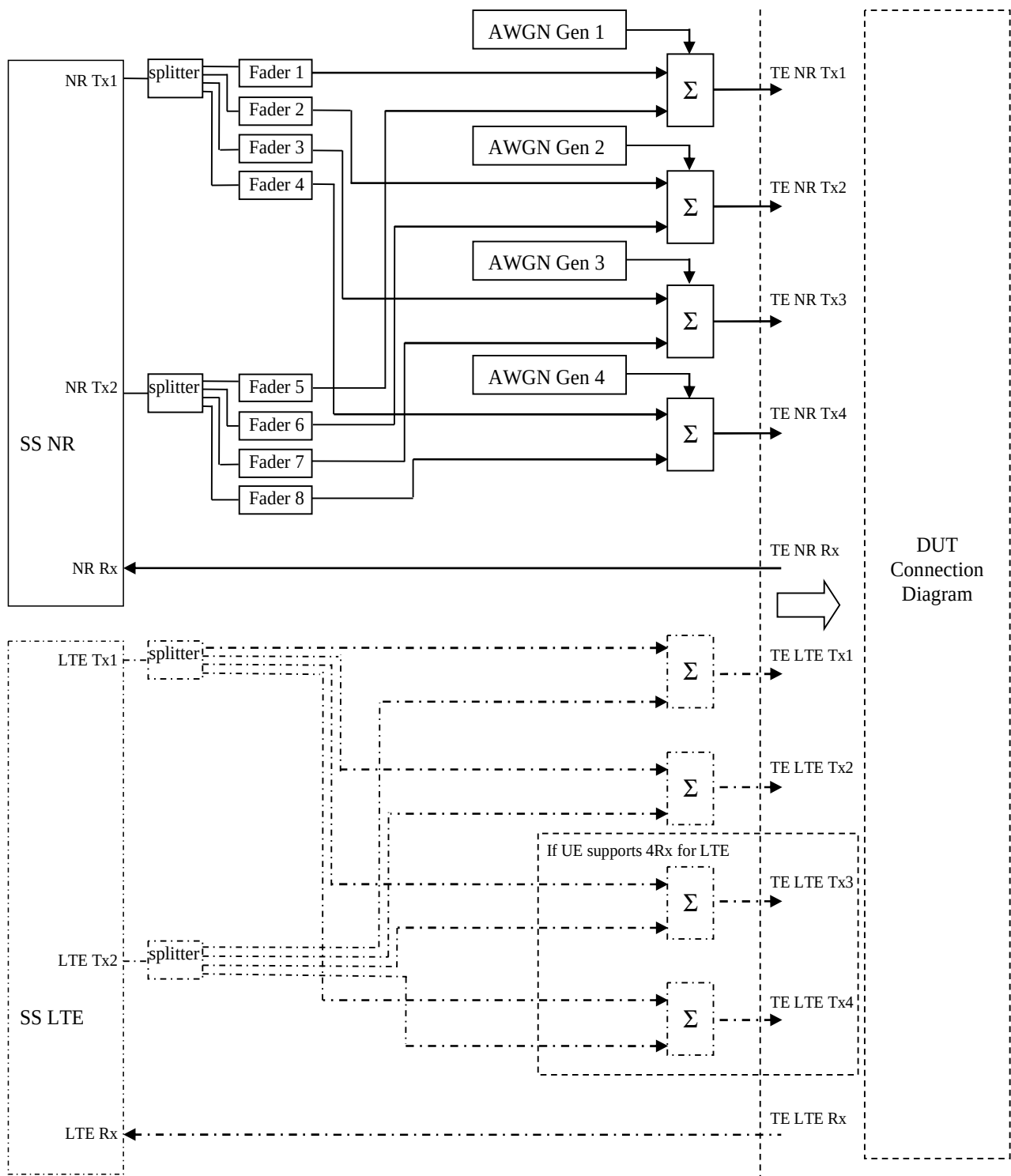


Figure A.3.1.7.4: Test Equipment connection for Demodulation Performance and CSI reporting tests with antenna configuration 2x4

Note 1: LTE can be 2Rx or 4Rx and not dependent on NR #Rx

Note 2: NR may be 2Rx on some of the CCs, in that case TE NR TX3 and TE NR TRX4 are not used

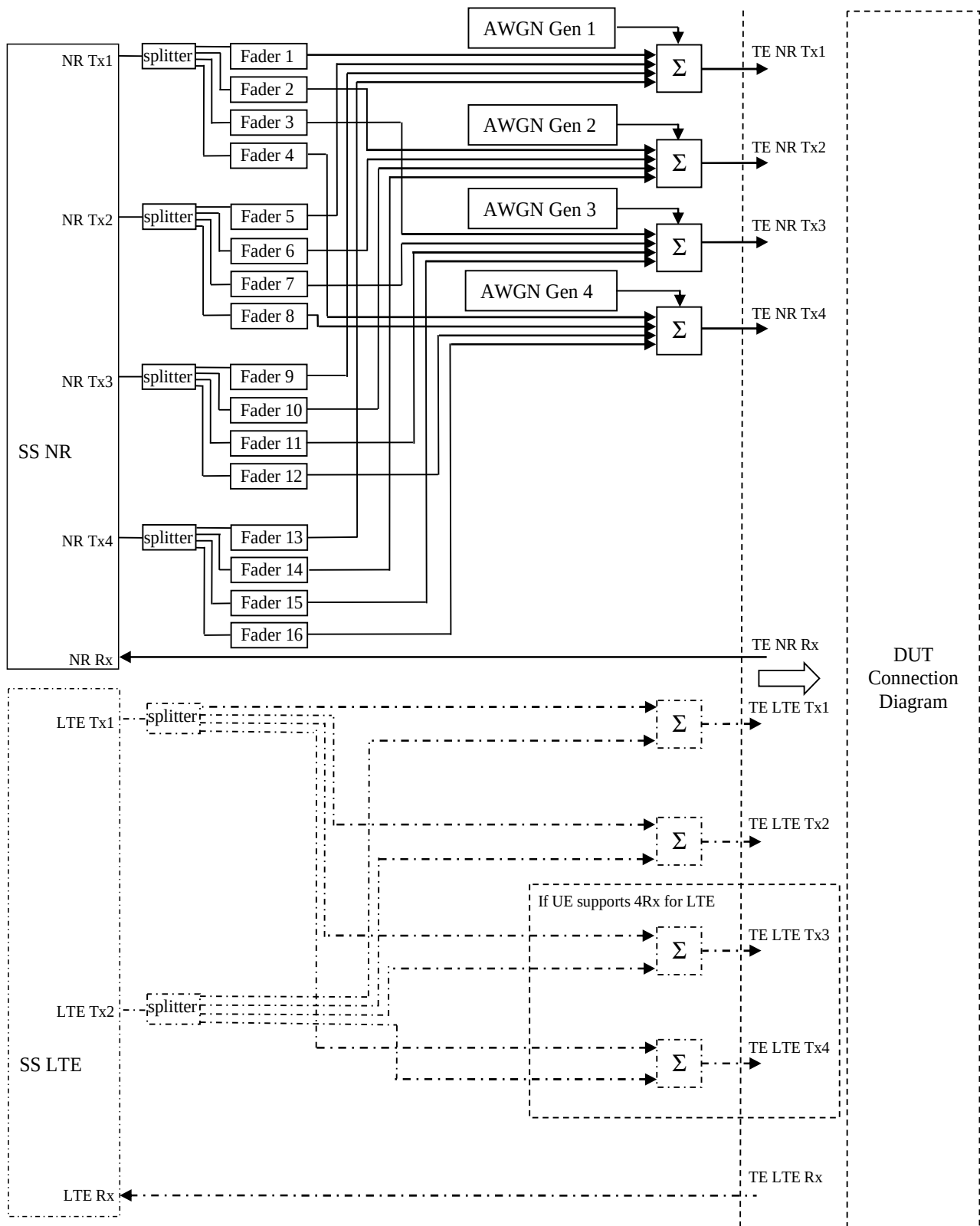


Figure A.3.1.7.5: Test Equipment connection for Demodulation Performance and CSI reporting tests with antenna configuration 4x4

Note 1: LTE can be 2Rx or 4Rx and not dependent on NR #Rx

Note: 2 NR may be 2Rx on some of the CCs, in that case TE NR TX3 and TE NR TX4 are not used

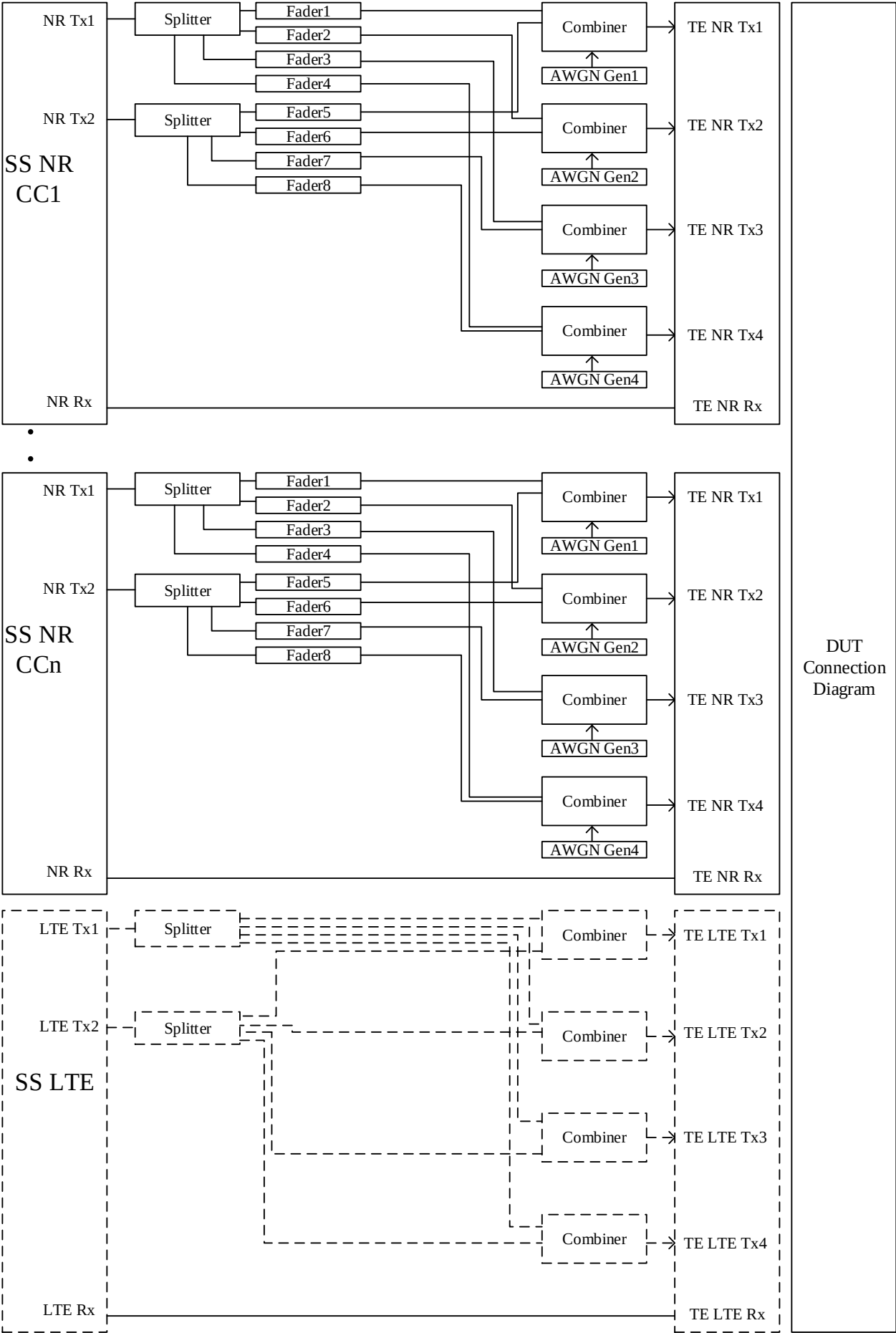


Figure A.3.1.7.6: Test Equipment connection for Demodulation Performance and CSI reporting tests with antenna configuration 2x4 for nDL CA and multi-cell

Note 1: LTE can be 2Rx or 4Rx and not dependent on NR #Rx

Note 2: NR may be 2Rx on some of the CCs, in that case TE NR TX3 and TE NR TX4 are not used

Note 3: NR may be 1Tx on some of the cells, in that case TE NR TX2, TE NR TX3 and TE NR TX4 are not used

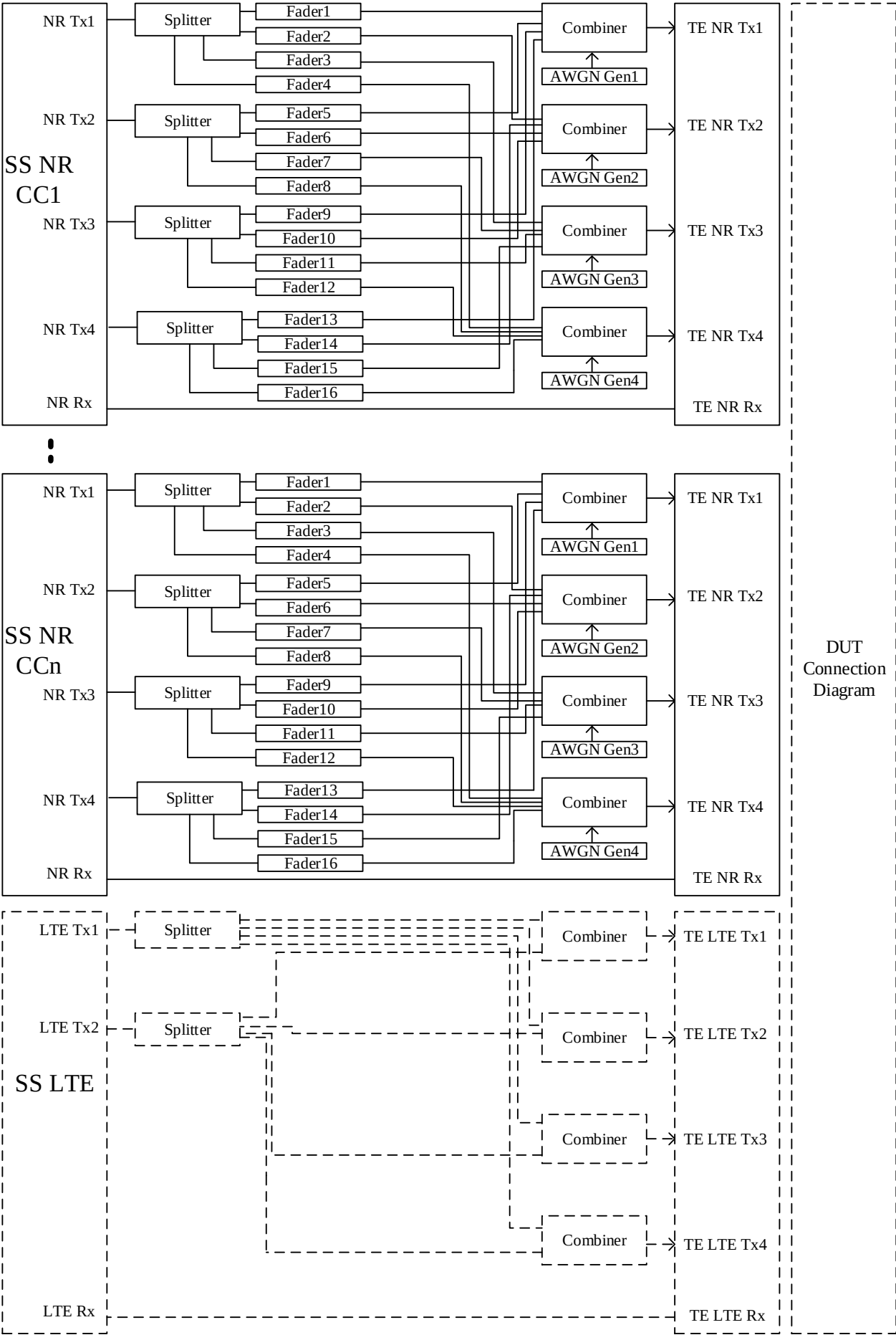


Figure A.3.1.7.7: Test Equipment connection for Demodulation Performance and CSI reporting tests with antenna configuration 4x4 for nDL CA

Note 1: LTE can be 2Rx or 4Rx and not dependent on NR #Rx

Note 2: NR may be 2Rx on some of the CCs, in that case TE NR TX3 and TE NR TX4 are not used

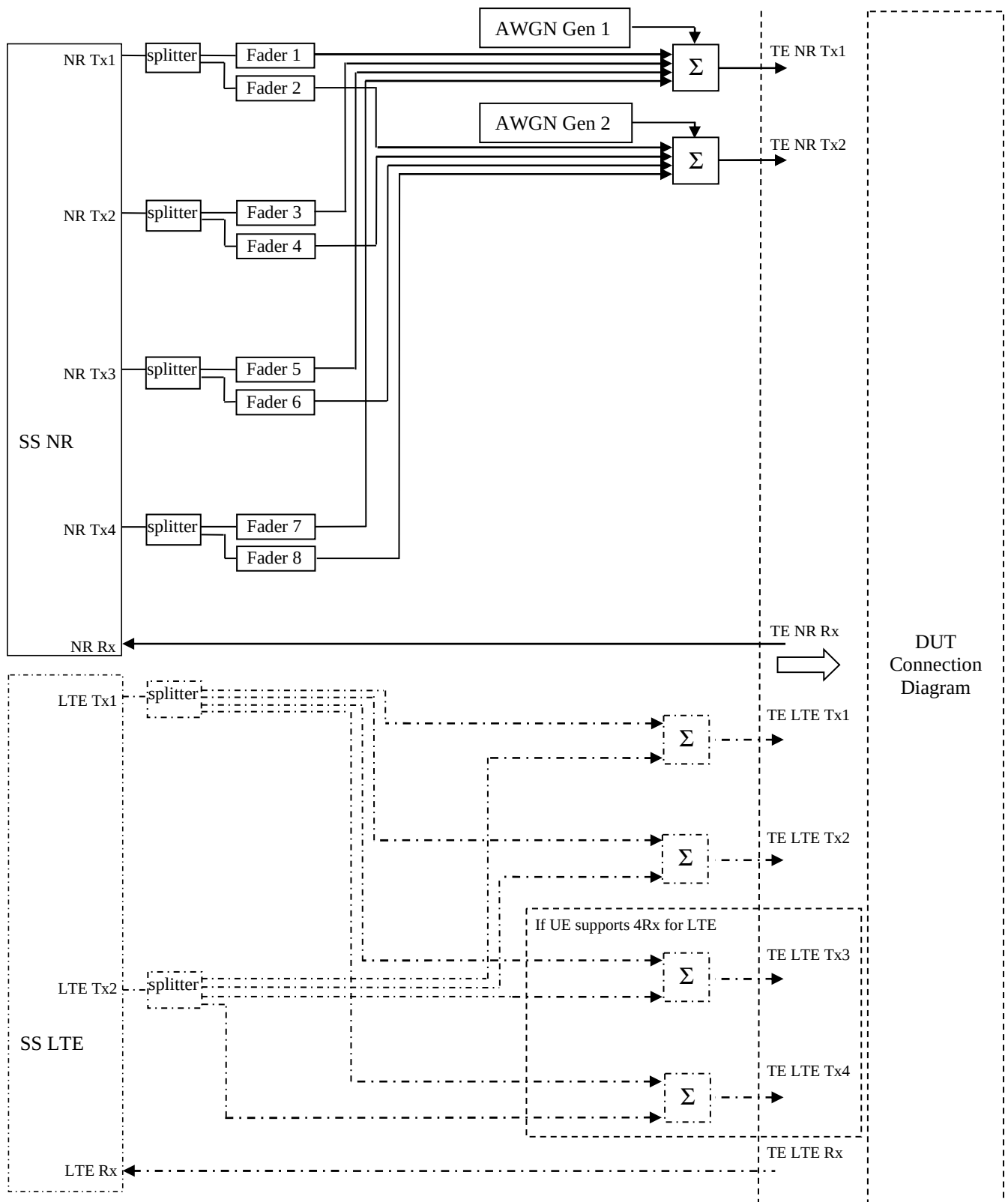


Figure A.3.1.7.8: Test Equipment connection for Demodulation Performance and CSI reporting tests with antenna configuration 4x2

Note: LTE can be 2Rx or 4Rx and not dependent on NR #Rx

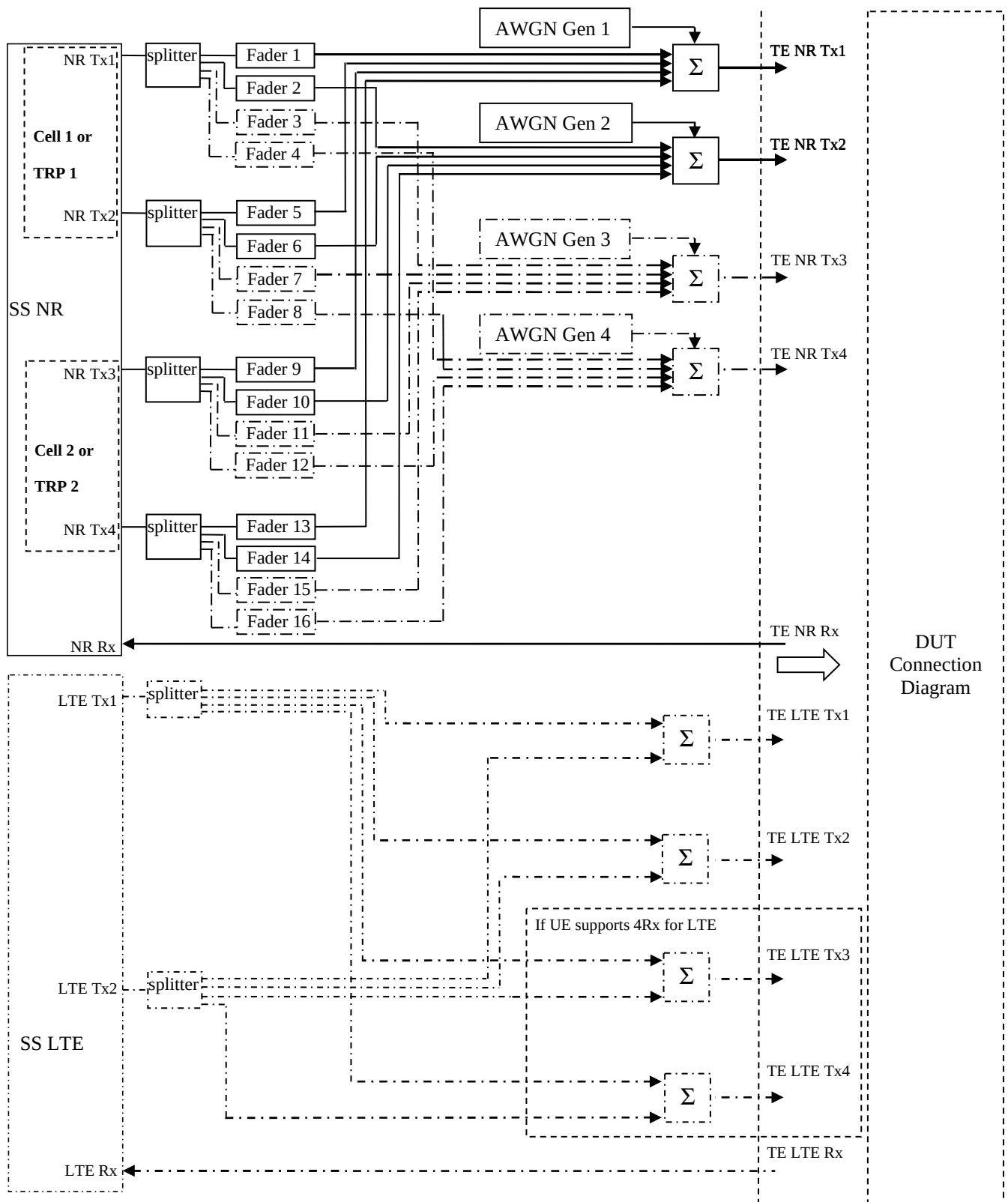


Figure A.3.1.7.9: Test Equipment connection for Demodulation Performance and CSI reporting tests with 2 carriers or 2 TRPs (2x2 or 2x4)

Note 1: LTE can be 2Rx or 4Rx and not dependent on NR #Rx

Note 2: NR may be 2Rx on some of the CCs, in that case TE NR TX3 and TE NR TX4 are not used

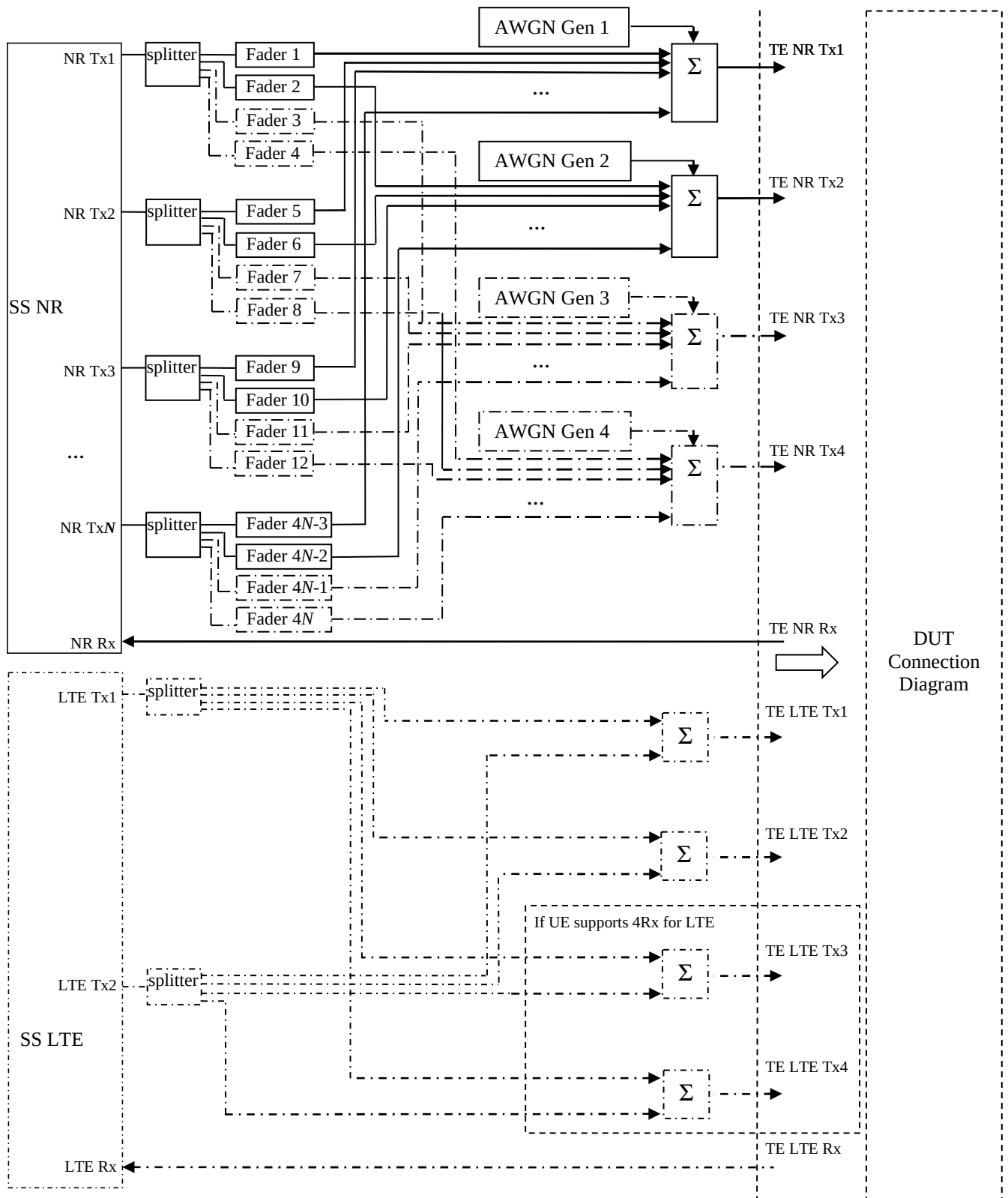


Figure A.3.1.7.10: Test Equipment connection for Demodulation Performance and CSI reporting tests with antenna configuration $N \times 2$ and $N \times 4$, $N=16$ or $N=32$

Note 1: LTE can be 2Rx or 4Rx and not dependent on NR #Rx

Note 2: NR may be 2Rx on some of the CCs, in that case TE NR TX3 and TE NR TX4 are not used

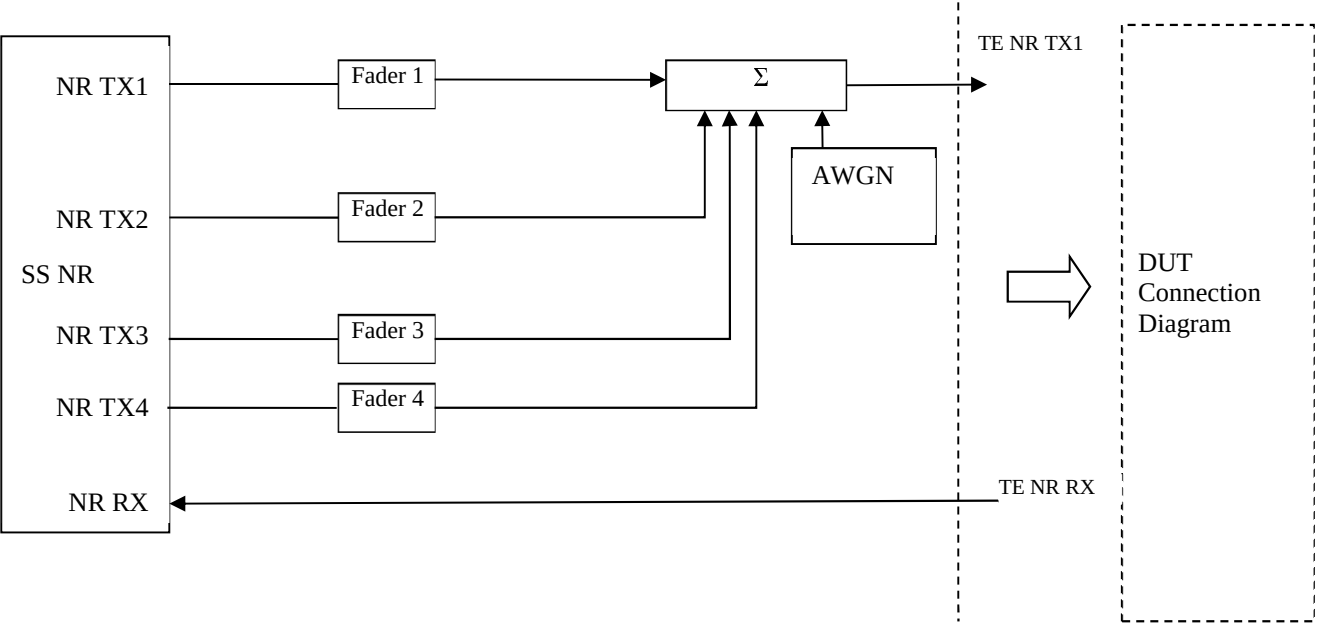


Figure A.3.1.7.11: Test Equipment connection for Demodulation Performance and CSI reporting tests with antenna configuration 4x1

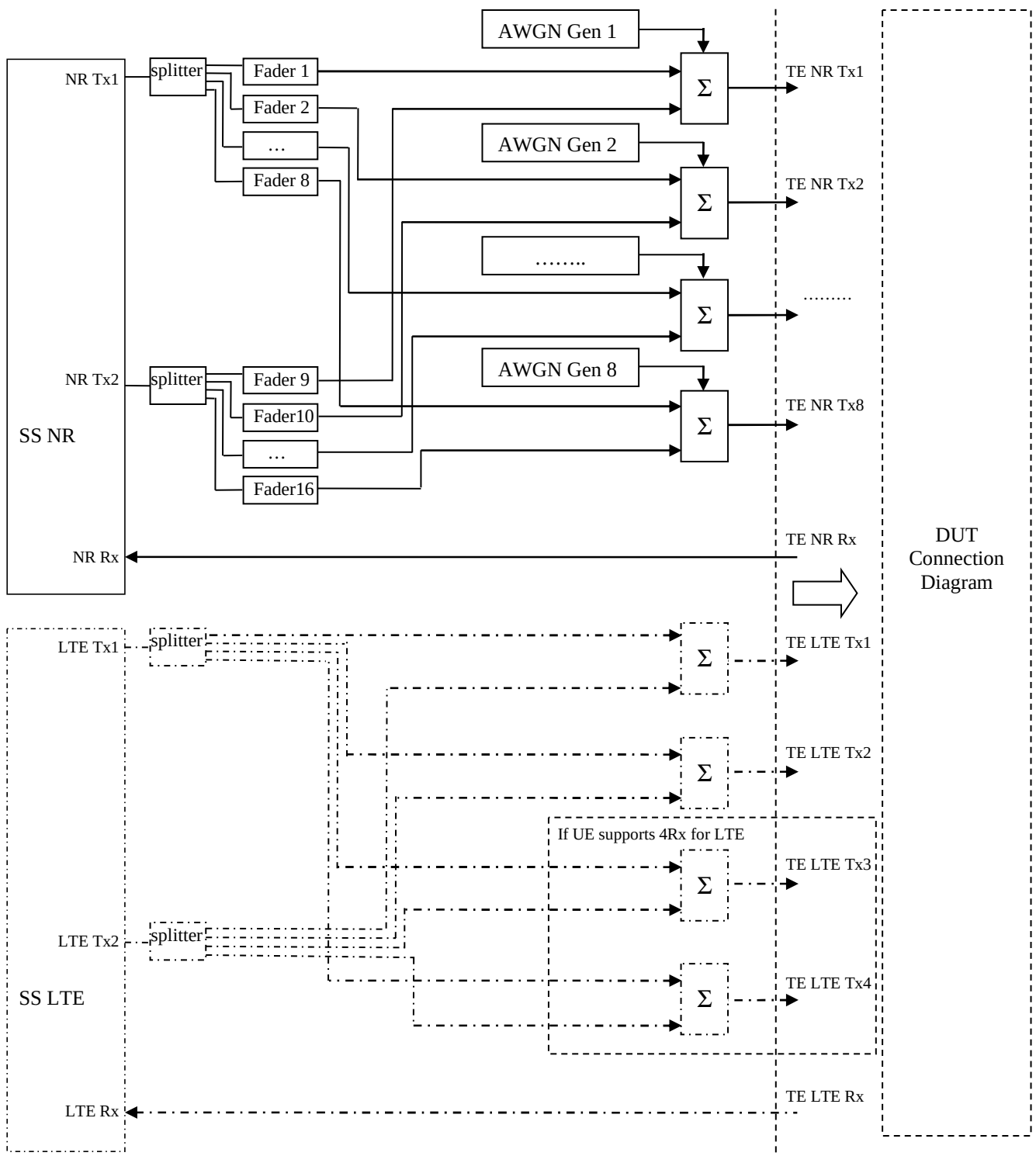


Figure A.3.1.7.12: Test Equipment connection for Demodulation Performance and CSI reporting tests with antenna configuration 2x8

Note 1: LTE can be 2Rx or 4Rx and not dependent on NR #Rx

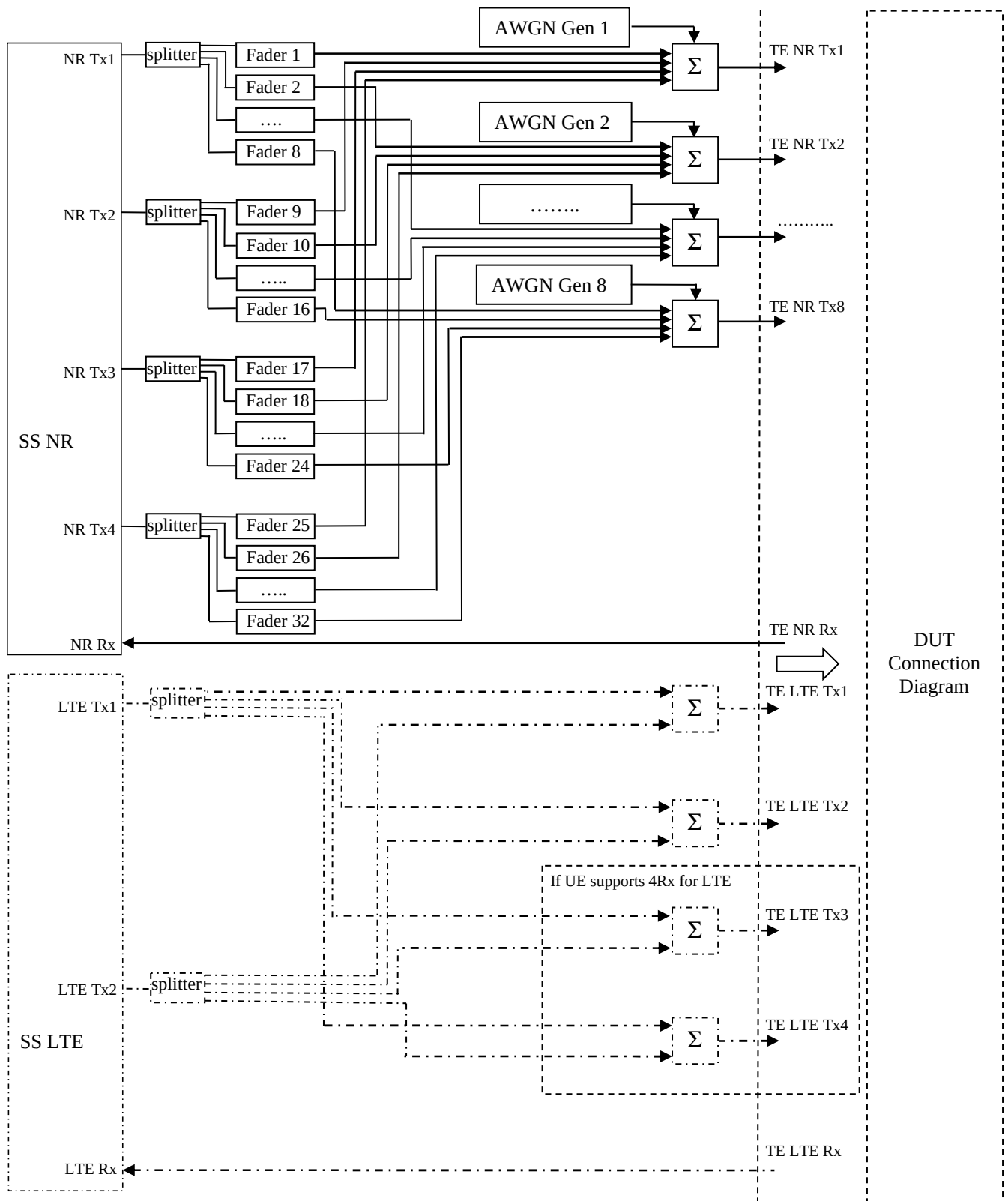


Figure A.3.1.7.13: Test Equipment connection for Demodulation Performance and CSI reporting tests with antenna configuration 4x8

Note 1: LTE can be 2Rx or 4Rx and not dependent on NR #Rx

FFS

Figure A.3.1.7.14: Test Equipment connection for Demodulation Performance and CSI reporting tests with antenna configuration 8x8

A.3.1.8 RRM tests with more than one NR cell

The figures in this section represent connection diagrams for test cases with more than one NR cell. The parameters in the connection diagram, e.g. the number of cells n or the value of the phase rotator φ_i shall be defined by the test cases.

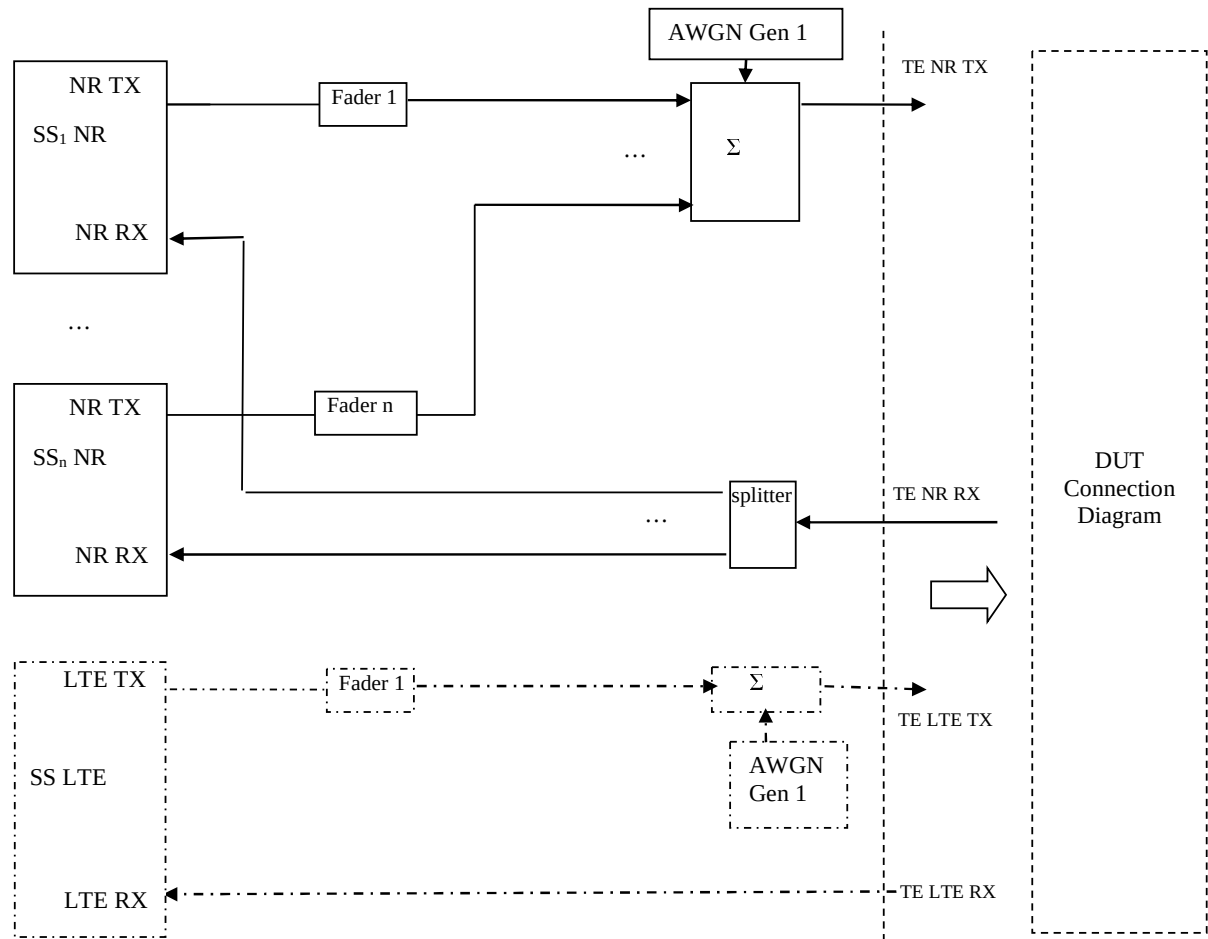


Figure A.3.1.8.1: Test Equipment connection for tests with more than one NR cell and antenna configuration 1x1

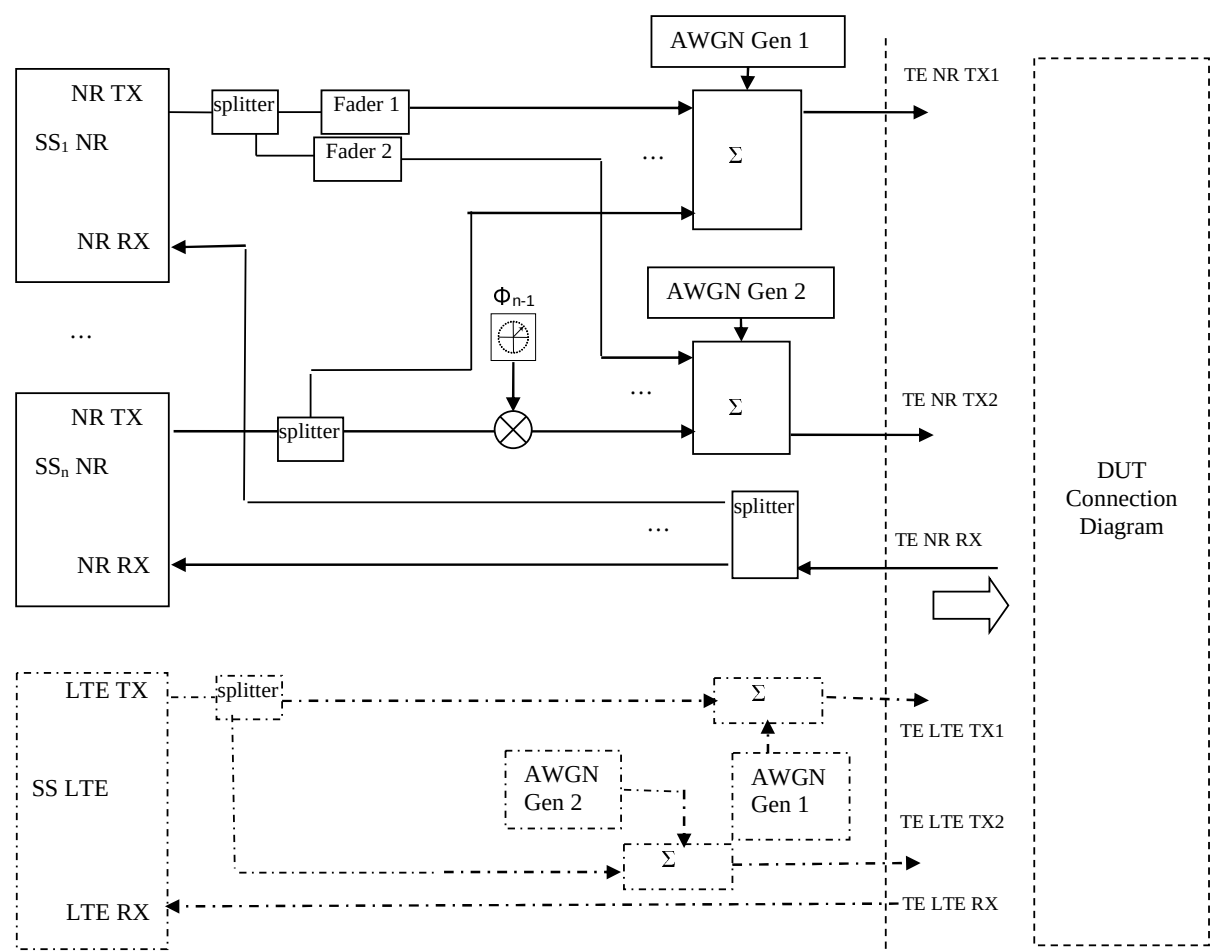


Figure A.3.1.8.2: Test Equipment connection for tests with more than one NR cell and antenna configuration 1x2

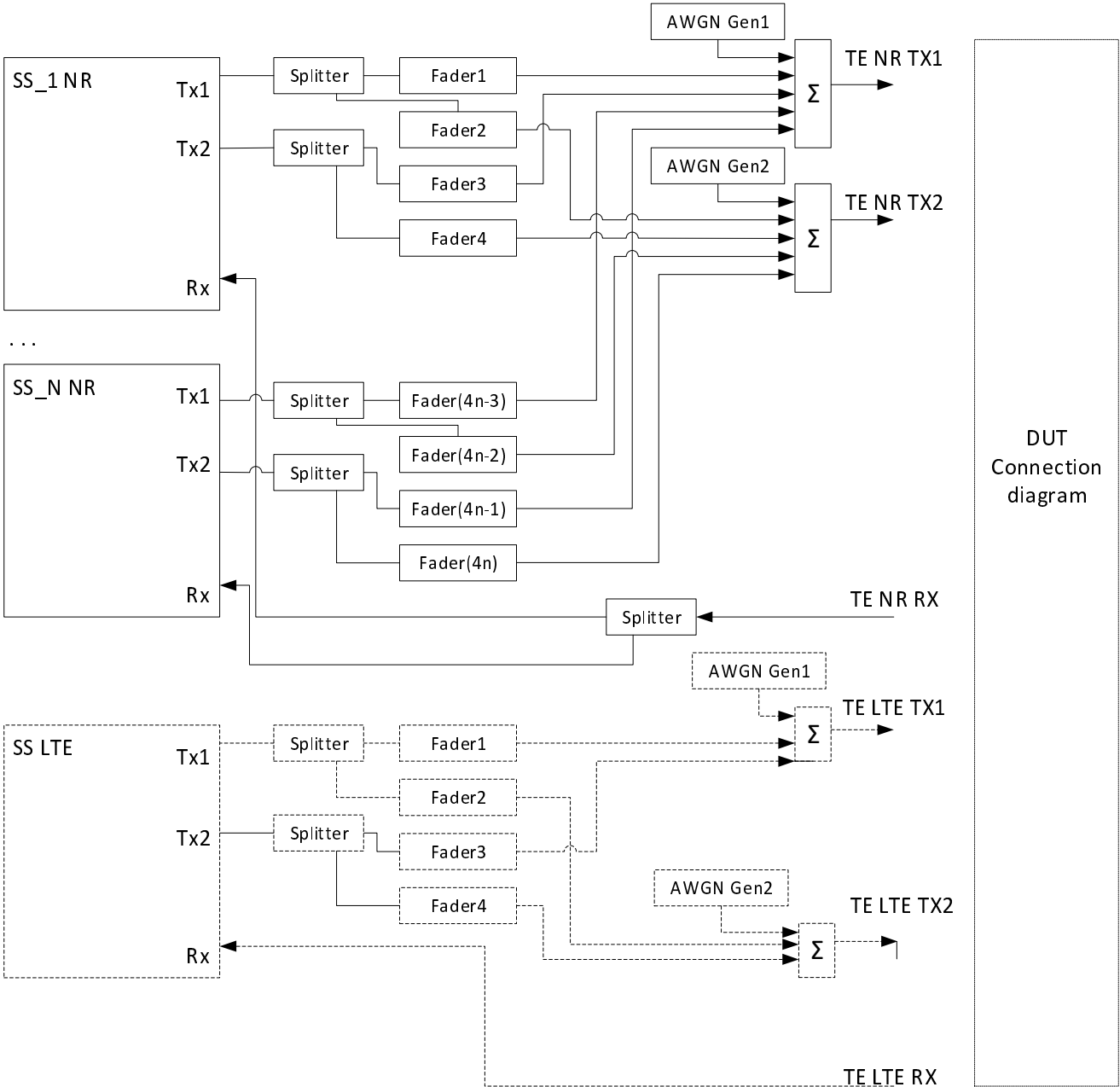


Figure A.3.1.8.2a: Test Equipment connection for tests with more than one NR cell and antenna configuration 2x2

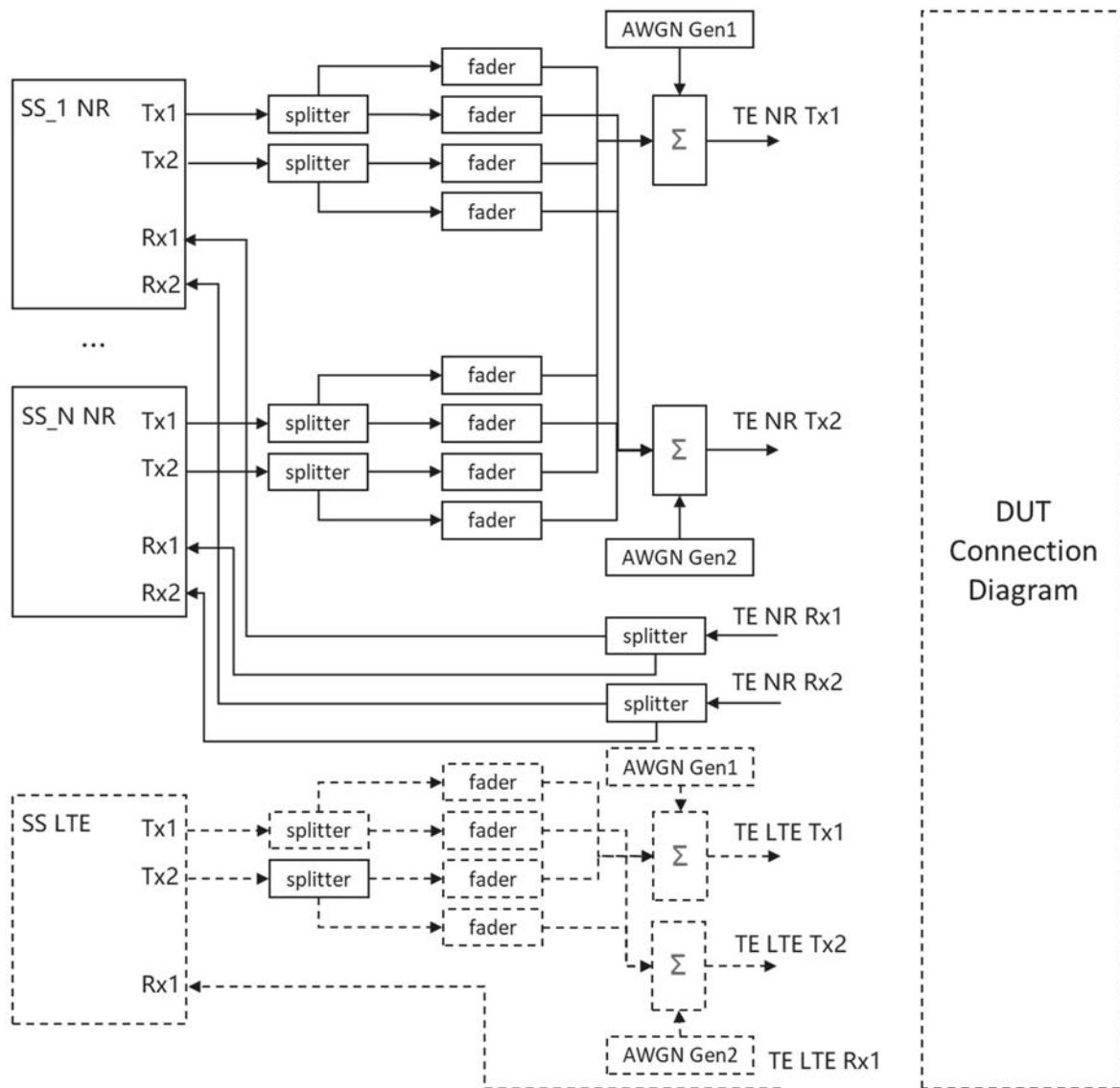


Figure A.3.1.8.2b: Test Equipment connection for UL MIMO tests with more than one NR cell and antenna configuration 2x2

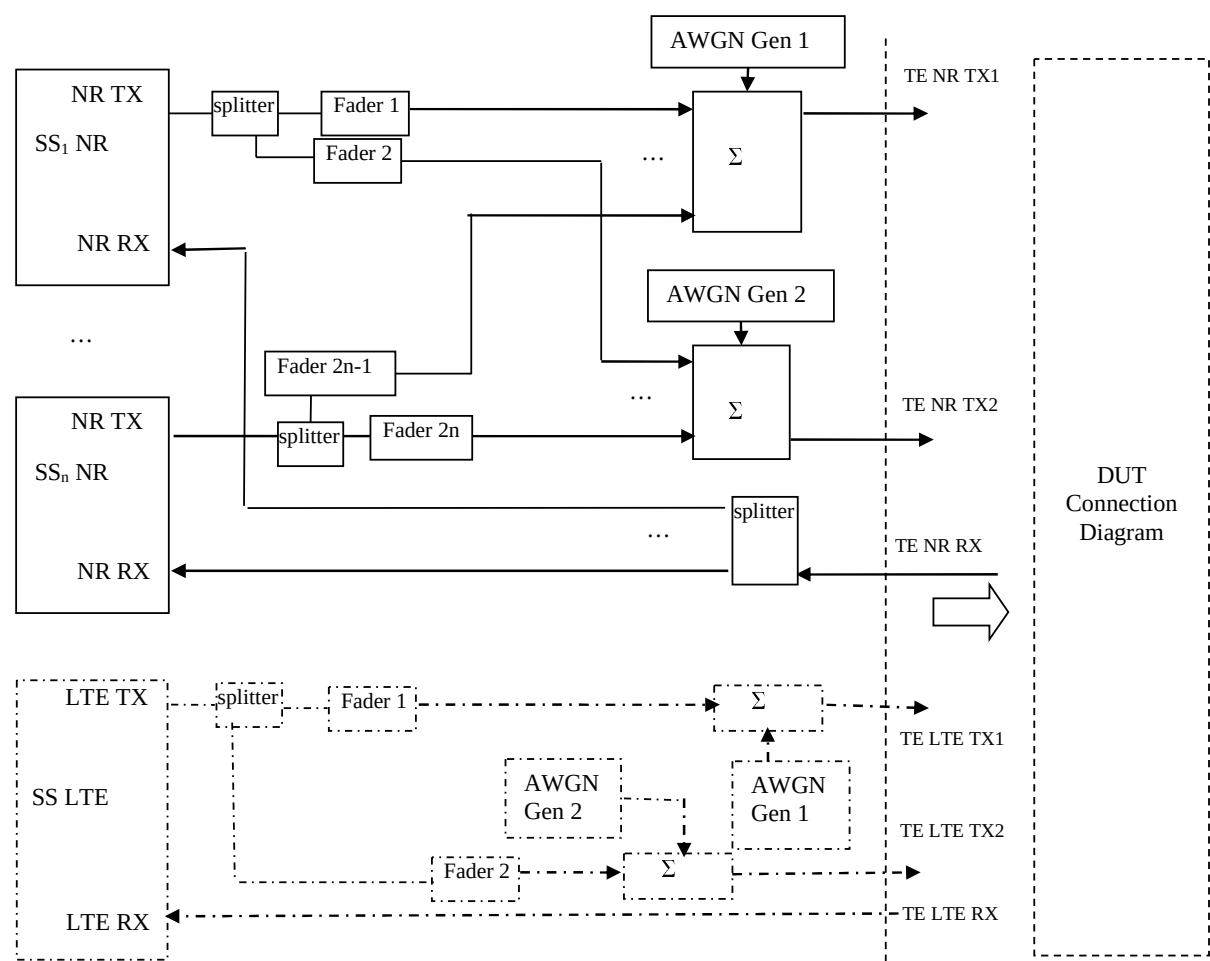


Figure A.3.1.8.3: Test Equipment connection for tests with more than one NR cell and antenna configuration 1x2 and fading

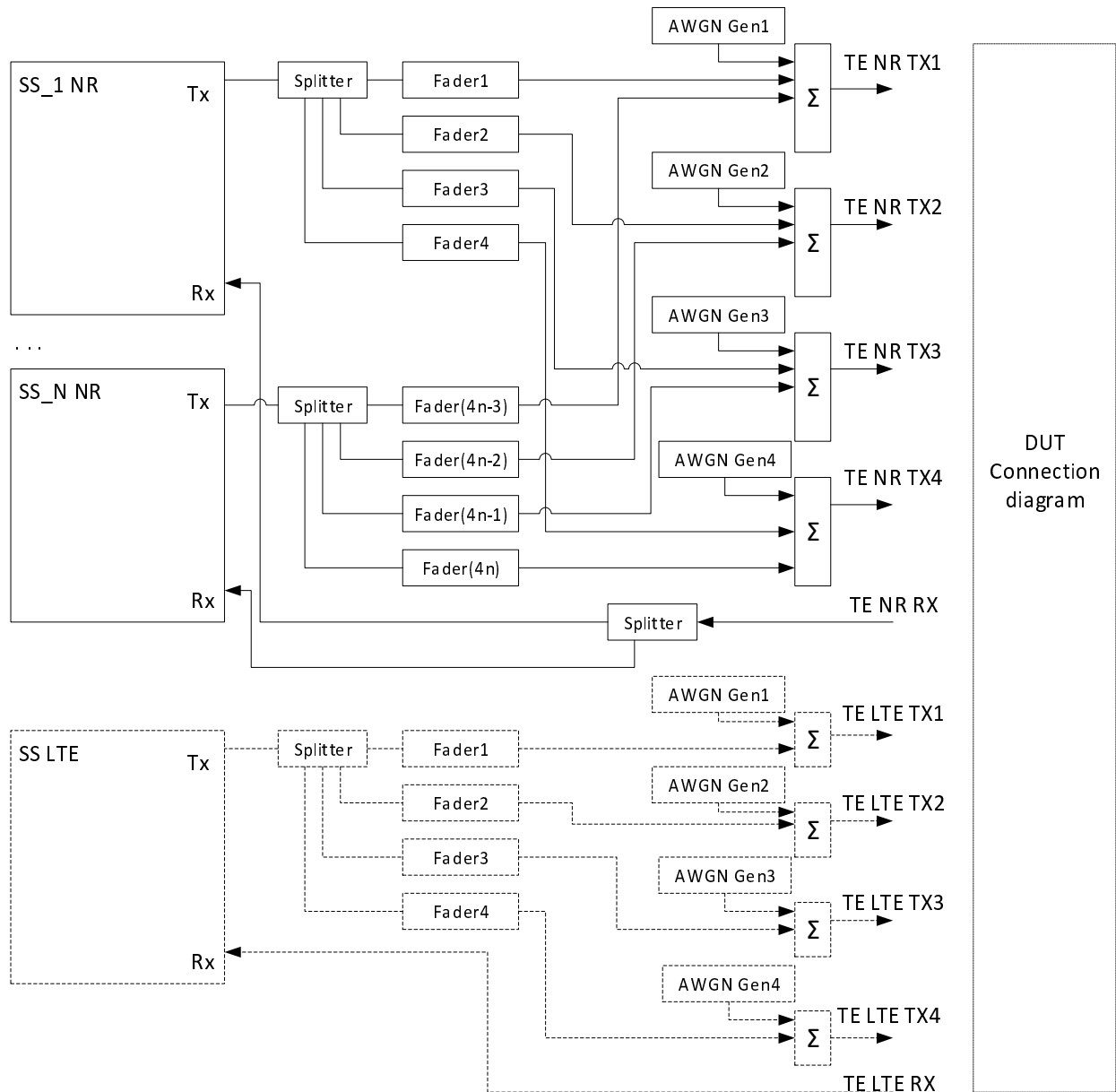


Figure A.3.1.8.4: Test Equipment connection for tests with more than one NR cell for 4Rx capable UEs with fading

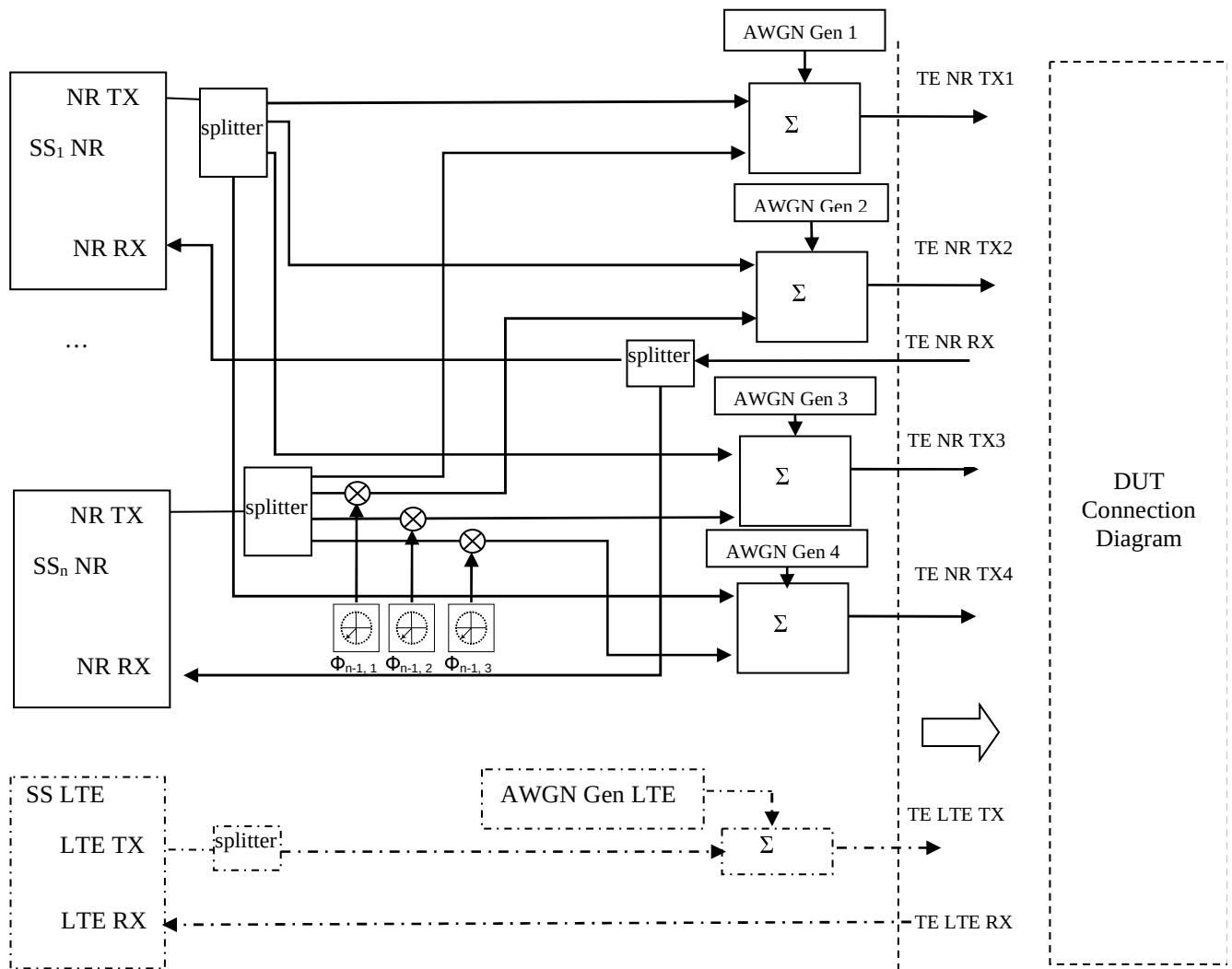


Figure A.3.1.8.5: Test Equipment connection for tests with more than one NR cell and antenna configuration 1x4

A.3.1.9 Test Equipment supporting NR Sidelink

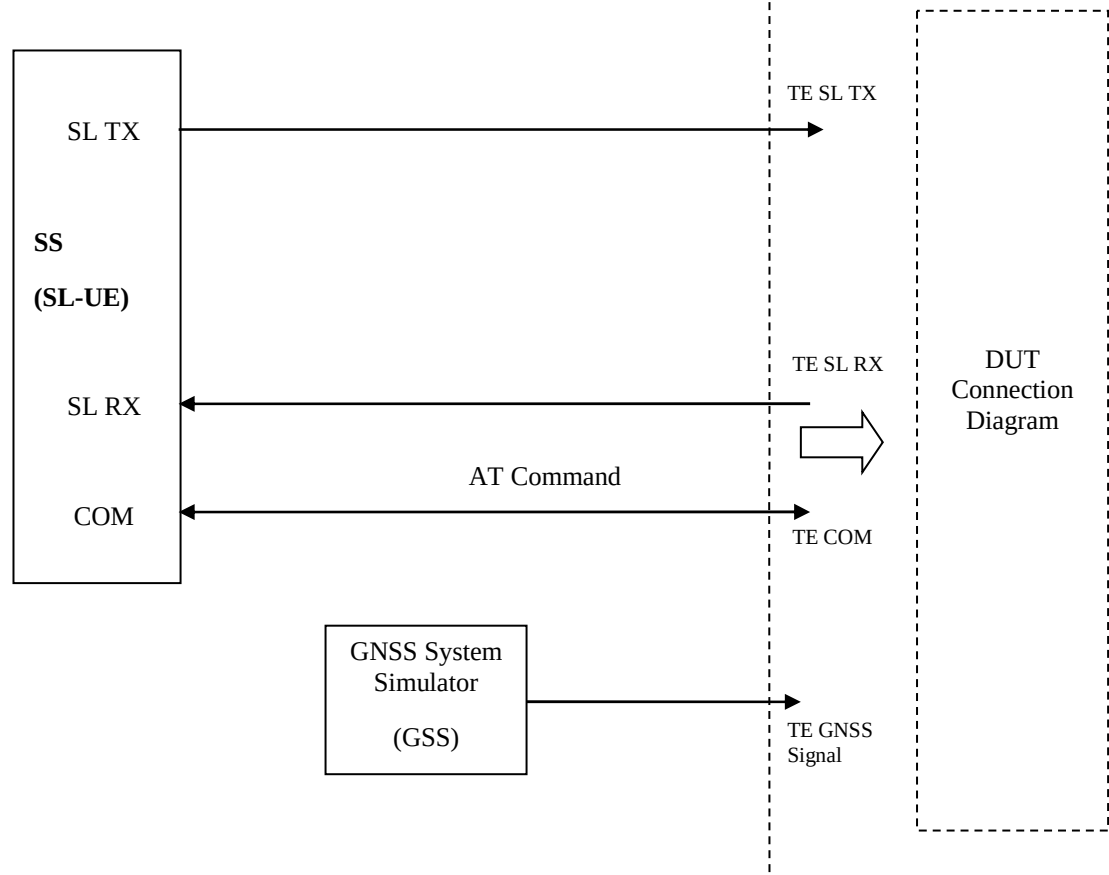


Figure A.3.1.9.1: Test Equipment connection for NR sidelink operation non-concurrent with NR UL/DL transmission

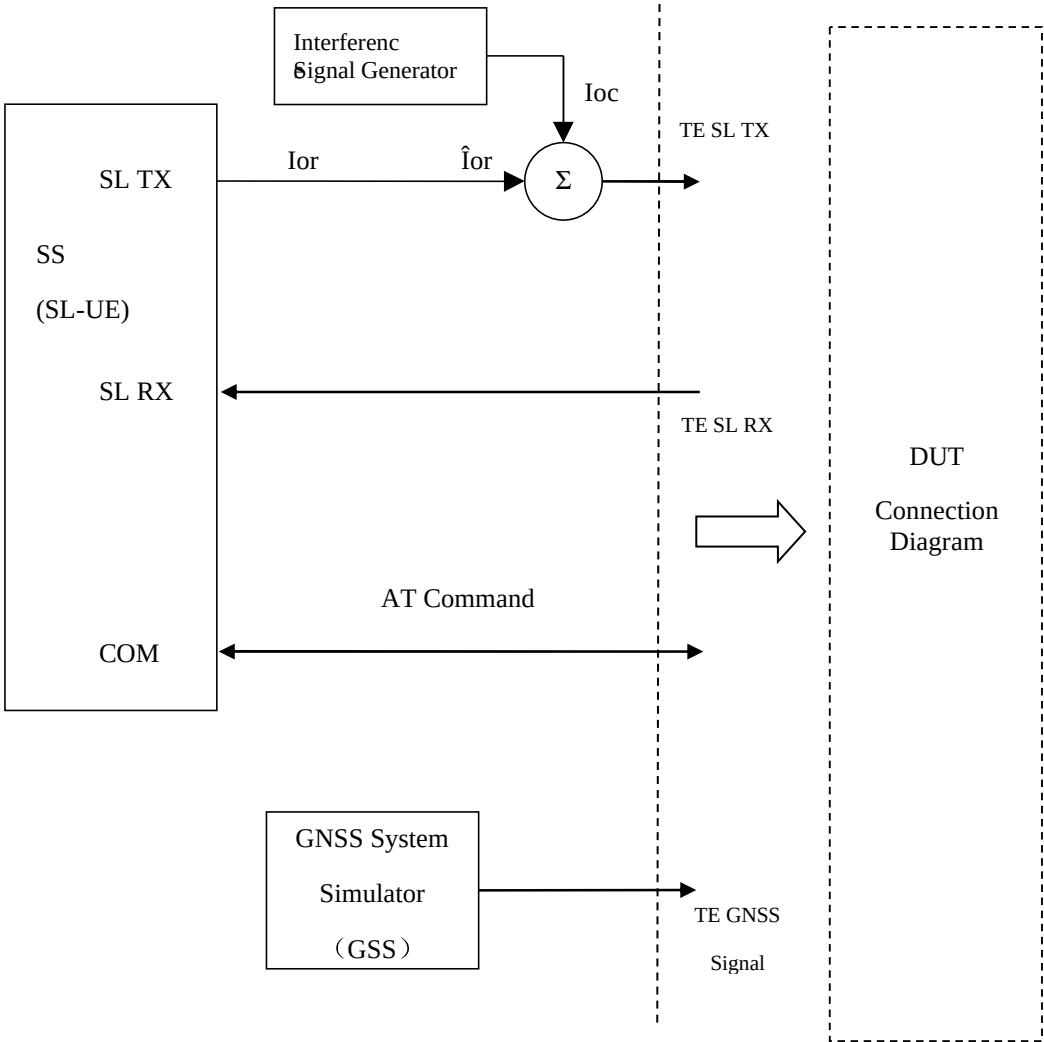


Figure A.3.1.9.1a: Test Equipment connection for NR sidelink operation non-concurrent Receiver tests with one Interference signal (Modulated or CW)

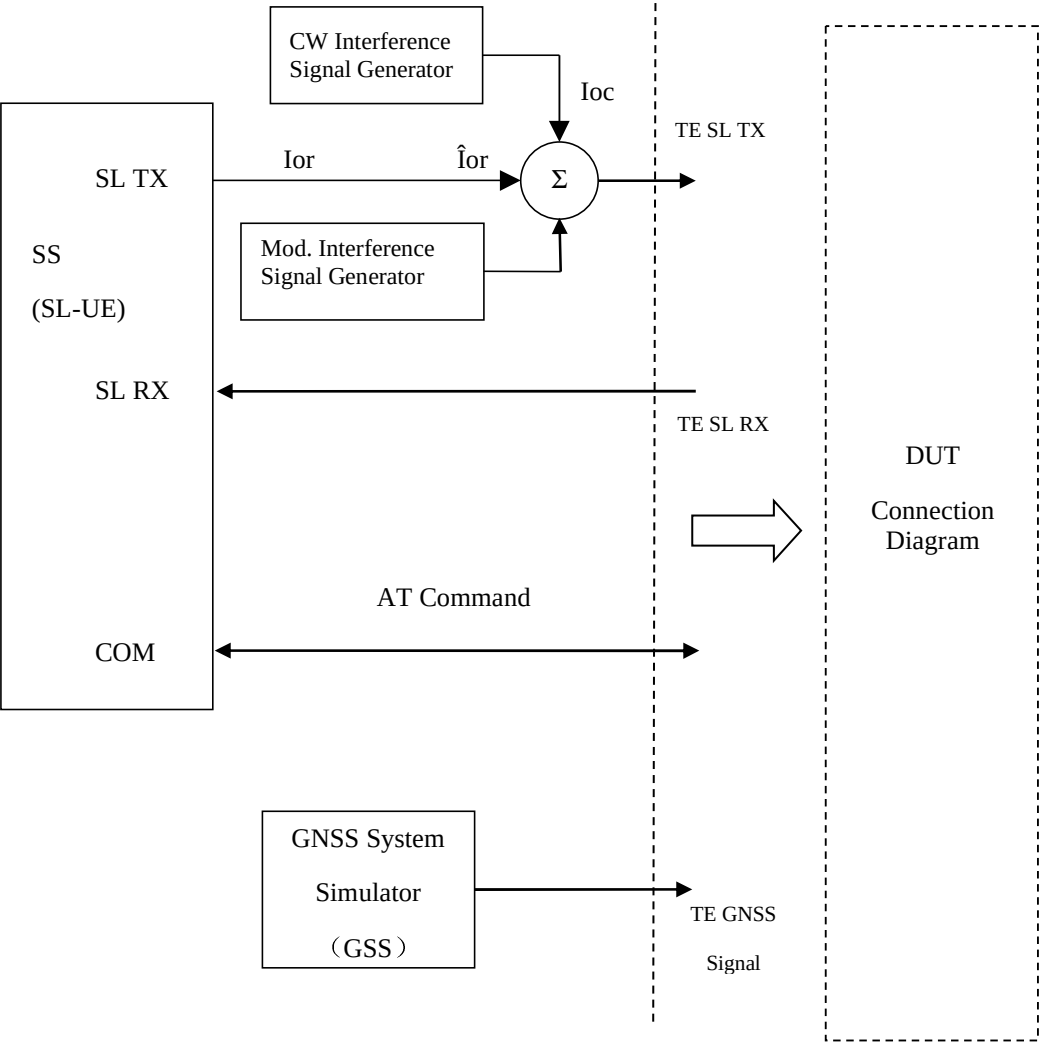


Figure A.3.1.9.1b: Test Equipment connection for NR sidelink operation non-concurrent Receiver tests with both Modulated and CW Interference signals

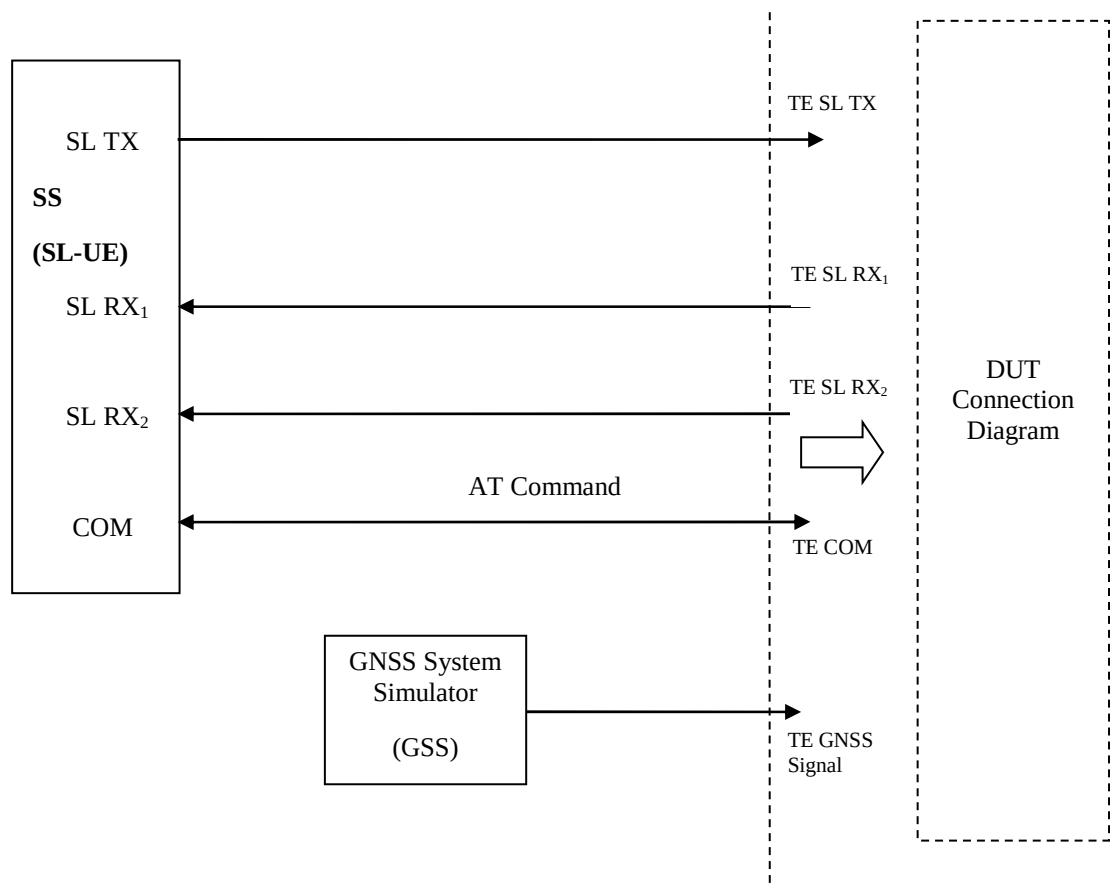


Figure A.3.1.9.2: Test Equipment connection for NR sidelink operation non-concurrent with NR UL/DL transmission SL-MIMO

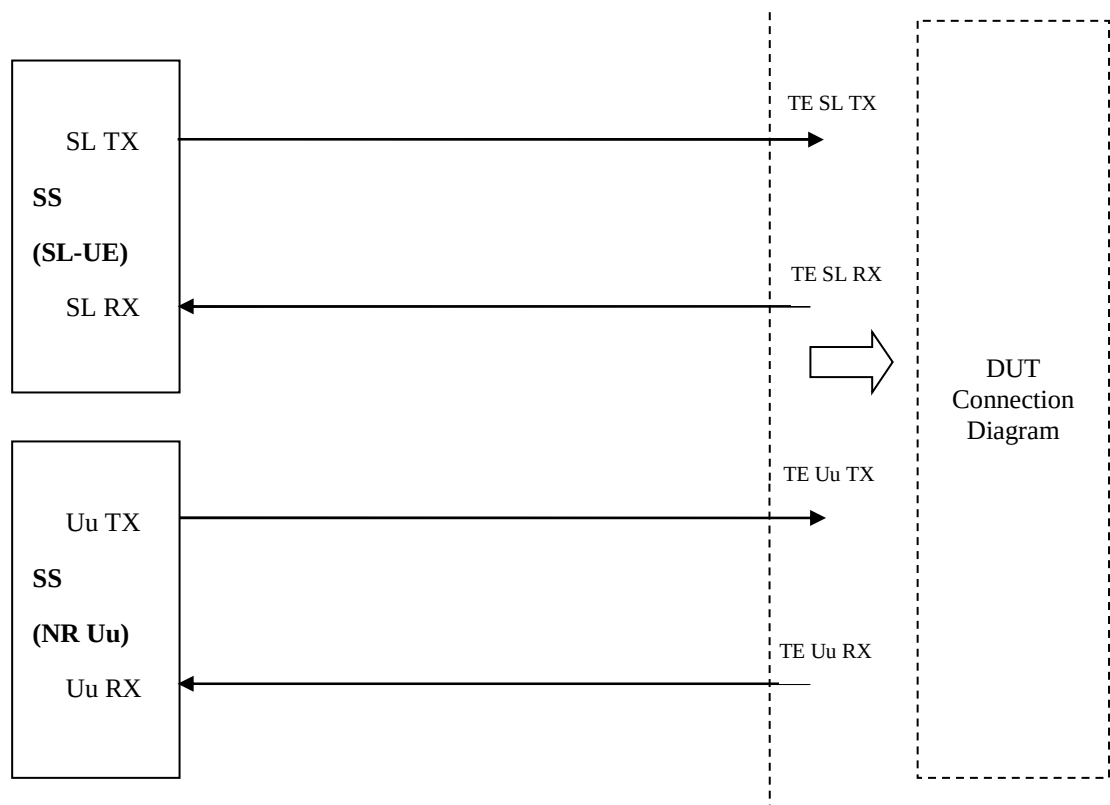


Figure A.3.1.9.3: Test Equipment connection for inter-band con-current NR V2X operation

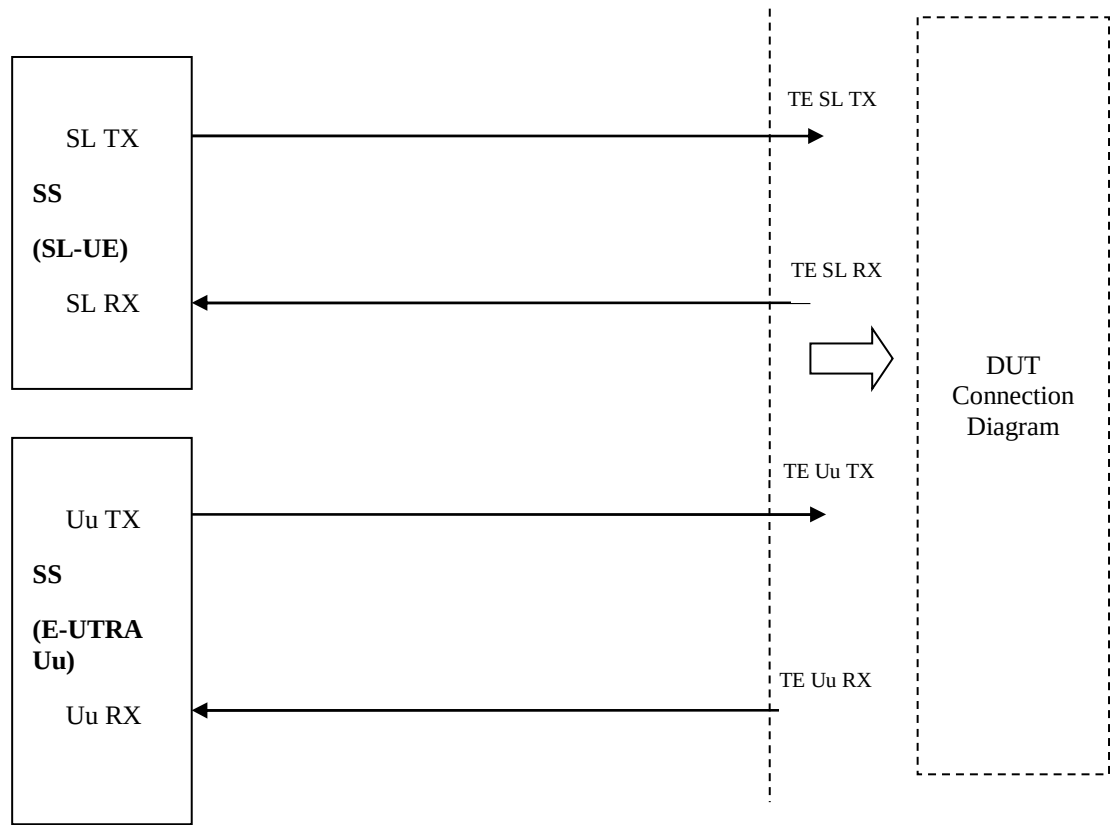


Figure A.3.1.9.4: Test Equipment connection for con-current E-UTRA Uu and NR Sidelink operation

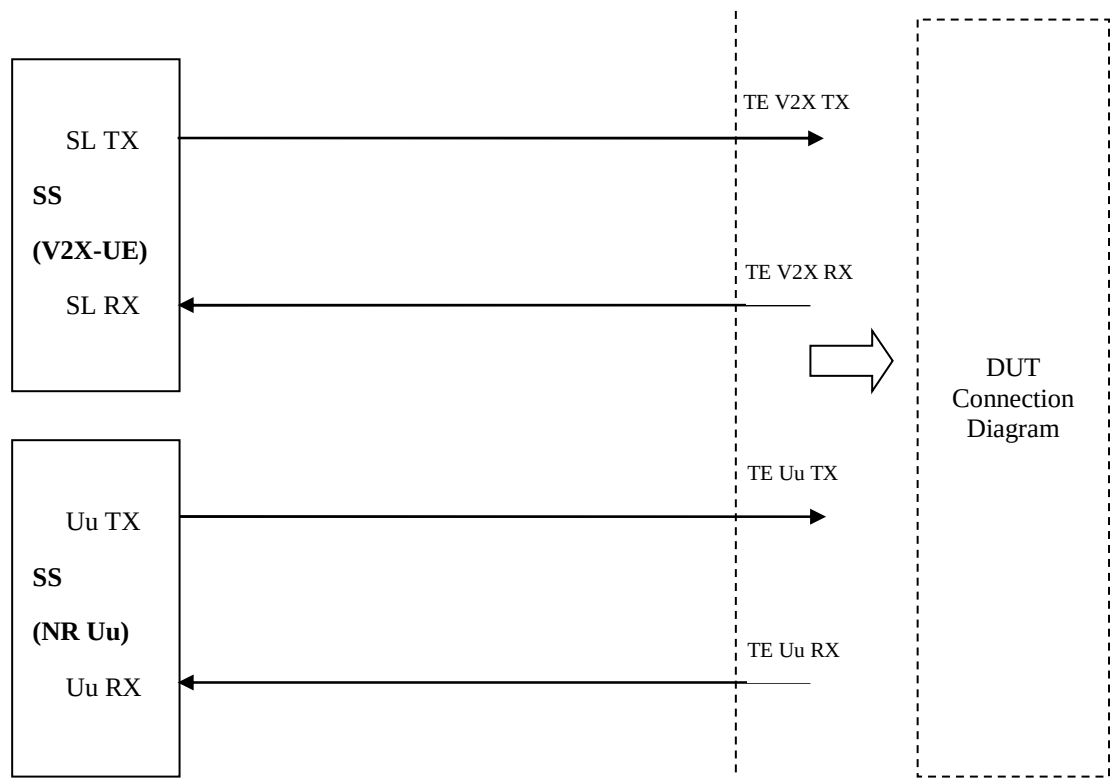


Figure A.3.1.9.5: Test Equipment connection for con-current E-UTRA V2X sidelink and NR Uu operation

A.3.2 User Equipment Parts for Conducted Measurements

A.3.2.1 General

The User Equipment part is focused on the number of physical antenna connectors and how to combine in the DUT. Depending on the DUT implementation only one of the following connection diagrams applies. These connection diagrams are examples of User equipment parts.

A.3.2.2 One Antenna Connector

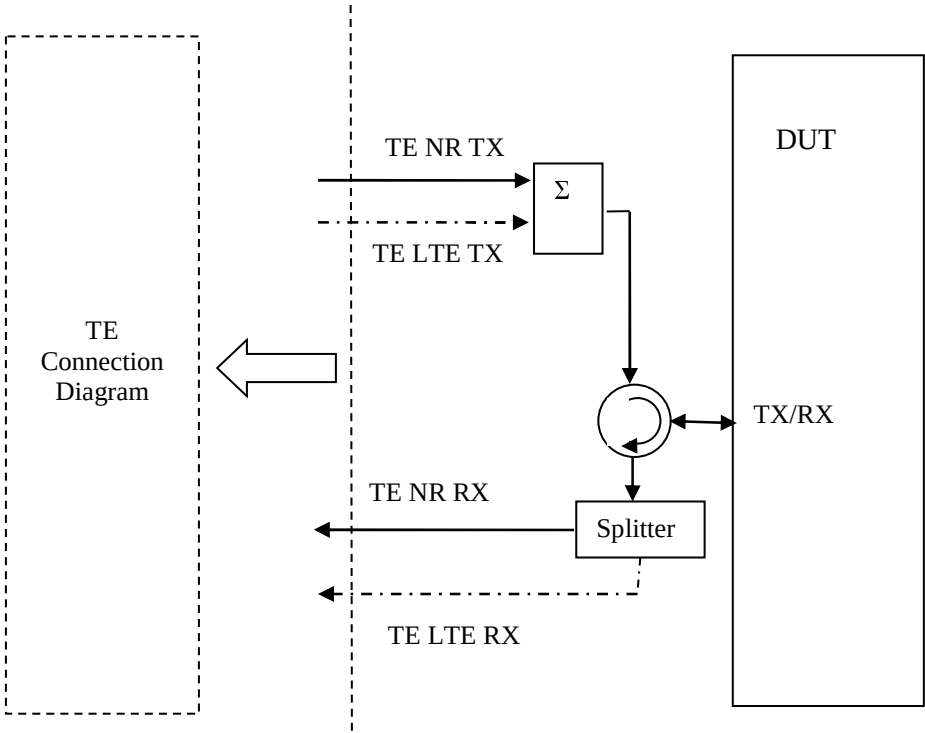


Figure A.3.2.2.1: User Equipment connection for single basic cell

A.3.2.3 Two Antenna Connectors

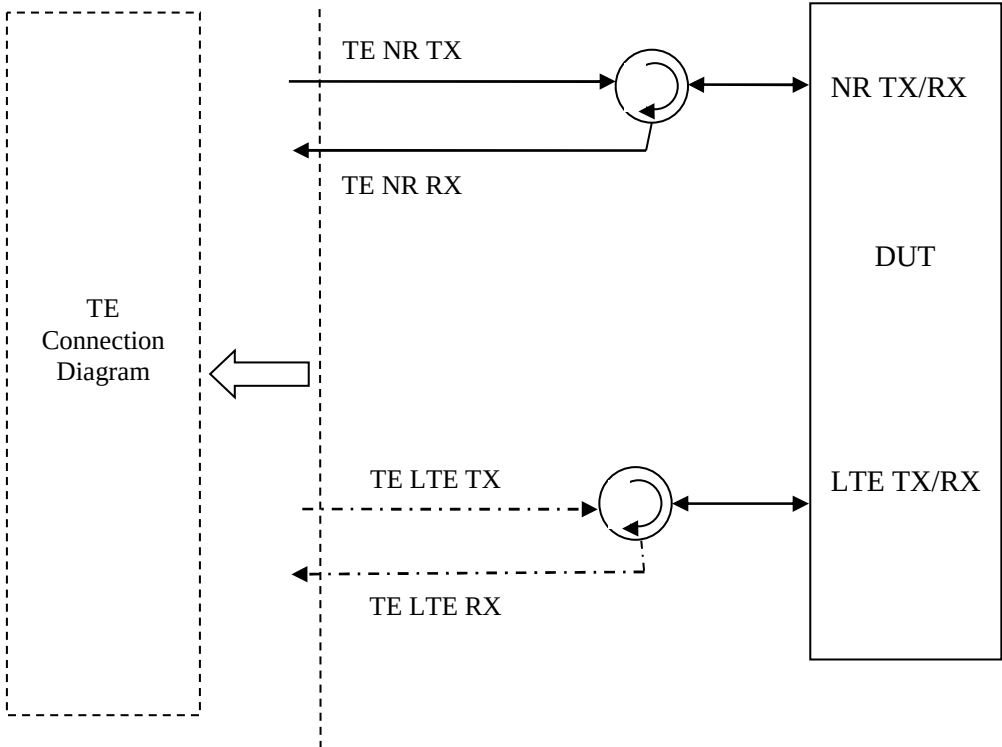


Figure A.3.2.3.1: User Equipment connection for single basic cell with NR and LTE cells at different separated connectors

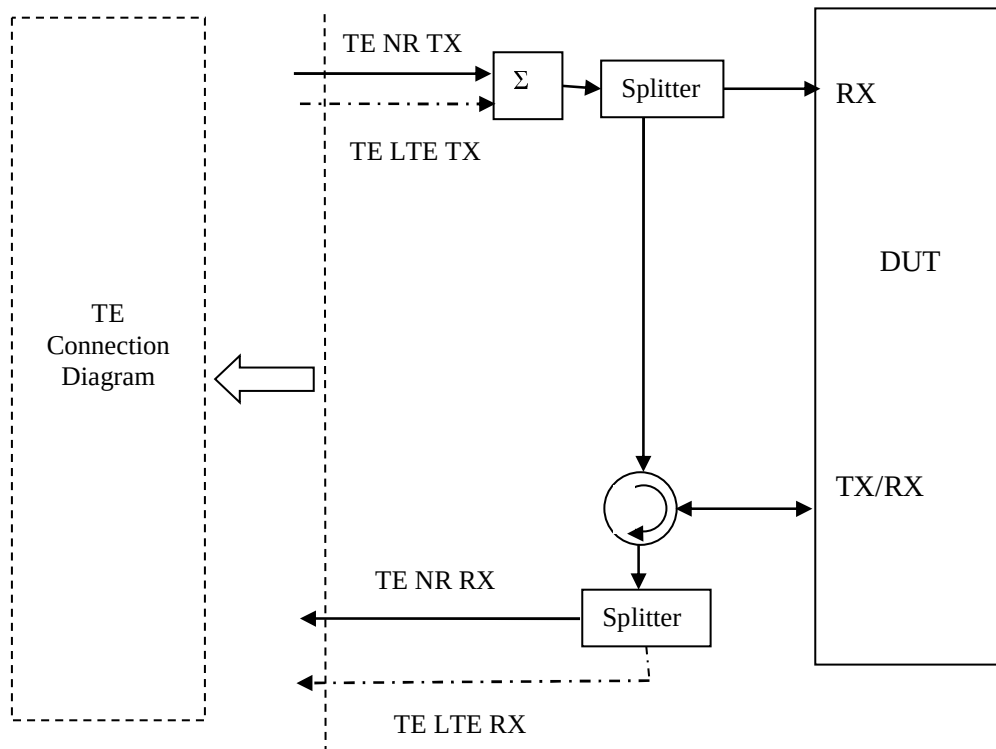


Figure A.3.2.3.2: User Equipment connection for single basic cell with NR and LTE cells at the same connectors for both cells

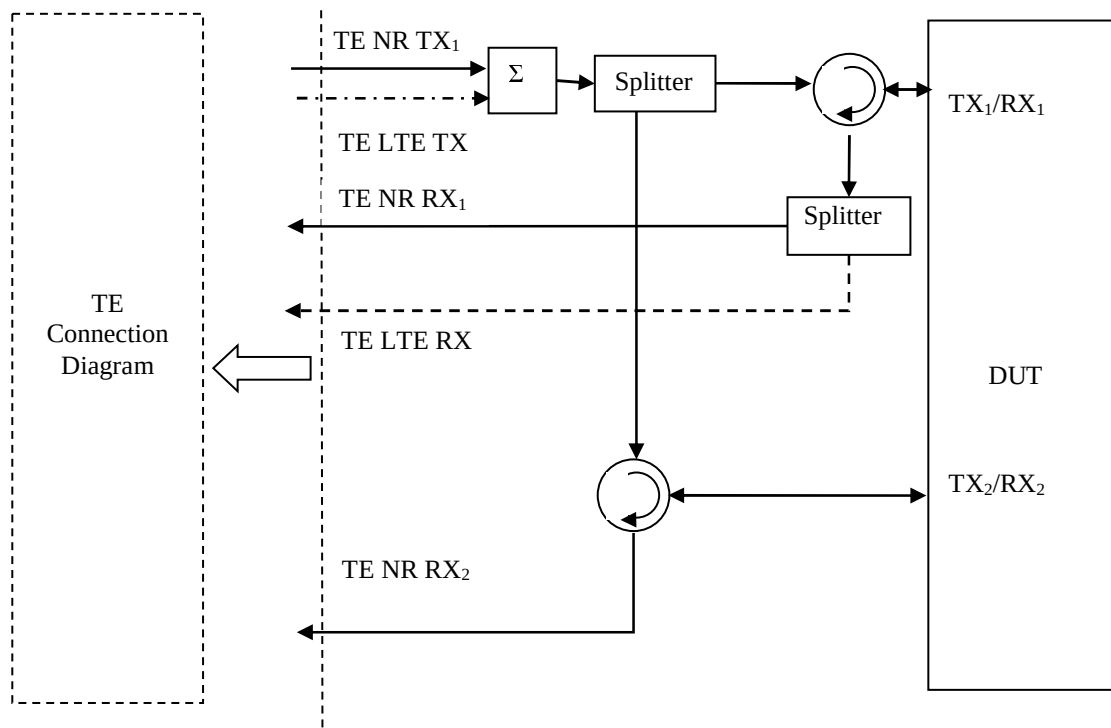


Figure A.3.2.3.3: 2 Tx User Equipment connection for single basic cell with NR and LTE cells at the same connectors for both cells and 2TX UL MIMO or Tx diversity supported

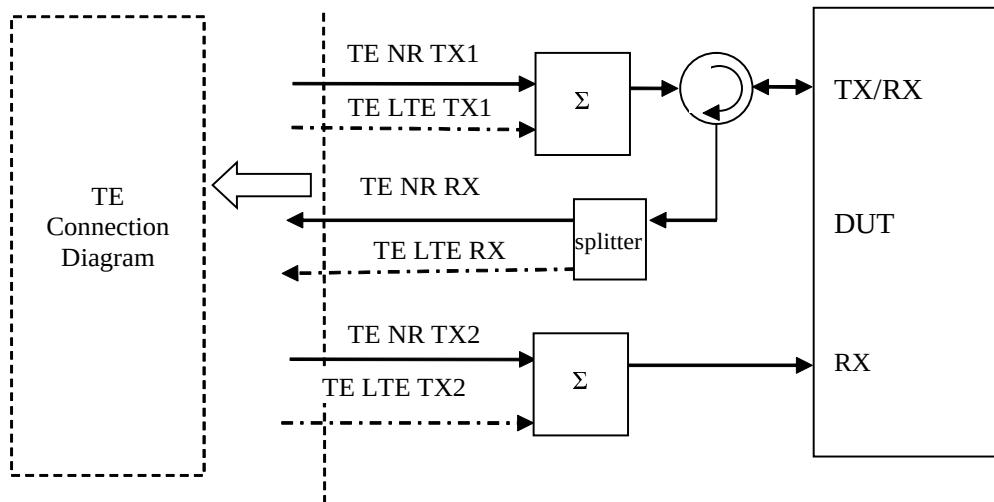


Figure A.3.2.3.4: User Equipment connection for UEs with NR and LTE RxTx and Rx antenna at same connectors

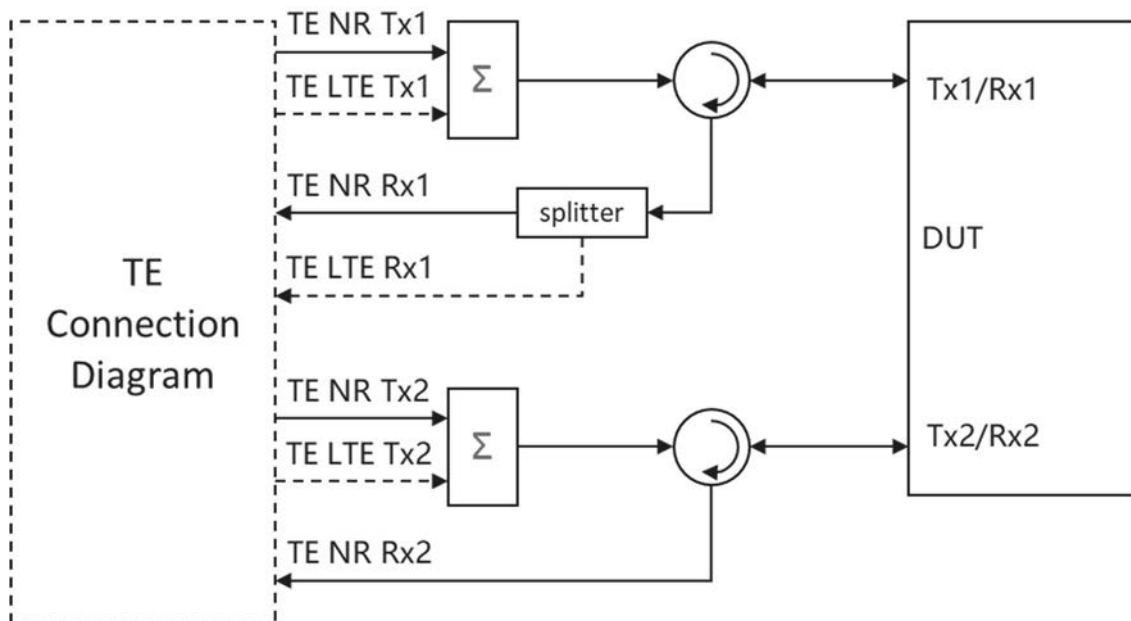


Figure A.3.2.3.4a: 2 Tx User Equipment connection for tests with more than one cell with NR and LTE cells at the same connectors for both cells and 2TX UL MIMO or Tx diversity supported

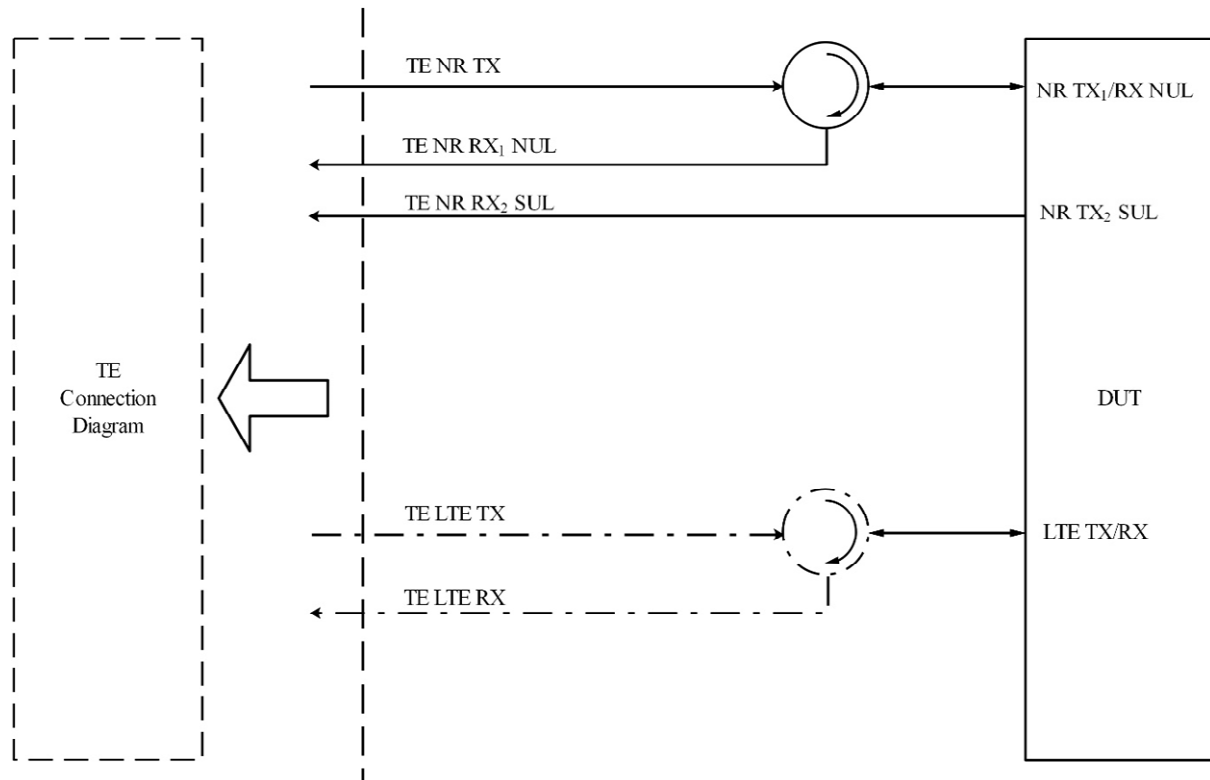


Figure A.3.2.3.5: User Equipment connection for single basic cell with NR and LTE cells at different separated connectors with NR SUL and NR NUL transmitted on separate antenna connectors

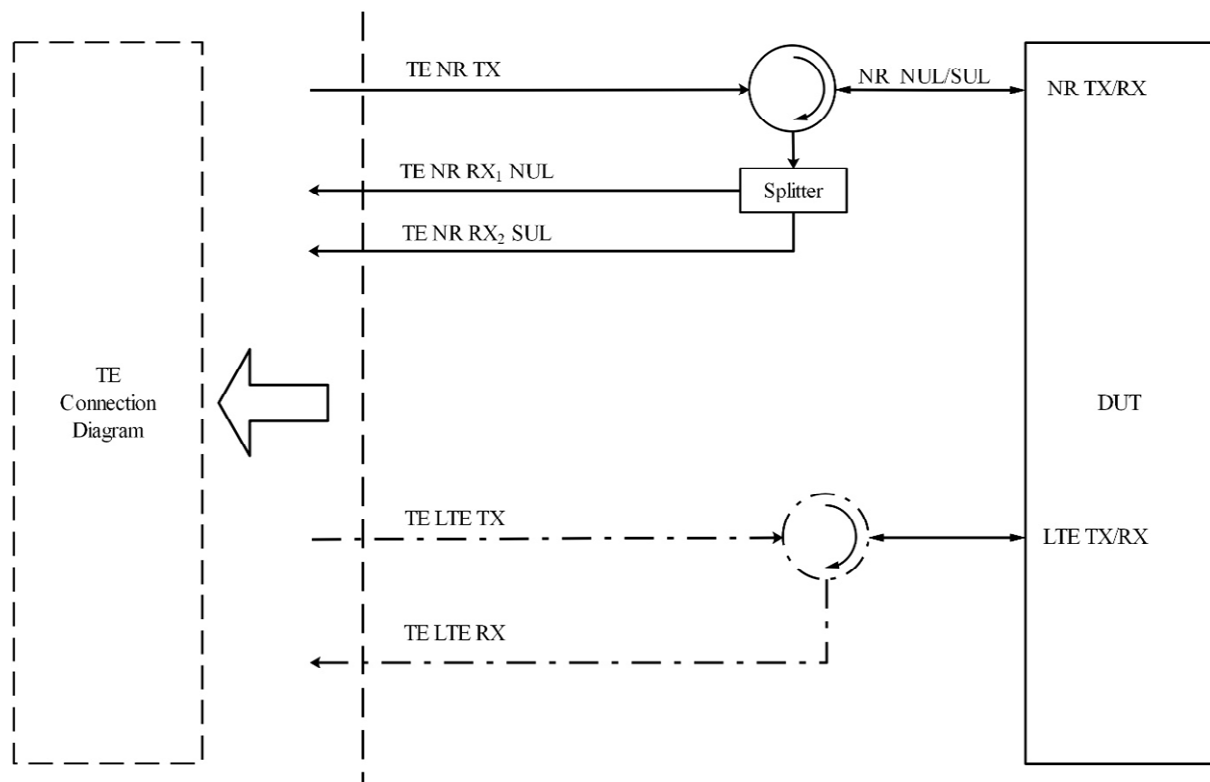


Figure A.3.2.3.6: User Equipment connection for single basic cell with NR and LTE cells at different separated connectors with NR SUL and NR NUL transmitted on the same antenna connector

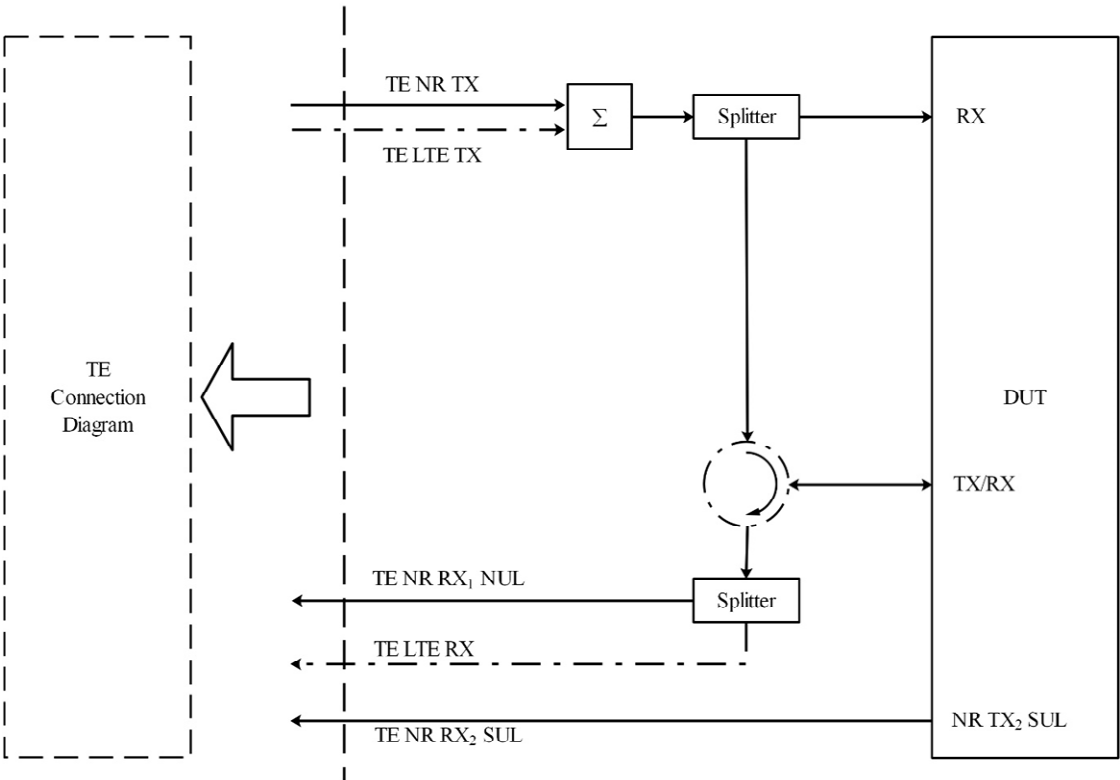


Figure A.3.2.3.7: User Equipment connection for single basic cell with NR and LTE cells at the same connectors for both cells with NR SUL and NR NUL transmitted on separate antenna connectors

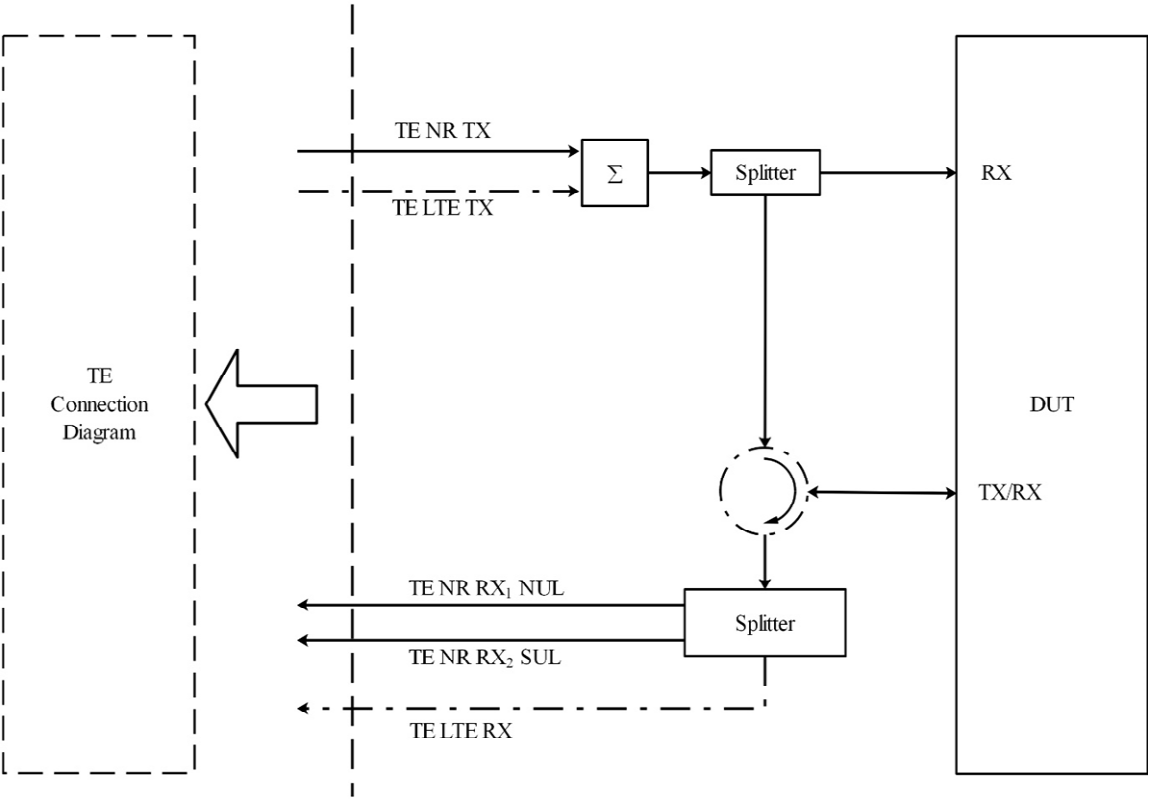


Figure A.3.2.3.8: User Equipment connection for single basic cell with NR and LTE cells at the same connectors for both cells with NR SUL and NR NUL transmitted on the same antenna connector

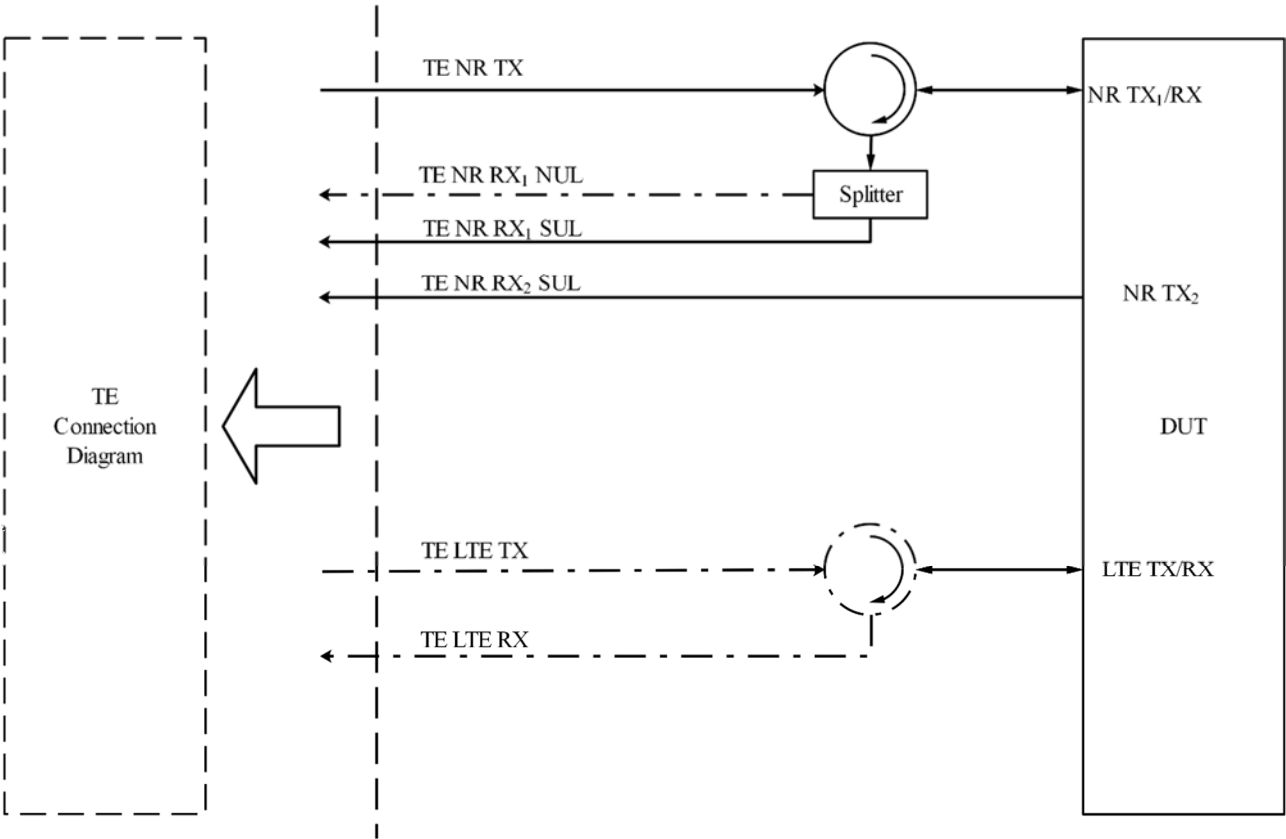


Figure A.3.2.3.9: User Equipment connection for single basic cell with NR and LTE cells at different separated connectors with UE supporting UL MIMO on SUL band

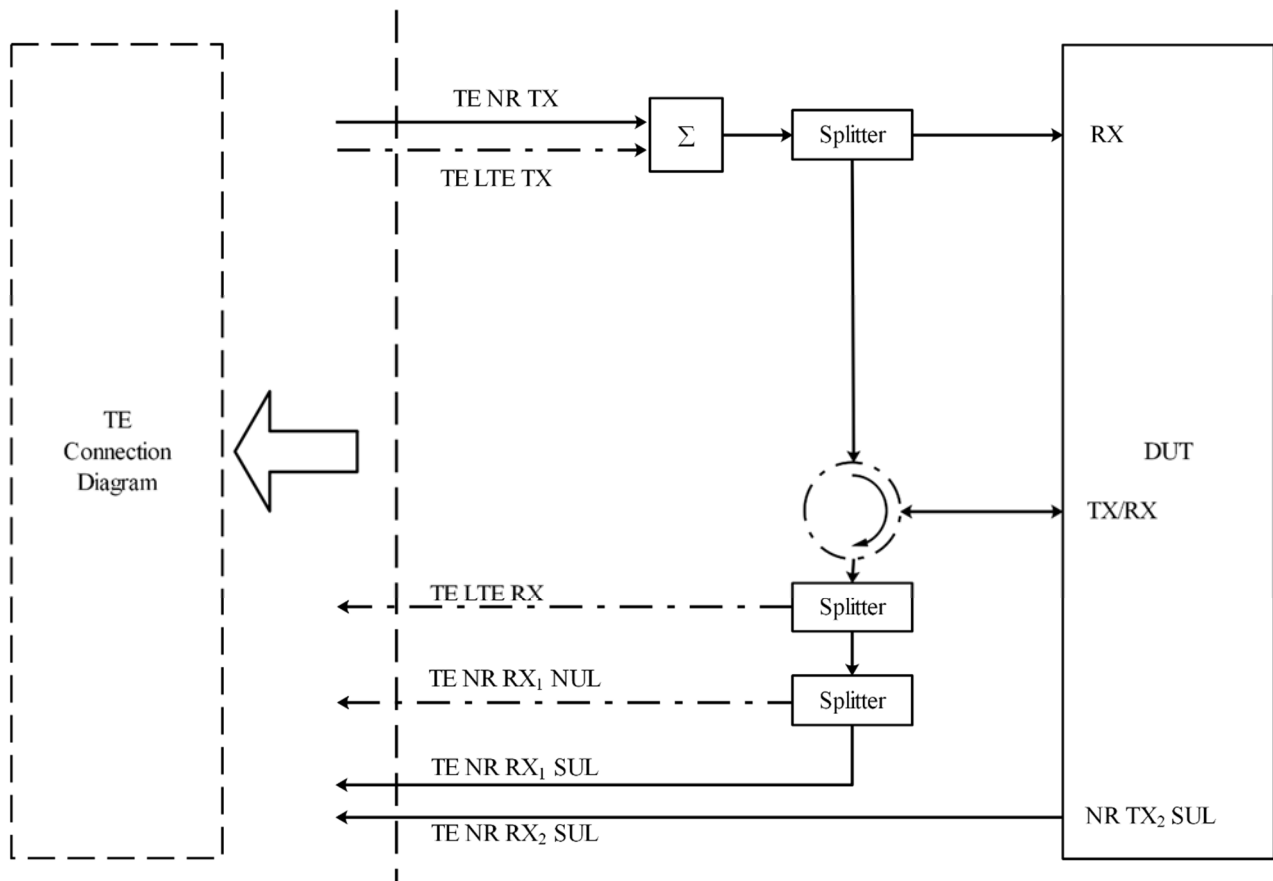
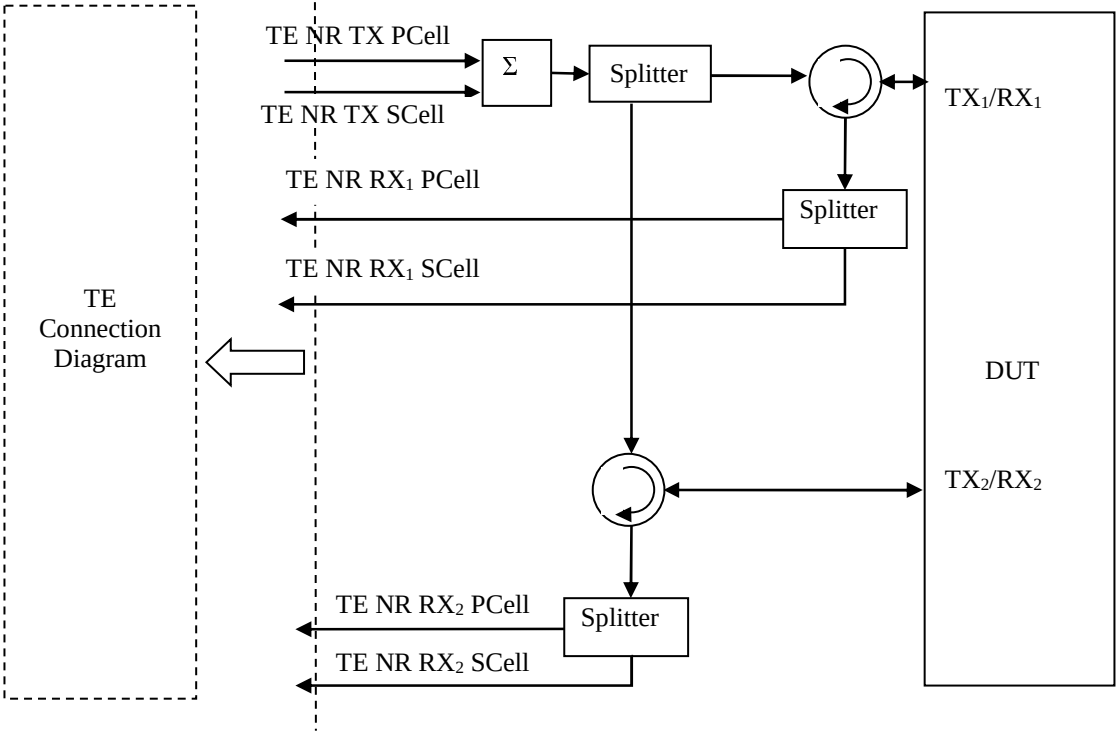


Figure A.3.2.3.10: User Equipment connection for single basic cell with NR and LTE cells at the same connectors for both cells with UE supporting UL MIMO on SUL band



r

Figure A.3.2.3.11: 2 Tx User Equipment connection for NR intra-band UL contiguous CA at the same connectors for both cells and 2TX UL MIMO supported

A.3.2.4 Three Antenna Connectors

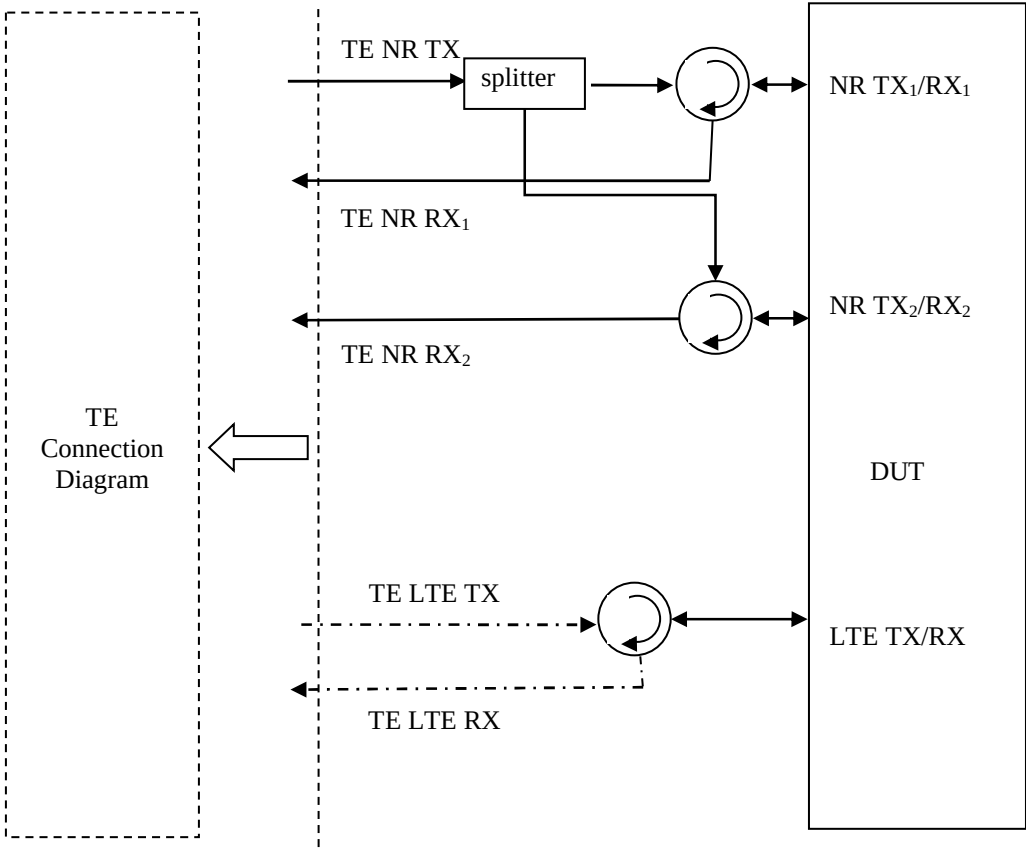


Figure A.3.2.4.1: 2Tx User Equipment connection for single basic cell with NR and LTE cells at different separated connectors and 2TX UL MIMO supported

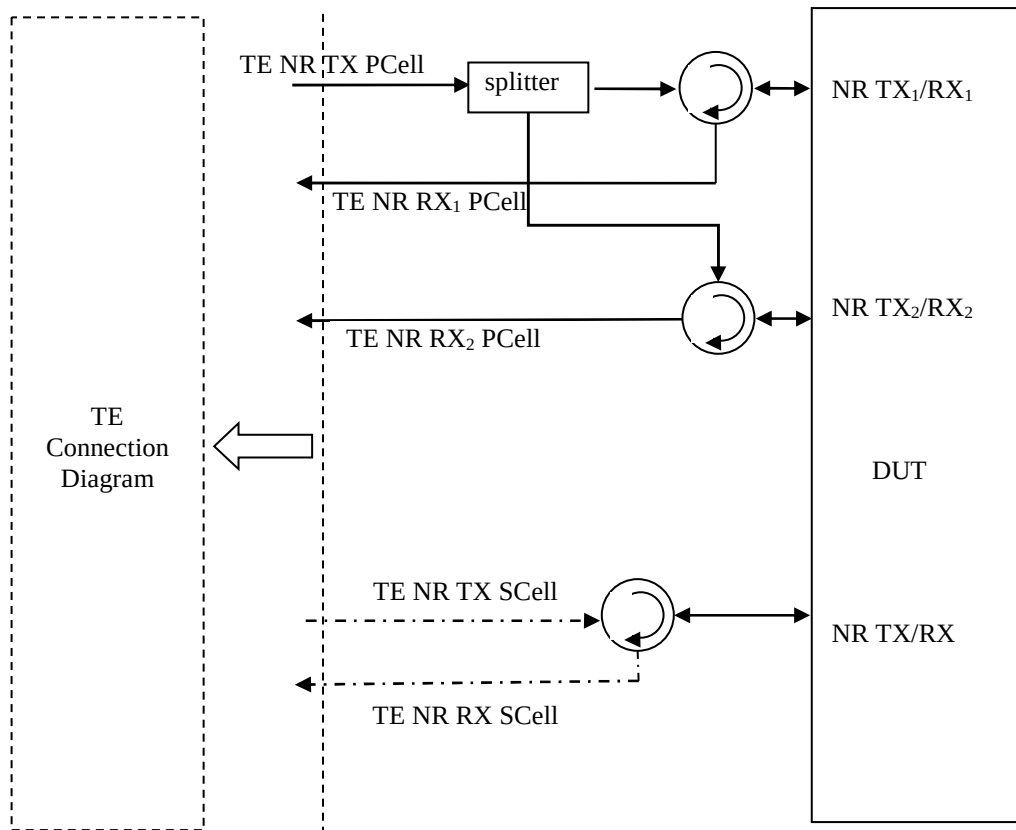


Figure A.3.2.4.2: 3Tx User Equipment connection for NR inter-band UL CA at different separated connectors for both cells and 2TX UL MIMO or Tx Diversity supported for PCell

A.3.2.5 Four Antenna Connectors

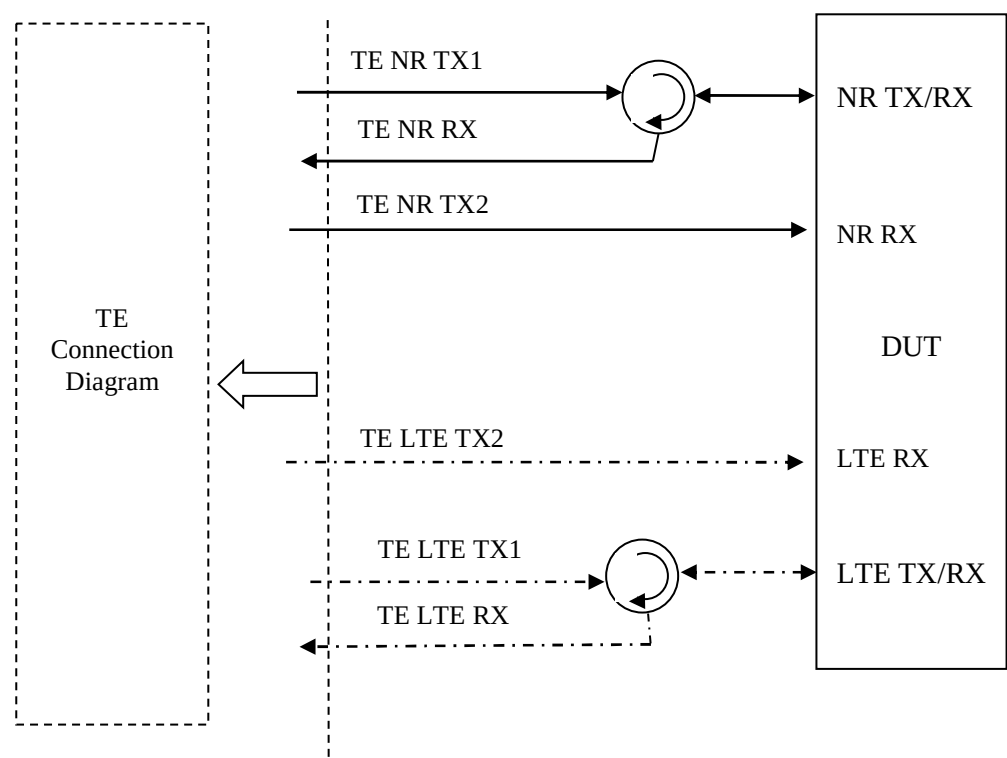


Figure A.3.2.5.1: User Equipment connection for UEs with NR and LTE RxTx and Rx antenna at different separated connectors

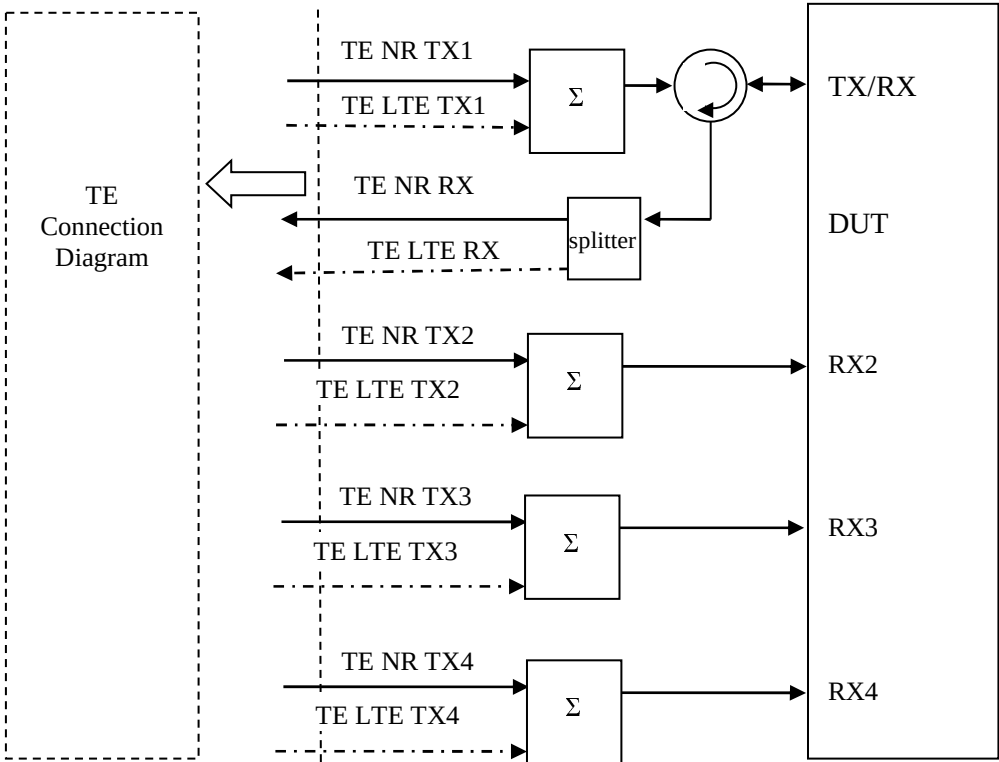


Figure A.3.2.5.2: User Equipment connection for 4Rx capable UEs without any 2Rx RF bands (NR and LTE at same connectors)

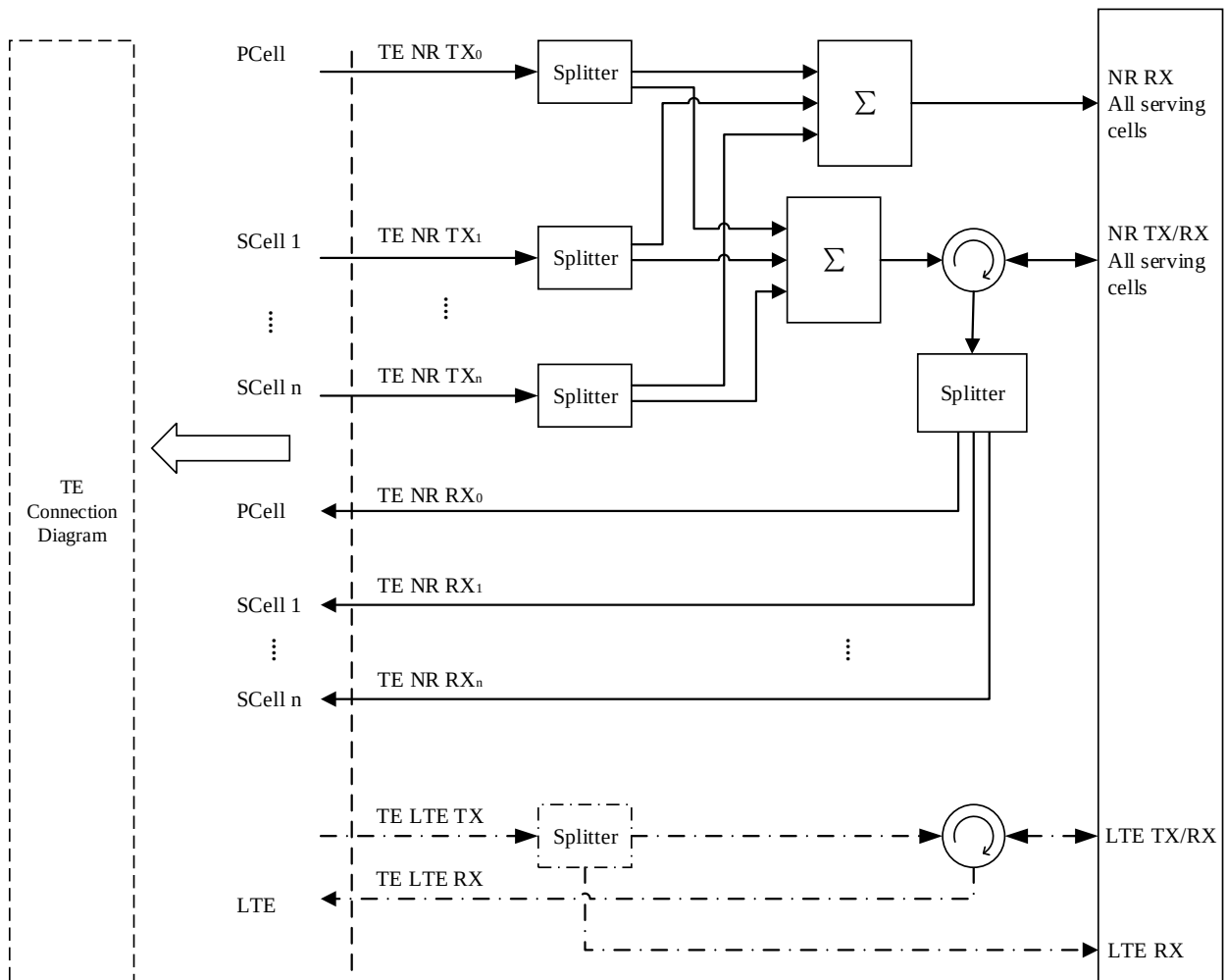


Figure A.3.2.5.3: User Equipment connection for UEs with NR CA (component carriers on common connector) and LTE

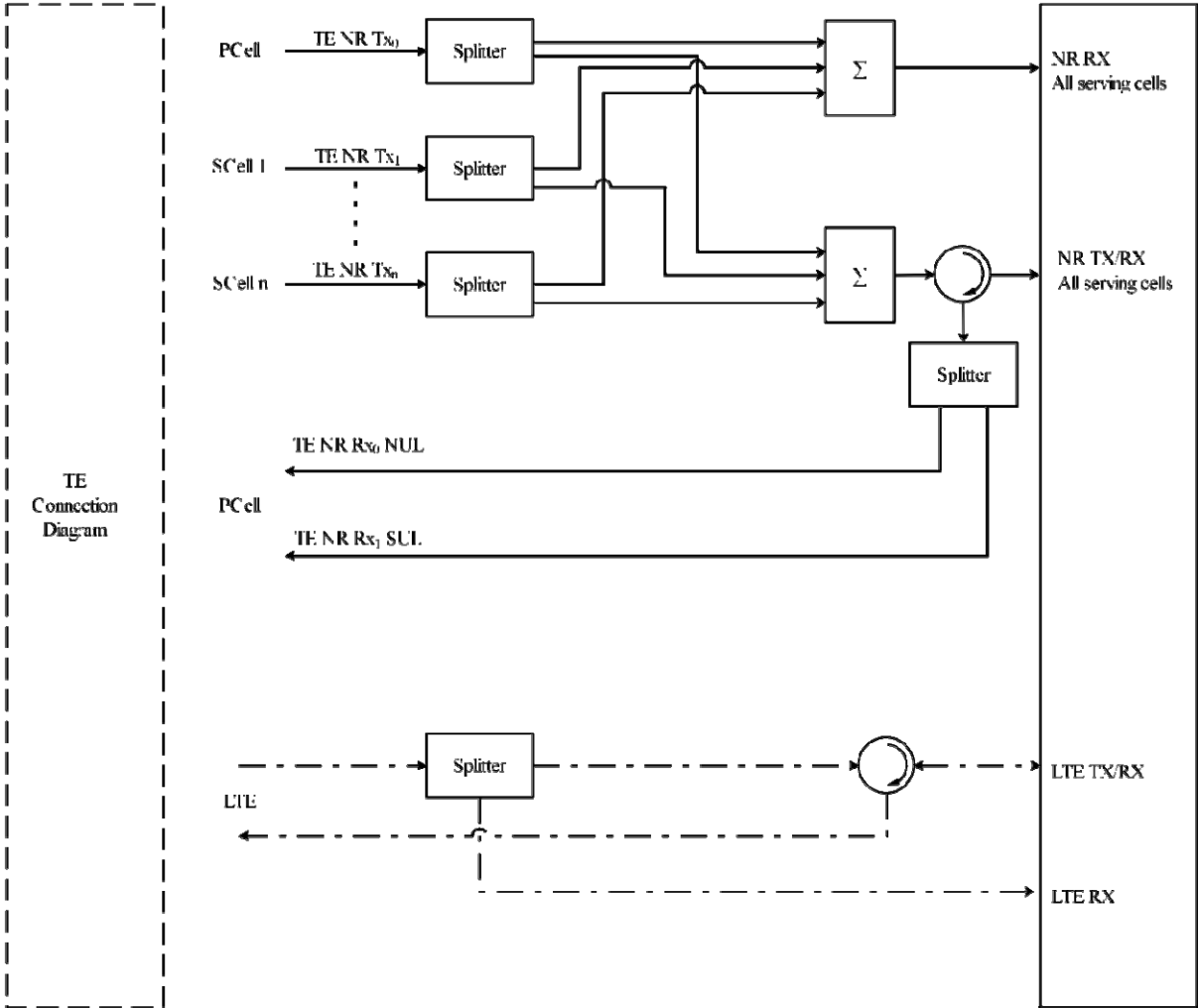


Figure A.3.2.5.4: User Equipment connection for UEs with NR SUL and DL CA (component carriers on common connector) and LTE

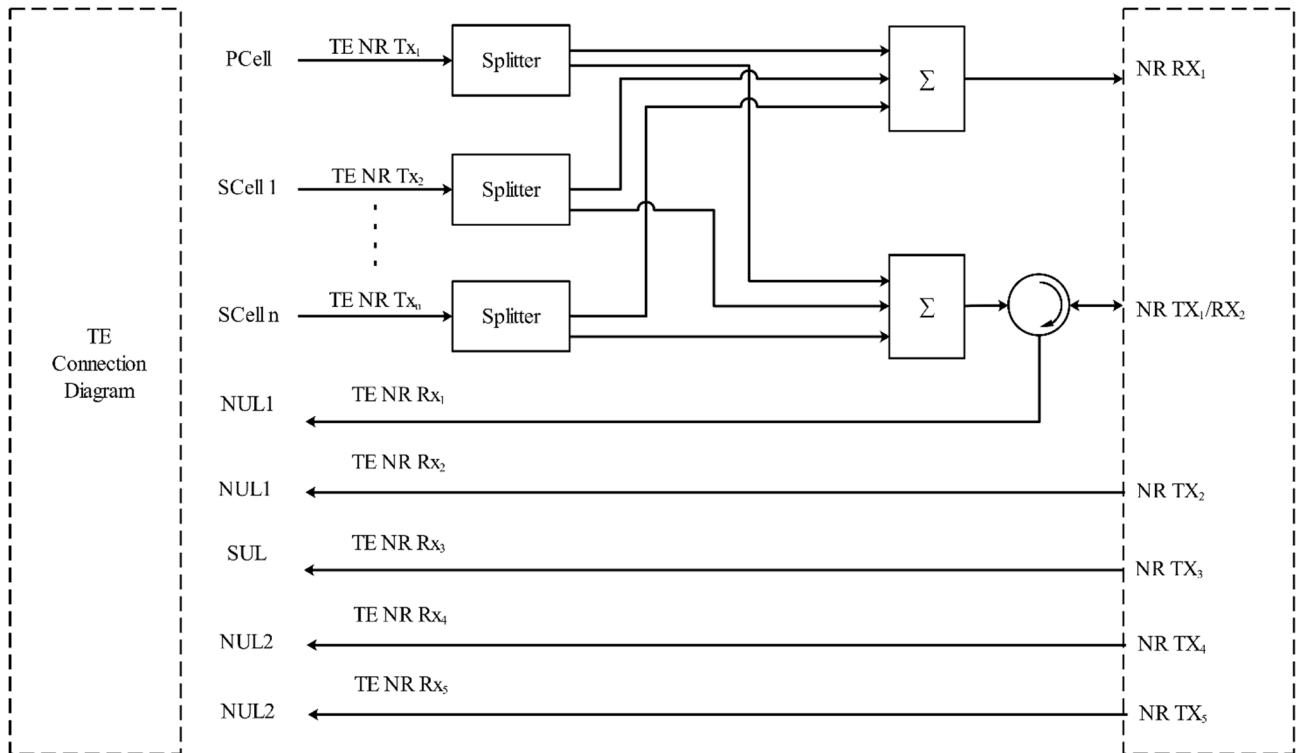


Figure A.3.2.5.5: User Equipment connection for SUL configuration with inter-band UL CA

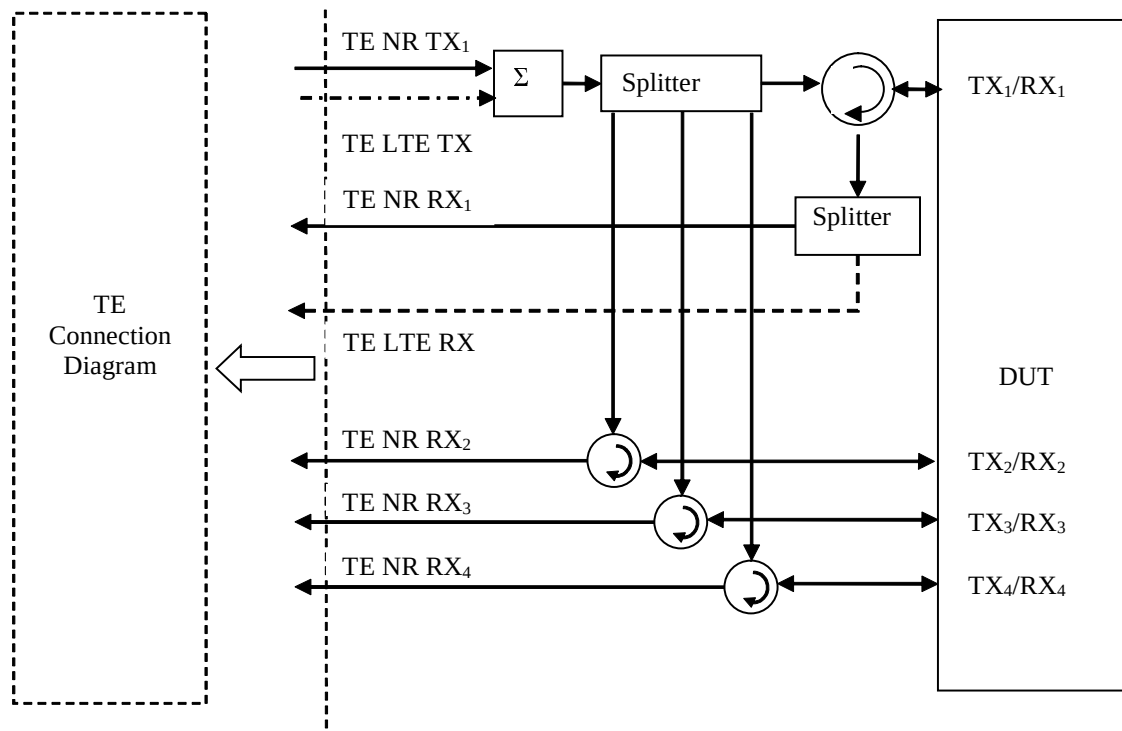


Figure A.3.2.5.6: 2 Tx User Equipment connection for single basic cell with NR and LTE cells at the same connectors for NR 4Tx UL MIMO or NR 4Tx Tx diversity

A.3.2.6 Over Four Antenna Connectors

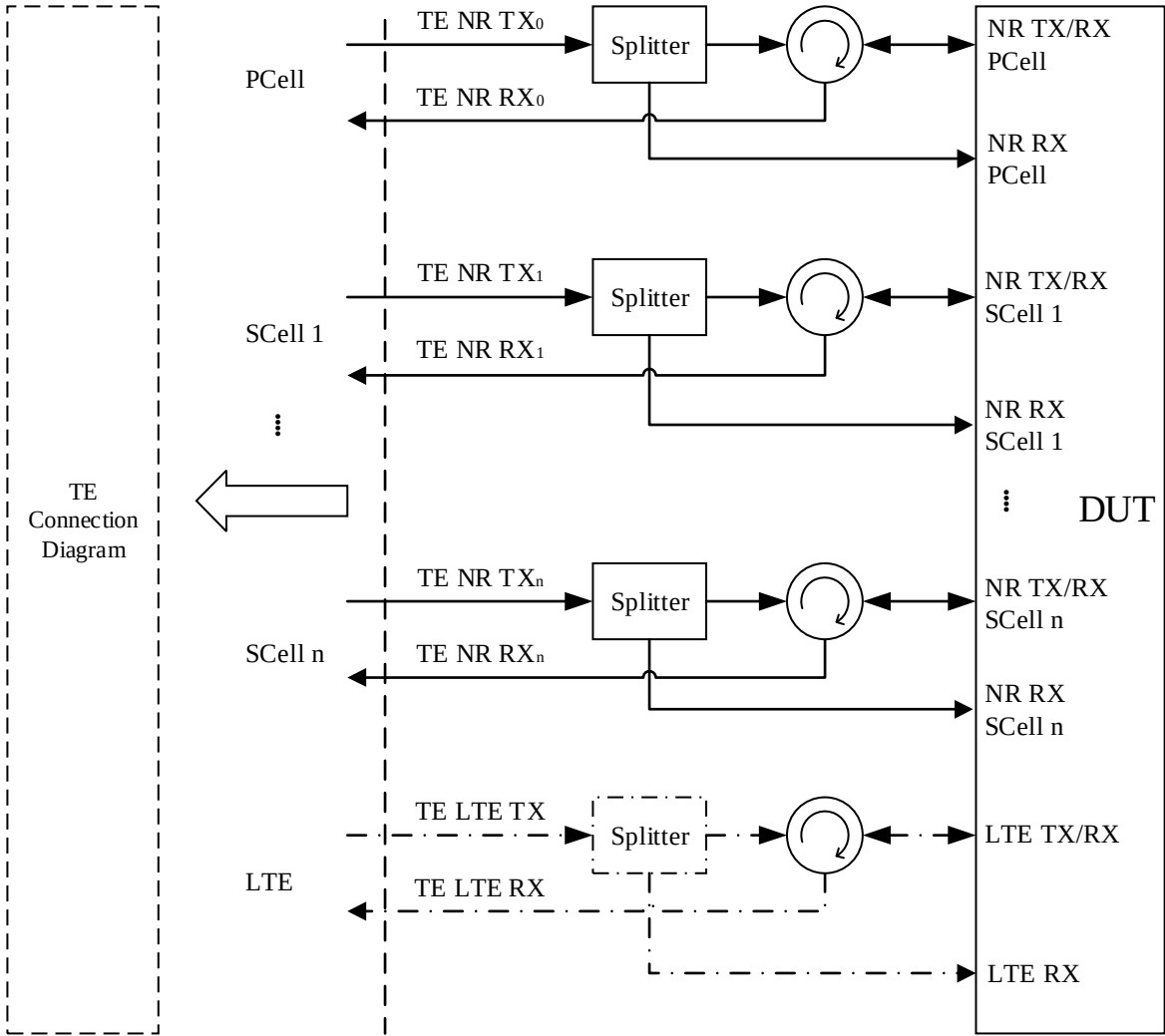


Figure A.3.2.6.1: User Equipment connection for UEs with NR CA (component carriers on separated connectors) and LTE

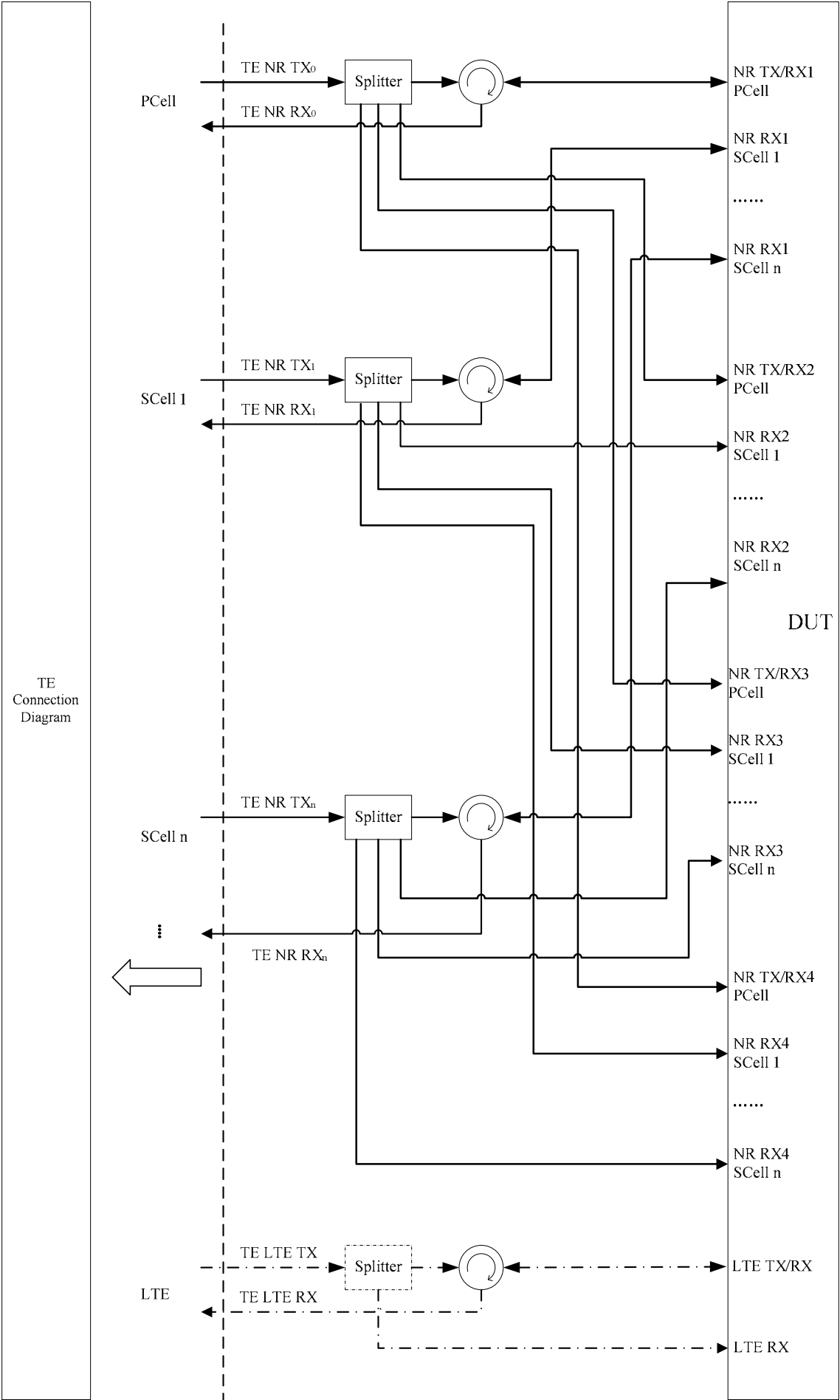


Figure A.3.2.6.2: User Equipment connection for UEs with NR CA and NR 4Rx (component carriers on separated connectors) and LTE

Note: NR may be 2Rx on some of the CCs, in that case RX3 and RX4 are not used

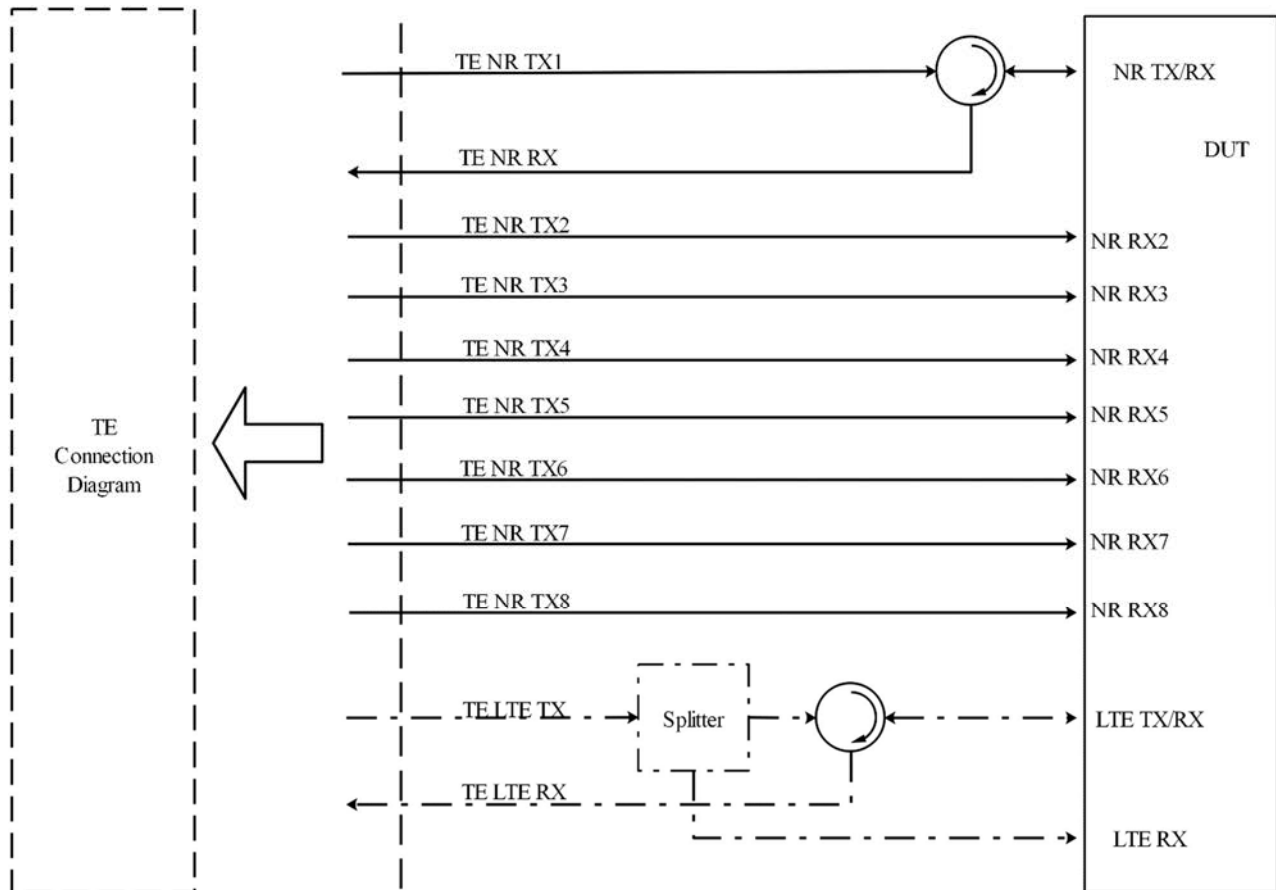


Figure A.3.2.6.3: User Equipment connection for 8Rx capable UEs without any 2Rx and 4Rx RF bands (NR and LTE at separate connectors)

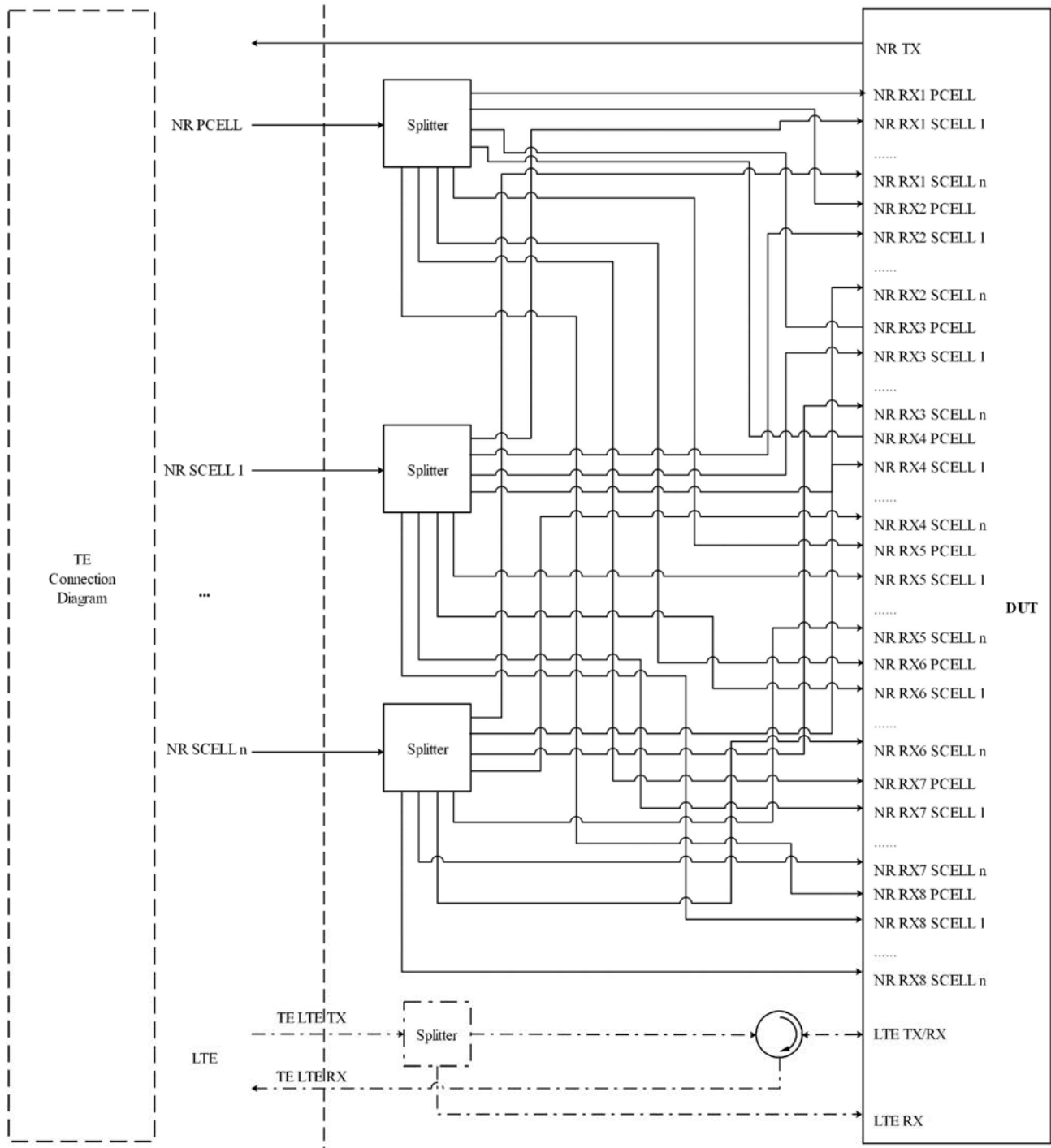


Figure A.3.2.6.4: User Equipment connection for UEs with NR CA and NR 8Rx (component carriers on separated connectors) and LTE

Note: NR may be 4Rx on some of the CCs, in that case RX5 to RX8 are not used. And NR may be 2Rx on some of the CCs, in that case RX3 to RX8 are not used.

A.3.2.7 User Equipment supporting NR Sidelink

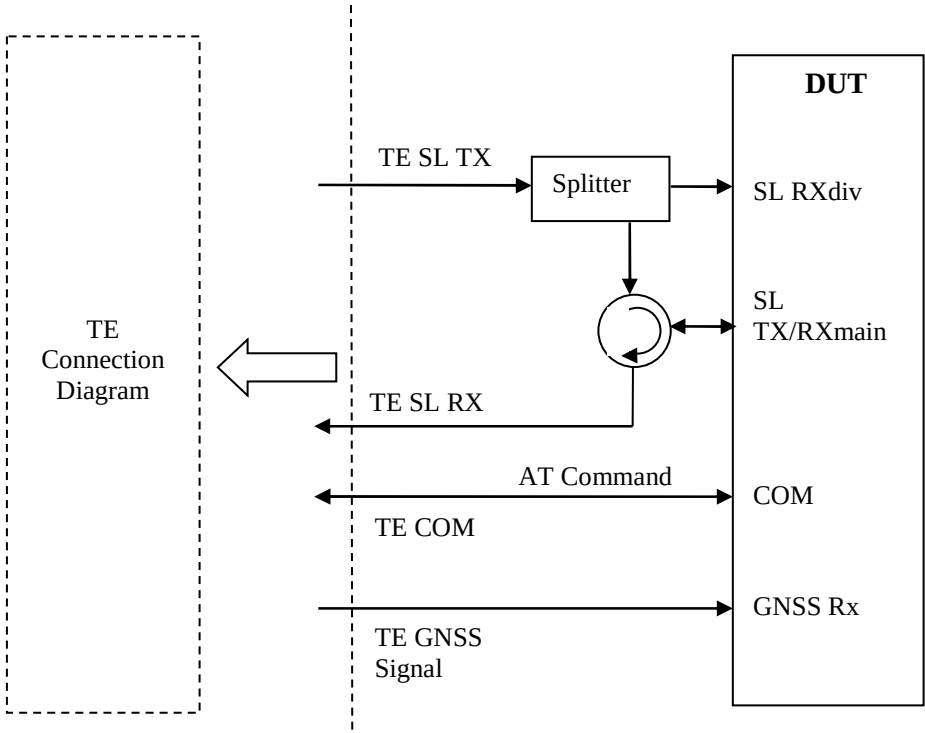


Figure A.3.2.7.1: User Equipment connection for NR sidelink operation non-concurrent with NR UL/DL transmission

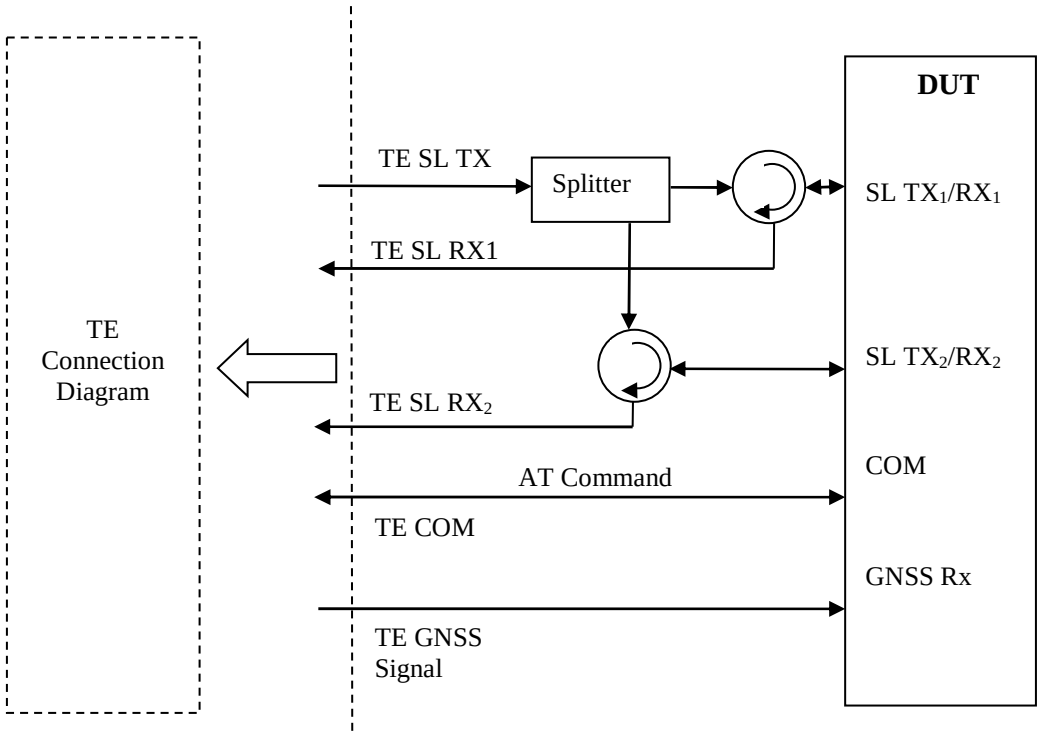


Figure A.3.2.7.2: User Equipment connection for NR sidelink operation non-concurrent with NR UL/DL transmission with SL-MIMO

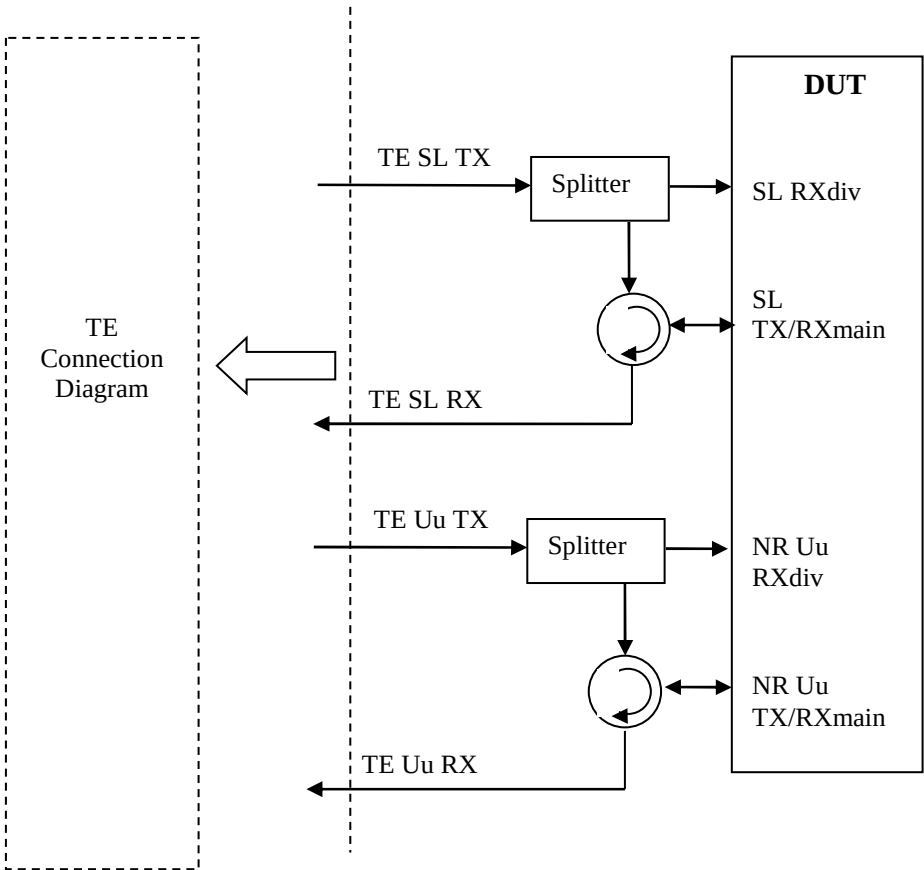


Figure A.3.2.7.3: User Equipment connection for inter-band con-current NR V2X operation

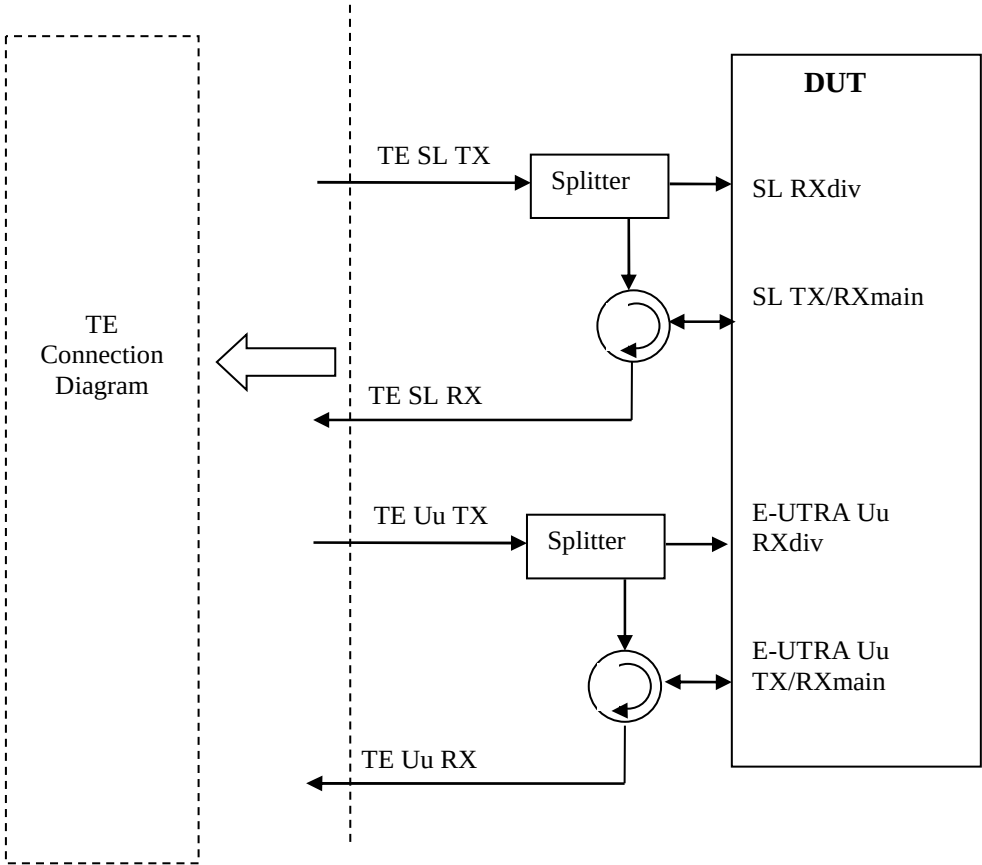


Figure A.3.2.7.4: User Equipment connection for con-current E-UTRA Uu and NR Sidelink operation

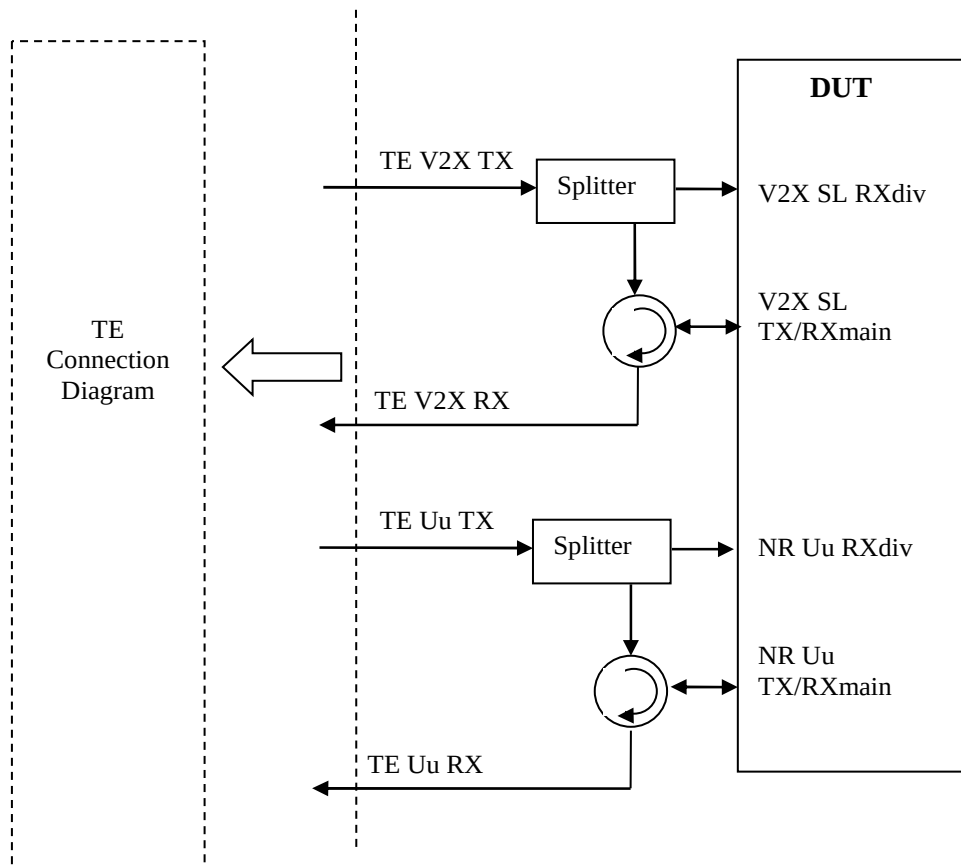


Figure A.3.2.7.5: User Equipment connection for con-current E-UTRA V2X sidelink and NR Uu operation

A.3.3 Test Equipment Parts for Radiated Measurements

A.3.3.1 Transmitter/Receiver tests

The Test Equipment part is focused on logical representation of TE measurement and link antenna(s) and positioner controller. The Test Equipment connection diagram below is applicable for NR radiated RX and TX tests, including CA and UL MIMO tests.

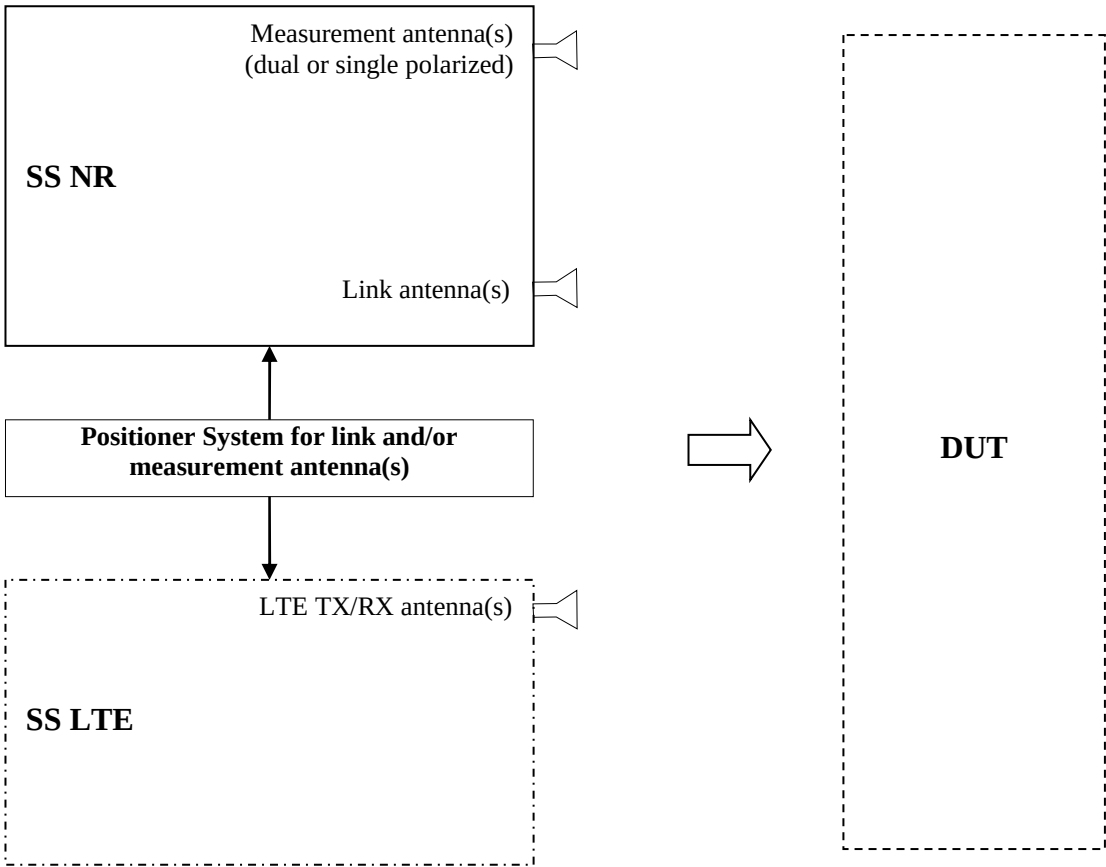


Figure A.3.3.1.1: Basic TE diagram for radiated RX and TX tests

For NR radiated RX tests requiring to simulate a modulated interference, connection diagram defined in figure A.3.3.1.2 will apply.

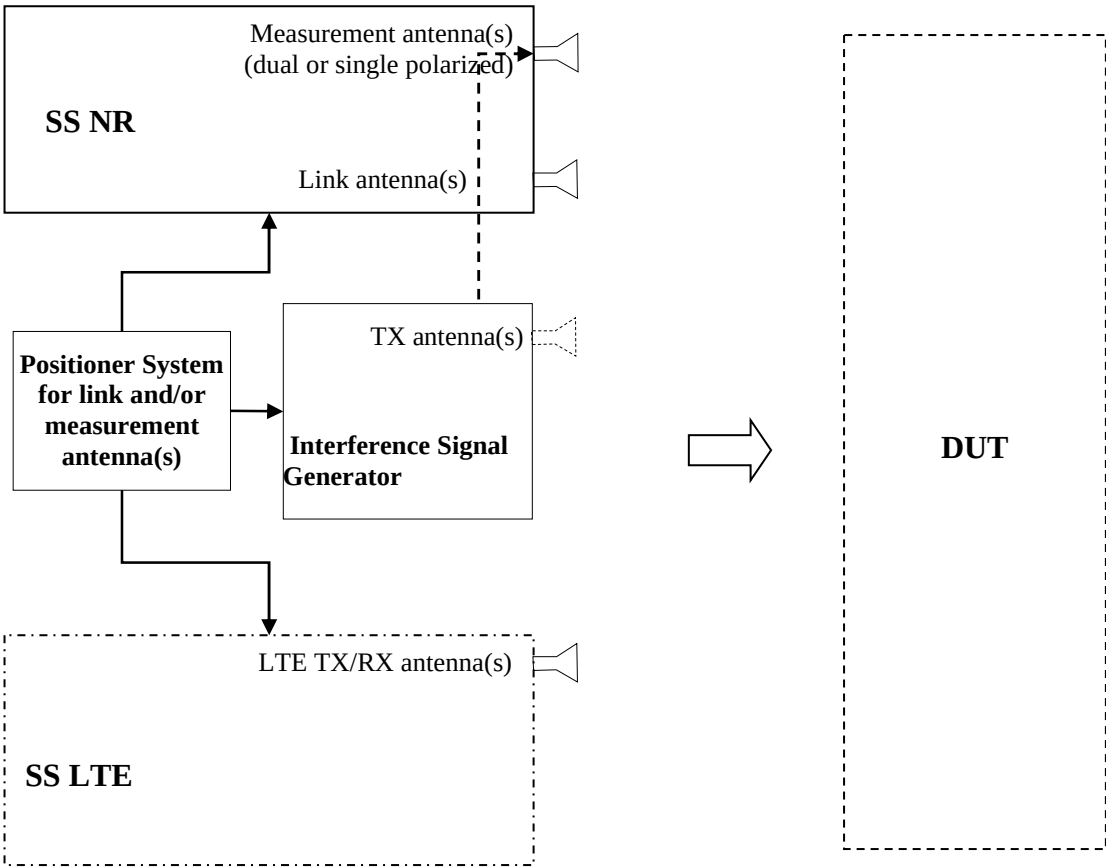


Figure A.3.3.1.2: TE diagram for radiated RX tests with Modulated Interference

For NR radiated spurious emission test cases, connection diagram defined in figure A.3.3.1.3 will apply.

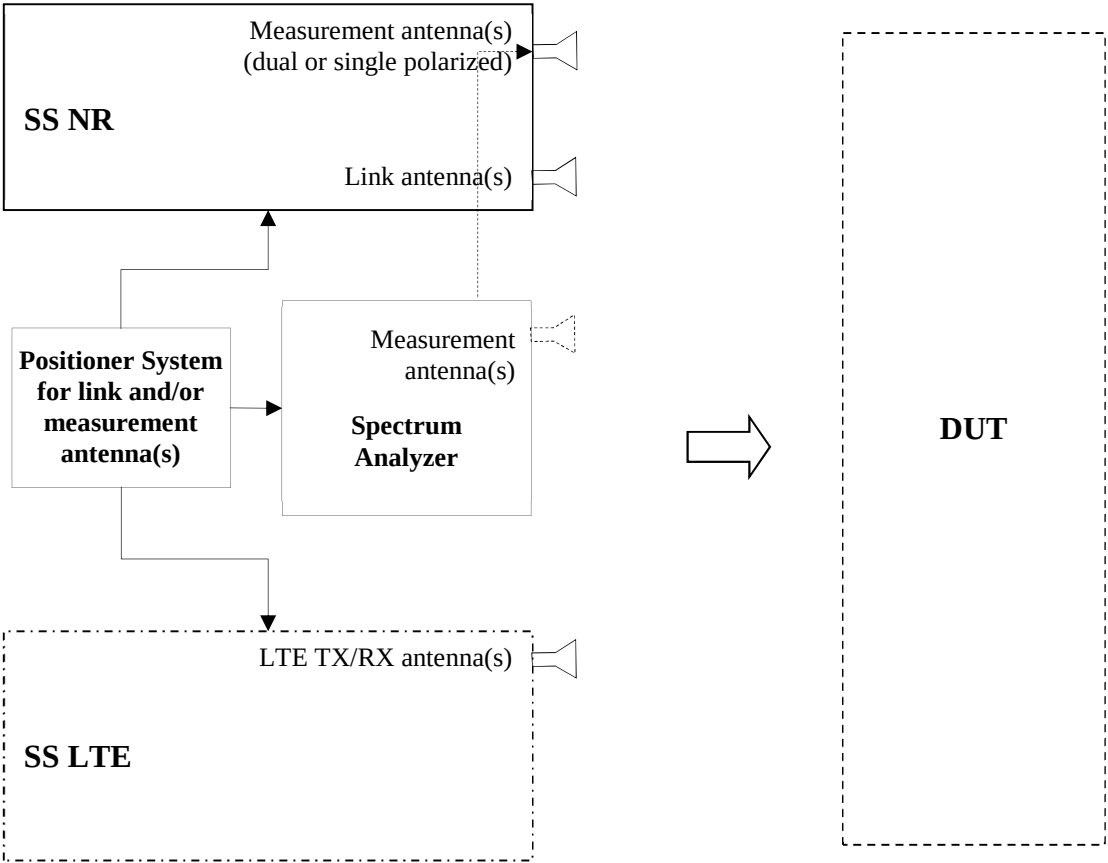


Figure A.3.3.1.3: TE diagram for spurious emission tests

A.3.3.2 Demodulation and CSI tests

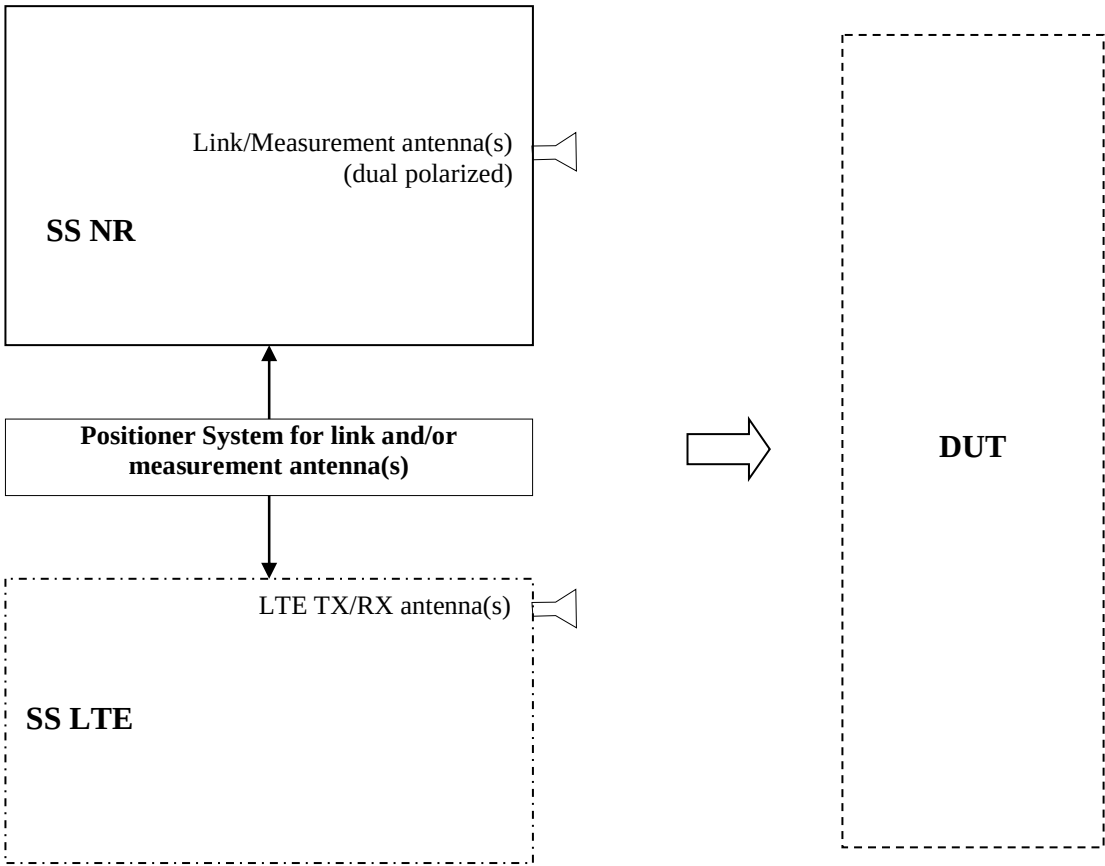


Figure A.3.3.2.1: Demodulation and CSI tests

Figures A.3.3.2.1-1 and A.3.3.2.1-1 show the connection diagram inside SS NR of Figure A.3.3.2.1 for downlink signal path.

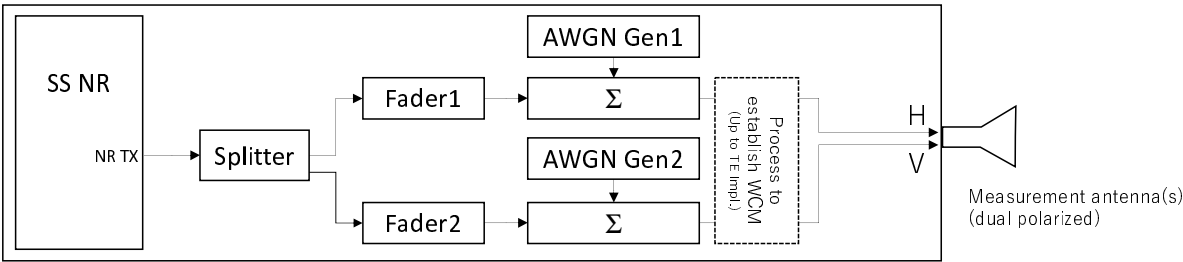


Figure A.3.3.2.1-1: TE diagram for Demodulation and CSI tests (1x2)

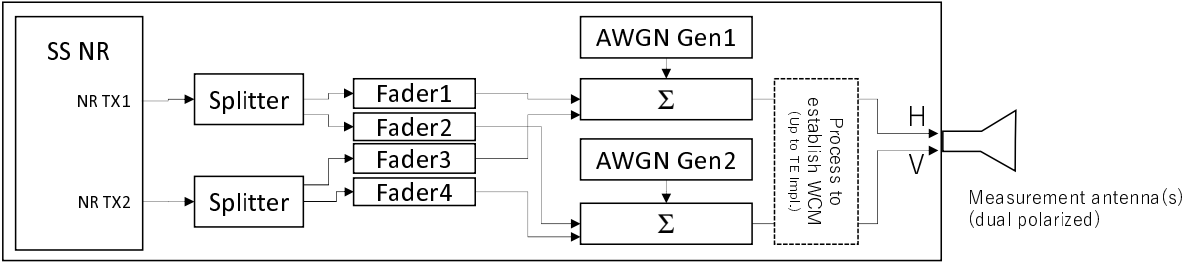


Figure A.3.3.2.1-2: TE diagram for Demodulation and CSI tests (2x2)

A.3.3.3 RRM tests

The Test Equipment part is focused on logical representation of TE antenna(s) and positioner. The Test Equipment connection diagram below is applicable for NR radiated RRM tests. SS NR uses several antennas to cover all required AoA offsets. The actual number of antennas is not determined and depends on the TE implementation. Positioner in the TE part is optional.

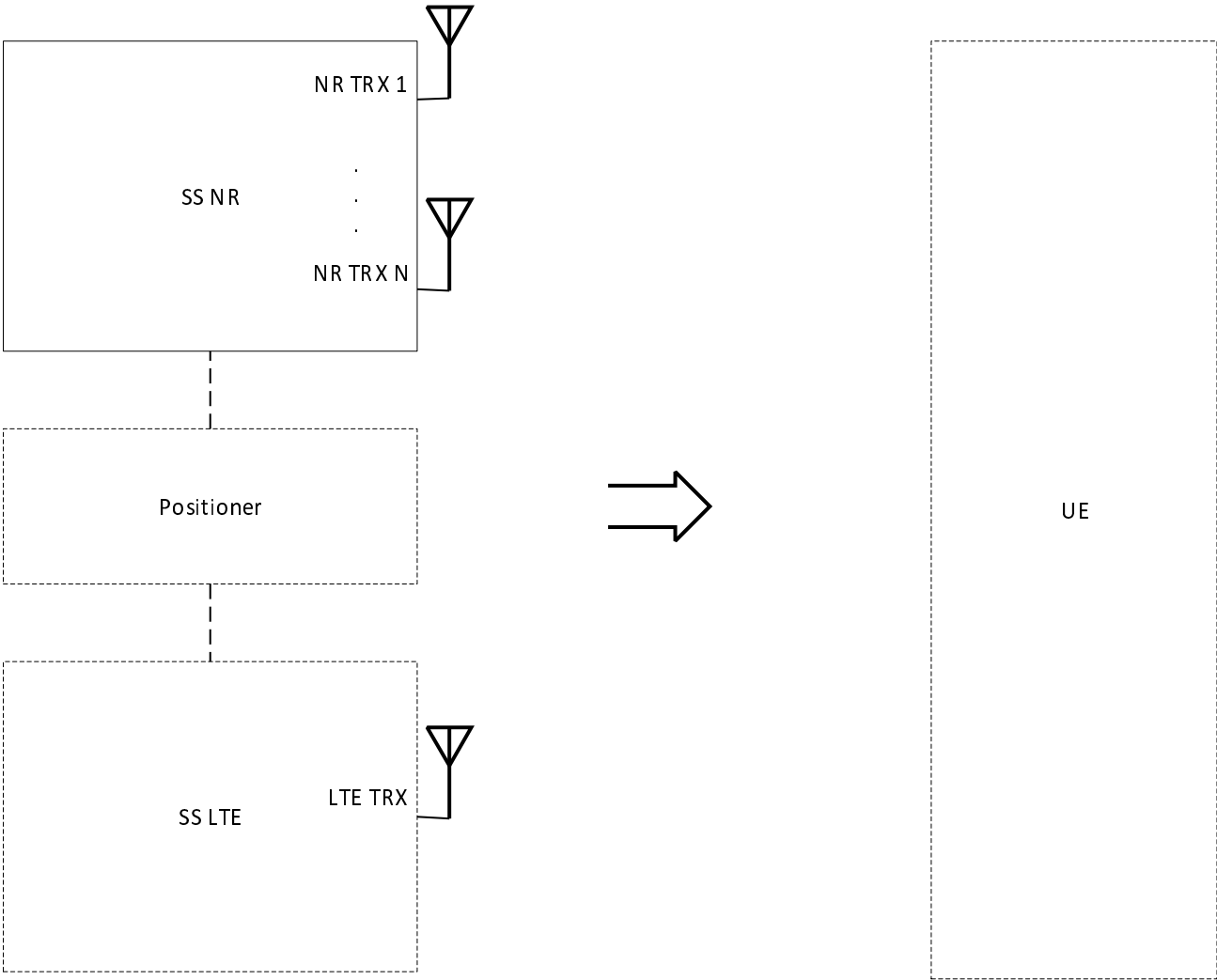


Figure A.3.3.3.1: TE diagram for radiated RRM tests

Figure A.3.3.3.1-1 shows the connection diagram inside the SS NR of Figure A.3.3.3.1 for downlink signal path (for single probe). 1x2 without fading in FR2 RRM test case represents the scenario with single antenna transmission from

TE side and 2 antenna receptions at UE side, which is equivalent to 1x1 in conducted test case from test equipment perspective.

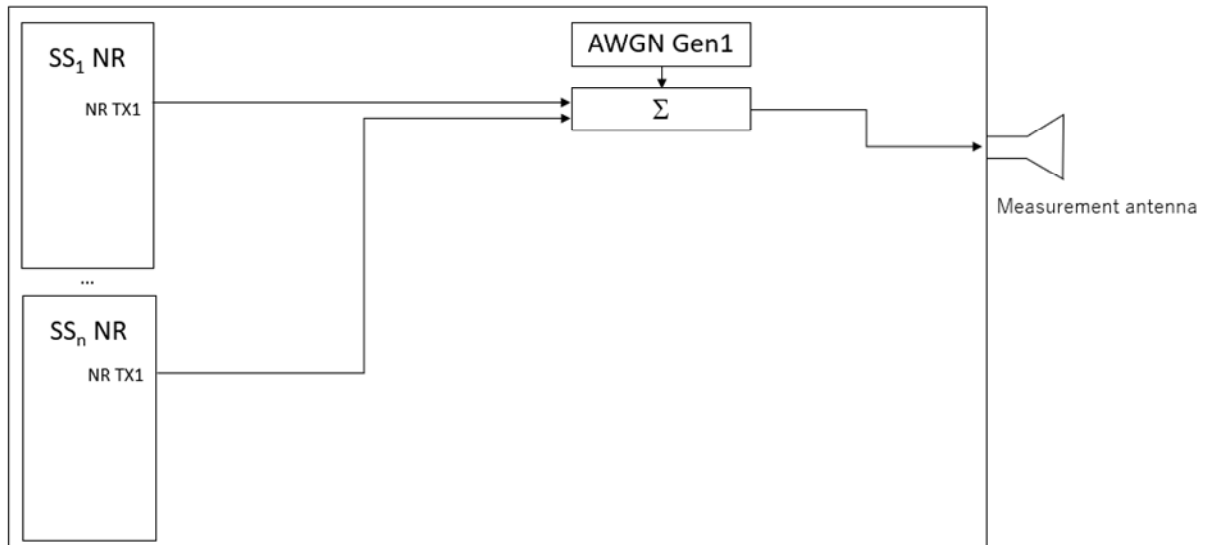


Figure A.3.3.3.1-1: TE diagram for radiated 1AoA RRM tests (1x2 without fading)

A.3.4 User Equipment Parts for Radiated Measurements

A.3.4.1 Basic Transmitter/Receiver tests

The User Equipment part is focused on logical representation of UE antenna(s), DUT positioner and positioner controller. The UE connection diagram below is applicable for NR radiated RX and TX tests, including CA and UL MIMO tests.

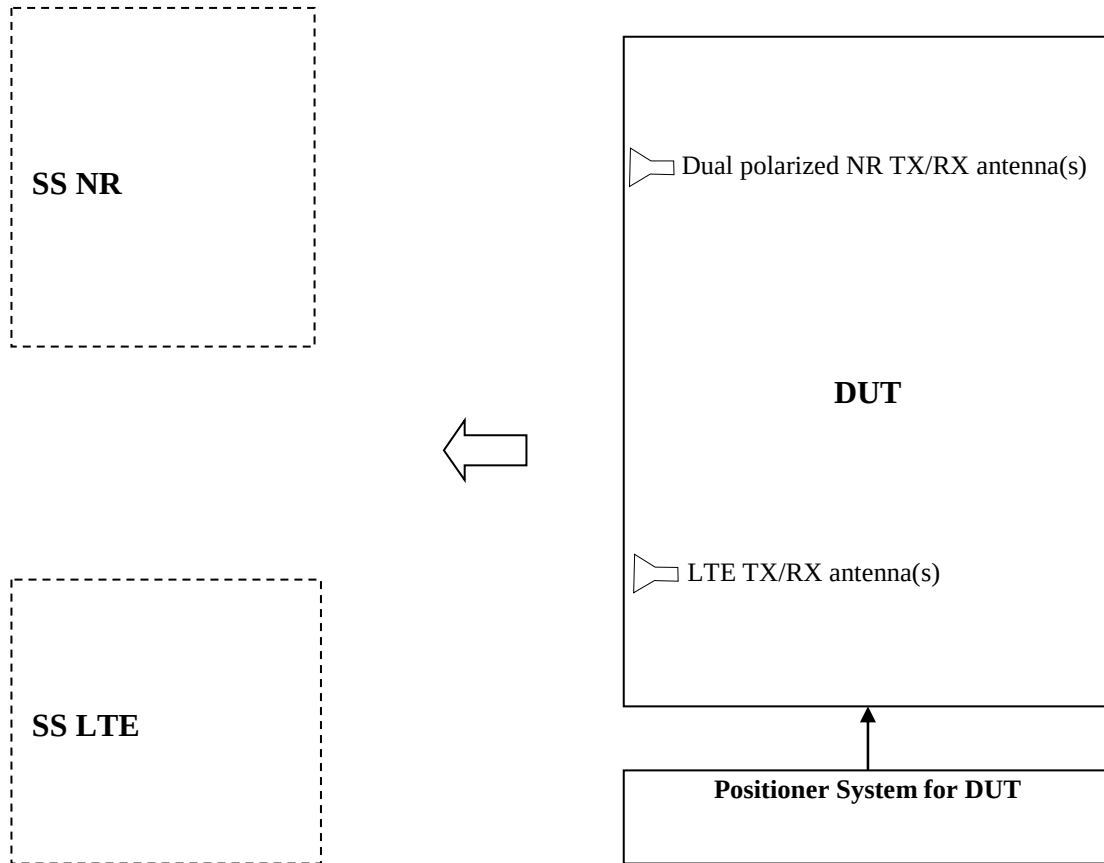


Figure A.3.4.1.1: UE diagram for radiated RX and TX tests

A.3.4.2 Demodulation and CSI tests

Same as Figure A.3.4.1.1.

A.3.4.3 RRM tests

Same as Figure A.3.4.1.1.

Annex B (normative):
Permitted test methods For OTA Testing

B.1 General

Editor's Note: The working assumption is that the DFF or IFF: CATR based OTA test methodologies defined in Annexes B.2.2 and B.2.4 respectively should be used for Signalling test.

The applicability of the permitted test methods herein is defined by the appropriate references within clauses 5, 6, and 7. A summary of the applicability is shown in Table B.1-1.

Table B.1-1: Permitted Test Methods Applicability Summary

Permitted Test Methods	UE RF	Demodulation	RRM	
			1 AoA	2 AoA
DFF	yes	yes	yes	yes
DFF Simplification	yes	yes	yes	N/A
IFF	yes	yes	yes	N/A
NFTF	yes (Note 1)	N/A	N/A	N/A
Enhanced IFF	yes	yes	yes	yes
IFF+DFF	yes	yes	yes	yes
Note 1: Not applicable for EIS, Frequency Error, EVM, Carrier Leakage, In-Band Emission, EVM SF, OBW as defined in Table J-1 of TS38.521-2 [15]				

B.2 Permitted Test Methods

B.2.1 General

The main objective of this annex is to specify basic parameters of permitted OTA test methods suitable for RF Tx and Rx, Performance, and RRM measurements and Signalling Conformance tests performed at high frequency in the FR2 operating bands defined in clause 4.3.1.2. The applicability of each OTA test method is summarized in Table B.1-1.

B.2.2 Direct far field (DFF)

B.2.2.1 Description

The DFF measurement setup for FR2 is capable of centre and off-centre of beam measurements and is shown in Figure B.2.2.1-1 below.

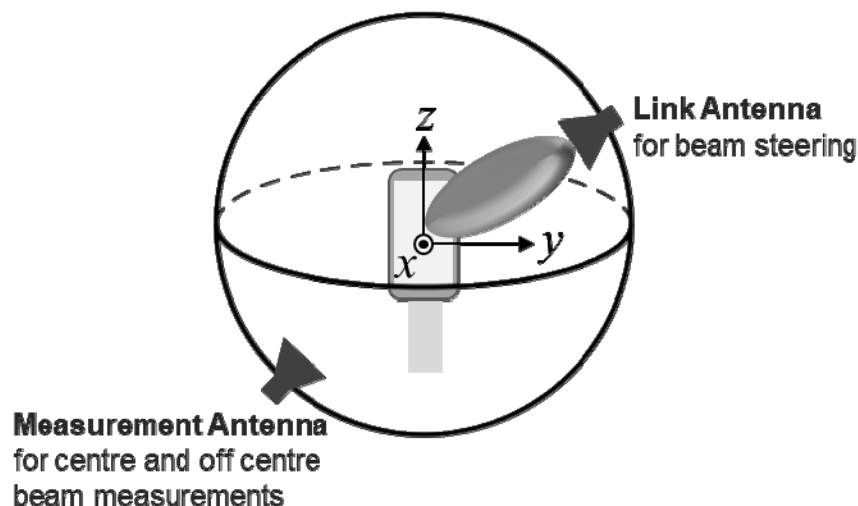


Figure B.2.2.1-1: DFF measurement setup

The key aspects of the DFF setup are:

- Far-field measurement system in an anechoic chamber
- The criterion for determining the far-field distance is described in B.2.2.4.
- A positioning system such that the angle between the dual-polarized measurement antenna and the DUT has at least two axes of freedom and maintains a polarization reference.
- A positioning system such that the angle between the link antenna and the DUT has at least two axes of freedom and maintains a polarization reference; this positioning system for the link antenna is in addition to the positioning system for the measurement antenna and provides for an angular relationship independently controllable from the measurement antenna.
- For setups intended for measurements of UE RF characteristics in non-standalone (NSA) mode with 1 UL configuration, an LTE link antenna is used to provide the LTE link to the DUT. The LTE link antenna provides a stable LTE signal without precise path loss or polarization control.
- For setups intended for measurements in NR CA mode with FR1 and FR2 inter-band NR CA, test setup provides NR FR1 link to the DUT. The NR FR1 link has a stable and noise-free signal without precise path loss or polarization control.

The applicability criteria of the DFF setup are:

- The DUT radiating aperture is $D \leq 5$ cm
- Either a single radiating aperture, multiple non-coherent apertures, or multiple coherent apertures DUTs can be tested
- If multiple antenna panels that are phase coherent are defined as a single array, the criterion on DUT radiating aperture applies to this single array
- D is based on the MU assessment in Annex B.1.1.3 of TR 38.810 [24]
- A measurement distance larger than the far-field criteria defined in B.2.2.4 is not precluded
- If the uncertainties can be further optimized, the MU may be reduced or D may be increased
- A manufacturer declaration on the following elements is needed unless the entire DUT size is contained in a sphere of diameter of ≤ 5 cm:

- Manufacturer declares antenna array size

For RRM testing, an example baseline system with two simultaneously active AoA ($N_{\text{MAX\_AoA}} = 2$) as defined in Clause 7.1.3 using a DFF setup is illustrated in Figure 2.2.1-2. Implementations of the RRM baseline system with only a subset of the probes are possible as long as the system can satisfy the relative angular relationships outlined in Clause 7.1.3.2.1.

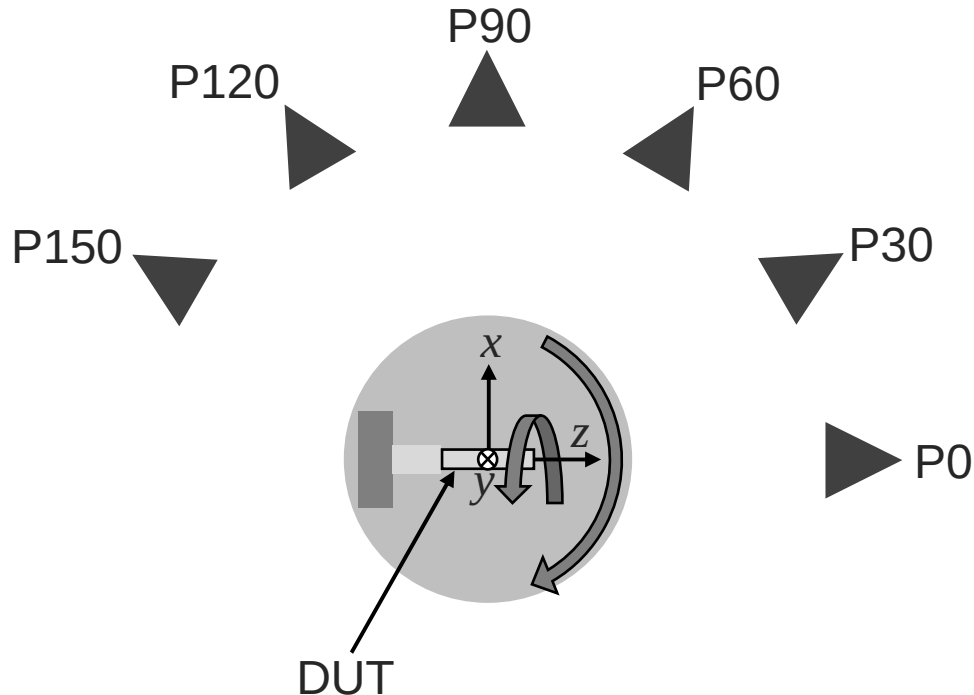


Figure B.2.2.1-2: Example RRM baseline system with two simultaneously active AoA using a DFF setup.

B.2.2.2 Quiet zone dimension

In order to allow testing of DUTs of different sizes and to allow for flexibility in test chamber implementations, there will be various defined quiet zone dimensions. The smallest quiet zone shall have a radius of 100mm to accommodate DUTs such as smartphones. The next larger quiet zone shall have a radius of 150mm to accommodate larger DUTs such as tablets. To test even larger devices, e.g., larger tablets and laptops, quiet zones with 200mm and 275mm are defined. The device types are listed as examples and other device types are not precluded.

The radiating portions of the device have to be fully enclosed within the quiet zone, but the non-radiating portions of the device can be located/placed outside the quiet zone if a vendor declaration with positioning reference points and the minimum QZ required to contain all active antennas within the quiet zone (per band) is provided. This grey-box testing approach where the declared reference point is aligned with the centre of the QZ is further illustrated in Figure B.2.2.2-1.

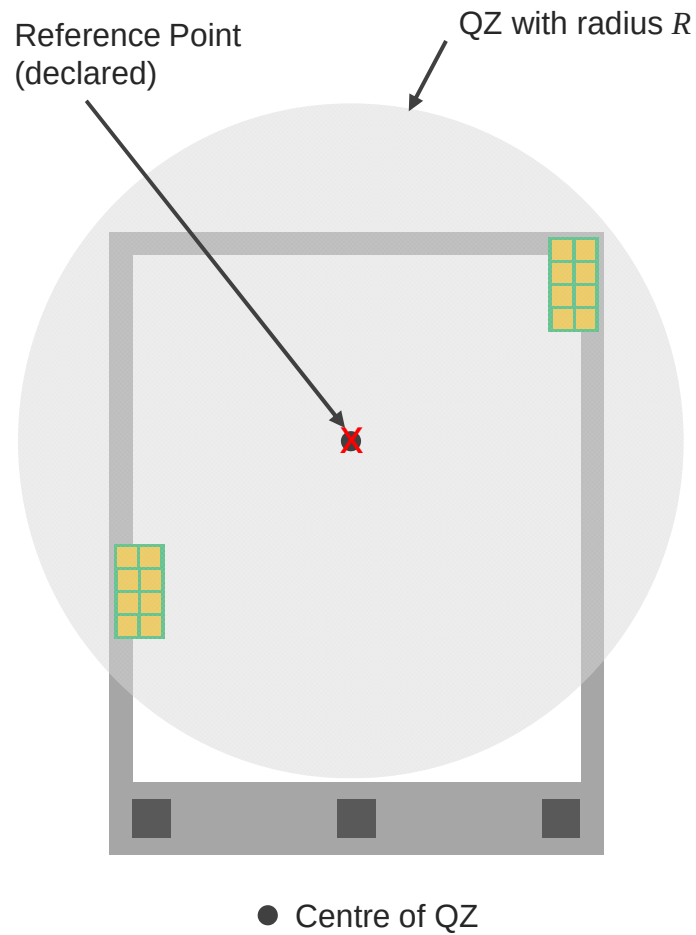


Figure B.2.2.2-1: Grey-box test approach

In the absence of a vendor declaration, the geometric centre of the DUT shall be aligned with the centre of the QZ and the DUT shall be fully contained within the QZ. This black-box testing approach is further illustrated in Figure B.2.2.2-2.

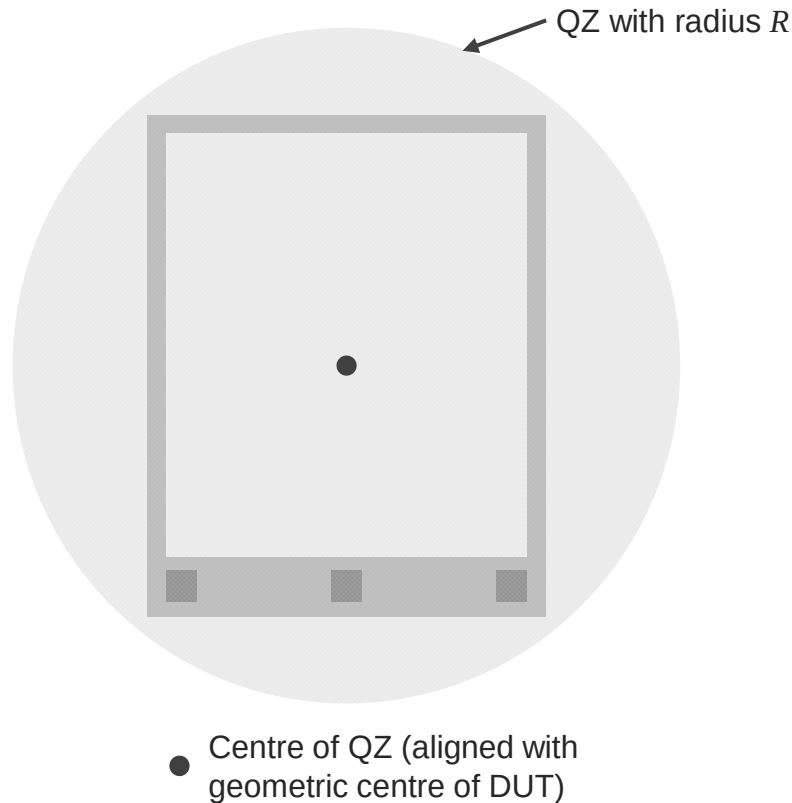


Figure B.2.2.2-2: Black-box test approach

B.2.2.3 Quality of the quiet zone

The quality of the quiet zone shall be measured for the frequencies defined in FFS. The measured quality of the quiet zone performance is used in uncertainty calculations for the appropriate quality of the quiet zone dimension utilized for the DUT.

B.2.2.4 Measurement Distance

For far-field measurements, the distance R between the DUT and the measurement antenna shall be calculated by the following equation.

$$R > \frac{2D^2}{\lambda}$$

where λ is the largest wavelength within the frequency band of interest and D is the diameter of the smallest sphere that encloses the radiating parts of the DUT.

For DFF, free space path loss is calculated by applying the Free Space Loss formula with R equal to the far field

distance: $\left(\frac{4\pi R}{\lambda}\right)^2$.

The minimum range length of a DFF system, i.e., the minimum distance between the centre of the quiet zone and the measurement antenna, needs to take into account the unknown offset of the antenna aperture from the centre of quiet zone in order to guarantee far-field conditions for any antenna array integrated inside the DUT. The distance between the centre of the quiet zone to the measurement antenna is referenced as R_{DFF} , while the radius of the quiet zone is R_{QZ} as illustrated in Figure B.2.2.4-1. The minimum distance between the antenna array integrated anywhere within the DUT and the measurement antenna needs to meet the far-field distance, $R_{\text{FF}} = 2D^2/\lambda$.

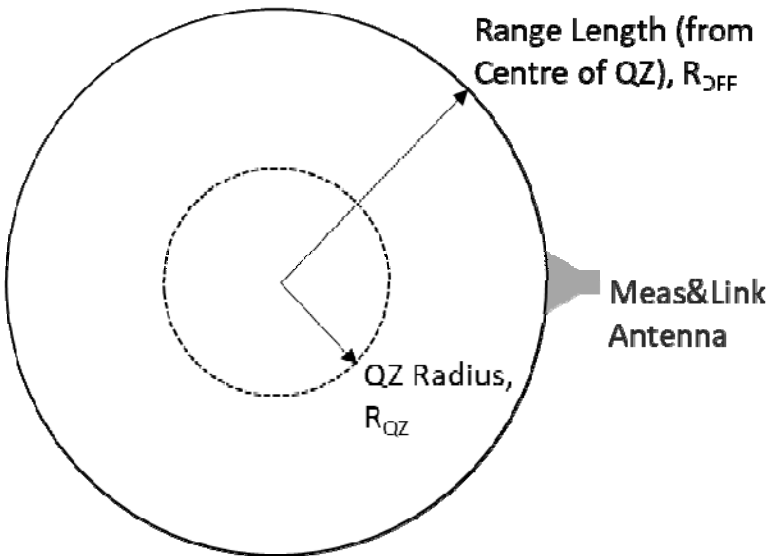


Figure B.2.2.4-1: Illustration of DFF System for range length definition

The setup in Figure B.2.2.4-2 is used to derive the minimum range length for NR FR2 DFF systems where the sphere enclosing the DUT matches the QZ and the DUT antenna with radiating aperture diameter D located in the corner of the DUT. With this setup, the minimum range length, R_{DFF} , can be determined as

$$R_{DFF} = R_{QZ} - D/2 + R_{FF} = R_{QZ} - D/2 + 2D^2/\lambda$$

which is tabulated in Table B.2.2.4-1 for two different QZ sizes assuming $D=5\text{cm}$.

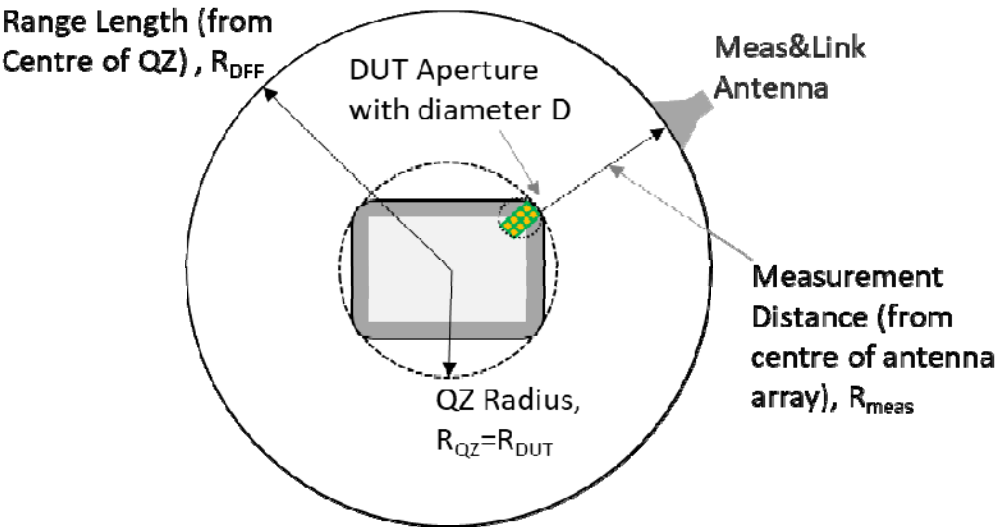


Figure B.2.2.4-2: Illustration of DFF System for minimum range length definition

Table B.2.2.4-1: Minimum Range Length of DFF System for $D = 5\text{cm}$

f [GHz] QZ [cm]	24.25	30	40	50	52.6
20	0.48	0.58	0.74	0.91	0.95

30	0.53	0.63	0.79	0.96	1.00

The influence of measurement distance on measurement uncertainty is discussed in Annex B.2.1 of TR 38.903 [XX].

B.2.3 Direct far field (DFF) setup simplification for centre of beam measurements

B.2.3.1 Description

The DFF setup in Annex B.2.2 can be simplified in the following way to perform centre of the beam measurements:

- The measurement and the link antenna can be combined so that the single antenna is used to steer the beam and to perform UE measurements.

The measurement setup for FR2 capable of centre of beam measurements is shown in Figure B.2.3.1-1 below.

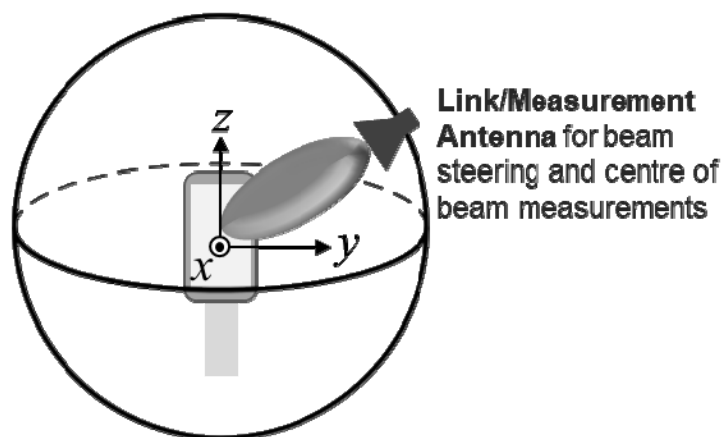


Figure B.2.3.1-1: DFF simplification for centre of beam measurement setup

The applicability criteria of the simplified DFF setup for centre of beam measurements are defined in B.2.2.1.

B.2.3.2 Quiet zone dimension

Same as Annex B.2.2.2.

B.2.3.3 Quality of the quiet zone

Same as Annex B.2.2.3.

B.2.3.4 Measurement Distance

Same as Annex B.2.2.4.

B.2.4 Indirect far field (IFF): Compact Antenna Test Range (CATR)

B.2.4.1 Description

The IFF method utilizing a compact antenna test range (CATR) creates the far field environment using a transformation with a parabolic reflector.

The IFF CATR measurement setup for FR2 is capable of centre and off-centre of beam measurements and an example setup is shown in Figure B.2.4.1-1 below. The relative orientation of the coordinate system with respect to the reflector and the axes of rotation apply to any CATR measurement setup.

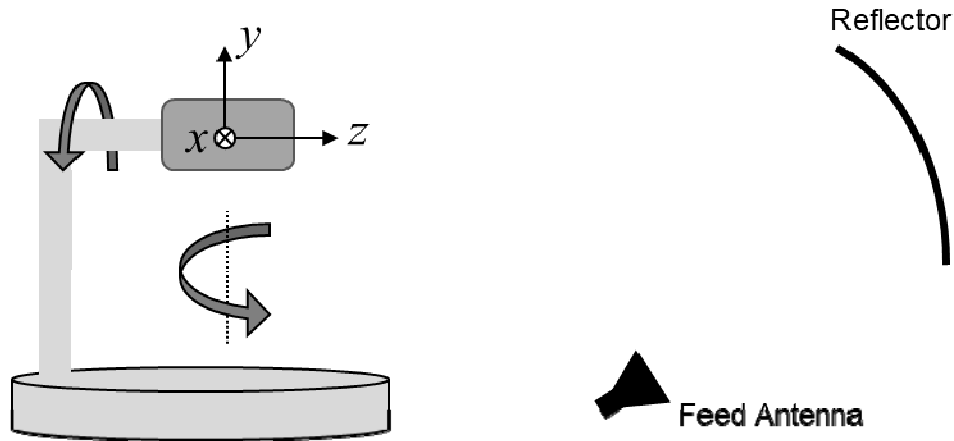


Figure B.2.4.1-1: Example of IFF: CATR measurement setup

The key aspects of this test method setup are:

- Indirect Far Field using Compact Antenna Test Range as described in TR 38.810 [24] with quiet zone diameter that meets the requirements of B.2.4.2.
- A positioning system such that the angle between the dual-polarized measurement antenna and the DUT has at least two axes of freedom and maintains a polarization reference.
- Before performing the UE Beamlock Test Function as defined in clause 4.9.2, the measurement probe acts as a link antenna maintaining polarization reference with respect to the DUT. Once the beam is locked then the link is to be passed to the link antenna which maintains reliable signal level with respect to the DUT.
- For setups intended for measurements of UE RF characteristics in non-standalone (NSA) mode with 1UL configuration, an LTE link antenna is used to provide the LTE link to the DUT. The LTE link antenna provides a stable LTE signal without precise path loss or polarization control.
- For setups intended for measurements in NR CA mode with FR1 and FR2 inter-band NR CA, test setup provides NR FR1 link to the DUT. The NR FR1 link has a stable and noise-free signal without precise path loss or polarization control.

The applicability criteria of this test method are:

- The total test volume, i.e., the quiet zone is defined as a sphere with radius R.
- DUT must fit within the quiet zone for the entire duration of the test.
- Either a single radiating aperture, multiple non-coherent apertures or multiple coherent apertures DUTs can be tested.
- No manufacturer declaration of the antenna array size is needed.

B.2.4.2 Quiet zone dimension

Same as Annex B.2.2.2.

B.2.4.3 Quality of the quiet zone

Same as Annex B.2.2.3.

B.2.4.4 Measurement Distance

The CATR system does not require a measurement distance of $R > \frac{2D^2}{\lambda}$ to achieve a plane wave as in a standard far field range.

For the CATR system, the far-field distance is seen as the focal length. The focal length is the distance between the feed and the reflector of the CATR. Further information on the focal length of a CATR system can be found in clause 5.2.3.2 of TR 38.810 [24].

The measurement distance for any CATR system implementation shall be adequate to meet the quiet zone dimensions defined in B.2.4.2.

In a CATR, from the reflector to the quiet zone, there is a plane wave with no free space path loss.

For CATR, free space path loss is calculated by applying the Free Space Loss formula with R equal to the far field

distance based on the focal length: $\left(\frac{4\pi R}{\lambda}\right)^2$.

A summary of the comparison of path losses which can be expected for the CATR compared to a Fraunhofer limit

distance ($R > \frac{2D^2}{\lambda}$) for different antenna sizes and frequencies can be found in clause 5.2.3.2 of TR 38.810 [24].

The influence of measurement distance on measurement uncertainty can be considered as zero as defined in Annex B.2.2 of TR 38.903 [XX].

B.2.5 Near field to far field transform (NFTF)

B.2.5.1 Description

The NFTF method computes the metrics defined in Far Field by using the Near Field to Far Field transformation.

The NFTF measurement setup of UE RF characteristics for FR2 is capable of centre and off centre of beam measurements and an example setup is shown in Figure B.2.5.1-1:

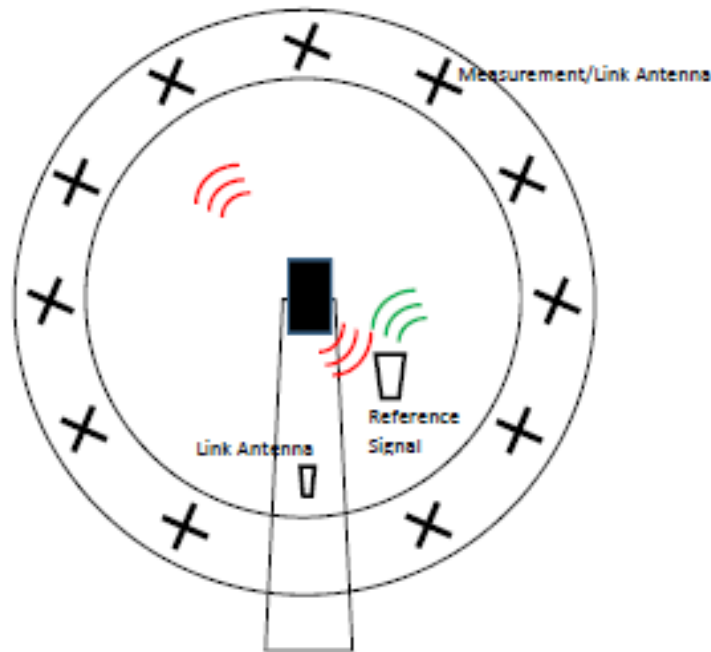


Figure B.2.5.1-1: Example of NTF measurement setup

The key aspects of the Near Field test range are:

- Radiated Near Field UE beam pattern is measured and based on the NTF mathematical transform, the final metric such as EIRP is the same as the metric for the baseline setup
- A positioning system such as the angle between the dual-polarized measurement/link antenna and the DUT has at least two axes of freedom and maintains a polarization reference
- For setups intended for measurements of UE RF characteristics in non-standalone (NSA) mode with 1UL configuration, an LTE link antenna is used to provide the LTE link to the DUT. The LTE link antenna provides a stable LTE signal without precise path loss or polarization control.
- For setups intended for measurements in NR CA mode with FR1 and FR2 inter-band NR CA, test setup provides NR FR1 link to the DUT. The NR FR1 link has a stable and noise-free signal without precise path loss or polarization control.

The applicability criteria of the NTF setup are:

- The DUT radiating aperture is $D \leq 5$ cm
 - Either a single radiating aperture, multiple non-coherent apertures or multiple coherent apertures DUTs can be tested
 - If multiple antenna panels that are phase coherent are defined as a single array, the criterion on DUT radiating aperture applies to this single array
 - D is based on the MU assessment in Annex B.1.4.3 of TR 38.810 [24]
 - If the uncertainties can be further optimized, the MU may be reduced or D may be increased
- A manufacturer declaration on the following elements is needed unless the entire DUT size is contained in a sphere of diameter of ≤ 5 cm:
 - Manufacturer declares antenna array size
- EIRP, TRP, and spurious emissions metrics can be tested.

B.2.5.2 Quiet zone dimension

Same as Annex B.2.2.2.

B.2.5.3 Quality of the quiet zone

Same as Annex B.2.2.3.

B.2.5.4 Measurement Distance

The NFFT system does not require a measurement distance of $R > \frac{2D^2}{\lambda}$ as in a standard far field range due to the use of the Near Field to Far Field transformation.

The measurement distance for any NFFT system implementation shall ensure that the DUT is not measured in the reactive near-field region and is adequate to meet the quiet zone dimensions defined in B.2.5.2.

B.2.6 Enhanced IFF

B.2.6.1 Description

The Enhanced IFF method utilizing multiple compact antenna test ranges (CATRs) creates the far field environment using a transformation with 2 or more parabolic reflectors for RRM testing with two simultaneously active AoA ($N_{MAX\_AoAs} = 2$) as defined in Clause 7.1.3.

An example RRM baseline system using an Enhanced IFF setup are shown in Figure B.2.6.1-1. Implementations of the RRM baseline system with only a subset of the reflectors/probes are possible as long as the system can satisfy the relative angular relationships outlined in Clause 7.1.3.2.1.

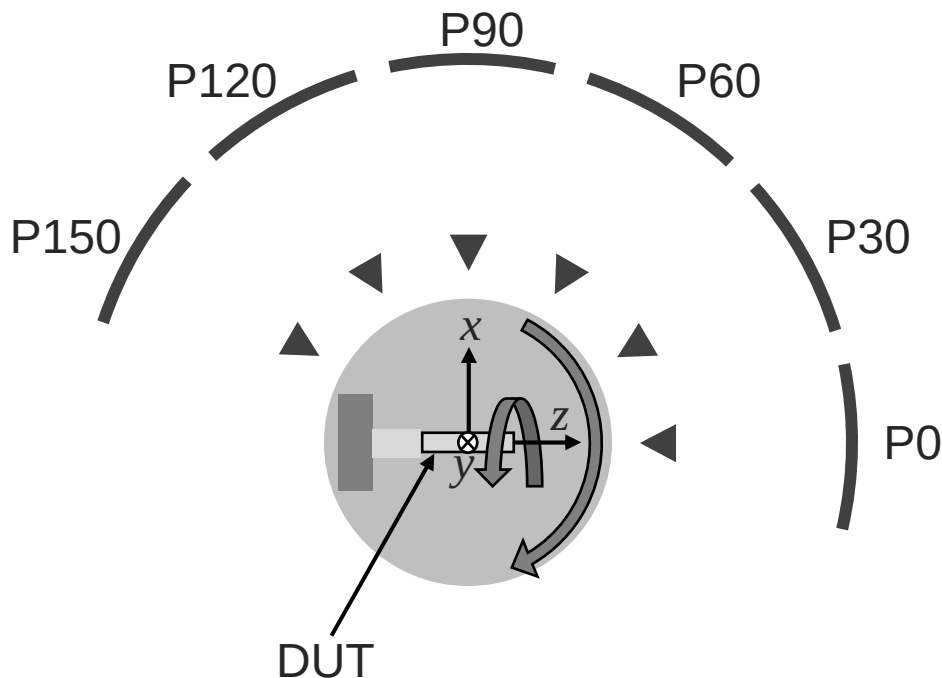


Figure B.2.6.1-1: Example RRM baseline system with two simultaneously active AoA using an Enhanced IFF setup

The key aspects of this test method setup are the same as the IFF setup, outlined in Clause B.2.4.1.

B.2.6.2 Quiet zone dimension

Same as Clause B.2.2.2.

B.2.6.3 Quality of the quiet zone

Same as Clause B.2.2.3.

B.2.6.4 Measurement Distance

Same as Clause B.2.4.4.

B.2.7 IFF+DFF

B.2.7.1 Description

The IFF+DFF method is utilizing a combination of compact antenna test ranges (CATRs) and DFF probes for RRM testing with two simultaneously active AoA ($N_{MAX\_AoAs} = 2$) as defined in Clause 7.1.3.

An example RRM baseline system using the IFF+DFF setup is shown in Figure B.2.7.1-1. Implementations of the RRM baseline system with only a subset of the probes are possible as long as the system can satisfy the relative angular relationships outlined in Clause 7.1.3.2.1.

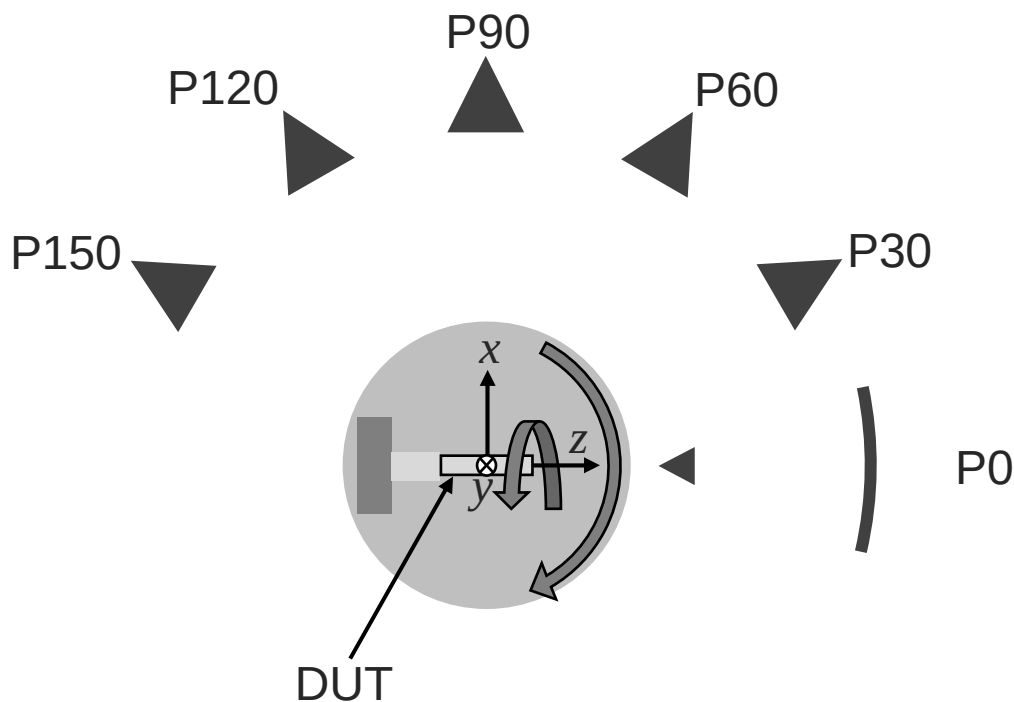


Figure B.2.7.1-1: Example RRM baseline system with two simultaneously active AoA using an IFF+DFF setup

The key aspects of this test method setup are the same as the IFF setup for the probes based on the IFF method, outlined in B.2.4.1 and the DFF setup for the probes based on the DFF method, outlined in Clause B.2.2.1.

B.2.7.2 Quiet zone dimension

Same as Clause B.2.2.2.

B.2.7.3 Quality of the quiet zone

Same as Clause B.2.2.3.

B.2.7.4 Measurement Distance

Same as Clause B.2.4.4 for the IFF setup for the probes based on the IFF method and Clause B.2.2.4 for the DFF setup for the probes based on the DFF method.

Annex C (informative): Calculation of test frequencies

C.0 General

Test frequencies are defined in clause 4.3.1 with extensions for signalling test cases in clause 6.2.3. This annex gives a guideline to determine these test frequencies and the associated signalling parameters for a given NR band, NR CA or NR DC band combination.

Clause C.1 describes definitions and parameters used by the procedures to determine test frequencies, SS/PBCH Block (SSB) and CORESET#0 configuration parameters.

Clause C.2 describes how to calculate test frequencies for symmetric NR bands, asymmetric NR bands, NR CA and NR DC configurations.

Clause C.3.2 describes how to determine the SSB, CORESET#0 and signalling parameters for FR1 carriers with SCS=15 kHz or SCS=30 kHz, and for FR2 carriers with SCS=60 kHz or SCS=120 kHz. CORESET#0 is required for a carrier to be used as a Pcell.

Clause C.3.3 describes how to determine the SSB and signalling parameters for a carriers without CORESET#0.

Clause C.5 describes how to calculate test frequencies for NR V2X bands.

C.1 Definitions and Parameters

Figure C.1-1 shows SSB and CORESET#0 and related parameters. CORESET#0 is required for a carrier to be used as a PCell.

F_{SSref}	Centre frequency of SSB. For a cell selectable as PCell the F_{SSref} corresponds to a valid GSCN value according to clause 5.4.3.1 of TS 38.101-1 [7] and TS 38.101-2 [8].
$\Delta F_{Offset(RBs)}$	$\Delta F_{Offset(RBs)} = 12 * Offset(RBs) * subCarrierSpacingCommon$, where $Offset(RBs)$ is given in tables 13-1 to 13-10 of TS 38.213 [22].
ΔF_{kSSB}	$\Delta F_{kSSB} = k_{SSB} * \{15 \text{ kHz for FR1, } subCarrierSpacingCommon \text{ (MIB) for FR2}\}$ (TS 38.211 [3], clause 7.4.3.1)
$\Delta F_{OffsetSSB-CORESET0}$	Frequency offset between the lowest subcarrier of the SSB and the lowest subcarrier of CORESET#0. $\Delta F_{OffsetSSB-CORESET0} = \Delta F_{Offset(RBs)} + \Delta F_{kSSB}$.
$\Delta F_{OffsetCORESET0-Carrier}$	Frequency offset, $F_{OffsetCORESET0-Carrier}$, between the lowest subcarrier of CORESET#0 and the lowest subcarrier of the carrier.
$\Delta F_{OffsetSSB-Carrier}$	Frequency offset between the lowest subcarrier of the SSB and the lowest subcarrier of the carrier.
$F_{CORESET0Low}$	Centre frequency of subcarrier 0 of CORESET#0.
$F_{OffsetToPointA}$	Frequency of the lowest subcarrier of the lowest resource block, which has the subcarrier spacing provided by the higher-layer parameter $subCarrierSpacingCommon$ and overlaps with the SS/PBCH block used by the UE for initial cell selection, expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2 (TS 38.211 [29] clause 4.4.4.2).
$\Delta F_{OffsetToPointA}$	Frequency offset between $F_{OffsetToPointA}$ and point A. $\Delta F_{OffsetToPointA} = offsetToPointA * \{15 \text{ kHz for FR1; } 60 \text{ kHz for FR2}\}$ (TS 38.211 [29] clause 4.4.4.2).

Additional parameters used in this annex are defined in Table C.1-2.

Table C.1-2: Definition of additional parameters used in Annex C.

k_{SSB}	As defined in TS 38.211 [29] clause 7.4.3.1
$SCS_{Carrier}$	Subcarrier spacing for the carrier (<i>SCS-SpecificCarrier</i>): FR1: 15kHz, 30kHz or 60kHz according to TS 38.101-1 [7] Table 5.3.5-1 FR2: 60kHz or 120kHz according to TS 38.101-2 [8] Table 5.3.5-1
SCS_{SSB}	SS/PBCH block subcarrier spacing FR1: 15kHz or 30kHz according to TS 38.101-1 [7] Table 5.4.3.3-1 FR2: 120kHz or 240kHz according to TS 38.101-2 [8] Table 5.4.3.3-1 NOTE: According to the tables in clause 13 of TS 38.213 [22] not all combinations of SCS_{SSB} and $SCS_{Carrier}$ are applicable.
SCS_{common}	Subcarrier spacing for SIB1, Msg.2/4 for initial access, paging and broadcast SI-messages. Provided to the UE in the MIB in IE <i>subCarrierSpacingCommon</i> .
PRB_{size}	Physical Resource Block size of the carrier = $12 * SCS_{Carrier}$.
CRB_{size}	Common Resource Block size = $12 * SCS_{common}$.
F_{DL_Low}, F_{UL_Low}	Lowest frequency of the downlink and uplink frequency range of the band as defined in clause 5.2 of TS 38.101-1 [7] and TS 38.101-2 [8].
F_{DL_High}, F_{UL_High}	Highest frequency of the downlink and uplink frequency range of the band as defined in clause 5.2 of TS 38.101-1 [7] and TS 38.101-2 [8].
ΔF_{Raster}	Frequency raster of the band as defined in clause 5.4.2.3 of TS 38.101-1 [7] and TS 38.101-2 [8].
BW_{DL}	Bandwidth of downlink frequency range of the band.
BW_{UL}	Bandwidth of uplink frequency range of the band.
CBW_{DL}	Downlink channel bandwidth (MHz) of the carrier according to Table 5.3.2-1 of TS 38.101-1 [7] and TS 38.101-2 [8].
CBW_{UL}	Uplink channel bandwidth (MHz) of the carrier according to Table 5.3.2-1 of TS 38.101-1 [7] and TS 38.101-2 [8].
$F_{Tx-Rx\_separation}$	Default Tx – Rx carrier centre frequency separation of the band as defined in clause 5.4.4 of TS 38.101-1 [7]. For TDD bands $F_{Tx-Rx\_separation} = 0$.
$\Delta F_{Tx-Rx\_separation}$	$\Delta F_{Tx-Rx_separation} = |(BW_{DL} - BW_{UL})/2|$ is the deviation to the default Tx-Rx carrier centre frequency separation ($F_{Tx-Rx\_separation}$) for FDD FR1 bands supporting asymmetric channel bandwidths as defined in clause 5.3.6 of TS 38.101-1 [7].
BW_{SSB}	Bandwidth of the SSB. $BW_{SSB} = 12 * SCS_{SSB} * 20$.
$\Delta GSCN, GSCN_{MIN}, GSCN_{MAX}$	GSCN step size, GSCN minimum and GSCN maximum values for the NR band according to table 5.4.3.3-1 of TS 38.101-1 [7] and TS 38.101-2 [8]
$Offset_{RBs}$	Offset (RBs) according to the applicable table 13-1 to 13-10 in TS 38.213 [22] for the given band and $\{SCS_{SSB}, SCS_{Carrier}\}$ combination of the carrier.
$Offset_{RBs,max}$	Maximum value for Offset (RBs) according to the applicable table 13-1 to 13-10 in TS 38.213 [22] for the given band and $\{SCS_{SSB}, SCS_{Carrier}\}$ combination of the

	carrier limited to the table indexes with number of RBs $N_{RB}^{CORESET}$ equal to the maximum value of $N_{RB}^{CORESET}$ in the table.
Offset _{RBs,min}	Minimum value for Offset (RBs) according to the applicable table 13-1 to 13-10 in TS 38.213 [22] for the given band and {SCS _{SSB} , SCS _{Carrier} } combination of the carrier limited to the table indexes with number of RBs $N_{RB}^{CORESET}$ equal to the minimum value of $N_{RB}^{CORESET}$ in the table.

C.2 Determination of test frequencies

C.2.0 General

Test frequencies are determined as:

For symmetric NR bands (supporting same bandwidth in UL and DL):

- test frequencies for the supported symmetric channel bandwidth combinations are determined as described in clause C.2.1; and
- the test frequencies for the supported asymmetric channel bandwidth combinations are determined as described in clause C.2.3.

For asymmetric NR bands (supporting different bandwidth in UL and DL):

- the test frequencies for the supported symmetric channel bandwidth combinations are determined as described in clause C.2.2; and
- the test frequencies for the supported asymmetric channel bandwidth combinations are determined as described in clause C.2.3.

For NR CA and NR DC:

- the test frequencies are determined as described in the relevant subclause in C.2.4 depending to the type of configuration.

The carrier test frequencies are determined considering the channel raster according to clause 5.4.2.3 in TS 38.101-1 [7] for FR1 and in TS 38.101-2 [8] for FR2.

C.2.1 Determination of test frequencies for symmetric NR bands and symmetric uplink and downlink channel bandwidth combinations

C.2.1.1 Determination of test frequencies for Low-, Mid- and High-Range

Downlink:

$F_{DL\_LowRange} = \text{Ceil}((F_{DL\_Low} + CBW_{DL}/2) / \Delta F_{Raster}) * \Delta F_{Raster}$	C.2.1.1-Eq1
$F_{DL\_MidRange} = \text{Round}((F_{DL\_Low} + BW_{DL}/2) / \Delta F_{Raster}) * \Delta F_{Raster}$	C.2.1.1-Eq2
$F_{DL\_HighRange} = \text{Floor}((F_{DL\_High} - CBW_{DL}/2) / \Delta F_{Raster}) * \Delta F_{Raster}$	C.2.1.1-Eq3

$F_{DL\_LowRange}$ is rounded up and $F_{DL\_HighRange}$ is rounded down to obey to the minimum guard band according to clause 5.3.3 of TS 38.101-1 [7] and TS 38.101-2 [8].

Uplink:

$F_{UL\_LowRange} = F_{DL\_LowRange} - F_{Tx-Rx\_separation}$	C.2.1.1-Eq4
$F_{UL\_MidRange} = F_{DL\_MidRange} - F_{Tx-Rx\_separation}$	C.2.1.1-Eq5
$F_{UL\_HighRange} = F_{DL\_HighRange} - F_{Tx-Rx\_separation}$	C.2.1.1-Eq6

For those FDD frequency bands with two UL sub-bands, $F_{\text{Tx-Rx\_separation}}$ shall be chosen using the following criteria:

- For Low-Range and Mid-Range, use $F_{\text{Tx-Rx\_separation}}$ for lower UL sub-band.
- For High-Range, use $F_{\text{Tx-Rx\_separation}}$ for higher UL sub-band.

For NTN frequency bands, the test frequencies for flexible Tx-Rx separation tests, $F_{\text{Tx-Rx\_separation}}$ shall be chosen using the following criteria:

- For Low-Range, use smallest $F_{\text{Tx-Rx\_separation}}$.
- For Mid-Range, use default $F_{\text{Tx-Rx\_separation}}$ - 1 MHz.
- For High-Range, use largest $F_{\text{Tx-Rx\_separation}}$.

C.2.1.2 Determination test frequencies for of Mid-Low and Mid-High-Range for signalling tests

$F_{\text{Mid-LowRange}} = \text{Round}((F_{\text{LowRange}} + (F_{\text{HighRange}} - F_{\text{LowRange}})/3) / \Delta F_{\text{Raster}}) * \Delta F_{\text{Raster}}$	C.2.1.2-Eq1
$F_{\text{Mid-HighRange}} = \text{Round}((F_{\text{LowRange}} + 2*(F_{\text{HighRange}} - F_{\text{LowRange}})/3) / \Delta F_{\text{Raster}}) * \Delta F_{\text{Raster}}$	C.2.1.2-Eq2

C.2.2 Determination of test frequencies for asymmetric NR bands and symmetric uplink and downlink channel bandwidth combinations

Determination of test frequencies for asymmetric NR bands, and symmetric uplink and downlink channel bandwidth combinations are determined using the procedure in clause C.2.3 with $\Delta F_{\text{Tx-Rx}} = 0$.

C.2.3 Determination of test frequencies for asymmetric uplink and downlink channel bandwidth combinations

C.2.3.1 General

The following procedure is used to calculate test frequencies for NR bands supporting asymmetric UL and DL channel bandwidths as described below, where CBW_{UL} and CBW_{DL} refer to the carrier's UL and DL channel bandwidths; and BW_{UL} and BW_{DL} refer to the band's total UL and DL bandwidths.

The procedure is also used to calculate test frequencies for symmetric UL and DL bandwidth combinations for asymmetric NR bands.

For FDD bands supporting asymmetric uplink and downlink bandwidth combinations a deviation of $\Delta F_{\text{Tx-Rx}}$ (C.2.3.1-Eq1) is to be added to the nominal Tx-Rx carrier centre frequency separation, $F_{\text{Tx-Rx\_separation}}$ (TS 38.101-1 [7] clause 5.3.6) unless, for such asymmetric uplink and downlink bandwidth combination, it is explicitly stated that $\Delta F_{\text{Tx-Rx}}$ as defined in clause 5.3.6 does not apply according to TS 38.101-1 [7] Table 7.3.2-3 (Uplink configuration for reference sensitivity).

$\Delta F_{\text{Tx-Rx}} = |(\text{CBW}_{\text{DL}} - \text{CBW}_{\text{UL}})/2|$	C.2.3.1-Eq1

For the case of asymmetric NR bands and symmetric UL and DL bandwidth combinations no additional deviation $\Delta F_{\text{Tx-Rx}}$ is applied. To meet the Tx-Rx frequency separation requirement for asymmetric NR bands where the supported overall UL bandwidth is smaller than the supported overall DL bandwidth, it may not be possible to cover the full DL frequency range for all UL and DL channel bandwidth combinations. For CA when such band is only used for DL CC the full range can be used for all DL channel bandwidths.

To maximize the tested frequency range for the non-CA case, the UL frequency range, as being smaller than the DL frequency range, needs to be used as the starting point to calculate the uplink and downlink test frequencies.

C.2.3.2 Determination of Low-, Mid- and High-Range for asymmetric uplink and downlink bandwidth combinations

For FDD bands, the following procedure is used to determine the test frequencies for Low-, Mid- and High-Range for bands supporting asymmetric UL and DL bandwidth combinations.

1. Calculate uplink carrier centre frequencies:

$F_{UL\_LowRange} = \text{Ceil}((F_{UL\_Low} + CBW_{UL/2}) / \Delta F_{Raster}) * \Delta F_{Raster}$	C.2.3.2-Eq1
$F_{UL\_MidRange} = \text{Round}((F_{UL\_Low} + BW_{UL\_Band}/2) / \Delta F_{Raster}) * \Delta F_{Raster}$	C.2.3.2-Eq2
$F_{UL\_HighRange} = \text{Floor}((F_{UL\_Low} + BW_{UL\_Band} - CBW_{UL/2}) / \Delta F_{Raster}) * \Delta F_{Raster}$	C.2.3.2-Eq3

For those FDD frequency bands with two UL sub-bands, for Low- and Mid-Range, use lower sub-band and for High-Range use higher sub-band. In these cases, BW_{UL_Band} refers to the sub-band.

2. Calculate the downlink frequencies:

Calculate the DL carrier centre frequencies from the UL frequencies in step 1.

$F_{DL\_LowRange} = F_{UL\_LowRange} + F_{Tx-Rx\_separation} + \Delta F_{Tx-Rx}$	C.2.3.2-Eq4
$F_{DL\_MidRange} = F_{UL\_MidRange} + F_{Tx-Rx\_separation} + \Delta F_{Tx-Rx}$	C.2.3.2-Eq5
$F_{DL\_HighRange} = F_{UL\_HighRange} + F_{Tx-Rx\_separation} + \Delta F_{Tx-Rx}$	C.2.3.2-Eq6

For those FDD frequency bands where TX-RX carrier centre frequency separation can have multiple values, $F_{Tx-Rx\_separation}$ shall be chosen using the following criteria:

- For Low-Range, use $F_{Tx-Rx\_separation}$ that minimizes $F_{DL\_LowRange}$ for each SCS.
- For Mid-Range, use $F_{Tx-Rx\_separation}$ closer to $F_{DL\_LowRange} + (F_{DL\_HighRange} - F_{DL\_LowRange})/2$.
- For High-Range, use $F_{Tx-Rx\_separation}$ that maximizes $F_{DL\_HighRange}$ for each SCS.

3. Check that the calculated centre test frequencies in step 2 for the BW_{DL} fits within the bands DL frequency range:

If $F_{DL\_LowRange} - CBW_{DL}/2$ is smaller than the lowest frequency of the band then recalculate the minimum $F_{DL\_LowRange}$ and modify the associated $F_{UL\_LowRange}$, $F_{DL\_MidRange}$ and $F_{UL\_MidRange}$ as:

$F_{DL\_LowRange} = \text{Ceil}((F_{DL\_Low} + CBW_{DL}/2) / \Delta F_{Raster}) * \Delta F_{Raster}$	C.2.3.2-Eq7
$F_{UL\_LowRange} = F_{DL\_LowRange} - F_{Tx-Rx\_separation} - \Delta F_{Tx-Rx}$	C.2.3.2-Eq8
$F_{DL\_MidRange} = \text{Round}((F_{DL\_LowRange} + F_{DL\_HighRange})/2 / \Delta F_{Raster}) * \Delta F_{Raster}$	C.2.3.2-Eq8a
$F_{UL\_MidRange} = F_{DL\_MidRange} - F_{Tx-Rx\_separation} - \Delta F_{Tx-Rx}$	C.2.3.2-Eq8b

If $F_{DL\_HighRange} + CBW_{DL}/2$ is larger than the higher frequency of the band then recalculate the maximum $F_{DL\_HighRange}$ and modify the associated $F_{UL\_HighRange}$, $F_{DL\_MidRange}$ and $F_{UL\_MidRange}$ as:

$F_{DL\_HighRange} = \text{Floor}((F_{DL\_Low} + BW_{DL\_Band} - CBW_{DL}/2) / \Delta F_{Raster}) * \Delta F_{Raster}$	C.2.3.2-Eq9
$F_{UL\_HighRange} = F_{DL\_HighRange} - F_{Tx-Rx\_separation} - \Delta F_{Tx-Rx}$	C.2.3.2-Eq10
$F_{DL\_MidRange} = \text{Round}((F_{DL\_LowRange} + F_{DL\_HighRange})/2 / \Delta F_{Raster}) * \Delta F_{Raster}$	C.2.3.2-Eq11
$F_{UL\_MidRange} = F_{DL\_MidRange} - F_{Tx-Rx\_separation} - \Delta F_{Tx-Rx}$	C.2.3.2-Eq12

For TDD bands where $CBW_{UL} < CBW_{DL}$, the following procedure is used to determine the test frequencies for Low-, Mid- and High-Range for bands supporting asymmetric UL and DL bandwidth combinations.

1. Apply exceptions to CBW_{UL} or CBW_{DL} or corresponding N_{RB} if defined in TS 38.101-1 [7], Table 5.3.6-2.
2. Follow the equations defined in section C.2.1.1.

For TDD bands where $CBW_{UL} > CBW_{DL}$, the following procedure is used to determine the test frequencies for Low-, Mid- and High-Range for bands supporting asymmetric UL and DL bandwidth combinations.

1. Apply exceptions to CBW_{UL} or CBW_{DL} or corresponding N_{RB} if defined in TS 38.101-1 [7], Table 5.3.6-2.

2. Calculate uplink carrier centre frequencies:

$F_{UL\_LowRange} = \text{Ceil}((F_{UL\_Low} + CBW_{UL}/2) / \Delta F_{Raster}) * \Delta F_{Raster}$	C.2.3.2-Eq13
$F_{UL\_MidRange} = \text{Round}((F_{UL\_Low} + BW_{UL}/2) / \Delta F_{Raster}) * \Delta F_{Raster}$	C.2.3.2-Eq14
$F_{UL\_HighRange} = \text{Floor}((F_{UL\_High} - CBW_{UL}/2) / \Delta F_{Raster}) * \Delta F_{Raster}$	C.2.3.2-Eq15

3. Calculate the downlink frequencies from the uplink frequencies in previous step:

$F_{DL\_LowRange} = F_{UL\_LowRange}$	C.2.3.2-Eq16
$F_{DL\_MidRange} = F_{UL\_MidRange}$	C.2.3.2-Eq17
$F_{DL\_HighRange} = F_{UL\_HighRange}$	C.2.3.2-Eq18

C.2.3.3 Determination of test frequencies for a Mid range adjacent inter-frequency cell for FR2 RRM multicell testing

The following procedure is used to determine the test frequencies for Mid-Range adjacent inter-frequency cell used for RRM FR2 NR multi-cell in NR SA and EN-DC test cases. The reason for using an adjacent inter-frequency cell to the Mid-range cell for FR2 instead of using Low- or High- Range test frequencies as used for FR1 is to reduce test system complexity.

In addition to the definition of parameters in clause C.1 the following parameters are used to calculate the test frequencies for the Mid adjacent inter-frequency cell:

Parameter	Description
F_{Mid}	Carrier centre frequency (MHz) of the Mid-range cell
CBW_{Mid}	Channel bandwidth (MHz) of the Mid-range cell
$CBW_{Adjacent}$	Channel bandwidth (MHz) of the adjacent cell

1. Calculate the Mid-range adjacent cell carrier centre frequencies:

$F_{MidRangeAdjacentCell} = \text{Ceil}((F_{Mid} + (CBW_{Mid} + CBW_{Adjacent})/2) / \Delta F_{Raster}) * \Delta F_{Raster}$	C.2.3.3-Eq1

2. Calculate SSB and CORESET#0 parameters as described in clause C.4.

C.2.4 Frequency determination for NR CA and NR DC configurations

C.2.4.1 Determination of test frequencies for NR Inter-band CA and NR DC

Test frequencies for NR Inter-band CA configurations and NR DC use the single carrier test frequencies for each of the included NR bands in the configuration as specified in clause 4.3.1.1.1 for FR1 bands and in clause 4.3.1.2.1 for FR2 bands.

C.2.4.2 Determination of test frequencies for NR Intra-band Contiguous CA

C.2.4.2.1 General

By default, test frequencies for NR Intra-band Contiguous CA in clause 4.3.1 are specified using the nominal channel spacing between the carrier components as specified in TS 38.101-1 [7] clause 5.4A.1 for FR1 and TS 38.101-2 [8] clause 5.4A.1 for FR2. In addition, some NR bands may have test frequencies specified based on an adjusted channel spacing as specified in in TS 38.101-1 [7] clause 5.4A.1 for FR1 and TS 38.101-2 [8] clause 5.4A.1 for FR2.

The test frequencies for NR Intra-band Contiguous CA with SCS=15kHz or SCS=30 kHz for FR1 and with SCS=60 kHz or SCS=120 kHz for FR2 is calculated for each CC such that the specific test cases can decide which CC is used as PCell. This means that all CC test frequencies is calculated with a CORESET#0 as specified in clause C.3.2.

The test frequencies for CCs with SCS=60 kHz for FR1 and with SCS=240 kHz for FR2 is calculated without CORESET#0 as specified in C.3.3. CCs with SCS=60 kHz for FR1 and with SCS=240 kHz for FR2 can only be used for NR Intra-band Contiguous CA configurations with mixed numerologies.

Note: For NR Intra-band Contiguous CA configurations for bands where Tx frequency range is lower than Rx frequency range the RAN4 requirements for reference sensitivity testing is specified having the PCC frequency lower than the SCC frequencies such that UL PRB maximise the Tx-Rx separation. This means that CC1 shall be used as PCell in the reference test case for bands where Tx frequency range is lower than Rx frequency range; and highest CC shall be used as PCell in the reference test case for bands where Tx frequency range is higher than Rx frequency range.

In addition to the definition of parameters in clause C.1 the following parameters are used to calculate carrier components (CC) test frequencies for NR Intra-band Contiguous and Non-contiguous CA configurations:

Parameter	Description
N_{CC}	Number of CCs in the for NR Intra-band configuration
$CCBW_{DL}(i)$	Channel bandwidth (MHz) of downlink CC(i), where $i = 1$ to N_{CC}
$F_{Channel\_Spacing}(i)$	Channel spacing between CC(i) and CC(i+1), where $i = 1$ to $(N_{CC}-1)$
$F_{offset,low}$	According to 38.101-1 [7], clause 5.3A.3
$F_{offset,high}$	According to 38.101-1 [7], clause 5.3A.3

C.2.4.2.2 Determination of test frequencies for Low-, Mid- and High-Range

Downlink CC(1), lowest frequency CC:

$F_{DL\_LowRange\_CC}(1)$ is rounded up and $F_{DL\_HighRange\_CC}(1)$ is rounded down to obey to the minimum guard band according to clause 5.3.3 of TS 38.101-1 [7] and TS 38.101-2 [8].

$F_{DL\_LowRange\_CC}(1) = \text{Ceil}((F_{DL\_Low} + F_{offset,low}) / \Delta F_{Raster}) * \Delta F_{Raster}$	C.2.4.2.2-Eq1
$F_{DL\_MidRange\_CC}(1) = \text{Round}((F_{DL\_Low} + BW_{DL}/2 - \sum_{k=1 \text{ to } (N_{CC})} CCBW_{DL}(k)/2 + CCBW_{DL}(1)/2) / \Delta F_{Raster}) * \Delta F_{Raster}$	C.2.4.2.2-Eq2
$F_{DL\_HighRange\_CC}(1) = \text{Floor}((F_{DL\_High} - \max(CCBW_{DL}(N_{CC})/2, F_{offset,high}) - \sum_{k=1 \text{ to } (N_{CC}-1)} F_{Channel\_Spacing}(k)) / \Delta F_{Raster}) * \Delta F_{Raster}$	C.2.4.2.2-Eq3

Downlink CC(2) to CC(N_{CC}), in increasing frequency order:

$F_{DL\_LowRange\_CC}(i) = F_{DL\_LowRange\_CC}(i-1) + F_{Channel\_Spacing}(i)$, $i=2$ to N_{CC}	C.2.4.2.2-Eq4
$F_{DL\_MidRange\_CC}(i) = F_{DL\_MidRange\_CC}(i-1) + F_{Channel\_Spacing}(i)$, $i=2$ to N_{CC}	C.2.4.2.2-Eq5
$F_{DL\_HighRange\_CC}(i) = F_{DL\_HighRange\_CC}(i-1) + F_{Channel\_Spacing}(i)$, $i=2$ to N_{CC}	C.2.4.2.2-Eq6

Uplink CC(i), $i=1$ to N_{CC} :

$F_{UL\_LowRange\_cc}(i) = F_{DL\_LowRange\_CC}(i) - F_{Tx-Rx\_separation}$	C.2.4.2.2-Eq7
$F_{UL\_MidRange\_cc}(i) = F_{DL\_MidRange\_CC}(i) - F_{Tx-Rx\_separation}$	C.2.4.2.2-Eq8
$F_{UL\_HighRange\_cc}(i) = F_{DL\_HighRange\_CC}(i) - F_{Tx-Rx\_separation}$	C.2.4.2.2-Eq9

C.2.4.2A Determination of test frequencies for FR1 NR Intra-band Contiguous CA without UL CA for bands with uplink bandwidth less than downlink bandwidth

C.2.4.2A.1 General

By default, test frequencies for FR1 NR Intra-band Contiguous CA for bands with uplink bandwidth less than downlink bandwidth in clause 4.3.1 (e.g. n66 and n70) are specified with CC1 used as PCC and all additional CCs are specified as SCCs without UL to enable the SCCs for High range to extend into the upper DL BW beyond the UL BW. The nominal channel spacing between the carrier components is calculated as specified in TS 38.101-1 [7] clause 5.4A.1.

In addition to the definition of parameters in clause C.1 the definition of parameters N_{CC} , $CCBW_{DL}$ and $F_{Channel\_Spacing}$ in clause C.2.4.2.1, and ΔF_{TX-RX} in clause C.2.3.1 are used to calculate the test frequencies.

C.2.4.2A.2 Determination of test frequencies for Low-, Mid- and High-Range

1. Calculate UL carrier centre frequencies for Low and High ranges:

$F_{UL\_LowRange} = \text{Ceil}((F_{UL\_Low} + CBW_{UL}/2) / \Delta F_{Raster}) * \Delta F_{Raster}$	C.2.4.2A.2-Eq1
$F_{UL\_HighRange} = \text{Floor}((F_{UL\_Low} + BW_{UL\_Band} - CBW_{UL}/2) / \Delta F_{Raster}) * \Delta F_{Raster}$	C.2.4.2A.2-Eq2

2. Calculate the DL CC(1) carrier centre frequencies from the UL frequencies in step 1 for Low and High ranges:

$\Delta F_{Tx-Rx} = |(CBW_{DL}(1) - CBW_{UL})/2|$	C.2.4.2A.2-Eq3
$S = +1$ if $F_{UL\_Low} \leq F_{DL\_Low}$ else -1	C.2.4.2A.2-Eq4
$F_{DL\_LowRange\_cc(1)} = F_{UL\_LowRange} + S * (F_{Tx-Rx\_separation} + \Delta F_{Tx-Rx})$	C.2.4.2A.2-Eq5
$F_{DL\_HighRange\_cc(1)} = F_{UL\_HighRange} + S * (F_{Tx-Rx\_separation} + \Delta F_{Tx-Rx})$	C.2.4.2A.2-Eq6

3. Check that DL aggregated CBW for the High range fits into the DL bandwidth.

$F_{DL\_HighRange\_max} = \text{Floor}((F_{DL\_HighRange\_cc(1)} + \sum_{k=1 \text{ to } N_{cc}-1} F_{Channel\_Spacing}(k) + CCBW_{DL}(N_{cc})/2)$	C.2.4.2A.2-Eq7

If $F_{DL\_HighRange\_max}$ is less or equal to F_{DL_High} then goto step 4 else modify $F_{DL\_HighRange\_cc(1)}$ such that the full aggregated CBW is located at the DL bandwidth high edge and recalculate $F_{UL\_HighRange}$.

$F_{DL\_HighRange\_cc(1)} = F_{DL\_High} - CCBW_{DL}(N_{cc})/2 - \sum_{k=1 \text{ to } (N_{cc}-2)} F_{Channel\_Spacing}(k)$	C.2.4.2A.2-Eq8
$F_{UL\_HighRange} = F_{DL\_HighRange\_cc(1)} - S * (F_{Tx-Rx\_separation} + \Delta F_{Tx-Rx})$	C.2.4.2A.2-Eq9

4. Calculate the $F_{UL\_MidRange}$ and $F_{DL\_MidRange\_cc(1)}$:

$F_{DL\_MidRange\_cc(1)} = \text{Round}((F_{DL\_LowRange\_cc(1)} + F_{DL\_HighRange\_cc(1)})/2) / \Delta F_{Raster} * \Delta F_{Raster}$	C.2.4.2A.2-Eq10
$F_{UL\_MidRange} = F_{DL\_MidRange\_cc(1)} - S * (F_{Tx-Rx\_separation} + \Delta F_{Tx-Rx})$	C.2.4.2A.2-Eq11

5. Calculate DL CC(2) to CC(N_{cc}), in increasing frequency order:

$F_{DL\_LowRange\_cc(i)} = F_{DL\_LowRange\_cc(i-1)} + F_{Channel\_Spacing}(i), i=2 \text{ to } N_{cc}$	C.2.4.2A.2-Eq12
$F_{DL\_MidRange\_cc(i)} = F_{DL\_MidRange\_cc(i-1)} + F_{Channel\_Spacing}(i), i=2 \text{ to } N_{cc}$	C.2.4.2A.2-Eq13
$F_{DL\_HighRange\_cc(i)} = F_{DL\_HighRange\_cc(i-1)} + F_{Channel\_Spacing}(i), i=2 \text{ to } N_{cc}$	C.2.4.2A.2-Eq14

C.2.4.3 Determination of test frequencies for NR Intra-band Non-Contiguous CA

C.2.4.3.1 General

The default test frequencies in clause 4.3.1 for NR Intra-band Non-Contiguous CA are based on maximum W_{gap} between the carrier components of the different bands taking the UE capability of maximum supported frequency separation between the lower edge of lowest component carrier and upper edge of highest component carrier for UL for FR1, and UL and DL for FR2.

Test frequencies with W_{gap} different from maximum W_{gap} are specified in the specific test cases using them.

In addition to the definition of parameters in clause C.1 the following parameters are used to calculate carrier components (CC) test frequencies for NR Intra-band Contiguous and Non-contiguous CA configurations:

Parameter	Description
N_{SB}	Number of sub-block in the for NR Intra-band non-contiguous configuration
$SBCBW_{DL}(i)$	Downlink channel bandwidth (MHz) of sub-block $SB(i)$, where $i = 1$ to N_{SB}
$maxF_{sBW}$	Maximum frequency separation bandwidth between the lower edge of lowest component carrier and upper edge of highest component carrier.
$maxW_{gap}$	$maxW_{gap}$ is the maximum separation in MHz between each sub-block in the NR Intra-band non-contiguous configuration within $maxF_{sBW}$ for a given sub-block combination.

C.2.4.3.1A Selection of maximum frequency separation for FR1

Select the maxFsBW dependent on the type of configuration and aggregated CBW for the sub-block combination in Table C.2.4.3.1A-1:

Table C.2.4.3.1A-1: Selecting maxFsBW for FR1

Type of configuration	Aggregated CBW	maxFsBW
Without UL CA	All	Full NR bandwidth
With UL CA	<100 MHz	Min(Full NR bandwidth,100 MHz)
	>=100 MHz and <200 MHz	Min(Full NR bandwidth,200 MHz)
	>=200 MHz and <600 MHz	Min(Full NR bandwidth,600 MHz)
	=600 MHz	Full NR bandwidth

C.2.4.3.1B Selection of maximum frequency separation for FR2

Select the maxFsBW dependent on the type of configuration and aggregated CBW for the sub-block combination in Table C.2.4.3.1B-1:

Table C.2.4.3.1B-1: Selecting maxFsBW for FR2

Type of configuration	Aggregated CBW	maxFsBW (Note 1)
With non-contiguous UL CA	<400 MHz	400 MHz
	>=400 MHz and <600 MHz	600 MHz
	>=600 MHz and <800 MHz	800 MHz
	>=800 MHz and <1000 MHz	1000 MHz
	>=1000 MHz and <1200 MHz	1200 MHz
	>=1200 MHz and <1400 MHz	1400 MHz
	>=1400 MHz	N/A
Without non-contiguous UL CA	<400 MHz	400 MHz
	>=400 MHz and <600 MHz	600 MHz
	>=600 MHz and <800 MHz	800 MHz
	>=800 MHz and <1000 MHz	1000 MHz
	>=1000 MHz and <1200 MHz	1200 MHz
	>=1200 MHz and <1400 MHz	1400 MHz
	>=1400 MHz and <1600 MHz	1600 MHz
	>=1600 MHz and <1800 MHz	1800 MHz
	>=1800 MHz and <2000 MHz	2000 MHz
	>=2000 MHz and <2200 MHz	2200 MHz
	>=2200 MHz and <2400 MHz	2400 MHz
Note 1: For FR2 intra-band non-contiguous CA configurations with non-contiguous UL CA the selected value of maxFsBW is based on applicable frequency separation classes for UL non-contiguous operation in TS 38.101-2 [8], Table 5.3A.4-2. For FR2 intra-band non-contiguous CA configurations without non-contiguous UL CA the selected value of maxFsBW is based on applicable frequency separation classes for DL non-contiguous operation in TS 38.101-2 [8], Table 5.3A.4-2.		

C.2.4.3.2 Determination of test frequencies for a sub-block combination

Editor's note: The number of test points for FR2 intra-band non-contiguous CA configurations is under investigation, e.g. "Low" and "High", or "Mid".

1. Calculate the maxWgap value between sub-blocks for the sub-block combination:

$$\text{maxWgap} = (\text{maxFsBW} - \sum_{k=1 \text{ to } N_{\text{SB}}} \text{SBCBW}_{\text{DL}}(k)) / (N_{\text{SB}} - 1)$$

C.2.4.3.3-Eq1

2. Calculate test frequencies for all sub-blocks in the sub-block combination:

If the maxFsBW is smaller than the full bandwidth of the NR band then calculate test frequencies for both Low and High range. Else only for the Low range.

For Low range the test frequencies are calculated such that the lower edge of the lowest component carrier of the lowest frequency sub-block is located at the lower edge of the NR bandwidth. The sub-blocks are separated by the calculated maxWgap in step 1.

For High range the test frequencies are calculated such that the upper edge of the highest component carrier of the highest frequency sub-block is located at the upper edge frequency of the NR bandwidth. The sub-blocks are separated by the calculated maxWgap in step 1.

Within each sub-block the test frequencies and parameters of the sub-block are calculated based on the location of the sub-block and the relevant principles in clause C.2, C3 and C4 for the type of component carriers in the sub-block.

If a sub-block consists of a single carrier the relevant principles in Annex C.2.1, C.2.2 and C.2.3 apply when calculating the low and high range test frequencies for the low and high sub-block respectively.

If a sub-block consists of multiple component carriers the relevant principles in Annex C.2.4.2 apply when calculating the low and high ranges for the low and high sub-block respectively.

The test frequencies for CCs with SCS=60 kHz for FR1 and with SCS=240 kHz for FR2 is calculated without CORESET#0 as specified in C.3.3. CCs with SCS=60 kHz for FR1 and with SCS=240 kHz for FR2 can only be used for NR Intra-band Non-Contiguous CA configurations with mixed numerologies.

C.2.4.3.3 Void

C.2.4.3.4 Determination of CBW combinations to add in initial test frequency tables

This clause is superseded by Annex C.2.4.4 to describe how to determine which CBW combinations to add in initial test frequency tables for intraband non-contiguous CA in clause 4.3.1.1.5.

C.2.4.4 Determination of CBW combinations to add in initial test frequency tables for Intra band CA

There is a need, for some bands, to limit the number of initial CBW combinations in the tables for the test frequencies for intra band non-contiguous CA and intra band contiguous CA in clause 4.3.1.1.3 and 4.3.1.1.5 respectively. If the total number of CBW combination exceeds a value of 35 combinations, the number of combinations should be reduced according to the steps described in this clause. The intention is to include the CBW combinations that is the most likely to be needed for testing.

The determination of which CBW combinations to add in the initial tables, is based on two statements stated in test cases:

1. Initial conditions for test: Lowest NRB_agg, Highest NRB_agg.
2. If the UE supports multiple CC Combinations in the CA Configuration with the same NRB_agg, only the combination with the highest NRB_PCC is tested.

The determination of initial CBW combinations to add in new tables for the test frequencies shall follow below steps:

1. One, and only one, combination for each possible value of aggregated CBW for a specific BCS. The maximum aggregated BW in table will be limited to Maximum supported Aggregated CBW as stated in 38.521-1 [14], Table 5.5A.2-1. The aggregated BW of the combinations will be restricted to even 10 MHz values.
2. Each combination according to step 1 above shall be configured to use the highest NRB_PCC (CBW) possible, to comply with statement 2 above.

Note: Since tables in clause 4.3.1.1.3 and 4.3.1.1.5 might be referenced to define default test frequencies for signalling tests in clause 6.2.3, BW combinations that are needed for signalling tests shall be added to the table in addition to the combinations defined above, if needed.

C.2.5 Frequency determination for supplemental uplink

C.2.5.1 General

The following procedure is used to calculate test frequencies for NR supplemental uplink as described below, where CBW_{UL} refers to the carrier's UL channel bandwidths and BW_{UL} refers to the band's total UL bandwidths.

C.2.5.2 Determination of Low-, Mid- and High-Range for supplemental uplink bands

The following procedure is used to determine the uplink carrier centre frequencies for Low-, Mid- and High-Range for supplemental uplink bands.

$F_{UL\_LowRange} = \text{Ceil}((F_{UL\_Low} + CBW_{UL}/2) / \Delta F_{Raster}) * \Delta F_{Raster}$	C.2.5.2-Eq1
$F_{UL\_MidRange} = \text{Round}((F_{UL\_Low} + BW_{UL\_Band}/2) / \Delta F_{Raster}) * \Delta F_{Raster}$	C.2.5.2-Eq2
$F_{UL\_HighRange} = \text{Floor}((F_{UL\_Low} + BW_{UL\_Band} - CBW_{UL}/2) / \Delta F_{Raster}) * \Delta F_{Raster}$	C.2.5.2-Eq3

C.2.6 Frequency determination for EN-DC configurations

C.2.6.1 Determination of test frequencies for EN-DC Inter-band

Test frequencies for EN-DC inter-band configurations use the Low and High ranges test frequencies for each of the included single carrier E-UTRA and NR bands, and E-UTRA and NR CA configurations in the configuration as specified E-UTRA in TS 36.508 [2], clause 4.3.1 and for NR in clause 4.3.1.1 for FR1 bands and in clause 4.3.1.2 for FR2 bands.

C.2.6.2 Determination of test frequencies for EN_DC Intra-band Contiguous CA

C.2.6.2.1 General

By default, test frequencies for EN-DC Intra-band Contiguous CA in clause 4.3.1 are specified using the nominal channel spacing between the E-UTRA and NR carrier components as specified in TS 38.101-3 [9], clause 5.4B.1.

The test frequencies for EN_DC Intra-band Contiguous CA is calculated for Low and High ranges for the following two cases:

- with NR CC at the band edge; and
- with E-UTRA CC at the band edge.

In addition to the definition of parameters in clause C.1 the following parameters are used to calculate carrier components (CC) test frequencies for EN_DC Intra-band Contiguous:

Parameter	Description
N_{NR_CC}	Number of NR CCs in the EN-DC Intra-band configuration
N_{EUTRA_CC}	Number of E-UTRA CCs in the EN-DC Intra-band configuration
$CCBW_{NR\_DL}(i)$	Channel bandwidth (MHz) of downlink NR CC(i), where $i = 1$ to N_{NR_CC}
$CCBW_{EUTRA\_DL}(m)$	Channel bandwidth (MHz) of downlink E-UTRA CC(m), where $m = 1$ to N_{EUTRA_CC}
$F_{NR\_EUTRA\_Channel\_Spacing}$	Nominal channel spacing between adjacent NR and E-UTRA CCs as defined in TS 38.101-3 [9], 5.4B.1.
$F_{EUTRA\_Channel\_Spacing}(m)$	Nominal channel spacing between E-UTRA adjacent contiguous CC(m) and CC(m+1), where $m = 1$ to $(N_{EUTRA\_CC}-1)$ as defined in TS 36.101 [48], 5.7.1A.
$F_{NR\_Channel\_Spacing}(i)$	Nominal channel spacing between NR adjacent contiguous CC(i) and CC(i+1), where $i = 1$ to $(N_{NR\_CC}-1)$ as defined in TS 38.101-1 [7] clause 5.4A.1 for FR1 and TS 38.101-2 [8] clause 5.4A.1 for FR2
$LCM\Delta F_{Raster}$	Least Common Multiple of NR ΔF_{Raster} and E-UTRA ΔF_{Raster} equals to 300 kHz for E-UTRA $\Delta F_{Raster} = 100$ kHz and NR $\Delta F_{Raster} = 15$ kHz, 30 kHz and 60 kHz.

C.2.6.2.2 Determination of test frequencies for Low-, Mid- and High-Range with NR at band edges

Downlink NR CC(1), lowest frequency CC:

$F_{NR\_DL\_LowRange\_CC(1)}$ is rounded up and $F_{NR\_DL\_HighRange\_CC(1)}$ is rounded down to obey to the minimum guard band according to clause 5.3.3 of TS 38.101-1 [7] and TS 38.101-2 [8].

The NR test frequencies are calculated such that both the NR CC and E-UTRA CC adjacent to each other are located at the NR and E-UTRA frequency raster respectively.

$F_{NR\_DL\_LowRange\_CC(1)} = \text{Ceil}((F_{DL\_Low} + CCBW_{NR\_DL(1)} / 2 + F_{NR\_EUTRA\_Channel\_Spacing}) / LCM\Delta F_{Raster}) * LCM\Delta F_{Raster} - F_{NR\_EUTRA\_Channel\_Spacing}, \text{ where}$ $F_{NR\_EUTRA\_Channel\_Spacing} = \text{Round}((CCBW_{EUTRA\_DL(1)} + CCBW_{NR\_DL(N_{NR\_CC})}) / (2 * \Delta F_{Raster})) * \Delta F_{Raster}$	C.2.6.2.2-Eq1
$F_{NR\_DL\_MidRange\_CC(1)} = \text{Round}((F_{DL\_Low} + BW_{DL}/2 - (\sum_{i=1 \text{ to } N_{NR\_CC}} CCBW_{NR\_DL(i)} + \sum_{m=1 \text{ to } N_{EUTRA\_CC}} CCBW_{EUTRA\_DL(m)})/2 + CCBW_{NR\_DL(1)})/2 + F_{NR\_EUTRA\_Channel\_Spacing} / LCM\Delta F_{Raster}) * LCM\Delta F_{Raster} - F_{NR\_EUTRA\_Channel\_Spacing}, \text{ where}$ $F_{NR\_EUTRA\_Channel\_Spacing} = \text{Round}((CCBW_{EUTRA\_DL(1)} + CCBW_{NR\_DL(N_{NR\_CC})}) / (2 * \Delta F_{Raster})) * \Delta F_{Raster}$	C.2.6.2.2-Eq2
$F_{NR\_DL\_HighRange\_CC(1)} = \text{Floor}((F_{DL\_High} - CCBW_{NR\_DL(N_{NR\_CC})}/2 - \sum_{i=1 \text{ to } (N_{NR\_CC}-1)} F_{NR\_Channel\_Spacing(i)} - F_{NR\_EUTRA\_Channel\_Spacing}) / LCM\Delta F_{Raster}) * LCM\Delta F_{Raster} + F_{NR\_EUTRA\_Channel\_Spacing}, \text{ where}$ $F_{NR\_EUTRA\_Channel\_Spacing} = \text{Round}((CCBW_{EUTRA\_DL(N_{EUTRA\_CC})} + CCBW_{NR\_DL(1)}) / (2 * \Delta F_{Raster})) * \Delta F_{Raster}$	C.2.6.2.2-Eq3

Downlink NR CC(2) to CC(N_{NR_CC}), in increasing frequency order:

$F_{NR\_DL\_LowRange\_CC(k)} = F_{DL\_LowRange\_CC(k-1)} + \sum F_{NR\_Channel\_Spacing(k)}, k=2 \text{ to } N_{DL\_CC}$	C.2.6.2.2-Eq4
$F_{NR\_DL\_MidRange\_CC(k)} = F_{DL\_MidRange\_CC(k-1)} + \sum F_{NR\_Channel\_Spacing(k)}, k=2 \text{ to } N_{DL\_CC}$	C.2.6.2.2-Eq5
$F_{NR\_DL\_HighRange\_CC(k)} = F_{DL\_HighRange\_CC(k-1)} + \sum F_{NR\_Channel\_Spacing(k)}, k=2 \text{ to } N_{DL\_CC}$	C.2.6.2.2-Eq6

Uplink NR CC(k), $k=1$ to N_{CC} :

$F_{NR\_UL\_LowRange\_CC(k)} = F_{NR\_DL\_LowRange\_CC(k)} - F_{Tx-Rx\_separation}$	C.2.6.2.2-Eq7
$F_{NR\_UL\_MidRange\_CC(k)} = F_{NR\_DL\_MidRange\_CC(k)} - F_{Tx-Rx\_separation}$	C.2.6.2.2-Eq8
$F_{NR\_UL\_HighRange\_CC(k)} = F_{NR\_DL\_HighRange\_CC(k)} - F_{Tx-Rx\_separation}$	C.2.6.2.2-Eq9

Downlink E-UTRA CC(1), lowest frequency CC:

$\Delta F_{NR\_EUTRA\_Channel\_Spacing}$ is selected in each formula C.2.6.2.2-Eq10, C.2.6.2.2-Eq11 and C.2.6.2.2-Eq12 selected such that $F_{EUTRA\_DL\_LowRange\_CC(1)}$, $F_{EUTRA\_DL\_MidRange\_CC(1)}$ and $F_{EUTRA\_DL\_HighRange\_CC(1)}$ are located on the E-UTRA band frequency raster.

$F_{EUTRA\_DL\_LowRange\_CC(1)} = F_{NR\_DL\_LowRange\_CC(N_{DL\_CC}) + F_{NR\_EUTRA\_Channel\_Spacing}$	C.2.6.2.2-Eq10
$F_{EUTRA\_DL\_MidRange\_CC(1)} = F_{NR\_DL\_MidRange\_CC(N_{DL\_CC}) + F_{NR\_EUTRA\_Channel\_Spacing}$	C.2.6.2.2-Eq11
$F_{EUTRA\_DL\_HighRange\_CC(1)} = F_{NR\_DL\_HighRange\_CC(N_{DL\_CC}) - \sum_{i=1 \text{ to } (N_{NR\_CC}-1)} F_{NR\_Channel\_Spacing(i)} - F_{NR\_EUTRA\_Channel\_Spacing} - \sum_{i=1 \text{ to } (N_{EUTRA\_CC}-1)} F_{EUTRA\_Channel\_Spacing(i)}$	C.2.6.2.2-Eq12

Downlink E-UTRA CC(2) to CC(N_{EUTRA_CC}), in increasing frequency order:

$F_{EUTRA\_DL\_LowRange\_CC(k)} = F_{EUTRA\_DL\_LowRange\_CC(k-1)} + \sum F_{EUTRA\_Channel\_Spacing(k)}, k=2 \text{ to } N_{EUTRA\_CC}$	C.2.6.2.2-Eq13
$F_{EUTRA\_DL\_MidRange\_CC(k)} = F_{EUTRA\_DL\_MidRange\_CC(k-1)} + \sum F_{EUTRA\_Channel\_Spacing(k)}, k=2 \text{ to } N_{EUTRA\_CC}$	C.2.6.2.2-Eq14
$F_{EUTRA\_DL\_HighRange\_CC(k)} = F_{EUTRA\_DL\_HighRange\_CC(k-1)} + \sum F_{EUTRA\_Channel\_Spacing(k)}, k=2 \text{ to } N_{EUTRA\_CC}$	C.2.6.2.2-Eq15

Uplink E-UTRA CC(k), $k=1$ to N_{EUTRA_CC} :

$F_{EUTRA\_UL\_LowRange\_CC(k)} = F_{EUTRA\_DL\_LowRange\_CC(k)} - F_{Tx-Rx\_separation}$	C.2.6.2.2-Eq16
$F_{EUTRA\_UL\_MidRange\_CC(k)} = F_{EUTRA\_DL\_MidRange\_CC(k)} - F_{Tx-Rx\_separation}$	C.2.6.2.2-Eq17
$F_{EUTRA\_UL\_HighRange\_CC(k)} = F_{EUTRA\_DL\_HighRange\_CC(k)} - F_{Tx-Rx\_separation}$	C.2.6.2.2-Eq18

C.2.6.2.3 Determination of test frequencies for Low-, Mid- and High-Range with E-UTRA at band edges

To get the NR carrier on the synchronisation raster the calculations of the E-UTRA carrier components needs to be based on the location of the NR carrier.

Downlink NR CC(1), lowest frequency CC:

$F_{NR\_DL\_LowRange\_CC(1)}$ is rounded up and $F_{NR\_DL\_HighRange\_CC(1)}$ is rounded down to obey to the minimum guard band according to clause 5.3.3 of TS 38.101-1 [7] and TS 38.101-2 [8].

$F_{NR\_DL\_LowRange\_CC(1)} = \text{Ceil}((F_{DL\_Low} + \sum_{m=1}^{N_{EUTRA\_CC}} CCBW_{EUTRA\_DL}(m) + CCBW_{NR\_DL}(1) / 2 - F_{NR\_EUTRA\_Channel\_Spacing}) / LCM\Delta F_{Raster}) * LCM\Delta F_{Raster} + F_{NR\_EUTRA\_Channel\_Spacing}$, where $F_{NR\_EUTRA\_Channel\_Spacing} = \text{Round}((CCBW_{EUTRA\_DL}(N_{EUTRA\_CC}) + CCBW_{NR\_DL}(1)) / (2 * \Delta F_{Raster})) * \Delta F_{Raster}$	C.2.6.2.3-Eq1
$F_{NR\_DL\_MidRange\_CC(1)}$ = same formula as C.2.6.2.2-Eq2	C.2.6.2.3-Eq2
$F_{NR\_DL\_HighRange\_CC(1)} = \text{Floor}((F_{DL\_High} - (\sum_{m=1}^{N_{EUTRA\_CC}} CCBW_{EUTRA\_DL}(m) + \sum_{i=1}^{N_{NR\_CC}} CCBW_{NR\_DL}(i)) + CCBW_{NR\_DL}(1) / 2 + F_{NR\_EUTRA\_Channel\_Spacing}) / LCM\Delta F_{Raster}) * LCM\Delta F_{Raster} - F_{NR\_EUTRA\_Channel\_Spacing}$, where $F_{NR\_EUTRA\_Channel\_Spacing} = \text{Round}((CCBW_{EUTRA\_DL}(1) + CCBW_{NR\_DL}(N_{NR\_CC})) / (2 * \Delta F_{Raster})) * \Delta F_{Raster}$	C.2.6.2.3-Eq3

Downlink NR CC(2) to CC(N_{NR_CC}), in increasing frequency order:

$F_{NR\_DL\_LowRange\_CC(k)}$ = same formula as C.2.6.2.2-Eq4	C.2.6.2.3-Eq4
$F_{NR\_DL\_MidRange\_CC(k)}$ = same formula as C.2.6.2.2-Eq5	C.2.6.2.3-Eq5
$F_{NR\_DL\_HighRange\_CC(k)}$ = same formula as C.2.6.2.2-Eq6	C.2.6.2.3-Eq6

Uplink NR CC(k), k=1 to N_{CC} :

$F_{NR\_UL\_LowRange\_cc(k)}$ = same formula as C.2.6.2.2-Eq7	C.2.6.2.3-Eq7
$F_{NR\_UL\_MidRange\_cc(k)}$ = same formula as C.2.6.2.2-Eq8	C.2.6.2.3-Eq8
$F_{NR\_UL\_HighRange\_cc(k)}$ = same formula as C.2.6.2.2-Eq9	C.2.6.2.3-Eq9

Downlink E-UTRA CC(1), lowest frequency CC:

$F_{EUTRA\_DL\_LowRange\_CC(1)} = F_{NR\_DL\_LowRange\_CC(1)} - F_{NR\_EUTRA\_Channel\_Spacing} - \sum_{m=1}^{(N_{EUTRA\_CC} - 1)} F_{EUTRA\_Channel\_Spacing}(m)$	C.2.6.2.3-Eq10
$F_{EUTRA\_DL\_MidRange\_CC(1)}$ = same formula as C.2.6.2.2-Eq11	C.2.6.2.3-Eq11
$F_{EUTRA\_DL\_HighRange\_CC(1)} = F_{NR\_DL\_HighRange\_CC}(N_{DL\_CC}) + \sum_{i=1}^{(N_{NR\_CC}-1)} F_{NR\_Channel\_Spacing}(i) + F_{NR\_EUTRA\_Channel\_Spacing} + \sum_{i=1}^{(N_{EUTRA\_CC}-1)} F_{EUTRA\_Channel\_Spacing}(i)$	C.2.6.2.3-Eq12

Downlink E-UTRA CC(2) to CC(N_{EUTRA_CC}), in increasing frequency order:

$F_{EUTRA\_DL\_LowRange\_CC(k)}$ = same formula as C.2.6.2.2-Eq13	C.2.6.2.3-Eq13
$F_{EUTRA\_DL\_MidRange\_CC(k)}$ = same formula as C.2.6.2.2-Eq14	C.2.6.2.3-Eq14
$F_{EUTRA\_DL\_HighRange\_CC(k)}$ = same formula as C.2.6.2.2-Eq15	C.2.6.2.3-Eq15

Uplink E-UTRA CC(k), k=1 to N_{EUTRA_CC} :

$F_{EUTRA\_UL\_LowRange\_cc(k)}$ = same formula as C.2.6.2.2-Eq16	C.2.6.2.3-Eq16
$F_{EUTRA\_UL\_MidRange\_cc(k)}$ = same formula as C.2.6.2.2-Eq17	C.2.6.2.3-Eq17
$F_{EUTRA\_UL\_HighRange\_cc(k)}$ = same formula as C.2.6.2.2-Eq18	C.2.6.2.3-Eq18

C.2.6.3 Determination of test frequencies for EN-DC Intra-band non-contiguous

Test frequencies for EN-DC Intra-band non-contiguous configurations use the Low and High ranges test frequencies for each of the included single carrier E-UTRA and NR bands, and E-UTRA and NR CA configurations in the configuration as specified E-UTRA in TS 36.508 [2], clause 4.3.1 and for NR in clause 4.3.1.1 for FR1 bands and in clause 4.3.1.2 for FR2 bands.

The following cases of test frequencies are specified for relevant E-UTRA and NR CBW combinations, and NR SCS:

- Low with maxWgap (NR - E-UTRA): NR Low range and E-UTRA High range
- High with maxWgap (E-UTRA - NR): NR High range and E-UTRA Low range

C.2.7 Determination of test frequencies for enhanced channel raster

Editor's note: For enhanced channel raster, Low and High range test frequencies for lowest supported SCS are to be defined.

C.2.7.1 General

To verify enhanced channel raster, there is a need to make sure that the test frequency used are not placed on the 100 kHz raster.

C.2.7.2 Determination of test frequencies for Low- and High-Range for enhanced channel raster

Define the test frequencies for all bandwidths by following the steps 1- 4 below for Low and High range respectively. Refer to 38.101-1 [7], table 5.3.5-1 for supported BWdths.

1. Determine the frequency, including SSB and coresets#0, for the defined bandwidth, according to applicable clause in Annex C.2.1, C.2.2, C.2.3 and C.3 with ΔF_{Raster} set to 10 kHz. The obtained frequency will be referred to as "f1".
2. Verify that f1, determined in step 1, is not located on the 100 kHz ΔF_{Raster} by verifying that the expression below is true. If the expression is not true, then go to step3, else go to step 4.

$\text{mod}(f1 / 100\text{kHz}) \neq 0$

3. If the calculated frequency, f1 from step 1 is located on the 100kHz raster, then adjust the f1 frequency one 10 kHz step, by using adjusted equations below instead of equations for $F_{\text{DL\_LowRange}}$, $F_{\text{DL\_HighRange}}$, $F_{\text{UL\_LowRange}}$ and $F_{\text{UL\_HighRange}}$ in Annex C.2.1, C.2.2 and C.2.3. Calculate adjusted frequency, SSB and coresets#0 according to Annex C.2.1, C.2.2, C.2.3 and C.3 including the adjusted equations.

Adjusted equation to replace C.2.1.1-Eq1, and C.2.1.1-Eq3 in Annex C.2.1

$F_{\text{DL\_LowRange}} = f1 + 10 \text{ kHz}$	C.2.7.2-Eq1
$F_{\text{DL\_HighRange}} = f1 - 10 \text{ kHz}$	C.2.7.2-Eq2

Adjusted equation to replace C.2.3.2-Eq1, and C.2.3.2-Eq3 in Annex C.2.3

$F_{\text{UL\_LowRange}} = f1 + 10 \text{ kHz}$	C.2.7.2-Eq3
$F_{\text{UL\_HighRange}} = f1 - 10 \text{ kHz}$	C.2.7.2-Eq4

4. Determine test frequency including SSB and coresets#0 from step 1 or 3, depending on result from step 2.

C.3 Determination of SSB and CORESET#0

C.3.1 General

The requirements to be met and the principles used for determining the SSB and CORESET#0 for a PCell are:

1. The complete SSB and CORESET#0 shall be within the carrier's channel bandwidth.
2. The SSB centre frequency (SSref) shall be on the synchronisation raster.
3. The SSB shall be kept as close as possible to the carrier's lower edge centre frequency.

4. CORESET#0 configuration is selected using lowest number of RBs and symbols in applicable table in TS 38.213 [22], clause 13.
5. The first SSB subcarrier shall be aligned with the defined resource grid given by SCS indicated by *subCarrierSpacingCommon* in the MIB.

C.3.2 Determination of SSB, CORESET#0 and signalling parameters for a PCell

Calculation of SSB and CORESET#0 parameters is limited to FR1 carriers with SCS=15 kHz or SCS=30 kHz, and to FR2 carriers with SCS=60 kHz or SCS=120 kHz. CORESET#0 is required for a carrier to be used as a PCell.

The following procedure is used to determine an SSB on the synchronisation raster (GSCN) and a CORESET#0 configuration (k_{SSB} , $Offset_{RBs}$ and $OffsetToPointA$) as close as possible to the carrier's lower edge. See figure C1-1 and clause C.1 for definition of parameters referenced in the procedure.

1. Determine SSB and CORESET#0:

- 1a. Calculate the lower of F_{SSref} , F_{SSref_Min} , correspondent to SSB lowest subcarrier being at the same frequency as the carrier's lowest subcarrier; and the higher limit of F_{SSref} , F_{SSref_Max} , correspondent to SSB highest subcarrier being at the same frequency as the carrier's highest subcarrier F_{SSref_Max}

$F_{carrierLow}$ = see formula for $F_{carrierLow}$ in Table C.1-1
$F_{SSref\_Min} = F_{carrierLow} + CRB_{size} * Offset_{RBs,min} + BW_{SSB} / 2$
$F_{SSref\_Max} = F_{carrierLow} + \Delta F_{carrierBandwidth} - BW_{SSB} / 2$

- 1b. Calculate $GSCN_{MIN}$ correspondent to F_{SSref_Min} in accordance to TS 38.101-1 [7], clause 5.4.3.1 for FR1 and TS 38.101-2 [7], clause 5.4.3.1 for FR2 and select the closest valid GSCN value with $GSCN \geq GSCN_{MIN}$ for the carrier in according to the carrier's synchronisation raster as specified in clause 5.4.3.3 in TS 38.101-1 [7] and TS 38.101-2 [8].
- 1c. Calculate the F_{SSref} for the selected GSCN value in step 1b in accordance to TS 38.101-1 [7], clause 5.4.3.1 for FR1 and TS 38.101-2 [7], clause 5.4.3.1 for FR2.
- 1d. Calculate the frequency $F_{offsetToPointA}$, which is the lowest subcarrier of the lowest resource block with the subcarrier spacing being a multiple of resource blocks expressed in terms of common PRB size and overlaps with the SS/PBCH block subcarrier 0 of the first resource block of the SS/PBCH block, F_{SSBlow} (TS 38.211 [3], clause 7.4.3.1):

$F_{SSBlow} = F_{SSref} - BW_{SSB} / 2$
$F_{offsetToPointA} = CRB_{size} * \text{Floor}(\text{Round}(((F_{SSBlow} - F_{carrierLow}) / CRB_{size}), 5)) + F_{carrierLow}$ Note 1

Note 1: The "Round" operation is needed to avoid that platforms using "float" representation will give erroneous results. Hence, the need for the "Round" operation is platform dependant. The "Round" operation is to be done to 5 decimals. It is needed to avoid that a calculated value of for example 5.999999999 is Floored to the value of 5.

- 1e. Calculate the maximum $Offset_{RBs}$ value with $F_{CORESET0Low} \geq F_{carrierLow}$:

$Max\_Offset_{RBs} = \text{Round}((F_{offsetToPointA} - F_{carrierLow}) / CRB_{size})$ Note 2

Note 2: The "Round" operation is needed to avoid that platforms using "float" representation will give erroneous results. Hence, the need for the "Round" operation is platform dependant. It is needed to make sure that the Max_Offset_{RBs} is an integer. For example a calculated value of $Max\_Offset_{RBs} = 5.999999999$ shall result in a $Max\_Offset_{RBs} = 6$.

- 1f. Select the largest valid $Offset_{RBs}$ value equal or smaller than the calculated max value, Max_Offset_{RBs} in step 1e within the applicable values for the carrier in TS 38.213 [4], table 13-1 to 13-10 limited to the table indexes with number of RBs $N_{RB}^{CORESET}$ and number of symbols $N_{symb}^{CORESET}$ equal to the minimum value of

$N_{RB}^{CORESET}$ in the table confining CORESET#0 between $F_{carrierLow}$ and $F_{carrierHigh}$ and minimum value of $N_{symbol}^{CORESET}$ for the selected $N_{RB}^{CORESET}$. If a valid $Offset_{RBs}$ value is found, then continue from step 1g.

If no valid $Offset_{RBs}$ value is found, then select the next valid GSCN with $F_{SSref} \leq F_{SSref\_Max}$ within the valid GSCN range for the carrier and repeat steps 1b to 1f.

If no valid $Offset_{RBs}$ value found within the valid GSCN range for the currently selected carrier frequency $F_{carrier}$ then shift $F_{carrier}$ up by ΔF_{Raster} for Low range; or down by ΔF_{Raster} for Mid, Mid-Low, Mid-High and High ranges and repeat steps 1a to 1g. In case of an exception, for Mid, Mid-Low and Mid-High, shifting frequency up can also be considered to achieve the frequency closer to the ideal case.

If no valid $Offset_{RBs}$ value found within the valid GSCN range then will the carrier not be possible to use as PCell and F_{SSref} , k_{SSB} , F_{PointA} , $OffsetToCarrier$ and $OffsetToPointA$ are calculated as described in clause C.3.3 and the procedure is completed.

1g. Calculate k_{SSB}

$k_{SSB} = (F_{SSB_{low}} - F_{offsetToPointA}) / \{15 \text{ kHz for FR1, } subCarrierSpacingCommon \text{ (MIB) for FR2}\}$ (TS 38.211 [3], clause 7.4.3.1).
$N = SCS_{SSB} / \{15 \text{ kHz for FR1; } subCarrierSpacingCommon \text{ (MIB) for FR2}\}$.
$k_{SSB} \bmod N \neq 0$ indicates that the SSB subcarriers are not aligned with the resource grid given by the SCS indicated by $subCarrierSpacingCommon$ in the MIB.

If k_{SSB} is an integer and $k_{SSB} \bmod N = 0$, then continue from step 2.

If k_{SSB} is not an integer value or $k_{SSB} \bmod N \neq 0$, then select the next valid GSCN with $F_{SSref} < F_{SSref\_Max}$ within the valid GSCN range for the carrier and repeat steps 1b to 1g.

If $N > 1$ and no valid k_{SSB} value found within the valid GSCN range for the currently selected carrier frequency $F_{carrier}$ then shift $F_{carrier}$ up by ΔF_{Raster} for Low range; or down by ΔF_{Raster} for Mid, Mid-Low, Mid-High and High ranges and repeat steps 1a to 1g for a maximum shift of $3 * \Delta F_{Raster}$ (see clause C.3.1, Note 1). Cases requiring more than $3 * \Delta F_{Raster}$ shifts shall be analyzed individually and, if eventually agreed, marked in section 4.3 to have been obtained applying certain exceptions over this section C.3.2. In case of an exception, for Mid, Mid-Low and Mid-High, shifting frequency up can also be considered to achieve the frequency closer to the ideal case.

If no valid k_{SSB} value found within the valid GSCN range then will the carrier not be possible to use as PCell and F_{SSref} , k_{SSB} , F_{PointA} , $OffsetToCarrier$ and $OffsetToPointA$ are calculated as described in clause C.3.2 and the procedure is completed.

2. Determine $OffsetToCarrier$

Select $offsetToCarrier$ value for the carrier in accordance to Table C.3.2-1.

Table C.3.2-1: Downlink and uplink $offsetToCarrier$ default values for different frequency ranges

Frequency range	Downlink $offsetToCarrier$	Uplink $offsetToCarrier$
Low range	0	0
Mid range	102	504
High range	504	6
Mid-Low range	12	36
Mid-High range	24	114
Note: Different values of $offsetToCarrier$ have been selected for Low, Mid-Low, Mid, Mid-High and High ranges to achieve enhanced test coverage of the $offsetToCarrier$ range of values.		

In case low, mid and high range are exactly the same frequency, use $offsetToCarrier$ associated to low range.

2b. Determine F_{pointA} :

$F_{PointA} = F_{carrierLow} - offsetToCarrier * PRB_{size}$

3. Calculate $\Delta F_{\text{OffsetCORESET-0-Carrier}}$:

The $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ value is used to calculate the Offset Carrier CORESET#0 parameter included in the test frequency tables in sub-clauses 4.3.1 and 6.2.3.

$$\Delta F_{\text{OffsetCORESET-0-Carrier}} = F_{\text{offsetToPointA}} - \text{Offset}_{\text{RB}} * \text{CRB}_{\text{size}} - F_{\text{carrierLow}}$$

4. Calculate signalling parameters:

IE field	Value
ssb-SubcarrierOffset	Set to the 4 least significant bits of k_{SSB} . For the case $k_{\text{SSB}} > 15$ the extended by an additional most significant bit encoded within PBCH as specified in TS 38.213 [22]. The IE field <i>ssb-SubcarrierOffset</i> is signalled in the MIB.
controlResourceSetZero	Set to the index associated with the selected $\text{Offset}_{\text{RBs}}$ value in the applicable table, 13-1 to 13-10, in TS 38.213 [22]. The IE field <i>controlResourceSetZero</i> is signalled in the IE <i>pdccch-ConfigSIB1</i> in the MIB.
absoluteFrequencySSB	Set to F_{SSref} expressed in ARFCN as defined in TS 38.101-1 [15] and TS 38.101-2 [39], clause 5.4.2.
absoluteFrequencyPointA	Set to F_{PointA} expressed in ARFCN as defined in TS 38.101-1 [15] and TS 38.101-2 [39], clause 5.4.2.
offsetToPointA	$(F_{\text{offsetToPointA}} - F_{\text{PointA}}) / (12 * \{15 \text{ kHz for FR1; } 60 \text{ kHz for FR2}\})$. The IE field <i>offsetToPointA</i> is signalled in IE <i>FrequencyInfoDL-SIB</i> .
offsetToCarrier	Set to value calculated in step 2a. The IE field <i>offsetToCarrier</i> is signalled in IE <i>SCS-SpecificCarrier</i> .

C.3.3 Determination of SSB and signalling parameters for a carrier without CORESET#0

The following procedure is used for calculation of SSB and signalling parameters for a carrier without a CORESET#0.

1. Calculate F_{SSref} , k_{SSB} and F_{PointA} with the SSB lowest subcarrier at the carrier's lowest subcarrier ($\Delta F_{\text{OffsetSSB-Carrier}}$ in Figure C.1-1 = 0):

$F_{\text{SSref}} = F_{\text{carrierLow}} + \text{BW}_{\text{SSB}} / 2$
$k_{\text{SSB}} = \{31 \text{ for FR1; } 15 \text{ for FR2}\}$ indicating that no CORESET#0 is present for the carrier (TS 38.213 [4], clause 13).
<i>offsetToCarrier</i> = target value for <i>offsetToCarrier</i> dependent on frequency range as specified in Table C.3.2-1.
$F_{\text{PointA}} = F_{\text{carrierLow}} - \text{offsetToCarrier} * \text{PRB}_{\text{size}}$

2. Calculate signalling parameters:

IE field	Value
ssb-SubcarrierOffset	Set to the 4 least significant bits of k_{SSB} . For the case $k_{\text{SSB}} > 15$ the extended by an additional most significant bit encoded within PBCH as specified in TS 38.213 [22]. The IE field <i>ssb-SubcarrierOffset</i> is signalled in the MIB.
controlResourceSetZero	Set to 0 indicating that no CORESET#0 exist (TS 38.213 [22], clause 13). The IE field <i>controlResourceSetZero</i> is signalled in the IE <i>pdccch-ConfigSIB1</i> in the MIB.
searchSpaceZero	Set to 0 indicating that no CORESET#0 exist (TS 38.213 [22], clause 13). The IE field <i>searchSpaceZero</i> is signalled in the IE <i>pdccch-ConfigSIB1</i> in the MIB.
absoluteFrequencySSB	Set to F_{SSref} expressed in ARFCN as defined in TS 38.101-1 [15] and TS 38.101-2 [39], clause 5.4.2.
absoluteFrequencyPointA	Set to F_{PointA} expressed in ARFCN as defined in TS 38.101-1 [15] and TS 38.101-2 [39], clause 5.4.2.
offsetToCarrier	Set to <i>offsetToCarrier</i> target value selected in step 1.

C.4 Determination of SSB and CORESET#0 for RRM testing with SSB SCS 120 kHz and 240 kHz

C.4.1 General

The requirements to be met and the principles used for determining the SSB and CORESET#0 for a PCell used in RRM test cases are:

1. The complete SSB and CORESET#0 shall be within the carrier's channel bandwidth.
2. The SSB centre frequency (SSref) shall be on the synchronisation raster.
3. The SSB shall be kept as close as possible to the carrier's lower edge centre frequency.
4. The CORESET#0 configuration is selected using 24 RBs and $\text{Offset}_{\text{RBs}} = 0$ according to Table 13-8 and Index 0 for $\text{SCS}_{\text{SSB}} = 120$ KHz in TS 38.213 [22] and Table 13-10 and Index 0 for $\text{SCS}_{\text{SSB}} = 240$ kHz in TS 38.213 [22].
5. The first SSB subcarrier shall be aligned with the defined resource grid given by SCS indicated by *subCarrierSpacingCommon* in the MIB.

C.4.2 Determination of SSB, CORESET#0 and signalling parameters

The following procedure is used to determine an SSB on the synchronisation raster (GSCN) and a CORESET#0 configuration (k_{SSB} , $\text{Offset}_{\text{RBs}} = 0$ and *OffsetToPointA*) as close as possible to the carrier's lower edge. See figure C1-1 and clause C.1 for definition of parameters referenced in the procedure.

1. The target test frequencies for Low, Mid and High ranges are calculated as described in clause C.2.1.1.

For each of Low, Mid and High ranges do:

2. Determine SSB and CORESET#0:

- 2a. Calculate the lower of F_{SSref} , $F_{\text{SSref\_Min}}$, correspondent to SSB lowest subcarrier being at the same frequency as the carrier's lowest subcarrier; and the higher limit of F_{SSref} , $F_{\text{SSref\_Max}}$, correspondent to SSB highest subcarrier being at the same frequency as the carrier's highest subcarrier $F_{\text{SSref\_Min}}$

$F_{\text{carrierLow}} = \text{see formula for } F_{\text{carrierLow}} \text{ in Table C.1-1}$
$F_{\text{SSref\_Min}} = F_{\text{carrierLow}} + \text{CRB}_{\text{size}} * \text{Offset}_{\text{RBs,min}} + \text{BW}_{\text{SSB}} / 2$
$F_{\text{SSref\_Max}} = F_{\text{carrierLow}} + \Delta F_{\text{carrierBandwidth}} - \text{BW}_{\text{SSB}} / 2$

- 2b. Calculate GSCN_{MIN} correspondent to $F_{\text{SSref\_Min}}$ in accordance to TS 38.101-2 [7], clause 5.4.3.1 and select the closest valid GSCN value with $\text{GSCN} \geq \text{GSCN}_{\text{MIN}}$ for the carrier in according to the carrier's synchronisation raster as specified in clause 5.4.3.3 in TS 38.101-2 [8].

- 2c. Calculate the F_{SSref} for the selected GSCN value in step 2b in accordance to TS 38.101-2 [7], clause 5.4.3.1 for FR2.

- 2d. Calculate the frequency F_{SSBlow} and shift the carrier frequency to achieve $F_{\text{carrierLow}}$ equal or as close as possible F_{SSBlow} on the carrier's frequency raster.

$F_{\text{SSBlow}} = F_{\text{SSref}} - \text{BW}_{\text{SSB}} / 2$
$F_{\text{carrier}} = \text{calculated using the formula in clause C.2.1.1 with } F_{\text{DL\_Low}} = F_{\text{SSBlow}}$
$F_{\text{carrierLow}} = \text{Ceil}((F_{\text{SSBlow}} + 12 * \text{SCS}_{\text{Carrier}} * (\text{NRB} / 2)) / \Delta F_{\text{Raster}}) * \Delta F_{\text{Raster}}$

- 2e. Calculate k_{SSB}

$k_{\text{SSB}} = (F_{\text{SSBlow}} - F_{\text{carrierLow}}) / \text{subCarrierSpacingCommon (MIB, FR2) (TS 38.211 [3], clause 7.4.3.1)}.$

$N = SCS_{SSB} / subCarrierSpacingCommon$ (MIB, FR2).
 $k_{SSB} \bmod N \neq 0$ indicates that the SSB subcarriers are not aligned with the resource grid given by the SCS indicated by *subCarrierSpacingCommon* in the MIB.

If k_{SSB} is an integer and $k_{SSB} \bmod N = 0$, then continue from step 3 else modify the carrier frequency to get valid value of k_{SSB} and $k_{SSB} \bmod N = 0$.

3. Calculate Point A frequency, $\Delta F_{OffsetToCarrier}$ and $\Delta F_{OffsetToPointA}$:

The CORESET#0 configuration is selected using 24 RBs and $Offset_{RBs} = 0$ according to Table 13-8 and Index 0 for $SCS_{SSB} = 120$ KHz and Table 13-10 and Index 0 for $SCS_{SSB} = 240$ kHz in TS 38.213 [22] (see C.4.1). This means that $F_{OffsetToPointA} = F_{carrierLow}$. By selecting Point A equal to $F_{carrierLow}$ this gives:

$F_{PointA} = F_{carrierLow}$
$\Delta F_{OffsetToCarrier} = 0$
$\Delta F_{OffsetToPointA} = 0$

4. Calculate signalling parameters:

IE field	Value
ssb-SubcarrierOffset	Set to the 4 least significant bits of k_{SSB} . The IE field <i>ssb-SubcarrierOffset</i> is signalled in the MIB.
controlResourceSetZero	0 (Index=0 in table 13-8 for $SCS_{SSB} = 120$ KHz in TS 38.213 [22] and table 13-10 for $SCS_{SSB} = 240$ KHz in TS 38.213 [22]). The IE field <i>controlResourceSetZero</i> is signalled in the IE <i>pdccch-ConfigSIB1</i> in the MIB.
absoluteFrequencySSB	Set to F_{SSref} expressed in ARFCN as defined in TS 38.101-1 [15] and TS 38.101-2 [39], clause 5.4.2.
absoluteFrequencyPointA	Set to F_{PointA} expressed in ARFCN as defined in TS 38.101-1 [15] and TS 38.101-2 [39], clause 5.4.2.
offsetToPointA	0 The IE field <i>offsetToPointA</i> is signalled in IE <i>FrequencyInfoDL-SIB</i> .
offsetToCarrier	0 The IE field <i>offsetToCarrier</i> is signalled in IE <i>SCS-SpecificCarrier</i> .

C.4.3 Determination of SSB, CORESET#0 and signalling parameters for NR Intra-band Contiguous CA for PCell

The following procedure is used to determine an SSB on the synchronisation raster (GSCN) and a CORESET#0 configuration (k_{SSB} , $Offset_{RBs} = 0$ and *OffsetToPointA*) as close as possible to the carrier's lower edge. See figure C1-1 and clause C.1 for definition of parameters referenced in the procedure.

1. The target test frequencies for Low, Mid and High ranges are calculated as described in clause C.2.4.2.

For each of Low, Mid and High ranges do:

2. Determine SSB and CORESET#0:

- 2a. Calculate the lower of F_{SSref} , F_{SSref_Min} , correspondent to SSB lowest subcarrier being at the same frequency as the carrier's lowest subcarrier; and the higher limit of F_{SSref} , F_{SSref_Max} , correspondent to SSB highest subcarrier being at the same frequency as the carrier's highest subcarrier F_{SSref_Min}

$F_{carrierLow} = \text{see formula for } F_{carrierLow} \text{ in Table C.1-1}$
$F_{SSref\_Min} = F_{carrierLow} + CRB_{size} * Offset_{RBs,min} + BW_{SSB} / 2$
$F_{SSref\_Max} = F_{carrierLow} + \Delta F_{carrierBandwidth} - BW_{SSB} / 2$

- 2b. Calculate $GSCN_{MIN}$ correspondent to F_{SSref_Min} in accordance to TS 38.101-2 [7], clause 5.4.3.1 and select the closest valid GSCN value with $GSCN \geq GSCN_{MIN}$ for the carrier in according to the carrier's synchronisation raster as specified in clause 5.4.3.3 in TS 38.101-2 [8].

- 2c. Calculate the F_{SSref} for the selected GSCN value in step 2b in accordance to TS 38.101-2 [7], clause 5.4.3.1 for FR2.

- 2d. Calculate the frequency $F_{SSB\text{Low}}$ and shift the carrier frequency to achieve $F_{\text{carrierLow}}$ equal or as close as possible $F_{SSB\text{Low}}$ on the carrier's frequency raster.

$F_{SSB\text{Low}} = F_{SS\text{ref}} - BW_{SSB} / 2$
$F_{\text{carrier}} = \text{Ceil}((F_{SSB\text{Low}} + 12 * SCS_{\text{Carrier}} * (N_{RB} / 2)) / \Delta F_{\text{Raster}}) * \Delta F_{\text{Raster}}$
$F_{\text{carrierLow}} = \text{see formula for } F_{\text{carrierLow}} \text{ in Table C.1-1 with new value of } F_{\text{carrier}}$

- 2e. Calculate k_{SSB}

$k_{SSB} = (F_{SSB\text{Low}} - F_{\text{carrierLow}}) / \text{subCarrierSpacingCommon (MIB, FR2) (TS 38.211 [3], clause 7.4.3.1).}$
$N = SCS_{SSB} / \text{subCarrierSpacingCommon (MIB, FR2).}$
$k_{SSB} \text{ MOD } N \neq 0$ indicates that the SSB subcarriers are not aligned with the resource grid given by the SCS indicated by subCarrierSpacingCommon in the MIB.

If k_{SSB} is an integer and $k_{SSB} \text{ MOD } N = 0$, then continue from step 3 else modify the carrier frequency to get valid value of k_{SSB} and $k_{SSB} \text{ MOD } N = 0$.

3. Calculate Point A frequency, $\Delta F_{\text{offsetToCarrier}}$ and $\Delta F_{\text{OffsetToPointA}}$:
The CORESET#0 configuration is selected using 24 RBs and $\text{Offset}_{RBs} = 0$ according to Table 13-8 and Index 0 for $SCS_{SSB} = 120$ KHz in TS 38.213 [22] and Table 13-10 and Index 0 for $SCS_{SSB} = 240$ kHz in TS 38.213 [22] (see C.4.1). This means that $F_{\text{OffsetToPointA}} = F_{\text{carrierLow}}$. By selecting Point A equal to $F_{\text{carrierLow}}$ this gives:

$F_{\text{PointA}} = F_{\text{carrierLow}}$
$\Delta F_{\text{offsetToCarrier}} = 0$
$\Delta F_{\text{OffsetToPointA}} = 0$

4. Calculate signalling parameters:

IE field	Value
ssb-SubcarrierOffset	Set to the 4 least significant bits of k_{SSB} . The IE field <i>ssb-SubcarrierOffset</i> is signalled in the MIB.
controlResourceSetZero	0 (Index=0 in table 13-8 for $SCS_{SSB} = 120$ KHz in TS 38.213 [22] and table 13-10 for $SCS_{SSB} = 240$ KHz in TS 38.213 [22]. The IE field <i>controlResourceSetZero</i> is signalled in the IE <i>pdccch-ConfigSIB1</i> in the MIB.
absoluteFrequencySSB	Set to $F_{SS\text{ref}}$ expressed in ARFCN as defined in TS 38.101-1 [15] and TS 38.101-2 [39], clause 5.4.2.
absoluteFrequencyPointA	Set to F_{PointA} expressed in ARFCN as defined in TS 38.101-1 [15] and TS 38.101-2 [39], clause 5.4.2.
offsetToPointA	0 The IE field <i>offsetToPointA</i> is signalled in IE <i>FrequencyInfoDL-SIB</i> .
offsetToCarrier	0 The IE field <i>offsetToCarrier</i> is signalled in IE <i>SCS-SpecificCarrier</i> .

C.4.4 Determination of SSB, CORESET#0 and signalling parameters for NR Intra-band Contiguous CA for SCell

The following procedure is used to determine an SSB on the synchronisation raster (GSCN) and a CORESET#0 configuration (k_{SSB} , $\text{Offset}_{RBs} = 0$ and *OffsetToPointA*) as close as possible to the carrier's lower edge. See figure C1-1 and clause C.1 for definition of parameters referenced in the procedure.

1. The target test frequencies for Low, Mid and High ranges are calculated as described in clause C.2.4.2.2
2. Determine SSB and CORESET#0:
 - 2a. Calculate the lower of $F_{SS\text{ref}}$, $F_{SS\text{ref\_Min}}$, correspondent to SSB lowest subcarrier being at the same frequency as the carrier's lowest subcarrier; and the higher limit of $F_{SS\text{ref}}$, $F_{SS\text{ref\_Max}}$, correspondent to SSB highest subcarrier being at the same frequency as the carrier's highest subcarrier $F_{SS\text{ref\_Max}}$

$F_{\text{carrierLow}} = \text{see formula for } F_{\text{carrierLow}} \text{ in Table C.1-1}$
$F_{SS\text{ref\_Min}} = F_{\text{carrierLow}} + CRB_{\text{size}} * \text{Offset}_{RBs,\text{min}} + BW_{SSB} / 2$
$F_{SS\text{ref\_Max}} = F_{\text{carrierLow}} + \Delta F_{\text{carrierBandwidth}} - BW_{SSB} / 2$

- 2b. Calculate $GSCN_{MIN}$ correspondent to F_{SSref_Min} in accordance to TS 38.101-1 [7], clause 5.4.3.1 for FR1 and TS 38.101-2 [7], clause 5.4.3.1 for FR2 and select the closest valid GSCN value with $GSCN \geq GSCN_{MIN}$ for the carrier in according to the carrier's synchronisation raster as specified in clause 5.4.3.3 in TS 38.101-1 [7] and TS 38.101-2 [8].
- 2c. Calculate the F_{SSref} for the selected GSCN value in step 1b in accordance to TS 38.101-1 [7], clause 5.4.3.1 for FR1 and TS 38.101-2 [7], clause 5.4.3.1 for FR2.
- 2d. Calculate the frequency $F_{offsetToPointA}$, which is the lowest subcarrier of the lowest resource block with the subcarrier spacing being a multiple of resource blocks expressed in terms of common PRB size and overlaps with the SS/PBCH block subcarrier 0 of the first resource block of the SS/PBCH block, F_{SSBlow} (TS 38.211 [3], clause 7.4.3.1):

$F_{SSBlow} = F_{SSref} - BW_{SSB} / 2$
$F_{offsetToPointA} = CRB_{size} * \text{Floor}(\text{Round}((F_{SSBlow} - F_{carrierLow}) / CRB_{size}), 5) + F_{carrierLow}$ Note 1

Note 1: The "Round" operation is needed to avoid that platforms using "float" representation will give erroneous results. Hence, the need for the "Round" operation is platform dependant. The "Round" operation is to be done to 5 decimals. It is needed to avoid that a calculated value of for example 5.999999999 is Floored to the value of 5.

- 2e. Calculate the maximum $Offset_{RBs}$ value with $F_{CORESET0Low} \geq F_{carrierLow}$:

$Max\_Offset_{RBs} = \text{Round}((F_{offsetToPointA} - F_{carrierLow}) / CRB_{size})$ Note 2

Note 2: The "Round" operation is needed to avoid that platforms using "float" representation will give erroneous results. Hence, the need for the "Round" operation is platform dependant. It is needed to make sure that the Max_Offset_{RBs} is an integer. For example a calculated value of $Max\_Offset_{RBs} = 5.999999999$ shall result in a $Max\_Offset_{RBs} = 6$.

- 2f. Select the largest valid $Offset_{RBs}$ value equal or smaller than the calculated max value, Max_Offset_{RBs} in step 1e within the applicable values for the carrier in TS 38.213 [4], table 13-1 to 13-10 limited to the table indexes with number of RBs $N_{RB}^{CORESET}$ and number of symbols $N_{symb}^{CORESET}$ equal to the minimum value of $N_{RB}^{CORESET}$ in the table and minimum value of $N_{symb}^{CORESET}$ for the selected $N_{RB}^{CORESET}$. If a valid $Offset_{RBs}$ value is found, then continue from step 2g.

If no valid $Offset_{RBs}$ value is found, then select the next valid GSCN with $F_{SSref} \leq F_{SSref\_Max}$ within the valid GSCN range for the carrier and repeat steps 2b to 2f.

If no valid $Offset_{RBs}$ value found within the valid GSCN range then will the carrier not be possible to use as PCell and F_{SSref} , k_{SSB} , F_{PointA} , $OffsetToCarrier$ and $OffsetToPointA$ are calculated as described in clause C.3.3 and the procedure is completed.

- 2g. Calculate k_{SSB}

$k_{SSB} = (F_{SSBlow} - F_{offsetToPointA}) / \{15 \text{ kHz for FR1, } subCarrierSpacingCommon \text{ (MIB) for FR2}\}$ (TS 38.211 [3], clause 7.4.3.1).
$N = SCS_{SSB} / \{15 \text{ kHz for FR1; } subCarrierSpacingCommon \text{ (MIB) for FR2}\}.$
$k_{SSB} \text{ MOD } N \neq 0$ indicates that the SSB subcarriers are not aligned with the resource grid given by the SCS indicated by $subCarrierSpacingCommon$ in the MIB.

If k_{SSB} is an integer and $k_{SSB} \text{ MOD } N = 0$, then continue from step 2.

If k_{SSB} is not an integer value or $k_{SSB} \text{ MOD } N \neq 0$, then select the next valid GSCN with $F_{SSref} < F_{SSref\_Max}$ within the valid GSCN range for the carrier and repeat steps 2b to 2g.

If $N > 1$ and no valid k_{SSB} value found within the valid GSCN range for the currently selected carrier frequency $F_{carrier}$ then shift $F_{carrier}$ up by ΔF_{Raster} for Low range; or down by ΔF_{Raster} for Mid, Mid-Low, Mid-High and High ranges and repeat steps 1a to 1g for a maximum shift of $3 * \Delta F_{Raster}$ (see clause C.3.1, Note 1).

Cases requiring more than $3 \cdot \Delta F_{\text{Raster}}$ shifts shall be analyzed individually and, if eventually agreed, marked in section 4.3 to have been obtained applying certain exceptions over this section C.3.2. In case of an exception, for Mid, Mid-Low and Mid-High, shifting frequency up can also be considered to achieve the frequency closer to the ideal case.

If no valid k_{SSB} value found within the valid GSCN range then will the carrier not be possible to use as PCell and F_{SSref} , k_{SSB} , F_{PointA} , *OffsetToCarrier* and *OffsetToPointA* are calculated as described in clause C.3.2 and the procedure is completed.

3. Calculate Point A frequency, $\Delta F_{\text{offsetToCarrier}}$ and $\Delta F_{\text{OffsetToPointA}}$:

The CORESET#0 configuration is selected using 24 RBs and $\text{Offset}_{\text{RBs}} = 0$ according to Table 13-8 and Index 0 for $\text{SCS}_{\text{SSB}} = 120$ KHz in TS 38.213 [22] and Table 13-10 and Index 0 for $\text{SCS}_{\text{SSB}} = 240$ kHz in TS 38.213 [22] (see C.4.1). This means that $F_{\text{OffsetToPointA}} = F_{\text{carrierLow}}$. By selecting Point A equal to $F_{\text{carrierLow}}$ this gives:

$F_{\text{PointA}} = F_{\text{carrierLow}}$
$\Delta F_{\text{offsetToCarrier}} = 0$
$\Delta F_{\text{OffsetToPointA}} = 0$

4. Calculate signalling parameters:

IE field	Value
ssb-SubcarrierOffset	Set to the 4 least significant bits of k_{SSB} . The IE field <i>ssb-SubcarrierOffset</i> is signalled in the MIB.
controlResourceSetZero	0 (Index=0 in table 13-8 for $\text{SCS}_{\text{SSB}} = 120$ KHz in TS 38.213 [22] and table 13-10 for $\text{SCS}_{\text{SSB}} = 240$ KHz in TS 38.213 [22]). The IE field <i>controlResourceSetZero</i> is signalled in the IE <i>pdccch-ConfigSIB1</i> in the MIB.
absoluteFrequencySSB	Set to F_{SSref} expressed in ARFCN as defined in TS 38.101-1 [15] and TS 38.101-2 [39], clause 5.4.2.
absoluteFrequencyPointA	Set to F_{PointA} expressed in ARFCN as defined in TS 38.101-1 [15] and TS 38.101-2 [39], clause 5.4.2.
offsetToPointA	0 The IE field <i>offsetToPointA</i> is signalled in IE <i>FrequencyInfoDL-SIB</i> .
offsetToCarrier	0 The IE field <i>offsetToCarrier</i> is signalled in IE <i>SCS-SpecificCarrier</i> .

C.5 Determination of test frequencies and S-SSB for V2X bands

C.5.1 General

Figure C.5.1-1 shows carrier and S-SSB on V2X bands and related parameters.

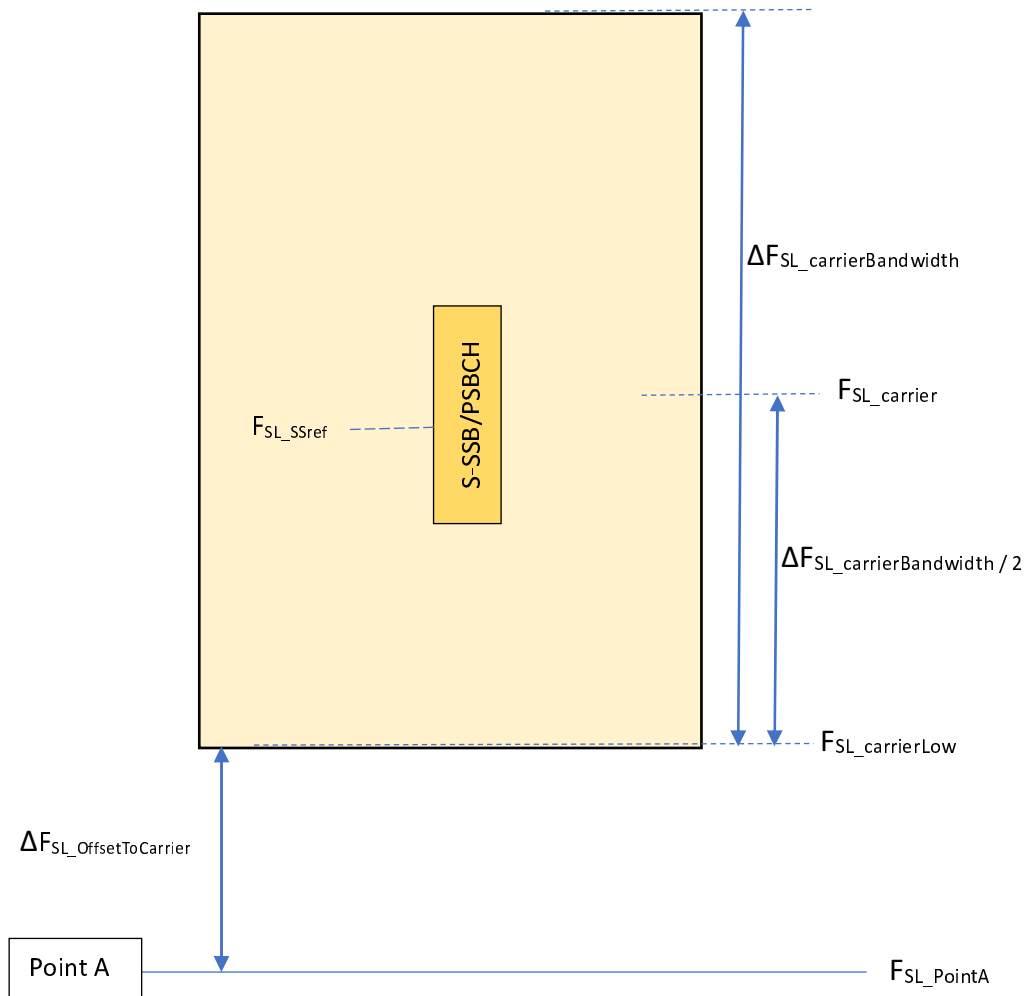


Figure C.5.1-1: location of S-SSB within a channel

The parameters referenced in Figure C.5.1-1 are defined in Table C.5.1-1.

Table C.5.1-1: Definition of parameters for V2X bands

Parameter	Description
F_{SL_PointA}	Reference Point A frequency.
$F_{SL\_carrier}$	$F_{SL\_carrier}$ is the centre frequency of a carrier corresponding to its NR-ARFCN value.
$F_{SL\_carrierLow}$	$F_{SL\_carrierLow}$ is the centre frequency of lowest subcarrier of the carrier. $F_{SL\_carrierLow} = F_{SL\_carrier} - 12 * SCS_{SL\_Carrier} * (N_{RB} / 2)$ with N_{RB} according to section 5.3E.1 of TS 38.101-1 for the channel bandwidth of the carrier.
$\Delta F_{SL\_carrierBandwidth}$	$\Delta F_{SL\_carrierBandwidth}$ is the carrier's channel bandwidth as provided in <i>carrierBandwidth</i> to the UE (<i>sl-SCS-SpecificCarrierList-r16</i>).
$\Delta F_{SL\_OffsetToCarrier}$	$\Delta F_{SL\_OffsetToCarrier}$ is the frequency offset between Point A and the lower edge of the carrier. $\Delta F_{SL\_OffsetToCarrier} = offsetToCarrier * CRB_{Size}$, where CRB_{Size} according to the subcarrier spacing of the carrier. <i>offsetToCarrier</i> is signalled to the UE (<i>sl-SCS-SpecificCarrierList-r16</i>).
F_{SL_SSref}	Centre frequency of subcarrier with index 66 in the S-SS/PSBCH block, corresponding to NR-ARFCN value signalled to the UE by <i>sl-AbsoluteFrequencySSB-r16</i> .

Additional parameters used in this annex are defined in Table C.5.1-2.

Table C.5.1-2: Definition of additional parameters used in section C.5.2

$SCS_{SL\_Carrier}$	subcarrier spacing for the carrier (<i>sl-SCS-SpecificCarrierList-r16</i>): FR1: 15kHz, 30kHz or 60kHz according to TS 38.101-1 [7] Table 5.3.5-1
CRB_{size}	Common Resource Block size = $12 * SCS_{SL\_Carrier}$.
F_{SL_Low}	Lowest frequency of the frequency range of the V2X band as defined in clause 5.2E.1 of TS 38.101-1 [7].
F_{SL_High}	Highest frequency of the frequency range of the V2X band as defined in clause 5.2E.1 of TS 38.101-1 [7].
ΔF_{SL_Raster}	Frequency raster of the band as defined in clause 5.4E.2.3 of TS 38.101-1 [7].
BW_{SL}	Bandwidth of V2X operation frequency range of the band.
CBW_{SL}	UE V2X operation channel bandwidth (MHz) of the carrier according to section 5.3E.1 of TS 38.101-1 [7].
BW_{SL_SSB}	Bandwidth of the SSB. $BW_{SL\_SSB} = 11 * SCS_{SL\_Carrier} * 12$

C.5.2 Determination of test frequencies and S-SSB for V2X bands

The carrier test frequencies are determined considering the channel raster according to clause 5.4.2.3 in TS 38.101-1 [7] for FR1.

The complete S-SSB shall be within a bandwidth of the SL BWP. The subcarrier with index 0 in the S-SSB shall be aligned with a subcarrier with index 0 in an RB of the SL BWP.

1. Determine sidelink carrier centre frequencies and the frequency of the carrier's lowest subcarrier:

$F_{SL\_LowRange} = \text{Ceil}((F_{SL\_Low} + CBW_{SL}/2) / \Delta F_{SL\_Raster}) * \Delta F_{SL\_Raster}$	C.5.2-Eq1
$F_{SL\_MidRange} = \text{Round}((F_{SL\_Low} + BW_{SL}/2) / \Delta F_{SL\_Raster}) * \Delta F_{SL\_Raster}$	C.5.2-Eq2
$F_{SL\_HighRange} = \text{Floor}((F_{SL\_High} - CBW_{SL}/2) / \Delta F_{SL\_Raster}) * \Delta F_{SL\_Raster}$	C.5.2-Eq3
$F_{SL\_carrierLow}$ = see formula for $F_{SL\_carrierLow}$ in Table C.1-1	

2. Determine OffsetToCarrier

Select offsetToCarrier value for the carrier in accordance to Table C.5.2-1.

Table C.5.2-1: Sidelink offsetToCarrier default values for different frequency ranges

Frequency range	Sidelink offsetToCarrier
Low range	0
Mid range	504
High range	6
Mid-Low range	36
Mid-High range	114
Note: Different values of <i>offsetToCarrier</i> have been selected for Low, Mid-Low, Mid, Mid-High and High ranges to achieve enhanced test coverage of the <i>offsetToCarrier</i> range of values.	

3. Determine F_{SL_PointA} :

$$F_{SL\_PointA} = F_{SL\_carrierLow} - \text{offsetToCarrier} * CRB_{size}$$

4. Determine the centre frequencies of S-SSB for the lowest, mid and highest possible location of F_{SL_SSref} :

$$\begin{aligned} F_{SL\_SSref\_Low} &= F_{carrierLow} + BW_{SL\_SSB} / 2 \\ F_{SL\_SSref\_Mid} &= F_{carrierLow} + (\text{Floor}(N_{RB}/2) - 5) * CRB_{size} + BW_{SSB} / 2 \\ F_{SL\_SSref\_High} &= F_{carrierLow} + (N_{RB} - 11) * CRB_{size} + BW_{SSB} / 2 \end{aligned}$$

5. Calculate signalling parameters:

IE field	Value
sl-AbsoluteFrequencySSB-r16	Set to F_{SL_SSref} expressed in ARFCN as defined in TS 38.101-1 [15] clause 5.4E.2.
sl-AbsoluteFrequencyPointA-r16	Set to F_{SL_PointA} expressed in ARFCN as defined in TS 38.101-1 [15] clause 5.4E.2.
offsetToCarrier	Set to value calculated in step 2. The IE field offsetToCarrier is signalled in IE sl-SCS-SpecificCarrierList-r16.

Annex D (informative): Change history

Change history							
Date	Meeting	TDoc	CR	R ev	Ca t	Subject/Comment	New version
2017-12	RAN5#77	R5-176995	-	-	-	TP on clauses of test equipment requirement in 38.508-1	0.1.0
2017-12	RAN5#77	R5-176779	-	-	-	Add references	0.1.0
2017-12	RAN5#77	R5-176917	-	-	-	Introduce general chapter for generic procedures	0.1.0
2017-12	RAN5#77	R5-176918	-	-	-	Add generic procedures RRC_IDLE and RRC_CONNECTED	0.1.0
2017-12	RAN5#77	R5-176920	-	-	-	Introduce RRC chapters	0.1.0
2018-01	RAN5#1- 5G-NR Adhoc	R5-180066	-	-	-	Definition of downlink physical layer parameters for NR	0.2.0
2018-03	RAN5#78	R5-181697	-	-	-	Addition of the environmental information into TS 38.508-1	0.3.0
2018-03	RAN5#78	R5-180265	-	-	-	Introduce chapter for reference configurations	0.3.0
2018-03	RAN5#78	R5-181311	-	-	-	Update the general chapter	0.3.0
2018-03	RAN5#78	R5-180382	-	-	-	Update RRCReconfiguration	0.3.0
2018-03	RAN5#78	R5-180383	-	-	-	Add draft RRC messages	0.3.0
2018-03	RAN5#78	R5-180577	-	-	-	Update chapter for test frequencies	0.3.0
2018-03	RAN5#78	R5-180709	-	-	-	Add CellGroupConfig	0.3.0
2018-03	RAN5#78	R5-180773	-	-	-	Add radioBearerConfig	0.3.0
2018-03	RAN5#78	R5-180775	-	-	-	Add draft Radio resource control information elements	0.3.0
2018-03	RAN5#78	R5-180966	-	-	-	Update RRC Connected state	0.3.0
2018-03	RAN5#78	R5-181035	-	-	-	Update RRC IDLE state	0.3.0
2018-03	RAN5#78	R5-180253	-	-	-	Revised WID on: UE Conformance Test Aspects - 5G system with NR and LTE	0.3.0
2018-04	RAN5#1- 5G-NR Adhoc	R5-181812	-	-	-	Update Radio resource control information elements	0.4.0
2018-04	RAN5#1- 5G-NR Adhoc	R5-182109	-	-	-	Update CellGroupConfig	0.4.0
2018-04	RAN5#1- 5G-NR Adhoc	R5-182064	-	-	-	Update radioBearerConfig	0.4.0
2018-04	RAN5#1- 5G-NR Adhoc	R5-182062	-	-	-	Update MIB	0.4.0
2018-04	RAN5#1- 5G-NR Adhoc	R5-182063	-	-	-	Introduce radio conditions	0.4.0
2018-04	RAN5#1- 5G-NR Adhoc	R5-181786	-	-	-	Update RRCReconfiguration	0.4.0
2018-04	RAN5#1- 5G-NR Adhoc	R5-181971	-	-	-	Add Other information elements	0.4.0
2018-04	RAN5#1- 5G-NR Adhoc	R5-182065	-	-	-	Update chapter 4.5.1 General	0.4.0
2018-04	RAN5#1- 5G-NR Adhoc	R5-181813	-	-	-	Update RRC IDLE state	0.4.0
2018-04	RAN5#1- 5G-NR Adhoc	R5-182066	-	-	-	Update RRC CONNECTED state	0.4.0
2018-04	RAN5#1- 5G-NR Adhoc	R5-182110	-	-	-	Text proposal to add clause 4.4 reference system configurations to TS 38.508-1	0.4.0
2018-04	RAN5#1- 5G-NR Adhoc	R5-182067	-	-	-	TP for definition of physical channel allocations in 38.508-1	0.4.0

2018-04	RAN5#1-5G-NR Adhoc	R5-182091	-	-	-	TP for clauses of signal level	0.4.0
2018-04	RAN5#1-5G-NR Adhoc	R5-181972	-	-	-	TP for updating of Downlink physical layer parameters	0.4.0
2018-04	RAN5#1-5G-NR Adhoc	R5-181893	-	-	-	Addition of UE capability information elements	0.4.0
2018-04	RAN5#1-5G-NR Adhoc	R5-181973	-	-	-	TP for adding Mid channel BW definition in TS 38.508-1	0.4.0
2018-04	RAN5#1-5G-NR Adhoc	R5-181974	-	-	-	Addition of SRB3	0.4.0
2018-04	RAN5#1-5G-NR Adhoc	R5-182068	-	-	-	Update MeasConfig information elements	0.4.0
2018-05	RAN5#79	R5-183082	-	-	-	Update radio resource control information elements	1.0.0
2018-05	RAN5#79	R5-182288	-	-	-	TP for updating of downlink physical layer parameters in 38.508-1	1.0.0
2018-05	RAN5#79	R5-182349	-	-	-	Corrections to clause 4.4 reference system configurations	1.0.0
2018-05	RAN5#79	R5-182792	-	-	-	TP for clauses of Supported Channels for a NR cell	1.0.0
2018-05	RAN5#79	R5-183218	-	-	-	pCR update chapter for test frequencies - EN-DC	1.0.0
2018-05	RAN5#79	R5-183234	-	-	-	TP for updating of physical channel allocation part in 38.508-1	1.0.0
2018-05	RAN5#79	R5-183256	-	-	-	pCR update chapter for test frequencies - FR1	1.0.0
2018-05	RAN5#79	R5-183916	-	-	-	TP for Annex A in TS 38.508-1 and adding a set of Connection Diagrams	1.0.0
2018-05	RAN5#79	R5-183920	-	-	-	Introduction of Environmental conditions for FR1	1.0.0
2018-05	RAN5#79	R5-182249	-	-	-	Add reference to NR cell table	1.0.0
2018-05	RAN5#79	R5-183210	-	-	-	Update PDCCH	1.0.0
2018-05	RAN5#79	R5-182312	-	-	-	Update chapter 4.5.1 General	1.0.0
2018-05	RAN5#79	R5-182313	-	-	-	Update RRC CONNECTED state	1.0.0
2018-05	RAN5#79	R5-183087	-	-	-	Addition of new RRCReconfiguration definition for AM/UM bearers	1.0.0
2018-05	RAN5#79	R5-183088	-	-	-	Updates to UE capability information elements	1.0.0
2018-05	RAN5#79	R5-183250	-	-	-	Updates to UE capability information elements	1.0.0
2018-05	RAN5#79	R5-183083	-	-	-	Update RACH	1.0.0
2018-05	RAN5#79	R5-183084	-	-	-	Update ARFCN	1.0.0
2018-05	RAN5#79	R5-183211	-	-	-	Update BWP-UplinkDedicated	1.0.0
2018-05	RAN5#79	R5-183212	-	-	-	Update serving cell	1.0.0
2018-05	RAN5#79	R5-183214	-	-	-	Update RadioBearerConfig	1.0.0
2018-05	RAN5#79	R5-183215	-	-	-	Update RRCReconfiguration	1.0.0
2018-05	RAN5#79	R5-182381	-	-	-	Update MIB	1.0.0
2018-05	RAN5#79	R5-183090	-	-	-	Update RRCReconfiguration for measurements	1.0.0
2018-05	RAN5#79	R5-183264	-	-	-	Corrections to clause 4.5	1.0.0
2018-05	RAN5#79	R5-183249	-	-	-	Correction to the Table CellGroupConfig	1.0.0
2018-05	RAN5#79	R5-183255	-	-	-	Update of FR1 signal levels	1.0.0
2018-05	RAN5#79	R5-183216	-	-	-	Update CellGroupConfig and some related information elements	1.0.0
2018-05	RAN5#79	R5-183086	-	-	-	Update CSI-MeasConfig	1.0.0
2018-05	RAN5#79	R5-183260	-	-	-	Update some information elements related to MeasConfig	1.0.0
2018-06	RAN#80	RP-181207	-	-	-	put under revision control as v15.0.0 with small editorial changes	15.0.0
2018-09	RAN#81	R5-184087	0004	-	F	Update chapter 3	15.1.0
2018-09	RAN#81	R5-184297	0012	-	F	Addition of Mid channel bandwidth definition for several missing bands	15.1.0
2018-09	RAN#81	R5-184327	0014	-	F	Adding condition for CP-OFDM waveform	15.1.0
2018-09	RAN#81	R5-184347	0019	-	F	Modified RRC_IDLE procedure to allow multi PDN configuration throughout the test case	15.1.0
2018-09	RAN#81	R5-184471	0044	-	F	Introduction of test frequencies for NR band n77	15.1.0
2018-09	RAN#81	R5-184472	0045	-	F	Introduction of test frequencies for NR band n78	15.1.0
2018-09	RAN#81	R5-184473	0046	-	F	Introduction of test frequencies for NR band n79	15.1.0
2018-09	RAN#81	R5-184474	0047	-	F	Introduction of test frequencies for NR band n257	15.1.0

2018-09	RAN#81	R5-184475	0048	-	F	Introduction of test frequencies for NR band n258	15.1.0
2018-09	RAN#81	R5-184476	0049	-	F	Introduction of test frequencies for NR band n260	15.1.0
2018-09	RAN#81	R5-184477	0050	-	F	Introduction of test frequencies for NR band n261	15.1.0
2018-09	RAN#81	R5-184599	0056	-	F	Add IE SS-RSSI-Measurement	15.1.0
2018-09	RAN#81	R5-184617	0059	-	F	Update MIB	15.1.0
2018-09	RAN#81	R5-184630	0072	-	F	Editorial Update in clause 4.6.3	15.1.0
2018-09	RAN#81	R5-184783	0079	-	F	Introduce 5GMM messages	15.1.0
2018-09	RAN#81	R5-184785	0080	-	F	Introduce 5GSM messages	15.1.0
2018-09	RAN#81	R5-184806	0081	-	F	Mid test CH BW for n71	15.1.0
2018-09	RAN#81	R5-185028	0002	1	F	Add SRB1 and SRB2 with NR PDCP	15.1.0
2018-09	RAN#81	R5-185029	0003	1	F	Update serving cell	15.1.0
2018-09	RAN#81	R5-185030	0005	1	F	Introduce SA RRC messages	15.1.0
2018-09	RAN#81	R5-185031	0006	1	F	Correct IE FrequencyInfoDL	15.1.0
2018-09	RAN#81	R5-185032	0007	1	F	Introduce SA system information blocks	15.1.0
2018-09	RAN#81	R5-185033	0008	1	F	Introduce SA other information elements	15.1.0
2018-09	RAN#81	R5-185035	0013	1	F	Correct IE GSCN-ValueNR	15.1.0
2018-09	RAN#81	R5-185036	0017	1	F	Update of FR1 signal levels	15.1.0
2018-09	RAN#81	R5-185037	0022	1	F	Addition of IP Connectivity check procedure	15.1.0
2018-09	RAN#81	R5-185038	0053	1	F	Introduce SA radio resource control information elements	15.1.0
2018-09	RAN#81	R5-185039	0054	1	F	Update IE PhysicalCellGroupConfig	15.1.0
2018-09	RAN#81	R5-185040	0055	1	F	Introduce cell configurations and timer tolerances chapter headers	15.1.0
2018-09	RAN#81	R5-185041	0057	1	F	Add IE SSB-MTC	15.1.0
2018-09	RAN#81	R5-185042	0058	1	F	Update BWP	15.1.0
2018-09	RAN#81	R5-185043	0060	1	F	Update PDSCH-Config	15.1.0
2018-09	RAN#81	R5-185044	0062	1	F	Update PUCCH and PUSCH configuration	15.1.0
2018-09	RAN#81	R5-185045	0063	1	F	Update RACH configuration	15.1.0
2018-09	RAN#81	R5-185046	0065	1	F	Update CellGroupConfig	15.1.0
2018-09	RAN#81	R5-185047	0066	1	F	Update CSI-MeasConfig	15.1.0
2018-09	RAN#81	R5-185048	0067	1	F	Update MeasConfig	15.1.0
2018-09	RAN#81	R5-185049	0068	1	F	Update other information elements	15.1.0
2018-09	RAN#81	R5-185050	0070	1	F	Update RadioBearerConfig	15.1.0
2018-09	RAN#81	R5-185051	0073	1	F	Specifying content for MeasResultSCG-Failure	15.1.0
2018-09	RAN#81	R5-185052	0075	1	F	Editorial correction to band representation of non-contiguous EN-DC band combination	15.1.0
2018-09	RAN#81	R5-185053	0076	1	F	Correction to RLC-Config IE	15.1.0
2018-09	RAN#81	R5-185054	0077	1	F	Correction to RadioBearerConfig-DRB	15.1.0
2018-09	RAN#81	R5-185055	0078	1	F	Corrections and updates to BandCombinationList and Feature Set IEs	15.1.0
2018-09	RAN#81	R5-185056	0084	1	F	Corrections and updates to UE Capability IEs	15.1.0
2018-09	RAN#81	R5-185085	0087	-	F	Addition of UM condition to RLC-Bearer-Config IE	15.1.0
2018-09	RAN#81	R5-185133	0086	1	F	Correction of clause 4.3.3.2.3	15.1.0
2018-09	RAN#81	R5-185163	0018	1	F	Modified RRC_Connected procedure for Multi PDN throughout the test case.	15.1.0
2018-09	RAN#81	R5-185165	0020	1	F	Update EN-DC Generic Procedure Parameter for Multi-PDN addition throughout Test Case	15.1.0
2018-09	RAN#81	R5-185168	0082	1	F	Introduction of OTA signalling test environment	15.1.0
2018-09	RAN#81	R5-185171	0009	2	F	Updates to PDCCH and SearchSpace configurations	15.1.0
2018-09	RAN#81	R5-185173	0016	1	F	Test Frequencies	15.1.0
2018-09	RAN#81	R5-185177	0051	1	F	Introduction of test frequencies for signalling testing in clause 6	15.1.0
2018-09	RAN#81	R5-185250	0023	1	F	Introduction of test frequencies for NR band n1	15.1.0
2018-09	RAN#81	R5-185251	0024	1	F	Introduction of test frequencies for NR band n2	15.1.0
2018-09	RAN#81	R5-185252	0025	1	F	Introduction of test frequencies for NR band n3	15.1.0
2018-09	RAN#81	R5-185253	0026	1	F	Introduction of test frequencies for NR band n5	15.1.0
2018-09	RAN#81	R5-185254	0027	1	F	Introduction of test frequencies for NR band n7	15.1.0
2018-09	RAN#81	R5-185255	0028	1	F	Introduction of test frequencies for NR band n8	15.1.0
2018-09	RAN#81	R5-185256	0029	1	F	Introduction of test frequencies for NR band n12	15.1.0
2018-09	RAN#81	R5-185257	0030	1	F	Introduction of test frequencies for NR band n20	15.1.0
2018-09	RAN#81	R5-185258	0031	1	F	Introduction of test frequencies for NR band n25	15.1.0
2018-09	RAN#81	R5-185259	0032	1	F	Introduction of test frequencies for NR band n28	15.1.0
2018-09	RAN#81	R5-185260	0033	1	F	Introduction of test frequencies for NR band n34	15.1.0
2018-09	RAN#81	R5-185261	0034	1	F	Introduction of test frequencies for NR band n38	15.1.0
2018-09	RAN#81	R5-185262	0035	1	F	Introduction of test frequencies for NR band n39	15.1.0

2018-09	RAN#81	R5-185263	0036	1	F	Introduction of test frequencies for NR band n40	15.1.0
2018-09	RAN#81	R5-185264	0037	1	F	Update of test frequencies for NR band n41	15.1.0
2018-09	RAN#81	R5-185265	0038	1	F	Introduction of test frequencies for NR band n51	15.1.0
2018-09	RAN#81	R5-185266	0039	1	F	Introduction of test frequencies for NR band n66	15.1.0
2018-09	RAN#81	R5-185267	0040	1	F	Introduction of test frequencies for NR band n70	15.1.0
2018-09	RAN#81	R5-185268	0041	1	F	Update of test frequencies for NR band n71	15.1.0
2018-09	RAN#81	R5-185269	0042	1	F	Introduction of test frequencies for NR band n75	15.1.0
2018-09	RAN#81	R5-185270	0043	1	F	Introduction of test frequencies for NR band n76	15.1.0
2018-09	RAN#81	R5-185443	0052	1	F	Correction to power level for FR1 RF tests	15.1.0
2018-09	RAN#81	R5-185557	0085	1	F	FR2 UE BeamlockProcedure 38.508-1	15.1.0
2018-12	RAN#82	R5-186453	0239	-	F	Updates to clause 4.3.3, physical channel allocations	15.2.0
2018-12	RAN#82	R5-186457	0240	-	F	Correction to E-UTRA test frequency for intra-band contiguous configuration for band 41	15.2.0
2018-12	RAN#82	R5-186468	0241	-	F	E-UTRA test frequencies for EN-DC intra-band contiguous configurations for band 71	15.2.0
2018-12	RAN#82	R5-186491	0245	-	F	Update chapter 4.5 for RF connected procedure	15.2.0
2018-12	RAN#82	R5-186508	0249	-	F	FR2 UE and TE radiated connection diagram	15.2.0
2018-12	RAN#82	R5-186575	0251	-	F	Update IE ServingCellConfig	15.2.0
2018-12	RAN#82	R5-186612	0252	-	F	Add CounterCheck	15.2.0
2018-12	RAN#82	R5-186613	0253	-	F	Update DLInformationTransfer	15.2.0
2018-12	RAN#82	R5-186641	0255	-	F	Update IE SchedulingRequestResourceConfig	15.2.0
2018-12	RAN#82	R5-186665	0258	-	F	Update LocationMeasurementIndication	15.2.0
2018-12	RAN#82	R5-186666	0259	-	F	Update MeasurementReport	15.2.0
2018-12	RAN#82	R5-186677	0261	-	F	Resubmission of update to 38.508 for mid channel bandwidth	15.2.0
2018-12	RAN#82	R5-186682	0262	-	F	Update MobilityFromNRCommand	15.2.0
2018-12	RAN#82	R5-186691	0264	-	F	Update Paging	15.2.0
2018-12	RAN#82	R5-186692	0265	-	F	Update RRCReestablishment	15.2.0
2018-12	RAN#82	R5-186714	0267	-	F	Update RRCReject	15.2.0
2018-12	RAN#82	R5-186719	0268	-	F	Updates related to introduction of test frequencies	15.2.0
2018-12	RAN#82	R5-186722	0271	-	F	Update SecurityAlgorithmConfig	15.2.0
2018-12	RAN#82	R5-186723	0272	-	F	Updates to MeasResults	15.2.0
2018-12	RAN#82	R5-186734	0273	-	F	Update RRCRelease	15.2.0
2018-12	RAN#82	R5-186744	0274	-	F	Update RRCResume	15.2.0
2018-12	RAN#82	R5-186825	0279	-	F	Correction of test frequencies for NR band n1	15.2.0
2018-12	RAN#82	R5-186826	0280	-	F	Correction of test frequencies for NR band n2	15.2.0
2018-12	RAN#82	R5-186827	0281	-	F	Correction of test frequencies for NR band n3	15.2.0
2018-12	RAN#82	R5-186828	0282	-	F	Correction of test frequencies for NR band n5	15.2.0
2018-12	RAN#82	R5-186829	0283	-	F	Correction of test frequencies for NR band n7	15.2.0
2018-12	RAN#82	R5-186830	0284	-	F	Correction of test frequencies for NR band n8	15.2.0
2018-12	RAN#82	R5-186831	0285	-	F	Correction of test frequencies for NR band n12	15.2.0
2018-12	RAN#82	R5-186832	0286	-	F	Correction of test frequencies for NR band n20	15.2.0
2018-12	RAN#82	R5-186833	0287	-	F	Correction of test frequencies for NR band n25	15.2.0
2018-12	RAN#82	R5-186834	0288	-	F	Correction of test frequencies for NR band n28	15.2.0
2018-12	RAN#82	R5-186835	0289	-	F	Correction of test frequencies for NR band n34	15.2.0
2018-12	RAN#82	R5-186836	0290	-	F	Correction of test frequencies for NR band n38	15.2.0
2018-12	RAN#82	R5-186837	0291	-	F	Correction of test frequencies for NR band n39	15.2.0
2018-12	RAN#82	R5-186838	0292	-	F	Correction of test frequencies for NR band n40	15.2.0
2018-12	RAN#82	R5-186839	0293	-	F	Correction of test frequencies for NR band n41	15.2.0
2018-12	RAN#82	R5-186840	0294	-	F	Correction of test frequencies for NR band n51	15.2.0
2018-12	RAN#82	R5-186841	0295	-	F	Introduction of test frequencies for NR band n66	15.2.0
2018-12	RAN#82	R5-186842	0296	-	F	Introduction of test frequencies for NR band n70	15.2.0
2018-12	RAN#82	R5-186844	0298	-	F	Correction of test frequencies for NR band n75	15.2.0
2018-12	RAN#82	R5-186845	0299	-	F	Correction of test frequencies for NR band n76	15.2.0
2018-12	RAN#82	R5-186846	0300	-	F	Correction of test frequencies for NR band n77	15.2.0
2018-12	RAN#82	R5-186847	0301	-	F	Correction of test frequencies for NR band n78	15.2.0
2018-12	RAN#82	R5-186848	0302	-	F	Correction of test frequencies for NR band n79	15.2.0
2018-12	RAN#82	R5-186850	0304	-	F	Correction of test frequencies for NR band n258	15.2.0
2018-12	RAN#82	R5-186851	0305	-	F	Correction of test frequencies for NR band n260	15.2.0
2018-12	RAN#82	R5-186852	0306	-	F	Correction of test frequencies for NR band n261	15.2.0
2018-12	RAN#82	R5-186855	0309	-	F	Introduction of preamble test states	15.2.0
2018-12	RAN#82	R5-186857	0311	-	F	Introduction DCI format 1_0 for paging, SI and random access	15.2.0
2018-12	RAN#82	R5-186858	0312	-	F	Correction to DCI format 1_1	15.2.0

2018-12	RAN#82	R5-186859	0313	-	F	Update IE RateMatchPattern	15.2.0
2018-12	RAN#82	R5-186861	0315	-	F	Correction of generic procedure parameter naming for test loop function	15.2.0
2018-12	RAN#82	R5-186862	0316	-	F	Correction of test procedures to activate and deactivate UE Beamlock Function	15.2.0
2018-12	RAN#82	R5-186893	0318	-	F	Corrections to the notes in the OTA signal level tables	15.2.0
2018-12	RAN#82	R5-186911	0320	-	F	Add RRCSetupComplete	15.2.0
2018-12	RAN#82	R5-186912	0321	-	F	Add RRCSetupRequest	15.2.0
2018-12	RAN#82	R5-186913	0322	-	F	Add RRCSystemInfoRequest	15.2.0
2018-12	RAN#82	R5-186916	0323	-	F	Add SecurityModeCommand	15.2.0
2018-12	RAN#82	R5-186918	0324	-	F	Update SystemInformation	15.2.0
2018-12	RAN#82	R5-186920	0325	-	F	Add UEAssistanceInformation	15.2.0
2018-12	RAN#82	R5-186921	0326	-	F	Update UECapabilityEnquiry	15.2.0
2018-12	RAN#82	R5-186922	0327	-	F	Update ULInformationTransfer	15.2.0
2018-12	RAN#82	R5-186923	0328	-	F	Update IE PTRS-UplinkConfig	15.2.0
2018-12	RAN#82	R5-186925	0330	-	F	Update RRCResumeRequest	15.2.0
2018-12	RAN#82	R5-186929	0331	-	F	Update PTRS-DownlinkConfig	15.2.0
2018-12	RAN#82	R5-186936	0335	-	F	Update PUCCH-SpatialRelationInfo	15.2.0
2018-12	RAN#82	R5-186987	0342	-	F	Addition of SIB3 message_Resubmission of 185792	15.2.0
2018-12	RAN#82	R5-186988	0343	-	F	Addition of SIB5 message_Resubmission of 186054	15.2.0
2018-12	RAN#82	R5-186989	0344	-	F	Addition of SIB6 - SIB8 message_Resubmission of 186055	15.2.0
2018-12	RAN#82	R5-186990	0345	-	F	Addition of SIB9 message_Resubmission of 186056	15.2.0
2018-12	RAN#82	R5-187026	0348	-	F	Addition of P-Max in Test environment for RF test	15.2.0
2018-12	RAN#82	R5-187028	0350	-	F	Addition of test frequencies for SUL band n80	15.2.0
2018-12	RAN#82	R5-187030	0352	-	F	Addition of test frequencies for SUL band n82	15.2.0
2018-12	RAN#82	R5-187031	0353	-	F	Addition of test frequencies for SUL band n83	15.2.0
2018-12	RAN#82	R5-187032	0354	-	F	Addition of test frequencies for SUL band n84	15.2.0
2018-12	RAN#82	R5-187033	0355	-	F	Addition of test frequencies for SUL band n86	15.2.0
2018-12	RAN#82	R5-187110	0358	-	F	Correction to default message contents for SRB3 configuration	15.2.0
2018-12	RAN#82	R5-187159	0361	-	F	Updates to Configuration Update 5GMM messages	15.2.0
2018-12	RAN#82	R5-187160	0362	-	F	Updates to De-registration 5GMM messages	15.2.0
2018-12	RAN#82	R5-187161	0363	-	F	Updates to Identity 5GMM messages	15.2.0
2018-12	RAN#82	R5-187162	0364	-	F	Updates to NAS Transport 5GMM messages	15.2.0
2018-12	RAN#82	R5-187163	0365	-	F	Updates to Notification 5GMM messages	15.2.0
2018-12	RAN#82	R5-187164	0366	-	F	Updates to PDU session authentication 5GSM messages	15.2.0
2018-12	RAN#82	R5-187166	0368	-	F	Updates to PDU session modification 5GSM messages	15.2.0
2018-12	RAN#82	R5-187172	0374	-	F	Removal of Editor's Notes in section 4.6.3	15.2.0
2018-12	RAN#82	R5-187175	0377	-	F	Addition and updates to Information Elements in section 4.6.5	15.2.0
2018-12	RAN#82	R5-187270	0381	-	F	Updating 4.2.1 General functional requirements	15.2.0
2018-12	RAN#82	R5-187271	0382	-	F	Update the section for test equipment requirements for TRx	15.2.0
2018-12	RAN#82	R5-187272	0383	-	F	FR2 downlink signal level(38.508-1)	15.2.0
2018-12	RAN#82	R5-187413	0389	-	F	Uplink RNTI to valid value in TS 38.508-1	15.2.0
2018-12	RAN#82	R5-187415	0390	-	F	Update maxPayloadMinus1 in PUCCH config in TS 38.508-1	15.2.0
2018-12	RAN#82	R5-187420	0393	-	F	Addition of connection diagram for 2 TX UL MIMO	15.2.0
2018-12	RAN#82	R5-187557	0396	-	F	Addition of low and high test channel bandwidth in 38.508	15.2.0
2018-12	RAN#82	R5-188205	0397	1	F	Updates to Annex B to add Permitted OTA Test Methods	15.2.0
2018-12	RAN#82	R5-187610	0398	-	F	Corrections to IEs part of PDSCH-ServingCellConfig, ServingCellConfig and ServingCellConfigCommon	15.2.0
2018-12	RAN#82	R5-187659	0243	1	F	Wordings for Uplink NAS messages	15.2.0
2018-12	RAN#82	R5-187660	0247	1	F	Default cell configurations for NAS	15.2.0
2018-12	RAN#82	R5-187661	0248	1	F	Update IE SI-SchedulingInfo	15.2.0
2018-12	RAN#82	R5-187662	0349	1	F	Addition of Combinations of system information blocks in 4.4.3.1.2	15.2.0
2018-12	RAN#82	R5-187664	0263	1	F	Correction to various Radio resource control IEs	15.2.0
2018-12	RAN#82	R5-187665	0308	1	F	Correction to DCI formats 0_0 and 0_1	15.2.0
2018-12	RAN#82	R5-187666	0310	1	F	Introduction of SDL and SUL cells in simulated cells in clause 4.4.2	15.2.0
2018-12	RAN#82	R5-187667	0314	1	F	Correction to RRC_IDLE procedure	15.2.0
2018-12	RAN#82	R5-187668	0332	1	F	Update CSI related information elements	15.2.0
2018-12	RAN#82	R5-187669	0333	1	F	Update ServingCellConfigCommon and TDD-UL-DL-Config	15.2.0
2018-12	RAN#82	R5-187670	0334	1	F	Update SRS-Config	15.2.0
2018-12	RAN#82	R5-187671	0336	1	F	Update some information elements for measurements	15.2.0

2018-12	RAN#82	R5-187672	0337	1	F	Update CellGroupConfig and related information elements	15.2.0
2018-12	RAN#82	R5-187673	0338	1	F	CR of NR 508-1 clause 4.6.2_SIB2, SIB4	15.2.0
2018-12	RAN#82	R5-187674	0339	1	F	CR of NR 508-1 Table 4.4.2-2_Default NR Cells parameters	15.2.0
2018-12	RAN#82	R5-187675	0341	1	F	Update RLC-Config	15.2.0
2018-12	RAN#82	R5-187676	0357	1	F	Specifying Test procedure to check that UE is camped on a new NR cell belonging to a new TA	15.2.0
2018-12	RAN#82	R5-187677	0360	1	F	Updates to Authentication 5GMM messages	15.2.0
2018-12	RAN#82	R5-187678	0369	1	F	Updates to PDU session release 5GSM messages	15.2.0
2018-12	RAN#82	R5-187679	0371	1	F	Updates to Security mode 5GMM messages	15.2.0
2018-12	RAN#82	R5-187680	0375	1	F	Addition of new Information Elements in section 4.6.3	15.2.0
2018-12	RAN#82	R5-187681	0379	1	F	Updates to SIG OTA Calibration for FR2	15.2.0
2018-12	RAN#82	R5-187682	0394	1	F	Addition of default QoS configurations	15.2.0
2018-12	RAN#82	R5-187720	0319	2	F	Uplink PTRS disable for RF testing	15.2.0
2018-12	RAN#82	R5-188238	0242	2	F	Addition to E-UTRA test frequencies for intra-band contiguous configuration for band 41	15.2.0
2018-12	RAN#82	R5-187723	0303	1	F	Correction of test frequencies for NR band n257	15.2.0
2018-12	RAN#82	R5-187724	0269	1	F	New annex for NR test frequency calculations	15.2.0
2018-12	RAN#82	R5-187725	0297	1	F	Correction of test frequencies for NR band n71	15.2.0
2018-12	RAN#82	R5-187745	0238	1	F	Update SIB1	15.2.0
2018-12	RAN#82	R5-187747	0257	1	F	Correction to Signal levels for conducted testing	15.2.0
2018-12	RAN#82	R5-187748	0270	1	F	Updates to E-UTRA RRC_CONNECTED generic procedure	15.2.0
2018-12	RAN#82	R5-187750	0275	1	F	Add RRCResumeComplete	15.2.0
2018-12	RAN#82	R5-187751	0278	1	F	Update chapter 4.5.3 RRC_INACTIVE	15.2.0
2018-12	RAN#82	R5-187752	0307	1	F	Correction of test frequencies for signalling testing in clause 6	15.2.0
2018-12	RAN#82	R5-187753	0317	1	F	Specifying Test procedure to check that UE is in RRC_IDLE state on a certain NR cell	15.2.0
2018-12	RAN#82	R5-187754	0329	1	F	Update IE RLF-TimersAndConstants	15.2.0
2018-12	RAN#82	R5-187755	0346	1	F	Add RRCSetup	15.2.0
2018-12	RAN#82	R5-187756	0347	1	F	Update RRCReconfiguration	15.2.0
2018-12	RAN#82	R5-187757	0356	1	F	Update IE RadioBearerConfig	15.2.0
2018-12	RAN#82	R5-187759	0370	1	F	Updates to Registration 5GMM messages	15.2.0
2018-12	RAN#82	R5-187760	0372	1	F	Updates to Security protected 5GS NAS and 5GMM status messages	15.2.0
2018-12	RAN#82	R5-187761	0373	1	F	Updates to Service Request 5GMM messages	15.2.0
2018-12	RAN#82	R5-187762	0376	1	F	Addition and updates to Information Elements in section 4.6.4	15.2.0
2018-12	RAN#82	R5-187763	0388	1	F	Addition of 5GS related new EFs to Test UICC definition	15.2.0
2018-12	RAN#82	R5-187764	0395	1	F	Update IE CellGroupConfig	15.2.0
2018-12	RAN#82	R5-187802	0384	1	F	Updating power levels for LTE Anchor Link	15.2.0
2018-12	RAN#82	R5-187887	0351	1	F	Addition of test frequencies for SUL band n81	15.2.0
2018-12	RAN#82	R5-188031	0391	1	F	Addition of 2TX_UL_MIMO condition	15.2.0
2018-12	RAN#82	R5-188107	0367	2	F	Updates to PDU session establishment 5GSM messages	15.2.0
2018-12	RAN#82	R5-188122	0260	2	F	Update chapter 4.5.2 RRC_IDLE	15.2.0
2018-12	RAN#82	R5-188123	0250	1	F	Update chapter 4.5.4 RRC_CONNECTED	15.2.0
2019-03	RAN#83	R5-191047	0526	-	F	Update IE PDCCH-ConfigCommon	15.3.0
2019-03	RAN#83	R5-191048	0527	-	F	Update IE RadioBearerConfig	15.3.0
2019-03	RAN#83	R5-191094	0529	-	F	Updates of test channel bandwidth in TS 38.508-1	15.3.0
2019-03	RAN#83	R5-191129	0530	-	F	Update IE SDAP-Config	15.3.0
2019-03	RAN#83	R5-191145	0531	-	F	Update IE CellGroupId	15.3.0
2019-03	RAN#83	R5-191155	0532	-	F	Correction to temperature and voltage of Common test environments	15.3.0
2019-03	RAN#83	R5-191187	0534	-	F	Updates for Other SI support	15.3.0
2019-03	RAN#83	R5-191189	0536	-	F	Correction to RadioBearerConfig	15.3.0
2019-03	RAN#83	R5-191191	0538	-	F	Correction to SystemInformation	15.3.0
2019-03	RAN#83	R5-191192	0539	-	F	Correction to PUCCH-Config	15.3.0
2019-03	RAN#83	R5-191193	0540	-	F	Correction to SIB3 and SIB4	15.3.0
2019-03	RAN#83	R5-191194	0541	-	F	Correction of PUSCH-TimeDomainResourceAllocationList	15.3.0
2019-03	RAN#83	R5-191195	0542	-	F	Corrections and clarifications regarding DCI formats 0_1 and 1_1	15.3.0
2019-03	RAN#83	R5-191219	0545	-	F	Updates to Authentication 5GMM messages	15.3.0
2019-03	RAN#83	R5-191220	0546	-	F	Updates to Configuration Update 5GMM messages	15.3.0
2019-03	RAN#83	R5-191221	0547	-	F	Updates to De-registration 5GMM messages	15.3.0
2019-03	RAN#83	R5-191222	0548	-	F	Updates to NAS transport 5GMM messages	15.3.0

2019-03	RAN#83	R5-191223	0549	-	F	Updates to PDU session establishment 5GSM messages	15.3.0
2019-03	RAN#83	R5-191224	0550	-	F	Updates to PDU session modification 5GSM messages	15.3.0
2019-03	RAN#83	R5-191225	0551	-	F	Updates to PDU session release 5GSM messages	15.3.0
2019-03	RAN#83	R5-191226	0552	-	F	Updates to Registration 5GMM messages	15.3.0
2019-03	RAN#83	R5-191227	0553	-	F	Updates to Security Mode 5GMM messages	15.3.0
2019-03	RAN#83	R5-191228	0554	-	F	Updates to Security Protected 5GS NAS message	15.3.0
2019-03	RAN#83	R5-191229	0555	-	F	Updates to Service Request 5GMM messages	15.3.0
2019-03	RAN#83	R5-191233	0556	-	F	Update IE BWP-Id	15.3.0
2019-03	RAN#83	R5-191234	0557	-	F	Add IE RejectWaitTime	15.3.0
2019-03	RAN#83	R5-191235	0558	-	F	Update IE ShortMAC-I	15.3.0
2019-03	RAN#83	R5-191236	0559	-	F	Update IE UE-TimersAndConstants	15.3.0
2019-03	RAN#83	R5-191237	0560	-	F	Update IE PUCCH-ConfigCommon	15.3.0
2019-03	RAN#83	R5-191242	0561	-	F	Addition of Positioning specifications	15.3.0
2019-03	RAN#83	R5-191243	0562	-	F	Update AS security Algorithm for RF testing	15.3.0
2019-03	RAN#83	R5-191274	0563	-	F	Update of structure of test frequency clauses	15.3.0
2019-03	RAN#83	R5-191280	0564	-	F	Correction to UL configuration	15.3.0
2019-03	RAN#83	R5-191281	0565	-	F	Correction to default value of IE's in PDSCH-Config in Table 4.6.3-75	15.3.0
2019-03	RAN#83	R5-191301	0568	-	F	Correction of test frequencies for signalling testing in clause 6	15.3.0
2019-03	RAN#83	R5-191302	0569	-	F	Correction of test frequencies for EN-DC configuration DC_(n)41	15.3.0
2019-03	RAN#83	R5-191304	0571	-	F	Correction of test frequencies for NR band n1	15.3.0
2019-03	RAN#83	R5-191305	0572	-	F	Correction of test frequencies for NR band n2	15.3.0
2019-03	RAN#83	R5-191306	0573	-	F	Correction of test frequencies for NR band n3	15.3.0
2019-03	RAN#83	R5-191307	0574	-	F	Correction of test frequencies for NR band n5	15.3.0
2019-03	RAN#83	R5-191308	0575	-	F	Correction of test frequencies for NR band n7	15.3.0
2019-03	RAN#83	R5-191309	0576	-	F	Correction of test frequencies for NR band n8	15.3.0
2019-03	RAN#83	R5-191310	0577	-	F	Correction of test frequencies for NR band n12	15.3.0
2019-03	RAN#83	R5-191311	0578	-	F	Correction of test frequencies for NR band n20	15.3.0
2019-03	RAN#83	R5-191312	0579	-	F	Correction of test frequencies for NR band n25	15.3.0
2019-03	RAN#83	R5-191313	0580	-	F	Correction of test frequencies for NR band n28	15.3.0
2019-03	RAN#83	R5-191314	0581	-	F	Correction of test frequencies for NR band n34	15.3.0
2019-03	RAN#83	R5-191315	0582	-	F	Correction of test frequencies for NR band n38	15.3.0
2019-03	RAN#83	R5-191316	0583	-	F	Correction of test frequencies for NR band n39	15.3.0
2019-03	RAN#83	R5-191317	0584	-	F	Correction of test frequencies for NR band n40	15.3.0
2019-03	RAN#83	R5-191318	0585	-	F	Correction of test frequencies for NR band n41	15.3.0
2019-03	RAN#83	R5-191319	0586	-	F	Introduction of test frequencies for NR band n50	15.3.0
2019-03	RAN#83	R5-191320	0587	-	F	Correction of test frequencies for NR band n51	15.3.0
2019-03	RAN#83	R5-191321	0588	-	F	Correction of test frequencies for NR band n66	15.3.0
2019-03	RAN#83	R5-191322	0589	-	F	Correction of test frequencies for NR band n70	15.3.0
2019-03	RAN#83	R5-191323	0590	-	F	Correction of test frequencies for NR band n71	15.3.0
2019-03	RAN#83	R5-191324	0591	-	F	Introduction of test frequencies for NR band n74	15.3.0
2019-03	RAN#83	R5-191325	0592	-	F	Correction of test frequencies for NR band n75	15.3.0
2019-03	RAN#83	R5-191326	0593	-	F	Correction of test frequencies for NR band n76	15.3.0
2019-03	RAN#83	R5-191327	0594	-	F	Correction of test frequencies for NR band n77	15.3.0
2019-03	RAN#83	R5-191328	0595	-	F	Correction of test frequencies for NR band n78	15.3.0
2019-03	RAN#83	R5-191329	0596	-	F	Correction of test frequencies for NR band n79	15.3.0
2019-03	RAN#83	R5-191330	0597	-	F	Correction of test frequencies for NR band n257	15.3.0
2019-03	RAN#83	R5-191331	0598	-	F	Correction of test frequencies for NR band n258	15.3.0
2019-03	RAN#83	R5-191332	0599	-	F	Correction of test frequencies for NR band n260	15.3.0
2019-03	RAN#83	R5-191333	0600	-	F	Correction of test frequencies for NR band n261	15.3.0
2019-03	RAN#83	R5-191334	0601	-	F	Correction of DCI format 1_0	15.3.0
2019-03	RAN#83	R5-191352	0603	-	F	Update CounterCheckResponse	15.3.0
2019-03	RAN#83	R5-191354	0604	-	F	Add FailureInformation	15.3.0
2019-03	RAN#83	R5-191355	0605	-	F	Update LocationMeasurementIndication	15.3.0
2019-03	RAN#83	R5-191356	0606	-	F	Updates to section 4.8.3 (test USIM parameters)	15.3.0
2019-03	RAN#83	R5-191360	0607	-	F	Update MeasurementReport	15.3.0
2019-03	RAN#83	R5-191361	0608	-	F	Update MobilityFromNRCommand	15.3.0
2019-03	RAN#83	R5-191364	0609	-	F	Update Paging	15.3.0
2019-03	RAN#83	R5-191366	0610	-	F	Update RRCSetupComplete	15.3.0
2019-03	RAN#83	R5-191368	0611	-	F	Update SecurityModeComplete	15.3.0
2019-03	RAN#83	R5-191370	0612	-	F	Update SecurityModeFailure	15.3.0
2019-03	RAN#83	R5-191371	0613	-	F	Update UEAssistanceInformation	15.3.0

2019-03	RAN#83	R5-191372	0614	-	F	Update UECapabilityInformation	15.3.0
2019-03	RAN#83	R5-191384	0616	-	F	Correction to SecurityConfig of RadioBearerConfig	15.3.0
2019-03	RAN#83	R5-191385	0617	-	F	Correction to SIB9	15.3.0
2019-03	RAN#83	R5-191386	0618	-	F	Correction to SRS-Config of BWP-UplinkDedicated	15.3.0
2019-03	RAN#83	R5-191446	0620	-	F	Correction of default configuration of RRC IEs in 38.508-1	15.3.0
2019-03	RAN#83	R5-191450	0621	-	F	Addition of NR system information combination SIB6, SIB7	15.3.0
2019-03	RAN#83	R5-191538	0624	-	F	Update ULInformationTransfer	15.3.0
2019-03	RAN#83	R5-191539	0625	-	F	Update IE QuantityConfig and CSI-ReportConfig	15.3.0
2019-03	RAN#83	R5-191620	0629	-	F	Clarification for NR inter-band measurement test case configuration	15.3.0
2019-03	RAN#83	R5-191762	0637	-	F	Editorial update in MeasObjectNR and ReportConfigNR	15.3.0
2019-03	RAN#83	R5-191763	0638	-	F	Update ReportConfigNR and TimeToTrigger	15.3.0
2019-03	RAN#83	R5-192271	0570	1	F	Correction of test frequencies for EN-DC configuration DC_(n)71	15.3.0
2019-03	RAN#83	R5-192272	0602	1	F	Update chapter 4.5 RRC Connected initiation	15.3.0
2019-03	RAN#83	R5-192273	0626	1	F	Update RRCRelease	15.3.0
2019-03	RAN#83	R5-192274	0615	1	F	Correction to NR SchedulingRequestResourceConfig	15.3.0
2019-03	RAN#83	R5-192275	0627	1	F	Update IE I-RNTI-Value	15.3.0
2019-03	RAN#83	R5-192276	0628	1	F	Update IE ShortI-RNTI-Value	15.3.0
2019-03	RAN#83	R5-192277	0630	1	F	Updates to test environments for Signalling test	15.3.0
2019-03	RAN#83	R5-192278	0633	1	F	Addition of USIM Profiles for Signaling TC	15.3.0
2019-03	RAN#83	R5-192279	0636	1	F	Update QoS Configuration	15.3.0
2019-03	RAN#83	R5-192280	0643	1	F	Update to of Generic procedure E-UTRA RRC_IDLE	15.3.0
2019-03	RAN#83	R5-192281	0644	1	F	Introduction of EAP AKA	15.3.0
2019-03	RAN#83	R5-192290	0655	-	F	Update chapter 4.5 RRC_INACTIVE	15.3.0
2019-03	RAN#83	R5-192363	0631	1	F	Updating P-Max IE	15.3.0
2019-03	RAN#83	R5-192364	0632	2	F	Updating IEs part of SearchSpace	15.3.0
2019-03	RAN#83	R5-192400	0528	1	F	Setup diagram for receiver test using spectrum analyzer	15.3.0
2019-03	RAN#83	R5-192541	0622	1	F	Connection diagrams for RRM tests	15.3.0
2019-03	RAN#83	R5-192542	0646	1	F	Antenna Connection diagram for UE part for RRM	15.3.0
2019-03	RAN#83	R5-192543	0649	1	F	Connection diagram for FR1 demod test cases	15.3.0
2019-03	RAN#83	R5-192705	0645	1	F	Introduction of Non 3GPP Access over WLAN	15.3.0
2019-03	RAN#83	R5-192735	0533	1	F	Correction to PUSCH-Config	15.3.0
2019-03	RAN#83	R5-192736	0535	1	F	Addition of details on Test State 0	15.3.0
2019-03	RAN#83	R5-192737	0537	1	F	Correction of CellGroupConfig tables and logical channel identities	15.3.0
2019-03	RAN#83	R5-192738	0543	1	F	Additions and updates to UE capability Information Elements	15.3.0
2019-03	RAN#83	R5-192739	0544	1	F	Updates and additions of default QoS configurations	15.3.0
2019-03	RAN#83	R5-192740	0566	1	F	Update chapter 4.5 General for PDUs	15.3.0
2019-03	RAN#83	R5-192741	0567	1	F	Update of Annex C on calculation of test frequencies	15.3.0
2019-03	RAN#83	R5-192742	0619	1	F	Correction to schedulingRequestID Configuration	15.3.0
2019-03	RAN#83	R5-192743	0639	1	F	Addition of Switch/Power UE procedures	15.3.0
2019-03	RAN#83	R5-192744	0640	1	F	Update to Test procedure to check that UE is camped on a new cell belonging to a new TA	15.3.0
2019-03	RAN#83	R5-192745	0641	1	F	Update to Test procedure to check that UE is in state 5GC RRC_IDLE on a certain cell	15.3.0
2019-03	RAN#83	R5-192846	0648	1	F	Updates to Annex B to add Permitted OTA Test Methods	15.3.0
2019-03	RAN#83	-	-	-	-	Editorial updates of table numbering	15.3.0
2019-06	RAN#84	R5-193537	0680	-	F	Remove unused DCI formats from 38.508-1	15.4.0
2019-06	RAN#84	R5-193540	0681	-	F	Adding setup diagram for Receiver performance tests 2x2	15.4.0
2019-06	RAN#84	R5-193542	0682	-	F	Remove brackets from parameters for DCI formats for scheduling	15.4.0
2019-06	RAN#84	R5-193613	0691	-	F	Update default configuration of QuantityConfig	15.4.0
2019-06	RAN#84	R5-193681	0693	-	F	Update chapter 4.5.3 RRC_INACTIVE procedures	15.4.0
2019-06	RAN#84	R5-193682	0694	-	F	Update chapter 4.5.4 RRC_CONNECTED procedures	15.4.0
2019-06	RAN#84	R5-193683	0695	-	F	Update chapter 4.5.5 SWITCHED_OFF procedures	15.4.0
2019-06	RAN#84	R5-193690	0696	-	F	Resubmission: Connection diagram for 1x2 Demod test cases	15.4.0
2019-06	RAN#84	R5-193734	0701	-	F	Update IE I-RNTI-Value	15.4.0
2019-06	RAN#84	R5-193735	0702	-	F	Update IE ShortI-RNTI-Value	15.4.0
2019-06	RAN#84	R5-193746	0710	-	F	Update IE SubcarrierSpacing	15.4.0
2019-06	RAN#84	R5-193813	0711	-	F	Update of USIM EF5GS3GPPLOC1 & EF5GSN3GPPLOC1	15.4.0
2019-06	RAN#84	R5-193828	0713	-	F	Add IE MultiFrequencyBandListNR-SIB	15.4.0
2019-06	RAN#84	R5-193829	0714	-	F	Add IE NR-NS-PmaxList	15.4.0

2019-06	RAN#84	R5-193843	0716	-	F	Update IE ServingCellConfig	15.4.0
2019-06	RAN#84	R5-193862	0717	-	F	Corrections to References	15.4.0
2019-06	RAN#84	R5-193980	0725	-	F	New test procedure for Registration Reject	15.4.0
2019-06	RAN#84	R5-193981	0726	-	F	Updates to test procedure 4.9.1	15.4.0
2019-06	RAN#84	R5-194038	0728	-	F	Editorial Correction - USIM Profiles for Signaling TC	15.4.0
2019-06	RAN#84	R5-194040	0729	-	F	Correction to QoS Configuration	15.4.0
2019-06	RAN#84	R5-194086	0733	-	F	Update K2 value to align with RF DL RMC	15.4.0
2019-06	RAN#84	R5-194087	0734	-	F	Update aggregationlevel2 in SearchSpace IE	15.4.0
2019-06	RAN#84	R5-194303	0740	-	F	TDD-UL-DL-Config for FR1 SCS 60kHz	15.4.0
2019-06	RAN#84	R5-194359	0742	-	F	Removal of column for Number of PDU sessions established from tables for Test States	15.4.0
2019-06	RAN#84	R5-194362	0743	-	F	Editorial correction to test frequency clauses	15.4.0
2019-06	RAN#84	R5-194364	0744	-	F	Update of test frequencies for EN-DC combination DC_41A_n41A	15.4.0
2019-06	RAN#84	R5-194367	0745	-	F	Common procedure to configure SCC for CA RF testing	15.4.0
2019-06	RAN#84	R5-194369	0746	-	F	Introduction of test frequencies for inter-band Rel-15 EN-DC two bands configurations	15.4.0
2019-06	RAN#84	R5-194420	0751	-	F	Update IE BWP-Downlink	15.4.0
2019-06	RAN#84	R5-194435	0752	-	F	Update IE BWP-Id	15.4.0
2019-06	RAN#84	R5-194438	0755	-	F	Updates to UE 4.6.5 Other Information Elements	15.4.0
2019-06	RAN#84	R5-194441	0757	-	F	Update IE BWP-Uplink	15.4.0
2019-06	RAN#84	R5-194479	0758	-	F	Editorial updates to 4.7.1 Contents of 5GMM messages	15.4.0
2019-06	RAN#84	R5-194480	0759	-	F	Editorial updates to 4.7.2 Contents of 5GSM messages	15.4.0
2019-06	RAN#84	R5-194510	0762	-	F	Update of Switch off - Power off procedure in RRC_CONNECTED	15.4.0
2019-06	RAN#84	R5-194539	0767	-	F	Introduction of test frequencies for EN-DC CA configuration DC_30A_n260(A-I)	15.4.0
2019-06	RAN#84	R5-194541	0768	-	F	Antenna Connection diagram for TE part for RRM	15.4.0
2019-06	RAN#84	R5-194709	0785	-	F	Update 38.508 RF and RRM clauses with agreed recommendation to configure UE as non-IMS	15.4.0
2019-06	RAN#84	R5-194783	0774	-	F	Introduction of test frequencies for NR band n50 and signalling testing	15.4.0
2019-06	RAN#84	R5-194784	0775	-	F	Introduction of test frequencies for NR band n74 and signalling testing	15.4.0
2019-06	RAN#84	R5-194790	0778	-	F	Updates to power allocations	15.4.0
2019-06	RAN#84	R5-194791	0779	-	F	Update of DownlinkConfigCommonSIB	15.4.0
2019-06	RAN#84	R5-194794	0684	1	F	Update IE PDSCH-Config	15.4.0
2019-06	RAN#84	R5-194795	0687	1	F	Update NR MeasObjectNR	15.4.0
2019-06	RAN#84	R5-194796	0690	1	F	Update default configuration of ReportConfigNR	15.4.0
2019-06	RAN#84	R5-194797	0692	1	F	Update chapter 4.5.2 RRC_IDLE procedures	15.4.0
2019-06	RAN#84	R5-194798	0704	1	F	Correction to the note associated to the Table 4.7.1-2	15.4.0
2019-06	RAN#84	R5-194800	0708	1	F	Update IE MIB	15.4.0
2019-06	RAN#84	R5-194801	0709	1	F	Update IE SchedulingRequestResourceConfig	15.4.0
2019-06	RAN#84	R5-194802	0712	1	F	Correct clause numbers in 4.5A	15.4.0
2019-06	RAN#84	R5-194803	0718	1	F	Update IE ServingCellConfigCommon	15.4.0
2019-06	RAN#84	R5-194804	0721	1	F	Update IE FrequencyInfoUL	15.4.0
2019-06	RAN#84	R5-194805	0722	1	F	Update IE FrequencyInfoUL-SIB	15.4.0
2019-06	RAN#84	R5-194806	0723	1	F	Update generic procedures chapter general	15.4.0
2019-06	RAN#84	R5-194807	0724	1	F	Update chapter 4.5.2 RRC_IDLE Initiation	15.4.0
2019-06	RAN#84	R5-194808	0730	1	F	Updates to RadioBearerConfig	15.4.0
2019-06	RAN#84	R5-194809	0732	1	F	Updates to PhysicalCellGroupConfig	15.4.0
2019-06	RAN#84	R5-194810	0739	1	F	New test procedure for RRC_CONNECTED	15.4.0
2019-06	RAN#84	R5-194811	0741	1	F	Updated IE MeasObjectEUTRA and ReportConfigInterRAT	15.4.0
2019-06	RAN#84	R5-194812	0753	1	F	Updates to Registration 5GMM messages	15.4.0
2019-06	RAN#84	R5-194813	0754	1	F	Updates to UE 4.6.4 UE Capability Information Elements	15.4.0
2019-06	RAN#84	R5-194814	0760	1	F	New Test procedure for UE for Tracking area updating / inter-system change from N1 mode to S1 mode in 5GMM/EMM-IDLE mode	15.4.0
2019-06	RAN#84	R5-194817	0777	1	F	New Test procedure for UE for Tracking area updating / inter-system change from S1 mode to N1 mode in 5GMM/EMM-IDLE mode	15.4.0

2019-06	RAN#84	R5-194821	0780	-	F	Introducing conditions for Handover in RRCReconfiguration and RadioBearerConfig	15.4.0
2019-06	RAN#84	R5-194824	0781	-	F	Updates to Service Request 5GMM message	15.4.0
2019-06	RAN#84	R5-194879	0735	1	F	Updates to Multi-Cell SIG OTA testing for FR2	15.4.0
2019-06	RAN#84	R5-194881	0763	1	F	Introduction of test frequencies for NR CA configuration CA_n257B	15.4.0
2019-06	RAN#84	R5-194882	0764	1	F	Introduction of test frequencies for NR CA configuration CA_n260B	15.4.0
2019-06	RAN#84	R5-194883	0765	1	F	Introduction of test frequencies for NR CA configuration CA_n260I	15.4.0
2019-06	RAN#84	R5-194884	0766	1	F	Introduction of test frequencies for NR CA configuration CA_n261B	15.4.0
2019-06	RAN#84	R5-194885	0782	1	F	Introduction of test frequencies for NR CA configuration CA_n260(A-I)	15.4.0
2019-06	RAN#84	R5-194889	0737	1	F	corrections to Non 3GPP Access over WLAN procedures	15.4.0
2019-06	RAN#84	R5-194894	0783	-	F	Update FFS in ResumeCause	15.4.0
2019-06	RAN#84	R5-194896	0784	-	F	Updates to reference QoS configurations for EPS interworking	15.4.0
2019-06	RAN#84	R5-194902	0685	1	F	Correction of Setup Diagrams for Receiver tests using Signal Generator in 38.508-1	15.4.0
2019-06	RAN#84	R5-195095	0750	1	F	Introduction of Connection diagram for 2x4 and 4x4 Demod test cases	15.4.0
2019-06	RAN#84	R5-195322	0686	1	F	Update NR SIB1	15.4.0
2019-06	RAN#84	R5-195323	0703	1	F	Update IE CommonCellGroupConfig	15.4.0
2019-06	RAN#84	R5-195324	0715	1	F	Update default configuration of MeasGapConfig	15.4.0
2019-06	RAN#84	R5-195325	0719	1	F	Addition of Switch off / Power off procedure in RRC_INACTIVE	15.4.0
2019-06	RAN#84	R5-195326	0720	1	F	Update of SIB5	15.4.0
2019-06	RAN#84	R5-195327	0731	1	F	Updates to RLC-BearerConfig	15.4.0
2019-06	RAN#84	R5-195328	0756	1	F	Updates to PDU session establishment 5GSM messages	15.4.0
2019-06	RAN#84	R5-195329	0773	1	F	Introduction of test frequencies for inter-RAT signalling testing	15.4.0
2019-06	RAN#84	R5-195330	0776	1	F	Correction to PUSCH-Config	15.4.0
2019-06	RAN#84	R5-195426	0727	2	F	38.508-1 implementation of FR2 UL demod OTA tests using single pol Rx TE	15.4.0
2019-06	RAN#84	R5-195427	0772	2	F	Addition of message contents needed for DEMOD test cases	15.4.0
2019-06	RAN#84	R5-194370	0747	-	F	Introduction of test frequencies for inter-band Rel-16 EN-DC two bands configurations	16.0.0
2019-06	RAN#84	R5-194371	0748	-	F	Introduction of test frequencies for inter-band Rel-16 EN-DC five bands configurations	16.0.0
2019-06	RAN#84	R5-194373	0749	-	F	Introduction of test frequencies for NR CA configuration CA_n41C	16.0.0
2019-09	RAN#85	R5-195696	0795	-	F	Update IE PDCP-Config	16.1.0
2019-09	RAN#85	R5-195711	0797	-	F	Add IE CGI-InfoEUTRA	16.1.0
2019-09	RAN#85	R5-195729	0798	-	F	Update IE CGI-Info	16.1.0
2019-09	RAN#85	R5-195730	0799	-	F	Update IE MeasResults	16.1.0
2019-09	RAN#85	R5-195731	0800	-	F	Update of 4.3.1.0A mid test CBW in 38.508-1	16.1.0
2019-09	RAN#85	R5-195747	0803	-	F	Update IE MeasResultCellListSFTD	16.1.0
2019-09	RAN#85	R5-195748	0804	-	F	Add IE MeasResultCellListSFTD-EUTRA	16.1.0
2019-09	RAN#85	R5-195749	0805	-	F	Add IE MeasResult2EUTRA	16.1.0
2019-09	RAN#85	R5-195750	0806	-	F	Add IE MeasResult2NR	16.1.0
2019-09	RAN#85	R5-195751	0807	-	F	Add IE SK-Counter	16.1.0
2019-09	RAN#85	R5-195752	0808	-	F	Update IE SS-RSSI-Measurement	16.1.0
2019-09	RAN#85	R5-195792	0811	-	F	Update MeasurementReport	16.1.0
2019-09	RAN#85	R5-195885	0814	-	F	Update RRCResume	16.1.0
2019-09	RAN#85	R5-195886	0815	-	F	Editorial update RRCReconfigurationComplete	16.1.0
2019-09	RAN#85	R5-195887	0816	-	F	Editorial update RRCReject	16.1.0
2019-09	RAN#85	R5-195888	0817	-	F	Editorial update RRCRelease	16.1.0
2019-09	RAN#85	R5-195889	0818	-	F	Add SCGFailureInformation	16.1.0
2019-09	RAN#85	R5-195890	0819	-	F	Add SCGFailureInformationEUTRA	16.1.0
2019-09	RAN#85	R5-195895	0820	-	F	Update UECapabilityEnquiry	16.1.0
2019-09	RAN#85	R5-195909	0821	-	F	Editorial update UECapabilityInformation	16.1.0
2019-09	RAN#85	R5-195910	0822	-	F	Add ULInformationTransferMRDC	16.1.0
2019-09	RAN#85	R5-195926	0823	-	F	Editorial update RRC IEs	16.1.0
2019-09	RAN#85	R5-195927	0824	-	F	Editorial update S-NSSAI	16.1.0

2019-09	RAN#85	R5-195944	0826	-	F	Correction to ReportConfigNR	16.1.0
2019-09	RAN#85	R5-195945	0827	-	F	Updates to default configurations for 5GC NAS test cases	16.1.0
2019-09	RAN#85	R5-196030	0829	-	F	Handling of thresholds in FR2 when Events A3 and A6 are inter-frequency	16.1.0
2019-09	RAN#85	R5-196031	0830	-	F	Adding references to TS 38.508-1	16.1.0
2019-09	RAN#85	R5-196136	0836	-	F	Addition new NR cell for SS-RSRP RRM tests	16.1.0
2019-09	RAN#85	R5-196148	0837	-	F	Update of Annex C for selecting SSB location for cells not selectable as PCell	16.1.0
2019-09	RAN#85	R5-196158	0838	-	F	Correction of references to test frequency tables	16.1.0
2019-09	RAN#85	R5-196159	0839	-	F	Correction of clause numbers for test frequencies for Non-3GPP Access	16.1.0
2019-09	RAN#85	R5-196168	0840	-	F	Correction of test frequency parameters for SSB location for NR band n1 and SCS 60kHz	16.1.0
2019-09	RAN#85	R5-196169	0841	-	F	Correction of test frequency parameters for SSB location for NR band n2 and SCS 60kHz	16.1.0
2019-09	RAN#85	R5-196170	0842	-	F	Correction of test frequency parameters for SSB location for NR band n3 and SCS 60kHz	16.1.0
2019-09	RAN#85	R5-196171	0843	-	F	Correction of test frequency parameters for SSB location for NR band n7 and SCS 60kHz	16.1.0
2019-09	RAN#85	R5-196172	0844	-	F	Correction of test frequency parameters for SSB location for NR band n25 and SCS 60kHz	16.1.0
2019-09	RAN#85	R5-196174	0846	-	F	Correction of test frequency parameters for SSB location for NR band n38 and SCS 60kHz	16.1.0
2019-09	RAN#85	R5-196175	0847	-	F	Correction of test frequency parameters for SSB location for NR band n39 and SCS 60kHz	16.1.0
2019-09	RAN#85	R5-196176	0848	-	F	Correction of test frequency parameters for SSB location for NR band n40 and SCS 60kHz	16.1.0
2019-09	RAN#85	R5-196177	0849	-	F	Correction of test frequency parameters for SSB location for NR band n41 and SCS 60kHz	16.1.0
2019-09	RAN#85	R5-196178	0850	-	F	Correction of test frequency parameters for SSB location for NR band n50 and SCS 60kHz	16.1.0
2019-09	RAN#85	R5-196179	0851	-	F	Correction of test frequency parameters for SSB location for NR band n66 and SCS 60kHz	16.1.0
2019-09	RAN#85	R5-196180	0852	-	F	Correction of test frequency parameters for SSB location for NR band n70 and SCS 60kHz	16.1.0
2019-09	RAN#85	R5-196181	0853	-	F	Correction of test frequency parameters for SSB location for NR band n74 and SCS 60kHz	16.1.0
2019-09	RAN#85	R5-196182	0854	-	F	Correction of test frequency parameters for SSB location for NR band n75 and SCS 15kHz and SCS 60kHz	16.1.0
2019-09	RAN#85	R5-196183	0855	-	F	Correction of test frequency parameters for SSB location for NR band n77 and SCS 60kHz	16.1.0
2019-09	RAN#85	R5-196184	0856	-	F	Correction of test frequency parameters for SSB location for NR band n78 and SCS 60kHz	16.1.0
2019-09	RAN#85	R5-196185	0857	-	F	Correction of test frequency parameters for SSB location for NR band n79 and SCS 60kHz	16.1.0
2019-09	RAN#85	R5-196197	0860	-	F	Update IE ServingCellConfigCommon	16.1.0
2019-09	RAN#85	R5-196198	0861	-	F	Update IE SubcarrierSpacing	16.1.0
2019-09	RAN#85	R5-196262	0863	-	F	Editorial update IE RLC-BearerConfig	16.1.0
2019-09	RAN#85	R5-196289	0864	-	F	Update chapter 4.5A.2 UE-requested PDU session establishment procedure	16.1.0
2019-09	RAN#85	R5-196310	0867	-	F	Addition of SUL bands for protocol testing in clause 6.2.3.1	16.1.0
2019-09	RAN#85	R5-196311	0868	-	F	Update of test frequency parameters for NR CA configuration CA_n41C	16.1.0
2019-09	RAN#85	R5-196315	0872	-	F	Update of test frequency parameters for NR CA configuration CA_n260(A-I)	16.1.0
2019-09	RAN#85	R5-196316	0873	-	F	Introduction of test frequencies for NR CA configuration CA_n261B and CA_n261C	16.1.0
2019-09	RAN#85	R5-196317	0874	-	F	Update of test frequency table for EN-DC configuration DC_41A_n41A for BCS1	16.1.0
2019-09	RAN#85	R5-196318	0875	-	F	Correction of test frequency parameters for EN-DC configuration DC_(n)41AA	16.1.0
2019-09	RAN#85	R5-196319	0876	-	F	Correction of test frequency parameters for EN-DC configuration DC_(n)71AA	16.1.0
2019-09	RAN#85	R5-196468	0885	-	F	Introduction of test frequencies for NR CA configuration CA_n258B and CA_n258C	16.1.0

2019-09	RAN#85	R5-196469	0886	-	F	Introduction of test frequencies for NR CA configuration CA_n258G to CA_n258M	16.1.0
2019-09	RAN#85	R5-196470	0887	-	F	Introduction of test frequencies for NR CA configuration CA_n260G to CA_n260I	16.1.0
2019-09	RAN#85	R5-196472	0889	-	F	Introduction of test frequencies for NR CA configuration CA_n261G to CA_n261I	16.1.0
2019-09	RAN#85	R5-196473	0890	-	F	Introduction of test frequencies for NR CA configuration CA_n261O to CA_n261Q	16.1.0
2019-09	RAN#85	R5-196490	0894	-	F	Introduction of test frequencies for NR CA configuration CA_n78C	16.1.0
2019-09	RAN#85	R5-196539	0895	-	F	Update to 38.508-1 for Demod specific message contents	16.1.0
2019-09	RAN#85	R5-196581	0897	-	F	Removing brackets from values for DCI formats	16.1.0
2019-09	RAN#85	R5-196597	0899	-	F	Cleanup of editor note of EFOPL5G	16.1.0
2019-09	RAN#85	R5-196637	0900	-	F	Update of default messages for EMERGENCY services test scenarios	16.1.0
2019-09	RAN#85	R5-196641	0904	-	F	Update of Test procedure for UE for Tracking area updating / Inter-system change from S1 mode to N1 mode in 5GMM/EMM-IDLE mode	16.1.0
2019-09	RAN#85	R5-196654	0905	-	F	Editorial correction of reference test conditions	16.1.0
2019-09	RAN#85	R5-196751	0911	-	F	AP#82.01: Update default DCI format to 0_1 / 1_1 in TS 38.508-1 for SIG test cases	16.1.0
2019-09	RAN#85	R5-196824	0917	-	F	Updates to UE 4.6.4 UE Capability Information Elements	16.1.0
2019-09	RAN#85	R5-196825	0918	-	F	Addition of default test control messages	16.1.0
2019-09	RAN#85	R5-196873	0922	-	F	Introduction of test frequencies for NR CA configuration CA_n258D to CA_n258F	16.1.0
2019-09	RAN#85	R5-196874	0923	-	F	Introduction of test frequencies for NR CA configuration CA_n260D to CA_n260F	16.1.0
2019-09	RAN#85	R5-196875	0924	-	F	Introduction of test frequencies for NR CA configuration CA_n260O to CA_n260Q	16.1.0
2019-09	RAN#85	R5-196942	0927	-	F	Correction of clause 2 and 4.3 in 38.508-1	16.1.0
2019-09	RAN#85	R5-196980	0786	1	F	Using generic procedure for IMS registration to 5GS	16.1.0
2019-09	RAN#85	R5-196981	0788	1	F	Update of SIB2	16.1.0
2019-09	RAN#85	R5-196982	0790	1	F	Update of SIB5	16.1.0
2019-09	RAN#85	R5-196984	0792	1	F	Update of frequency definition for Inter-RAT test cases	16.1.0
2019-09	RAN#85	R5-196985	0793	1	F	Update IE CellGroupConfig	16.1.0
2019-09	RAN#85	R5-196986	0858	1	F	Update MIB	16.1.0
2019-09	RAN#85	R5-196987	0865	1	F	Update chapter 4.5.4 RRC_CONNECTED procedures	16.1.0
2019-09	RAN#85	R5-196988	0831	1	F	Addition of IE MasterKeyUpdate	16.1.0
2019-09	RAN#85	R5-196990	0833	1	F	USIM Configuration for Signalling Test Cases	16.1.0
2019-09	RAN#85	R5-196991	0835	1	F	Correction to SIG OTA UE Orientation procedure	16.1.0
2019-09	RAN#85	R5-196992	0878	1	F	Addition of New Test Procedure - Response\No response to Paging for 5GC NAS testing	16.1.0
2019-09	RAN#85	R5-196994	0913	1	F	Update IE ServingCellConfig	16.1.0
2019-09	RAN#85	R5-196995	0910	1	F	Corrections to DCI_1_0 configuration	16.1.0
2019-09	RAN#85	R5-196996	0919	1	F	Updates to generic procedure using SERVICE REQUEST procedure	16.1.0
2019-09	RAN#85	R5-196997	0901	1	F	Introduction of Test Procedure for IMS Emergency call establishment in 5GC NORMAL-SERVICE	16.1.0
2019-09	RAN#85	R5-196998	0903	1	F	Establishment of Test procedure for UE for Tracking area updating / Inter-system change from N1 mode to S1 mode in 5GMM/EMM-IDLE mode	16.1.0
2019-09	RAN#85	R5-197014	0928	-	F	Addition of NR CA test frequencies for protocol testing in clause 6.2.3	16.1.0
2019-09	RAN#85	R5-197099	0929	-	F	Correction to Switch off-Power off procedure in RRC_CONNECTED	16.1.0
2019-09	RAN#85	R5-197104	0884	1	F	Introduction of test frequencies for NR CA configuration CA_n257G to CA_n257M	16.1.0
2019-09	RAN#85	R5-197106	0892	1	F	Update of EN-DC inter-band configurations in clause 4.3.1	16.1.0
2019-09	RAN#85	R5-197139	0891	2	F	Update of NR CA inter-band configurations in clause 4.3.1	16.1.0
2019-09	RAN#85	R5-197226	0915	1	F	changes for Non 3GPP Access over WLAN	16.1.0
2019-09	RAN#85	R5-197230	0883	1	F	Introduction of test frequencies for NR CA configuration CA_n257D to CA_n257F	16.1.0
2019-09	RAN#85	R5-197231	0869	1	F	Update of test frequency parameters for NR CA configuration CA_n257B and CA_n257C	16.1.0

2019-09	RAN#85	R5-197232	0870	1	F	Introduction of test frequencies for NR CA configuration CA_n260B and CA_n260C	16.1.0
2019-09	RAN#85	R5-197233	0888	1	F	Introduction of test frequencies for NR CA configuration CA_n260J to CA_n260M	16.1.0
2019-09	RAN#85	R5-197234	0813	1	F	Update RRCReconfiguration	16.1.0
2019-09	RAN#85	R5-197235	0796	1	F	Update RadioBearerConfig-DRB	16.1.0
2019-09	RAN#85	R5-197236	0825	1	F	Update RRCReconfiguration-HO	16.1.0
2019-09	RAN#85	R5-197241	0791	1	F	Update of EUTRA-AllowedMeasBandwidth	16.1.0
2019-09	RAN#85	R5-197243	0809	1	F	Addition of Delta to signalling threshold in System Information in FR2	16.1.0
2019-09	RAN#85	R5-197244	0866	1	F	Correction to REGISTRATION REJECT message	16.1.0
2019-09	RAN#85	R5-197246	0902	1	F	Introduction of Test Procedure for IMS Emergency call establishment in 5GC LIMITED-SERVICE or NO-SUPI	16.1.0
2019-09	RAN#85	R5-197296	0898	2	F	Update of PHR-Config	16.1.0
2019-09	RAN#85	R5-197300	0787	1	F	4x2 Connection Diagram for demodulation tests	16.1.0
2019-09	RAN#85	R5-197301	0862	1	F	Correction to Section 5.4.2 Message definition for Performance Test	16.1.0
2019-09	RAN#85	R5-197302	0882	1	F	Addition of FR2 CA connection diagram	16.1.0
2019-09	RAN#85	R5-197303	0920	1	F	Corrections to test frequencies and formulas	16.1.0
2019-09	RAN#85	R5-197304	0896	1	F	Removing IOT bit information from test channel bandwidth tables	16.1.0
2019-09	RAN#85	R5-197305	0908	1	F	Addition of SMTC Configuration for RRM test cases	16.1.0
2019-09	RAN#85	R5-197507	0906	1	F	Addition of TDD UL DL Config for RRM test cases	16.1.0
2019-09	RAN#85	R5-197508	0907	1	F	Addition of FilterCoefficient configuration for RRM test cases	16.1.0
2019-09	RAN#85	R5-197638	0881	2	F	Addition of FR1 CA connection diagram	16.1.0
2019-10	RAN#85	-	-	-	-	Implementation fixes	16.1.1
2019-12	RAN#86	R5-197727	0932	-	F	Editorial update IE BWP-Id	16.2.0
2019-12	RAN#86	R5-197751	0933	-	F	Editorial update IE PDSCH-TimeDomainResourceAllocationList	16.2.0
2019-12	RAN#86	R5-197835	0937	-	F	Correction to IE ReportConfigNR	16.2.0
2019-12	RAN#86	R5-197897	0940	-	F	Editorial update IE CodebookConfig	16.2.0
2019-12	RAN#86	R5-197932	0946	-	F	Editorial update IE PDSCH-Config	16.2.0
2019-12	RAN#86	R5-197967	0948	-	F	Update of Annex C on calculation of test frequencies and parameters	16.2.0
2019-12	RAN#86	R5-197968	0949	-	F	Correction of test frequency parameters for NR band n1	16.2.0
2019-12	RAN#86	R5-197969	0950	-	F	Correction of test frequency parameters for NR band n2	16.2.0
2019-12	RAN#86	R5-197970	0951	-	F	Correction of test frequency parameters for NR band n3	16.2.0
2019-12	RAN#86	R5-197971	0952	-	F	Correction of test frequency parameters for NR band n5	16.2.0
2019-12	RAN#86	R5-197972	0953	-	F	Correction of test frequency parameters for NR band n7	16.2.0
2019-12	RAN#86	R5-197973	0954	-	F	Correction of test frequency parameters for NR band n8	16.2.0
2019-12	RAN#86	R5-197974	0955	-	F	Correction of test frequency parameters for NR band n12	16.2.0
2019-12	RAN#86	R5-197975	0956	-	F	Correction of test frequency parameters for NR band n20	16.2.0
2019-12	RAN#86	R5-197976	0957	-	F	Correction of test frequency parameters for NR band n25	16.2.0
2019-12	RAN#86	R5-197977	0958	-	F	Correction of test frequency parameters for NR band n28	16.2.0
2019-12	RAN#86	R5-197978	0959	-	F	Correction of test frequency parameters for NR band n34	16.2.0
2019-12	RAN#86	R5-197979	0960	-	F	Correction of test frequency parameters for NR band n38	16.2.0
2019-12	RAN#86	R5-197980	0961	-	F	Correction of test frequency parameters for NR band n39	16.2.0
2019-12	RAN#86	R5-197981	0962	-	F	Correction of test frequency parameters for NR band n40	16.2.0
2019-12	RAN#86	R5-197982	0963	-	F	Correction of test frequency parameters for NR band n41	16.2.0
2019-12	RAN#86	R5-197983	0964	-	F	Correction of test frequency parameters for NR band n50	16.2.0
2019-12	RAN#86	R5-197984	0965	-	F	Correction of test frequency parameters for NR band n51	16.2.0
2019-12	RAN#86	R5-197985	0966	-	F	Correction of test frequency parameters for NR band n66	16.2.0
2019-12	RAN#86	R5-197986	0967	-	F	Correction of test frequency parameters for NR band n70	16.2.0
2019-12	RAN#86	R5-197987	0968	-	F	Correction of test frequency parameters for NR band n71	16.2.0
2019-12	RAN#86	R5-197988	0969	-	F	Correction of test frequency parameters for NR band n74	16.2.0
2019-12	RAN#86	R5-197989	0970	-	F	Correction of test frequency parameters for NR band n75 (SDL)	16.2.0
2019-12	RAN#86	R5-197990	0971	-	F	Correction of test frequency parameters for NR band n76 (SDL)	16.2.0
2019-12	RAN#86	R5-197991	0972	-	F	Correction of test frequency parameters for NR band n77	16.2.0
2019-12	RAN#86	R5-197992	0973	-	F	Correction of test frequency parameters for NR band n78	16.2.0
2019-12	RAN#86	R5-197993	0974	-	F	Correction of test frequency parameters for NR band n79	16.2.0
2019-12	RAN#86	R5-197994	0975	-	F	Editorial correction to note 1 in frequency tables for NR bands n257, n258, n260 and n261	16.2.0

2019-12	RAN#86	R5-197997	0978	-	F	Introduction of test frequencies for NR CA configuration CA_n261D to CA_n261F	16.2.0
2019-12	RAN#86	R5-197998	0979	-	F	Introduction of test frequencies for NR CA configuration CA_n261J to CA_n261M	16.2.0
2019-12	RAN#86	R5-198016	0983	-	F	Introduction of test frequencies parameters for Rel-16 NR CA configuration CA_n66B	16.2.0
2019-12	RAN#86	R5-198017	0984	-	F	Introduction of test frequencies parameters for Rel-16 NR CA configuration CA_n66(2A)	16.2.0
2019-12	RAN#86	R5-198018	0985	-	F	Introduction of test frequencies and parameters for NR band n29	16.2.0
2019-12	RAN#86	R5-198019	0986	-	F	Introduction of test frequencies and parameters for NR band n65	16.2.0
2019-12	RAN#86	R5-198028	0988	-	F	Add 4Rx connection diagram for RRM measurement tests	16.2.0
2019-12	RAN#86	R5-198057	0993	-	F	Editorial update IE RateMatchPattern	16.2.0
2019-12	RAN#86	R5-198058	0994	-	F	Editorial update IE SchedulingRequestResourceConfig	16.2.0
2019-12	RAN#86	R5-198082	0999	-	F	Introduce general chapter in 4.6	16.2.0
2019-12	RAN#86	R5-198120	1004	-	F	Correction of test frequencies parameters for Rel-15 EN-DC configuration DC_(n)41AA	16.2.0
2019-12	RAN#86	R5-198121	1005	-	F	Correction of test frequencies parameters for Rel-15 EN-DC configuration DC_(n)71AA	16.2.0
2019-12	RAN#86	R5-198125	1009	-	F	Introduction of test frequencies and parameters for NR band n48	16.2.0
2019-12	RAN#86	R5-198126	1010	-	F	Introduction of test frequencies for NR band b41 and CBW 30MHz	16.2.0
2019-12	RAN#86	R5-198131	1012	-	F	Update of USIM Configuration 15 for forbidden PLMN	16.2.0
2019-12	RAN#86	R5-198133	1014	-	F	Update IE ServingCellConfigCommonSIB	16.2.0
2019-12	RAN#86	R5-198141	1015	-	F	Clarification on default radio configuration of NAS cells	16.2.0
2019-12	RAN#86	R5-198217	1019	-	F	Correction of test frequency parameters for protocol testing and NR bands with scs=15kHz	16.2.0
2019-12	RAN#86	R5-198223	1021	-	F	Add IE BetaOffsets	16.2.0
2019-12	RAN#86	R5-198224	1022	-	F	Update IE PUSCH-Config	16.2.0
2019-12	RAN#86	R5-198250	1023	-	F	Update IE CSI-FrequencyOccupation	16.2.0
2019-12	RAN#86	R5-198251	1024	-	F	Update IE PHR-Config	16.2.0
2019-12	RAN#86	R5-198258	1026	-	F	Editorial update IE DRX-Config	16.2.0
2019-12	RAN#86	R5-198282	1027	-	F	Update to Connection diagram for 2x4 and 4x4 Demod test cases	16.2.0
2019-12	RAN#86	R5-198286	1028	-	F	Correction of mapping of frequency ranges to NR test frequencies for NR SA	16.2.0
2019-12	RAN#86	R5-198304	1029	-	F	Editorial update IE LogicalChannelConfig	16.2.0
2019-12	RAN#86	R5-198370	1035	-	F	Connection diagram for FR2 Demod and CSI test cases	16.2.0
2019-12	RAN#86	R5-198480	1039	-	F	Editorial update IE PDCCH-ConfigCommon	16.2.0
2019-12	RAN#86	R5-198485	1041	-	F	Editorial update IE PDCP-Config	16.2.0
2019-12	RAN#86	R5-198506	1044	-	F	Addition of RRCReconfiguration for Speech call setup	16.2.0
2019-12	RAN#86	R5-198507	1045	-	F	Editorial updates to section 4.7.0	16.2.0
2019-12	RAN#86	R5-198508	1046	-	F	New reference QoS configurations for IMS voice and video	16.2.0
2019-12	RAN#86	R5-198509	1047	-	F	Updates to REGISTRATION ACCEPT 5GMM message	16.2.0
2019-12	RAN#86	R5-198510	1048	-	F	Updates to test control messages	16.2.0
2019-12	RAN#86	R5-198540	1051	-	F	Update of REGISTRATION ACCEPT for IMS emergency support	16.2.0
2019-12	RAN#86	R5-198544	1053	-	F	Update of Table 4.6.3-162 SearchSpace in 38.508-1	16.2.0
2019-12	RAN#86	R5-198638	1058	-	F	Corrections on test frequencies for NR CA band n260 in 38.508-1	16.2.0
2019-12	RAN#86	R5-198649	1059	-	F	Corrections on test frequencies for NR CA band n261 in 38.508-1	16.2.0
2019-12	RAN#86	R5-198659	1062	-	F	Update TCI State Cell parameter in Demod section	16.2.0
2019-12	RAN#86	R5-198718	1067	-	F	Updates to RSRP-Range, RSRQ-Range and SINR-Range	16.2.0
2019-12	RAN#86	R5-198847	0941	1	F	Corrections to DCI_1_1 configuration	16.2.0
2019-12	RAN#86	R5-198848	0931	1	F	Update IE PUSCH-TimeDomainResourceAllocationList	16.2.0
2019-12	RAN#86	R5-198850	0934	1	F	Correction to IE MasterKeyUpdate	16.2.0
2019-12	RAN#86	R5-198851	0935	1	F	Update of NR SIBs	16.2.0
2019-12	RAN#86	R5-198852	0936	1	F	Correction to USIM configuration	16.2.0
2019-12	RAN#86	R5-198853	0938	1	F	Correction to IE ReportConfigInterRAT	16.2.0
2019-12	RAN#86	R5-198854	0942	1	F	Correction to Table 4.9.9.2.3-1 for Inter-system change from S1 mode to N1 mode in 5GMM-IDLE mode	16.2.0
2019-12	RAN#86	R5-198856	0982	1	F	Addition of frequency configurations for NR MFBI testing	16.2.0

2019-12	RAN#86	R5-198857	0992	1	F	Editorial update IE CSI-AperiodicTriggerStateList	16.2.0
2019-12	RAN#86	R5-198858	0998	1	F	Editorial update IE ServingCellConfig	16.2.0
2019-12	RAN#86	R5-198859	1000	1	F	Editorial update IE SecurityAlgorithmConfig	16.2.0
2019-12	RAN#86	R5-198860	1002	1	F	Update IE SRS-Config	16.2.0
2019-12	RAN#86	R5-198861	1001	1	F	Update of Generic Test Procedures for IMS Emergency call establishment 4.9.11 and 4.9.12 to reflect the fact that they can be used in multiple states and scenarios	16.2.0
2019-12	RAN#86	R5-198862	1013	1	F	Update IE ServingCellConfigCommon	16.2.0
2019-12	RAN#86	R5-198863	1016	1	F	Update IE CSI-RS-ResourceMapping	16.2.0
2019-12	RAN#86	R5-198865	1032	1	F	Update RRCReconfiguration	16.2.0
2019-12	RAN#86	R5-198866	1033	1	F	Update chapter 4.5.1 General	16.2.0
2019-12	RAN#86	R5-198867	1034	1	F	Update to PDU SESSION ESTABLISHMENT ACCEPT and Reference QoS flow descriptions to align EPS bearer id format	16.2.0
2019-12	RAN#86	R5-198869	1061	1	F	New Test Procedures for IMS Emergency call release	16.2.0
2019-12	RAN#86	R5-198870	1063	1	F	Update chapter 4.5.2 RRC_IDLE	16.2.0
2019-12	RAN#86	R5-198871	1072	1	F	Update of RRCReconfiguration for measurement configuration	16.2.0
2019-12	RAN#86	R5-198955	0995	1	F	Update procedure for NR RF CA testing	16.2.0
2019-12	RAN#86	R5-198956	0996	1	F	Update procedure for EN-DC RF CA testing	16.2.0
2019-12	RAN#86	R5-198957	1036	1	F	Update to 38.508-1 for DEMOD message contents	16.2.0
2019-12	RAN#86	R5-198958	0991	1	F	Update IE PUCCH-Config	16.2.0
2019-12	RAN#86	R5-198959	0976	1	F	Introduction of test frequencies for Rel-15 EN-DC inter-band configurations	16.2.0
2019-12	RAN#86	R5-198960	0980	1	F	Introduction of test frequencies for Rel-16 NR inter-band CA configurations	16.2.0
2019-12	RAN#86	R5-198961	0987	1	F	Introduction of test frequencies for NR configuration CA_n29A-n66A	16.2.0
2019-12	RAN#86	R5-198962	1003	1	F	Introduction of test frequencies for Rel-15 NR DC configurations	16.2.0
2019-12	RAN#86	R5-198997	1068	1	F	Introduction of test frequencies and parameters for NR bands n29, n48 and n65 for protocol testing	16.2.0
2019-12	RAN#86	R5-199008	0997	1	F	Editorial update WLAN table 4.5.2.2-3	16.2.0
2019-12	RAN#86	R5-199013	0943	1	F	Correction to SMTC and GAP for inter frequency cell	16.2.0
2019-12	RAN#86	R5-199015	0981	1	F	Correction of test frequencies for NR CA and EN-DC protocol testing	16.2.0
2019-12	RAN#86	R5-199016	1049	1	F	Updates to Test Procedure 4.9.11	16.2.0
2019-12	RAN#86	R5-199017	1050	1	F	Updates to Test Procedure 4.9.12	16.2.0
2019-12	RAN#86	R5-199020	1079	-	F	Update default setting of deriveSSB-IndexFromCell	16.2.0
2019-12	RAN#86	R5-199021	1011	1	F	Update IE TDD-UL-DL-Config	16.2.0
2019-12	RAN#86	R5-199022	1070	1	F	Updates to Signalling Reference test conditions	16.2.0
2019-12	RAN#86	R5-199026	1025	2	F	Update IE CellGroupConfig	16.2.0
2019-12	RAN#86	R5-199071	0944	2	F	Update of SUL related messages	16.2.0
2019-12	RAN#86	R5-199075	1080	1	F	Correction to NR RRC_IDLE mode procedure	16.2.0
2019-12	RAN#86	R5-199093	1065	2	F	Update chapter 4.5.4 RRC_CONNECTED	16.2.0
2019-12	RAN#86	R5-199094	1069	1	F	Updates for handling of Multiple PDU sessions / Multiple DRBs	16.2.0
2019-12	RAN#86	R5-199103	1076	2	F	Adding new generic procedure for UE-requested PDU session modification after the first S1 to N1 mode change	16.2.0
2019-12	RAN#86	R5-199300	1042	1	F	Corrections on category of EN-DC configurations for test frequencies in 38.508-1	16.2.0
2019-12	RAN#86	R5-199301	1054	1	F	Addition of ServingCellConfigCommon for RRM tests	16.2.0
2019-12	RAN#86	R5-199302	1057	1	F	Corrections on test frequencies for NR CA band n257 in 38.508-1	16.2.0
2019-12	RAN#86	R5-199303	1060	1	F	Corrections on test frequencies for NR CA band n258 in 38.508-1	16.2.0
2019-12	RAN#86	R5-199304	1066	1	F	Update Radio resource control information elements for RRM to add CSI-RS for Tracking	16.2.0
2019-12	RAN#86	R5-199423	1077	-	F	Update ra-responseWindow in TS 38.508-1	16.2.0
2019-12	RAN#86	R5-199481	0989	1	F	Addition of FR1 NR CA and NR 4Rx connection diagrams	16.2.0
2019-12	RAN#86	R5-199511	1078	-	F	Update of quiet zone size	16.2.0
2019-12	RAN#86	R5-199545	1020	1	F	Addition of multi-AoA capabilities for IFF	16.2.0
2020-03	RAN#87	R5-200135	1120		F	Removal of Correction to SIG OTA UE Orientation procedure	16.3.0
2020-03	RAN#87	R5-200147	1130		F	Update to USIM config 6.4.1-11	16.3.0
2020-03	RAN#87	R5-200244	1133		F	Correction to nAndPagingFrameOffset	16.3.0

2020-03	RAN#87	R5-200296	1136		F	Addition of generic procedure for IMS MO speech setup	16.3.0
2020-03	RAN#87	R5-200297	1137		F	Addition of generic procedure for IMS MT speech setup	16.3.0
2020-03	RAN#87	R5-200298	1138		F	Addition of generic procedure for IMS MO call release	16.3.0
2020-03	RAN#87	R5-200299	1139		F	Addition of generic procedure for IMS MT call release	16.3.0
2020-03	RAN#87	R5-200349	1142		F	Correction to frequencyBandList in SIB4	16.3.0
2020-03	RAN#87	R5-200431	1146		F	Correction to CSI-FrequencyOccupation	16.3.0
2020-03	RAN#87	R5-200432	1147		F	Correction to default setting of additionalPmax	16.3.0
2020-03	RAN#87	R5-200433	1148		F	Correction to powerControlOffset for performance tests	16.3.0
2020-03	RAN#87	R5-200434	1149		F	Correction to RACH configuration for RRM tests	16.3.0
2020-03	RAN#87	R5-200435	1150		F	Correction to TDD UL-DL Config for performance test cases	16.3.0
2020-03	RAN#87	R5-200477	1154		F	Update to Registration REQ and Authentication Response message	16.3.0
2020-03	RAN#87	R5-200499	1157		F	Correction of test frequency tables for NR band n1	16.3.0
2020-03	RAN#87	R5-200500	1158		F	Correction of test frequency tables for NR band n2	16.3.0
2020-03	RAN#87	R5-200501	1159		F	Correction of test frequency tables for NR band n3	16.3.0
2020-03	RAN#87	R5-200502	1160		F	Correction of test frequency tables for NR band n7	16.3.0
2020-03	RAN#87	R5-200503	1161		F	Correction of test frequency tables for NR band n25	16.3.0
2020-03	RAN#87	R5-200504	1162		F	Correction of test frequency tables for NR band n28	16.3.0
2020-03	RAN#87	R5-200505	1163		F	Correction of test frequency tables for NR band n34	16.3.0
2020-03	RAN#87	R5-200506	1164		F	Correction of test frequency tables for NR band n38	16.3.0
2020-03	RAN#87	R5-200507	1165		F	Correction of test frequency tables for NR band n39	16.3.0
2020-03	RAN#87	R5-200508	1166		F	Correction of test frequency tables for NR band n40	16.3.0
2020-03	RAN#87	R5-200510	1168		F	Correction of test frequency tables for NR band n50	16.3.0
2020-03	RAN#87	R5-200511	1169		F	Correction of test frequency tables for NR band n66	16.3.0
2020-03	RAN#87	R5-200512	1170		F	Correction of test frequency tables for NR band n70	16.3.0
2020-03	RAN#87	R5-200513	1171		F	Correction of test frequency tables for NR band n71	16.3.0
2020-03	RAN#87	R5-200514	1172		F	Correction of test frequency tables for NR band n74	16.3.0
2020-03	RAN#87	R5-200515	1173		F	Correction of test frequency tables for NR band n75	16.3.0
2020-03	RAN#87	R5-200531	1189		F	Correction of test frequency tables for NR band n29	16.3.0
2020-03	RAN#87	R5-200532	1190		F	Correction of test frequency tables for NR band n48	16.3.0
2020-03	RAN#87	R5-200533	1191		F	Correction of test frequency tables for NR band n65	16.3.0
2020-03	RAN#87	R5-200597	1200		F	Introduction of test frequencies for inter-band Rel-16 EN-DC configurations in 38.508-1	16.3.0
2020-03	RAN#87	R5-200605	1202		F	Addition of test frequencies for n95 SUL band	16.3.0
2020-03	RAN#87	R5-200645	1206		F	Updates to 4.6.4 UE Capability Information Elements	16.3.0
2020-03	RAN#87	R5-200646	1207		F	Correction to QoS rule number 7	16.3.0
2020-03	RAN#87	R5-200647	1208		F	Correction to IMS emergency call release procedures	16.3.0
2020-03	RAN#87	R5-201246	1209	1	F	TRS configuration messages definition for RF in 38.508-1	16.3.0
2020-03	RAN#87	R5-200678	1210		F	Update of IE ControlResourceSet to introduce band and channel bandwidth specific values for frequencyDomainResources	16.3.0
2020-03	RAN#87	R5-200703	1213		F	Correction to IE BeamFailureRecoveryConfig	16.3.0
2020-03	RAN#87	R5-200774	1215		F	Editorial update IE MeasConfig	16.3.0
2020-03	RAN#87	R5-200775	1216		F	Editorial update IE radioLinkMonitoringRS-Id	16.3.0
2020-03	RAN#87	R5-200804	1218		F	Correction of test frequency tables for NR band n5	16.3.0
2020-03	RAN#87	R5-200805	1219		F	Correction of test frequency tables for NR band n8	16.3.0
2020-03	RAN#87	R5-200806	1220		F	Correction of test frequency tables for NR band n12	16.3.0
2020-03	RAN#87	R5-200807	1221		F	Correction of test frequency tables for NR band n20	16.3.0
2020-03	RAN#87	R5-200808	1222		F	Correction of test frequency tables for NR band n51	16.3.0
2020-03	RAN#87	R5-200900	1197	1	F	Corrections on test frequencies for EN-DC band combinations including FR1 and FR2 in 38.508-1	16.3.0
2020-03	RAN#87	R5-200901	1198	1	F	Corrections on test frequencies for EN-DC band combinations including FR2 in 38.508-1	16.3.0
2020-03	RAN#87	R5-200902	1199	1	F	Corrections on uplink EN-DC configurations for test frequencies in 38.508-1	16.3.0
2020-03	RAN#87	R5-200921	1132	1	F	Addition of Rel-16 inter-band CA and EN-DC FR1 two bands test configurations	16.3.0
2020-03	RAN#87	R5-200930	1081	1	F	Update SIB1	16.3.0
2020-03	RAN#87	R5-200931	1082	1	F	Update CounterCheck	16.3.0
2020-03	RAN#87	R5-200932	1083	1	F	Editorial update DLInformationTransfer	16.3.0
2020-03	RAN#87	R5-200933	1084	1	F	Editorial update FailureInformation	16.3.0
2020-03	RAN#87	R5-200934	1085	1	F	Editorial update MeasurementReport	16.3.0
2020-03	RAN#87	R5-200935	1086	1	F	Editorial update MobilityFromNRCommand	16.3.0
2020-03	RAN#87	R5-200936	1087	1	F	Editorial update Paging	16.3.0

2020-03	RAN#87	R5-200937	1088	1	F	Editorial update RRCReestablishment	16.3.0
2020-03	RAN#87	R5-200938	1090	1	F	Editorial update RRCReconfigurationComplete	16.3.0
2020-03	RAN#87	R5-200939	1091	1	F	Editorial update RRCReject	16.3.0
2020-03	RAN#87	R5-200940	1092	1	F	Editorial update RRCRelease	16.3.0
2020-03	RAN#87	R5-200941	1093	1	F	Editorial update RRCResumeComplete	16.3.0
2020-03	RAN#87	R5-200942	1094	1	F	Editorial update RRCSetup	16.3.0
2020-03	RAN#87	R5-200943	1096	1	F	Editorial update SCGFailureInformation	16.3.0
2020-03	RAN#87	R5-200944	1097	1	F	Editorial update SecurityMode	16.3.0
2020-03	RAN#87	R5-200945	1098	1	F	Update SystemInformation	16.3.0
2020-03	RAN#87	R5-200946	1099	1	F	Editorial update UEAssistanceInformation	16.3.0
2020-03	RAN#87	R5-200947	1100	1	F	Editorial update UECapability	16.3.0
2020-03	RAN#87	R5-200948	1101	1	F	Editorial update ULInformation	16.3.0
2020-03	RAN#87	R5-200949	1103	1	F	Editorial update IE RLC-BearerConfig	16.3.0
2020-03	RAN#87	R5-200951	1108	1	F	Add IE TDD-UL-DL-ConfigDedicated	16.3.0
2020-03	RAN#87	R5-200952	1111	1	F	Update IE ServingCellConfig	16.3.0
2020-03	RAN#87	R5-200953	1112	1	F	Update IE ServingCellConfigCommonSIB	16.3.0
2020-03	RAN#87	R5-200954	1113	1	F	Update IE DMRS-DownlinkConfig	16.3.0
2020-03	RAN#87	R5-200955	1114	1	F	Update IE FrequencyInfoUL	16.3.0
2020-03	RAN#87	R5-200956	1118	1	F	Update chapter 4.5.1 General	16.3.0
2020-03	RAN#87	R5-200957	1122	1	F	Update chapter 4.5.4 RRC_CONNECTED	16.3.0
2020-03	RAN#87	R5-200958	1125	1	F	Update IE CellGroupID	16.3.0
2020-03	RAN#87	R5-200959	1126	1	F	Update IE ServCellIndex	16.3.0
2020-03	RAN#87	R5-200960	1127	1	F	Update IE SK-Counter	16.3.0
2020-03	RAN#87	R5-200961	1128	1	F	Update IE SDAP-Config	16.3.0
2020-03	RAN#87	R5-200965	1145	1	F	Correction to CORESET and search space configuration	16.3.0
2020-03	RAN#87	R5-200966	1193	1	F	Addition of NR SUL connection diagrams	16.3.0
2020-03	RAN#87	R5-200967	1201	1	F	Clarification to high test channel bandwidth table	16.3.0
2020-03	RAN#87	R5-200968	1203	1	F	Addition of missing EN-DC test frequencies	16.3.0
2020-03	RAN#87	R5-200996	1124	1	F	Correction to PUCCH-Config for Format1 and Format2	16.3.0
2020-03	RAN#87	R5-201005	1131	1	F	Update of Annex C on calculation of test frequencies to achieve full bandwidth testing of NR bands	16.3.0
2020-03	RAN#87	R5-201020	1155	1	F	Update SIG test frequencies in clause 6.2.3.x	16.3.0
2020-03	RAN#87	R5-201021	1167	1	F	Correction of test frequency tables for NR band n41	16.3.0
2020-03	RAN#87	R5-201022	1174	1	F	Correction of test frequency tables for NR band n77	16.3.0
2020-03	RAN#87	R5-201023	1175	1	F	Correction of test frequency tables for NR band n78	16.3.0
2020-03	RAN#87	R5-201024	1176	1	F	Correction of test frequency tables for NR band n79	16.3.0
2020-03	RAN#87	R5-201025	1177	1	F	Correction of test frequency tables for NR band n257	16.3.0
2020-03	RAN#87	R5-201026	1178	1	F	Correction of test frequency tables for NR band n258	16.3.0
2020-03	RAN#87	R5-201027	1179	1	F	Correction of test frequency tables for NR band n260	16.3.0
2020-03	RAN#87	R5-201028	1180	1	F	Correction of test frequency tables for NR band n261	16.3.0
2020-03	RAN#87	R5-201029	1192	1	F	Update of clause 4.4.2 on simulated cells	16.3.0
2020-03	RAN#87	R5-201061	1153	1	F	Addition of a few R16s inter-band EN-DC FR1 test configurations	16.3.0
2020-03	RAN#87	R5-201065	1194	1	F	Addition of test channel bandwidth for NR bands in 38.508-1	16.3.0
2020-03	RAN#87	R5-201092	1123	1	F	Updates to NR FR1 and LTE Power levels in OTA	16.3.0
2020-03	RAN#87	R5-201093	1224	1	F	Message content Updates for Carrier Aggregation	16.3.0
2020-03	RAN#87	R5-201108	1143	1	F	Correction to EUTRA-AllowedMeasBandwidth	16.3.0
2020-03	RAN#87	R5-201116	1204	1	F	Updates to 4.7.3 Contents of EAP-AKA messages in 38.508-1	16.3.0
2020-03	RAN#87	R5-201148	1134	1	F	Updates to default SSB index of intra-frequency NR cells	16.3.0
2020-03	RAN#87	R5-201159	1151	1	F	Correction to test frequencies for n257 intra-band contiguous CA	16.3.0
2020-03	RAN#87	R5-201173	1117	1	F	Update IE TDD-UL-DL-Config	16.3.0
2020-03	RAN#87	R5-201174	1095	1	F	Update RRCSysInfoRequest	16.3.0
2020-03	RAN#87	R5-201175	1106	1	F	Update IE RLF-TimersAndConstants	16.3.0
2020-03	RAN#87	R5-201176	1107	1	F	Update IE SCS-SpecificCarrier	16.3.0
2020-03	RAN#87	R5-201177	1109	1	F	Update chapter 4.6.0	16.3.0
2020-03	RAN#87	R5-201179	1116	1	F	Update IE MeasObjectNR	16.3.0
2020-03	RAN#87	R5-201189	1214	1	F	Addition of IFF DFF Hybrid Setup for FR2 2AoA RRM test	16.3.0
2020-03	RAN#87	R5-201194	1141	1	F	Update to Common Coreset RB IE and section 5-6 Demod message contents	16.3.0
2020-03	RAN#87	R5-201195	1144	1	F	Update of DCI 1_0 and DCI 1_1 configuration	16.3.0
2020-03	RAN#87	R5-201197	1152	1	F	Correction to TRS configuration for RRM tests	16.3.0

2020-03	RAN#87	R5-201202	1205	1	F	Update to Switch Off/ Power off procedure in RRC_CONNECTED mode	16.3.0
2020-03	RAN#87	R5-201203	1129	1	F	Update to PDCP-Config	16.3.0
2020-03	RAN#87	R5-201217	1217	1	F	Updates to PsDU session modification procedures	16.3.0
2020-03	RAN#87	R5-201221	1089	1	F	Update RRCReconfiguration	16.3.0
2020-03	RAN#87	R5-201222	1121	1	F	Update IE CellGroupConfig	16.3.0
2020-03	RAN#87	R5-201232	1140	2	F	CR to 38.508-1 to introduce DFF Range Length	16.3.0
2020-03	RAN#87	R5-201234	1110	2	F	Update IE ServingCellConfigCommon	16.3.0
2020-03	RAN#87	R5-201148	1134	1	F	Add new missing column of Table 4.4.2-2	16.3.1
2020-06	RAN#88	R5-201320	1225	-	F	Update IE CellGroupConfig	16.4.0
2020-06	RAN#88	R5-201322	1227	-	F	Update of default value of frequencyDomainResources in ControlResourceSet IE	16.4.0
2020-06	RAN#88	R5-201331	1228	-	F	Correction to Table 4.9.6.1-1-Switch off in Idle	16.4.0
2020-06	RAN#88	R5-201333	1230	-	F	Addition of 4.9.6.3A Switch off Power off procedure in RRC_CONNECTED with T3540 started	16.4.0
2020-06	RAN#88	R5-201335	1232	-	F	Update to USIM config 6.4.1-1	16.4.0
2020-06	RAN#88	R5-201336	1233	-	F	Update to USIM Table 6.4.1-10	16.4.0
2020-06	RAN#88	R5-201337	1234	-	F	Correction to Table 7.3.1-7 NZP-CSI-RS-Resource for TRS	16.4.0
2020-06	RAN#88	R5-201446	1235	-	F	Fixing wrong reference for RRC_CONNECTED state on WLAN access	16.4.0
2020-06	RAN#88	R5-201572	1253	-	F	Corrections to default content of DCI messages	16.4.0
2020-06	RAN#88	RP-201138	1258	1	F	Correction to IE SearchSpace	16.4.0
2020-06	RAN#88	R5-201731	1265	-	F	Addition of NR SUL connection diagram in A.3.1.4	16.4.0
2020-06	RAN#88	R5-201800	1267	-	F	Addition of USIM configuration for TC 6.3.1.8 and TC 6.3.1.9	16.4.0
2020-06	RAN#88	R5-201837	1268	-	F	Update of test channel bandwidths for band n48	16.4.0
2020-06	RAN#88	R5-201932	1271	-	F	Removing brackets from mid test channel BWs for FR2	16.4.0
2020-06	RAN#88	R5-201956	1273	-	F	Correction of clause 4.4.2 on simulated cells	16.4.0
2020-06	RAN#88	R5-201958	1275	-	F	Correction to Annex C on calculation of kSSB to align SSB and RMSI subcarriers	16.4.0
2020-06	RAN#88	R5-201959	1276	-	F	Removal of definition of frequencyDomainResources value dependent on CORESET#0 configuration in Annex C.	16.4.0
2020-06	RAN#88	R5-201961	1278	-	F	Correction of test frequency tables for NR band n1	16.4.0
2020-06	RAN#88	R5-201962	1279	-	F	Correction of test frequency tables for NR band n2	16.4.0
2020-06	RAN#88	R5-201963	1280	-	F	Correction of test frequency tables for NR band n3	16.4.0
2020-06	RAN#88	R5-201964	1281	-	F	Correction of test frequency tables for NR band n5	16.4.0
2020-06	RAN#88	R5-201965	1282	-	F	Correction of test frequency tables for NR band n7	16.4.0
2020-06	RAN#88	R5-201966	1283	-	F	Correction of test frequency tables for NR band n8	16.4.0
2020-06	RAN#88	R5-201967	1284	-	F	Correction of test frequency tables for NR band n12	16.4.0
2020-06	RAN#88	R5-201968	1285	-	F	Correction of test frequency tables for NR band n20	16.4.0
2020-06	RAN#88	R5-201969	1286	-	F	Correction of test frequency tables for NR band n25	16.4.0
2020-06	RAN#88	R5-201970	1287	-	F	Correction of test frequency tables for NR band n28	16.4.0
2020-06	RAN#88	R5-201971	1288	-	F	Correction of test frequency tables for NR band n34	16.4.0
2020-06	RAN#88	R5-201972	1289	-	F	Correction of test frequency tables for NR band n38	16.4.0
2020-06	RAN#88	R5-201973	1290	-	F	Correction of test frequency tables for NR band n39	16.4.0
2020-06	RAN#88	R5-201974	1291	-	F	Correction of test frequency tables for NR band n40	16.4.0
2020-06	RAN#88	R5-201975	1292	-	F	Correction of test frequency tables for NR band n41	16.4.0
2020-06	RAN#88	R5-201976	1293	-	F	Correction of test frequency tables for NR band n50	16.4.0
2020-06	RAN#88	R5-201977	1294	-	F	Correction of test frequency tables for NR band n51	16.4.0
2020-06	RAN#88	R5-201978	1295	-	F	Correction of test frequency tables for NR band n66	16.4.0
2020-06	RAN#88	R5-201979	1296	-	F	Correction of test frequency tables for NR band n70	16.4.0
2020-06	RAN#88	R5-201980	1297	-	F	Correction of test frequency tables for NR band n71	16.4.0
2020-06	RAN#88	R5-201981	1298	-	F	Correction of test frequency tables for NR band n74	16.4.0
2020-06	RAN#88	R5-201982	1299	-	F	Correction of test frequency tables for NR band n77	16.4.0
2020-06	RAN#88	R5-201983	1300	-	F	Correction of test frequency tables for NR band n78	16.4.0
2020-06	RAN#88	R5-201984	1301	-	F	Correction of test frequency tables for NR band n79	16.4.0
2020-06	RAN#88	R5-201989	1306	-	F	Corrections of test frequency tables for CA_n41C	16.4.0
2020-06	RAN#88	R5-201990	1307	-	F	Corrections of test frequency tables for CA_n78C	16.4.0
2020-06	RAN#88	R5-201991	1308	-	F	Editorial correction to test frequency clause numbering	16.4.0
2020-06	RAN#88	R5-201995	1312	-	F	Correction of test frequency tables for CA_n66B	16.4.0
2020-06	RAN#88	R5-201997	1314	-	F	Introduction of test frequencies for NR band n26	16.4.0
2020-06	RAN#88	R5-201998	1315	-	F	Introduction of test frequencies for NR band 26 for protocol testing	16.4.0
2020-06	RAN#88	R5-201999	1316	-	F	Correction of test frequency tables for NR band n29	16.4.0
2020-06	RAN#88	R5-202000	1317	-	F	Correction of test frequency tables for NR band n48	16.4.0

2020-06	RAN#88	R5-202001	1318	-	F	Correction of test frequency tables for NR band n65	16.4.0
2020-06	RAN#88	R5-202024	1327	-	F	Update IE PDCP-Config	16.4.0
2020-06	RAN#88	R5-202123	1330	-	F	CR to 38.508-1 to clarify the test zone/quiet zone	16.4.0
2020-06	RAN#88	R5-202186	1333	-	F	Addition of locationAndBandwidth in BWP for FR1 in 38.508-1	16.4.0
2020-06	RAN#88	R5-202210	1335	-	F	Corrections on test frequencies for inter-band EN-DC configurations within FR1 for five bands in 38.508-1	16.4.0
2020-06	RAN#88	R5-202212	1336	-	F	Corrections of test frequency tables for CA_n257x	16.4.0
2020-06	RAN#88	R5-202213	1337	-	F	Corrections of test frequency tables for CA_n258x	16.4.0
2020-06	RAN#88	R5-202214	1338	-	F	Corrections of test frequency tables for CA_n260x	16.4.0
2020-06	RAN#88	R5-202215	1339	-	F	Corrections of test frequency tables for CA_n261x	16.4.0
2020-06	RAN#88	R5-202244	1343	-	F	Correction to nrofRBs under TRS CSI-FrequencyOccupation for Demod test cases with 10 MHz CBW	16.4.0
2020-06	RAN#88	R5-202284	1351	-	F	Correction to configuration bwp-id parameter in TCI-State IE	16.4.0
2020-06	RAN#88	R5-202409	1354	-	F	Update PDCCH-ControlResourceSet for RRM testing	16.4.0
2020-06	RAN#88	R5-202410	1355	-	F	Addition Physical Layer Parameter section for RRM testing	16.4.0
2020-06	RAN#88	R5-202449	1356	-	F	Correction of test frequencies for DC_n71AA	16.4.0
2020-06	RAN#88	R5-202486	1358	-	F	Correction to content of EF5GSN3GPPLOCI	16.4.0
2020-06	RAN#88	R5-202525	1360	-	F	Correction to System Information Combination for PWS	16.4.0
2020-06	RAN#88	R5-202531	1353	1	F	Addition of R16 new channel bandwidths for n1 in 38.508-1	16.4.0
2020-06	RAN#88	R5-202534	1266	1	F	Removal of USIM configuration 14	16.4.0
2020-06	RAN#88	R5-202549	1350	1	F	Aligning the tabular representation of ASN.1 with PRD13 sections 4.8 and 5	16.4.0
2020-06	RAN#88	R5-202554	1252	1	F	Updates to PDCCH-ConfigCommon	16.4.0
2020-06	RAN#88	R5-202561	1226	1	F	Update IE default content for control resource set establishment and common search space mapping	16.4.0
2020-06	RAN#88	R5-202562	1229	1	F	Update to 4.9.6.3 Switch off Power off procedure in RRC_CONNECTED	16.4.0
2020-06	RAN#88	R5-202563	1231	1	F	Correction to Table 4.9.7.2.3-1-Tracking Area Update Request	16.4.0
2020-06	RAN#88	R5-202564	1236	1	F	Correction to Table 4.5.2.2-2-Adding second SMC procedure for Selected EPS NAS security algorithms IE	16.4.0
2020-06	RAN#88	R5-202565	1237	1	F	Clarification to ROUND for negative Threshold values in SIB1 and SIB4	16.4.0
2020-06	RAN#88	R5-202573	1251	1	F	Updates to test frequency definitions for SDL NR bands	16.4.0
2020-06	RAN#88	R5-202574	1257	1	F	Correction to condition SRB_NR_PDCP in RadioBearerConfig	16.4.0
2020-06	RAN#88	R5-202575	1260	1	F	Correction to UECapabilityEnquiry in case of EN-DC interband CA	16.4.0
2020-06	RAN#88	R5-202576	1262	1	F	Updates to PDCP-Config	16.4.0
2020-06	RAN#88	R5-202577	1274	1	F	Clarifications of Annex C on calculation of test frequencies	16.4.0
2020-06	RAN#88	R5-202578	1277	1	F	Update SIG test frequencies in clause 6.2.3.x	16.4.0
2020-06	RAN#88	R5-202579	1302	1	F	Correction of test frequency tables for NR band n257	16.4.0
2020-06	RAN#88	R5-202580	1303	1	F	Correction of test frequency tables for NR band n258	16.4.0
2020-06	RAN#88	R5-202581	1304	1	F	Correction of test frequency tables for NR band n260	16.4.0
2020-06	RAN#88	R5-202582	1305	1	F	Correction of test frequency tables for NR band n261	16.4.0
2020-06	RAN#88	R5-202583	1322	1	F	Introduction of protocol testing applicability for EN-DC inter-band, NR-CA inter-band and NR DC test frequency tables	16.4.0
2020-06	RAN#88	R5-202585	1331	1	F	Correction to Reference QoS rules	16.4.0
2020-06	RAN#88	R5-202586	1346	1	F	Updates to Generic Test Procedure for IMS MT speech call establishment	16.4.0
2020-06	RAN#88	R5-202587	1347	1	F	Updates to Generic Test Procedure for IMS MO call release	16.4.0
2020-06	RAN#88	R5-202588	1349	1	F	Aligning the tabular representation of ASN.1 with PRD13 section 4.6	16.4.0
2020-06	RAN#88	R5-202589	1359	1	F	Update the default USIM configurations	16.4.0
2020-06	RAN#88	R5-202590	1361	1	F	Addition of Generic procedure to check user plane connectivity for CA tests	16.4.0
2020-06	RAN#88	R5-202703	1255	1	F	Clarifications on the QoQZ validation procedure for RRM	16.4.0
2020-06	RAN#88	R5-202708	1254	1	F	TRS - PowerControlOffset correction for UE RF testing	16.4.0
2020-06	RAN#88	R5-202820	1352	1	F	Correction to PRB-Id for secondHopPRB	16.4.0
2020-06	RAN#88	R5-202859	1329	1	F	Updates on FR2 inter-band EN-DC configurations for test frequencies in 38.508-1	16.4.0
2020-06	RAN#88	R5-202879	1332	1	F	Addition of BW to Table 4.6.3-33	16.4.0
2020-06	RAN#88	R5-202880	1334	1	F	Clarification of disabling Tx diversity for FR2 UE	16.4.0

2020-06	RAN#88	R5-202881	1341	1	F	Restructuring 38.508-1 message contents for Demod and CSI reporting test cases	16.4.0
2020-06	RAN#88	R5-202882	1342	1	F	Update of PUCCH-ResourceId for Demod test cases	16.4.0
2020-06	RAN#88	R5-202883	1348	1	F	Configuration of p-ZP-CSI-RS-ResourceSet for PDSCH Demod test cases	16.4.0
2020-06	RAN#88	R5-202956	1270	1	F	Update of default test channel BW	16.4.0
2020-06	RAN#88	R5-202962	1269	2	F	Updating DCI related messages	16.4.0
2020-06	RAN#88	R5-202967	1344	1	F	Update to default value of PDSCH-to-HARQ_feedback timing indicator (k1)	16.4.0
2020-06	RAN#88	R5-203056	1313	1	F	Introduction of test frequencies for Rel-16 NR CA configuration CA_n66B and CA_n66(2A) in cl 6.2.3.4	16.4.0
2020-06	RAN#88	R5-203057	1319	1	F	Addition of test frequencies for additional channel bandwidths for NR band n66	16.4.0
2020-06	RAN#88	R5-203078	1325	1	F	Updates to Generic Test Procedure for IMS MO speech call establishment	16.4.0
2020-06	RAN#88	R5-203079	1326	2	F	Update NR-DC in chapter 4	16.4.0
2020-09	RAN#89	R5-203275	1364	-	F	Editorial update IE ARFCN-ValueNR	16.5.0
2020-09	RAN#89	R5-203277	1366	-	F	Add IEs ARFCN-ValueUTRA-FDD, AvailabilityCombinationsPerCell, AvailabilityIndicator and BAP-Routing-ID	16.5.0
2020-09	RAN#89	R5-203278	1367	-	F	n26 Default CH BW in 38.508-1	16.5.0
2020-09	RAN#89	R5-203287	1368	-	F	Correction PRB-Id for PUCCH secondHopPRB	16.5.0
2020-09	RAN#89	R5-203320	1369	-	F	Add IE BeamFailureRecoverySCellConfig	16.5.0
2020-09	RAN#89	R5-203339	1372	-	F	Add IE CGI-InfoEUTRALogging	16.5.0
2020-09	RAN#89	R5-203340	1373	-	F	Add IEs CGI-Info-Logging and CLI-RSSI-Range	16.5.0
2020-09	RAN#89	R5-203341	1374	-	F	Add IEs CommonLocationInfo, CondReconfigId, CondReconfigToAddModList and ConditionalReconfiguration	16.5.0
2020-09	RAN#89	R5-203342	1375	-	F	Add IEs ConfiguredGrantConfigIndex and ConfiguredGrantConfigIndexMAC	16.5.0
2020-09	RAN#89	R5-203343	1376	-	F	Add IE DRX-ConfigSecondaryGroup	16.5.0
2020-09	RAN#89	R5-203344	1377	-	F	Add IE HighSpeedConfig	16.5.0
2020-09	RAN#89	R5-203345	1378	-	F	Add IE InvalidSymbolPattern	16.5.0
2020-09	RAN#89	R5-203346	1379	-	F	Add IEs LBT-FailureRecoveryConfig and LocationInfo	16.5.0
2020-09	RAN#89	R5-203347	1380	-	F	Add IE MeasIdleConfig	16.5.0
2020-09	RAN#89	R5-203348	1381	-	F	Add IE MeasObjectCLI	16.5.0
2020-09	RAN#89	R5-203349	1382	-	F	Add IE MeasObjectNR-SL	16.5.0
2020-09	RAN#89	R5-203350	1383	-	F	Add IE MeasObjectUTRA-FDD	16.5.0
2020-09	RAN#89	R5-203351	1384	-	F	Add IEs MeasResultIdleEUTRA and MeasResultIdleNR	16.5.0
2020-09	RAN#89	R5-203355	1387	-	F	Add IEs MsgA-ConfigCommon and MsgA-PUSCH-Config	16.5.0
2020-09	RAN#89	R5-203356	1388	-	F	Add IEs NeedForGapsConfigNR and NeedForGapsInfoNR	16.5.0
2020-09	RAN#89	R5-203357	1389	-	F	Correction to Table 4.5.2.2-2-second SMC procedure for Selected EPS NAS security algorithms IE	16.5.0
2020-09	RAN#89	R5-203359	1391	-	F	Correction to Table 4.6.3-141 ReportConfigInterRAT	16.5.0
2020-09	RAN#89	R5-203446	1395	-	F	Add IEs NPN-Identity and NPN-IdentityInfoList	16.5.0
2020-09	RAN#89	R5-203449	1396	-	F	Add IE PLMN-IdentityList2	16.5.0
2020-09	RAN#89	R5-203450	1397	-	F	Add IE PUCCH-ConfigurationList	16.5.0
2020-09	RAN#89	R5-203451	1398	-	F	Add IE PUCCH-SpatialRelationInfo-Id	16.5.0
2020-09	RAN#89	R5-203455	1399	-	F	Corrections to 4.5.1	16.5.0
2020-09	RAN#89	R5-203456	1400	-	F	Updating usages of TS 34.229-1 to TS 34.229-5	16.5.0
2020-09	RAN#89	R5-203467	1401	-	F	Add IE RACH-ConfigCommonTwoStepRA	16.5.0
2020-09	RAN#89	R5-203470	1402	-	F	Add IE RACH-ConfigGenericTwoStepRA	16.5.0
2020-09	RAN#89	R5-203471	1403	-	F	Add IE ReferenceTimeInfo	16.5.0
2020-09	RAN#89	R5-203472	1404	-	F	Add IE RepetitionSchemeConfig	16.5.0
2020-09	RAN#89	R5-203476	1405	-	F	Add IE ReportConfigNR-SL	16.5.0
2020-09	RAN#89	R5-203500	1410	-	F	Update to Table 4.6.3-74: MeasObjectEUTRA	16.5.0
2020-09	RAN#89	R5-203506	1411	-	F	Add IE RSSI-Range	16.5.0
2020-09	RAN#89	R5-203507	1412	-	F	Add IEs SemiStaticChannelAccessConfig and Sensor-LocationInfo	16.5.0
2020-09	RAN#89	R5-203508	1413	-	F	Add IE SI-RequestConfig	16.5.0
2020-09	RAN#89	R5-203509	1414	-	F	Add IEs SPS-ConfigIndex, SPS-PUCCH-AN and SPS-PUCCH-AN-List	16.5.0
2020-09	RAN#89	R5-203510	1415	-	F	Add IE SRS-RSRP-Range	16.5.0
2020-09	RAN#89	R5-203533	1417	-	F	Update to PDSCH-ServingCellConfig	16.5.0
2020-09	RAN#89	R5-203534	1418	-	F	Updates to CellGroupConfig and RNTI-Value for NR-DC	16.5.0
2020-09	RAN#89	R5-203557	1420	-	F	Add IEs UL-DelayValueConfig and UplinkCancellation	16.5.0

2020-09	RAN#89	R5-203575	1422	-	F	Add chapter Positioning System information blocks	16.5.0
2020-09	RAN#89	R5-203577	1423	-	F	Add IEs SIB10, SIB11, SIB12, SIB13 and SIB14	16.5.0
2020-09	RAN#89	R5-203582	1424	-	F	Add messages DedicatedSIBRequest, DL DedicatedMessageSegment, DLInformationTransferMRDC and IABOtherInformation	16.5.0
2020-09	RAN#89	R5-203634	1429	-	F	Introduction of test frequencies for additional Rel-16 EN-DC inter-band configurations	16.5.0
2020-09	RAN#89	R5-203662	1432	-	F	Removal of USIM profile #16	16.5.0
2020-09	RAN#89	R5-203671	1433	-	F	Update of PDSCH-to-HARQ_feedback timing indicator (k1) value	16.5.0
2020-09	RAN#89	R5-203681	1436	-	F	Editorial correction typos in annex C.2.3.2	16.5.0
2020-09	RAN#89	R5-203704	1438	-	F	Correction to Table 4.6.3-87 NZP-CSI-RS-ResourceSet	16.5.0
2020-09	RAN#89	R5-203719	1441	-	F	Add messages LoggedMeasurementConfiguration, MCGFailureInformation and SidelinkUEInformationNR	16.5.0
2020-09	RAN#89	R5-203725	1442	-	F	Add messages UEInformationRequest, UEInformationResponse, UL DedicatedMessageSegment and ULInformationTransferIRAT	16.5.0
2020-09	RAN#89	R5-203729	1443	-	F	Update IE RACH-ConfigGeneric	16.5.0
2020-09	RAN#89	R5-203730	1444	-	F	Scheduling Request Resource config for RRM test cases	16.5.0
2020-09	RAN#89	R5-203731	1445	-	F	OSI scheduling config for RRM test cases	16.5.0
2020-09	RAN#89	R5-203755	1447	-	F	Update IE SchedulingRequestResourceConfig	16.5.0
2020-09	RAN#89	R5-203767	1449	-	F	Addition of test frequencies for new Rel-16 CBW for NR band n77	16.5.0
2020-09	RAN#89	R5-203768	1450	-	F	Addition of test frequencies for new Rel-16 CBW for NR band n78	16.5.0
2020-09	RAN#89	R5-203769	1451	-	F	Introduction of test frequencies for Rel-16 NR band n30	16.5.0
2020-09	RAN#89	R5-203793	1454	-	F	Correction of n29 test frequencies for protocol testing	16.5.0
2020-09	RAN#89	R5-203794	1455	-	F	Introduction of n30 test frequencies for protocol testing	16.5.0
2020-09	RAN#89	R5-203796	1456	-	F	Correction of EN-DC test frequency information for protocol testing	16.5.0
2020-09	RAN#89	R5-203813	1457	-	F	Correction to PUCCH-Config	16.5.0
2020-09	RAN#89	R5-203815	1458	-	F	FR2 PUSCH K2 values alignment to TS 38.214	16.5.0
2020-09	RAN#89	R5-203908	1463	-	F	Corrections on test frequencies for NR FR2 CA band n261	16.5.0
2020-09	RAN#89	R5-203998	1467	-	F	Addition of test frequencies for new Rel-16 CBW 25 and 50 MHz for NR band n1	16.5.0
2020-09	RAN#89	R5-204021	1469	-	F	Correction of n51 and n76 test frequencies for protocol testing	16.5.0
2020-09	RAN#89	R5-204032	1470	-	F	Introduction of n259 test frequencies for protocol testing	16.5.0
2020-09	RAN#89	R5-204038	1471	-	F	Corrections of test frequency tables for EN-DC configuration DC_(n)41AA	16.5.0
2020-09	RAN#89	R5-204039	1472	-	F	Corrections of test frequency tables for EN-DC configuration DC_(n)71AA	16.5.0
2020-09	RAN#89	R5-204041	1473	-	F	Addition of test channel bandwidths for n1 new CBW in 38.508-1 R16	16.5.0
2020-09	RAN#89	R5-204049	1475	-	F	Correction to the procedure for determination of SSB and CORESET0	16.5.0
2020-09	RAN#89	R5-204052	1478	-	F	PUCCH Resource ID for CSI TCs	16.5.0
2020-09	RAN#89	R5-204053	1479	-	F	Correction to PDCCH-ConfigCommon for performance tests	16.5.0
2020-09	RAN#89	R5-204150	1484	-	F	Update Table 5.4.2.0-2: ServingCellConfigCommon	16.5.0
2020-09	RAN#89	R5-204167	1488	-	F	Corrections of test frequency tables for CA_n260(A-I)	16.5.0
2020-09	RAN#89	R5-204168	1489	-	F	Update Table 7.3.1-4: ServingCellConfigCommon	16.5.0
2020-09	RAN#89	R5-204223	1491	-	F	Update missing SMTC configurations in RRM message contents	16.5.0
2020-09	RAN#89	R5-204238	1493	-	F	Correction to default contents of RRCReestablishmentRequest message	16.5.0
2020-09	RAN#89	R5-204325	1495	-	F	Adding procedure for establishment of multiple additional PDN connections in EPS (S1 mode)	16.5.0
2020-09	RAN#89	R5-204327	1497	-	F	Updates to Test procedure for UE for Tracking area updating / Inter-system change from N1 mode to S1 mode in 5GMM/EMM-IDLE mode	16.5.0
2020-09	RAN#89	R5-204329	1499	-	F	Update of 4.5A.2 UE-requested PDU session establishment procedure	16.5.0
2020-09	RAN#89	R5-204330	1500	-	F	Updates Procedure to UE-requested PDU session modification after the first S1 to N1 mode change	16.5.0

2020-09	RAN#89	R5-204331	1501	-	F	Void 4.9.14 Procedure for UE-requested PDU session modification after the first S1 to N1 mode change	16.5.0
2020-09	RAN#89	R5-204346	1502	-	F	Introduction of test frequencies for Rel-16 NR band n259	16.5.0
2020-09	RAN#89	R5-204378	1427	1	F	Correction to NR inter-band CA configurations in FR1	16.5.0
2020-09	RAN#89	R5-204384	1409	1	F	Correction to test procedure for UE for Tracking area updating / Inter-system change from S1 mode to N1 mode in 5GMM/EMM-IDLE mode	16.5.0
2020-09	RAN#89	R5-204386	1390	1	F	Correction to Table 4.6.1-17 RRCResume	16.5.0
2020-09	RAN#89	R5-204387	1406	1	F	Corrections to generic procedures for MO and MT speech call establishment	16.5.0
2020-09	RAN#89	R5-204388	1407	1	F	Correction to USIM configurations 7 and 13	16.5.0
2020-09	RAN#89	R5-204389	1408	1	F	Correction to switch off / power off procedures for IMS	16.5.0
2020-09	RAN#89	R5-204390	1421	1	F	Correction of description of NGEN-DC in table 4.5.1-1	16.5.0
2020-09	RAN#89	R5-204391	1425	1	F	Correction to UE-CapabilityRAT-RequestList and UE-CapabilityRequestFilterNR	16.5.0
2020-09	RAN#89	R5-204392	1439	1	F	Addition of Generic Test Procedure for IMS MO SMS in 5GC	16.5.0
2020-09	RAN#89	R5-204393	1440	1	F	Addition of Generic Test Procedure for IMS MT SMS in 5GC	16.5.0
2020-09	RAN#89	R5-204394	1446	1	F	Update IE RLC-BearerConfig	16.5.0
2020-09	RAN#89	R5-204395	1481	1	F	Update IE SIB2	16.5.0
2020-09	RAN#89	R5-204396	1482	1	F	New procedure for PDU Session Release	16.5.0
2020-09	RAN#89	R5-204397	1483	1	F	Update to FreqBandList	16.5.0
2020-09	RAN#89	R5-204398	1490	1	F	Update IE ServingCellConfigCommon	16.5.0
2020-09	RAN#89	R5-204399	1494	1	F	Adding generic procedure E-UTRA RRC_IDLE with unrestricted number of PDN connections	16.5.0
2020-09	RAN#89	R5-204400	1496	1	F	Update of PDU SESSION ESTABLISHMENT ACCEPT for multi PDU-PDN handling	16.5.0
2020-09	RAN#89	R5-204401	1498	1	F	Updates of Test procedure for UE for Tracking area updating / Inter-system change from S1 mode to N1 mode in 5GMM/EMM-IDLE mode	16.5.0
2020-09	RAN#89	R5-204507	1371	1	F	Add IEs BH-RLC-ChannelConfig, BH-LogicalChannelIdentity, BH-LogicalChannelIdentity-Ext and BH-RLC-ChannelID	16.5.0
2020-09	RAN#89	R5-204508	1386	1	F	Add IEs MeasResultsSL and MeasTriggerQuantityEUTRA	16.5.0
2020-09	RAN#89	R5-204509	1416	1	F	Modification to InterRAT-Parameters to add the UE capability nr-HO-ToEN-DC-r16	16.5.0
2020-09	RAN#89	R5-204510	1419	1	F	Add IE SSB-PositionQCL-Relation	16.5.0
2020-09	RAN#89	R5-204704	1503	-	F	Adding the test frequency for DC_3A-7A_n78A	16.5.0
2020-09	RAN#89	R5-204706	1504	-	F	Adding the test frequency for DC_28A_n3A	16.5.0
2020-09	RAN#89	R5-204708	1435	1	F	Updating indicator for SUL FR1 test cases	16.5.0
2020-09	RAN#89	R5-204709	1437	1	F	Update frequencyDomainResources and nrofCandidates	16.5.0
2020-09	RAN#89	R5-204751	1428	1	F	Introduction of test frequencies for additional Rel-15 band EN-DC inter-band configurations	16.5.0
2020-09	RAN#89	R5-204752	1460	1	F	Correction to TCI-state related configurations	16.5.0
2020-09	RAN#89	R5-204753	1461	1	F	Correction to CSI-RS related configurations	16.5.0
2020-09	RAN#89	R5-204754	1468	1	F	Update on test frequencies for EN-DC configurations including FR2	16.5.0
2020-09	RAN#89	R5-204755	1485	1	F	Corrections of test frequency tables for CA_n258x	16.5.0
2020-09	RAN#89	R5-204756	1486	1	F	Corrections of test frequency tables for CA_n260x	16.5.0
2020-09	RAN#89	R5-204757	1487	1	F	Corrections of test frequency tables for CA_n261x	16.5.0
2020-09	RAN#89	R5-204758	1492	1	F	Add SSB subcarrier spacing configurations in RRM message contents	16.5.0
2020-09	RAN#89	R5-204800	1362	1	F	Introduction of test frequencies for Rel-16 inter-band EN-DC combinations within FR1	16.5.0
2020-09	RAN#89	R5-204852	1434	1	F	Jumbo CR for update to Demod message contents	16.5.0
2020-09	RAN#89	R5-204896	1370	1	F	Addition of test frequencies for n28 with CBW of 30MHz	16.5.0
2020-09	RAN#89	R5-204899	1448	1	F	Adding default value for IE rbg-Size for demodulation and CSI reporting tests	16.5.0
2020-09	RAN#89	R5-204900	1462	1	F	Introduction of definition of Mid, Low, High test channel bandwidth and removal of NOTES that incorrectly permit UE not to support mandatory BWs	16.5.0
2020-09	RAN#89	R5-204901	1476	1	F	Correction to message configuration for performance tests	16.5.0
2020-10	RAN#89	R5-204325	1495	-	F	Addition of missing Table 4.5A.2B.2.2-2 and specific message contents of R5-204325	16.5.1
2020-12	RAN#90	R5-205093	1507	-	F	Add IE BandCombinationListSidelink	16.6.0
2020-12	RAN#90	R5-205096	1508	-	F	Add IE CarrierAggregationVariant	16.6.0

2020-12	RAN#90	R5-205104	1509	-	F	Add IEs FreqSeparationClassDL-Only and HighSpeedParameters	16.6.0
2020-12	RAN#90	R5-205130	1514	-	F	Add IE PowSav-Parameters	16.6.0
2020-12	RAN#90	R5-205167	1519	-	F	Add IE OLPC-SRS-Pos	16.6.0
2020-12	RAN#90	R5-205172	1521	-	F	Add IEs SidelinkParameters, SON-Parameters and SpatialRelationsSRS-Pos	16.6.0
2020-12	RAN#90	R5-205178	1522	-	F	Add IE UE-BasedPerfMeas-Parameters	16.6.0
2020-12	RAN#90	R5-205181	1523	-	F	Add IE SharedSpectrumChAccessParamsPerBand	16.6.0
2020-12	RAN#90	R5-205186	1524	-	F	Add IEs AbsoluteTimeInfo, AreaConfiguration and BT-NameList	16.6.0
2020-12	RAN#90	R5-205187	1525	-	F	Add IEs IAB-IP-Address, IAB-IP-AddressIndex and IAB-IP-Usage	16.6.0
2020-12	RAN#90	R5-205188	1526	-	F	Add IEs LoggingDuration, LoggingInterval, LogMeasResultListBT and LogMeasResultListWLAN	16.6.0
2020-12	RAN#90	R5-205189	1527	-	F	Add IE PhysCellIdUTRA-FDD	16.6.0
2020-12	RAN#90	R5-205190	1528	-	F	Add IEs Sensor-NameList, TraceReference and UE-MeasurementsAvailable-r16	16.6.0
2020-12	RAN#90	R5-205191	1529	-	F	Add IEs UTRA-FDD-Q-OffsetRange, VisitedCellInfoList and WLAN-NameList	16.6.0
2020-12	RAN#90	R5-205215	1533	-	F	Update chapter 4.5.1 General	16.6.0
2020-12	RAN#90	R5-205249	1537	-	F	Introduction of test frequencies for NR Band n53 signalling testing	16.6.0
2020-12	RAN#90	R5-205250	1538	-	F	Introduction of test channel BWs for NR Band n53	16.6.0
2020-12	RAN#90	R5-205288	1539	-	F	Addition of IE DCP-Config-r16	16.6.0
2020-12	RAN#90	R5-205332	1542	-	F	Updates to generic procedure NR-DC RRC_CONNECTED	16.6.0
2020-12	RAN#90	R5-205334	1544	-	F	Updates to RadioBearerConfig in Table 4.6.3-132	16.6.0
2020-12	RAN#90	R5-205336	1546	-	F	Updates to RRCReconfiguration in Table 4.6.1-13	16.6.0
2020-12	RAN#90	R5-205339	1549	-	F	Updates to RRCReconfiguration-NR-DC in Table 4.8.1-1CA	16.6.0
2020-12	RAN#90	R5-205403	1554	-	F	Addition of PC5 RRC messages for sidelink communication	16.6.0
2020-12	RAN#90	R5-205404	1555	-	F	Addition of sidelink IEs for Uu RRC and PC5 RRC	16.6.0
2020-12	RAN#90	R5-205532	1573	-	F	Clarifications to Annex C and CORESET1	16.6.0
2020-12	RAN#90	R5-205661	1580	-	F	Update of Annex C on calculating test frequencies for RRM testing	16.6.0
2020-12	RAN#90	R5-205701	1588	-	F	Update RF test channel bandwidths for n14 and n30	16.6.0
2020-12	RAN#90	R5-205725	1594	-	F	Correction to test channel bandwidth for NR band n40 and n50	16.6.0
2020-12	RAN#90	R5-205728	1597	-	F	Adding test frequencies for CA_n78B	16.6.0
2020-12	RAN#90	R5-205771	1602	-	F	Addition of test frequencies for a few Rel-16 EN-DC configurations	16.6.0
2020-12	RAN#90	R5-205832	1603	-	F	Connection diagrams for radiated RRM Tests	16.6.0
2020-12	RAN#90	R5-205874	1607	-	F	Correction of test frequency of CA_n41C	16.6.0
2020-12	RAN#90	R5-205875	1608	-	F	Correction of test frequency of CA_n66B	16.6.0
2020-12	RAN#90	R5-205881	1610	-	F	Addition of test frequency for 40MHz of band n38	16.6.0
2020-12	RAN#90	R5-205926	1612	-	F	Correction to nrofRBs IE for CSI-FrequencyOccupation	16.6.0
2020-12	RAN#90	R5-205932	1614	-	F	Addition of IE configuration for ULPTx to clause 5	16.6.0
2020-12	RAN#90	R5-205937	1615	-	F	Update of 4.9.12 Generic Test Procedure for IMS Emergency call establishment in 5GC without IMS emergency registration and editorials	16.6.0
2020-12	RAN#90	R5-205939	1617	-	F	Update for Flexible PDU-PDN - Default messages	16.6.0
2020-12	RAN#90	R5-205940	1618	-	F	Update for Flexible PDU-PDN - DNN Configurations	16.6.0
2020-12	RAN#90	R5-205997	1621	-	F	Correction of test frequencies for NR band n1	16.6.0
2020-12	RAN#90	R5-205998	1622	-	F	Editorial correction to NR-DC test frequency clause 4.3.1	16.6.0
2020-12	RAN#90	R5-206002	1626	-	F	Correction of FR1 NR band test frequency tables for protocol testing	16.6.0
2020-12	RAN#90	R5-206003	1627	-	F	Correction of FR2 NR band test frequency tables for protocol testing	16.6.0
2020-12	RAN#90	R5-206004	1628	-	F	Change of default SCS for NR CA test frequencies for FR2 protocol testing	16.6.0
2020-12	RAN#90	R5-206008	1632	-	F	Editorial correction to NR CA test frequencies for FR1 protocol testing	16.6.0
2020-12	RAN#90	R5-206019	1637	-	F	Correction of test frequencies for CA_n260 of intra-band non-contiguous A-I	16.6.0
2020-12	RAN#90	R5-206046	1642	-	F	Clarify usage of SSB-Ids for RRM test cases	16.6.0
2020-12	RAN#90	R5-206048	1644	-	F	Clarification on the conditions in DCI format 1_1 table for RRM	16.6.0

2020-12	RAN#90	R5-206060	1645	-	F	Correction to 4.9.17 IMS MO release	16.6.0
2020-12	RAN#90	R5-206061	1646	-	F	Correction to 4.9.18 IMS MT release	16.6.0
2020-12	RAN#90	R5-206065	1650	-	F	Alignment of Rel-16 5GSM messages	16.6.0
2020-12	RAN#90	R5-206066	1651	-	F	Addition of new SSTs	16.6.0
2020-12	RAN#90	R5-206067	1652	-	F	Update IE SIB2	16.6.0
2020-12	RAN#90	R5-206078	1654	-	F	Update IE SIB4	16.6.0
2020-12	RAN#90	R5-206086	1655	-	F	Addition of common message contents for sustained downlink data rate tests	16.6.0
2020-12	RAN#90	R5-206087	1656	-	F	Correction to Default RRM TRS qcl-info and PDCCH TCI State	16.6.0
2020-12	RAN#90	R5-206112	1657	-	F	Update requirements of test equipment for RF test	16.6.0
2020-12	RAN#90	R5-206113	1658	-	F	Update requirements of test equipment for RRM tests	16.6.0
2020-12	RAN#90	R5-206115	1659	-	F	Update requirements of reference test conditions for RRM tests	16.6.0
2020-12	RAN#90	R5-206157	1663	-	F	CSI-measConfig applicable for RRM testing	16.6.0
2020-12	RAN#90	R5-206158	1664	-	F	Editorial update IE CellAccessRelatedInfo-EUTRA-5GC	16.6.0
2020-12	RAN#90	R5-206164	1666	-	F	Editorial update IE CellAccessRelatedInfo-EUTRA-EPC	16.6.0
2020-12	RAN#90	R5-206266	1671	-	F	Corrections to test procedures in subclause 4.9	16.6.0
2020-12	RAN#90	R5-206288	1510	1	F	Corrections to UE-requested PDU session establishment procedure	16.6.0
2020-12	RAN#90	R5-206289	1515	1	F	Update of 4.9.7 Test procedure for UE for Tracking area updating / Inter-system change from N1 mode to S1 mode in 5GMM/EMM-IDLE mode	16.6.0
2020-12	RAN#90	R5-206290	1516	1	F	Update of 4.9.9 Test procedure for UE for Tracking area updating / Inter-system change from S1 mode to N1 mode in 5GMM/EMM-IDLE mode	16.6.0
2020-12	RAN#90	R5-206291	1517	1	F	Update of 4.5.2 RRC_IDLE	16.6.0
2020-12	RAN#90	R5-206292	1532	1	F	Correction to Test procedure 4.9.5	16.6.0
2020-12	RAN#90	R5-206293	1534	1	F	Corrections to generic procedures regarding IMS usage	16.6.0
2020-12	RAN#90	R5-206294	1540	1	F	Update Generic Test Procedures for IMS MO, MT speech call	16.6.0
2020-12	RAN#90	R5-206295	1543	1	F	Updates to generic procedure parameters in Table 4.5.1-1	16.6.0
2020-12	RAN#90	R5-206296	1616	1	F	Update for Flexible PDU-PDN - Session-Connection establishment	16.6.0
2020-12	RAN#90	R5-206297	1541	1	F	Updates to CellGroupConfig in Table 4.6.3-19	16.6.0
2020-12	RAN#90	R5-206298	1545	1	F	Updates to RadioBearerConfig in Table 4.6.3-132 for NR-DC	16.6.0
2020-12	RAN#90	R5-206299	1547	1	F	Updates to RRCReconfiguration in Table 4.6.1-13 for NR-DC	16.6.0
2020-12	RAN#90	R5-206300	1548	1	F	Updates to RRCReconfigurationComplete	16.6.0
2020-12	RAN#90	R5-206301	1586	1	F	Update IE SSB-ToMeasure	16.6.0
2020-12	RAN#90	R5-206302	1620	1	F	Correction to PDCCH-ConfigCommon	16.6.0
2020-12	RAN#90	R5-206303	1665	1	F	Messages Exceptions corrections for SUL cases	16.6.0
2020-12	RAN#90	R5-206304	1670	1	F	Update to ims-EmergencySupport indication of SIB1	16.6.0
2020-12	RAN#90	R5-206305	1595	1	F	Correction to test frequencies for signalling testing	16.6.0
2020-12	RAN#90	R5-206306	1625	1	F	Introducing test frequencies for CA_n261(2A) for protocol testing	16.6.0
2020-12	RAN#90	R5-206307	1629	1	F	Introduction of NR-DC test frequencies for protocol testing	16.6.0
2020-12	RAN#90	R5-206308	1661	1	F	Update requirements of test equipment for Signalling test	16.6.0
2020-12	RAN#90	R5-206309	1531	1	F	Correction to Table 4.8.1-1A RRCReconfiguration-HO	16.6.0
2020-12	RAN#90	R5-206388	1631	1	F	Introduction of n14 test frequencies for protocol testing	16.6.0
2020-12	RAN#90	R5-206394	1552	1	F	Adding ReferenceTimeInfo IE config for IIoT test	16.6.0
2020-12	RAN#90	R5-206403	1559	1	F	Update to RRC messages and IEs for R16 Mobility Enhancement	16.6.0
2020-12	RAN#90	R5-206407	1553	1	F	Correction to Uu RRC messages and SIBs for sidelink communication	16.6.0
2020-12	RAN#90	R5-206408	1556	1	F	Addition of V2X default configuration_USIM	16.6.0
2020-12	RAN#90	R5-206409	1557	1	F	Addition of V2X default configuration_NAS Messages	16.6.0
2020-12	RAN#90	R5-206419	1575	1	F	Updates to default contents of NAS messages for Rel-16 RACS	16.6.0
2020-12	RAN#90	R5-206420	1576	1	F	Updates to default contents of RRC messages for Rel-16 RACS	16.6.0
2020-12	RAN#90	R5-206426	1649	1	F	Alignment of Rel-16 5GMM messages	16.6.0
2020-12	RAN#90	R5-206427	1668	1	F	Updates to DLDedicatedMessageSegment message	16.6.0
2020-12	RAN#90	R5-206621	1589	1	F	Correction to test frequencies for NR band n34	16.6.0
2020-12	RAN#90	R5-206622	1590	1	F	Correction to test frequencies for NR band n38	16.6.0
2020-12	RAN#90	R5-206623	1591	1	F	Correction to test frequencies for NR band n39	16.6.0

2020-12	RAN#90	R5-206624	1592	1	F	Correction to test frequencies for NR band n40	16.6.0
2020-12	RAN#90	R5-206625	1593	1	F	Correction to test frequencies for NR band n50	16.6.0
2020-12	RAN#90	R5-206626	1609	1	F	Correction of test frequency of CA_n78C	16.6.0
2020-12	RAN#90	R5-206628	1611	1	F	Update to DEMOD message contents	16.6.0
2020-12	RAN#90	R5-206629	1669	1	F	Single PDN and PDU configuration for EN-DC RF testing	16.6.0
2020-12	RAN#90	R5-206630	1619	1	F	Addition of aperiodic CSI-RS reference configuration for RRM test	16.6.0
2020-12	RAN#90	R5-206631	1623	1	F	Introduction of test frequencies for SCS=60 kHz and EN-DC configurations DC_41X_n41A	16.6.0
2020-12	RAN#90	R5-206632	1505	1	F	Message contents for iRAT periodical measurements	16.6.0
2020-12	RAN#90	R5-206633	1638	1	F	Minor corrections of 4.1 for test environment conditions	16.6.0
2020-12	RAN#90	R5-206712	1579	1	F	Addition of UL and DL inter-band CA configurations for several FR1 bands	16.6.0
2020-12	RAN#90	R5-206713	1587	1	F	Update to reference test conditions for R16 EN-DC configuration	16.6.0
2020-12	RAN#90	R5-206714	1639	1	F	Introduction of test frequencies for additional Rel-16 EN-DC inter-band configurations	16.6.0
2020-12	RAN#90	R5-206715	1660	1	F	Introduction of test frequencies for additional Rel-16 EN-DC inter-band configurations	16.6.0
2020-12	RAN#90	R5-206736	1536	1	F	Introduction of test frequencies for NR Band n53	16.6.0
2020-12	RAN#90	R5-206737	1572	1	F	Addition of R16 new channel bandwidths for n3 in 38.508-1	16.6.0
2020-12	RAN#90	R5-206738	1630	1	F	Introduction of test frequencies for n14	16.6.0
2020-12	RAN#90	R5-206739	1636	1	F	Correction of 4.3.1 for test channel bandwidth of NR bands	16.6.0
2020-12	RAN#90	R5-206757	1596	1	F	Adding test frequencies for CA_n40B	16.6.0
2020-12	RAN#90	R5-206758	1598	1	F	Adding test frequencies for CA_n77A-n77A	16.6.0
2020-12	RAN#90	R5-206759	1599	1	F	Adding test frequencies for CA_n78A-n78A	16.6.0
2020-12	RAN#90	R5-206760	1633	1	F	Updating message contents for Uplink carrier switching	16.6.0
2020-12	RAN#90	R5-206790	1581	1	F	Introduction of test frequencies for RRM and NR band n257	16.6.0
2020-12	RAN#90	R5-206791	1582	1	F	Introduction of test frequencies for RRM and NR band n258	16.6.0
2020-12	RAN#90	R5-206792	1583	1	F	Introduction of test frequencies for RRM and NR band n260	16.6.0
2020-12	RAN#90	R5-206793	1584	1	F	Introduction of test frequencies for RRM and NR band n261	16.6.0
2020-12	RAN#90	R5-206794	1585	1	F	Introduction of test frequencies for RRM and NR band n259	16.6.0
2020-12	RAN#90	R5-206820	1667	1	F	Update to quality of quiet zone validation rule for IFF DFF hybrid setup	16.6.0
2020-12	RAN#90	R5-206860	1506	1	F	SSB bitmap correction for RRM test cases	16.6.0
2020-12	RAN#90	R5-206861	1624	1	F	Introducing test frequencies for CA_n261(2A)	16.6.0
2020-12	RAN#90	R5-206862	1643	1	F	Clarify the RF / RRM conditions for default messages	16.6.0
2021-03	RAN#91	R5-210186	1678	-	F	Update global conditions	16.7.0
2021-03	RAN#91	R5-210327	1688	-	F	Update FailureInformation message	16.7.0
2021-03	RAN#91	R5-210328	1689	-	F	Editorial update RRCReconfiguration message	16.7.0
2021-03	RAN#91	R5-210359	1692	-	F	Editorial update SidelinkUEInformationNR message	16.7.0
2021-03	RAN#91	R5-210394	1697	-	F	Editorial update UEAssistanceInformation message	16.7.0
2021-03	RAN#91	R5-210414	1699	-	F	Update UECapabilityEnquiry message	16.7.0
2021-03	RAN#91	R5-210468	1704	-	F	Add new SIB combination for RRM tests with single cell	16.7.0
2021-03	RAN#91	R5-210599	1711	-	F	Editorial correction on numbering of several Tables in 38.508-1	16.7.0
2021-03	RAN#91	R5-210616	1713	-	F	Editorial update DLDedicatedMessageSegment message	16.7.0
2021-03	RAN#91	R5-210623	1714	-	F	Correction to Table 4.6.1-13 RRCReconfiguration	16.7.0
2021-03	RAN#91	R5-210626	1717	-	F	Correction to Table 6.4.1-11 USIM Configuration 11	16.7.0
2021-03	RAN#91	R5-210627	1718	-	F	Correction to Table 4.8.2.1-7 Reference QoS rule 7	16.7.0
2021-03	RAN#91	R5-210687	1719	-	F	Correction to Table 4.6.3-25B CondReconfigId	16.7.0
2021-03	RAN#91	R5-210688	1720	-	F	Correction to Table 4.6.3-25C CondReconfigToAddModList	16.7.0
2021-03	RAN#91	R5-210689	1721	-	F	Correction to Table 4.6.3-25D ConditionalReconfiguration	16.7.0
2021-03	RAN#91	R5-210698	1723	-	F	Addition of IE SL-PreconfigurationNR	16.7.0
2021-03	RAN#91	R5-210699	1724	-	F	Addition of V2X NAS IEs	16.7.0
2021-03	RAN#91	R5-210701	1726	-	F	Correction of NR SL IE SL-BWP-ConfigCommon	16.7.0
2021-03	RAN#91	R5-210703	1728	-	F	Correction of NR SL IE SL-ConfigDedicatedNR	16.7.0
2021-03	RAN#91	R5-210704	1729	-	F	Correction of NR SL IE SL-FreqConfigCommon	16.7.0
2021-03	RAN#91	R5-210705	1730	-	F	Correction of NR SL IE SL-LogicalChannelConfig	16.7.0
2021-03	RAN#91	R5-210706	1731	-	F	Correction of NR SL IE SL-MeasConfigInfo	16.7.0
2021-03	RAN#91	R5-210707	1732	-	F	Correction of NR SL IE SL-PDCP-Config	16.7.0
2021-03	RAN#91	R5-210708	1733	-	F	Correction of NR SL IE SL-RadioBearerConfig	16.7.0
2021-03	RAN#91	R5-210709	1734	-	F	Correction of NR SL IE SL-ResourcePool	16.7.0
2021-03	RAN#91	R5-210710	1735	-	F	Correction of NR SL IE SL-RLC-BearerConfig	16.7.0

2021-03	RAN#91	R5-210711	1736	-	F	Correction of NR SL IE SL-RLC-Config	16.7.0
2021-03	RAN#91	R5-210713	1738	-	F	Correction to NR Uu IE ARFCN-ValueNR	16.7.0
2021-03	RAN#91	R5-210714	1739	-	F	Correction to NR Uu IE SCS-SpecificCarrier	16.7.0
2021-03	RAN#91	R5-210771	1744	-	F	Correction in CodebookConfig for 4Tx RI Demod test cases	16.7.0
2021-03	RAN#91	R5-210772	1745	-	F	Alignment xOverhead setting with PDSCH RMCs for Demod FR2 testing	16.7.0
2021-03	RAN#91	R5-210805	1746	-	F	Update IE SemiStaticChannelAccessConfig	16.7.0
2021-03	RAN#91	R5-210812	1747	-	F	Update IE ServingCellConfig	16.7.0
2021-03	RAN#91	R5-210824	1748	-	F	Number of control symbols for RRM tests with 240kHz SSB SCS	16.7.0
2021-03	RAN#91	R5-210826	1750	-	F	Editorial update IE ServingCellConfigCommon	16.7.0
2021-03	RAN#91	R5-210873	1752	-	F	Correction of aperiodic CSI-RS reference configuration for RRM tests	16.7.0
2021-03	RAN#91	R5-210897	1753	-	F	Correction to test frequency parameters for band n83	16.7.0
2021-03	RAN#91	R5-210898	1754	-	F	Correction to test frequency parameters for band n84	16.7.0
2021-03	RAN#91	R5-211032	1759	-	F	Correction test frequencies for CA_n261(2A)	16.7.0
2021-03	RAN#91	R5-211033	1760	-	F	Correction test frequencies for CA_n261(2A) for protocol testing	16.7.0
2021-03	RAN#91	R5-211034	1761	-	F	Correction of protocol applicability for test frequencies for DC_xA_n261(2A) configurations	16.7.0
2021-03	RAN#91	R5-211107	1770	-	F	Corrections to subclauses in 38.508-1 with appropriate subclause level and heading styles	16.7.0
2021-03	RAN#91	R5-211116	1772	-	F	Update of 4.3.1.1.3.41.1 for test frequency of NR intra-band contiguous CA_n41C	16.7.0
2021-03	RAN#91	R5-211117	1773	-	F	Update of 4.3.1.1.3.66.1 for test frequency of NR intra-band contiguous CA_n66B	16.7.0
2021-03	RAN#91	R5-211118	1774	-	F	Update of 4.3.1.1.3.78.1 for test frequency of NR intra-band contiguous CA_n78C	16.7.0
2021-03	RAN#91	R5-211121	1777	-	F	Update of 4.3.1.3.2.1 for test frequencies for NR-DC configurations between FR1 and FR2	16.7.0
2021-03	RAN#91	R5-211124	1780	-	F	Update of 4.3.1.6.1.3 for test frequencies for EN-DC band combinations including FR1 and FR2	16.7.0
2021-03	RAN#91	R5-211168	1784	-	F	Updates to PDU SESSION ESTABLISHMENT ACCEPT message	16.7.0
2021-03	RAN#91	R5-211170	1786	-	F	Editorial update to BandCombinationListSidelink IE	16.7.0
2021-03	RAN#91	R5-211171	1787	-	F	Update to RRCReconfiguration-Speech IE	16.7.0
2021-03	RAN#91	R5-211204	1791	-	F	Editorial update IE BWP	16.7.0
2021-03	RAN#91	R5-211328	1796	-	F	Correction to frequency parameters for band n53	16.7.0
2021-03	RAN#91	R5-211335	1727	1	F	Correction of NR SL IE SL-BWP-PoolConfigCommon	16.7.0
2021-03	RAN#91	R5-211336	1737	1	F	Correction of NR SL IE SL-SDAP-Config	16.7.0
2021-03	RAN#91	R5-211337	1740	1	F	Correction to PC5-RRC message RRCReconfigurationSidelink	16.7.0
2021-03	RAN#91	R5-211338	1741	1	F	Correction to PC5-RRC message UECapabilityEnquirySidelink	16.7.0
2021-03	RAN#91	R5-211339	1742	1	F	Correction to PC5-RRC message UECapabilityInformationSidelink	16.7.0
2021-03	RAN#91	R5-211369	1673	1	F	Corrections to generic test procedures for IMS	16.7.0
2021-03	RAN#91	R5-211370	1676	1	F	Correction to generic procedure for UE-requested PDU session modification after S1 to N1 change	16.7.0
2021-03	RAN#91	R5-211371	1680	1	F	Correction to test procedure 4.9.7	16.7.0
2021-03	RAN#91	R5-211372	1698	1	F	Correction to RRC IDLE procedures	16.7.0
2021-03	RAN#91	R5-211374	1712	1	F	Update IE PDCCH-ConfigCommon	16.7.0
2021-03	RAN#91	R5-211375	1715	1	F	Correction to Table 4.6.3-185 SSB-MTC	16.7.0
2021-03	RAN#91	R5-211456	1722	1	F	Correction to Table 4.6.3-142 ReportConfigNR	16.7.0
2021-03	RAN#91	R5-211462	1725	1	F	Addition of SI combination for NR SL	16.7.0
2021-03	RAN#91	R5-211465	1693	1	F	Updates to SIB1 and SIB10 for Rel-16 NPN	16.7.0
2021-03	RAN#91	R5-211466	1694	1	F	Addition of System information combination for Rel-16 NPN	16.7.0
2021-03	RAN#91	R5-211467	1684	1	F	Introduction of definition of common environment for R16 NR Immediate MDT	16.7.0
2021-03	RAN#91	R5-211468	1685	1	F	Updating Contents of RRC messages for Logged MDT test cases	16.7.0
2021-03	RAN#91	R5-211491	1700	1	F	Addition of Cell configurations for 5G-SRVCC from NG-RAN to UTRAN	16.7.0
2021-03	RAN#91	R5-211497	1682	1	F	Editorial update IE PhysicalCellGroupConfig	16.7.0
2021-03	RAN#91	R5-211498	1781	1	F	Introduction of support for URLLC	16.7.0

2021-03	RAN#91	R5-211499	1782	1	F	Addition of QoS for URLLC	16.7.0
2021-03	RAN#91	R5-211548	1695	1	F	Addition of NID information for Rel-16 NPN	16.7.0
2021-03	RAN#91	R5-211604	1794	-	F	Introduction of test frequencies for CBW 70 MHz for n77	16.7.0
2021-03	RAN#91	R5-211605	1795	-	F	Introduction of test frequencies for CBW 70 MHz for n78	16.7.0
2021-03	RAN#91	R5-211660	1677	1	F	Update of EN-DC inter-band configurations in clause 4.3.1	16.7.0
2021-03	RAN#91	R5-211661	1690	1	F	Addition of 3 band EN-DC Test Frequency (DC_1A-8A_n78A, DC_3A-8A_n78A)	16.7.0
2021-03	RAN#91	R5-211662	1691	1	F	Addition of 4 band EN-DC Test Frequency (DC_1A-3A-8A_n78A)	16.7.0
2021-03	RAN#91	R5-211663	1743	1	F	Update PDSCH-TimeDomainResourceAllocationList to consider coreset0 for Demod FR2 test cases	16.7.0
2021-03	RAN#91	R5-211664	1763	1	F	Update message content for PMI reporting test cases	16.7.0
2021-03	RAN#91	R5-211665	1705	1	F	Changes to RRM default message contents	16.7.0
2021-03	RAN#91	R5-211666	1706	1	F	Add SSB Index table for RRM with SECOND_SSB condition	16.7.0
2021-03	RAN#91	R5-211667	1751	1	F	Addition of default configuration of CSI-IM for RRM tests	16.7.0
2021-03	RAN#91	R5-211668	1790	1	F	Specify CSI-SSB-ResourceSet for RRM	16.7.0
2021-03	RAN#91	R5-211669	1702	1	F	Editorial rework of the conditions for CSI-FrequencyOccupation	16.7.0
2021-03	RAN#91	R5-211670	1703	1	F	Align TDD UL DL Common for RRM with TS 38.533	16.7.0
2021-03	RAN#91	R5-211671	1707	1	F	Correct reportOffsetList in CSI-ReportConfig	16.7.0
2021-03	RAN#91	R5-211672	1708	1	F	Specify CSI-SSB-ResourceSet	16.7.0
2021-03	RAN#91	R5-211673	1764	1	F	Clarification on the connection diagram for FR2 demod and RRM test cases	16.7.0
2021-03	RAN#91	R5-211762	1778	1	F	Update of 4.3.1.4.1 for test frequencies for EN-DC band combinations within FR1	16.7.0
2021-03	RAN#91	R5-211763	1779	1	F	Update of 4.3.1.5.1 for test frequencies for EN-DC band combinations including FR2	16.7.0
2021-03	RAN#91	R5-211784	1776	1	F	Update of 4.3.1.0A for mid test channel bandwidth	16.7.0
2021-03	RAN#91	R5-211785	1792	1	F	Correction of test frequencies for NR band n48	16.7.0
2021-03	RAN#91	R5-211855	1758	1	F	Updating the value of P-Max for EN-DC and NR SA test cases	16.7.0
2021-03	RAN#91	R5-211856	1768	1	F	Correction to the message contents for CQI reporting tests in 5.4.2.4	16.7.0
2021-03	RAN#91	R5-211857	1769	1	F	Correction to the message contents for PMI reporting tests in 5.4.2.5	16.7.0
2021-03	RAN#91	R5-210927	1755	-	F	Updating Rel-17 mid and highest channel bandwidth for n83 and n84	17.0.0
2021-03	RAN#91	R5-210928	1756	-	F	Adding Rel-17 CBW 30MHz test frequencies for n83	17.0.0
2021-03	RAN#91	R5-210929	1757	-	F	Updating test frequencies for Rel-17 new CBWs for band n84	17.0.0
2021-03	RAN#91	R5-211836	1766	1	F	Introduction of test frequencies for n48 adding CBW 70 MHz - DL only	17.0.0
2021-06	RAN#92	R5-212203	1804	-	F	Resubmission of Addition of SI combination for NR SL	17.1.0
2021-06	RAN#92	R5-212213	1807	-	F	Add IE Phy-ParametersSharedSpectrumChAccess	17.1.0
2021-06	RAN#92	R5-212248	1811	-	F	Correction to TCI stated of CSI-RS for TRS	17.1.0
2021-06	RAN#92	R5-212249	1812	-	F	Correction to physical layer parameters for demodulation tests	17.1.0
2021-06	RAN#92	R5-212250	1813	-	F	Update of TE diagram for FR2 RRM tests with multiple NR cells	17.1.0
2021-06	RAN#92	R5-212409	1817	-	F	Correction to IE BWP-DownlinkDedicated	17.1.0
2021-06	RAN#92	R5-212455	1822	-	F	Correction of NR SL IE SL-BWP-Config	17.1.0
2021-06	RAN#92	R5-212456	1823	-	F	Correction of NR SL IE SL-BWP-PoolConfig	17.1.0
2021-06	RAN#92	R5-212457	1824	-	F	Correction of NR SL IE SL-CBR-CommonTxConfigList	17.1.0
2021-06	RAN#92	R5-212458	1825	-	F	Correction of NR SL IE SL-CBR-PriorityTxConfigList	17.1.0
2021-06	RAN#92	R5-212459	1826	-	F	Correction of NR SL IE SL-ConfiguredGrantConfig	17.1.0
2021-06	RAN#92	R5-212460	1827	-	F	Correction of NR SL IE SL-DestinationIdentity	17.1.0
2021-06	RAN#92	R5-212461	1828	-	F	Correction of NR SL IE SL-FreqConfig	17.1.0
2021-06	RAN#92	R5-212462	1829	-	F	Correction of NR SL IE SL-MeasConfigCommon	17.1.0
2021-06	RAN#92	R5-212463	1830	-	F	Correction of NR SL IE SL-MeasIdList	17.1.0
2021-06	RAN#92	R5-212464	1831	-	F	Correction of NR SL IE SL-MeasObjectList	17.1.0
2021-06	RAN#92	R5-212465	1832	-	F	Correction of NR SL IE SL-PSBCH-Config	17.1.0
2021-06	RAN#92	R5-212468	1835	-	F	Correction of NR SL IE SL-QoS-Profile	17.1.0
2021-06	RAN#92	R5-212469	1836	-	F	Correction of NR SL IE SL-QuantityConfig	17.1.0
2021-06	RAN#92	R5-212473	1840	-	F	Correction of NR SL IE SL-ScheduledConfig	17.1.0
2021-06	RAN#92	R5-212476	1843	-	F	Correction of NR SL IE SL-TxPower	17.1.0

2021-06	RAN#92	R5-212478	1845	-	F	Correction of NR SL IE SL-UE-SelectedConfig	17.1.0
2021-06	RAN#92	R5-212479	1846	-	F	Correction of NR SL IE SL-ZoneConfig	17.1.0
2021-06	RAN#92	R5-212616	1859	-	F	Correction to PUCCH resource indicator value for PMI reporting requirements	17.1.0
2021-06	RAN#92	R5-212642	1861	-	F	Editorial correction of header level in clause 5.4.2.0 in 38.508-1	17.1.0
2021-06	RAN#92	R5-212688	1865	-	F	Correction of nominal channel spacing in test frequencies for CA_n257x	17.1.0
2021-06	RAN#92	R5-212689	1866	-	F	Correction of nominal channel spacing in test frequencies for CA_n258x	17.1.0
2021-06	RAN#92	R5-212690	1867	-	F	Correction of nominal channel spacing in test frequencies for CA_n260x	17.1.0
2021-06	RAN#92	R5-212691	1868	-	F	Correction of nominal channel spacing in test frequencies for CA_n261x	17.1.0
2021-06	RAN#92	R5-212692	1869	-	F	Correction of test frequencies for CA_n41C	17.1.0
2021-06	RAN#92	R5-212693	1870	-	F	Correction of test frequencies for CA_n78C	17.1.0
2021-06	RAN#92	R5-212694	1871	-	F	Correction of test frequencies for DC_(n)41AA	17.1.0
2021-06	RAN#92	R5-212695	1872	-	F	Editorial correction of test frequencies for protocol testing	17.1.0
2021-06	RAN#92	R5-212698	1875	-	F	Introduction of test frequencies for n41 adding CBW 70 MHz	17.1.0
2021-06	RAN#92	R5-212699	1876	-	F	Introduction of test frequencies for n48 adding CBW 30 MHz	17.1.0
2021-06	RAN#92	R5-212702	1879	-	F	Introduction of principles for calculating test frequencies for NR Intra-band Contiguous CA for asymmetric bands in Annex C	17.1.0
2021-06	RAN#92	R5-212703	1880	-	F	Correction of test frequencies for CA_n66B	17.1.0
2021-06	RAN#92	R5-212705	1881	-	F	Add message contents for RRM FR2 tests with reduced RB allocation	17.1.0
2021-06	RAN#92	R5-212724	1885	-	F	Correct number of HARQ processes for PDSCH	17.1.0
2021-06	RAN#92	R5-212819	1892	-	F	Correction of 4.3.1.0D for bandwidth part	17.1.0
2021-06	RAN#92	R5-212820	1893	-	F	Correction of 4.3.1.1.2 for test frequencies for NR FR1 inter-band CA configurations	17.1.0
2021-06	RAN#92	R5-212886	1897	-	F	Update of default SCS for n48 for protocol testing	17.1.0
2021-06	RAN#92	R5-212890	1898	-	F	Test frequencies definition for EN-DC band 41CA	17.1.0
2021-06	RAN#92	R5-212892	1900	-	F	Correction to NZP CSI-RS default configuration for RRM test	17.1.0
2021-06	RAN#92	R5-212921	1901	-	F	Addition of GNSS requirements for NR sidelink	17.1.0
2021-06	RAN#92	R5-212924	1904	-	F	Addition of connection diagram of NR sidelink testing	17.1.0
2021-06	RAN#92	R5-212946	1905	-	F	Updating IEs for URLLC	17.1.0
2021-06	RAN#92	R5-212986	1906	-	F	Introducing Rel-16 CA configuration CA_n28A-n41A to clause 4.3.1	17.1.0
2021-06	RAN#92	R5-213003	1907	-	F	Adding test frequency description for SUL configuration	17.1.0
2021-06	RAN#92	R5-213004	1908	-	F	Adding connection diagrams for SUL configuration with DL CA	17.1.0
2021-06	RAN#92	R5-213054	1910	-	F	Correction to PDU Session Authentication Command, PDU Session Authentication Complete and PDU Session Authentication Result messages.	17.1.0
2021-06	RAN#92	R5-213057	1912	-	F	Introduction of test frequencies for CA_n48(2A)	17.1.0
2021-06	RAN#92	R5-213150	1917	-	F	Updates to global conditions	17.1.0
2021-06	RAN#92	R5-213153	1920	-	F	Updates to PDU SESSION ESTABLISHMENT REJECT message	17.1.0
2021-06	RAN#92	R5-213154	1921	-	F	Updates to PDU SESSION MODIFICATION REJECT message	17.1.0
2021-06	RAN#92	R5-213155	1922	-	F	Updates to QoS flows	17.1.0
2021-06	RAN#92	R5-213180	1939	-	F	Update chapter 4.5.2 RRC_IDLE	17.1.0
2021-06	RAN#92	R5-213192	1940	-	F	Update chapter 4.5.4 RRC_CONNECTED	17.1.0
2021-06	RAN#92	R5-213304	1953	-	F	Correction of test frequencies for NR band n66	17.1.0
2021-06	RAN#92	R5-213307	1954	-	F	Correction of common default messages for demod FR2	17.1.0
2021-06	RAN#92	R5-213339	1956	-	F	Update PUCCH-ConfigCommon for Demod testing	17.1.0
2021-06	RAN#92	R5-213340	1957	-	F	Update message content for subband CQI reporting test cases	17.1.0
2021-06	RAN#92	R5-213400	1961	-	F	Inclusion of additional P-CSCF IP address in PDU session establishment	17.1.0
2021-06	RAN#92	R5-213409	1955	1	F	Editorial updates to test procedure titles	17.1.0
2021-06	RAN#92	R5-213416	1838	1	F	Correction of NR SL IE SL-ReportConfigList	17.1.0
2021-06	RAN#92	R5-213417	1841	1	F	Correction of NR SL IE SL-SyncConfig	17.1.0
2021-06	RAN#92	R5-213418	1848	1	F	Correction to PC5-RRC message MeasurementReportSidelink	17.1.0

2021-06	RAN#92	R5-213419	1850	1	F	Correction to PC5-RRC message RRCReconfigurationFailureSidelink	17.1.0
2021-06	RAN#92	R5-213423	1857	1	F	Updates to NETWORK SLICE-SPECIFIC AUTHENTICATION COMMAND and NETWORK SLICE- SPECIFIC AUTHENTICATION COMPLETE messages	17.1.0
2021-06	RAN#92	R5-213424	1858	1	F	Updates to NETWORK SLICE-SPECIFIC AUTHENTICATION RESULT message	17.1.0
2021-06	RAN#92	R5-213425	1924	1	F	Introduction of Always-On indication for URLLC	17.1.0
2021-06	RAN#92	R5-213439	1816	1	F	Correction to IMS call release sequences	17.1.0
2021-06	RAN#92	R5-213440	1886	1	F	Addition of Generic Test procedure for IMS MO Video call establishment in 5GC	17.1.0
2021-06	RAN#92	R5-213441	1913	1	F	Correction to Table 4.9.12.2.2-1 for IMS Emergency call establishment in 5GC without IMS emergency registration	17.1.0
2021-06	RAN#92	R5-213442	1914	1	F	Correction to Procedure for UE-requested PDU session modification after the first S1 to N1 mode change / Single- registration mode with N26	17.1.0
2021-06	RAN#92	R5-213443	1941	1	F	Update chapter 4.5.1 General	17.1.0
2021-06	RAN#92	R5-213444	1887	1	F	Addition of default contents for RRCReconfiguration-Video	17.1.0
2021-06	RAN#92	R5-213445	1888	1	F	Corrections to PDCP config	17.1.0
2021-06	RAN#92	R5-213446	1798	1	F	Update of USIM Configurations 4, 7, 8, 10, 12 and 21	17.1.0
2021-06	RAN#92	R5-213447	1854	1	F	Correction to Table 6.4.1-12 USIM Configuration 12	17.1.0
2021-06	RAN#92	R5-213448	1873	1	F	Update of default SCS for n38, n39, n40 and n50 for protocol testing	17.1.0
2021-06	RAN#92	R5-213449	1942	1	F	Update maximum number of simultaneous configured cells for FR1 and FR2 in OTA	17.1.0
2021-06	RAN#92	R5-213450	1951	1	F	Updates to FR1 and E-UTRA OTA signal level testing	17.1.0
2021-06	RAN#92	R5-213451	1802	1	F	Correction and editorials to default message content specification	17.1.0
2021-06	RAN#92	R5-213452	1915	1	F	Correction to Combinations of system information blocks	17.1.0
2021-06	RAN#92	R5-213557	1819	1	F	Addition of general procedures for NR sidelink	17.1.0
2021-06	RAN#92	R5-213558	1820	1	F	Addition of test procedure to establish sidelink unicast mode	17.1.0
2021-06	RAN#92	R5-213559	1821	1	F	Addition of test state for NR sidelink	17.1.0
2021-06	RAN#92	R5-213560	1833	1	F	Correction of NR SL IE SL-PSSCH-TxConfigList	17.1.0
2021-06	RAN#92	R5-213561	1834	1	F	Correction of NR SL IE SL-QoS-FlowIdentity	17.1.0
2021-06	RAN#92	R5-213562	1837	1	F	Correction of NR SL IE SLRB-Uu-ConfigIndex	17.1.0
2021-06	RAN#92	R5-213563	1839	1	F	Correction of NR SL IE SL-RLC-BearerConfigIndex	17.1.0
2021-06	RAN#92	R5-213564	1844	1	F	Correction of NR SL IE SL-TypeTxSync	17.1.0
2021-06	RAN#92	R5-213565	1847	1	F	Correction to PC5-RRC message MasterInformationBlockSidelink	17.1.0
2021-06	RAN#92	R5-213566	1849	1	F	Correction to PC5-RRC message RRCReconfigurationCompleteSidelink	17.1.0
2021-06	RAN#92	R5-213567	1856	1	F	Update IE SL-Thres-RSRP-List	17.1.0
2021-06	RAN#92	R5-213573	1890	1	F	Updates to NPN-Identity for Rel-16 NPN	17.1.0
2021-06	RAN#92	R5-213574	1891	1	F	Addition of System information combination for Rel-16 NPN	17.1.0
2021-06	RAN#92	R5-213580	1889	1	F	Updates to default contents of UECapabilityEnquiry message	17.1.0
2021-06	RAN#92	R5-213601	1855	1	F	Introduction of definition of common environment for R16 NR SON and MDT	17.1.0
2021-06	RAN#92	R5-213643	1918	1	F	Addition of DNN configurations for new SSTs	17.1.0
2021-06	RAN#92	R5-213644	1919	1	F	Updates to UE Policy Delivery messages	17.1.0
2021-06	RAN#92	R5-213645	1923	1	F	Updates to REGISTRATION ACCEPT message	17.1.0
2021-06	RAN#92	R5-213675	1960	1	F	Correction to procedure 4.9.9 Tracking area updating / Inter- system change from S1 mode to N1 mode in 5GMM/EMM- IDLE mode	17.1.0
2021-06	RAN#92	R5-213833	1926	1	F	Testing frequencies update for band n3	17.1.0
2021-06	RAN#92	R5-213834	1950	1	F	CR to 38.508-1 on larger quiet zone with grey-box approach	17.1.0
2021-06	RAN#92	R5-213853	1864	1	F	Correction of test frequencies for CA n260(A-I)	17.1.0
2021-06	RAN#92	R5-213854	1862	1	F	Introduction of principles for calculating test frequencies for NR Intra-band Non-Contiguous CA in Annex C	17.1.0
2021-06	RAN#92	R5-213858	1896	1	F	Update Note about n28 Test frequency Mid range and CBW 30 MHz	17.1.0
2021-06	RAN#92	R5-213859	1925	1	F	Mid range test frequencies update in case asymmetric bandwidths	17.1.0
2021-06	RAN#92	R5-213860	1927	1	F	Testing frequencies update for band n34	17.1.0
2021-06	RAN#92	R5-213861	1928	1	F	Testing frequencies update for band n39	17.1.0
2021-06	RAN#92	R5-213862	1929	1	F	Testing frequencies update for band n53	17.1.0

2021-06	RAN#92	R5-213863	1930	1	F	Testing frequencies update for band n66	17.1.0
2021-06	RAN#92	R5-213864	1931	1	F	Testing frequencies update for band n70	17.1.0
2021-06	RAN#92	R5-213865	1932	1	F	Testing frequencies update for band n80	17.1.0
2021-06	RAN#92	R5-213866	1933	1	F	Testing frequencies update for band n81	17.1.0
2021-06	RAN#92	R5-213867	1934	1	F	Testing frequencies update for band n82	17.1.0
2021-06	RAN#92	R5-213868	1935	1	F	Testing frequencies update for band n86	17.1.0
2021-06	RAN#92	R5-213869	1937	1	F	OffsetToCarrier alignment for cases with equal low, mid and high frequency range (n30, n39, n51, n70) and editorial corrections in annex C.3.	17.1.0
2021-06	RAN#92	R5-213870	1884	1	F	Align Chapter 7 of TS 38.508-1 with Annex H of TS 38.533	17.1.0
2021-06	RAN#92	R5-213871	1944	1	F	Introduction of test frequencies for n257 for RRM Inter-freq adjacent cell	17.1.0
2021-06	RAN#92	R5-213872	1945	1	F	Introduction of test frequencies for n258 for RRM Inter-freq adjacent cell	17.1.0
2021-06	RAN#92	R5-213873	1947	1	F	Introduction of test frequencies for n260 for RRM Inter-freq adjacent cell	17.1.0
2021-06	RAN#92	R5-213874	1948	1	F	Introduction of test frequencies for n261 for RRM Inter-freq adjacent cell	17.1.0
2021-06	RAN#92	R5-213875	1863	1	F	Introduction of principles for calculating test frequencies for EN-DC configurations in Annex C	17.1.0
2021-06	RAN#92	R5-213876	1882	1	F	Add locationAndBandwidth for RRM FR2 tests with reduced RB allocation	17.1.0
2021-06	RAN#92	R5-213877	1936	1	F	Annex C: Clarifications to maximum and minimum offsetRBs	17.1.0
2021-06	RAN#92	R5-213878	1938	1	F	Annex C update to add SUL test frequencies calculation	17.1.0
2021-06	RAN#92	R5-213879	1949	1	F	Determination of test frequencies for a Mid range adjacent inter-frequency cell for FR2 RRM multicell testing in Annex C	17.1.0
2021-06	RAN#92	R5-213964	1877	1	F	Correction of test frequencies for CA_n66(2A)	17.1.0
2021-06	RAN#92	R5-213977	1946	1	F	Introduction of test frequencies for n259 for RRM Inter-freq adjacent cell	17.1.0
2021-06	RAN#92	R5-213996	1902	1	F	Addition of calculation method of NR sidelink test frequencies	17.1.0
2021-06	RAN#92	R5-213997	1903	1	F	Addition of V2X test frequencies of band n47	17.1.0
2021-06	RAN#92	R5-214017	1799	1	F	Updating test frequencies for Rel-17 EN-DC band combinations within FR1	17.1.0
2021-06	RAN#92	R5-214018	1801	1	F	Add test frequencies for R17 NR inter-band CA configurations in FR1	17.1.0
2021-06	RAN#92	R5-214019	1909	1	F	Introducing Rel-17 CA configuration CA_n28A-n79A to clause 4.3.1	17.1.0
2021-06	RAN#92	R5-214026	1809	1	F	RRC signalling for UL power boosting via suspended IBE requirements	17.1.0
2021-06	RAN#92	R5-214047	1959	1	F	Clarification on PDU configuration for RF, Demod and RRM tests	17.1.0
2021-06	RAN#92	R5-214076	1860	1	F	Update IE PDCCH-ConfigCommon for additional BWP	17.1.0
2021-06	RAN#92	R5-214107	1883	1	F	Align RRM CSI-ResourcePeriodicityAndOffset to TS 38.133	17.1.0
2021-09	RAN#93	R5-214381	1963	-	F	Correct dl_DataToUL_ACK for short DCI test cases	17.2.0
2021-09	RAN#93	R5-214436	1967	-	F	Correction to 38.508 Table 4.8.2.3-2: Reference QoS flow #2	17.2.0
2021-09	RAN#93	R5-214554	1968	-	F	Correction of default test frequencies for bands n38, n39, n40 and n50 and protocol testing	17.2.0
2021-09	RAN#93	R5-214611	1970	-	F	Correction of default test frequencies for band n48 and protocol testing	17.2.0
2021-09	RAN#93	R5-214622	1971	-	F	Editorial updates to test procedure titles	17.2.0
2021-09	RAN#93	R5-214678	1972	-	F	Correction to k1 setting for FR2 RRM	17.2.0
2021-09	RAN#93	R5-214727	1974	-	F	Introduction of test frequencies for CA_n48B	17.2.0
2021-09	RAN#93	R5-214728	1975	-	F	Corrections to UEInformationRequest and UEInformationResponse	17.2.0
2021-09	RAN#93	R5-214755	1976	-	F	Updates to System information combination for NR-DC	17.2.0
2021-09	RAN#93	R5-214800	1979	-	F	Correction to IEs for UE policy part	17.2.0
2021-09	RAN#93	R5-214808	1987	-	F	Correction to NR V2X USIM configuration	17.2.0
2021-09	RAN#93	R5-214853	1989	-	F	Introduction of test frequencies for CA_n48B and protocol testing	17.2.0
2021-09	RAN#93	R5-214900	1992	-	F	Editorial Updates to Clause. 4.4.3.1.2 for System information combination	17.2.0
2021-09	RAN#93	R5-214929	1994	-	F	Introduction of test frequencies for CA_n71(2A) for protocol testing	17.2.0
2021-09	RAN#93	R5-214947	1997	-	F	Correction to Table 6.4.1-8 USIM Configuration 8	17.2.0

2021-09	RAN#93	R5-214959	1998	-	F	Correction of test frequencies for CA_n66(2A) for protocol testing	17.2.0
2021-09	RAN#93	R5-214962	1999	-	F	Alignment of test frequency tables for CA_n48(2A), CA_n66(2A), CA_n77(2A) and CA_n78(2A)	17.2.0
2021-09	RAN#93	R5-214977	2003	-	F	Correction to default configuration-ControlResourceSet	17.2.0
2021-09	RAN#93	R5-214978	2004	-	F	Correction to default configuration-SCell CSI on PCell	17.2.0
2021-09	RAN#93	R5-215071	2006	-	F	Update to Out of Coverage procedure to trigger SL-MIMO transmission	17.2.0
2021-09	RAN#93	R5-215308	2012	-	F	Adding test frequencies for SUL band n97	17.2.0
2021-09	RAN#93	R5-215341	2015	-	F	Correction to TRS configuration for RF test cases	17.2.0
2021-09	RAN#93	R5-215456	2019	-	F	Update of 4.3.1.4.1 for test frequencies for EN-DC configurations within FR1	17.2.0
2021-09	RAN#93	R5-215462	2021	-	F	Correction of 4.3.1.0D for locationAndBandwidth in BWP	17.2.0
2021-09	RAN#93	R5-215499	2023	-	F	Introduction of V2X SST	17.2.0
2021-09	RAN#93	R5-215504	2028	-	F	Updates to Table 4.4A.5-2	17.2.0
2021-09	RAN#93	R5-215518	2029	-	F	Editorial correction: channel bandwidth and RB allocation revision in Test frequencies for CA_n260(A-I)	17.2.0
2021-09	RAN#93	R5-215530	2030	-	F	Correction on Test frequencies for DC_(n)41CA	17.2.0
2021-09	RAN#93	R5-215541	2031	-	F	Test frequencies update for CA_n257G, CA_n257H and CA_n257I	17.2.0
2021-09	RAN#93	R5-215612	2032	-	F	Correction RF E-UTRA CONNECTED state	17.2.0
2021-09	RAN#93	R5-215678	2034	-	F	RRC and NAS message handling in uplink in case of simultaneous RRC and NAS procedures	17.2.0
2021-09	RAN#93	R5-215679	2035	-	F	Enquiry of Capability and checking of UeCapabilityInformation contents for NR-DC	17.2.0
2021-09	RAN#93	R5-215689	2039	-	F	Correction to USIM Configuration 18 and 19	17.2.0
2021-09	RAN#93	R5-215691	2040	-	F	Update chapter 4.5.4 RRC_CONNECTED	17.2.0
2021-09	RAN#93	R5-215835	1964	1	F	Correct CSI-MeasConfig for test cases with 1SSB	17.2.0
2021-09	RAN#93	R5-215836	1965	1	F	Complete CSI-ReportConfig for RRM	17.2.0
2021-09	RAN#93	R5-215837	2014	1	F	Correction to CSI report configurations	17.2.0
2021-09	RAN#93	R5-215936	2005	1	F	Update of SIB2 to add messages for relaxed RRM measurement	17.2.0
2021-09	RAN#93	R5-215969	1962	1	F	Updating Test Frequencies for Rel-17 CA,DC band combinations within FR1 into TS 38.508-1	17.2.0
2021-09	RAN#93	R5-215970	1993	1	F	Introduction of test frequencies for CA_n71(2A)	17.2.0
2021-09	RAN#93	R5-215971	2008	1	F	Addition of R17 CADC configuration into 38.508-1	17.2.0
2021-09	RAN#93	R5-215972	2020	1	F	Update of 4.3.1.1.2 for NR inter-band CA configurations in FR1	17.2.0
2021-09	RAN#93	R5-216027	2016	1	F	Addition of Perf RI FR2 message contents	17.2.0
2021-09	RAN#93	R5-216070	2007	1	F	Adding connection diagram for eMIMO multi-TRP demod test cases	17.2.0
2021-09	RAN#93	R5-216079	1973	1	F	Updating test frequencies for Rel-17 inter-band EN-DC configurations	17.2.0
2021-09	RAN#93	R5-216116	2009	1	F	Updates to Test Equipment connection for Demodulation Performance and CSI reporting tests	17.2.0
2021-09	RAN#93	R5-216122	2010	1	B	Introduction of test frequencies for n24 and n99	17.2.0
2021-09	RAN#93	R5-216150	1977	1	F	Correction to Test Procedure for IMS MO and MT call release in 5GC	17.2.0
2021-09	RAN#93	R5-216151	2017	1	F	Correction to introduce Handling of PDU Session Release during switch off/Power off procedures	17.2.0
2021-09	RAN#93	R5-216152	2026	1	F	Addition of UE Configuration Update procedure	17.2.0
2021-09	RAN#93	R5-216153	2037	1	F	Corrections for IMS video call signalling	17.2.0
2021-09	RAN#93	R5-216154	2041	1	F	Correction to Table 4.6.3-142 and Table 4.6.3-79 for SFTD measurement reporting	17.2.0
2021-09	RAN#93	R5-216155	2024	1	F	Introduction of PS Data Off	17.2.0
2021-09	RAN#93	R5-216156	2025	1	F	Introduction of URSP	17.2.0
2021-09	RAN#93	R5-216157	2027	1	F	Updates to REGISTRATION messages	17.2.0
2021-09	RAN#93	R5-216158	2036	1	F	Correction to Table 4.8.2.2-1 for default Packet filter ID	17.2.0
2021-09	RAN#93	R5-216159	1969	1	F	Correction for USIM configurations	17.2.0
2021-09	RAN#93	R5-216160	2018	1	F	Updates to NR cell configurations for SIG	17.2.0
2021-09	RAN#93	R5-216161	2038	1	F	Correction to reference configurations for IMS video call signalling	17.2.0
2021-09	RAN#93	R5-216243	1991	1	F	Correction of test frequencies for CA_n66B for protocol testing	17.2.0
2021-09	RAN#93	R5-216256	2022	1	F	Introduction of MIoT SST	17.2.0

2021-09	RAN#93	R5-216263	1980	1	F	Correction to IEs for V2XP info	17.2.0
2021-09	RAN#93	R5-216264	1981	1	F	Correction to IEs for Served by E-UTRA or served by NR	17.2.0
2021-09	RAN#93	R5-216265	1982	1	F	Correction to IEs for Not served by E-UTRA and not served by NR	17.2.0
2021-09	RAN#93	R5-216266	1983	1	F	Correction to IEs for V2X service identifier to PC5 RAT and Tx profiles mapping rules	17.2.0
2021-09	RAN#93	R5-216267	1984	1	F	Correction to IEs for Privacy config	17.2.0
2021-09	RAN#93	R5-216268	1985	1	F	Correction to IEs for V2X communication over PC5 in E-UTRA-PC5	17.2.0
2021-09	RAN#93	R5-216269	1986	1	F	Correction to IEs for V2X communication over PC5 in NR-PC5	17.2.0
2021-09	RAN#93	R5-216270	1988	1	F	Correction to UE Policy Delivery msg	17.2.0
2021-09	RAN#93	R5-216284	1990	1	F	Update default message contents of LoggedMeasurementConfiguration	17.2.0
2021-09	RAN#93	R5-216320	2011	1	B	Introduction of signalling test frequencies for n24 and n99	17.2.0
2021-09	RAN#93	R5-216321	2013	1	F	Adding signalling test frequencies for SUL band n97	17.2.0
2021-09	RAN#93	R5-216327	2000	1	F	Default message content update for NR EIEI	17.2.0
2021-09	RAN#93	R5-216328	2001	1	F	Generic procedure for eCall over IMS establishment in 5GS Normal Service	17.2.0
2021-09	RAN#93	R5-216329	2002	1	F	USIM configuration for NR EIEI	17.2.0
2021-12	RAN#94	R5-216510	2047	-	F	Updating Test Frequencies for Rel-16 CA,DC band combinations within FR1 into TS 38.508-1	17.3.0
2021-12	RAN#94	R5-216530	2048	-	F	Addition of test frequencies for asymmetric channel bandwidths for n24	17.3.0
2021-12	RAN#94	R5-216603	2051	-	F	Addition of NR band n95	17.3.0
2021-12	RAN#94	R5-216636	2052	-	F	Updates on simultaneous co-existence of NR cells	17.3.0
2021-12	RAN#94	R5-216761	2053	-	F	Addition of PDCCCH Search Space Ext configuration in 38.508-1	17.3.0
2021-12	RAN#94	R5-216767	2054	-	F	Updates to NETWORK SLICE-SPECIFIC AUTHENTICATION COMMAND message	17.3.0
2021-12	RAN#94	R5-216768	2055	-	F	Updates to NETWORK SLICE-SPECIFIC AUTHENTICATION COMPLETE message	17.3.0
2021-12	RAN#94	R5-216773	2059	-	F	Update IE SSB-PositionQCL-Relation	17.3.0
2021-12	RAN#94	R5-216829	2061	-	F	Correction to IMS MO emergency call release procedure	17.3.0
2021-12	RAN#94	R5-216851	2062	-	F	Correction to IE Table 7.3.1-3 - SSB-MTC	17.3.0
2021-12	RAN#94	R5-216895	2063	-	F	Correction to IE Table 4.6.3-77A - MeasObjectUTRA-FDD	17.3.0
2021-12	RAN#94	R5-216896	2064	-	F	Correction to IE Table 4.6.3-79 - MeasResults	17.3.0
2021-12	RAN#94	R5-216898	2066	-	F	Correction to IE Table 4.6.5-16 - UTRA-FDD-Q-OffsetRange	17.3.0
2021-12	RAN#94	R5-216899	2067	-	F	Correction to RRC message Table 4.6.1-8 - MobilityFromNRCommand	17.3.0
2021-12	RAN#94	R5-216905	2068	-	F	Correction to IE Table 4.6.3-62A - HighSpeedConfig	17.3.0
2021-12	RAN#94	R5-216922	2097	-	F	Update of Table 4.7.1-7-Registration Accept	17.3.0
2021-12	RAN#94	R5-217024	2101	-	F	Add Reference file	17.3.0
2021-12	RAN#94	R5-217025	2102	-	F	Correction to DIRECT LINK ESTABLISHMENT REQUEST msg	17.3.0
2021-12	RAN#94	R5-217026	2103	-	F	Correction to DIRECT LINK ESTABLISHMENT ACCEPT msg	17.3.0
2021-12	RAN#94	R5-217027	2104	-	F	Correction to DIRECT LINK MODIFICATION REQUEST msg	17.3.0
2021-12	RAN#94	R5-217028	2105	-	F	Correction to DIRECT LINK MODIFICATION ACCEPT msg	17.3.0
2021-12	RAN#94	R5-217029	2106	-	F	Correction to DIRECT LINK RELEASE REQUEST msg	17.3.0
2021-12	RAN#94	R5-217030	2107	-	F	Correction to DIRECT LINK RELEASE ACCEPT msg	17.3.0
2021-12	RAN#94	R5-217032	2109	-	F	Correction to DIRECT LINK KEEPALIVE RESPONSE msg	17.3.0
2021-12	RAN#94	R5-217035	2112	-	F	Correction to DIRECT LINK AUTHENTICATION REJECT msg	17.3.0
2021-12	RAN#94	R5-217038	2115	-	F	Correction to DIRECT LINK SECURITY MODE REJECT msg	17.3.0
2021-12	RAN#94	R5-217039	2116	-	F	Correction to DIRECT LINK REKEYING REQUEST msg	17.3.0
2021-12	RAN#94	R5-217040	2117	-	F	Correction to DIRECT LINK REKEYING RESPONSE msg	17.3.0
2021-12	RAN#94	R5-217044	2121	-	F	Correction to DIRECT LINK IDENTIFIER UPDATE REJECT msg	17.3.0
2021-12	RAN#94	R5-217045	2122	-	F	Correction to DIRECT LINK MODIFICATION REJECT msg	17.3.0
2021-12	RAN#94	R5-217095	2125	-	F	Update chapter 4.8.1 for NE-DC	17.3.0
2021-12	RAN#94	R5-217118	2128	-	F	Meas exception for TRS config in RF test cases	17.3.0
2021-12	RAN#94	R5-217243	2133	-	F	Correction to IE Table 4.6.3-127 QuantityConfig	17.3.0

2021-12	RAN#94	R5-217246	2134	-	F	Correction of spec number and addition of uncertainty value for OTA testing in section 5.2.1	17.3.0
2021-12	RAN#94	R5-217259	2135	-	F	Addition of 13 NR CA combinations to FR1 inter-band configurations table	17.3.0
2021-12	RAN#94	R5-217286	2137	-	F	Correction to IMS Emergency call establishment test procedure with IMS emergency registration	17.3.0
2021-12	RAN#94	R5-217298	2138	-	F	Addition of test frequencies for Rel-15 EN-DC configurations	17.3.0
2021-12	RAN#94	R5-217340	2139	-	F	Correction of 4.3.1.2.4.4.2 for test frequency for intra-band non-contiguous CA_n260	17.3.0
2021-12	RAN#94	R5-217366	2140	-	F	Addition of default message for 16Tx PMI reporting test cases in 5.4.2.5	17.3.0
2021-12	RAN#94	R5-217379	2141	-	F	Addition of default DCI_0_2 for URLLC	17.3.0
2021-12	RAN#94	R5-217390	2143	-	F	Update to SIG test frequencies for V2X	17.3.0
2021-12	RAN#94	R5-217430	2144	-	F	Correction to the periodicity of CSI-RS for tracking	17.3.0
2021-12	RAN#94	R5-217453	2146	-	F	Updates to 4.8.4	17.3.0
2021-12	RAN#94	R5-217527	2148	-	F	message content update for HST single tap 1Tx PDSCH test cases	17.3.0
2021-12	RAN#94	R5-217555	2153	-	F	Editorial correction in channel bandwidth clause	17.3.0
2021-12	RAN#94	R5-217587	2155	-	F	Addition of CA_n1A-n3A into TS 38.508-1	17.3.0
2021-12	RAN#94	R5-217588	2156	-	F	Introduction of test frequencies for CA_n48(2A) for protocol testing	17.3.0
2021-12	RAN#94	R5-217589	2157	-	F	Introduction of test frequencies for n38 and CBWs 25 MHz and 30 MHz	17.3.0
2021-12	RAN#94	R5-217682	2160	-	F	Editorial update to clause 4.5A.2	17.3.0
2021-12	RAN#94	R5-217735	2163	-	F	Introduction of test frequencies for CA_n260K, CA_n260L and CA_n260M	17.3.0
2021-12	RAN#94	R5-217766	2165	-	F	Correction to NR V2X default configuration	17.3.0
2021-12	RAN#94	R5-217792	2043	1	F	Update chapter 4.5.4 RRC_CONNECTED	17.3.0
2021-12	RAN#94	R5-217793	2044	1	F	Update chapter 4.5.1 General	17.3.0
2021-12	RAN#94	R5-217794	2045	1	F	Update chapter 4.5.2 RRC_IDLE	17.3.0
2021-12	RAN#94	R5-217795	2060	1	F	Addition of new generic procedure for IMS MT video call establishment	17.3.0
2021-12	RAN#94	R5-217796	2130	1	F	Adding test procedure for adding video to a speech call	17.3.0
2021-12	RAN#94	R5-217797	2136	1	F	Correction to IMS MO Video call establishment test procedure	17.3.0
2021-12	RAN#94	R5-217798	2147	1	F	Adding test procedure for removing video from an ongoing call	17.3.0
2021-12	RAN#94	R5-217799	2042	1	F	Update RRCReconfiguration	17.3.0
2021-12	RAN#94	R5-217800	2046	1	F	Update IE CellAccessRelatedInfo	17.3.0
2021-12	RAN#94	R5-217801	2127	1	F	Update RRCReconfigurationComplete	17.3.0
2021-12	RAN#94	R5-217877	2098	1	F	Correction to default configuration of SIB12	17.3.0
2021-12	RAN#94	R5-217878	2099	1	F	Addition of default configuration of DCI and SCI for NR SL test	17.3.0
2021-12	RAN#94	R5-217879	2100	1	F	Addition of power level setting for NR SL test	17.3.0
2021-12	RAN#94	R5-217880	2108	1	F	Correction to DIRECT LINK KEEPALIVE REQUEST msg	17.3.0
2021-12	RAN#94	R5-217881	2110	1	F	Correction to DIRECT LINK AUTHENTICATION REQUEST msg	17.3.0
2021-12	RAN#94	R5-217882	2111	1	F	Correction to DIRECT LINK AUTHENTICATION RESPONSE msg	17.3.0
2021-12	RAN#94	R5-217883	2113	1	F	Correction to DIRECT LINK SECURITY MODE COMMAND msg	17.3.0
2021-12	RAN#94	R5-217884	2114	1	F	Correction to DIRECT LINK SECURITY MODE COMPLETE msg	17.3.0
2021-12	RAN#94	R5-217885	2118	1	F	Correction to DIRECT LINK IDENTIFIER UPDATE REQUEST msg	17.3.0
2021-12	RAN#94	R5-217886	2119	1	F	Correction to DIRECT LINK IDENTIFIER UPDATE ACCEPT msg	17.3.0
2021-12	RAN#94	R5-217887	2120	1	F	Correction to DIRECT LINK IDENTIFIER UPDATE ACK msg	17.3.0
2021-12	RAN#94	R5-217888	2123	1	F	Correction to DIRECT LINK ESTABLISHMENT REJECT	17.3.0
2021-12	RAN#94	R5-217933	2050	1	F	Updates to UTRA signal levels in FR1 and OTA environment	17.3.0
2021-12	RAN#94	R5-217943	2124	1	F	Update Radio resource control information elements for NR 2-step RACH test cases	17.3.0
2021-12	RAN#94	R5-217944	2161	1	F	Test Procedure for eCall over IMS establishment in 5GS eCall only Support	17.3.0
2021-12	RAN#94	R5-217949	2056	1	F	Update IE MeasObjectNR	17.3.0

2021-12	RAN#94	R5-217950	2057	1	F	Update IE ServingCellConfigCommon	17.3.0
2021-12	RAN#94	R5-217951	2058	1	F	Update IE ServingCellConfigCommonSIB	17.3.0
2021-12	RAN#94	R5-218220	2158	1	F	Correction of test frequencies for CA_n257x	17.3.0
2021-12	RAN#94	R5-218221	2129	1	F	Add meas objects and report config for inter-RAT	17.3.0
2021-12	RAN#94	R5-218267	2049	1	F	Addition of NR inter-band CA configurations for CA_n260-n261 in FR2	17.3.0
2021-12	RAN#94	R5-218268	2151	1	F	Addition of R16 FR1+FR2 CADC configuration into 38.508-1	17.3.0
2021-12	RAN#94	R5-218269	2159	1	F	Addition of test frequencies for R16 EN-DC FR2 configurations with n260	17.3.0
2021-12	RAN#94	R5-218335	2065	1	F	Correction to IE Table 4.6.3-141 - ReportConfigInterRAT	17.3.0
2021-12	RAN#94	R5-218361	2152	1	F	Addition of test frequencies for n3 CBW 50MHz	17.3.0
2021-12	RAN#94	R5-218414	2166	1	F	Update to demod parameter CSI-RS-ResourceMapping to add 1Tx condition	17.3.0
2021-12	RAN#94	R5-218415	2164	1	F	Update to n71 test frequencies for LTE-NR coex test cases	17.3.0
2021-12	RAN#94	R5-218451	2132	1	F	Introduction_of_test_frequencies_for_new_EN-DC_comb_within_FR1	17.3.0
2021-12	RAN#94	R5-218452	2149	1	F	Introduction of test frequencies for CA_n48B BCS1	17.3.0
2021-12	RAN#94	R5-218470	2150	1	F	Introduction of test frequencies for CA_n48B BCS2	17.3.0
2022-03	RAN#95	R5-220090	2171	-	F	Correction of clause title typos of 4.3.1.1.1.x	17.4.0
2022-03	RAN#95	R5-220094	2172	-	F	Correction of test channel bandwidth for n38	17.4.0
2022-03	RAN#95	R5-220186	2186	-	F	Editorial update of test procedure 4.9.15	17.4.0
2022-03	RAN#95	R5-220206	2188	-	F	Addition of test frequencies for CA_n3A-n41A with and without UL configuration	17.4.0
2022-03	RAN#95	R5-220240	2189	-	F	Corrections to 4.9.17 on IMS MO call release	17.4.0
2022-03	RAN#95	R5-220248	2191	-	F	Correct TDD pattern for FR2 RF 60kHz SCS	17.4.0
2022-03	RAN#95	R5-220271	2192	-	F	Addition of test frequencies for CA_n41A-n79A with UL configuration	17.4.0
2022-03	RAN#95	R5-220308	2195	-	F	Introduction of test frequencies for CA_n261M	17.4.0
2022-03	RAN#95	R5-220309	2196	-	F	Correction of NR inter-band CA configurations for CA_n260-n261 in FR2	17.4.0
2022-03	RAN#95	R5-220311	2197	-	F	Introduction of test frequencies for Rel-16 inter-band EN-DC two band combinations within FR1	17.4.0
2022-03	RAN#95	R5-220374	2198	-	F	Introduction of test frequencies for additional Rel-17 EN-DC inter-band configurations	17.4.0
2022-03	RAN#95	R5-220449	2199	-	F	Update of test frequencies for protocol testing and NR inter-band CA	17.4.0
2022-03	RAN#95	R5-220452	2200	-	F	Correction to RF E-UTRA RRC_CONNECTED procedure	17.4.0
2022-03	RAN#95	R5-220541	2204	-	F	Introduction of test frequencies for n25 adding CBWs 25MHz, 30MHz, 40MHz	17.4.0
2022-03	RAN#95	R5-220567	2206	-	F	Addition of default AT command and information element for NR SL test	17.4.0
2022-03	RAN#95	R5-220569	2208	-	F	Correction to test procedures for establishing unicast link	17.4.0
2022-03	RAN#95	R5-220579	2218	-	F	Correction to SIB12	17.4.0
2022-03	RAN#95	R5-220580	2219	-	F	Correction to IE SL-BWP-Config and SL-BWP-ConfigCommon	17.4.0
2022-03	RAN#95	R5-220582	2221	-	F	Correction to IE SL-ResourcePool	17.4.0
2022-03	RAN#95	R5-220590	2229	-	F	Correction to V2X service identifier to PC5 RAT and Tx profiles mapping rule	17.4.0
2022-03	RAN#95	R5-220591	2230	-	F	Correction to V2X frequencies	17.4.0
2022-03	RAN#95	R5-220632	2231	-	F	Introduction_of_test_frequencies_for_new_EN-DC_comb_within_FR1	17.4.0
2022-03	RAN#95	R5-220643	2232	-	F	Introduction of test frequencies for n2 adding CBWs 25MHz, 30MHz, 40MHz	17.4.0
2022-03	RAN#95	R5-220653	2234	-	F	Addition of test frequencies for CA_n41C-n79A with and without UL configuration	17.4.0
2022-03	RAN#95	R5-220725	2237	-	F	Addition of default configuration for NR SL RRM test	17.4.0
2022-03	RAN#95	R5-220760	2238	-	F	Introduction of test frequencies for n5 adding CBW 25MHz	17.4.0
2022-03	RAN#95	R5-220761	2239	-	F	Editorial corrections for NR CA configuration CA_n48B	17.4.0
2022-03	RAN#95	R5-220771	2242	-	F	Introduction of test frequencies for CA_n66(2A) BCS1 and BCS2	17.4.0
2022-03	RAN#95	R5-220774	2243	-	F	Corrections to test procedures 4.9.26 and 4.9.27	17.4.0
2022-03	RAN#95	R5-220779	2245	-	F	Update of test frequencies for n66 and asymmetric channel bandwidth combination set 1	17.4.0
2022-03	RAN#95	R5-220788	2246	-	F	Addition of V2X connection diagram	17.4.0
2022-03	RAN#95	R5-220797	2249	-	F	Addition of connection diagram for 16Tx	17.4.0

2022-03	RAN#95	R5-220808	2250	-	F	Update to MAC-CellGroupConfig	17.4.0
2022-03	RAN#95	R5-220847	2253	-	F	Addition of test frequency n53 in Table 6.2.3.1-4	17.4.0
2022-03	RAN#95	R5-220860	2254	-	F	Introducing Rel-17 2 band CA configurations for n24 and n41 to clause 4.3.1	17.4.0
2022-03	RAN#95	R5-220861	2255	-	F	Introducing Rel-17 2 band CA configurations for n24 and n48 to clause 4.3.1	17.4.0
2022-03	RAN#95	R5-220862	2256	-	F	Introducing Rel-17 2 band CA configurations for n24 and n77 to clause 4.3.1	17.4.0
2022-03	RAN#95	R5-220916	2259	-	F	Addition of PRB-Id setting for RRM test cases	17.4.0
2022-03	RAN#95	R5-220955	2262	-	F	Updates to IE UE Route Selection Policy Rules	17.4.0
2022-03	RAN#95	R5-220960	2264	-	F	Addition of test frequency for DC_7C_n78A	17.4.0
2022-03	RAN#95	R5-220972	2265	-	F	Addition of test frequencies for Rel-16 EN-DC configurations	17.4.0
2022-03	RAN#95	R5-220974	2266	-	F	Correction to applicability for protocol testing for inter-band EN-DC configurations	17.4.0
2022-03	RAN#95	R5-221070	2269	-	F	USIM configurations for NR EIEI test cases	17.4.0
2022-03	RAN#95	R5-221104	2270	-	F	Addition of new USIM configuration for RACS test case	17.4.0
2022-03	RAN#95	R5-221132	2271	-	F	Updating channel bandwidths for NR band n97	17.4.0
2022-03	RAN#95	R5-221133	2272	-	F	Updating test frequencies for NR band n97	17.4.0
2022-03	RAN#95	R5-221167	2275	-	F	Update to Ciphering algo IE for FR1 NSA SDR	17.4.0
2022-03	RAN#95	R5-221176	2276	-	F	Introduction of test frequencies for NR CA configurations CA_n5A-n7A, CA_n5A-n78A and CA_n7A-n78A	17.4.0
2022-03	RAN#95	R5-221186	2278	-	F	Introduction of test frequencies for DC_1A_n5A, DC_1A_n7A, DC_3A_n5A, DC_7A_n5A, DC_28A_n7A	17.4.0
2022-03	RAN#95	R5-221255	2282	-	F	Update K1 value for RRM TDD FR1 30kHz RMC	17.4.0
2022-03	RAN#95	R5-221264	2284	-	F	Correction of csi-ResourceConfigId	17.4.0
2022-03	RAN#95	R5-221265	2285	-	F	Correction of DMRS-DownlinkConfig	17.4.0
2022-03	RAN#95	R5-221292	2287	-	F	Addition of Setup Diagram for RRM multicell 2x2 test cases	17.4.0
2022-03	RAN#95	R5-221369	2289	-	F	Update to PUCCH resource configuration for Scell CSI	17.4.0
2022-03	RAN#95	R5-221377	2290	-	F	Addition of Test frequencies for NE-DC band configurations for signalling testing	17.4.0
2022-03	RAN#95	R5-221389	2291	-	F	Correction to SIG test frequencies for intra-band non-contiguous CA	17.4.0
2022-03	RAN#95	R5-221413	2293	-	F	Update IE SDAP-Config	17.4.0
2022-03	RAN#95	R5-221419	2173	1	F	Update chapter 4.5.1 General	17.4.0
2022-03	RAN#95	R5-221420	2233	1	F	Correction to RRCReconfiguration message with condition REEST	17.4.0
2022-03	RAN#95	R5-221421	2277	1	F	Correction to the BWP-DownlinkDedicated	17.4.0
2022-03	RAN#95	R5-221422	2280	1	F	NE-DC support for UECapabilityEnquiry and UECapabilityInformation messages	17.4.0
2022-03	RAN#95	R5-221423	2194	1	F	Correction to IMS MO speech call establishment generic procedure	17.4.0
2022-03	RAN#95	R5-221424	2176	1	F	Correction to test procedure 4.9.11 IMS Emergency call or eCall over IMS establishment in 5GC with IMS emergency registration	17.4.0
2022-03	RAN#95	R5-221425	2177	1	F	Correction to test procedure 4.9.12 IMS Emergency call or eCall over IMS establishment in 5GC without IMS emergency registration	17.4.0
2022-03	RAN#95	R5-221426	2263	1	F	Updates to IE Route Selection Descriptors	17.4.0
2022-03	RAN#95	R5-221491	2168	1	F	Update of NR CA configurations for Protocol testing with NR CA 3CC	17.4.0
2022-03	RAN#95	R5-221492	2169	1	F	Update of inter-band cell environment for Protocol testing with NR CA 3CC	17.4.0
2022-03	RAN#95	R5-221493	2286	1	F	Modification of common test environment for EHC testing	17.4.0
2022-03	RAN#95	R5-221499	2207	1	F	Correction to generic test procedures for NR SL MIMO tests	17.4.0
2022-03	RAN#95	R5-221500	2209	1	F	Addition of test procedures for releasing unicast link	17.4.0
2022-03	RAN#95	R5-221501	2210	1	F	Addition of test procedures for data exchanging on unicast link	17.4.0
2022-03	RAN#95	R5-221502	2211	1	F	Correction to PC5 RRC message MasterInformationBlockSidelink	17.4.0
2022-03	RAN#95	R5-221503	2212	1	F	Correction to PC5 RRC message MeasurementReportSidelink	17.4.0
2022-03	RAN#95	R5-221504	2213	1	F	Correction to PC5 RRC message RRCReconfigurationSidelink	17.4.0
2022-03	RAN#95	R5-221505	2214	1	F	Correction to PC5 RRC message RRCReconfigurationCompleteSidelink	17.4.0

2022-03	RAN#95	R5-221506	2215	1	F	Correction to PC5 RRC message RRCReconfigurationFailureSidelink	17.4.0
2022-03	RAN#95	R5-221507	2216	1	F	Correction to PC5 RRC message UECapabilityEnquirySidelink	17.4.0
2022-03	RAN#95	R5-221508	2217	1	F	Correction to PC5 RRC message UECapabilityInformationSidelink	17.4.0
2022-03	RAN#95	R5-221509	2222	1	F	Correction to V2X message DIRECT LINK ESTABLISHMENT REQUEST	17.4.0
2022-03	RAN#95	R5-221510	2223	1	F	Correction to V2X message DIRECT LINK ESTABLISHMENT ACCEPT	17.4.0
2022-03	RAN#95	R5-221511	2224	1	F	Correction to V2X message DIRECT LINK RELEASE REQUEST	17.4.0
2022-03	RAN#95	R5-221512	2225	1	F	Correction to V2X message DIRECT LINK RELEASE ACCEPT	17.4.0
2022-03	RAN#95	R5-221513	2226	1	F	Correction to V2X message DIRECT LINK KEEPALIVE REQUEST	17.4.0
2022-03	RAN#95	R5-221514	2227	1	F	Correction to V2X message DIRECT LINK SECURITY MODE COMMAND	17.4.0
2022-03	RAN#95	R5-221515	2228	1	F	Correction to V2X message DIRECT LINK SECURITY MODE COMPLETE	17.4.0
2022-03	RAN#95	R5-221584	2251	1	F	Addition of default DCI_1_2 for URLLC	17.4.0
2022-03	RAN#95	R5-221591	2203	1	F	Addition of positioning system information blocks associated parameters	17.4.0
2022-03	RAN#95	R5-221667	2258	1	F	Correction to test frequency range for n14	17.4.0
2022-03	RAN#95	R5-221668	2268	1	F	Correction of 4.3.1.2.4.4.2 for test frequencies for CA_n260_A-I	17.4.0
2022-03	RAN#95	R5-221669	2236	1	F	Correction to default RRC IEs for RRM	17.4.0
2022-03	RAN#95	R5-221670	2167	1	F	Updated the related RRC information for DSS	17.4.0
2022-03	RAN#95	R5-221671	2190	1	F	Added FR2 connection diagram using modulated interferer	17.4.0
2022-03	RAN#95	R5-221672	2244	1	F	Correction of 4.1.1 on removal of lower humidity limit in NR test environment	17.4.0
2022-03	RAN#95	R5-221757	2267	1	F	Correction of 4.3.1.1.5.48 for test frequencies of CA_n48_2A	17.4.0
2022-03	RAN#95	R5-221787	2283	1	F	Update of mid test channel bandwidth for band n25	17.4.0
2022-03	RAN#95	R5-221815	2247	1	F	Update to NR sidelink preconfiguration	17.4.0
2022-03	RAN#95	R5-221816	2248	1	F	Update to GNSS configuration for NR sidelink	17.4.0
2022-03	RAN#95	R5-221869	2273	1	F	Updating test frequencies for NR band n1	17.4.0
2022-03	RAN#95	R5-221871	2185	1	F	Add test frequencies for R17 NR inter-band CA configurations in FR1	17.4.0
2022-03	RAN#95	R5-221872	2187	1	F	Addition of test frequencies for NE-DC configurations DC_n28A_3A, DC_n28A_3C, DC_n28A_39A, DC_n28A_39C	17.4.0
2022-03	RAN#95	R5-221873	2202	1	F	Update of protocol testing applicability for 3CC inter-band NR DC configurations	17.4.0
2022-03	RAN#95	R5-221874	2261	1	F	Addition of several NR CA combinations to FR1 inter-band configurations table	17.4.0
2022-03	RAN#95	R5-222039	2205	1	F	Correction to cl 4.5.3 RRC_INACTIVE generic procedure	17.4.0
2022-06	RAN#96	R5-222122	2294	-	F	Correction for Procedure for UE-requested PDU session modification after the first S1 to N1 mode change	17.5.0
2022-06	RAN#96	R5-222173	2296	-	F	Introduction of test frequencies for CA_n77C BCS0 and BCS1	17.5.0
2022-06	RAN#96	R5-222175	2297	-	F	Introduction of test frequencies for CA_n77C for protocol testing	17.5.0
2022-06	RAN#96	R5-222283	2300	-	F	Introduction of test frequencies for Rel-16 inter-band EN-DC three band combinations within FR1	17.5.0
2022-06	RAN#96	R5-222308	2302	-	F	Introduction of NR-DC in FR1 for test setup diagrams	17.5.0
2022-06	RAN#96	R5-222329	2303	-	F	Correction of test frequencies for CA_n66(2A) BCS1 and BCS2	17.5.0
2022-06	RAN#96	R5-222380	2308	-	F	Updating RRCReconfiguration and RadioBearerConfig for NR-DC and NE-DC	17.5.0
2022-06	RAN#96	R5-222431	2310	-	F	Correction to message contents for CQI reporting	17.5.0
2022-06	RAN#96	R5-222460	2312	-	F	Updates to REGISTRATION ACCEPT message	17.5.0
2022-06	RAN#96	R5-222461	2313	-	F	Updates to Configuration Update Command message	17.5.0
2022-06	RAN#96	R5-222462	2314	-	F	Updates to Registration Reject message	17.5.0
2022-06	RAN#96	R5-222463	2315	-	F	Updates to De-registration Request message	17.5.0

2022-06	RAN#96	R5-222464	2316	-	F	Update of Combinations of system information blocks for NE-DC	17.5.0
2022-06	RAN#96	R5-222502	2317	-	F	Addition of test frequency for performance test cases	17.5.0
2022-06	RAN#96	R5-222503	2318	-	F	Addition of locationAndBandwidth for BW 45 MHz	17.5.0
2022-06	RAN#96	R5-222512	2319	-	F	Correction to generic procedure 4.9.28	17.5.0
2022-06	RAN#96	R5-222513	2320	-	F	Editorial update RRCReconfiguration	17.5.0
2022-06	RAN#96	R5-222537	2321	-	F	Corrections to Table 7.3.1-12G	17.5.0
2022-06	RAN#96	R5-222565	2324	-	F	Update IE P-Max	17.5.0
2022-06	RAN#96	R5-222566	2325	-	F	Editorial update IE FreqBandList	17.5.0
2022-06	RAN#96	R5-222567	2326	-	F	Editorial update IE CellGroupConfig	17.5.0
2022-06	RAN#96	R5-222568	2327	-	F	Editorial update IE CellGroupId	17.5.0
2022-06	RAN#96	R5-222570	2328	-	F	Editorial update IE PDCCH-ConfigCommon	17.5.0
2022-06	RAN#96	R5-222572	2329	-	F	Addition of CA configuration for CA_n29A-n71A	17.5.0
2022-06	RAN#96	R5-222617	2331	-	F	Addition of default message contents for NR SL Demod	17.5.0
2022-06	RAN#96	R5-222647	2338	-	F	Correction to sidelink IE SL-ReportConfigList	17.5.0
2022-06	RAN#96	R5-222650	2341	-	F	Correction to general functional requirements for RedCap test	17.5.0
2022-06	RAN#96	R5-222657	2344	-	F	Editorial update IE SCellIndex	17.5.0
2022-06	RAN#96	R5-222818	2346	-	F	Correction to V2X message	17.5.0
2022-06	RAN#96	R5-222836	2354	-	F	Clarification of Annex C for calculation of SSB and CORESET#0 for PCells	17.5.0
2022-06	RAN#96	R5-222876	2370	-	F	Removing redundant ciphering algorithm for SDR testing	17.5.0
2022-06	RAN#96	R5-222917	2372	-	F	Connection diagram for 1x2 nDLCA Demodulation and CSI cases	17.5.0
2022-06	RAN#96	R5-222924	2373	-	F	Addition of connection diagram for Tx Diversity support	17.5.0
2022-06	RAN#96	R5-222933	2374	-	F	Update of auxiliary procedure 4.5A.2B	17.5.0
2022-06	RAN#96	R5-223025	2376	-	F	Update of NR inter-band CA configurations in FR1	17.5.0
2022-06	RAN#96	R5-223067	2378	-	F	Addition of test frequency for NR inter-band CA configurations including n1	17.5.0
2022-06	RAN#96	R5-223072	2379	-	F	Introduction of test frequencies for CA_n258G for protocol testing	17.5.0
2022-06	RAN#96	R5-223084	2382	-	F	Corrections to usages of Annex A.6 of TS 34.229-5	17.5.0
2022-06	RAN#96	R5-223126	2397	-	F	Introducing band configuration DC_20A_n257A	17.5.0
2022-06	RAN#96	R5-223158	2399	-	F	Editorial update IE ServCellIndex	17.5.0
2022-06	RAN#96	R5-223197	2401	-	F	Introduction of test frequencies for additional Rel-17 NR CA and EN-DC inter-band configurations	17.5.0
2022-06	RAN#96	R5-223222	2403	-	F	Correction to 4.3.1.1.2.1 on test frequencies for NR inter-band CA configurations in FR1 with two bands	17.5.0
2022-06	RAN#96	R5-223223	2404	-	F	Correction to 4.3.1.1.2.2 on test frequencies for NR inter-band CA configurations in FR1 with three bands	17.5.0
2022-06	RAN#96	R5-223224	2405	-	F	Correction to 4.3.1.1.5.66 on test frequencies for NR intra-band non-contiguous CA configurations of CA_n66 with class 2A	17.5.0
2022-06	RAN#96	R5-223225	2406	-	F	Correction to 4.3.1.1.5.71 on test frequencies for NR intra-band non-contiguous CA configurations of CA_n71 with class 2A	17.5.0
2022-06	RAN#96	R5-223229	2410	-	F	Correction to 4.3.1.4.1.3 on test frequencies for inter-band EN-DC R17 configurations with three bands	17.5.0
2022-06	RAN#96	R5-223234	2411	-	F	Editorial correction to 4.3.1.2.2 on test frequencies for NR inter-band CA configurations in FR2 for CA_n260-n261	17.5.0
2022-06	RAN#96	R5-223250	2412	-	F	Hardcoding USIM configurations	17.5.0
2022-06	RAN#96	R5-223341	2375	1	F	Update of Test procedure for IMS MO Emergency call release	17.5.0
2022-06	RAN#96	R5-223359	2332	1	F	Addition of test frequency for NR SL concurrent	17.5.0
2022-06	RAN#96	R5-223360	2333	1	F	Correction to default configuration of SCI	17.5.0
2022-06	RAN#96	R5-223361	2334	1	F	Correction to sidelink IE SL-BWP-PoolConfig	17.5.0
2022-06	RAN#96	R5-223362	2335	1	F	Correction to sidelink IE SL-BWP-PoolConfigCommon	17.5.0
2022-06	RAN#96	R5-223363	2336	1	F	Correction to sidelink IE SL-FreqConfig	17.5.0
2022-06	RAN#96	R5-223364	2337	1	F	Correction to sidelink IE SL-FreqConfigCommon	17.5.0
2022-06	RAN#96	R5-223365	2339	1	F	Correction to test procedures for unicast link establishment	17.5.0
2022-06	RAN#96	R5-223387	2330	1	F	Addition of scheduling information for positioning system information blocks	17.5.0
2022-06	RAN#96	R5-223399	2295	1	F	Addition of SIB11 to common environment for early measurements	17.5.0

2022-06	RAN#96	R5-223400	2414	1	F	Modification of SIB1 in common environment for idle/inactive measurements	17.5.0
2022-06	RAN#96	R5-223410	2340	1	F	Addition of abbreviations for RedCap test	17.5.0
2022-06	RAN#96	R5-223413	2380	1	F	Updates to Test procedure 4.9.15	17.5.0
2022-06	RAN#96	R5-223414	2307	1	F	Editorial updates to SIBs	17.5.0
2022-06	RAN#96	R5-223415	2381	1	F	Updates to Data-off condition for PDU SESSION ESTABLISHMENT REQUEST message	17.5.0
2022-06	RAN#96	R5-223416	2299	1	F	Resolving test frequency for n53 10 Mhz CBW	17.5.0
2022-06	RAN#96	R5-223417	2353	1	F	Correction to Combinations of system information blocks	17.5.0
2022-06	RAN#96	R5-223480	2402	1	F	Corrections on mandatory channel bandwidths after Rel-15	17.5.0
2022-06	RAN#96	R5-223602	2415	-	F	Correction to 4.3.1.4.1.3 on test frequencies for DC_1A-28A_n78C	17.5.0
2022-06	RAN#96	R5-223649	2398	1	F	Introduction of test frequencies for 3 band EN-DC configurations	17.5.0
2022-06	RAN#96	R5-223650	2400	1	F	Introduction of test frequencies for additional Rel-16 NR CA DC and EN-DC inter-band configurations	17.5.0
2022-06	RAN#96	R5-223651	2407	1	F	Correction to 4.3.1.1.5.77 on test frequencies for NR intra-band non-contiguous CA configurations of CA_n77 with class 2A	17.5.0
2022-06	RAN#96	R5-223652	2408	1	F	Correction to 4.3.1.1.5.78 on test frequencies for NR intra-band non-contiguous CA configurations of CA_n78 with class 2A	17.5.0
2022-06	RAN#96	R5-223653	2409	1	F	Correction to 4.3.1.4.1.3 on test frequencies for inter-band EN-DC R16 configurations	17.5.0
2022-06	RAN#96	R5-223755	2301	1	F	Introduction of test frequencies for NR-DC in FR1	17.5.0
2022-06	RAN#96	R5-223784	2371	1	F	Addition of RedCap default test channel bandwidth	17.5.0
2022-06	RAN#96	R5-223792	2322	1	F	Correction to test frequency for n53	17.5.0
2022-06	RAN#96	R5-223793	2369	1	F	Clarification of PCC and SCC configuration for CA test cases	17.5.0
2022-06	RAN#96	R5-223795	2323	1	F	CR on Permitted Methodologies and Applicability	17.5.0
2022-06	RAN#96	R5-223796	2377	1	F	Add new messages and procedure for test function to limit Pcell Power	17.5.0
2022-09	RAN#97	R5-223987	2416	-	F	Correction to test procedure 4.9.11 IMS Emergency call or eCall over IMS establishment in 5GC with IMS emergency registration	17.6.0
2022-09	RAN#97	R5-224033	2417	-	F	Introduction of test frequencies for NR-U band n46	17.6.0
2022-09	RAN#97	R5-224034	2418	-	F	Introduction of test frequencies for NR-U band n96	17.6.0
2022-09	RAN#97	R5-224094	2429	-	F	Update of MDT default RRC messages and IEs	17.6.0
2022-09	RAN#97	R5-224139	2434	-	F	Add IE BeamFailureRecoveryServingCellConfig	17.6.0
2022-09	RAN#97	R5-224140	2435	-	F	Add IE BetaOffsetsCrossPri	17.6.0
2022-09	RAN#97	R5-224149	2436	-	F	Introduction of test frequencies for Rel-16 inter-band DC_3A-7A-20A_n8A within FR1	17.6.0
2022-09	RAN#97	R5-224166	2437	-	F	Correction to Table 4.7.2-2 PDU Session Establishment Accept	17.6.0
2022-09	RAN#97	R5-224179	2438	-	F	Test frequencies for NR DC configurations in FR1 for signalling testing	17.6.0
2022-09	RAN#97	R5-224235	2443	-	F	Correction of the styles of the subclauses in 4.3.1.1 and 4.3.1.2	17.6.0
2022-09	RAN#97	R5-224276	2445	-	F	Add IE CandidateBeamRS	17.6.0
2022-09	RAN#97	R5-224284	2446	-	F	Add IE CFR-ConfigMulticast	17.6.0
2022-09	RAN#97	R5-224290	2447	-	F	Add IEs DL-PRS-ProcessingWindowPreConfig, DMRS-BundlingPUCCH-Config and DMRS-BundlingPUSCH-Config	17.6.0
2022-09	RAN#97	R5-224380	2459	-	F	Add IE FreqPriorityListNRSlicing	17.6.0
2022-09	RAN#97	R5-224458	2465	-	F	Alignment CSI-ResourcePeriodicityAndOffset to CSI-RS.3.2 TDD	17.6.0
2022-09	RAN#97	R5-224459	2466	-	F	Correction derivation path Table 7.3.1-35	17.6.0
2022-09	RAN#97	R5-224460	2467	-	F	Correction to 7.3.1-12G	17.6.0
2022-09	RAN#97	R5-224462	2469	-	F	Definition of ZP-CSI-RS-ResourceSetId	17.6.0
2022-09	RAN#97	R5-224638	2478	-	F	Clarification of Antenna ports of DCI format 1_1 for RF TCs	17.6.0
2022-09	RAN#97	R5-224639	2479	-	F	Correction to CSI-MeasConfig for RRM	17.6.0
2022-09	RAN#97	R5-224658	2482	-	F	Add IE GapPriority	17.6.0
2022-09	RAN#97	R5-224662	2484	-	F	Add IE HysteresisLocation	17.6.0
2022-09	RAN#97	R5-224685	2485	-	F	Correction to IMS MO Video call establishment test procedure in 5GC	17.6.0
2022-09	RAN#97	R5-224686	2486	-	F	Correction to IMS MT Video call establishment test procedure in 5GC	17.6.0

2022-09	RAN#97	R5-224689	2489	-	F	Correction to IMS MT speech call establishment test procedure in 5GC	17.6.0
2022-09	RAN#97	R5-224725	2491	-	F	Update the SN-FieldLength of PDCP-Config and RLC-Config for RedCap test	17.6.0
2022-09	RAN#97	R5-224740	2495	-	F	Add Default configuration for DCI format 4_1 scheduling MBS Multicast test	17.6.0
2022-09	RAN#97	R5-224741	2496	-	F	Add Default configuration for DCI format 4_2 scheduling MBS Multicast test	17.6.0
2022-09	RAN#97	R5-224762	2508	-	F	Add IE MeasGapId	17.6.0
2022-09	RAN#97	R5-224763	2509	-	F	Add IE MeasObjectRxTxDiff	17.6.0
2022-09	RAN#97	R5-224816	2511	-	F	Add IE MeasResultRxTxTimeDiff	17.6.0
2022-09	RAN#97	R5-224817	2512	-	F	Add IE MRB-Identity	17.6.0
2022-09	RAN#97	R5-224818	2513	-	F	Add IEs MUSIM-GapConfig, MUSIM-GapID and MUSIM-GapInfo	17.6.0
2022-09	RAN#97	R5-224819	2514	-	F	Add IEs NeedForGapNCSG-ConfigEUTRA, NeedForGapNCSG-ConfigNR, NeedForGapNCSG-InfoEUTRA and NeedForGapNCSG-InfoNR	17.6.0
2022-09	RAN#97	R5-224820	2515	-	F	Add IE NonCellDefiningSSB	17.6.0
2022-09	RAN#97	R5-224821	2516	-	F	Add IE NR-DL-PRS-PDC-Info	17.6.0
2022-09	RAN#97	R5-224822	2517	-	F	Add IEs NSAG-IdentityInfo and NTN-Config	17.6.0
2022-09	RAN#97	R5-224824	2519	-	F	Add IEs RxTxTimeDiff, SCellActivationRS-Config and SCellActivationRS-ConfigId	17.6.0
2022-09	RAN#97	R5-224825	2520	-	F	Add IE SemiStaticChannelAccessConfigUE	17.6.0
2022-09	RAN#97	R5-224859	2521	-	F	Add IE TCI-Info	17.6.0
2022-09	RAN#97	R5-224860	2522	-	F	Add IE UE-TimersAndConstantsRemoteUE	17.6.0
2022-09	RAN#97	R5-224861	2523	-	F	Add IEs UL-ExcessDelayConfig and UE UL-GapFR2-Config	17.6.0
2022-09	RAN#97	R5-224862	2524	-	F	Add IEs Uplink-PowerControl, Uu-RelayRLC-ChannelConfig and Uu-RelayRLC-ChannelID	17.6.0
2022-09	RAN#97	R5-224863	2525	-	F	Add IE AppLayerMeasParameters	17.6.0
2022-09	RAN#97	R5-224864	2526	-	F	Add IE FR2-2-AccessParamsPerBand	17.6.0
2022-09	RAN#97	R5-224877	2528	-	F	Add IE NTN-Parameters	17.6.0
2022-09	RAN#97	R5-224878	2529	-	F	Add IE PosSRS-RRC-Inactive-OutsideInitialUL-BWP-r17	17.6.0
2022-09	RAN#97	R5-224880	2531	-	F	Add IE RedCapParameters	17.6.0
2022-09	RAN#97	R5-224881	2532	-	F	Add IE SRS-AllPosResourcesRRC-Inactive	17.6.0
2022-09	RAN#97	R5-224882	2533	-	F	Add IE UE-RadioPagingInfo	17.6.0
2022-09	RAN#97	R5-224883	2534	-	F	Add IE AppLayerMeasConfig	17.6.0
2022-09	RAN#97	R5-224909	2535	-	F	Update IE DownlinkConfigCommonSIB	17.6.0
2022-09	RAN#97	R5-224912	2537	-	F	Update IE MeasObjectNR	17.6.0
2022-09	RAN#97	R5-224913	2538	-	F	Add IE MeasResultForRSSI	17.6.0
2022-09	RAN#97	R5-224914	2539	-	F	Update IE MeasResults	17.6.0
2022-09	RAN#97	R5-224915	2540	-	F	Add IE MeasRSSI-ReportConfig	17.6.0
2022-09	RAN#97	R5-224916	2541	-	F	Update IE ReportConfigNR	17.6.0
2022-09	RAN#97	R5-224917	2542	-	F	Add IE RMTC Config	17.6.0
2022-09	RAN#97	R5-224992	2545	-	F	Add IE DedicatedInfoF1c	17.6.0
2022-09	RAN#97	R5-225007	2546	-	F	Add IE MeasConfigAppLayerId	17.6.0
2022-09	RAN#97	R5-225092	2550	-	F	Adding new connection diagram for SUL with UL MIMO test case	17.6.0
2022-09	RAN#97	R5-225177	2553	-	F	Introduction of new default 5GMM messages	17.6.0
2022-09	RAN#97	R5-225178	2554	-	F	Introduction of new default 5GSM messages	17.6.0
2022-09	RAN#97	R5-225180	2556	-	F	Updates to default 5GSM messages	17.6.0
2022-09	RAN#97	R5-225188	2557	-	F	CR to Correct Permitted Methodologies and Applicability	17.6.0
2022-09	RAN#97	R5-225212	2558	-	F	Update nrofRB for 200 MHz ChBw 120 kHz SCS	17.6.0
2022-09	RAN#97	R5-225215	2559	-	F	Update number of HARQ processes for RRM test cases	17.6.0
2022-09	RAN#97	R5-225271	2555	1	F	Updates to default 5GMM messages	17.6.0
2022-09	RAN#97	R5-225280	2494	1	F	Add Default configuration for DCI format 4_0 scheduling MBS Broadcast test	17.6.0
2022-09	RAN#97	R5-225290	2471	1	F	Correction of NR SL message contents	17.6.0
2022-09	RAN#97	R5-225291	2472	1	F	Correction of test procedure 4.9.31 - Connectivity check	17.6.0
2022-09	RAN#97	R5-225299	2448	1	F	Updates to Table 4.6.3-16: CellAccessRelatedInfo for NPN	17.6.0
2022-09	RAN#97	R5-225300	2456	1	F	Addition of Test Environment for legacy test cases applicable to SNPN Only UE	17.6.0
2022-09	RAN#97	R5-225310	2544	1	F	Update of protocol applicability for DC_19A_n77(2A), DC_19A_n78(2A), DC_21A_n77(2A) and DC_21A_n78(2A)	17.6.0
2022-09	RAN#97	R5-225311	2462	1	F	Correction of the scheduling information for combination NR-15	17.6.0

2022-09	RAN#97	R5-225312	2463	1	F	Addition of message contents for DedicatedSIBRequest	17.6.0
2022-09	RAN#97	R5-225316	2425	1	F	Update default message contents of RACH-ConfigDedicated	17.6.0
2022-09	RAN#97	R5-225321	2536	1	F	Update IE LBT FailureRecoveryConfig	17.6.0
2022-09	RAN#97	R5-225325	2497	1	F	Add test procedures for MBS Multicast test	17.6.0
2022-09	RAN#97	R5-225326	2502	1	F	Add SIB20 for MBS Broadcast test	17.6.0
2022-09	RAN#97	R5-225327	2503	1	F	Add SIB21 for MBS Broadcast test	17.6.0
2022-09	RAN#97	R5-225328	2504	1	F	Add MBSBroadcastConfiguration for MBS Broadcast test	17.6.0
2022-09	RAN#97	R5-225329	2505	1	F	Add MBSInterestIndication for MBS Broadcast test	17.6.0
2022-09	RAN#97	R5-225330	2506	1	F	Add MBS information elements for MBS test	17.6.0
2022-09	RAN#97	R5-225333	2475	1	F	Update of MDT message and information element	17.6.0
2022-09	RAN#97	R5-225342	2492	1	F	Addition of RedCap default test channel bandwidth for signaling MFBI test	17.6.0
2022-09	RAN#97	R5-225343	2493	1	F	Addition of RedCap default test channel bandwidth for signaling test	17.6.0
2022-09	RAN#97	R5-225352	2449	1	F	Update of Table 4.6.1-30 to add message contents values for SDT in UEAssistanceInformation	17.6.0
2022-09	RAN#97	R5-225353	2450	1	F	Update of Table 4.6.1-28 to add message contents values for SDT in SIB1	17.6.0
2022-09	RAN#97	R5-225354	2451	1	F	Update of Table 4.6.1-16 to add message contents values for SDT in RRCRelease	17.6.0
2022-09	RAN#97	R5-225355	2453	1	F	Update of Table 4.6.3-96 to add message contents values for SDT in PDCCH-ConfigCommon	17.6.0
2022-09	RAN#97	R5-225356	2473	1	F	Addition of SIB16 for slice based cell reselection	17.6.0
2022-09	RAN#97	R5-225357	2474	1	F	Updates to message contents for slice specific RACH configuration	17.6.0
2022-09	RAN#97	R5-225358	2464	1	F	Add UplinkDataCompression into PDCP-Config for NR UDC test	17.6.0
2022-09	RAN#97	R5-225362	2483	1	F	Updates to test procedures 4.9.12A and 4.9.12B	17.6.0
2022-09	RAN#97	R5-225363	2458	1	F	Add IEs DRX-ConfigSL, EphemerisInfo, FeatureCombination and FeatureCombinationPreambles	17.6.0
2022-09	RAN#97	R5-225364	2530	1	F	Editorial update IE RAT-Type	17.6.0
2022-09	RAN#97	R5-225365	2549	1	F	Updating the values for IE P-Max	17.6.0
2022-09	RAN#97	R5-225366	2428	1	F	Updates on UE Power Limit Messages: Option 2	17.6.0
2022-09	RAN#97	R5-225367	2548	1	F	Introducing FR2 signal test frequencies for intra-band contiguous 3CA	17.6.0
2022-09	RAN#97	R5-225681	2441	1	F	Correction of test channel bandwidth for R16	17.6.0
2022-09	RAN#97	R5-225682	2442	1	F	Correction of test channel bandwidth for n79	17.6.0
2022-09	RAN#97	R5-225684	2440	1	F	Correction of test channel bandwidth for R15	17.6.0
2022-09	RAN#97	R5-225686	2439	1	F	Update UE capability information elements for PC1.5 duty cycle	17.6.0
2022-09	RAN#97	R5-225730	2476	1	F	Addition of test frequencies for DC 21A n28A	17.6.0
2022-09	RAN#97	R5-225731	2527	1	F	Addition of configurations for many 4CA NR combinations	17.6.0
2022-09	RAN#97	R5-225766	2543	1	F	Corrections on Mid test channel bandwidth for band n66 for Redcap	17.6.0
2022-09	RAN#97	R5-225780	2468	1	F	Correction quantity config for inter-RAT to UTRA	17.6.0
2022-09	RAN#97	R5-225781	2477	1	F	Correction to connection diagram for DL CA Demodulation and CSI test cases	17.6.0
2022-09	RAN#97	R5-225782	2481	1	F	Correction to RRC message for uplink CA	17.6.0
2022-12	RAN#98	R5-225952	2563		F	Introduction of test channel bandwidths for new NR bands n91, n92, n93 and n94	17.7.0
2022-12	RAN#98	R5-225953	2564		F	Introduction of test frequencies for new NR bands n91, n92, n93 and n94	17.7.0
2022-12	RAN#98	R5-225970	2566		F	Inclusive Language Review and update of IE SIB3	17.7.0
2022-12	RAN#98	R5-225971	2567		F	Inclusive Language Review and update of IE SIB4	17.7.0
2022-12	RAN#98	R5-225972	2568		F	Inclusive Language Review and update of IE SIB5	17.7.0
2022-12	RAN#98	R5-225973	2569		F	Inclusive Language Review and update of IE MeasObjectEUTRA	17.7.0
2022-12	RAN#98	R5-225974	2570		F	Inclusive Language Review and update of IE MeasObjectNR	17.7.0
2022-12	RAN#98	R5-225975	2571		F	Inclusive Language Review and update of IE ReportConfigNR	17.7.0
2022-12	RAN#98	R5-226020	2572		F	Update of test procedures 4.9.12A and 4.9.12B	17.7.0
2022-12	RAN#98	R5-226040	2573		F	Correction to test procedure 4.9.7	17.7.0
2022-12	RAN#98	R5-226041	2574		F	Updates to SysInfo for SCells operating on NR CA bands with no UL frequency	17.7.0
2022-12	RAN#98	R5-226110	2575		F	Correction to default configurations for RedCap RRM TCs	17.7.0

2022-12	RAN#98	R5-226247	2577	F	Add IE SIB17	17.7.0
2022-12	RAN#98	R5-226248	2578	F	Add IE SIB18	17.7.0
2022-12	RAN#98	R5-226249	2579	F	Add IE SIB19	17.7.0
2022-12	RAN#98	R5-226250	2580	F	Update IE BeamFailureRecoveryRSConfig	17.7.0
2022-12	RAN#98	R5-226251	2581	F	Update IE BeamFailureRecoveryServingCellConfig	17.7.0
2022-12	RAN#98	R5-226253	2583	F	Update IE DRX-ConfigSecondaryGroup	17.7.0
2022-12	RAN#98	R5-226254	2584	F	Update IE FreqPriorityListSlicing	17.7.0
2022-12	RAN#98	R5-226255	2585	F	Add IE FreqPriorityListDedicatedSlicing	17.7.0
2022-12	RAN#98	R5-226257	2587	F	Update IE MUSIM-GapId	17.7.0
2022-12	RAN#98	R5-226259	2589	F	Add IEs PCI-ARFCN-EUTRA and PCI-ARFCN-NR	17.7.0
2022-12	RAN#98	R5-226260	2590	F	Add IE ReferenceLocation	17.7.0
2022-12	RAN#98	R5-226261	2591	F	Update IE RMTC-Config	17.7.0
2022-12	RAN#98	R5-226262	2592	F	Add IE ServingCellAndBWP-Id	17.7.0
2022-12	RAN#98	R5-226263	2593	F	Update IE TCI-ActivatedConfig	17.7.0
2022-12	RAN#98	R5-226264	2594	F	Add IE TAR-Config	17.7.0
2022-12	RAN#98	R5-226265	2595	F	Add IEs TCI-UL-State and TCI-UL-StateId	17.7.0
2022-12	RAN#98	R5-226266	2596	F	Add IE TimeAlignmentTimer	17.7.0
2022-12	RAN#98	R5-226268	2598	F	Update IE PosSRS-RRC-Inactive-OutsideInitialUL-BWP	17.7.0
2022-12	RAN#98	R5-226269	2599	F	Add IE PRS-ProcessingCapabilityOutsideMGinPPWperType	17.7.0
2022-12	RAN#98	R5-226270	2600	F	Add IE SimultaneousRxTxPerBandPair	17.7.0
2022-12	RAN#98	R5-226271	2601	F	Update IE UE-MeasurementsAvailable	17.7.0
2022-12	RAN#98	R5-226352	2605	F	Addition of CGI specific information elements for R15 SON_MDT	17.7.0
2022-12	RAN#98	R5-226366	2607	F	Removal of Test freqs for R16 pending CADC configs from cl 4.3.1	17.7.0
2022-12	RAN#98	R5-226367	2608	F	Removal of Test freqs for R17 pending CADC configs from cl 4.3.1	17.7.0
2022-12	RAN#98	R5-226390	2613	F	Editorial correction for test procedure sequence in 4.7.2-2 on 38.508-1 in rel17	17.7.0
2022-12	RAN#98	R5-226400	2615	F	Updates for NR_CA_n5A-n77A, CA_n66A-n77A	17.7.0
2022-12	RAN#98	R5-226494	2616	F	Correct typo in Table 4.6.3-68	17.7.0
2022-12	RAN#98	R5-226495	2617	F	Corrections to Table 7.3.1-22	17.7.0
2022-12	RAN#98	R5-226496	2618	F	Corrections to Table 7.3.1-31	17.7.0
2022-12	RAN#98	R5-226669	2625	F	Update to K1 value for FDD RRM test cases	17.7.0
2022-12	RAN#98	R5-226684	2626	F	Addition of 2x1 antenna connection for RedCap	17.7.0
2022-12	RAN#98	R5-226691	2627	F	n66_2A frequency correction	17.7.0
2022-12	RAN#98	R5-226693	2628	F	Corrections to ssbPositionInBurst for 7.3.1-x	17.7.0
2022-12	RAN#98	R5-226694	2629	F	Corrections to RACHConfigCommon for RRM	17.7.0
2022-12	RAN#98	R5-226695	2630	F	Removal of Table 7.3.1-33	17.7.0
2022-12	RAN#98	R5-226718	2638	F	Add low-mid-high ch BWs for NR-U	17.7.0
2022-12	RAN#98	R5-226727	2639	F	Update of test frequency for n3 R17 CBW	17.7.0
2022-12	RAN#98	R5-226731	2641	F	Update IE Phy-ParametersSharedSpectrumChAccess	17.7.0
2022-12	RAN#98	R5-226863	2644	F	Updating signalling test frequencies for n79 20MHz CBW	17.7.0
2022-12	RAN#98	R5-226864	2645	F	Updating test channel bandwidths for n79	17.7.0
2022-12	RAN#98	R5-226894	2646	F	Update of n28 test frequencies for DC_21A_n28A in clause 6.2.3.1	17.7.0
2022-12	RAN#98	R5-226934	2647	F	Updates to default 5GMM messages	17.7.0
2022-12	RAN#98	R5-226935	2648	F	Updates to default 5GSM messages	17.7.0
2022-12	RAN#98	R5-227084	2650	F	Update to offsetToCarrier for DC_21A_n28A	17.7.0
2022-12	RAN#98	R5-227087	2651	F	Addition of locationAndBandwidth for BW 35 MHz	17.7.0
2022-12	RAN#98	R5-227101	2653	F	Correction to definition of SRB_NR_PDCP	17.7.0
2022-12	RAN#98	R5-227108	2655	F	Test frequencies updates for band n7	17.7.0
2022-12	RAN#98	R5-227110	2657	F	Test frequencies updates for band n25	17.7.0
2022-12	RAN#98	R5-227111	2658	F	Test frequencies updates for band n66	17.7.0
2022-12	RAN#98	R5-227138	2660	F	Update of configuration of system information blocks for MBS Broadcast TC	17.7.0
2022-12	RAN#98	R5-227139	2661	F	Update of MBS IE CFR-ConfigMCCH-MTCH	17.7.0
2022-12	RAN#98	R5-227142	2664	F	Editorial correction of physical layer parameters for scheduling of MBS	17.7.0
2022-12	RAN#98	R5-227174	2671	F	Update PC5 message for LINK IDENTIFIER UPDATE procedure	17.7.0
2022-12	RAN#98	R5-227251	2674	F	Correction of test frequencies	17.7.0
2022-12	RAN#98	R5-227275	2677	F	Introduction of CA_n48A-n77A and CA_n71A-n77A configurations	17.7.0

2022-12	RAN#98	R5-227406	2614	1	F	Addition of Test procedure for deleting configured S-NSSAI, default configured S-NSSAI and allowed S-NSSAI	17.7.0
2022-12	RAN#98	R5-227407	2582	1	F	Update IE DL-PPW-PreConfig	17.7.0
2022-12	RAN#98	R5-227408	2586	1	F	Add IE LTE-NeighCellsCRS-AssistInfoList	17.7.0
2022-12	RAN#98	R5-227409	2597	1	F	Add IEs UplinkTxDirectCurrentMoreCarrierList and UplinkTxDirectCurrentTwoCarrierList	17.7.0
2022-12	RAN#98	R5-227410	2676	1	F	Updates to connectivity options	17.7.0
2022-12	RAN#98	R5-227449	2619	1	F	Update to cl 4.5B.1 for SNPN-only UEs	17.7.0
2022-12	RAN#98	R5-227473	2649	1	F	Correction to EHC parametrization in 38.508-1	17.7.0
2022-12	RAN#98	R5-227476	2678	1	F	Addition of USIM configuration for MUSIM test cases	17.7.0
2022-12	RAN#98	R5-227477	2679	1	F	Addition of test procedure for registration of a MUSIM UE	17.7.0
2022-12	RAN#98	R5-227480	2620	1	F	Update of Table 4.6.1-28 to add message contents values for NTN in SIB1	17.7.0
2022-12	RAN#98	R5-227499	2672	1	F	Updating SIB1 content with Paging Early Indication configuration	17.7.0
2022-12	RAN#98	R5-227507	2659	1	F	Update of CLOSE UE TEST LOOP message	17.7.0
2022-12	RAN#98	R5-227508	2662	1	F	Update of MBS IE TMGI	17.7.0
2022-12	RAN#98	R5-227509	2663	1	F	Update of Radio resource control information elements for Broadcast MBS TC	17.7.0
2022-12	RAN#98	R5-227510	2665	1	F	Update of DNN configuration for PDU session associated with MBS Multicast session	17.7.0
2022-12	RAN#98	R5-227511	2666	1	F	Update of Procedure for MBS Multicast session join and session establishment	17.7.0
2022-12	RAN#98	R5-227512	2667	1	F	Update of Radio resource control information elements for Multicast MBS TC	17.7.0
2022-12	RAN#98	R5-227518	2670	1	F	Update common configurations for RedCap UE	17.7.0
2022-12	RAN#98	R5-227542	2609	1	F	Update of information elements for slice specific RACH configuration	17.7.0
2022-12	RAN#98	R5-227544	2610	1	F	Update of MDT information element for SON_MDT	17.7.0
2022-12	RAN#98	R5-227587	2654	1	F	Update TS 38.508-1 clause 4.5B for RedCap UE	17.7.0
2022-12	RAN#98	R5-227593	2611	1	F	Addition of parameter related to SOR-CMCI for DL NAS transport and UL NAS transport message in 38.508-1	17.7.0
2022-12	RAN#98	R5-227700	2606	1	F	Removal of Test freqs for R15 pending CADC configs from cl 4.3.1	17.7.0
2022-12	RAN#98	R5-227701	2640	1	F	Update of test frequency for n8 R17 CBW 35MHz	17.7.0
2022-12	RAN#98	R5-227702	2643	1	F	Adding test frequencies for n79 new CBW 10MHz and 20MHz	17.7.0
2022-12	RAN#98	R5-227703	2602	1	F	Update to IE Table 4.6.3-62A - HighSpeedConfig	17.7.0
2022-12	RAN#98	R5-227639	2603	2	F	Update IE ServingCellConfigCommon	17.7.0
2022-12	RAN#98	R5-227705	2604	1	F	Update IE ServingCellConfigCommonSIB	17.7.0
2022-12	RAN#98	R5-227706	2673	1	F	Disabling of PUCCH intra-slot frequency hopping for RF	17.7.0
2022-12	RAN#98	R5-227840	2565	1	F	Introduction of test frequencies for signalling testing for new NR bands n91, n92, n93 and n94	17.7.0
2022-12	RAN#98	R5-227892	2675	1	F	Updates to determination of test frequencies for NR Intra-band Non-Contiguous CA	17.7.0
2023-03	RAN#99	R5-230065	2680	-	F	Introduction of test channel bandwidths for new NR bands n100, n101	17.8.0
2023-03	RAN#99	R5-230066	2681	-	F	Introduction of test frequencies for new NR bands n100, n101	17.8.0
2023-03	RAN#99	R5-230067	2682	-	F	Introduction of test frequencies for signalling testing for new NR bands n100, n101	17.8.0
2023-03	RAN#99	R5-230093	2683	-	F	Addition of test frequencies for new EN-DC comb within FR1	17.8.0
2023-03	RAN#99	R5-230103	2684	-	F	Updates to clause 4.5B.2 for RedCap test environment	17.8.0
2023-03	RAN#99	R5-230231	2692	-	F	Update IEs SIB16, CellReselectionPriority, FreqPriorityListSlicing, NSAG-ID and NSAG-IdentityInfo	17.8.0
2023-03	RAN#99	R5-230279	2696	-	F	Corrections to Clause 6.2.3.7 Test frequencies for NR sidelink configurations for signalling testing	17.8.0
2023-03	RAN#99	R5-230287	2697	-	F	Update inter-band NR CA configurations of three bands CA_n2A-n5A-n77A, CA_n2A-n66A-n77A, and CA_n5A-n66A-n77A	17.8.0
2023-03	RAN#99	R5-230457	2700	-	F	Correction to default configuration of RRC IEs for RedCap	17.8.0
2023-03	RAN#99	R5-230587	2703	-	F	Update IE BWP-UplinkDedicated	17.8.0
2023-03	RAN#99	R5-230588	2704	-	F	Update IE LBT-FailureRecoveryConfig	17.8.0
2023-03	RAN#99	R5-230601	2705	-	F	update default message contents of ReportConfigInterRAT	17.8.0
2023-03	RAN#99	R5-230675	2713	-	F	Correction to Test Procedures for Switch off/Power off	17.8.0

2023-03	RAN#99	R5-230753	2719	-	F	Introduction or test frequencies for n46 and n96 in clause 6.2.3.1	17.8.0
2023-03	RAN#99	R5-230754	2720	-	F	Corrections to Annex C for test frequency calculations	17.8.0
2023-03	RAN#99	R5-230755	2721	-	F	Update IE DownlinkConfigCommonSIB	17.8.0
2023-03	RAN#99	R5-230882	2723	-	F	NTN test channel bandwidths for n256 and n255	17.8.0
2023-03	RAN#99	R5-230884	2724	-	F	NR NTN test frequencies for n256	17.8.0
2023-03	RAN#99	R5-230897	2726	-	F	Addition of test frequency for DC_71A_n2A	17.8.0
2023-03	RAN#99	R5-230966	2728	-	F	Correction to PUCCH secondHopPRB for RF condition	17.8.0
2023-03	RAN#99	R5-230999	2729	-	F	Update IE BWP-UplinkCommon	17.8.0
2023-03	RAN#99	R5-231002	2731	-	F	Corrections to RRC Reconfiguration for SCell addition	17.8.0
2023-03	RAN#99	R5-231023	2733	-	F	Addition of default RRC message configuration for measurement gap enhancements	17.8.0
2023-03	RAN#99	R5-231079	2735	-	F	Updating test frequencies for n79	17.8.0
2023-03	RAN#99	R5-231185	2736	-	F	Correction to PDU SESSION ESTABLISHMENT ACCEPT message	17.8.0
2023-03	RAN#99	R5-231218	2737	-	F	Add condition to activate dedicated BWP to ServingCellConfig	17.8.0
2023-03	RAN#99	R5-231219	2738	-	F	Addition of scheduling information for high accuracy GNSS posSibTypes	17.8.0
2023-03	RAN#99	R5-231227	2739	-	F	Introduction of CA_n41A-n71A configuration.	17.8.0
2023-03	RAN#99	R5-231236	2744	-	F	Update IE NPN-IdentityInfoList	17.8.0
2023-03	RAN#99	R5-231243	2747	-	F	Test frequencies update for bands n8 and n25	17.8.0
2023-03	RAN#99	R5-231399	2722	1	F	Add IEs PathlossReferenceRS and PathlossReferenceRS-Id	17.8.0
2023-03	RAN#99	R5-231423	2701	1	F	Correction to PHY parameters for SL mode 1 transmission	17.8.0
2023-03	RAN#99	R5-231424	2702	1	F	Correction to RRC IEs for SL mode 1 transmission	17.8.0
2023-03	RAN#99	R5-231447	2695	1	F	Addition of CG SDT Configuration message contents for 3GPP SDT	17.8.0
2023-03	RAN#99	R5-231448	2727	1	F	Update of the contents of RRC messages for L2 U2N relay related operation	17.8.0
2023-03	RAN#99	R5-231453	2750	1	F	Adding default contents for SIB17	17.8.0
2023-03	RAN#99	R5-231461	2716	1	F	Addition of System information combination for Rel-17 eNPN	17.8.0
2023-03	RAN#99	R5-231467	2707	1	F	Addition of Procedure for MBS Multicast session release	17.8.0
2023-03	RAN#99	R5-231468	2708	1	F	Update of Contents of Paging for Multicast MBS TC	17.8.0
2023-03	RAN#99	R5-231469	2709	1	F	Correction of CLOSE UE TEST LOOP message for Loop Mode C	17.8.0
2023-03	RAN#99	R5-231470	2710	1	F	Correction of PDCP-Config for MBS TC	17.8.0
2023-03	RAN#99	R5-231471	2711	1	F	Correction of RadioBearerConfig for MBS TC	17.8.0
2023-03	RAN#99	R5-231472	2712	1	F	Correction of CellGroupConfig for MBS TC	17.8.0
2023-03	RAN#99	R5-231560	2715	1	F	Updates to SIB1 and SIB18 for Rel-17 Enpn	17.8.0
2023-03	RAN#99	R5-231570	2690	1	F	Update IE SIB2	17.8.0
2023-03	RAN#99	R5-231571	2706	1	F	update default message contents of MeasResults	17.8.0
2023-03	RAN#99	R5-231577	2691	1	F	Update IEs SIB11, ARFCN-ValueEUTRA, MeasIdleConfig and EUTRA-PhysCellIdRange	17.8.0
2023-03	RAN#99	R5-231603	2717	1	F	Correction of test frequencies for n46	17.8.0
2023-03	RAN#99	R5-231604	2718	1	F	Correction of test frequencies for n96	17.8.0
2023-03	RAN#99	R5-231634	2694	1	F	Introduction of CA_n41A-n66A configuration.	17.8.0
2023-03	RAN#99	R5-231792	2686	1	F	Update of Propagation Delay Compensation tables for UE Rx-Tx measurements	17.8.0
2023-03	RAN#99	R5-231793	2725	1	F	Addition of test frequencies for R16 combos	17.8.0
2023-03	RAN#99	R5-231867	2693	1	F	Correction to high range reference test frequency for n66 DL CA	17.8.0
2023-03	RAN#99	R5-231874	2698	1	F	Addition of test frequencies for new 3CC EN-DC comb within FR1	17.8.0
2023-03	RAN#99	R5-231902	2751	1	F	Correction to introduce search space configuration changes for DCI_2-6 transmission	17.8.0
2023-06	RAN#100	R5-232056	2752	-	F	Correction to test procedure 4.9.9	17.9.0
2023-06	RAN#100	R5-232337	2756	-	F	Addition of test frequencies for new 3CC EN-DC comb within FR2	17.9.0
2023-06	RAN#100	R5-232338	2757	-	F	Addition of test frequencies for new EN-DC comb within FR2	17.9.0
2023-06	RAN#100	R5-232350	2758	-	F	RF message exceptions for K1 and number of HARQ processes in CA	17.9.0
2023-06	RAN#100	R5-232441	2762	-	F	Introduction of test channel bandwidths for new NR band n13	17.9.0
2023-06	RAN#100	R5-232442	2763	-	F	Introduction of test frequencies for new NR band n13	17.9.0
2023-06	RAN#100	R5-232443	2764	-	F	Introduction of test frequencies for signalling testing for new NR band n13	17.9.0

2023-06	RAN#100	R5-232497	2765	-	F	Correction to default configuration of RRC IEs for NR cov enh test	17.9.0
2023-06	RAN#100	R5-232520	2766	-	F	NR NTN test frequencies for n255	17.9.0
2023-06	RAN#100	R5-232576	2767	-	F	Correction to RRC IEs for NR sidelink test	17.9.0
2023-06	RAN#100	R5-232654	2770	-	F	Update of NR inter-band CA configurations in FR1 for CA_n3A-n8A	17.9.0
2023-06	RAN#100	R5-232693	2774	-	F	Addition of NTN freq bands to clause 6.2.3 for Default test frequencies	17.9.0
2023-06	RAN#100	R5-232712	2776	-	F	Correction NZP-CSI-RS-ResourceSet for FR1	17.9.0
2023-06	RAN#100	R5-232723	2781	-	F	Correction to default P-Max value for Power Class 1.5 UEs	17.9.0
2023-06	RAN#100	R5-232743	2782	-	F	Update of the contents of RRC messages for L2 U2N relay related operation	17.9.0
2023-06	RAN#100	R5-232746	2783	-	F	Update of the contents of Sidelink information elements	17.9.0
2023-06	RAN#100	R5-232790	2786	-	F	Addition of test frequencies of CA_n39A-n41A config TC 4.3.1.1.2.1	17.9.0
2023-06	RAN#100	R5-232877	2787	-	F	Addition of new CA configuration CA-n41A-n66A-n71A	17.9.0
2023-06	RAN#100	R5-232934	2789	-	F	Update CSI-ReportConfig IE content for RRM testing	17.9.0
2023-06	RAN#100	R5-232946	2793	-	F	Delete NR-19 for MBS in the Common configurations of system information blocks	17.9.0
2023-06	RAN#100	R5-232970	2794	-	F	Update Service accept NAS message	17.9.0
2023-06	RAN#100	R5-232971	2795	-	F	Update RadioBearerConfig-SRB2-DRB message	17.9.0
2023-06	RAN#100	R5-232991	2797	-	F	Correction to RRM PDCCH TCI-State	17.9.0
2023-06	RAN#100	R5-232992	2798	-	F	Correction to RRM TRS CSI-ResourceConfig	17.9.0
2023-06	RAN#100	R5-233091	2799	-	F	Adding uplink CA test frequencies for CA_n77(2A)	17.9.0
2023-06	RAN#100	R5-233135	2804	-	F	Correction to RF or RRM condition for default messages	17.9.0
2023-06	RAN#100	R5-233142	2805	-	F	Update to test procedure for registration of a MUSIM UE	17.9.0
2023-06	RAN#100	R5-233195	2806	-	F	Corrections to Test frequencies for NR CA configurations for signalling testing	17.9.0
2023-06	RAN#100	R5-233317	2769	1	F	Correction to introduce search space configuration changes for DCI_2-6 transmission	17.9.0
2023-06	RAN#100	R5-233369	2775	1	F	Addition of new clause for UE Position Requirements for NR NTN testing	17.9.0
2023-06	RAN#100	R5-233379	2785	1	F	Addition of a new combination of system information block for SIB16	17.9.0
2023-06	RAN#100	R5-233382	2791	1	F	Addition of Procedure to check TMGI and associated MRB reception in a multicast MBS session	17.9.0
2023-06	RAN#100	R5-233383	2792	1	F	Update PDCCH-Config for MSS condition	17.9.0
2023-06	RAN#100	R5-233406	2790	1	F	Update general configuration parameter for HD-FDD UE	17.9.0
2023-06	RAN#100	R5-233423	2777	1	F	Addition of PC5 RRC message uuMessageTransferSidelink	17.9.0
2023-06	RAN#100	R5-233424	2778	1	F	Addition of PC5 RRC RemoteUEInformationSidelink message	17.9.0
2023-06	RAN#100	R5-233425	2780	1	F	Update of PC5 RRC message Uu-RelayRLC-ChannelConfig	17.9.0
2023-06	RAN#100	R5-233426	2779	1	F	Update of PC5 RRC message SL-L2RelayUE-Config	17.9.0
2023-06	RAN#100	R5-233429	2755	1	F	Add generic procedure for Switch off / Power off procedure in MA PDU session Established on NR and WLAN	17.9.0
2023-06	RAN#100	R5-233434	2771	1	F	Updates to SIB19 for NR NTN	17.9.0
2023-06	RAN#100	R5-233435	2772	1	F	Update IE ServingCellConfigCommon for NR NTN	17.9.0
2023-06	RAN#100	R5-233436	2773	1	F	Update to clause 4.4.3 Common parameters for NR NTN	17.9.0
2023-06	RAN#100	R5-233474	2768	1	F	Correction to switch off test procedure	17.9.0
2023-06	RAN#100	R5-233500	2808	1	F	Correction of 38.508-1 4.1.1 on lower humidity limit in temperature test environment	17.9.0
2023-06	RAN#100	R5-233674	2754	1	F	Addition and update of tables for HST FR2 scenario	17.9.0
2023-06	RAN#100	R5-233675	2807	1	F	Update to TS 38.508-1 clause 4.6.3-200BB for FR2 UL Gaps IE	17.9.0
2023-06	RAN#100	R5-233676	2809	-	F	Correction to frequency range for ssb-PositionsInBurst and SSB-ToMeasure	17.9.0
2023-06	RAN#100	R5-233699	2759	1	F	Correction of test frequency parameters for n79	17.9.0
2023-06	RAN#100	R5-233700	2802	1	F	Updating frequency calculation in Annex C.3.2	17.9.0
2023-06	RAN#100	R5-233734	2788	2	F	Addition of test frequency for new 3/4 band EN-DC comb	17.9.0
2023-09	RAN#101	R5-233931	2812	-	F	Clarify default ASN.1 contents	17.10.0
2023-09	RAN#101	R5-233932	2813	-	F	Update IE MAC-CellGroupConfig	17.10.0
2023-09	RAN#101	R5-233944	2814	-	F	Introduction of Inter-band NR CA configuration CA_n20A-n78A	17.10.0
2023-09	RAN#101	R5-233987	2815	-	F	Adding 5GS registration type for Rel-17 eNPN onboarding service.	17.10.0

2023-09	RAN#101	R5-234038	2817	-	F	Update IE PUSCH-TimeDomainResourceAllocationList	17.10.0
2023-09	RAN#101	R5-234056	2819	-	F	Add DC_48A_n46A configuration to 38.508-1	17.10.0
2023-09	RAN#101	R5-234058	2820	-	F	Update IE PDSCH-Config	17.10.0
2023-09	RAN#101	R5-234076	2821	-	F	Addition of test frequencies for new EN-DC combos within FR2	17.10.0
2023-09	RAN#101	R5-234145	2826	-	F	Update LoggedMeasurementConfiguration	17.10.0
2023-09	RAN#101	R5-234146	2827	-	F	Update IE CellGroupConfig	17.10.0
2023-09	RAN#101	R5-234147	2828	-	F	Update IE ConfiguredGrantConfig	17.10.0
2023-09	RAN#101	R5-234148	2829	-	F	Update IE ControlResourceSet	17.10.0
2023-09	RAN#101	R5-234149	2830	-	F	Update IE CSI-ReportConfig	17.10.0
2023-09	RAN#101	R5-234159	2831	-	F	Test frequencies for band n70 and asymmetric channel bandwidths	17.10.0
2023-09	RAN#101	R5-234160	2832	-	F	Test frequency corrections for n77	17.10.0
2023-09	RAN#101	R5-234161	2833	-	F	Low and High test channel BW correction in 38.508-1	17.10.0
2023-09	RAN#101	R5-234162	2834	-	F	Test frequency corrections for n66	17.10.0
2023-09	RAN#101	R5-234191	2835	-	F	Relative Tx Power Allocation to PRS	17.10.0
2023-09	RAN#101	R5-234295	2837	-	F	Addition of test frequencies for new NRCA comb within FR1	17.10.0
2023-09	RAN#101	R5-234303	2838	-	F	Update IE LogicalChannelConfig	17.10.0
2023-09	RAN#101	R5-234305	2840	-	F	Update IE RadioBearerConfig	17.10.0
2023-09	RAN#101	R5-234306	2841	-	F	Update IE RLC-BearerConfig	17.10.0
2023-09	RAN#101	R5-234307	2842	-	F	Update IE RLC-Config	17.10.0
2023-09	RAN#101	R5-234308	2843	-	F	Update IE SRB-Identity	17.10.0
2023-09	RAN#101	R5-234310	2844	-	F	Add radio configuration for RRCReconfiguration and SRB4	17.10.0
2023-09	RAN#101	R5-234447	2849	-	F	Addition of several NR CA combination to inter-band configurations table	17.10.0
2023-09	RAN#101	R5-234457	2850	-	F	Correction of DCI 4-0	17.10.0
2023-09	RAN#101	R5-234459	2852	-	F	Update PDSCH-ConfigBroadcast-r17	17.10.0
2023-09	RAN#101	R5-234476	2854	-	F	Correction of DCI 1-0 DCI 1-1 and DCI 1-2	17.10.0
2023-09	RAN#101	R5-234513	2856	-	F	Update IE PDCP-Config	17.10.0
2023-09	RAN#101	R5-234514	2857	-	F	Update IE PDSCH-ServingCellConfig	17.10.0
2023-09	RAN#101	R5-234515	2858	-	F	Update IE PUCCH-Config	17.10.0
2023-09	RAN#101	R5-234516	2859	-	F	Update IE PUSCH-Config	17.10.0
2023-09	RAN#101	R5-234520	2860	-	F	Update IE PUSCH-ServingCellConfig	17.10.0
2023-09	RAN#101	R5-234521	2861	-	F	Update IE RACH-ConfigCommon	17.10.0
2023-09	RAN#101	R5-234522	2862	-	F	Update IE RACH-ConfigDedicated	17.10.0
2023-09	RAN#101	R5-234523	2863	-	F	Update IE ReportConfigInterRAT	17.10.0
2023-09	RAN#101	R5-234527	2864	-	F	Update IE SCS-SpecificCarrier	17.10.0
2023-09	RAN#101	R5-234528	2865	-	F	Update IE ServingCellConfig	17.10.0
2023-09	RAN#101	R5-234529	2866	-	F	Update IE ServingCellConfigCommon	17.10.0
2023-09	RAN#101	R5-234530	2867	-	F	Update IE SRS-Config	17.10.0
2023-09	RAN#101	R5-234538	2868	-	F	Addition of test freqs for CA_n258E.	17.10.0
2023-09	RAN#101	R5-234539	2869	-	F	Addition of test freqs for CA_n258F.	17.10.0
2023-09	RAN#101	R5-234540	2870	-	F	Addition of test freqs for CA_n258I.	17.10.0
2023-09	RAN#101	R5-234541	2871	-	F	Addition of test freqs for CA_n258J.	17.10.0
2023-09	RAN#101	R5-234542	2872	-	F	Addition of test freqs for CA_n258K.	17.10.0
2023-09	RAN#101	R5-234543	2873	-	F	Addition of test freqs for CA_n258L.	17.10.0
2023-09	RAN#101	R5-234544	2874	-	F	Addition of test freqs for CA_n258M.	17.10.0
2023-09	RAN#101	R5-234689	2879	-	F	Addition of test frequencies for new EN-DC configurations within FR1	17.10.0
2023-09	RAN#101	R5-234731	2885	-	F	Introduction of test frequency of CA_n28A-n41A-n79A	17.10.0
2023-09	RAN#101	R5-234905	2893	-	F	Correction to frequency range for ssb-PositionsInBurst and SSB-ToMeasure	17.10.0
2023-09	RAN#101	R5-234906	2894	-	F	Correction to default value of csi-SSB-ResourceToAddModList for RRM test cases	17.10.0
2023-09	RAN#101	R5-234935	2895	-	F	Annex C Test frequencies calculations corrections	17.10.0
2023-09	RAN#101	R5-234936	2896	-	F	Test frequencies for band n2: Addition of 35 MHz channel bandwidth	17.10.0
2023-09	RAN#101	R5-234941	2899	-	F	Test frequencies for band n5 and asymmetric channel bandwidths	17.10.0
2023-09	RAN#101	R5-234942	2900	-	F	Test frequencies for band n8 and asymmetric channel bandwidths	17.10.0
2023-09	RAN#101	R5-234944	2902	-	F	Test frequencies for band n25 and asymmetric channel bandwidths	17.10.0
2023-09	RAN#101	R5-234947	2905	-	F	Test frequencies for band n71 and asymmetric channel bandwidths in Rel-15	17.10.0

2023-09	RAN#101	R5-234948	2906	-	F	Test frequencies for band n71 and asymmetric channel bandwidths in Rel-17	17.10.0
2023-09	RAN#101	R5-234949	2907	-	F	Test frequencies for band n91 and asymmetric channel bandwidths	17.10.0
2023-09	RAN#101	R5-234950	2908	-	F	Test frequencies for band n92 and asymmetric channel bandwidths	17.10.0
2023-09	RAN#101	R5-234951	2909	-	F	Test frequencies for band n93 and asymmetric channel bandwidths	17.10.0
2023-09	RAN#101	R5-234952	2910	-	F	Test frequencies for band n94 and asymmetric channel bandwidths	17.10.0
2023-09	RAN#101	R5-235084	2911	-	F	Updates on Dedicated coreset configuration for RF and RRM testing	17.10.0
2023-09	RAN#101	R5-235249	2922	-	F	Update MIB for NCD-SSB	17.10.0
2023-09	RAN#101	R5-235277	2825	1	F	Correct Editorial mistake in default message contents of DLInformationTransfer	17.10.0
2023-09	RAN#101	R5-235279	2855	1	F	Update SchedulingRequestResourceConfig	17.10.0
2023-09	RAN#101	R5-235280	2886	1	F	Updates to default 5GMM messages	17.10.0
2023-09	RAN#101	R5-235306	2884	1	F	Correction to test procedure 4.9.31_SL DRB connectivity check	17.10.0
2023-09	RAN#101	R5-235313	2851	1	F	Correction of DCI 4-2	17.10.0
2023-09	RAN#101	R5-235336	2810	1	F	Addition of NTN freq band n255 to clause 6.2.3 for Default test frequencies	17.10.0
2023-09	RAN#101	R5-235349	2822	1	F	Update default message contents of RRCReconfiguration for MDT enhance	17.10.0
2023-09	RAN#101	R5-235350	2823	1	F	Update default message contents of UEInformationRequest for MDT enhance	17.10.0
2023-09	RAN#101	R5-235369	2875	1	F	Addition of default ProSe PC5 signalling messages	17.10.0
2023-09	RAN#101	R5-235370	2876	1	F	Addition of spec reference of 24.554 for ProSe PC5 signalling messages	17.10.0
2023-09	RAN#101	R5-235371	2881	1	F	Addition of test procedure for establishing unicast mode ProSe Direct communication / Peer UE side	17.10.0
2023-09	RAN#101	R5-235372	2882	1	F	Addition of test procedure for registration of NR sidelink U2N Relay / Relay UE side	17.10.0
2023-09	RAN#101	R5-235373	2883	1	F	Addition of Generic procedures for NR sidelink U2N Relay	17.10.0
2023-09	RAN#101	R5-235375	2912	1	F	Updating PDCCH-ConfigCommon content	17.10.0
2023-09	RAN#101	R5-235376	2839	1	F	Update IE LogicalChannelIdentity	17.10.0
2023-09	RAN#101	R5-235377	2845	1	F	Add radio configuration for RadioBearerConfig and SRB4	17.10.0
2023-09	RAN#101	R5-235378	2846	1	F	Add radio configuration for CellGroupConfig and SRB4	17.10.0
2023-09	RAN#101	R5-235391	2880	1	F	Addition of test procedure for establishing unicast mode ProSe Direct communication / Initiating UE side	17.10.0
2023-09	RAN#101	R5-235414	2887	1	F	Addition of signaling test frequency for CA_n77(2A)	17.10.0
2023-09	RAN#101	R5-235415	2853	1	F	Add si-SchedulingInfo-v1700 for the TC scheduling SIB15 to SIB21	17.10.0
2023-09	RAN#101	R5-235600	2901	1	F	Test frequencies for band n24 and asymmetric channel bandwidths	17.10.0
2023-09	RAN#101	R5-235601	2897	1	F	Test frequencies for band n18	17.10.0
2023-09	RAN#101	R5-235602	2836	1	F	Update inter-band NR CA 3DL configurations with additional band combos	17.10.0
2023-09	RAN#101	R5-235603	2921	1	F	Addition of CA_n2(2A)-n66A frequency	17.10.0
2023-09	RAN#101	R5-235604	2916	1	F	Rel-16 Corrections to Table 4.3.1.0A-1 (mid test channel bandwidths) for unlicensed bands	17.10.0
2023-09	RAN#101	R5-235605	2918	1	F	Rel-17 Corrections to Table 4.3.1.0A-1 (mid test channel bandwidths)	17.10.0
2023-09	RAN#101	R5-235606	2913	1	F	Addition of connection diagram for FR2 spurious emissions	17.10.0
2023-09	RAN#101	R5-235780	2889	1	F	Addition of default message for unified TCI state	17.10.0
2023-09	RAN#101	R5-235781	2891	1	F	Correction to SIB4 redCapAccessAllowed-r17 for RedCap testing	17.10.0
2023-09	RAN#101	R5-235782	2892	1	F	Correction to c-SRS default value for FR2 multiple BWP case	17.10.0
2023-09	RAN#101	R5-235822	2917	1	F	Rel-16 Corrections to Table 4.3.1.0A-1 (mid test channel bandwidths) for sidelink	17.10.0
2023-09	RAN#101	R5-235823	2919	1	F	Correction to Table 4.3.1.0A-1 (mid test channel bandwidths) for RedCap Ues	17.10.0
2023-09	RAN#101	R5-235841	2890	1	F	Correction to notes for RedCap CBW	17.10.0
2023-09	RAN#101	R5-235843	2914	1	F	Rel-15 Corrections to Table 4.3.1.0A-1 (mid test channel bandwidths)	17.10.0

2023-09	RAN#101	R5-235844	2915	1	F	Rel-16 Corrections to Table 4.3.1.0A-1 (mid test channel bandwidths)	17.10.0
2023-09	RAN#101	R5-235460	2920	2	F	Common test environments for NR-NTN testing	17.10.0
2023-09	RAN#101	-	-	-	-	Administrative release upgrade to match the release of TS 38.508-2 which was upgraded at RAN#101 to Rel-18 due to Rel-18 relevant CR(s)	18.0.0
2023-12	RAN#102	R5-236072	2927	-	F	Introduction of test frequencies for CA_n1A-n3A-n28A-n78A	18.1.0
2023-12	RAN#102	R5-236171	2931	-	F	Correction to default REGISTRATION ACCEPT message	18.1.0
2023-12	RAN#102	R5-236197	2932	-	F	Addition of default config for SMTC.7 and SMTC.8	18.1.0
2023-12	RAN#102	R5-236302	2935	-	F	Correction to SIB4 for RedCap	18.1.0
2023-12	RAN#102	R5-236305	2937	-	F	Corrections to generic procedure NR RRC_IDLE	18.1.0
2023-12	RAN#102	R5-236333	2938	-	F	n70 frequencies - Typo correction in offset to carrier	18.1.0
2023-12	RAN#102	R5-236346	2940	-	F	Test frequency corrections for n66	18.1.0
2023-12	RAN#102	R5-236374	2944	-	F	Update additional NR CA two bands configurations	18.1.0
2023-12	RAN#102	R5-236401	2945	-	F	Addition of test frequencies for new EN-DC configurations within FR1	18.1.0
2023-12	RAN#102	R5-236410	2946	-	F	Add new table for BWP without Coreset0 in 6.2.3.1	18.1.0
2023-12	RAN#102	R5-236411	2947	-	F	Update Downlink physical channels and physical signals for NCD-SSB	18.1.0
2023-12	RAN#102	R5-236412	2948	-	F	Update NonCellDefiningSSB	18.1.0
2023-12	RAN#102	R5-236413	2949	-	F	Update MIB and PDCCH-ConfigSIB1 for NCD-SSB	18.1.0
2023-12	RAN#102	R5-236480	2950	-	F	Moving Default 5G ProSe message and IEs	18.1.0
2023-12	RAN#102	R5-236483	2951	-	F	Simplification of tables for test freqs for CA_n48(2A)	18.1.0
2023-12	RAN#102	R5-236487	2955	-	F	Introduction of Test freqs for CA_n2(2A), BCS0	18.1.0
2023-12	RAN#102	R5-236492	2960	-	F	Editorial change of format for Header of clause 4.3.1.2.3.2	18.1.0
2023-12	RAN#102	R5-236774	2968	-	F	Addition of default settings of UICC and USIM for 5G ProSe	18.1.0
2023-12	RAN#102	R5-236775	2969	-	F	Addition of spec reference of 24.555 and 23.304 for ProSe information elements	18.1.0
2023-12	RAN#102	R5-236776	2970	-	F	Update of AT Command message for NR sidelink U2N Remote UE	18.1.0
2023-12	RAN#102	R5-236786	2971	-	F	Update of SecurityModeComplete and RRCReconfigurationComplete message for NR sidelink U2N Relay UE	18.1.0
2023-12	RAN#102	R5-236801	2973	-	F	Correction to PDCCH-ConfigCommon for performance tests for TDD patterns other than SCS 30 kHz	18.1.0
2023-12	RAN#102	R5-236802	2974	-	F	Correction to CSI-FrequencyOccupation for CSI-IM-Resource	18.1.0
2023-12	RAN#102	R5-236832	2975	-	F	Addition of SL-AccessInfo-L2U2N message for sidelink relay	18.1.0
2023-12	RAN#102	R5-236834	2976	-	F	Addition of SL-DefaultDRX-GC-BC message for sidelink relay	18.1.0
2023-12	RAN#102	R5-236844	2977	-	F	Update of RRC message RRCSetupRequest and RRCSetupComplete	18.1.0
2023-12	RAN#102	R5-236845	2978	-	F	Update of Contents of UE Policy Delivery messages	18.1.0
2023-12	RAN#102	R5-236876	2980	-	F	Addition of aperiodic TRS configuration for fast SCell activation	18.1.0
2023-12	RAN#102	R5-236900	2983	-	F	Addition of connection diagram for NR CA with UL MIMO	18.1.0
2023-12	RAN#102	R5-236933	2984	-	F	Removal of RedCap mid test channel bandwidth for n47 to 4.3.1.0A	18.1.0
2023-12	RAN#102	R5-236940	2985	-	F	Removal of mid test channel bandwidth for n18 to 4.3.1.0A	18.1.0
2023-12	RAN#102	R5-236948	2986	-	F	Update inter-band NR CA configuration of three bands CA_n1A-n3A-n78A	18.1.0
2023-12	RAN#102	R5-237035	2989	-	F	Updating SearchSpace content	18.1.0
2023-12	RAN#102	R5-237073	2990	-	F	Updating test frequency for band n30	18.1.0
2023-12	RAN#102	R5-237299	2998	-	F	Update the Contents of Pre-configuration for sidelink relay	18.1.0
2023-12	RAN#102	R5-237315	2999	-	F	Corrections to test procedures 4.9.7 and 4.9.9	18.1.0
2023-12	RAN#102	R5-237319	2936	1	F	Corrections to generic procedure E-UTRA RRC_IDLE	18.1.0
2023-12	RAN#102	R5-237320	2995	1	F	Change in generic procedure 4.9.9 depending on network support of N26	18.1.0
2023-12	RAN#102	R5-237323	2929	1	F	Update IE RACH-ConfigDedicated	18.1.0
2023-12	RAN#102	R5-237324	2930	1	F	Update IE MsgA-PUSCH-Config	18.1.0
2023-12	RAN#102	R5-237325	2987	1	F	Update MsgA-PUSCH-Config	18.1.0
2023-12	RAN#102	R5-237326	2964	1	F	Corrections for Test Procedure for eCall over IMS establishment in 5GS: eCall Only Support	18.1.0
2023-12	RAN#102	R5-237393	2965	1	F	Correction to default configuration of RRC IEs for CE test cases	18.1.0

2023-12	RAN#102	R5-237421	2963	1	F	Correction to USIM configuration for 5G eCall over IMS test case	18.1.0
2023-12	RAN#102	R5-237422	2942	1	F	Updates to default PCI of NR cells for signalling test cases	18.1.0
2023-12	RAN#102	R5-237475	2967	1	F	Addition of 5G ProSe information elements for UE policy part	18.1.0
2023-12	RAN#102	R5-237600	2923	1	F	Addition of test frequencies for new R16 NR CA comb within FR1	18.1.0
2023-12	RAN#102	R5-237601	2926	1	F	Addition of test frequencies for new R17 NR CA comb within FR1	18.1.0
2023-12	RAN#102	R5-237602	2928	1	F	Introduction of test frequencies for CA_n25A-n66A-n77(2A) and CA_n25A-n66A-n78(2A)	18.1.0
2023-12	RAN#102	R5-237603	2956	1	F	Introduction of test freqs for CA_n66(3A)	18.1.0
2023-12	RAN#102	R5-237604	2992	1	F	Addition of Note 5 in Table 4.4.2-1 for RRM CA Intra band scenarios	18.1.0
2023-12	RAN#102	R5-237646	2941	1	F	Addition of several EN-DC combinations to inter-band configurations table	18.1.0
2023-12	RAN#102	R5-237816	2933	1	F	Addition of useAutonomousGaps-r16 in Table 4.6.3-142	18.1.0
2023-12	RAN#102	R5-237817	2943	1	F	Update additional ENDC inter-band configurations	18.1.0
2023-12	RAN#102	R5-237818	2982	1	F	Addition of SCG activation and deactivation configuration for NR-DC	18.1.0
2023-12	RAN#102	R5-237858	2981	1	F	Addition of conditional PSCell addition configuration for NR-DC	18.1.0
2023-12	RAN#102	R5-237863	2993	1	F	Common test environment update for NR NTN RF/RRM testing	18.1.0
2023-12	RAN#102	R5-237885	2988	1	F	SMTc configuration for RRM RedCap testing	18.1.0
2023-12	RAN#102	R5-237908	2959	1	F	Introduction of Test freqs for CA_n77(2A), BCS1	18.1.0
2023-12	RAN#102	R5-237909	2961	1	F	Correction of test frequencies for CA_n48B	18.1.0
2023-12	RAN#102	R5-237939	2939	1	F	Defined frequencies for n7 and certain Release 16 CBWs	18.1.0
2024-03	RAN#103	R5-240153	3003	-	F	Correction to RRCReestablishment message	18.2.0
2024-03	RAN#103	R5-240154	3004	-	F	Correction to PEIPS in REGISTRATION ACCEPT message	18.2.0
2024-03	RAN#103	R5-240163	3005	-	F	Correction to Test procedure 4.9.27	18.2.0
2024-03	RAN#103	R5-240164	3006	-	F	Correction to Test procedure 4.9.38	18.2.0
2024-03	RAN#103	R5-240165	3007	-	F	Correction to DLInformationTransfer message	18.2.0
2024-03	RAN#103	R5-240166	3008	-	F	Correction to UEInformationRequest message	18.2.0
2024-03	RAN#103	R5-240167	3009	-	F	Editorial update of CounterCheck message	18.2.0
2024-03	RAN#103	R5-240168	3010	-	F	Correction to IE RadioLinkMonitoringConfig	18.2.0
2024-03	RAN#103	R5-240172	3014	-	F	Correction to RRCReconfiguration configuration	18.2.0
2024-03	RAN#103	R5-240233	3016	-	F	Update inter-band NR CA configuration of three bands CA_n1A-n8A-n78A	18.2.0
2024-03	RAN#103	R5-240236	3017	-	F	Correction to NR RRC_Idle generic procedure	18.2.0
2024-03	RAN#103	R5-240271	3020	-	F	Correction of errors in Annex C	18.2.0
2024-03	RAN#103	R5-240272	3021	-	F	Style correction for clause title of 4.3.1.1.1.100 and 4.3.1.1.1.101	18.2.0
2024-03	RAN#103	R5-240274	3022	-	F	Addition of test frequencies for new R16 NR CA combos within FR1	18.2.0
2024-03	RAN#103	R5-240275	3023	-	F	Addition of test frequencies for new R17 NR CA combos within FR1	18.2.0
2024-03	RAN#103	R5-240349	3027	-	F	Correction of Default parameters for simulated SNPN cells.	18.2.0
2024-03	RAN#103	R5-240378	3028	-	F	Update of conditional PSCell addition configuration for NR-DC	18.2.0
2024-03	RAN#103	R5-240444	3031	-	F	Add IndirectPathFailureInformation	18.2.0
2024-03	RAN#103	R5-240445	3032	-	F	Add MBSMulticastConfiguration	18.2.0
2024-03	RAN#103	R5-240446	3033	-	F	Add MeasurementReportAppLayer	18.2.0
2024-03	RAN#103	R5-240448	3035	-	F	Add UEPositioningAssistanceInfo	18.2.0
2024-03	RAN#103	R5-240460	3036	-	F	Introduction of test frequencies for CA_n66A-n71A-n77(2A) and CA_n66A-n71A-n78(2A)	18.2.0
2024-03	RAN#103	R5-240468	3037	-	F	Test frequencies and channel bandwidth updates for band n71 and n25 in Rel-17	18.2.0
2024-03	RAN#103	R5-240480	3040	-	F	Removal of test procedure for Out_of_Coverage_with_Relay	18.2.0
2024-03	RAN#103	R5-240482	3042	-	F	Update of 5G ProSe information elements of UE policies for 5G ProSe usage information reporting	18.2.0
2024-03	RAN#103	R5-240483	3043	-	F	Update of 5G ProSe information elements of UE policies for 5G ProSe remote	18.2.0
2024-03	RAN#103	R5-240484	3044	-	F	Addition of PROSE PC5 DISCOVERY	18.2.0
2024-03	RAN#103	R5-240489	3045	-	F	Add IEs SIB22, SIB23, SIB24 and SIB25	18.2.0
2024-03	RAN#103	R5-240491	3047	-	F	Editorial update IE PosSI-SchedulingInfo	18.2.0

2024-03	RAN#103	R5-240492	3048	-	F	Add IE AdvancedReceiver-MU-MIMO	18.2.0
2024-03	RAN#103	R5-240493	3049	-	F	Add IE Altitude	18.2.0
2024-03	RAN#103	R5-240494	3050	-	F	Add IE ATG-Config	18.2.0
2024-03	RAN#103	R5-240495	3051	-	F	Add IEs CandidateTCI-State and CandidateTCI-UL-State	18.2.0
2024-03	RAN#103	R5-240496	3052	-	F	Add IE CellDTXDRX-Config	18.2.0
2024-03	RAN#103	R5-240497	3053	-	F	Add IE ClockQualityMetrics	18.2.0
2024-03	RAN#103	R5-240499	3055	-	F	Add IE EarlyUL-SyncConfig	18.2.0
2024-03	RAN#103	R5-240500	3056	-	F	Add IE EUTRA-C-RNTI	18.2.0
2024-03	RAN#103	R5-240536	3057	-	F	Editorial updates to test procedure 4.9.1	18.2.0
2024-03	RAN#103	R5-240537	3058	-	F	Harmonization of SCell add condition	18.2.0
2024-03	RAN#103	R5-240617	3060	-	F	Added 30kHz SCS for SSB in n53 to 30kHz SCS test frequencies	18.2.0
2024-03	RAN#103	R5-240775	3068	-	F	Introduction of test frequencies for CA_n1A-n28A-n78A and CA_n3A-n28A-n78A	18.2.0
2024-03	RAN#103	R5-240856	3074	-	F	Corrections on C.1 for the parameters for calculation of test frequencies	18.2.0
2024-03	RAN#103	R5-240878	3076	-	F	Update NR inter-band CA configurations FR1 four bands table	18.2.0
2024-03	RAN#103	R5-240971	3079	-	F	Annex C update to asymmetric channel bandwidths test frequencies calculation	18.2.0
2024-03	RAN#103	R5-240989	3081	-	F	SIB2 updates for NR unlicensed test cases	18.2.0
2024-03	RAN#103	R5-241092	3084	-	F	Correction to CBW selection to avoid unintentional asymmetric CBW	18.2.0
2024-03	RAN#103	R5-241371	3096	-	F	Add IE MeasSequence	18.2.0
2024-03	RAN#103	R5-241372	3097	-	F	Add IE MeasWindowConfig	18.2.0
2024-03	RAN#103	R5-241373	3098	-	F	Add IEs N3C-IndirectPathConfigRelay and N3C-IndirectPathAddChange	18.2.0
2024-03	RAN#103	R5-241374	3099	-	F	Add IEs NCR-AperiodicFwdConfig, NCR-FwdConfig, NCR-PeriodicityAndOffset and NCR-PeriodicFwdResourceSet	18.2.0
2024-03	RAN#103	R5-241375	3100	-	F	Add IEs NCR-PeriodicFwdResourceSetId, NCR-SemiPersistentFwdResourceSet and NCR-SemiPersistentFwdResourceSetId	18.2.0
2024-03	RAN#103	R5-241480	3011	1	F	Correction to IE NRDC-Parameters	18.2.0
2024-03	RAN#103	R5-241481	3012	1	F	Correction to IE UE-MRDC-Capability	18.2.0
2024-03	RAN#103	R5-241482	3013	1	F	Correction to IE UE-NR-Capability	18.2.0
2024-03	RAN#103	R5-241483	3034	1	F	Editorial update SystemInformation	18.2.0
2024-03	RAN#103	R5-241484	3046	1	F	Editorial update IE PosSystemInformation-r16-IEs	18.2.0
2024-03	RAN#103	R5-241485	3054	1	F	Add IEs CSI-ReportSubConfig, CSI-ReportSubConfigId and CSI-ReportSubConfigTriggerList	18.2.0
2024-03	RAN#103	R5-241486	3070	1	F	Add IE HysteresisAltitude	18.2.0
2024-03	RAN#103	R5-241487	3071	1	F	Add IEs LTM-CandidateId, LTM-Candidate, LTM-Config and LTM-CSI-ReportConfig	18.2.0
2024-03	RAN#103	R5-241488	3072	1	F	Add IEs LTM-CSI-ReportConfigId, LTM-CSI-ResourceConfig and LTM-CSI-ResourceConfigId	18.2.0
2024-03	RAN#103	R5-241538	3030	1	F	Move all V2X sub-clauses from 4.7 into a new clause 4.7D	18.2.0
2024-03	RAN#103	R5-241539	3067	1	F	Correction to default configuration of frequencyInfoSL	18.2.0
2024-03	RAN#103	R5-241561	3062	1	F	Updates to Ephemeris Info for Multi-Cell NRN-NTN signalling test cases	18.2.0
2024-03	RAN#103	R5-241565	3063	1	F	Updates to SIB19 Common Config for NR-NTN test cases	18.2.0
2024-03	RAN#103	R5-241580	3105	1	F	Addition of signalling test frequencies for DC_2A_n2A and DC_66A_n66A	18.2.0
2024-03	RAN#103	R5-241597	3038	1	F	Addition of test procedure for 5G ProSe U2N Relay Discovery	18.2.0
2024-03	RAN#103	R5-241598	3039	1	F	Addition of test procedure for remote Initial Access procedure under NR sidelink U2N Relay / Remote UE side	18.2.0
2024-03	RAN#103	R5-241599	3041	1	F	Update test procedure for registration of NR sidelink U2N Relay / Relay UE side	18.2.0
2024-03	RAN#103	R5-241628	3018	1	F	Correction to NR RRC_Inactive generic procedure	18.2.0
2024-03	RAN#103	R5-241629	3104	1	F	Updates to OTA Signalling test environment	18.2.0
2024-03	RAN#103	R5-241630	3095	1	F	Test environment definition for GERAN in Conducted and OTA Environment	18.2.0
2024-03	RAN#103	R5-241703	3080	1	F	Asymmetric channel bandwidths test frequencies updates for frequency bands n5 and n8	18.2.0
2024-03	RAN#103	R5-241704	3059	1	F	RF TRx testing - P-Max configuration extension to RX tests to enable TxD	18.2.0

2024-03	RAN#103	R5-241705	3077	1	F	Addition of test frequencies for DC_2A_n2A and DC_66A_n66A	18.2.0
2024-03	RAN#103	R5-241706	3083	1	F	Correction to test frequencies for CA_n48 - 2A	18.2.0
2024-03	RAN#103	R5-241708	3078	1	F	Update additional inter-band NR CA configurations	18.2.0
2024-03	RAN#103	R5-241717	3085	1	F	Correction to point A value for n83	18.2.0
2024-03	RAN#103	R5-241718	3086	1	F	Correction to parameters for Rel-17 bands	18.2.0
2024-03	RAN#103	R5-241719	3082	1	F	Correction to SUL configuration messages	18.2.0
2024-03	RAN#103	R5-241722	3025	1	F	Update of RRC message RRCReconfigurationComplete, RRCSetupComplete and SecurityModeComplete for SL relay	18.2.0
2024-03	RAN#103	R5-241723	3026	1	F	Update of Test procedure for establishing unicast mode ProSe Direct communication	18.2.0
2024-03	RAN#103	R5-241869	3024	2	F	Updating test frequency for SUL band n83 20MHz CBW	18.2.0
2024-03	RAN#103	R5-241875	3091	1	F	Addition of missing section for RRM CA Configuration	18.2.0
2024-03	RAN#103	R5-241919	3001	1	F	Introduction of RF Test Environment for ATG	18.2.0
2024-03	RAN#103	R5-241920	3002	1	F	Introduction of RRM Test Environment for ATG	18.2.0
2024-03	RAN#103	R5-241921	3019	1	F	Correction of Notes in tables of test channel bandwidths	18.2.0
2024-03	RAN#103	R5-241926	3106	-	F	Update of abbreviations for ATG	18.2.0
2024-03	RAN#103	R5-241927	3029	1	F	Addition of test frequencies for new EN-DC comb within FR2	18.2.0
2024-03	RAN#103	R5-241928	3075	1	F	Update for additional NR-CA and NR-DC band configurations	18.2.0
2024-03	RAN#103	R5-241944	3094	1	F	Addition of test frequencies for CA n77(2A), BCS1, UL CA..	18.2.0
2024-03	RAN#103	R5-241968	3092	1	F	Update of PDSCH Config for RF test cases	18.2.0
2024-03	RAN#103	R5-242007	3093	1	F	Correction of test environment for NR NTN RF testing	18.2.0
2024-03	RAN#103	R5-242016	3101	1	F	Updates to Test environment for NR NTN RRM testing	18.2.0
2024-03	RAN#103	R5-242017	3102	1	F	Common Test environment updates for NR NTN RF, demod and RRM testing	18.2.0
2024-03	RAN#103	R5-242022	3087	1	F	Correction to message exceptions for Performance test cases	18.2.0
2024-03	RAN#103	R5-242038	3065	1	F	Correction to default configuration of SMTC for NCD-SSB	18.2.0
2024-06	RAN#104	R5-242139	3108	-	F	Correction to RRC message MobilityFromNRCommand	18.3.0
2024-06	RAN#104	R5-242140	3109	-	F	Correction to IE PDCP-Config for UDC	18.3.0
2024-06	RAN#104	R5-242141	3110	-	F	Correction to IE MeasIdleConfig for Idle/Inactive measurements	18.3.0
2024-06	RAN#104	R5-242142	3111	-	F	Correction to IE CondReconfigToAddModList	18.3.0
2024-06	RAN#104	R5-242240	3112	-	F	Addition of test frequencies for CA_n28A-n40A	18.3.0
2024-06	RAN#104	R5-242241	3113	-	F	Addition of test frequencies for CA_n3A-n28A-n41A-n77A	18.3.0
2024-06	RAN#104	R5-242321	3115	-	F	Editorial updates to specification references in clauses 4.5, 4.5A & 4.9	18.3.0
2024-06	RAN#104	R5-242322	3116	-	F	Editorial updates to specification references in clause 4.6	18.3.0
2024-06	RAN#104	R5-242323	3117	-	F	Editorial updates to REGISTRATION REQUEST message	18.3.0
2024-06	RAN#104	R5-242368	3120	-	F	Introduction of test channel bandwidths and test frequencies for band n106	18.3.0
2024-06	RAN#104	R5-242401	3123	-	F	Add IE AppLayerIdleInactiveConfig	18.3.0
2024-06	RAN#104	R5-242402	3124	-	F	Add IE EUTRA-MultiBandInfoListAerial	18.3.0
2024-06	RAN#104	R5-242405	3125	-	F	Add IE MBS-NonServingInfoList	18.3.0
2024-06	RAN#104	R5-242406	3126	-	F	Add IE MBS-SessionInfoListMulticast	18.3.0
2024-06	RAN#104	R5-242407	3127	-	F	Add IE AerialParameters	18.3.0
2024-06	RAN#104	R5-242408	3128	-	F	Add IE DL-PRS-MeasurementWithRxFH-RRC-Connected	18.3.0
2024-06	RAN#104	R5-242409	3129	-	F	Add IE ERedCapParameters	18.3.0
2024-06	RAN#104	R5-242410	3130	-	F	Add IE NCR-Parameters	18.3.0
2024-06	RAN#104	R5-242413	3133	-	F	Update IE SharedSpectrumChAccessParamsPerBand	18.3.0
2024-06	RAN#104	R5-242414	3134	-	F	Add IE SharedSpectrumChAccessParamsSidelinkPerBand	18.3.0
2024-06	RAN#104	R5-242415	3135	-	F	Add IE SupportedAggBandwidth	18.3.0
2024-06	RAN#104	R5-242450	3136	-	F	Update for additional ENDC band configurations	18.3.0
2024-06	RAN#104	R5-242460	3137	-	F	Update for additional NRCA band configurations	18.3.0
2024-06	RAN#104	R5-242515	3138	-	F	Test frequency parameters corrections for CA n48B	18.3.0
2024-06	RAN#104	R5-242534	3140	-	F	Correction of clause structure of CA test frequencies	18.3.0
2024-06	RAN#104	R5-242574	3146	-	F	Update for derivation path of test procedure 4.9.39 and 4.9.40	18.3.0
2024-06	RAN#104	R5-242590	3149	-	F	Addition of test frequencies for new EN-DC comb within FR2	18.3.0
2024-06	RAN#104	R5-242598	3150	-	F	Editorial correction for Editor Note and reference section number in 4.3.1	18.3.0
2024-06	RAN#104	R5-242601	3151	-	F	Addition of CBW 70MHz 90MHz and 100MHz for n40	18.3.0
2024-06	RAN#104	R5-242603	3152	-	F	Add IE PosSRS-BWA-RRC-Inactive	18.3.0

2024-06	RAN#104	R5-242604	3153	-	F	Add IEs PosSRS-TxFrequencyHoppingRRC-Connected and PosSRS-TxFrequencyHoppingRRC-Inactive	18.3.0
2024-06	RAN#104	R5-242650	3156	-	F	Add IE LTM-TCI-Info	18.3.0
2024-06	RAN#104	R5-242651	3157	-	F	Add IE N3C-RelayUE-Info	18.3.0
2024-06	RAN#104	R5-242652	3158	-	F	Add IE NeedForInterruptionInfoNR	18.3.0
2024-06	RAN#104	R5-242653	3159	-	F	Add IE PDU-SessionID	18.3.0
2024-06	RAN#104	R5-242654	3160	-	F	Add IE PUCCH-CSI-Resource	18.3.0
2024-06	RAN#104	R5-242655	3161	-	F	Add IE QFI	18.3.0
2024-06	RAN#104	R5-242656	3162	-	F	Add IE RACH-ConfigTwoTA	18.3.0
2024-06	RAN#104	R5-242657	3163	-	F	Add IE ReferenceConfiguration	18.3.0
2024-06	RAN#104	R5-242658	3164	-	F	Add IE SelectedPSCellForCHO-WithSCG	18.3.0
2024-06	RAN#104	R5-242659	3165	-	F	Add IE SI-RequestConfigRepetition	18.3.0
2024-06	RAN#104	R5-242660	3166	-	F	Add IEs SRS-PosTx-Hopping and SRS-PosResourceSetLinkedForAggBW	18.3.0
2024-06	RAN#104	R5-242661	3167	-	F	Add IE TN-Areaid	18.3.0
2024-06	RAN#104	R5-242708	3168	-	F	Definition of CA_n2A-n30A, CA_n5A-n30A, CA_n30A-n66A and CA_n30A-n77A applicability to protocol testing	18.3.0
2024-06	RAN#104	R5-242714	3169	-	F	Definition of DC_2A-2A_n66A, DC_66A-66A-66A_n77A, DC_66A-66A-66A_n77(2A) and DC_66A-66A_n2A applicability to protocol testing	18.3.0
2024-06	RAN#104	R5-242763	3172	-	F	Add IEs SL-BWP-DiscPoolConfig and SL-BWP-DiscPoolConfigCommon	18.3.0
2024-06	RAN#104	R5-242764	3173	-	F	Add IEs SL-BWP-PRS-PoolConfig and SL-BWP-PRS-PoolConfigCommon	18.3.0
2024-06	RAN#104	R5-242772	3175	-	F	Update channel access configurations for shared spectrum	18.3.0
2024-06	RAN#104	R5-242786	3176	-	F	Update of Channel bandwidth in Default NG-RAN RRC message and information elements contents	18.3.0
2024-06	RAN#104	R5-242799	3178	-	F	Addition of new combination of system information blocks for 5G ProSe communication	18.3.0
2024-06	RAN#104	R5-242800	3179	-	F	Editorial update of SIB12 in 4.6.2	18.3.0
2024-06	RAN#104	R5-242802	3181	-	F	Update of Table 4.6.1-22 RRCSetupComplete	18.3.0
2024-06	RAN#104	R5-242803	3182	-	F	Update of Table 4.6.1A-2A RemoteUEInformationSidelink	18.3.0
2024-06	RAN#104	R5-242805	3184	-	F	Addition of 5G ProSe discovery and security messages	18.3.0
2024-06	RAN#104	R5-242806	3185	-	F	Update of 5G ProSe direct discovery messages	18.3.0
2024-06	RAN#104	R5-242810	3189	-	F	Update of Default settings of UICC and USIM for 5G ProSe	18.3.0
2024-06	RAN#104	R5-242811	3190	-	F	Update of Test procedure for 5G ProSe U2N Relay Discovery	18.3.0
2024-06	RAN#104	R5-242858	3191	-	F	Correction to SUL n83 test frequencies in Table 4.3.1.1.1.83-1	18.3.0
2024-06	RAN#104	R5-242919	3193	-	F	Addition of TE and UE connection diagram for 3Tx NR CA and EN-DC	18.3.0
2024-06	RAN#104	R5-243008	3195	-	F	Clarification of test frequency for n5 CBW 25 MHz	18.3.0
2024-06	RAN#104	R5-243168	3200	-	F	Editorial correction of Table 4.5.4.2-4: WLAN IPsec_SA_Established	18.3.0
2024-06	RAN#104	R5-243187	3203	-	F	Add IE SL-CBR-CommonTxDedicated-SL-PRS-RP-List	18.3.0
2024-06	RAN#104	R5-243188	3204	-	F	Add IE SL-ConfiguredGrantConfigDedicated-SL-PRS-RP	18.3.0
2024-06	RAN#104	R5-243217	3206	-	F	Add IEs SL-FreqSelectionConfig and SL-IndirectPathAddChange	18.3.0
2024-06	RAN#104	R5-243286	3207	-	F	Corrections on 4.3.1 for NTN FR1 test channel bandwidth	18.3.0
2024-06	RAN#104	R5-243294	3209	-	F	Corrections on 4.3.1.4.1.2 for test frequency for DC_38A_n78A	18.3.0
2024-06	RAN#104	R5-243337	3210	-	F	Correction on Rel-17 HST conditions in ServingCellConfigCommon	18.3.0
2024-06	RAN#104	R5-243481	3212	-	F	Addition of DCI information for semi static channel access in shared spectrum	18.3.0
2024-06	RAN#104	R5-243482	3213	-	F	Common configuration change for SDT condition	18.3.0
2024-06	RAN#104	R5-243489	3148	1	F	Editorial correction for generic procedure 4.5.4, 4.5.5 and 4.5.7	18.3.0
2024-06	RAN#104	R5-243490	3154	1	F	Add IE Aerial-Config	18.3.0
2024-06	RAN#104	R5-243491	3155	1	F	Add IE EpochTime	18.3.0
2024-06	RAN#104	R5-243492	3205	1	F	Add IEs SL-DRX-Config, SL-DRX-ConfigGC-BC, SL-DRX-ConfigUC and SL-DRX-ConfigUC-SemiStatic	18.3.0
2024-06	RAN#104	R5-243493	3198	1	F	Correction to IE PDCCH-ConfigCommon	18.3.0
2024-06	RAN#104	R5-243494	3119	1	F	Introduction of signalling test frequencies for band n85	18.3.0

2024-06	RAN#104	R5-243533	3215		F	Addition of signalling test frequencies for CA_n48C and CA_n5B	18.3.0
2024-06	RAN#104	R5-243536	3174	1	F	Update of Logical Channel Config Table 4.6.3-66	18.3.0
2024-06	RAN#104	R5-243546	3216		F	Correction for test procedure 4.9.41	18.3.0
2024-06	RAN#104	R5-243547	3180	1	F	Update of Test procedure for 5G ProSe Layer-2 U2N Relay initial access / Remote UE side	18.3.0
2024-06	RAN#104	R5-243548	3183	1	F	Update of Table 4.6.1A-8 uuMessageTransferSidelink	18.3.0
2024-06	RAN#104	R5-243549	3186	1	F	Addition of Default HTTP messages for communication with the 5G ProSe	18.3.0
2024-06	RAN#104	R5-243550	3187	1	F	Addition of Default TLS message and information element contents	18.3.0
2024-06	RAN#104	R5-243551	3188	1	F	Addition of spec reference of 3GPP TS 33.310, 33.503 and IETF RFC 5246 for 5G ProSe information elements	18.3.0
2024-06	RAN#104	R5-243554	3142	1	F	Added Common test environment for NR-NTN test cases	18.3.0
2024-06	RAN#104	R5-243555	3171	1	F	Addition of system information combination for inter frequency NTN scenario	18.3.0
2024-06	RAN#104	R5-243566	3121	1	F	Signalling test frequencies for 3 MHz and band n106	18.3.0
2024-06	RAN#104	R5-243574	3144	1	F	Addition of generic procedure for UUAA-MM	18.3.0
2024-06	RAN#104	R5-243581	3197	1	F	Addition of a new section for IDC Configuration	18.3.0
2024-06	RAN#104	R5-243597	3143	1	F	Updates to SIB19 and ephemeris information for NGSO and GSO condition	18.3.0
2024-06	RAN#104	R5-243600	3196	1	F	Update inter-band NR CA configuration for CA_n3A-n8A-n78A	18.3.0
2024-06	RAN#104	R5-243601	3122	1	F	Addition of 3 MHz CBW test frequencies for NR Bands n26, n28, n85 and n100	18.3.0
2024-06	RAN#104	R5-243602	3118	1	F	Introduction of test channel bandwidths and test frequencies for band n85	18.3.0
2024-06	RAN#104	R5-243603	3177	1	F	Update of editors note for test frequencies	18.3.0
2024-06	RAN#104	R5-243604	3199	1	F	Addition of missing TRS configurations	18.3.0
2024-06	RAN#104	R5-243654	3214		F	Correction of test bandwidth for CA_n2(2A)	18.3.0
2024-06	RAN#104	R5-243750	3208	1	F	Addition to 4.3.1 for FR2 Redcap UE test channel bandwidth	18.3.0
2024-06	RAN#104	R5-243833	3194	1	F	Correction to K1 for RRM TDD SCS 15 kHz	18.3.0
2024-06	RAN#104	R5-243882	3139	1	F	Clarification of Test frequency limitations for CA in Annex C	18.3.0
2024-06	RAN#104	R5-243900	3211	1	F	Addition of connection diagram for CSI test cases for inter-cell interference scenarios	18.3.0
2024-06	RAN#104	R5-243952	3201	1	F	Common configuration for SN initiated inter-SN CPC EN-DC for 38.508-1	18.3.0
2024-09	RAN#105	R5-244094	3217	-	F	Addition of test frequencies for CA_n28A-n41A-n77A	18.4.0
2024-09	RAN#105	R5-244099	3218	-	F	Add IE SL-InterUE-CoordinationConfig	18.4.0
2024-09	RAN#105	R5-244100	3219	-	F	Add IE SL-LBT-FailureRecoveryConfig	18.4.0
2024-09	RAN#105	R5-244102	3221	-	F	Add IEs SL-PosBWP-ConfigCommon and SL-PRS-ResourcePool	18.4.0
2024-09	RAN#105	R5-244103	3222	-	F	Add IEs SL-RBSetConfig and SL-RelayIndicationMP	18.4.0
2024-09	RAN#105	R5-244104	3223	-	F	Add IEs SL-RelayUE-ConfigU2U and SL-RemoteUE-ConfigU2U	18.4.0
2024-09	RAN#105	R5-244114	3224	-	F	Add IE SL-RLC-ChannelConfig	18.4.0
2024-09	RAN#105	R5-244115	3225	-	F	Add IEs SL-ServingCellInfo and SL-SourceIdentity	18.4.0
2024-09	RAN#105	R5-244116	3226	-	F	Add IE SL-SRAP-ConfigU2U	18.4.0
2024-09	RAN#105	R5-244117	3227	-	F	Correct IE SL-DRX-ConfigGC-BC	18.4.0
2024-09	RAN#105	R5-244118	3228	-	F	Correct IE SL-AccessInfo-L2U2N	18.4.0
2024-09	RAN#105	R5-244137	3229	-	F	Add IE SIB17bis	18.4.0
2024-09	RAN#105	R5-244229	3236	-	F	Correction to RRC IE RadioBearerConfig	18.4.0
2024-09	RAN#105	R5-244231	3238	-	F	Editorial update to RRC IE BT-NameList and WLAN-NameList	18.4.0
2024-09	RAN#105	R5-244232	3239	-	F	Editorial correction to the table in cl. 6.1.3.3	18.4.0
2024-09	RAN#105	R5-244313	3242	-	F	Update IE AppLayerMeasConfig	18.4.0
2024-09	RAN#105	R5-244314	3243	-	F	Update IE MeasConfigAppLayerId	18.4.0
2024-09	RAN#105	R5-244315	3244	-	F	Update RRCReconfiguration configuration for SRB4	18.4.0
2024-09	RAN#105	R5-244326	3249	-	F	Updates for test configuration of CA_n2A-n5A-n66A	18.4.0
2024-09	RAN#105	R5-244331	3250	-	F	Updates for additional test configurations	18.4.0
2024-09	RAN#105	R5-244372	3251	-	F	Frequency related parameters corrections for n100	18.4.0
2024-09	RAN#105	R5-244379	3252	-	F	CBW clarification in case of asymmetric BW	18.4.0
2024-09	RAN#105	R5-244380	3253	-	F	Clarification on rules to calculate Low and High DL frequency in case of asymmetric UL and DL BW	18.4.0

2024-09	RAN#105	R5-244386	3254	-	F	Introduction of test channel bandwidths and test frequencies for bands n31 and n72	18.4.0
2024-09	RAN#105	R5-244388	3256	-	F	Demodulation test frequencies for bands n31 and n72	18.4.0
2024-09	RAN#105	R5-244408	3257	-	F	Correct IE CSI-ReportSubConfig	18.4.0
2024-09	RAN#105	R5-244409	3258	-	F	Update IE FeatureCombination	18.4.0
2024-09	RAN#105	R5-244410	3259	-	F	Add IE MeasurementValidityDuration	18.4.0
2024-09	RAN#105	R5-244461	3262	-	F	Correction of test frequencies for CA_n66(2A)	18.4.0
2024-09	RAN#105	R5-244462	3263	-	F	Removal of editors Note for CA_n77(2A)	18.4.0
2024-09	RAN#105	R5-244463	3264	-	F	Addition of Round in Symbols chapter	18.4.0
2024-09	RAN#105	R5-244464	3265	-	F	Addition of test frequencies for CA_n48C	18.4.0
2024-09	RAN#105	R5-244485	3266	-	F	Editorial correction to ATG RF/Demod IE values	18.4.0
2024-09	RAN#105	R5-244486	3267	-	F	Editorial correction to ATG RRM IE values	18.4.0
2024-09	RAN#105	R5-244527	3273	-	F	Add IE PDCCH-RACH-DL-Info	18.4.0
2024-09	RAN#105	R5-244540	3274	-	F	Addition of many 3 band EN-DC combos	18.4.0
2024-09	RAN#105	R5-244576	3277	-	F	Updates to default UE Policy Delivery messages	18.4.0
2024-09	RAN#105	R5-244602	3279	-	F	Correction to default configurations for MCE test cases	18.4.0
2024-09	RAN#105	R5-244648	3280	-	F	Addition of default configuration of SI-RequestConfigRepetition-r18	18.4.0
2024-09	RAN#105	R5-244693	3284	-	F	Addition of Physical layer parameters for DCI format 0_3	18.4.0
2024-09	RAN#105	R5-244694	3285	-	F	Addition of Physical layer parameters for DCI format 1_3	18.4.0
2024-09	RAN#105	R5-244696	3287	-	F	Update of PDSCH-Config for DCI format 1_3	18.4.0
2024-09	RAN#105	R5-244709	3290	-	F	Update ServingCellConfigCommonSIB DownlinkConfigCommonSIB and BWP-DownlinkCommon for MBS	18.4.0
2024-09	RAN#105	R5-244710	3291	-	F	Update PDSCH-ConfigBroadcast-r17 CFR-ConfigMCCH-MTCH and MBSBroadcastConfiguration	18.4.0
2024-09	RAN#105	R5-244711	3292	-	F	Update DCI format 4-0	18.4.0
2024-09	RAN#105	R5-244789	3297	-	F	Update IE AppLayerMeasParameters	18.4.0
2024-09	RAN#105	R5-244791	3299	-	F	Addition of DCI information for dynamic channel access in shared spectrum	18.4.0
2024-09	RAN#105	R5-244792	3300	-	F	Updated ChannelAccessConfig Table	18.4.0
2024-09	RAN#105	R5-244812	3301	-	F	Clarification of test frequency for n70 CBW 25 MHz	18.4.0
2024-09	RAN#105	R5-244902	3307	-	F	Correction of test frequency for NR band n13	18.4.0
2024-09	RAN#105	R5-244914	3308	-	F	Update inter-band NR CA configuration of three bands CA_n1A-n5A-n78	18.4.0
2024-09	RAN#105	R5-244923	3309	-	F	Updates on 4.3.1.0D for bandwidth part for 3MHz BW	18.4.0
2024-09	RAN#105	R5-244976	3312	-	F	Update of Default NG-RAN RRC message and information elements contents table 4.6.3-142 ReportConfigNR	18.4.0
2024-09	RAN#105	R5-245068	3313	-	F	Addition of test frequency for R16 Inter-band EN-DC FR1 configurations with three bands	18.4.0
2024-09	RAN#105	R5-245071	3314	-	F	Addition of test frequency for Inter-band EN-DC FR1 DC_2A-66A-66A_n2A	18.4.0
2024-09	RAN#105	R5-245215	3319	-	F	Clarification of test frequency for n8 and n71 CBW 35 MHz	18.4.0
2024-09	RAN#105	R5-245220	3320	-	F	Correction of BWP-UplinkDedicated	18.4.0
2024-09	RAN#105	R5-245313	3321	-	F	Addition of eRedCap default test channel bandwidth	18.4.0
2024-09	RAN#105	R5-245324	3322	-	F	Correction to Signalling test frequency parameters for band n106	18.4.0
2024-09	RAN#105	R5-245334	3323	-	F	Update on CSI-ReportingBand for RRM testing	18.4.0
2024-09	RAN#105	R5-245335	3324	-	F	Update on pdccch-DMRS-SCID for RRM testing	18.4.0
2024-09	RAN#105	R5-245339	3325	-	F	Update CSI-ReportConfig for PMI eTypeII test cases	18.4.0
2024-09	RAN#105	R5-245484	3326	-	F	Adding eUICC reference and update to common test UICC configuration	18.4.0
2024-09	RAN#105	R5-245490	3220	1	F	Add IEs SL-PagingIdentityRemoteUE and SL-PBPS-CPS-Config	18.4.0
2024-09	RAN#105	R5-245491	3237	1	F	Correction to RRC IE ReportConfigNR and ReportConfigNR-SL	18.4.0
2024-09	RAN#105	R5-245492	3296	1	F	Update 2 steps RACH message contents	18.4.0
2024-09	RAN#105	R5-245493	3275	1	F	Updates to default 5GMM messages	18.4.0
2024-09	RAN#105	R5-245494	3276	1	F	Updates to default 5GSM messages	18.4.0
2024-09	RAN#105	R5-245495	3231	1	F	Corrections to DNN APN configurations	18.4.0
2024-09	RAN#105	R5-245496	3272	1	F	Addition of a new cell combination for IDC Configuration	18.4.0
2024-09	RAN#105	R5-245544	3298	1	F	Addition of DCI configuration for dynamic channel access in shared spectrum	18.4.0
2024-09	RAN#105	R5-245545	3232	1	F	Addition of Paging message contents values for 3GPP MT-SDT	18.4.0

2024-09	RAN#105	R5-245546	3233	1	F	Addition of RRCRelease message contents values for 3GPP MT-SDT	18.4.0
2024-09	RAN#105	R5-245547	3234	1	F	Addition of SIB1 message contents values for 3GPP MT-SDT	18.4.0
2024-09	RAN#105	R5-245549	3281	1	F	Addition of default configuration of SI-SchedulingInfo-v1800	18.4.0
2024-09	RAN#105	R5-245550	3282	1	F	Correction of default configuration of FeatureCombinationPreambles	18.4.0
2024-09	RAN#105	R5-245556	3303	1	F	Update of RRC message for Further NR mobility enhancements	18.4.0
2024-09	RAN#105	R5-245557	3304	1	F	Addition of RRC IEs for Further NR mobility enhancements	18.4.0
2024-09	RAN#105	R5-245581	3310	1	F	Update of the content of sidelink information elements and 5G ProSe discovery messages	18.4.0
2024-09	RAN#105	R5-245582	3311	1	F	Update of Default NG-RAN RRC message and information elements contents table 4.6.3-141 ReportConfigInterRAT	18.4.0
2024-09	RAN#105	R5-245591	3240	1	F	Update MeasurementReportAppLayer message	18.4.0
2024-09	RAN#105	R5-245592	3241	1	F	Update RRCReconfiguration message	18.4.0
2024-09	RAN#105	R5-245593	3245	1	F	Add configuration for application layer measurements	18.4.0
2024-09	RAN#105	R5-245619	3255	1	F	Signalling test frequencies for bands n31 and n72	18.4.0
2024-09	RAN#105	R5-245620	3317	1	F	Signalling test frequencies for 5MHz and band n54	18.4.0
2024-09	RAN#105	R5-245621	3268	1	F	Update of ATG RRC messages and information elements	18.4.0
2024-09	RAN#105	R5-245622	3278	1	F	Update to the RRC message related to R18 MUSIM	18.4.0
2024-09	RAN#105	R5-245624	3295	1	F	Update SIB1 for adding SIB1-v1800-Ies	18.4.0
2024-09	RAN#105	R5-245630	3327	1	-	Addition of Cell DTX and DRX related IEs	18.4.0
2024-09	RAN#105	R5-245636	3286	1	F	Update of Searchspace for DCI format 1_3 and 0_3	18.4.0
2024-09	RAN#105	R5-245637	3288	1	F	Update of PUSCH-Config for DCI format 0_3	18.4.0
2024-09	RAN#105	R5-245638	3289	1	F	Update of ServingCellConfig for DCI format 1_3 and 0_3	18.4.0
2024-09	RAN#105	R5-245654	3230	1	F	Corrections to test procedure for UUA-MM	18.4.0
2024-09	RAN#105	R5-245656	3329	1	F	Allow tester to disable IMS and set Data Centric	18.4.0
2024-09	RAN#105	R5-245657	3261	2	F	Update on Test procedures for 5G ProSe Layer-2 U2N Relay initial access	18.4.0
2024-09	RAN#105	R5-245801	3269	1	F	Addition of Test frequencies for CA_n28A-n41C	18.4.0
2024-09	RAN#105	R5-245802	3270	1	F	Addition of Test frequencies for CA_n41A-n79C	18.4.0
2024-09	RAN#105	R5-245803	3246	1	F	Updates for a few section headings format and an Editors Note	18.4.0
2024-09	RAN#105	R5-245972	3247	1	F	Update for additional Rel-16 NR-CA band configurations	18.4.0
2024-09	RAN#105	R5-245973	3248	1	F	Update for additional Rel-17 NR-CA and NR-DC band configurations	18.4.0
2024-09	RAN#105	R5-245974	3316	1	F	Introduction of test channel bandwidths and test frequencies for band n54	18.4.0
2024-09	RAN#105	R5-245976	3283	1	F	Correction of notes for High Test Channel bandwidth	18.4.0
2024-09	RAN#105	R5-245993	3315	1	F	Updates to High test channel bandwidth Informative Note 1 for FR1 and FR2	18.4.0
2024-09	RAN#105	R5-246040	3306	1	F	Adding new connection diagrams for SUL operation with inter-band CA	18.4.0
2024-12	RAN#106	R5-246127	3330	-	F	Addition of test frequencies for new R16 2CC NRCA combos with n40	18.5.0
2024-12	RAN#106	R5-246128	3331	-	F	Addition of test frequencies for CA_n40A-n77A	18.5.0
2024-12	RAN#106	R5-246193	3332	-	F	Addition of test frequencies for new 3CC NRCA combos within FR1	18.5.0
2024-12	RAN#106	R5-246255	3334	-	F	Introduction of test channel bandwidths and test frequencies for band n105	18.5.0
2024-12	RAN#106	R5-246256	3335	-	F	Signalling test frequencies for band n105	18.5.0
2024-12	RAN#106	R5-246257	3336	-	F	Demodulation test frequencies for band n105	18.5.0
2024-12	RAN#106	R5-246270	3337	-	F	Editorial CR implementation correction for n100 Low test CBW	18.5.0
2024-12	RAN#106	R5-246283	3338	-	F	Correction to signalling test frequencies for bands n31 and n72	18.5.0
2024-12	RAN#106	R5-246323	3339	-	F	Update IE CandidateTCI-State	18.5.0
2024-12	RAN#106	R5-246324	3340	-	F	Update IE CandidateTCI-UL-State	18.5.0
2024-12	RAN#106	R5-246325	3341	-	F	Update IE EarlyUL-SyncConfig	18.5.0
2024-12	RAN#106	R5-246326	3342	-	F	Update IE LTM-TCI-Info	18.5.0
2024-12	RAN#106	R5-246364	3345	-	F	Correction to RRC IE RadioBearerConfig	18.5.0
2024-12	RAN#106	R5-246365	3346	-	F	Correction to RRC IE UE-CapabilityRequestFilterNR	18.5.0
2024-12	RAN#106	R5-246400	3347	-	F	Corrections to PDCCH-Config	18.5.0
2024-12	RAN#106	R5-246403	3348	-	F	Updates to test procedure 4.9.44 for UUA-MM	18.5.0

2024-12	RAN#106	R5-246467	3351	-	F	CR 38.508-1 Definition of many NR CA combos with 2 bands and 3 bands	18.5.0
2024-12	RAN#106	R5-246482	3353	-	F	Update test procedure 4.9.15	18.5.0
2024-12	RAN#106	R5-246483	3354	-	F	Update test procedure 4.9.16	18.5.0
2024-12	RAN#106	R5-246505	3356	-	F	Introduction of Setup Diagrams for V2X receiver test cases	18.5.0
2024-12	RAN#106	R5-246580	3358	-	F	Correction of ServingCellConfig	18.5.0
2024-12	RAN#106	R5-246591	3359	-	F	Correction of PDSCH-ConfigBroadcast-r17	18.5.0
2024-12	RAN#106	R5-246592	3360	-	F	Correction of DCI format 4-0 for MBS broadcast	18.5.0
2024-12	RAN#106	R5-246597	3361	-	F	Update SIG default test frequencies for eRedCap UE	18.5.0
2024-12	RAN#106	R5-246598	3362	-	F	Update PDCP-Config and RLC-Config for eRedCap UE	18.5.0
2024-12	RAN#106	R5-246599	3363	-	F	Update SIB4 for eRedCap UE	18.5.0
2024-12	RAN#106	R5-246600	3364	-	F	Update common test environment for eRedCap UE	18.5.0
2024-12	RAN#106	R5-246631	3365	-	F	Update NTN satellite information clause 6.3.4	18.5.0
2024-12	RAN#106	R5-246740	3370	-	F	Correction to test procedure 4.9.22 - Unicast link establishment	18.5.0
2024-12	RAN#106	R5-246756	3371	-	F	Correction to default configuration of FeatureCombination	18.5.0
2024-12	RAN#106	R5-246757	3372	-	F	Correction to default configuration of SI-RequestConfig	18.5.0
2024-12	RAN#106	R5-246785	3374	-	F	Addition of many 3 band EN-DC combos	18.5.0
2024-12	RAN#106	R5-246894	3377	-	F	Update of Table 4.6.1-13 RRCReconfiguration for Sidelink relay	18.5.0
2024-12	RAN#106	R5-246964	3381	-	F	Correction of mistakes in C.2.6.1 and C.2.6.3	18.5.0
2024-12	RAN#106	R5-247001	3382	-	F	Correction to PTRS configuration for FR2 PDSCH testing	18.5.0
2024-12	RAN#106	R5-247025	3383	-	F	Adding new connection diagrams for UE supporting 8Rx	18.5.0
2024-12	RAN#106	R5-247042	3384	-	F	Addition of test frequencies for CA_n79C	18.5.0
2024-12	RAN#106	R5-247043	3385	-	F	Addition of test frequencies for 5 MHz BW for n41	18.5.0
2024-12	RAN#106	R5-247044	3386	-	F	Correction of test frequencies for CA_n77(2A)	18.5.0
2024-12	RAN#106	R5-247171	3388	-	F	Correction to pdccch-DMRS-ScramblingID	18.5.0
2024-12	RAN#106	R5-247199	3390	-	F	Update of Table 4.9.39.3-7 and Table 4.9.40.3-5 for test procedure for establishing unicast mode ProSe Direct communication	18.5.0
2024-12	RAN#106	R5-247202	3393	-	F	Update of Tables for SL L2 U2N Relay UE and Remote UE	18.5.0
2024-12	RAN#106	R5-247214	3394	-	F	Addition of NR CA and DC configurations for shared spectrum	18.5.0
2024-12	RAN#106	R5-247215	3395	-	F	Addition of channel bandwidths for interband CA test cases	18.5.0
2024-12	RAN#106	R5-247247	3397	-	F	Introduction of test channel bandwidths and test frequencies for band n8, n39, n98 and n109	18.5.0
2024-12	RAN#106	R5-247248	3398	-	F	Introduction of test channel bandwidths and test frequencies for Demodulation test cases for band n109	18.5.0
2024-12	RAN#106	R5-247334	3402	-	F	Addition of connection diagram for antenna configuration 4x1	18.5.0
2024-12	RAN#106	R5-247345	3403	-	F	Update on message content for PMI reporting test cases	18.5.0
2024-12	RAN#106	R5-247346	3404	-	F	Updates on message content for FR2 CQI and RI test cases	18.5.0
2024-12	RAN#106	R5-247371	3405	-	F	Addition of test frequency for CA_n1A-n5A	18.5.0
2024-12	RAN#106	R5-247380	3406	-	F	Addition of test frequency for CA_n5A-n78A	18.5.0
2024-12	RAN#106	R5-247388	3407	-	F	Update inter-band NR CA configuration of three bands CA_n3A-n5A-n78	18.5.0
2024-12	RAN#106	R5-247580	3378	1	F	Addition of Table 4.6.1A-2B NotificationMessageSidelink	18.5.0
2024-12	RAN#106	R5-247581	3379	1	F	Update of the content of sidelink information elements and Pre-configuration for Sidelink	18.5.0
2024-12	RAN#106	R5-247582	3391	1	F	Update of 4.9.41 Test procedure for 5G ProSe Layer-2 U2N Relay initial access / Relay UE side	18.5.0
2024-12	RAN#106	R5-247583	3392	1	F	Update of 4.9.42 Test procedure for 5G ProSe Layer-2 U2N Relay initial access / Remote UE side	18.5.0
2024-12	RAN#106	R5-247598	3375	1	F	SIB19 Updates related to NR NTN-Rel18	18.5.0
2024-12	RAN#106	R5-247614	3399	1	F	Introduction of test channel bandwidths and test frequencies for signalling testing for band n98 and n109	18.5.0
2024-12	RAN#106	R5-247615	3401	1	F	Introduction of test channel bandwidths and test frequencies for signalling test for band n254	18.5.0
2024-12	RAN#106	R5-247629	3344	1	F	Updates to RRC message and IEs for Further NR mobility enhancements	18.5.0
2024-12	RAN#106	R5-247630	3387	1	F	Addition of RRC IEs for Further measurement gap enhancements	18.5.0
2024-12	RAN#106	R5-247663	3350	1	F	Correction to Clause 4.9.6 test procedures for Switch off / Power off UE	18.5.0
2024-12	RAN#106	R5-247672	3376	1	F	SIB25 Updates related to NR NTN-Rel18	18.5.0
2024-12	RAN#106	R5-247678	3366	1	F	Addition of SIG Test frequencies for CA_n79C	18.5.0

2024-12	RAN#106	R5-247700	3352	1	F	Updates for Release 17 part of test configuration CA_n2A-n5A-n66A-n77C	18.5.0
2024-12	RAN#106	R5-247701	3355	1	F	Updates for Release 18 part of test configuration CA_n2A-n5A-n66A-n77C	18.5.0
2024-12	RAN#106	R5-247702	3367	1	F	Update Low Test Channel Bandwidth for band n41	18.5.0
2024-12	RAN#106	R5-247703	3368	1	F	Correction to default configuration of PDSCH-Config for SDR test	18.5.0
2024-12	RAN#106	R5-247704	3373	1	F	Addition of EN-DC combo DC_2A-5A_n66A	18.5.0
2024-12	RAN#106	R5-247783	3400	1	F	Introduction of test channel bandwidths and test frequencies for band n254	18.5.0
2024-12	RAN#106	R5-247922	3380	1	F	Correction to default message contents for Demod tests	18.5.0
2024-12	RAN#106	R5-247997	3369	1	F	Correction to default configuration of 2-step RACH related message contents for RRM TCs	18.5.0
2025-03	RAN#107	R5-250041	3408	-	F	Add IE AdditionalPCIIndex	18.6.0
2025-03	RAN#107	R5-250079	3411	-	F	Update to EarlyUL-SyncConfig-r18 for Further NR mobility enhancements	18.6.0
2025-03	RAN#107	R5-250121	3413	-	F	Addition of test CBW for band n104	18.6.0
2025-03	RAN#107	R5-250123	3414	-	F	Addition of Test frequencies for CA_n41C-n79C	18.6.0
2025-03	RAN#107	R5-250180	3416	-	F	Update test procedure 4.9.24	18.6.0
2025-03	RAN#107	R5-250183	3417	-	F	Update test procedure 4.9.26	18.6.0
2025-03	RAN#107	R5-250225	3418	-	F	Addition of test frequencies for new 4CC NRCA combo within FR1	18.6.0
2025-03	RAN#107	R5-250241	3420	-	F	Adding demodulation test frequencies for bands n13 and n85	18.6.0
2025-03	RAN#107	R5-250273	3422	-	F	Addition of several NR CA combination to inter-band configurations table	18.6.0
2025-03	RAN#107	R5-250313	3424	-	F	Correction of clause 4.9.12B	18.6.0
2025-03	RAN#107	R5-250314	3425	-	F	Corrections of clauses 4.9.11 and 4.9.12	18.6.0
2025-03	RAN#107	R5-250315	3426	-	F	Updates to clause 4.5.1	18.6.0
2025-03	RAN#107	R5-250316	3427	-	F	Interpretation of UL RRC IE presence and values	18.6.0
2025-03	RAN#107	R5-250318	3429	-	F	Correction of RRCReconfiguration-SRB2-SRB4-DRB(n, m)	18.6.0
2025-03	RAN#107	R5-250401	3430	-	F	Addition of signalling parameters for spectrum less than 5MHz for FR1	18.6.0
2025-03	RAN#107	R5-250446	3431	-	F	Support of MCX	18.6.0
2025-03	RAN#107	R5-250453	3433	-	F	Addition of test frequencies for interband CA test cases	18.6.0
2025-03	RAN#107	R5-250584	3434	-	F	Correction of Scheduling for combination NR-22	18.6.0
2025-03	RAN#107	R5-250628	3436	-	F	Addition of referenced specification for extreme conditions in the References section	18.6.0
2025-03	RAN#107	R5-250635	3438	-	F	Addition of test frequencies for n48(2A), BCS1	18.6.0
2025-03	RAN#107	R5-250756	3442	-	F	Inclination correction in orbital format GSO ephemeris files	18.6.0
2025-03	RAN#107	R5-250970	3444	-	F	Update of Tables for Uu-RelayRLC-ChannelID and SL-RLC-ChannelID	18.6.0
2025-03	RAN#107	R5-250979	3446	-	F	Update of Table 4.6.6-7 SL-ConfigDedicatedNR	18.6.0
2025-03	RAN#107	R5-251024	3447	-	F	Editorial correction to clause 4.5B.4	18.6.0
2025-03	RAN#107	R5-251031	3448	-	F	Correction to test procedure 4.9.27	18.6.0
2025-03	RAN#107	R5-251033	3449	-	F	Corrections to reference radio configurations in clause 4.8.1	18.6.0
2025-03	RAN#107	R5-251255	3409	1	F	Update IE CandidateTCI-State	18.6.0
2025-03	RAN#107	R5-251256	3410	1	F	Update IE LTM-TCI-Info	18.6.0
2025-03	RAN#107	R5-251257	3428	1	F	Interpretation of UL NAS IE presence and values	18.6.0
2025-03	RAN#107	R5-251288	3451	-	F	Update SIG default test frequencies for band n106	18.6.0
2025-03	RAN#107	R5-251307	3445	1	F	Addition of test procedure for 5G ProSe Layer-2 U2N Relay / Remote UE RRC Reestablishment / Remote UE side	18.6.0
2025-03	RAN#107	R5-251368	3435	1	F	Addition of default parameters for DSR testcases to common specification.	18.6.0
2025-03	RAN#107	R5-251375	3412	1	F	Correction to Generic procedure 4.5.2.2-2	18.6.0
2025-03	RAN#107	R5-251500	3439	1	F	Addition of test frequencies for CA_n78(2A), UL CA, BCS 0,1,2	18.6.0
2025-03	RAN#107	R5-251501	3419	1	F	Adding NR CA_n78A-n258A test frequencies to NR CA Capability table	18.6.0
2025-03	RAN#107	R5-251502	3437	1	F	Addition of test frequencies for CA_n77(2A), BCS 4,5	18.6.0
2025-03	RAN#107	R5-251674	3423	1	F	Test frequency corrections for 3MHz CBW	18.6.0
2025-03	RAN#107	R5-251686	3441	1	F	Addition of test frequencies for new NR CA comb within FR1	18.6.0
2025-06	RAN#108	R5-251927	3453	-	F	Add configuration for speech and RTT	18.7.0
2025-06	RAN#108	R5-252064	3456	-	F	Correction of reference in Ephemeris Information clauses	18.7.0
2025-06	RAN#108	R5-252088	3458	-	F	Addition of test frequency for demod testing for n104	18.7.0
2025-06	RAN#108	R5-252166	3463	-	F	Correction to DNN/APN configurations	18.7.0

2025-06	RAN#108	R5-252227	3464	-	F	Editorial correction of Table 4.8.2.2-9	18.7.0
2025-06	RAN#108	R5-252232	3465	-	F	Addition of several 3 band NR CA combination to inter-band configurations table	18.7.0
2025-06	RAN#108	R5-252252	3466	-	F	Addition of test frequencies for CA_n28A-n78A-n79A	18.7.0
2025-06	RAN#108	R5-252291	3467	-	F	Addition of support for QoS signalling for Real-time text	18.7.0
2025-06	RAN#108	R5-252304	3468	-	F	Addition of DCI 2-9 condition to Search Space configuration	18.7.0
2025-06	RAN#108	R5-252353	3471	-	F	Correction of test frequencies for Bands n31 and n72	18.7.0
2025-06	RAN#108	R5-252454	3475	-	F	Update test procedure for IMS MO call release in 5GC - release IMS data channel	18.7.0
2025-06	RAN#108	R5-252455	3476	-	F	Update test procedure for IMS MT call release in 5GC - release IMS data channel	18.7.0
2025-06	RAN#108	R5-252472	3477	-	F	Correction of test procedure for adding video to a speech call in 5GC	18.7.0
2025-06	RAN#108	R5-252513	3480	-	F	Correction to nrofHARQProcessesForPDSCH for NTN testing	18.7.0
2025-06	RAN#108	R5-252522	3481	-	F	Update of 4.9.41 Test procedure for 5G ProSe Layer-2 U2N Relay initial access / Relay UE side	18.7.0
2025-06	RAN#108	R5-252523	3482	-	F	Update of 4.9.42 Test procedure for 5G ProSe Layer-2 U2N Relay initial access / Remote UE side	18.7.0
2025-06	RAN#108	R5-252524	3483	-	F	Update of Table 4.6.1-21 RRCSetup for SL relay	18.7.0
2025-06	RAN#108	R5-252526	3485	-	F	Update of RRCReconfiguration for SL relay	18.7.0
2025-06	RAN#108	R5-252528	3487	-	F	Update of CellGroupConfig and Uu-RelayRLC-ChannelConfig for SL relay	18.7.0
2025-06	RAN#108	R5-252529	3488	-	F	Update of SL-L2RemoteUE-Config	18.7.0
2025-06	RAN#108	R5-252530	3489	-	F	Update of SL-SRAP-Config for SL relay	18.7.0
2025-06	RAN#108	R5-252584	3501	-	F	Addition of frequencies for missing BW combination, CA_n79C	18.7.0
2025-06	RAN#108	R5-252714	3505	-	F	Correction to default configurations for 2-step RACH RRM test cases	18.7.0
2025-06	RAN#108	R5-252717	3506	-	F	Addition of connecting diagram for Tx switching test cases	18.7.0
2025-06	RAN#108	R5-252734	3507	-	F	Addition of default configurations of DCI formats for dynamic waveform switching SIG test cases	18.7.0
2025-06	RAN#108	R5-252832	3509	-	F	Editorial correction of typo for Ephemeris NR NTN RRM UL timing accuracy test cases	18.7.0
2025-06	RAN#108	R5-252875	3510	-	F	Add IE CSI-ReportPeriodicityAndOffset	18.7.0
2025-06	RAN#108	R5-252964	3514	-	F	Update for SIB19 RRM parameter table	18.7.0
2025-06	RAN#108	R5-253042	3517	-	F	Correct the test frequencies for NR FR1 bands configuring a BWP without CORESET0	18.7.0
2025-06	RAN#108	R5-253065	3462	1	F	Correction to Table 4.7.2-1	18.7.0
2025-06	RAN#108	R5-253066	3499	1	F	Correction to UE-CapabilityRequestFilterCommon for NR-DC	18.7.0
2025-06	RAN#108	R5-253067	3454	1	F	Add generic test procedure IMS Emergency call and RTT	18.7.0
2025-06	RAN#108	R5-253069	3469	1	F	Add generic test procedure for removing RTT from an ongoing call in 5GC	18.7.0
2025-06	RAN#108	R5-253070	3457	1	F	Addition of test frequency for protocol testing for n104	18.7.0
2025-06	RAN#108	R5-253071	3498	1	F	Correction to signalling test frequency for CA_n77(2A)	18.7.0
2025-06	RAN#108	R5-253084	3470	1	F	Correction to sections 4.5B.3, 4.4.3.1.2 and 4.4.3.1.3	18.7.0
2025-06	RAN#108	R5-253085	3478	1	F	Update 4.5C UE position requirements for NTN testing	18.7.0
2025-06	RAN#108	R5-253086	3503	1	F	Correction to clause 4.6.3	18.7.0
2025-06	RAN#108	R5-253102	3484	1	F	Update of SL-ConfigDedicatedNR and SL-RLC-ChannelConfig for SL relay	18.7.0
2025-06	RAN#108	R5-253103	3486	1	F	Update of RRCReconfigurationSidelink and SL-RLC-ChannelConfigPC5 for SL relay	18.7.0
2025-06	RAN#108	R5-253104	3490	1	F	Update of LogicalChannelIdentity, Uu-RelayRLC-ChannelID and SL-RLC-ChannelID for SL relay	18.7.0
2025-06	RAN#108	R5-253107	3452	1	F	Add generic test procedure add RTT to speech call	18.7.0
2025-06	RAN#108	R5-253130	3474	1	F	Add test procedure for IMS bootstrap data channel establishment in 5GC	18.7.0
2025-06	RAN#108	R5-253134	3516	1	F	Addition of common configuration for ATG UE	18.7.0
2025-06	RAN#108	R5-253201	3473	1	F	Add Qos flow configuration for IMS data channel	18.7.0
2025-06	RAN#108	R5-253402	3500	1	F	Correction of frequencies for CA_n78B	18.7.0
2025-06	RAN#108	R5-253407	3479	1	F	Message exception for 4Tx UL MIMO	18.7.0
2025-06	RAN#108	R5-253411	3502	1	F	Addition of test frequencies for n104	18.7.0
2025-06	RAN#108	R5-253412	3459	1	F	Editorial Correction to test frequency of CA_n79C	18.7.0
2025-06	RAN#108	R5-253436	3461	1	F	Addition of RRC IE for R18 coverage enhancement	18.7.0

2025-06	RAN#108	R5-253640	3504	1	F	Addition of connecting diagram for 4Tx UL MIMO and 4Tx TxD test cases	18.7.0
2025-06	RAN#108	R5-252102	3460	-	F	Update to test frequency for n28 PC2 40MHz	19.0.0
2025-09	RAN#109	R5-253776	3519	-	F	Editorial corrections to the EN in clause 4.3.1.1.3	19.1.0
2025-09	RAN#109	R5-253777	3520	-	F	Addition of test frequencies for R16 EN-DC combos within FR1	19.1.0
2025-09	RAN#109	R5-253789	3521	-	F	Addition of test frequencies for R15 EN-DC combos within FR1	19.1.0
2025-09	RAN#109	R5-253892	3524	-	F	Update to test frequency for CA_n40A-n41A	19.1.0
2025-09	RAN#109	R5-253961	3525	-	F	Correction of test frequencies for Band n254	19.1.0
2025-09	RAN#109	R5-253984	3526	-	F	Corrections for SIP registration	19.1.0
2025-09	RAN#109	R5-253985	3527	-	F	Corrections to clause 4.4A Test states	19.1.0
2025-09	RAN#109	R5-254022	3528	-	F	Update of UE position requirements for ATG testing	19.1.0
2025-09	RAN#109	R5-254023	3529	-	F	Corrections to ATG related system information combination	19.1.0
2025-09	RAN#109	R5-254088	3533	-	F	Signalling test frequencies for band n110	19.1.0
2025-09	RAN#109	R5-254104	3535	-	F	Update USIM configuration	19.1.0
2025-09	RAN#109	R5-254144	3536	-	F	Correction to PLMN-IdentityInfoList	19.1.0
2025-09	RAN#109	R5-254146	3537	-	F	Correction to DownlinkConfigCommonSIB	19.1.0
2025-09	RAN#109	R5-254162	3539	-	F	Updates to NR NTN related default message contents	19.1.0
2025-09	RAN#109	R5-254202	3540	-	F	Implementation of RRM NR Intra-band Contiguous CA procedure in FR2	19.1.0
2025-09	RAN#109	R5-254205	3541	-	F	Addition of RRM NR Intra-band Contiguous CA configurations in FR2	19.1.0
2025-09	RAN#109	R5-254210	3544	-	F	Modification of the references for the RRM FR2 intra-band contiguous tables	19.1.0
2025-09	RAN#109	R5-254257	3545	-	F	Correction to Demod test frequencies for band n31 and n72	19.1.0
2025-09	RAN#109	R5-254258	3546	-	F	Correction to Demod test frequencies for band n30	19.1.0
2025-09	RAN#109	R5-254262	3548	-	F	Addition of SIG test frequencies to verify protocol aspects of flexible Tx-Rx separation for NR NTN bands n255 and n256	19.1.0
2025-09	RAN#109	R5-254311	3551	-	F	Updates on test freq for R16 EN-DC configuration with more than three bands	19.1.0
2025-09	RAN#109	R5-254312	3552	-	F	Updates on test freq for R17 EN-DC configuration with more than three bands	19.1.0
2025-09	RAN#109	R5-254313	3553	-	F	Updates on test freq for R18 EN-DC configuration with more than three bands	19.1.0
2025-09	RAN#109	R5-254314	3554	-	F	Updates on test freq for R15 EN-DC configuration with more than three bands	19.1.0
2025-09	RAN#109	R5-254326	3555	-	F	Addition of test freq for EN-DC configuration DC_1A-41A_n78A	19.1.0
2025-09	RAN#109	R5-254373	3557	-	F	Correction of test frequencies for Band n99	19.1.0
2025-09	RAN#109	R5-254374	3558	-	F	Correction of test frequencies for Band n29	19.1.0
2025-09	RAN#109	R5-254375	3559	-	F	Correction of test frequencies for Band n75 and n76	19.1.0
2025-09	RAN#109	R5-254377	3560	-	F	Update of scheduling request for NTN RF test cases	19.1.0
2025-09	RAN#109	R5-254397	3561	-	F	Update to CSI-ReportPeriodicityAndOffset	19.1.0
2025-09	RAN#109	R5-254462	3564	-	F	Update of SSB configuration for mTRP RRM test cases	19.1.0
2025-09	RAN#109	R5-254508	3570	-	F	Correction to USIM configuration 23	19.1.0
2025-09	RAN#109	R5-254529	3571	-	F	Addition of test frequencies for Rel16 NR CA configurations	19.1.0
2025-09	RAN#109	R5-254531	3573	-	F	Addition of test frequencies for Rel18 NR CA configurations	19.1.0
2025-09	RAN#109	R5-254562	3576	-	F	Updating default configuration of RRC IEs for 2-step RACH RRM test cases	19.1.0
2025-09	RAN#109	R5-254595	3582	-	F	Update of Tables related to SL DRX configuration	19.1.0
2025-09	RAN#109	R5-254604	3584	-	F	Addition of USIM Configurations for 5G ProSe	19.1.0
2025-09	RAN#109	R5-254605	3585	-	F	Update of 38.508-1 table 4.7C.1.5-11	19.1.0
2025-09	RAN#109	R5-254615	3587	-	F	Adding test frequencies for CA configurations including band n71	19.1.0
2025-09	RAN#109	R5-254736	3589	-	F	Definition of UL Mid CBW for n8	19.1.0
2025-09	RAN#109	R5-254737	3590	-	F	Correction to test frequencies of n105	19.1.0
2025-09	RAN#109	R5-254738	3591	-	F	Update of test frequencies for intra-band non-contiguous EN-DC in demod test cases	19.1.0
2025-09	RAN#109	R5-254793	3593	-	F	Adding test frequencies for several EN-DC configurations including band n40	19.1.0
2025-09	RAN#109	R5-254798	3594	-	F	Adding test frequencies for CA and EN-DC configurations	19.1.0
2025-09	RAN#109	R5-254846	3595	-	F	Correction to SIB19 configuration for NR-NTN test cases	19.1.0
2025-09	RAN#109	R5-254943	3550	1	F	Addition of new System information config for NTN-TN scenarios	19.1.0

2025-09	RAN#109	R5-254952	3578	1	F	Update of Table 4.6.1A-3 RRCReconfigurationSidelink	19.1.0
2025-09	RAN#109	R5-254953	3579	1	F	Addition of contents of PC5 RRC UEAssistanceInformationSidelink message	19.1.0
2025-09	RAN#109	R5-254954	3580	1	F	Update of Table 4.6.2-14A SIB12-IEs	19.1.0
2025-09	RAN#109	R5-254955	3581	1	F	Update of Table 4.6.6-7 SL-ConfigDedicatedNR	19.1.0
2025-09	RAN#109	R5-254958	3599	-	F	Introduction of SOR-SNPN-SI-LS IE for Rel-18 eNPN test cases	19.1.0
2025-09	RAN#109	R5-254988	3530	1	F	Update to the IE ReferenceLocation	19.1.0
2025-09	RAN#109	R5-254993	3518	1	F	Update to default SIB4 message for NR channel BW less than 5MHz for FR1	19.1.0
2025-09	RAN#109	R5-255007	3522	1	F	Addition of SIB23 and related scheduling information for SLPP test cases	19.1.0
2025-09	RAN#109	R5-255008	3523	1	F	Addition of default SL-PRS resource pool configuration	19.1.0
2025-09	RAN#109	R5-255034	3531	1	F	Update to RRC IEs for Further NR mobility enhancements	19.1.0
2025-09	RAN#109	R5-255039	3586	1	F	Update of RRC messages for MBS Multicast reception in RRC_INACTIVE	19.1.0
2025-09	RAN#109	R5-255040	3549	1	F	Common configuration updates related to UAV	19.1.0
2025-09	RAN#109	R5-255066	3577	1	F	DCI format updates for SSSG switching	19.1.0
2025-09	RAN#109	R5-255097	3596	1	F	update to NR-NTN specific common clause	19.1.0
2025-09	RAN#109	R5-255202	3566	1	F	Addition of test frequency for Rel-16 n71 related EN-DC configurations	19.1.0
2025-09	RAN#109	R5-255203	3563	1	F	Addition of test frequencies for new three bands NR CA and new four bands NRCA combos within FR1	19.1.0
2025-09	RAN#109	R5-255204	3572	1	F	Addition of test frequencies for Rel17 NR CA configurations	19.1.0
2025-09	RAN#109	R5-255205	3567	1	F	Addition of test frequency for Rel-18 CA_8A-n77A	19.1.0
2025-09	RAN#109	R5-255206	3568	1	F	Addition of test frequency for Rel-19 NR CA and EN-DC configurations	19.1.0
2025-09	RAN#109	R5-255207	3588	1	F	Addition of connecting diagram for Tx switching test cases	19.1.0
2025-09	RAN#109	R5-255208	3565	1	F	Update of Test Equipment diagrams for 2Tx tests	19.1.0
2025-09	RAN#109	R5-255209	3538	1	F	Correction of p-max for FR2 default message contents	19.1.0
2025-09	RAN#109	R5-255242	3598		F	Update of Annex C for valid CORESET 0	19.1.0
2025-09	RAN#109	R5-255294	3547	1	F	Corrections to default RF test frequencies for n256 and addition of RF test frequencies to verify RF aspects of variable Tx-Rx spacing for NR NTN bands n255 and n256	19.1.0
2025-09	RAN#109	R5-255358	3592	1	F	Adding test frequencies for V2X intra-band concurrent operation	19.1.0
2025-09	RAN#109	R5-255372	3532	1	F	Introduction of test channel bandwidths and test frequencies for band n110	19.1.0
2025-09	RAN#109	R5-255373	3534	1	F	Demodulation test frequencies for band n110	19.1.0
2025-09	RAN#109	R5-255421	3562	2	F	Addition of test frequencies for CA_n3A_n28A-n77(2A) within FR1	19.1.0
2025-10	RAN#109	R5-254146	3537	-	F	Correction of implementation mistake	19.1.1
2025-12	RAN#110	R5-255607	3603	-	F	Introduction of test channel bandwidths and test frequencies for bands n87 and n88	19.2.0
2025-12	RAN#110	R5-255608	3604	-	F	Signalling test frequencies for bands n87 and n88	19.2.0
2025-12	RAN#110	R5-255609	3605	-	F	Demodulation test frequencies for bands n87 and n88	19.2.0
2025-12	RAN#110	R5-255620	3606	-	F	Correction of UL test frequencies and CBWs for n71	19.2.0
2025-12	RAN#110	R5-255745	3613	-	F	Test frequencies calculations clarifications for asymmetric CBW configuration in TDD bands	19.2.0
2025-12	RAN#110	R5-255896	3633	-	F	Updates to Radio resource control information elements for Aerial Ues	19.2.0
2025-12	RAN#110	R5-255920	3635	-	F	Addition of combination of system information blocks for MBS Multicast reception in RRC_INACTIVE	19.2.0
2025-12	RAN#110	R5-255922	3637	-	F	Update of MBS information elements for MBS Broadcast	19.2.0
2025-12	RAN#110	R5-255943	3638	-	F	Correction to 5GSM message PDU SESSION ESTABLISHMENT ACCEPT	19.2.0
2025-12	RAN#110	R5-255968	3645	-	F	Correction to 38.508-1 cl 4.8.2.3 (Reference QoS flow descriptions)	19.2.0
2025-12	RAN#110	R5-256003	3649	-	F	Updates for additional Rel-19 band configurations	19.2.0
2025-12	RAN#110	R5-256053	3650	-	F	Update to Test environments for ATG TCs	19.2.0
2025-12	RAN#110	R5-256127	3653	-	F	Corrections to NR inter-band CA configurations in FR1 (four bands)	19.2.0
2025-12	RAN#110	R5-256375	3667	-	F	Adding test frequency for CA_n78C BCS1	19.2.0
2025-12	RAN#110	R5-256381	3669	-	F	Adding test frequency for band n79 with 30, 70 and 90MHz channel bandwidth	19.2.0

2025-12	RAN#110	R5-256477	3672	-	F	Correction to RedCap high test channel bandwidth for n38 in Table 4.3.1.0C-1	19.2.0
2025-12	RAN#110	R5-256606	3616	1	F	Update to Test loop mode for ATSSS	19.2.0
2025-12	RAN#110	R5-256609	3644	1	F	Correction to 38.508-1 cl 4.9.46 (Adding RTT to a speech call in 5GC)	19.2.0
2025-12	RAN#110	R5-256610	3607	1	F	Add IE SIB26	19.2.0
2025-12	RAN#110	R5-256611	3608	1	F	Add IE SIB27	19.2.0
2025-12	RAN#110	R5-256612	3614	1	F	Add IEs ApplicabilitySetConfigId and ApplicabilityReportList	19.2.0
2025-12	RAN#110	R5-256613	3615	1	F	Add IE AssociatedId	19.2.0
2025-12	RAN#110	R5-256614	3618	1	F	Add IEs Cho-WithCandidateSCGInfo, CLI-RSSI-MeasResource and CLI-RSSI-MeasResourceId	19.2.0
2025-12	RAN#110	R5-256615	3619	1	F	Add IEs CLI-RSSI-MeasResourceSet and CLI-RSSI-MeasResourceSetId	19.2.0
2025-12	RAN#110	R5-256616	3620	1	F	Add IEs CSI-LoggedMeasurementConfig and CSI-LoggedMeasurementConfigId	19.2.0
2025-12	RAN#110	R5-256617	3621	1	F	Add IE DataCollectionCandidateConfigId	19.2.0
2025-12	RAN#110	R5-256618	3623	1	F	Add IE GapOccasionRatio	19.2.0
2025-12	RAN#110	R5-256619	3624	1	F	Add IE LTM-ConfigNRDC	19.2.0
2025-12	RAN#110	R5-256620	3625	1	F	Add IE LTM-ExecutionConditionList	19.2.0
2025-12	RAN#110	R5-256621	3626	1	F	Add IE MeasTriggerQuantity	19.2.0
2025-12	RAN#110	R5-256622	3627	1	F	Add IE MeasTriggerQuantityOffset	19.2.0
2025-12	RAN#110	R5-256623	3628	1	F	Add IE OD-SSB-Config	19.2.0
2025-12	RAN#110	R5-256624	3629	1	F	Add IE PUSCH-MutingResources	19.2.0
2025-12	RAN#110	R5-256625	3630	1	F	Add IE RandomAccessAdaptConfig	19.2.0
2025-12	RAN#110	R5-256626	3631	1	F	Add IE SK-CounterConfigLTM	19.2.0
2025-12	RAN#110	R5-256627	3632	1	F	Add IEs SRS-RSRP-MeasResource and SRS-RSRP-MeasResourceId	19.2.0
2025-12	RAN#110	R5-256628	3639	1	F	Add IEs SRS-RSRP-MeasResourceSet and SRS-RSRP-MeasResourceSetId	19.2.0
2025-12	RAN#110	R5-256629	3640	1	F	Correct IE T-Reselection	19.2.0
2025-12	RAN#110	R5-256630	3641	1	F	Add IEs ThresholdP-LR and ThresholdQ-LR	19.2.0
2025-12	RAN#110	R5-256631	3642	1	F	Correct IE TrackingAreaCode	19.2.0
2025-12	RAN#110	R5-256632	3664	1	F	Add IE AIML-Parameters	19.2.0
2025-12	RAN#110	R5-256633	3665	1	F	Add IE PosSRS-TxFrequencyHoppingRRC-ConnectedNonRedCap	19.2.0
2025-12	RAN#110	R5-256634	3666	1	F	Add IE PosSRS-TxFrequencyHoppingRRC-InactiveNonRedCap	19.2.0
2025-12	RAN#110	R5-256635	3634	1	F	Update of Tables related to SL DRX configuration	19.2.0
2025-12	RAN#110	R5-256646	3636	1	F	Update of IE SIB24 and MBS-SessionInfoListMulticast for MBS Multicast reception in RRC_INACTIVE	19.2.0
2025-12	RAN#110	R5-256654	3652	1	F	Addition of reference configuration for R18 IDC	19.2.0
2025-12	RAN#110	R5-256686	3617	1	F	Update to clause 4.4A.3 Test state parameters	19.2.0
2025-12	RAN#110	R5-256702	3609	1	F	Addition of default message contents for SCI format 1-B and SCI format 2-D	19.2.0
2025-12	RAN#110	R5-256703	3610	1	F	Correction to SL-ResourcePool default configuration	19.2.0
2025-12	RAN#110	R5-256704	3611	1	F	Correction to SL-PRS-ResourcePool default configuration	19.2.0
2025-12	RAN#110	R5-256801	3668	1	F	Adding test frequency for CA_n78D	19.2.0
2025-12	RAN#110	R5-256802	3643	1	F	Test frequencies for Rel-16 FR1 intra-band CA and 2-band CA	19.2.0
2025-12	RAN#110	R5-256803	3663	1	F	Addition of CodebookConfig-r18	19.2.0
2025-12	RAN#110	R5-256804	3655	1	F	Correction to test frequencies of n28 with CBW 40 MHz	19.2.0
2025-12	RAN#110	R5-256927	3646	1	F	Update of the description of reducing CA BW combinations in tables	19.2.0
2025-12	RAN#110	R5-256928	3647	1	F	Update of frequencies for CA_n48B	19.2.0
2025-12	RAN#110	R5-256929	3648	1	F	Update of frequencies for CA_n77C	19.2.0
2025-12	RAN#110	R5-256933	3612	1	F	Correction of RLC Config and SchedulingRequestResourceConfig for GSO configuration	19.2.0
2025-12	RAN#110	R5-256936	3601	1	F	Test frequencies for CA_n5A-n29A and CA_n5A-n25A-n77(2A)	19.2.0
2025-12	RAN#110	R5-256937	3602	1	F	Test frequencies for CA_n25A-n66A-n71A-n77A	19.2.0
2025-12	RAN#110	R5-256964	3622	1	F	Addition of many 3 band NR CA combination to inter-band configurations table	19.2.0
2025-12	RAN#110	R5-256972	3656	1	F	Addition of scheduling request for NTN RRM test cases	19.2.0
2025-12	RAN#110	R5-256986	3671	1	F	Updates in PDSCH config for eRedCap	19.2.0

2026-03	RAN#111	R5-260102	3685	-	F	Addition of test frequencies for CA_n28A-n78(2A) with UL CA_n28A-n78A	19.3.0
2026-03	RAN#111	R5-260103	3686	-	F	Addition of test frequencies for CA_n28A-n78(2A) with UL CA_n78(2A)	19.3.0
2026-03	RAN#111	R5-260199	3689	-	F	Addition of SL-PRS signal power value	19.3.0
2026-03	RAN#111	R5-260201	3691	-	F	Editorial correction to SL-PRS-ResourcePool configuration	19.3.0
2026-03	RAN#111	R5-260202	3692	-	F	Update IP address configuration IE in default sidelink message contents	19.3.0
2026-03	RAN#111	R5-260266	3694	-	F	Update to ATG-Config	19.3.0
2026-03	RAN#111	R5-260267	3695	-	F	Correction to the test procedure 4.9.47 for IMS Emergency call and RTT	19.3.0
2026-03	RAN#111	R5-260268	3696	-	F	Correction to the test procedure 4.9.49 for IMS bootstrap data channel establishment in 5GC	19.3.0
2026-03	RAN#111	R5-260269	3697	-	F	Update to SIB25	19.3.0
2026-03	RAN#111	R5-260270	3698	-	F	Updates to DNN/APN configurations	19.3.0
2026-03	RAN#111	R5-260271	3699	-	F	Updates to generic 5GC configurations	19.3.0
2026-03	RAN#111	R5-260304	3701	-	F	Correction on test frequency parameters for band n5	19.3.0
2026-03	RAN#111	R5-260305	3702	-	F	Definition of test frequencies for SUL band n83 for CBW 25MHz	19.3.0
2026-03	RAN#111	R5-260306	3703	-	F	Correction on test frequency tables for NTN NR band n254	19.3.0
2026-03	RAN#111	R5-260339	3705	-	F	Addition of signalling test frequencies for CA_n41(2A) and CA_n71B	19.3.0
2026-03	RAN#111	R5-260352	3706	-	F	Update orbital ephemeris for NR NTN	19.3.0
2026-03	RAN#111	R5-260415	3708	-	F	Correction to Timer T319 in SIB19 for GSO	19.3.0
2026-03	RAN#111	R5-260444	3709	-	F	Correction to default content for SL PRS SCIs	19.3.0
2026-03	RAN#111	R5-260475	3710	-	F	Update to test frequency for EN-DC band combinations	19.3.0
2026-03	RAN#111	R5-260520	3713	-	F	Introduction of Demod test frequencies for NTN NR band n252	19.3.0
2026-03	RAN#111	R5-260580	3718	-	F	Correction of test frequencies for n41	19.3.0
2026-03	RAN#111	R5-260582	3719	-	F	Update of message contents for SDR requirements	19.3.0
2026-03	RAN#111	R5-260654	3728	-	F	Update of test frequency table for CA_n48C	19.3.0
2026-03	RAN#111	R5-260769	3734	-	F	Correction to default configuration of SL-ConfiguredGrantConfig	19.3.0
2026-03	RAN#111	R5-260807	3736	-	F	Addition of message contents for NR sidelink relay enhancements testing	19.3.0
2026-03	RAN#111	R5-260808	3737	-	F	Update of message contents of MBSInterestIndication	19.3.0
2026-03	RAN#111	R5-260809	3738	-	F	Update of Default 5G ProSe message contents for NR sidelink relay testing	19.3.0
2026-03	RAN#111	R5-260828	3739	-	F	Correction to test frequencies for n254	19.3.0
2026-03	RAN#111	R5-260829	3740	-	F	Correction to test frequencies for n8	19.3.0
2026-03	RAN#111	R5-260830	3741	-	F	Correction to the definition of F_offsetToPointA	19.3.0
2026-03	RAN#111	R5-260858	3742	-	F	Update message content for PMI test cases	19.3.0
2026-03	RAN#111	R5-260914	3744	-	F	Correction to Reference QoS rules	19.3.0
2026-03	RAN#111	R5-260933	3745	-	F	Update to precise Delay and Doppler values in the Ephemeris information tables	19.3.0
2026-03	RAN#111	R5-261066	3760	-	F	message exception for 8Rx CQI test cases	19.3.0
2026-03	RAN#111	R5-261132	3720	1	F	Updates to NTN-Parameters	19.3.0
2026-03	RAN#111	R5-261133	3731	1	F	Add IE CQI-Table	19.3.0
2026-03	RAN#111	R5-261134	3748	1	F	Update to DNN configuration for V2X	19.3.0
2026-03	RAN#111	R5-261147	3749	1	F	Adding signalling test frequency for CA_n78D	19.3.0
2026-03	RAN#111	R5-261148	3721	1	F	Updates to SIB19	19.3.0
2026-03	RAN#111	R5-261159	3735	1	F	Addition of message contents for sidelink CA and sidelink in shared spectrum	19.3.0
2026-03	RAN#111	R5-261171	3711	1	F	Addition of autonomous denial information elements for IDC	19.3.0
2026-03	RAN#111	R5-261189	3673	1	F	Add IE SIB28	19.3.0
2026-03	RAN#111	R5-261191	3675	1	F	Update IE AMF-Identifier	19.3.0
2026-03	RAN#111	R5-261192	3676	1	F	Update IE ApplicabilitySetConfigId	19.3.0
2026-03	RAN#111	R5-261193	3677	1	F	Update IE ARFCN-ValueUTRA-FDD	19.3.0
2026-03	RAN#111	R5-261194	3678	1	F	Update IE AssociatedId	19.3.0
2026-03	RAN#111	R5-261195	3679	1	F	Update IE BH-LogicalChannelIdentity-Ext	19.3.0
2026-03	RAN#111	R5-261196	3680	1	F	Update IE BH-RLC-ChannelId	19.3.0
2026-03	RAN#111	R5-261197	3681	1	F	Update IE CellReselectionSubPriority	19.3.0
2026-03	RAN#111	R5-261198	3682	1	F	Update IE CLI-RSSI-Range	19.3.0
2026-03	RAN#111	R5-261199	3683	1	F	Update IEs CLI-RSSI-MeasResourceId and CLI-RSSI-MeasResourceSetId	19.3.0

2026-03	RAN#111	R5-261200	3684	1	F	Update IEs ConfiguredGrantConfigIndex and ConfiguredGrantConfigIndexMAC	19.3.0
2026-03	RAN#111	R5-261201	3733	1	F	Add IE RA-AdaptConfig	19.3.0
2026-03	RAN#111	R5-261217	3690	1	F	Correction to sidelink resource configuration for SLPP test cases	19.3.0
2026-03	RAN#111	R5-261256	3693	2	F	Update to 38.508-1 for R19 NR_FR1_lessthan_5MHz_BW_Ph2-UEConTest	19.3.0
2026-03	RAN#111	R5-261257	3688	2	F	Addition of test frequencies for CA_n100A-n101A and DC_n100A-n101A	19.3.0
2026-03	RAN#111	R5-261400	3704	1	F	Addition of test frequencies for CA_n41-n66 and CA_n41-n71 configurations	19.3.0
2026-03	RAN#111	R5-261401	3750	1	F	Adding test frequency for R17 configuration	19.3.0
2026-03	RAN#111	R5-261402	3687	1	F	Addition of test frequencies for CA_n66A-n77(3A)	19.3.0
2026-03	RAN#111	R5-261403	3751	1	F	Adding test frequency for R18 configuration	19.3.0
2026-03	RAN#111	R5-261405	3722	1	F	Simplifications on test frequency table for more than 3 bands inter-band CA configurations	19.3.0
2026-03	RAN#111	R5-261406	3723	1	F	Simplifications on test frequency table for more than 4 bands inter-band EN-DC configurations within FR1	19.3.0
2026-03	RAN#111	R5-261407	3724	1	F	Simplifications on test frequency table for more than 3 bands inter-band EN-DC configurations including FR2	19.3.0
2026-03	RAN#111	R5-261408	3752	1	F	Adding test frequency for R19 configuration	19.3.0
2026-03	RAN#111	R5-261409	3754	1	F	Adding test frequency for n39 for enhanced channel raster	19.3.0
2026-03	RAN#111	R5-261410	3755	1	F	Adding test frequency for n40 for enhanced channel raster	19.3.0
2026-03	RAN#111	R5-261411	3753	1	F	Adding connection diagram for intra-band CA with Tx/D	19.3.0
2026-03	RAN#111	R5-261413	3725	1	F	Addition of new clause 5.2.2.3 Test frequencies for EN-DC band combinations within FR1	19.3.0
2026-03	RAN#111	R5-261457	3700	1	F	Introduction of RF test frequencies for NTN NR band n252	19.3.0
2026-03	RAN#111	R5-261458	3757	1	F	Correction of NR NTN test frequencies	19.3.0
2026-03	RAN#111	R5-261459	3756	1	F	Addition of Demod test frequencies for NR NTN	19.3.0
2026-03	RAN#111	R5-261460	3730	1	F	Addition of RF test frequencies for default Tx-Rx separation for n250, n251 and n253	19.3.0
2026-03	RAN#111	R5-261598	3716	1	F	Addition of new combination of SIB	19.3.0
2026-03	RAN#111	R5-261599	3747	1	F	Correction to SIB combinations including SIB9	19.3.0
2026-03	RAN#111	R5-261643	3717	1	F	Connection diagram for 8Rx Demod test cases	19.3.0
2026-03	RAN#111	R5-261645	3758	1	F	Update of Doppler and delay for NR NTN RF test cases	19.3.0
2026-03	RAN#111	R5-261654	3707	1	F	Update of time drift handling for NR NTN	19.3.0
2026-03	RAN#111	R5-261673	3729	1	F	Added description of calculation of enhanced raster test frequencies	19.3.0
2026-03	RAN#111	R5-261674	3727	1	F	Update of description of Test frequency calculation for non contiguous CA	19.3.0
2026-03	RAN#111	R5-261675	3726	1	F	Update of description of Test frequency calculation for contiguous CA	19.3.0

History

Version	Date	Status
V19.1.1	November 2025	Publication
V19.2.0	March 2026	Publication
V19.3.0	April 2026	Publication