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TECHNICAL SPECIFICATION

5G;
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Part 1: Common test environment
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Contents

Foreword

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

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y the second digit is incremented for all changes of substance, i.e. technical enhancements, corrections, updates, etc.

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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); User Equipment (UE) conformance specification".

[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 1: Range 1 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 1: Range 1 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 36.214: “Evolved Universal Terrestrial Radio Access (E-UTRA); Physical layer; Measurements”.

[22] 3GPP TS 38.213: “NR; Physical layer procedures for control”.

[23] 3GPP TS 38.523-3: "5GS; UE conformance specification; Part 3: Test Suites".

[24] 3GPP TR 38.810: “Study on test methods for New Radio”

[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".

3 Definitions, symbols and abbreviations

3.1 Definitions

For the purposes of the present document, the terms and definitions given in 3GPP 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 3GPP 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:

3.3 Abbreviations

For the purposes of the present document, the abbreviations given in 3GPP 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 3GPP TR 21.905 [1].

5GC 5G Core Network
5GMM 5GS Mobility Management
5GS 5G System
5GSM 5GS Session Management
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
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 of 25 % to 75 %)
-10°C to +55°C	For extreme conditions (see IEC publications 68-2-1 and 68-2-2)

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 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

+ 25 °C ± [10] °C	For normal (room temperature) conditions with relative humidity of 25% 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] for extreme operation.

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

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 Lithium Mercury/nickel & cadmium	 0,85 * nominal 0,95 * nominal 0,90 * nominal	 Nominal 1,1 * Nominal	 Nominal 1,1 * 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 38.101-2[8] 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 that are either:

- non-standalone(NSA) mode; or
- standalone(SA) mode.

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 (NSA only) respectively.

a) FDD Mode; or

b) TDD Mode; or

c) both FDD/TDD Modes.

All test equipment shall provide the following minimum functionality.

- The capability of emulating a single NR cell and a single E-UTRA (for NSA mode 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 3GPP TS 38.523-1 [12] (Signalling), 3GPP TS 38.521-1 [14], 38.521-2 [15], 38.521-3 [16] (TRx) and 38.521-4 [17] (Performance) and 3GPP TS 38.533 [18] (RRM).

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 3GPP TS 38.321 [20]. Similarly, the mapping between Transport channels and Physical channels is as described in 3GPP 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 3GPP 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

4.2.2.1.1.1 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

4.2.2.1.1.2 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	

4.2.2.1.1.3 Physical channels

Physical channel	Minimum number	Comments
PBCH	1	Physical Broadcast Channel
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

4.2.2.1.1.4 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

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] and TS 38.101-3 [9].

4.3.1.0A Mid test channel bandwidth

Editor's Note: The note in table 4.3.1-1 and 4.3.1-2 to be updated based on RAN plenary updates.

The Mid test channel bandwidth definition for RF is given in Table 4.3.1-1 and Table 4.3.1-2 for FR1 and FR2 respectively.

Table 4.3.1-1: Mid Test Channel bandwidths for each NR band, FR1

NR band / UE Mid Test Channel bandwidth	
NR Band	**Mid [MHz]**
n1	15
n2	15
n3	15
n5	15
n7	15
n8	15
n12	10
n20	15
n25	15
n28	15
n34	10
n38	15
n39	20
n40	30
n41	50
n51	5
n66	20
n70	15
n71	10
n75	15
n76	5
n77	50
n78	50
n79	60
n80	20
n81	15
n82	15
n83	15
n84	15
n86	20
Note 1:	For UEs where IOT bit declaration is required due to lack of channel BW support in the network, if mid channel BW is not supported by the UE, select the closest lower channel BW supported by the UE in both UL and DL. This shall apply until further updates from RAN plenary and only for Rel 15 UEs.

Table 4.3.1-2: Mid Test Channel bandwidths for each NR band, FR2

NR band / UE Mid Test Channel bandwidth	
NR Band	**Mid [MHz]**
n257	[200]
n258	[200]
n260	[200]
NOTE 1: For UEs where IOT bit declaration is required due to lack of channel BW support in the network, if mid channel BW is not supported by the UE, select the closest lower channel BW supported by the UE in both UL and DL. This shall apply until further updates from RAN plenary and only for Rel 15 UEs.	

4.3.1.0B Low test channel bandwidth

Editor's Note: The note in table 4.3.1.0B-1 and 4.3.1.0B-2 to be updated based on RAN plenary updates.

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

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

NR band / UE Low Test Channel bandwidth	
NR Band	**Low [MHz]**
n1	5
n2	5
n3	5
n5	5
n7	5
n8	5
n12	5
n20	5
n25	5
n28	5
n34	5
n38	5
n39	5
n40	5
n41	10
n51	5
n66	5
n70	5
n71	5
n75	5
n76	5
n77	10
n78	10
n79	40
n80	5
n81	5
n82	5
n83	5
n84	5
n86	5
NOTE 1: For UEs where IOT bit declaration is required due to lack of channel BW support in the network, if the above defined low channel bandwidth is not supported by the UE, select the closest channel bandwidth in both DL and UL. This shall apply only for Rel.15 UEs and until further updates are provided from RAN plenary	

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

NR band / UE Low Test Channel bandwidth	
NR Band	**Low [MHz]**
n257	50
n258	50
n260	50
n261	50
NOTE 1: For UEs where IOT bit declaration is required due to lack of channel BW support in the network, if the above defined low channel bandwidth is not supported by the UE, select the closest channel bandwidth in both DL and UL. This shall apply only for Rel.15 UEs and until further updates are provided from RAN plenary	

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 and Table 4.3.1.0C-2 for FR1 and FR2 respectively.

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

NR band / UE High Test Channel bandwidth	
NR Band	**High [MHz]**
n1	20
n2	20
n3	30
n5	20
n7	20
n8	20
n12	15
n20	20
n25	20
n28	20
n34	15
n38	20
n39	40
n40	80
n41	100
n51	5
n66	40
n70	15[1]/25[2]
n71	20
n75	20
n76	5
n77	100
n78	100
n79	100
n80	30
n81	20
n82	20
n83	20
n84	20
n86	40
NOTE 1: This UE channel bandwidth is applicable only to uplink. NOTE 2: This UE channel bandwidth is applicable only to downlink.	

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

NR band / UE High Test Channel bandwidth	
NR Band	**High [MHz]**
n257	400
n258	400
n260	400
n261	400

4.3.1.0B Bandwidth part

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

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

BW [MHz]	SCS [kHz]	L_RBs (MAX N_{RB})	locationAndBandwidth (Note 1)
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
40	15	216	16774
40	30	106	28875
40	60	51	13750
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
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 *locationAndBandwidth* parameter is calculated as the RIV value in accordance to [21] TS 38.214 with N_{BWP}^{size} = 275, RB_{start} =0 and L_{RBs} = Max N_{RB} for each bandwidth and subcarrier spacing.			

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

BW [MHz]	SCS [kHz]	L_RBs (MAX N_{RB})	locationAndBandwidth (Note 1)
50	60	66	17875
50	120	32	8525
100	60	132	36025
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 *locationAndBandwidth* parameter is calculated as the RIV value in accordance to [21] TS 38.214 with N_{BWP}^{size} = 275, RB_{start} =0 and L_{RBs} = Max N_{RB} for each bandwidth and subcarrier spacing.			

4.3.1.1 Test frequencies for NR operating bands in FR1

4.3.1.1.1 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

Band width [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]	k_{SSB}	CORE SET#0 Offset [RBs] Note 1	CORE SET#0 Index Note 1	offsetTo PointA (SIB1) [PRBs] Note 1
5	25	Downlink	Low	2112.5	422500	2110.25	422050	0	15	5279	422410	0	0	0	0
			Mid	2140	428000	2119.57	423914	101		5350	427970	20	0	0	101
			High	2167.5	433500	2075.25	415050	500		5418	433470	20	0	0	500
		Uplink	Low	1922.5	384500	1920.25	384050	0	-	-	-	-	-	-	-
			Mid	1950	390000	1857.75	371550	500		-	-	-	-	-	-
			High	1977.5	395500	1975.07	395014	1		-	-	-	-	-	-
10	52	Downlink	Low	2115	423000	2110.32	422064	0	15	5280	422430	2	0	0	0
			Mid	2140	428000	2117.14	423428	101		5344	427490	22	0	0	101
			High	2165	433000	2070.32	414064	500		5405	432490	22	0	0	500
		Uplink	Low	1925	385000	1920.32	384064	0	-	-	-	-	-	-	-
			Mid	1950	390000	1855.32	371064	500		-	-	-	-	-	-
			High	1975	395000	1970.14	394028	1		-	-	-	-	-	-
15	79	Downlink	Low	2117.5	423500	2110.39	422078	0	15	5281	422450	4	0	0	0
			Mid	2140	428000	2114.71	422942	101		5338	427010	0	2	1	103
			High	2162.5	432500	2065.39	413078	500		5395	431570	20	2	1	502
		Uplink	Low	1927.5	385500	1920.39	384078	0	-	-	-	-	-	-	-
			Mid	1950	390000	1852.89	370578	500		-	-	-	-	-	-
			High	1972.5	394500	1965.21	393042	1		-	-	-	-	-	-
20	106	Downlink	Low	2120	424000	2110.46	422092	0	15	5282	422650	18	4	2	4
			Mid	2140	428000	2112.28	422456	101		5332	426530	2	2	1	103
			High	2160	432000	2060.46	412092	500		5382	430590	22	2	1	502
		Uplink	Low	1930	386000	1920.46	384092	0	-	-	-	-	-	-	-
			Mid	1950	390000	1850.46	370092	500		-	-	-	-	-	-
			High	1970	394000	1960.28	392056	1		-	-	-	-	-	-

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 the four most significant bits of the IE pdcch-ConfigSIB1 in the MIB. 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 4.3.1.1.1.1-2: Test frequencies for NR operating band n1 and SCS 30 kHz

Band width [MHz]	*carrier Bandwidth* [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}	CORESET#0 Offset [RBs] Note 1	CORESET#0 Index Note 1	offsetToPointA (SIB1) [PRBs] Note 1
10	24	Downlink	Low	2115	423000	2110.68	422136	0	15	5286	422910	18	5	0	10
			Mid	2140	428000	2099.32	419864	101		5350	427970	14	6	1	214
			High	2165	433000	1980.68	396136	500		5411	432970	14	6	1	1012
		Uplink	Low	1925	385000	1920.68	384136	0	-	-	-	-	-	-	-
			Mid	1950	390000	1765.68	353136	500		-	-	-	-	-	-
			High	1975	395000	1970.32	394064	1		-	-	-	-	-	-
15	38	Downlink	Low	2117.5	423500	2110.66	422132	0	15	5287	422930	2	6	1	12
			Mid	2140	428000	2096.8	419360	101		5344	427490	22	6	1	214
			High	2162.5	432500	1975.66	395132	500		5401	432050	18	7	2	1014
		Uplink	Low	1927.5	385500	1920.66	384132	0	-	-	-	-	-	-	-
			Mid	1950	390000	1763.16	352632	500		-	-	-	-	-	-
			High	1972.5	394500	1965.3	393060	1		-	-	-	-	-	-
20	51	Downlink	Low	2120	424000	2110.82	422164	0	15	5285	422890	2	5	0	10
			Mid	2140	428000	2094.46	418892	101		5338	427010	18	6	1	214
			High	2160	432000	1970.82	394164	500		5388	431070	14	7	2	1014
		Uplink	Low	1930	386000	1920.82	384164	0	-	-	-	-	-	-	-
			Mid	1950	390000	1760.82	352164	500		-	-	-	-	-	-
			High	1970	394000	1960.46	392092	1		-	-	-	-	-	-

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 the four most significant bits of the IE pdcch-ConfigSIB1 in the MIB. 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 4.3.1.1.1.1-3: Test frequencies for NR operating band n1 and SCS 60 kHz

Bandwidth [MHz]	*carrierBandwidth* [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	*absoluteFrequencyPointA* [ARFCN]	*offsetToCarrier* [PRBs]
10	11	Downlink	Low	2115	423000	2111.04	422208	0
			Mid	2140	428000	2063.32	412664	101
			High	2165	433000	1801.04	360208	500
		Uplink	Low	1925	385000	1921.04	384208	0
			Mid	1950	390000	1586.04	317208	500
			High	1975	395000	1970.32	394064	1
15	18	Downlink	Low	2117.5	423500	2111.02	422204	0
			Mid	2140	428000	2060.8	412160	101
			High	2162.5	432500	1796.02	360208	500
		Uplink	Low	1927.5	385500	1921.02	384204	0
			Mid	1950	390000	1583.52	316704	500
			High	1972.5	394500	1965.3	393060	1
20	24	Downlink	Low	2120	424000	2111.36	422272	0
			Mid	2140	428000	2058.64	411728	101
			High	2160	432000	1791.36	358272	500
		Uplink	Low	1930	386000	1921.36	384272	0
			Mid	1950	390000	1581.36	316272	500
			High	1970	394000	1960.64	392128	1

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

Band width [MHz]	*carrier Bandwidth* [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}	CORESET#0 Offset [RBs] Note 1	CORESET#0 Index 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
			Mid	1960	392000	1939.57	387914	101		4900	391970	20	0	0	101
			High	1987.5	397500	1895.25	379050	500		4968	397470	20	0	0	500
		Uplink	Low	1852.5	370500	1850.25	370050	0	-	-	-	-	-	-	-
			Mid	1880	376000	1787.75	357550	500		-	-	-	-	-	-
			High	1907.5	381500	1905.07	381014	1		-	-	-	-	-	-
10	52	Downlink	Low	1935	387000	1930.32	386064	0	15	4830	386430	2	0	0	0
			Mid	1960	392000	1937.14	387428	101		4894	391490	22	0	0	101
			High	1985	397000	1890.32	378064	500		4955	396490	22	0	0	500
		Uplink	Low	1855	371000	1850.32	370064	0	-	-	-	-	-	-	-
			Mid	1880	376000	1785.32	357064	500		-	-	-	-	-	-
			High	1905	381000	1900.14	380028	1		-	-	-	-	-	-
15	79	Downlink	Low	1937.5	387500	1930.39	386078	0	15	4831	386450	4	0	0	0
			Mid	1960	392000	1934.71	386942	101		4888	391010	0	2	1	103
			High	1982.5	396500	1885.39	377078	500		4945	395570	20	2	1	502
		Uplink	Low	1857.5	371500	1850.39	370078	0	-	-	-	-	-	-	-
			Mid	1880	376000	1782.89	356578	500		-	-	-	-	-	-
			High	1902.5	380500	1895.21	379042	1		-	-	-	-	-	-
20	106	Downlink	Low	1940	388000	1930.46	386092	0	15	4832	386650	18	4	2	4
			Mid	1960	392000	1932.28	386456	101		4882	390530	2	2	1	103
			High	1980	396000	1880.46	376092	500		4932	394590	22	2	1	502
		Uplink	Low	1860	372000	1850.46	370092	0	-	-	-	-	-	-	-
			Mid	1880	376000	1780.46	356092	500		-	-	-	-	-	-
			High	1900	380000	1890.28	378056	1		-	-	-	-	-	-

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 the four most significant bits of the IE pdcch-ConfigSIB1 in the MIB. 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 4.3.1.1.1.2-2: Test frequencies for NR operating band n2 and SCS 30 kHz

Band width [MHz]	*carrier Bandwidth* [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}	CORESET#0 Offset [RBs] Note 1	CORESET#0 Index Note 1	offsetToPointA (SIB1) [PRBs] Note 1
10	24	Downlink	Low	1935	387000	1930.68	386136	0	15	4836	386910	18	5	0	10
			Mid	1960	392000	1919.32	383864	101		4900	391970	14	6	1	214
			High	1985	397000	1800.68	360136	500		4961	396970	14	6	1	1012
		Uplink	Low	1855	371000	1850.68	370136	0	-	-	-	-	-	-	-
			Mid	1880	376000	1695.68	339136	500		-	-	-	-	-	-
			High	1905	381000	1900.32	380064	1		-	-	-	-	-	-
15	38	Downlink	Low	1937.5	387500	1930.66	386132	0	15	4837	386930	2	6	1	12
			Mid	1960	392000	1916.8	383360	101		4894	391490	22	6	1	214
			High	1982.5	396500	1795.66	359132	500		4951	396050	18	7	2	1014
		Uplink	Low	1857.5	371500	1850.66	370132	0	-	-	-	-	-	-	-
			Mid	1880	376000	1693.16	338632	500		-	-	-	-	-	-
			High	1902.5	380500	1895.3	379060	1		-	-	-	-	-	-
20	51	Downlink	Low	1940	388000	1930.82	386164	0	15	4835	386890	2	5	0	10
			Mid	1960	392000	1914.46	382892	101		4888	391010	18	6	1	214
			High	1980	396000	1790.82	358164	500		4938	395070	14	7	2	1014
		Uplink	Low	1860	372000	1850.82	370164	0	-	-	-	-	-	-	-
			Mid	1880	376000	1690.82	338164	500		-	-	-	-	-	-
			High	1900	380000	1890.46	378092	1		-	-	-	-	-	-
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 the four most significant bits of the IE pdcch-ConfigSIB1 in the MIB. 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 4.3.1.1.1.2-3: Test frequencies for NR operating band n2 and SCS 60 kHz

Bandwidth [MHz]	*carrierBandwidth* [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	*absoluteFrequencyPointA* [ARFCN]	*offsetToCarrier* [PRBs]
10	11	Downlink	Low	1935	387000	1931.04	386208	0
			Mid	1960	392000	1883.32	376664	101
			High	1985	397000	1621.04	324208	500
		Uplink	Low	1855	371000	1851.04	370208	0
			Mid	1880	376000	1516.04	303208	500
			High	1905	381000	1900.32	380064	1
15	18	Downlink	Low	1937.5	387500	1931.02	386204	0
			Mid	1960	392000	1880.8	376160	101
			High	1982.5	396500	1616.02	323204	500
		Uplink	Low	1857.5	371500	1851.02	370204	0
			Mid	1880	376000	1513.52	302704	500
			High	1902.5	380500	1895.3	379060	1
20	24	Downlink	Low	1940	388000	1931.36	386272	0
			Mid	1960	392000	1878.64	375728	101
			High	1980	396000	1611.36	322272	500
		Uplink	Low	1860	372000	1851.36	370272	0
			Mid	1880	376000	1511.36	302272	500
			High	1900	380000	1890.64	378128	1

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

Band width [MHz]	*carrier Bandwidth* [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}	CORESET#0 Offset [RBs] Note 1	CORESET#0 Index Note 1	offsetToPointA (SIB1) [PRBs] Note 1
5	25	Downlink	Low	1807.5	361500	1805.25	361050	0	15	4518	361470	20	0	0	0
			Mid	1842.5	368500	1822.07	364414	101		4604	368410	0	0	0	101
			High	1877.5	375500	1785.25	357050	500		4693	375410	0	0	0	500
		Uplink	Low	1712.5	342500	1710.25	342050	0	-	-	-	-	-	-	-
			Mid	1747.5	349500	1655.25	331050	500		-	-	-	-	-	-
			High	1782.5	356500	1780.07	356014	1		-	-	-	-	-	-
10	52	Downlink	Low	1810	362000	1805.32	361064	0	15	4519	361490	22	0	0	0
			Mid	1842.5	368500	1819.64	363928	101		4598	367930	2	0	0	101
			High	1875	375000	1780.32	356064	500		4680	374430	2	0	0	500
		Uplink	Low	1715	343000	1710.32	342064	0	-	-	-	-	-	-	-
			Mid	1747.5	349500	1652.82	330564	500		-	-	-	-	-	-
			High	1780	356000	1775.14	355028	1		-	-	-	-	-	-
15	79	Downlink	Low	1812.5	362500	1805.39	361078	0	15	4517	361450	4	0	0	0
			Mid	1842.5	368500	1817.21	363442	101		4592	367450	4	0	0	101
			High	1872.5	374500	1775.39	355078	500		4667	373450	4	0	0	500
		Uplink	Low	1717.5	343500	1710.39	342078	0	-	-	-	-	-	-	-
			Mid	1747.5	349500	1650.39	330078	500		-	-	-	-	-	-
			High	1777.5	355500	1770.21	354042	1		-	-	-	-	-	-
20	106	Downlink	Low	1815	363000	1805.46	361092	0	15	4518	361470	6	0	0	0
			Mid	1842.5	368500	1814.78	362956	101		4586	366970	6	0	0	101
			High	1870	374000	1770.46	354092	500		4657	372530	2	2	1	502
		Uplink	Low	1720	344000	1710.46	342092	0	-	-	-	-	-	-	-
			Mid	1747.5	349500	1647.96	329592	500		-	-	-	-	-	-
			High	1775	355000	1765.28	353056	1		-	-	-	-	-	-
25	133	Downlink	Low	1817.5	363500	1805.53	361106	0	15	4519	361490	8	0	0	0
			Mid	1842.5	368500	1812.35	362470	101		4580	366490	8	0	0	101
			High	1867.5	373500	1765.53	353106	500		4644	371550	4	2	1	502
		Uplink	Low	1722.5	344500	1710.53	342106	0	-	-	-	-	-	-	-
			Mid	1747.5	349500	1645.53	329106	500		-	-	-	-	-	-
			High	1772.5	354500	1760.35	352070	1		-	-	-	-	-	-
30	160	Downlink	Low	1820	364000	1805.6	361120	0	15	4520	361690	22	4	2	4
			Mid	1842.5	368500	1809.92	361984	101		4574	366010	10	0	0	101
			High	1865	373000	1760.6	352120	500		4631	370570	6	2	1	502
		Uplink	Low	1725	345000	1710.6	342120	0	-	-	-	-	-	-	-
			Mid	1747.5	349500	1643.1	328620	500		-	-	-	-	-	-
			High	1770	354000	1755.42	351084	1		-	-	-	-	-	-
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 the four most significant bits of the IE pdcch-ConfigSIB1 in the MIB. 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 4.3.1.1.1.3-2: Test frequencies for NR operating band n3 and SCS 30 kHz

Band width [MHz]	*carrier Bandwidth* [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}	CORESET#0 Offset [RBs] Note 1	CORESET#0 Index Note 1	offsetToPointA (SIB1) [PRBs] Note 1
10	24	Downlink	Low	1810	362000	1805.68	361136	0	15	4525	361970	14	6	1	12
			Mid	1842.5	368500	1801.82	360364	101		4604	368410	18	5	0	212
			High	1875	375000	1690.68	338136	500		4686	374910	18	5	0	1010
		Uplink	Low	1715	343000	1710.68	342136	0	-	-	-	-	-	-	-
			Mid	1747.5	349500	1563.18	312636	500		-	-	-	-	-	-
			High	1780	356000	1775.32	355064	1		-	-	-	-	-	-
15	38	Downlink	Low	1812.5	362500	1805.66	361132	0	15	4523	361930	2	6	1	12
			Mid	1842.5	368500	1799.3	359860	101		4598	367930	2	6	1	214
			High	1872.5	374500	1685.66	337132	500		4673	373930	2	6	1	1012
		Uplink	Low	1717.5	343500	1710.66	342132	0	-	-	-	-	-	-	-
			Mid	1747.5	349500	1560.66	312132	500		-	-	-	-	-	-
			High	1777.5	355500	1770.3	354060	1		-	-	-	-	-	-
20	51	Downlink	Low	1815	363000	1805.82	361164	0	15	4524	361950	22	5	0	10
			Mid	1842.5	368500	1796.96	359392	101		4592	367450	22	5	0	212
			High	1870	374000	1680.82	336164	500		4663	373010	18	6	1	1012
		Uplink	Low	1720	344000	1710.82	342164	0	-	-	-	-	-	-	-
			Mid	1747.5	349500	1558.32	311664	500		-	-	-	-	-	-
			High	1775	355000	1765.46	353092	1		-	-	-	-	-	-
25	65	Downlink	Low	1817.5	363500	1805.8	361160	0	15	4525	361970	6	6	1	12
			Mid	1842.5	368500	1794.44	358888	101		4586	366970	6	6	1	214
			High	1867.5	373500	1675.8	335160	500		4650	372030	2	7	2	1014
		Uplink	Low	1722.5	344500	1710.8	342160	0	-	-	-	-	-	-	-
			Mid	1747.5	349500	1555.8	311160	500		-	-	-	-	-	-
			High	1772.5	354500	1760.44	352088	1		-	-	-	-	-	-
30	78	Downlink	Low	1820	364000	1805.96	361192	0	15	4523	361930	6	5	0	10
			Mid	1842.5	368500	1792.1	358420	101		4580	366490	2	6	1	214
			High	1865	373000	1670.96	334192	500		4637	371050	22	6	1	1012
		Uplink	Low	1725	345000	1710.96	342192	0	-	-	-	-	-	-	-
			Mid	1747.5	349500	1553.46	310692	500		-	-	-	-	-	-
			High	1770	354000	1755.6	351120	1		-	-	-	-	-	-
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 the four most significant bits of the IE pdcch-ConfigSIB1 in the MIB. 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 4.3.1.1.1.3-3: Test frequencies for NR operating band n3 and SCS 60 kHz

Bandwidth [MHz]	*carrierBandwidth* [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	*absoluteFrequencyPointA* [ARFCN]	*offsetToCarrier* [PRBs]
10	11	Downlink	Low	1810	362000	1806.04	361208	0
			Mid	1842.5	368500	1765.82	353164	101
			High	1875	375000	1511.04	302208	500
		Uplink	Low	1715	343000	1711.04	342208	0
			Mid	1747.5	349500	1383.54	276708	500
			High	1780	356000	1775.32	355064	1
15	18	Downlink	Low	1812.5	362500	1806.02	361204	0
			Mid	1842.5	368500	1763.3	352660	101
			High	1872.5	374500	1506.02	301204	500
		Uplink	Low	1717.5	343500	1711.02	342204	0
			Mid	1747.5	349500	1381.02	276204	500
			High	1777.5	355500	1770.3	354060	1
20	24	Downlink	Low	1815	363000	1806.36	361272	0
			Mid	1842.5	368500	1761.14	352228	101
			High	1870	374000	1501.36	300272	500
		Uplink	Low	1720	344000	1711.36	342272	0
			Mid	1747.5	349500	1378.86	275772	500
			High	1775	355000	1765.64	353128	1
25	31	Downlink	Low	1817.5	363500	1806.34	361268	0
			Mid	1842.5	368500	1758.62	351724	101
			High	1867.5	373500	1496.34	299268	500
		Uplink	Low	1722.5	344500	1711.34	342268	0
			Mid	1747.5	349500	1376.34	275268	500
			High	1772.5	354500	1760.62	352124	1
30	38	Downlink	Low	1820	364000	1806.32	361264	0
			Mid	1842.5	368500	1756.1	351220	101
			High	1865	373000	1491.32	298264	500
		Uplink	Low	1725	345000	1711.32	342264	0
			Mid	1747.5	349500	1373.82	274764	500
			High	1770	354000	1755.6	351120	1

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 and SCS 15 kHz

Band width [MHz]	*carrier Bandwidth* [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}	CORESET#0 Offset [RBs] Note 1	CORESET#0 Index Note 1	offsetToPointA (SIB1) [PRBs] Note 1
5	25	Downlink	Low	871.5	174300	869.25	173850	0	15	2178	174270	20	0	0	0
			Mid	881.5	176300	861.07	172214	101		2203	176210	0	0	0	101
			High	891.5	178300	799.25	159850	500		2228	178330	16	2	1	502
		Uplink	Low	826.5	165300	824.25	164850	0	-	-	-	-	-	-	-
			Mid	836.5	167300	744.25	148850	500		-	-	-	-	-	-
			High	846.5	169300	844.07	168814	1		-	-	-	-	-	-
10	52	Downlink	Low	874	174800	869.32	173864	0	15	2179	174290	22	0	0	0
			Mid	881.5	176300	858.64	171728	101		2197	175730	2	0	0	101
			High	889	177800	794.32	158864	500		2218	177410	14	4	2	504
		Uplink	Low	829	165800	824.32	164864	0	-	-	-	-	-	-	-
			Mid	836.5	167300	741.82	148364	500		-	-	-	-	-	-
			High	844	168800	839.14	167828	1		-	-	-	-	-	-
15	79	Downlink	Low	876.5	175300	869.39	173878	0	15	2177	174250	4	0	0	0
			Mid	881.5	176300	856.21	171242	101		2191	175250	4	0	0	101
			High	886.5	177300	789.39	157878	500		2205	176430	16	4	2	504
		Uplink	Low	831.5	166300	824.39	164878	0	-	-	-	-	-	-	-
			Mid	836.5	167300	739.39	147878	500		-	-	-	-	-	-
			High	841.5	168300	834.21	166842	1		-	-	-	-	-	-
20	106	Downlink	Low	879	175800	869.46	173892	0	15	2178	174270	6	0	0	0
			Mid	881.5	176300	853.78	170756	101		2185	174770	6	0	0	101
			High	884	176800	784.46	156892	500		2192	175450	18	4	2	504
		Uplink	Low	834	166800	824.46	164892	0	-	-	-	-	-	-	-
			Mid	836.5	167300	736.96	147392	500		-	-	-	-	-	-
			High	839	167800	829.28	165856	1		-	-	-	-	-	-
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 the four most significant bits of the IE pdcch-ConfigSIB1 in the MIB. 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 4.3.1.1.1.5-2: Test frequencies for NR operating band n5 and SCS 30 kHz

Band width [MHz]	*carrier Bandwidth* [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}	CORESET#0 Offset [RBs] Note 1	CORESET#0 Index Note 1	offsetToPointA (SIB1) [PRBs] Note 1
10	24	Downlink	Low	874	174800	869.68	173936	0	30	2185	174770	14	1	1	2
			Mid	881.5	176300	840.82	168164	101		2203	176210	18	0	0	202
			High	889	177800	704.68	140936	500		2224	177890	6	3	3	1006
		Uplink	Low	829	165800	824.68	164936	0	-	-	-	-	-	-	-
			Mid	836.5	167300	652.18	130436	500		-	-	-	-	-	-
			High	844	168800	839.32	167864	1		-	-	-	-	-	-
15	38	Downlink	Low	876.5	175300	869.66	173932	0	30	2183	174730	2	1	1	2
			Mid	881.5	176300	838.3	167660	101		2197	175730	2	1	1	204
			High	886.5	177300	699.66	139932	500		2208	176670	6	0	0	1000
		Uplink	Low	831.5	166300	824.66	164932	0	-	-	-	-	-	-	-
			Mid	836.5	167300	649.66	129932	500		-	-	-	-	-	-
			High	841.5	168300	834.3	166860	1		-	-	-	-	-	-
20	51	Downlink	Low	879	175800	869.82	173964	0	30	2184	174750	22	0	0	0
			Mid	881.5	176300	835.96	167192	101		2191	175250	22	0	0	202
			High	884	176800	694.82	138964	500		2195	175690	2	0	0	1000
		Uplink	Low	834	166800	824.82	164964	0	-	-	-	-	-	-	-
			Mid	836.5	167300	647.32	129464	500		-	-	-	-	-	-
			High	839	167800	829.46	165892	1		-	-	-	-	-	-
"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 the four most significant bits of the IE pdcch-ConfigSIB1 in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2."															

4.3.1.1.1.6 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

Band width [MHz]	*carrier Bandwidth* [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}	CORESET#0 Offset [RBs] Note 1	CORESET#0 Index Note 1	offsetToPointA (SIB1) [PRBs] Note 1
5	25	Downlink	Low	2622.5	524500	2620.25	524050	0	15	6554	524410	0	0	0	0
			Mid	2655	531000	2634.57	526914	101		6636	530910	0	0	0	101
			High	2687.5	537500	2595.25	519050	500		6718	537410	0	0	0	500
		Uplink	Low	2502.5	500500	2500.25	500050	0	-	-	-	-	-	-	-
			Mid	2535	507000	2442.75	488550	500		-	-	-	-	-	-
			High	2567.5	513500	2565.07	513014	1		-	-	-	-	-	-
10	52	Downlink	Low	2625	525000	2620.32	524064	0	15	6555	524430	2	0	0	0
			Mid	2655	531000	2632.14	526428	101		6630	530430	2	0	0	101
			High	2685	537000	2590.32	518064	500		6705	536430	2	0	0	500
		Uplink	Low	2505	501000	2500.32	500064	0	-	-	-	-	-	-	-
			Mid	2535	507000	2440.32	488064	500		-	-	-	-	-	-
			High	2565	513000	2560.14	512028	1		-	-	-	-	-	-
15	79	Downlink	Low	2627.5	525500	2620.39	524078	0	15	6556	524450	4	0	0	0
			Mid	2655	531000	2629.71	525942	101		6624	529950	4	0	0	101
			High	2682.5	536500	2585.39	517078	500		6692	535450	4	0	0	500
		Uplink	Low	2507.5	501500	2500.39	500078	0	-	-	-	-	-	-	-
			Mid	2535	507000	2437.89	487578	500		-	-	-	-	-	-
			High	2562.5	512500	2555.21	511042	1		-	-	-	-	-	-
20	106	Downlink	Low	2630	526000	2620.46	524092	0	15	6557	524650	18	4	2	4
			Mid	2655	531000	2627.28	525456	101		6618	529470	6	0	0	101
			High	2680	536000	2580.46	516092	500		6682	534530	2	2	1	502
		Uplink	Low	2510	502000	2500.46	500092	0	-	-	-	-	-	-	-
			Mid	2535	507000	2435.46	487092	500		-	-	-	-	-	-
			High	2560	512000	2550.28	510056	1		-	-	-	-	-	-

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 the four most significant bits of the IE pdcch-ConfigSIB1 in the MIB. 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 4.3.1.1.1.7-2: Test frequencies for NR operating band n7 and SCS 30 kHz

Band width [MHz]	*carrier Bandwidth* [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}	CORESET#0 Offset [RBs] Note 1	CORESET#0 Index Note 1	offsetToPointA (SIB1) [PRBs] Note 1
10	24	Downlink	Low	2625	525000	2620.68	524136	0	15	6561	524910	18	5	0	10
			Mid	2655	531000	2614.32	522864	101		6636	530910	18	5	0	212
			High	2685	537000	2500.68	500136	500		6711	536910	18	5	0	1010
		Uplink	Low	2505	501000	2500.68	500136	0	-	-	-	-	-	-	-
			Mid	2535	507000	2350.68	470136	500		-	-	-	-	-	-
			High	2565	513000	2560.32	512064	1		-	-	-	-	-	-
15	38	Downlink	Low	2627.5	525500	2620.66	524132	0	15	6562	524930	2	6	1	12
			Mid	2655	531000	2611.8	522360	101		6630	530430	2	6	1	214
			High	2682.5	536500	2495.66	499132	500		6698	535930	2	6	1	1012
		Uplink	Low	2507.5	501500	2500.66	500132	0	-	-	-	-	-	-	-
			Mid	2535	507000	2348.16	469632	500		-	-	-	-	-	-
			High	2562.5	512500	2555.3	511060	1		-	-	-	-	-	-
20	51	Downlink	Low	2630	526000	2620.82	524164	0	15	6560	524890	2	5	0	10
			Mid	2655	531000	2609.46	521892	101		6624	529950	22	5	0	212
			High	2680	536000	2490.82	498164	500		6688	535010	18	6	1	1012
		Uplink	Low	2510	502000	2500.82	500164	0	-	-	-	-	-	-	-
			Mid	2535	507000	2345.82	469164	500		-	-	-	-	-	-
			High	2560	512000	2550.46	510092	1		-	-	-	-	-	-

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 the four most significant bits of the IE pdcch-ConfigSIB1 in the MIB. 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 4.3.1.1.1.7-3: Test frequencies for NR operating band n7 and SCS 60 kHz

Bandwidth [MHz]	*carrierBandwidth* [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	*absoluteFrequencyPointA* [ARFCN]	*offsetToCarrier* [PRBs]
10	11	Downlink	Low	2625	525000	2621.04	524208	0
			Mid	2655	531000	2578.32	515664	101
			High	2685	537000	2321.04	464208	500
		Uplink	Low	2505	501000	2501.04	500208	0
			Mid	2535	507000	2171.04	434208	500
			High	2565	513000	2560.32	512064	1
15	18	Downlink	Low	2627.5	525500	2621.02	524204	0
			Mid	2655	531000	2575.8	515160	101
			High	2682.5	536500	2316.02	463204	500
		Uplink	Low	2507.5	501500	2501.02	500204	0
			Mid	2535	507000	2168.52	433704	500
			High	2562.5	512500	2555.3	511060	1
20	24	Downlink	Low	2630	526000	2621.36	524272	0
			Mid	2655	531000	2573.64	514728	101
			High	2680	536000	2311.36	462272	500
		Uplink	Low	2510	502000	2501.36	500272	0
			Mid	2535	507000	2166.36	433272	500
			High	2560	512000	2550.64	510128	1

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

Band width [MHz]	***carrier Bandwidth* [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}	**CORESET#0 Offset [RBs] Note 1**	**CORESET#0 Index Note 1**	**offsetToPointA (SIB1) [PRBs] Note 1**
5	25	Downlink	Low	927.5	185500	925.25	185050	0	15	2318	185530	16	2	1	2
			Mid	942.5	188500	922.07	184414	101		2354	188410	0	0	0	101
			High	957.5	191500	865.25	173050	500		2393	191530	16	2	1	502
		Uplink	Low	882.5	176500	880.25	176050	0	-	-	-	-	-	-	-
			Mid	897.5	179500	805.25	161050	500		-	-	-	-	-	-
			High	912.5	182500	910.07	182014	1		-	-	-	-	-	-
10	52	Downlink	Low	930	186000	925.32	185064	0	15	2319	185550	18	2	1	2
			Mid	942.5	188500	919.64	183928	101		2348	187930	2	0	0	101
			High	955	191000	860.32	172064	500		2383	190610	14	4	2	504
		Uplink	Low	885	177000	880.32	176064	0	-	-	-	-	-	-	-
			Mid	897.5	179500	802.82	160564	500		-	-	-	-	-	-
			High	910	182000	905.14	181028	1		-	-	-	-	-	-
15	79	Downlink	Low	932.5	186500	925.39	185078	0	15	2320	185570	20	2	1	2
			Mid	942.5	188500	917.21	183442	101		2342	187450	4	0	0	101
			High	952.5	190500	855.39	171078	500		2370	189630	16	4	2	504
		Uplink	Low	887.5	177500	880.39	176078	0	-	-	-	-	-	-	-
			Mid	897.5	179500	800.39	160078	500		-	-	-	-	-	-
			High	907.5	181500	900.21	180042	1		-	-	-	-	-	-
20	106	Downlink	Low	935	187000	925.46	185092	0	15	2318	185530	2	2	1	2
			Mid	942.5	188500	914.78	182956	101		2336	186970	6	0	0	101
			High	950	190000	850.46	170092	500		2357	188650	18	4	2	504
		Uplink	Low	890	178000	880.46	176092	0	-	-	-	-	-	-	-
			Mid	897.5	179500	797.96	159592	500		-	-	-	-	-	-
			High	905	181000	895.28	179056	1		-	-	-	-	-	-

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 the four most significant bits of the IE pdcch-ConfigSIB1 in the MIB. 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 4.3.1.1.1.8-2: Test frequencies for NR operating band n8 and SCS 30 kHz

Band width [MHz]	*carrier Bandwidth* [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}	CORESET#0 Offset [RBs] Note 1	CORESET#0 Index Note 1	offsetToPointA (SIB1) [PRBs] Note 1
10	24	Downlink	Low	930	186000	925.68	185136	0	15	2325	186030	10	7	2	14
			Mid	942.5	188500	901.82	180364	101		2354	188410	18	5	0	212
			High	955	191000	770.68	154136	500		2389	191090	6	8	3	1016
		Uplink	Low	885	177000	880.68	176136	0	-	-	-	-	-	-	-
			Mid	897.5	179500	713.18	142636	500		-	-	-	-	-	-
			High	910	182000	905.32	181064	1		-	-	-	-	-	-
15	38	Downlink	Low	932.5	186500	925.66	185132	0	15	2326	186050	18	7	2	14
			Mid	942.5	188500	899.3	179860	101		2348	187930	2	6	1	214
			High	952.5	190500	765.66	153132	500		2373	189870	6	5	0	1010
		Uplink	Low	887.5	177500	880.66	176132	0	-	-	-	-	-	-	-
			Mid	897.5	179500	710.66	142132	500		-	-	-	-	-	-
			High	907.5	181500	900.3	180060	1		-	-	-	-	-	-
20	51	Downlink	Low	935	187000	925.82	185164	0	15	2324	186010	18	6	1	12
			Mid	942.5	188500	896.96	179392	101		2342	187450	22	5	0	212
			High	950	190000	760.82	152164	500		2360	188890	2	5	0	1010
		Uplink	Low	890	178000	880.82	176164	0	-	-	-	-	-	-	-
			Mid	897.5	179500	708.32	141664	500		-	-	-	-	-	-
			High	905	181000	895.46	179092	1		-	-	-	-	-	-

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 the four most significant bits of the IE pdcch-ConfigSIB1 in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.

4.3.1.1.1.9 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

Band width [MHz]	***carrier Bandwidth* [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}	**CORE SET#0 Offset [RBs] Note 1**	**CORE SET#0 Index Note 1**	**offsetToPointA (SIB1) [PRBs] Note 1**
5	25	Downlink	Low	731.5	146300	729.25	145850	0	15	1828	146210	0	0	0	0
			Mid	737.5	147500	717.07	143414	101		1843	147410	0	0	0	101
			High	743.5	148700	651.25	130250	500		1858	148610	0	0	0	500
		Uplink	Low	701.5	140300	699.25	139850	0	-	-	-	-	-	-	-
			Mid	707.5	141500	615.25	123050	500		-	-	-	-	-	-
			High	713.5	142700	711.07	142214	1		-	-	-	-	-	-
10	52	Downlink	Low	734	146800	729.32	145864	0	15	1829	146410	14	4	2	4
			Mid	737.5	147500	714.64	142928	101		1837	146930	2	0	0	101
			High	741	148200	646.32	129264	500		1845	147630	2	0	0	500
		Uplink	Low	704	140800	699.32	139864	0	-	-	-	-	-	-	-
			Mid	707.5	141500	612.82	122564	500		-	-	-	-	-	-
			High	711	142200	706.14	141228	1		-	-	-	-	-	-
15	79	Downlink	Low	736.5	147300	729.39	145878	0	15	1830	146430	16	4	2	4
			Mid	737.5	147500	712.21	142442	101		1831	146450	4	0	0	101
			High	738.5	147700	641.39	128278	500		1832	146650	4	0	0	500
		Uplink	Low	706.5	141300	699.39	139878	0	-	-	-	-	-	-	-
			Mid	707.5	141500	610.39	122078	500		-	-	-	-	-	-
			High	708.5	141700	701.21	140242	1		-	-	-	-	-	-
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 the four most significant bits of the IE pdcch-ConfigSIB1 in the MIB. 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 4.3.1.1.1.12-2: Test frequencies for NR operating band n12 and SCS 30 kHz

Band width [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]	k_{SSB}	CORE SET#0 Offset [RBs] Note 1	CORE SET#0 Index Note 1	offsetTo PointA (SIB1) [PRBs] Note 1
10	24	Downlink	Low	734	146800	729.68	145936	0	15	1835	146890	6	8	3	16
			Mid	737.5	147500	696.82	139364	101		1843	147410	18	5	0	212
			High	741	148200	556.68	111336	500		1851	148110	18	5	0	1010
		Uplink	Low	704	140800	699.68	139936	0	-	-	-	-	-	-	-
			Mid	707.5	141500	523.18	104636	500		-	-	-	-	-	-
			High	711	142200	706.32	141264	1		-	-	-	-	-	-
15	38	Downlink	Low	736.5	147300	729.66	145932	0	15	1833	146670	6	5	0	10
			Mid	737.5	147500	694.3	138860	101		1837	146930	2	6	1	214
			High	738.5	147700	551.66	110332	500		1838	147130	2	6	1	1012
		Uplink	Low	706.5	141300	699.66	139932	0	-	-	-	-	-	-	-
			Mid	707.5	141500	520.66	104132	500		-	-	-	-	-	-
			High	708.5	141700	701.3	140260	1		-	-	-	-	-	-
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 the four most significant bits of the IE pdcch-ConfigSIB1 in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.															

4.3.1.1.1.13 to 4.3.1.1.1.19 FFS

4.3.1.1.1.20 Reference test frequencies for NR operating band n20

Table 4.3.1.1.1.20-1: Test frequencies for NR operating band n20 and SCS 15 kHz

Band width [MHz]	*carrier Bandwidth* [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}	CORESET#0 Offset [RBs] Note 1	CORESET#0 Index Note 1	offsetToPointA (SIB1) [PRBs] Note 1
5	25	Downlink	Low	793.5	158700	791.25	158250	0	15	1983	158670	20	0	0	0
			Mid	806	161200	785.57	157114	101		2015	161290	12	4	2	105
			High	818.5	163700	726.25	145250	500		2047	163730	16	2	1	502
		Uplink	Low	834.5	166900	832.25	166450	0	-	-	-	-	-	-	-
			Mid	847	169400	754.75	150950	500		-	-	-	-	-	-
			High	859.5	171900	857.07	171414	1		-	-	-	-	-	-
10	52	Downlink	Low	796	159200	791.32	158264	0	15	1984	158690	22	0	0	0
			Mid	806	161200	783.14	156628	101		2009	160810	14	4	2	105
			High	816	163200	721.32	144264	500		2034	162750	18	2	1	502
		Uplink	Low	837	167400	832.32	166464	0	-	-	-	-	-	-	-
			Mid	847	169400	752.32	150464	500		-	-	-	-	-	-
			High	857	171400	852.14	170428	1		-	-	-	-	-	-
15	79	Downlink	Low	798.5	159700	791.39	158278	0	15	1982	158650	4	0	0	0
			Mid	806	161200	780.71	156142	101		2003	160330	16	4	2	105
			High	813.5	162700	716.39	143278	500		2021	161770	20	2	1	502
		Uplink	Low	839.5	167900	832.39	166478	0	-	-	-	-	-	-	-
			Mid	847	169400	749.89	149978	500		-	-	-	-	-	-
			High	854.5	170900	847.21	169442	1		-	-	-	-	-	-
20	106	Downlink	Low	801	160200	791.46	158292	0	15	1983	158670	6	0	0	0
			Mid	806	161200	778.28	155656	101		1997	159850	18	4	2	105
			High	811	162200	711.46	142292	500		2011	160850	18	4	2	504
		Uplink	Low	842	168400	832.46	166492	0	-	-	-	-	-	-	-
			Mid	847	169400	747.46	149492	500		-	-	-	-	-	-
			High	852	170400	842.28	168456	1		-	-	-	-	-	-
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 the four most significant bits of the IE pdcch-ConfigSIB1 in the MIB. 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 4.3.1.1.1.20-2: Test frequencies for NR operating band n20 and SCS 30 kHz

Band width [MHz]	*carrier Bandwidth* [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}	CORESET#0 Offset [RBs] Note 1	CORESET#0 Index Note 1	offsetToPointA (SIB1) [PRBs] Note 1
10	24	Downlink	Low	796	159200	791.68	158336	0	15	1990	159170	14	6	1	12
			Mid	806	161200	765.32	153064	101		2015	161290	6	8	3	218
			High	816	163200	631.68	126336	500		2040	163230	10	7	2	1014
		Uplink	Low	837	167400	832.68	166536	0	-	-	-	-	-	-	-
			Mid	847	169400	662.68	132536	500		-	-	-	-	-	-
			High	857	171400	852.32	170464	1		-	-	-	-	-	-
15	38	Downlink	Low	798.5	159700	791.66	158332	0	15	1988	159130	2	6	1	12
			Mid	806	161200	762.8	152560	101		2006	160570	6	5	0	212
			High	813.5	162700	626.66	125332	500		2027	162250	18	7	2	1014
		Uplink	Low	839.5	167900	832.66	166532	0	-	-	-	-	-	-	-
			Mid	847	169400	660.16	132032	500		-	-	-	-	-	-
			High	854.5	170900	847.3	169460	1		-	-	-	-	-	-
20	51	Downlink	Low	801	160200	791.82	158364	0	15	1989	159150	22	5	0	10
			Mid	806	161200	760.46	152092	101		2000	160090	2	5	0	212
			High	811	162200	621.82	124364	500		2014	161090	2	5	0	1010
		Uplink	Low	842	168400	832.82	166564	0	-	-	-	-	-	-	-
			Mid	847	169400	657.82	131564	500		-	-	-	-	-	-
			High	852	170400	842.46	168492	1		-	-	-	-	-	-
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 the four most significant bits of the IE pdcch-ConfigSIB1 in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.															

4.3.1.1.1.21 to 4.3.1.1.1.24 FFS

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

Band width [MHz]	*carrier Bandwidth* [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}	CORESET#0 Offset [RBs] Note 1	CORESET#0 Index 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
			Mid	1962.5	392500	1942.07	388414	101		4904	392410	0	0	0	101
			High	1992.5	398500	1900.25	380050	500		4979	398410	0	0	0	500
		Uplink	Low	1852.5	370500	1850.25	370050	0	-	-	-	-	-	-	-
			Mid	1882.5	376500	1790.25	358050	500		-	-	-	-	-	-
			High	1912.5	382500	1910.07	382014	1		-	-	-	-	-	-
10	52	Downlink	Low	1935	387000	1930.32	386064	0	15	4830	386430	2	0	0	0
			Mid	1962.5	392500	1939.64	387928	101		4898	391930	2	0	0	101
			High	1990	398000	1895.32	379064	500		4969	397490	22	0	0	500
		Uplink	Low	1855	371000	1850.32	370064	0	-	-	-	-	-	-	-
			Mid	1882.5	376500	1787.82	357564	500		-	-	-	-	-	-
			High	1910	382000	1905.14	381028	1		-	-	-	-	-	-
15	79	Downlink	Low	1937.5	387500	1930.39	386078	0	15	4831	386450	4	0	0	0
			Mid	1962.5	392500	1937.21	387442	101		4892	391450	4	0	0	101
			High	1987.5	397500	1890.39	378078	500		4956	396510	0	2	1	502
		Uplink	Low	1857.5	371500	1850.39	370078	0	-	-	-	-	-	-	-
			Mid	1882.5	376500	1785.39	357078	500		-	-	-	-	-	-
			High	1907.5	381500	1900.21	380042	1		-	-	-	-	-	-
20	106	Downlink	Low	1940	388000	1930.46	386092	0	15	4832	386650	18	4	2	4
			Mid	1962.5	392500	1934.78	386956	101		4886	390970	6	0	0	101
			High	1985	397000	1885.46	377092	500		4943	395530	2	2	1	502
		Uplink	Low	1860	372000	1850.46	370092	0	-	-	-	-	-	-	-
			Mid	1882.5	376500	1782.96	356592	500		-	-	-	-	-	-
			High	1905	381000	1895.28	379056	1		-	-	-	-	-	-

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 the four most significant bits of the IE pdcch-ConfigSIB1 in the MIB. 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 4.3.1.1.1.25-2: Test frequencies for NR operating band n25 and SCS 30 kHz

Band width [MHz]	*carrier Bandwidth* [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}	CORESET#0 Offset [RBs] Note 1	CORESET#0 Index Note 1	offsetToPointA (SIB1) [PRBs] Note 1
10	24	Downlink	Low	1935	387000	1930.68	386136	0	15	4836	386910	18	5	0	10
			Mid	1962.5	392500	1921.82	384364	101		4904	392410	18	5	0	212
			High	1990	398000	1805.68	361136	500		4975	397970	14	6	1	1012
		Uplink	Low	1855	371000	1850.68	370136	0	-	-	-	-	-	-	-
			Mid	1882.5	376500	1698.18	339636	500		-	-	-	-	-	-
			High	1910	382000	1905.32	381064	1		-	-	-	-	-	-
15	38	Downlink	Low	1937.5	387500	1930.66	386132	0	15	4837	386930	2	6	1	12
			Mid	1962.5	392500	1919.3	383860	101		4898	391930	2	6	1	214
			High	1987.5	397500	1800.66	360132	500		4962	396990	22	6	1	1012
		Uplink	Low	1857.5	371500	1850.66	370132	0	-	-	-	-	-	-	-
			Mid	1882.5	376500	1695.66	339132	500		-	-	-	-	-	-
			High	1907.5	381500	1900.3	380060	1		-	-	-	-	-	-
20	51	Downlink	Low	1940	388000	1930.82	386164	0	15	4835	386890	2	5	0	10
			Mid	1962.5	392500	1916.96	383392	101		4892	391450	22	5	0	212
			High	1985	397000	1795.82	359164	500		4949	396010	18	6	1	1012
		Uplink	Low	1860	372000	1850.82	370164	0	-	-	-	-	-	-	-
			Mid	1882.5	376500	1693.32	338664	500		-	-	-	-	-	-
			High	1905	381000	1895.46	379092	1		-	-	-	-	-	-
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 the four most significant bits of the IE pdcch-ConfigSIB1 in the MIB. 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 4.3.1.1.1.25-3: Test frequencies for NR operating band n25 and SCS 60 kHz

Bandwidth [MHz]	*carrierBandwidth* [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	*absoluteFrequencyPointA* [ARFCN]	*offsetToCarrier* [PRBs]
10	11	Downlink	Low	1935	387000	1931.04	386208	0
			Mid	1962.5	392500	1885.82	377164	101
			High	1990	398000	1626.04	325208	500
		Uplink	Low	1855	371000	1851.04	370208	0
			Mid	1882.5	376500	1518.54	303708	500
			High	1910	382000	1905.32	381064	1
15	18	Downlink	Low	1937.5	387500	1931.02	386204	0
			Mid	1962.5	392500	1883.3	376660	101
			High	1987.5	397500	1621.02	324204	500
		Uplink	Low	1857.5	371500	1851.02	370204	0
			Mid	1882.5	376500	1516.02	303204	500
			High	1907.5	381500	1900.3	380060	1
20	24	Downlink	Low	1940	388000	1931.36	386272	0
			Mid	1962.5	392500	1881.14	376228	101
			High	1985	397000	1616.36	323272	500
		Uplink	Low	1860	372000	1851.36	370272	0
			Mid	1882.5	376500	1513.86	302772	500
			High	1905	381000	1895.64	379128	1

4.3.1.1.1.26 to 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

Band width [MHz]	*carrier Bandwidth* [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}	CORESET#0 Offset [RBs] Note 1	CORESET#0 Index Note 1	offsetToPointA (SIB1) [PRBs] Note 1
5	25	Downlink	Low	760.5	152100	758.25	151650	0	15	1902	152190	12	4	2	4
			Mid	780.5	156100	760.07	152014	101		1949	156010	0	0	0	101
			High	800.5	160100	708.25	141650	500		2002	160130	16	2	1	502
		Uplink	Low	705.5	141100	703.25	140650	0	-	-	-	-	-	-	-
			Mid	725.5	145100	633.25	126650	500		-	-	-	-	-	-
			High	745.5	149100	743.07	148614	1		-	-	-	-	-	-
10	52	Downlink	Low	763	152600	758.32	151664	0	15	1903	152210	14	4	2	4
			Mid	780.5	156100	757.64	151528	101		1943	155530	2	0	0	101
			High	798	159600	703.32	140664	500		1989	159150	18	2	1	502
		Uplink	Low	708	141600	703.32	140664	0	-	-	-	-	-	-	-
			Mid	725.5	145100	630.82	126164	500		-	-	-	-	-	-
			High	743	148600	738.14	147628	1		-	-	-	-	-	-
15	79	Downlink	Low	765.5	153100	758.39	151678	0	15	1901	152170	20	2	1	2
			Mid	780.5	156100	755.21	151042	101		1937	155050	4	0	0	101
			High	795.5	159100	698.39	139678	500		1976	158170	20	2	1	502
		Uplink	Low	710.5	142100	703.39	140678	0	-	-	-	-	-	-	-
			Mid	725.5	145100	628.39	125678	500		-	-	-	-	-	-
			High	740.5	148100	733.21	146642	1		-	-	-	-	-	-
20	106	Downlink	Low	768	153600	758.46	151692	0	15	1902	152190	22	2	1	2
			Mid	780.5	156100	752.78	150556	101		1931	154570	6	0	0	101
			High	793	158600	693.46	138692	500		1966	157250	18	4	2	504
		Uplink	Low	713	142600	703.46	140692	0	-	-	-	-	-	-	-
			Mid	725.5	145100	625.96	125192	500		-	-	-	-	-	-
			High	738	147600	728.28	145656	1		-	-	-	-	-	-

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 the four most significant bits of the IE pdcch-ConfigSIB1 in the MIB. 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 4.3.1.1.1.28-2: Test frequencies for NR operating band n28 and SCS 30 kHz

Band width [MHz]	*carrier Bandwidth* [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}	CORESET#0 Offset [RBs] Note 1	CORESET#0 Index Note 1	offsetToPointA (SIB1) [PRBs] Note 1
10	24	Downlink	Low	763	152600	758.68	151736	0	15	1909	152690	6	8	3	16
			Mid	780.5	156100	739.82	147964	101		1949	156010	18	5	0	212
			High	798	159600	613.68	122736	500		1995	159630	10	7	2	1014
		Uplink	Low	708	141600	703.68	140736	0	-	-	-	-	-	-	-
			Mid	725.5	145100	541.18	108236	500		-	-	-	-	-	-
			High	743	148600	738.32	147664	1		-	-	-	-	-	-
15	38	Downlink	Low	765.5	153100	758.66	151732	0	15	1907	152650	18	7	2	14
			Mid	780.5	156100	737.3	147460	101		1943	155530	2	6	1	214
			High	795.5	159100	608.66	121732	500		1982	158650	18	7	2	1014
		Uplink	Low	710.5	142100	703.66	140732	0	-	-	-	-	-	-	-
			Mid	725.5	145100	538.66	107732	500		-	-	-	-	-	-
			High	740.5	148100	733.3	146660	1		-	-	-	-	-	-
20	51	Downlink	Low	768	153600	758.82	151764	0	15	1908	152670	14	7	2	14
			Mid	780.5	156100	734.96	146992	101		1937	155050	22	5	0	212
			High	793	158600	603.82	120764	500		1969	157490	2	5	0	1010
		Uplink	Low	713	142600	703.82	140764	0	-	-	-	-	-	-	-
			Mid	725.5	145100	536.32	107264	500		-	-	-	-	-	-
			High	738	147600	728.46	145692	1		-	-	-	-	-	-

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 the four most significant bits of the IE pdcch-ConfigSIB1 in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.

4.3.1.1.1.29 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

Band width [MHz]	*carrier Bandwidth* [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}	CORESET#0 Offset [RBs] Note 1	CORESET#0 Index Note 1	offsetToPointA (SIB1) [PRBs] Note 1
5	25	Downlink & Uplink	Low	2012.5	402500	2010.25	402050	0	15	5032	402530	16	2	1	2
			Mid	2017.5	403500	1997.07	399414	101		5043	403470	20	0	0	101
			High	2022.5	404500	1930.25	386050	500		5054	404410	0	0	0	500
10	52	Downlink & Uplink	Low	2015	403000	2010.32	402064	0	15	5030	402490	22	0	0	0
			Mid	2017.5	403500	1994.64	398928	101		5037	402990	22	0	0	101
			High	2020	404000	1925.32	385064	500		5044	403490	22	0	0	500
15	79	Downlink & Uplink	Low	2017.5	403500	2010.39	402078	0	15	5031	402510	0	2	1	2
			Mid	2017.5	403500	1992.21	398442	101		5031	402510	0	2	1	103
			High	2017.5	403500	1920.39	384078	500		5031	402510	0	2	1	502

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 the four most significant bits of the IE pdcch-ConfigSIB1 in the MIB. 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 4.3.1.1.1.34-2: Test frequencies for NR operating band n34 and SCS 30 kHz

Band width [MHz]	*carrier Bandwidth* [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}	CORESET#0 Offset [RBs] Note 1	CORESET#0 Index Note 1	offsetToPointA (SIB1) [PRBs] Note 1
10	24	Downlink & Uplink	Low	2015	403000	2010.68	402136	0	15	5036	402970	14	6	1	12
			Mid	2017.5	403500	1976.82	395364	101		5043	403470	14	6	1	214
			High	2020	404000	1835.68	367136	500		5050	403970	14	6	1	1012
15	38	Downlink & Uplink	Low	2017.5	403500	2010.66	402132	0	15	5037	402990	22	6	1	12
			Mid	2017.5	403500	1974.3	394860	101		5037	402990	22	6	1	214
			High	2017.5	403500	1830.66	366132	500		5037	402990	22	6	1	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 the four most significant bits of the IE pdcch-ConfigSIB1 in the MIB. 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 4.3.1.1.1.34-3: Test frequencies for NR operating band n34 and SCS 60 kHz

Bandwidth [MHz]	*carrierBandwidth* [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	*absoluteFrequencyPointA* [ARFCN]	*offsetToCarrier* [PRBs]
10	11	Downlink & Uplink	Low	2015	403000	2011.04	402208	0
			Mid	2017.5	403500	1940.82	388164	101
			High	2020	404000	1656.04	331208	500
15	18	Downlink & Uplink	Low	2017.5	403500	2011.02	402204	0
			Mid	2017.5	403500	1938.3	387660	101
			High	2017.5	403500	1651.02	330204	500

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

Bandwidth [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}	CORESET#0 Offset [RBs] Note 1	CORESET#0 Index Note 1	offsetToPointA (SIB1) [PRBs] Note 1
5	25	Downlink & Uplink	Low	2572.5	514500	2570.25	514050	0	15	6432	514590	12	4	2	4
			Mid	2595	519000	2574.57	514914	101		6486	518910	0	0	0	101
			High	2617.5	523500	2525.25	505050	500		6543	523470	20	0	0	500
10	52	Downlink & Uplink	Low	2575	515000	2570.32	514064	0	15	6433	514610	14	4	2	4
			Mid	2595	519000	2572.14	514428	101		6480	518430	2	0	0	101
			High	2615	523000	2520.32	504064	500		6530	522490	22	0	0	500
15	79	Downlink & Uplink	Low	2577.5	515500	2570.39	514078	0	15	6431	514570	20	2	1	2
			Mid	2595	519000	2569.71	513942	101		6474	517950	4	0	0	101
			High	2612.5	522500	2515.39	503078	500		6520	521570	20	2	1	502
20	106	Downlink & Uplink	Low	2580	516000	2570.46	514092	0	15	6432	514590	22	2	1	2
			Mid	2595	519000	2567.28	513456	101		6468	517470	6	0	0	101
			High	2610	522000	2510.46	502092	500		6507	520590	22	2	1	502
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 the four most significant bits of the IE pdcch-ConfigSIB1 in the MIB. 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 4.3.1.1.1.38-2: Test frequencies for NR operating band n38 and SCS 30 kHz

Band width [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]	k_{SSB}	CORE SET#0 Offset [RBs] Note 1	CORE SET#0 Index Note 1	offsetTo PointA (SIB1) [PRBs] Note 1
10	24	Downlink & Uplink	Low	2575	515000	2570.68	514136	0	15	6439	515090	6	8	3	16
			Mid	2595	519000	2554.32	510864	101		6486	518910	18	5	0	212
			High	2615	523000	2430.68	486136	500		6536	522970	14	6	1	1012
15	38	Downlink & Uplink	Low	2577.5	515500	2570.66	514132	0	15	6437	515050	18	7	2	14
			Mid	2595	519000	2551.8	510360	101		6480	518430	2	6	1	214
			High	2612.5	522500	2425.66	485132	500		6526	522050	18	7	2	1014
20	51	Downlink & Uplink	Low	2580	516000	2570.82	514164	0	15	6438	515070	14	7	2	14
			Mid	2595	519000	2549.46	509892	101		6474	517950	22	5	0	212
			High	2610	522000	2420.82	484164	500		6513	521070	14	7	2	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 the four most significant bits of the IE pdcch-ConfigSIB1 in the MIB. 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 4.3.1.1.1.38-3: Test frequencies for NR operating band n38 and SCS 60 kHz

Bandwidth [MHz]	*carrierBandwidth* [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	*absolute FrequencyPoint A* [ARFCN]	*offsetTo Carrier* [PRBs]
10	11	Downlink	Low	2575	515000	2571.04	514208	0
			Mid	2595	519000	2518.32	503664	101
			High	2615	523000	2251.04	450208	500
15	18	Downlink	Low	2577.5	515500	2571.02	514204	0
			Mid	2595	519000	2515.8	503160	101
			High	2612.5	522500	2246.02	449204	500
20	24	Downlink	Low	2580	516000	2571.36	514272	0
			Mid	2595	519000	2513.64	502728	101
			High	2610	522000	2241.36	448272	500

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

Band width [MHz]	*carrier Bandwidth* [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}	CORESET#0 Offset [RBs] Note 1	CORESET#0 Index Note 1	offsetToPointA (SIB1) [PRBs] Note 1
5	25	Downlink & Uplink	Low	1882.5	376500	1880.25	376050	0	15	4707	376590	12	4	2	4
			Mid	1900	380000	1879.57	375914	101		4750	379970	20	0	0	101
			High	1917.5	383500	1825.25	365050	500		4793	383530	16	2	1	502
10	52	Downlink & Uplink	Low	1885	377000	1880.32	376064	0	15	4708	376610	14	4	2	4
			Mid	1900	380000	1877.14	375428	101		4744	379490	22	0	0	101
			High	1915	383000	1820.32	364064	500		4783	382610	14	4	2	504
15	79	Downlink & Uplink	Low	1887.5	377500	1880.39	376078	0	15	4706	376570	20	2	1	2
			Mid	1900	380000	1874.71	374942	101		4738	379010	0	2	1	103
			High	1912.5	382500	1815.39	363078	500		4770	381630	16	4	2	504
20	106	Downlink & Uplink	Low	1890	378000	1880.46	376092	0	15	4707	376590	22	2	1	2
			Mid	1900	380000	1872.28	374456	101		4732	378530	2	2	1	103
			High	1910	382000	1810.46	362092	500		4757	380650	18	4	2	504
25	133	Downlink & Uplink	Low	1892.5	378500	1880.53	376106	0	15	4708	376610	0	4	2	4
			Mid	1900	380000	1869.85	373970	101		4726	378050	4	2	1	103
			High	1907.5	381500	1805.53	361106	500		4744	379490	8	0	0	500
30	160	Downlink & Uplink	Low	1895	379000	1880.6	376120	0	15	4706	376570	6	2	1	2
			Mid	1900	380000	1867.42	373484	101		4720	377570	6	2	1	103
			High	1905	381000	1800.6	360120	500		4731	378510	10	0	0	500
40	216	Downlink & Uplink	Low	1900	380000	1880.56	376112	0	15	4708	376610	22	2	1	2
			Mid	1900	380000	1862.38	372476	101		4708	376610	22	2	1	103
			High	1900	380000	1790.56	358112	500		4708	376610	22	2	1	502
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 the four most significant bits of the IE pdcch-ConfigSIB1 in the MIB. 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 4.3.1.1.1.39-2: Test frequencies for NR operating band n39 and SCS 30 kHz

Band width [MHz]	*carrier Bandwidth* [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}	CORESET#0 Offset [RBs] Note 1	CORESET#0 Index Note 1	offsetToPointA (SIB1) [PRBs] Note 1
10	24	Downlink & Uplink	Low	1885	377000	1880.68	376136	0	15	4714	377090	6	8	3	16
			Mid	1900	380000	1859.32	371864	101		4750	379970	14	6	1	214
			High	1915	383000	1730.68	346136	500		4789	383090	6	8	3	1016
15	38	Downlink & Uplink	Low	1887.5	377500	1880.66	376132	0	15	4712	377050	18	7	2	14
			Mid	1900	380000	1856.8	371360	101		4744	379490	22	6	1	214
			High	1912.5	382500	1725.66	345132	500		4773	381870	6	5	0	1010
20	51	Downlink & Uplink	Low	1890	378000	1880.82	376164	0	15	4713	377070	14	7	2	14
			Mid	1900	380000	1854.46	370892	101		4738	379010	18	6	1	214
			High	1910	382000	1720.82	344164	500		4760	380890	2	5	0	1010
25	65	Downlink & Uplink	Low	1892.5	378500	1880.8	376160	0	15	4714	377090	22	7	2	14
			Mid	1900	380000	1851.94	370388	101		4732	378530	2	7	2	216
			High	1907.5	381500	1715.8	343160	500		4750	379970	6	6	1	1012
30	78	Downlink & Uplink	Low	1895	379000	1880.96	376192	0	15	4712	377050	22	6	1	12
			Mid	1900	380000	1849.6	369920	101		4726	378050	22	6	1	214
			High	1905	381000	1710.96	342192	500		4737	378990	2	6	1	1012
40	106	Downlink & Uplink	Low	1900	380000	1880.92	376184	0	15	4714	377090	14	7	2	14
			Mid	1900	380000	1844.56	368912	101		4714	377090	14	7	2	216
			High	1900	380000	1700.92	340184	500		4714	377090	14	7	2	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 the four most significant bits of the IE pdcch-ConfigSIB1 in the MIB. 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 4.3.1.1.1.39-3: Test frequencies for NR operating band n39 and SCS 60 kHz

Bandwidth [MHz]	*carrierBandwidth* [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	*absoluteFrequencyPointA* [ARFCN]	*offsetToCarrier* [PRBs]
10	11	Downlink & Uplink	Low	1885	377000	1881.04	376208	0
			Mid	1900	380000	1823.32	364664	101
			High	1915	383000	1551.04	310208	500
15	18	Downlink & Uplink	Low	1887.5	377500	1881.02	376204	0
			Mid	1900	380000	1820.8	364160	101
			High	1912.5	382500	1546.02	309204	500
20	24	Downlink & Uplink	Low	1890	378000	1881.36	376272	0
			Mid	1900	380000	1818.64	363728	101
			High	1910	382000	1541.36	308272	500
25	31	Downlink & Uplink	Low	1892.5	378500	1881.34	376268	0
			Mid	1900	380000	1816.12	363224	101
			High	1907.5	381500	1536.34	307268	500
30	38	Downlink & Uplink	Low	1895	379000	1881.32	376264	0
			Mid	1900	380000	1813.6	362720	101
			High	1905	381000	1531.32	306264	500
40	51	Downlink & Uplink	Low	1900	380000	1881.64	376328	0
			Mid	1900	380000	1808.92	361784	101
			High	1900	380000	1521.64	304328	500

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

Band width [MHz]	*carrier Bandwidth* [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}	CORESET#0 Offset [RBs] Note 1	CORESET#0 Index Note 1	offsetToPointA (SIB1) [PRBs] Note 1
5	25	Downlink & Uplink	Low	2302.5	460500	2300.25	460050	0	15	5757	460590	12	4	2	4
			Mid	2350	470000	2329.57	465914	101		5875	469970	20	0	0	101
			High	2397.5	479500	2305.25	461050	500		5993	479530	16	2	1	502
10	52	Downlink & Uplink	Low	2305	461000	2300.32	460064	0	15	5758	460610	14	4	2	4
			Mid	2350	470000	2327.14	465428	101		5869	469490	22	0	0	101
			High	2395	479000	2300.32	460064	500		5983	478610	14	4	2	504
15	79	Downlink & Uplink	Low	2307.5	461500	2300.39	460078	0	15	5756	460570	20	2	1	2
			Mid	2350	470000	2324.71	464942	101		5863	469010	0	2	1	103
			High	2392.5	478500	2295.39	459078	500		5970	477630	16	4	2	504
20	106	Downlink & Uplink	Low	2310	462000	2300.46	460092	0	15	5757	460590	22	2	1	2
			Mid	2350	470000	2322.28	464456	101		5857	468530	2	2	1	103
			High	2390	478000	2290.46	458092	500		5957	476650	18	4	2	504
25	133	Downlink & Uplink	Low	2312.5	462500	2300.53	460106	0	15	5758	460610	0	4	2	4
			Mid	2350	470000	2319.85	463970	101		5851	468050	4	2	1	103
			High	2387.5	477500	2285.53	457106	500		5944	475490	8	0	0	500
30	160	Downlink & Uplink	Low	2315	463000	2300.6	460120	0	15	5756	460570	6	2	1	2
			Mid	2350	470000	2317.42	463484	101		5845	467570	6	2	1	103
			High	2385	477000	2280.6	456120	500		5931	474510	10	0	0	500
40	216	Downlink & Uplink	Low	2320	464000	2300.56	460112	0	15	5758	460610	22	2	1	2
			Mid	2350	470000	2312.38	462476	101		5833	466610	22	2	1	103
			High	2380	476000	2270.56	454112	500		5908	472610	22	2	1	502
50	270	Downlink & Uplink	Low	2325	465000	2300.7	460140	0	15	5757	460590	6	2	1	2
			Mid	2350	470000	2307.52	461504	101		5821	465650	2	4	2	105
			High	2375	475000	2260.7	452140	500		5882	470650	2	4	2	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 the four most significant bits of the IE pdcch-ConfigSIB1 in the MIB. 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 4.3.1.1.1.40-2: Test frequencies for NR operating band n40 and SCS 30 kHz

Band width [MHz]	*carrier Bandwidth* [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}	CORESET#0 Offset [RBs] Note 1	CORESET#0 Index Note 1	offsetToPointA (SIB1) [PRBs] Note 1
10	24	Downlink	Low	2305	461000	2300.68	460136	0	15	5764	461090	6	8	3	16
		&	Mid	2350	470000	2309.32	461864	101		5875	469970	14	6	1	214
		Uplink	High	2395	479000	2210.68	442136	500		5989	479090	6	8	3	1016
15	38	Downlink	Low	2307.5	461500	2300.66	460132	0	15	5762	461050	18	7	2	14
		&	Mid	2350	470000	2306.8	461360	101		5869	469490	22	6	1	214
		Uplink	High	2392.5	478500	2205.66	441132	500		5973	477870	6	5	0	1010
20	51	Downlink	Low	2310	462000	2300.82	460164	0	15	5763	461070	14	7	2	14
		&	Mid	2350	470000	2304.46	460892	101		5863	469010	18	6	1	214
		Uplink	High	2390	478000	2200.82	440164	500		5960	476890	2	5	0	1010
25	65	Downlink	Low	2312.5	462500	2300.8	460160	0	15	5764	461090	22	7	2	14
		&	Mid	2350	470000	2301.94	460388	101		5857	468530	2	7	2	216
		Uplink	High	2387.5	477500	2195.8	439160	500		5950	475970	6	6	1	1012
30	78	Downlink	Low	2315	463000	2300.96	460192	0	15	5762	461050	22	6	1	12
		&	Mid	2350	470000	2299.6	459920	101		5851	468050	22	6	1	214
		Uplink	High	2385	477000	2190.96	438192	500		5937	474990	2	6	1	1012
40	106	Downlink	Low	2320	464000	2300.92	460184	0	15	5764	461090	14	7	2	14
		&	Mid	2350	470000	2294.56	458912	101		5839	467090	14	7	2	216
		Uplink	High	2380	476000	2180.92	436184	500		5914	473090	14	7	2	1014
50	133	Downlink	Low	2325	465000	2301.06	460212	0	15	5763	461070	22	6	1	12
		&	Mid	2350	470000	2289.7	457940	101		5827	466130	18	7	2	216
		Uplink	High	2375	475000	2171.06	434212	500		5888	471130	18	7	2	1014
60	162	Downlink	Low	2330	466000	2300.84	460168	0	15	5762	461050	6	7	2	14
		&	Mid	2350	470000	2284.48	456896	101		5812	464930	14	5	0	212
		Uplink	High	2370	474000	2160.84	432168	500		5862	468990	10	6	1	1012
80	217	Downlink	Low	2340	468000	2300.94	460188	0	15	5763	461070	6	7	2	14
		&	Mid	2350	470000	2274.58	454916	101		5788	463010	10	6	1	214
		Uplink	High	2360	472000	2140.94	428188	500		5813	465130	2	8	3	1016
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 the four most significant bits of the IE pdcch-ConfigSIB1 in the MIB. 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 4.3.1.1.1.40-3: Test frequencies for NR operating band n40 and SCS 60 kHz

Bandwidth [MHz]	*carrierBandwidth* [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	*absoluteFrequencyPointA* [ARFCN]	*offsetToCarrier* [PRBs]
10	11	Downlink & Uplink	Low	2305	461000	2301.04	460208	0
			Mid	2350	470000	2273.32	454664	101
			High	2395	479000	2031.04	406208	500
15	18	Downlink & Uplink	Low	2307.5	461500	2301.02	460204	0
			Mid	2350	470000	2270.8	454160	101
			High	2392.5	478500	2026.02	405204	500
20	24	Downlink & Uplink	Low	2310	462000	2301.36	460272	0
			Mid	2350	470000	2268.64	453728	101
			High	2390	478000	2021.36	404272	500
25	31	Downlink & Uplink	Low	2312.5	462500	2301.34	460268	0
			Mid	2350	470000	2266.12	453224	101
			High	2387.5	477500	2016.34	403268	500
30	38	Downlink & Uplink	Low	2315	463000	2301.32	460264	0
			Mid	2350	470000	2263.6	452720	101
			High	2385	477000	2011.32	402264	500
40	51	Downlink & Uplink	Low	2320	464000	2301.64	460328	0
			Mid	2350	470000	2258.92	451784	101
			High	2380	476000	2001.64	400328	500
50	65	Downlink & Uplink	Low	2325	465000	2301.6	460320	0
			Mid	2350	470000	2253.88	450776	101
			High	2375	475000	1991.6	398320	500
60	79	Downlink & Uplink	Low	2330	466000	2301.56	460312	0
			Mid	2350	470000	2248.84	449768	101
			High	2370	474000	1981.56	396312	500
80	107	Downlink & Uplink	Low	2340	468000	2301.48	460296	0
			Mid	2350	470000	2238.76	447752	101
			High	2360	472000	1961.48	392296	500

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 and SCS 15 kHz

Band width [MHz]	*carrier Bandwidth* [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}	CORESET#0 Offset [RBs] Note 1	CORESET#0 Index Note 1	offsetToPointA (SIB1) [PRBs] Note 1
10	52	Downlink & Uplink	Low	2501.01	500202	2496.33	499266	0	15	6246	499710	4	2	1	2
			Mid	2593.005	518601	2570.145	514029	101		6477	518190	7	4	2	105
			High	2685	537000	2590.32	518064	500		6705	536430	2	0	0	500
15	79	Downlink & Uplink	Low	2503.5	500700	2496.39	499278	0	15	6246	499710	0	2	1	2
			Mid	2593.005	518601	2567.715	513543	101		6471	517710	9	4	2	105
			High	2682.495	536499	2585.385	517077	500		6693	535470	11	0	0	500
20	106	Downlink & Uplink	Low	2506.005	501201	2496.465	499293	0	15	6246	499710	19	0	0	0
			Mid	2593.005	518601	2565.285	513057	101		6465	517230	11	4	2	105
			High	2679.99	535998	2580.45	516090	500		6681	534510	20	0	0	500
40	216	Downlink & Uplink	Low	2516.01	503202	2496.57	499314	0	15	6246	499710	12	0	0	0
			Mid	2592.99	518598	2555.37	511074	101		6438	515070	0	0	0	101
			High	2670	534000	2560.56	512112	500		6633	530670	18	4	2	504
50	270	Downlink & Uplink	Low	2521.005	504201	2496.705	499341	0	15	6246	499710	3	0	0	0
			Mid	2593.005	518601	2550.525	510105	101		6426	514110	3	0	0	101
			High	2664.99	532998	2550.69	510138	500		6606	528510	4	0	0	500
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 the four most significant bits of the IE pdcch-ConfigSIB1 in the MIB. 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. 41-2: Test frequencies for NR operating band n41 and SCS 30 kHz

Band width [MHz]	*carrier Bandwidth* [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}	CORESET#0 Offset [RBs] Note 1	CORESET#0 Index Note 1	offsetToPointA (SIB1) [PRBs] Note 1
10	24	Downlink	Low	2501.01	500202	2496.69	499338	0	30	6252	500190	20	1	1	2
		&	Mid	2592.99	518598	2552.31	510462	101		6483	518670	0	3	3	208
		Uplink	High	2685	537000	2500.68	500136	500		6711	536910	18	0	0	1000
15	38	Downlink	Low	2503.5	500700	2496.66	499332	0	30	6252	500190	22	1	1	2
		&	Mid	2592.99	518598	2549.79	509958	101		6474	517950	0	0	0	202
		Uplink	High	2682.48	536496	2495.64	499128	500		6699	535950	10	1	1	1002
20	51	Downlink	Low	2506.02	501204	2496.84	499368	0	30	6252	500190	10	1	1	2
		&	Mid	2592.99	518598	2547.45	509490	101		6471	517710	4	3	3	208
		Uplink	High	2679.99	535998	2490.81	498162	500		6687	534990	12	1	1	1002
40	106	Downlink	Low	2516.01	503202	2496.93	499386	0	30	6252	500190	4	1	1	2
		&	Mid	2592.99	518598	2537.55	507510	101		6444	515550	16	0	0	202
		Uplink	High	2670	534000	2470.92	494184	500		6636	530910	2	0	0	1000
50	133	Downlink	Low	2521.02	504204	2497.08	499416	0	30	6252	500190	18	0	0	0
		&	Mid	2592.99	518598	2532.69	506538	101		6432	514590	20	0	0	202
		Uplink	High	2664.99	532998	2461.05	492210	500		6612	528990	20	0	0	1000
60	162	Downlink	Low	2526	505200	2496.84	499368	0	30	6252	500190	10	1	1	2
		&	Mid	2592.99	518598	2527.47	505494	101		6420	513630	0	2	2	206
		Uplink	High	2659.98	531996	2450.82	490164	500		6588	527070	14	2	2	1004
80	217	Downlink	Low	2536.02	507204	2496.96	499392	0	30	6252	500190	2	1	1	2
		&	Mid	2592.99	518598	2517.57	503514	101		6396	511710	20	2	2	206
		Uplink	High	2649.99	529998	2430.93	486186	500		6537	522990	4	1	1	1002
90	245	Downlink	Low	2541	508200	2496.9	499380	0	30	6252	500190	6	1	1	2
		&	Mid	2592.99	518598	2512.53	502506	101		6381	510510	4	0	0	202
		Uplink	High	2644.98	528996	2420.88	484176	500		6513	521070	10	2	2	1004
100	273	Downlink	Low	2546.01	509202	2496.87	499374	0	30	6252	500190	8	1	1	2
		&	Mid	2592.99	518598	2507.49	501498	101		6369	509550	20	0	0	202
		Uplink	High	2640	528000	2410.86	482172	500		6486	518910	6	0	0	1000

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 the four most significant bits of the IE pdcch-ConfigSIB1 in the MIB. 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 4.3.1.1.1.41-3: Test frequencies for NR operating band n41 and SCS 60 kHz

Bandwidth [MHz]	*carrierBandwidth* [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	*absoluteFrequencyPointA* [ARFCN]	*offsetToCarrier* [PRBs]
10	11	Downlink & Uplink	Low	2501.01	500202	2497.05	499410	0
			Mid	2593.005	518601	2516.325	503265	101
			High	2685	537000	2321.04	464208	500
15	18	Downlink & Uplink	Low	2503.5	500700	2497.02	499404	0
			Mid	2593.005	518601	2513.805	502761	101
			High	2682.495	536499	2316.015	463203	500
20	24	Downlink & Uplink	Low	2506.005	501201	2497.365	499473	0
			Mid	2593.005	518601	2511.645	502329	101
			High	2679.99	535998	2311.35	462270	500
40	51	Downlink & Uplink	Low	2516.01	503202	2497.65	499530	0
			Mid	2593.005	518601	2501.925	500385	101
			High	2670	534000	2291.64	458328	500
50	65	Downlink & Uplink	Low	2521.005	504201	2497.605	499521	0
			Mid	2593.005	518601	2496.885	499377	101
			High	2664.99	532998	2281.59	456318	500
60	79	Downlink & Uplink	Low	2526	505200	2497.56	499512	0
			Mid	2593.005	518601	2491.845	498369	101
			High	2659.995	531999	2271.555	454311	500
80	107	Downlink & Uplink	Low	2536.005	507201	2497.485	499497	0
			Mid	2593.005	518601	2481.765	496353	101
			High	2649.99	529998	2251.47	450294	500
90	121	Downlink & Uplink	Low	2541	508200	2497.44	499488	0
			Mid	2593.005	518601	2476.725	495345	101
			High	2644.995	528999	2241.435	448287	500
100	135	Downlink & Uplink	Low	2546.01	509202	2497.41	499482	0
			Mid	2593.005	518601	2471.685	494337	101
			High	2640	528000	2231.4	446280	500

4.3.1.1.1.42 to 4.3.1.1.1.50 FFS

4.3.1.1.1.51 Reference test frequencies for NR operating band n51

Table 4.3.1.1.1.51-1: Test frequencies for NR operating band n51 and SCS 15 kHz

Band width [MHz]	*carrier Bandwidth* [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}	CORESET#0 Offset [RBs] Note 1	CORESET#0 Index Note 1	offsetToPointA (SIB1) [PRBs] Note 1
5	25	Downlink & Uplink	Low	1429.5	285900	1427.25	285450	0	15	3573	285870	20	0	0	0
			Mid	1429.5	285900	1409.07	281814	101		3573	285870	20	0	0	101
			High	1429.5	285900	1337.25	267450	500		3573	285870	20	0	0	500

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 the four most significant bits of the IE pdcch-ConfigSIB1 in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.

4.3.1.1.1.52 to 4.3.1.1.1.65 FFS

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/DL Bandwidth combination	Bandwidth [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}	CORESET#0 Offset [RBs] Note 1	CORESET#0 Index Note 1	offsetToPointA (SIB1) [PRBs] Note 1
5/5	5	25	Downlink	Low	2112.5	422500	2110.25	422050	0	15	5279	422410	0	0	0	0
				Mid	2145	429000	2124.57	424914	101		5361	428910	0	0	0	101
				High	2177.5	435500	2085.25	417050	500		5443	435410	0	0	0	500
	5	25	Uplink	Low	1712.5	342500	1710.25	342050	0	-	-	-	-	-	-	-
				Mid	1745	349000	1652.75	330550	500		-	-	-	-	-	-
				High	1777.5	355500	1775.07	355014	1		-	-	-	-	-	-
5/20	20	106	Downlink	Low	2120	424000	2110.46	422092	0	15	5282	422650	18	4	2	4
				Mid	2152.5	430500	2124.78	424956	101		5364	429150	18	4	2	105
				High	2185	437000	2085.46	417092	500		5446	435650	18	4	2	504
	5	25	Uplink	Low	1712.5	342500	1710.25	342050	0	-	-	-	-	-	-	-
				Mid	1745	349000	1652.75	330550	500		-	-	-	-	-	-
				High	1777.5	355500	1775.07	355014	1		-	-	-	-	-	-
5/40	40	216	Downlink	Low	2130	426000	2110.56	422112	0	15	5283	422670	18	4	2	4
				Mid	2162.5	432500	2124.88	424976	101		5365	429170	18	4	2	105
				High	2180	436000	2070.56	414112	500		5405	432490	6	0	0	500
	5	25	Uplink	Low	1712.5	342500	1710.25	342050	0	-	-	-	-	-	-	-
				Mid	1745	349000	1652.75	330550	500		-	-	-	-	-	-
				High	1762.5	352500	1760.07	352014	1		-	-	-	-	-	-
10/10	10	52	Downlink	Low	2115	423000	2110.32	422064	0	15	5280	422430	2	0	0	0
				Mid	2145	429000	2122.14	424428	101		5355	428430	2	0	0	101
				High	2175	435000	2080.32	416064	500		5430	434430	2	0	0	500
	10	52	Uplink	Low	1715	343000	1710.32	342064	0	-	-	-	-	-	-	-
				Mid	1745	349000	1650.32	330064	500		-	-	-	-	-	-
				High	1775	355000	1770.14	354028	1		-	-	-	-	-	-
10/20	20	106	Downlink	Low	2120	424000	2110.46	422092	0	15	5282	422650	18	4	2	4
				Mid	2150	430000	2122.28	424456	101		5357	428650	18	4	2	105
				High	2180	436000	2080.46	416092	500		5432	434650	18	4	2	504
	10	52	Uplink	Low	1715	343000	1710.32	342064	0	-	-	-	-	-	-	-
				Mid	1745	349000	1650.32	330064	500		-	-	-	-	-	-
				High	1775	355000	1770.14	354028	1		-	-	-	-	-	-
10/40	40	216	Downlink	Low	2130	426000	2110.56	422112	0	15	5283	422670	18	4	2	4
				Mid	2160	432000	2122.38	424476	101		5358	428670	18	4	2	105
				High	2180	436000	2070.56	414112	500		5405	432490	6	0	0	500
	10	52	Uplink	Low	1715	343000	1710.32	342064	0	-	-	-	-	-	-	-
				Mid	1745	349000	1650.32	330064	500		-	-	-	-	-	-
				High	1765	353000	1760.14	352028	1		-	-	-	-	-	-
15/15	15	79	Downlink	Low	2117.5	423500	2110.39	422078	0	15	5281	422450	4	0	0	0
				Mid	2145	429000	2119.71	423942	101		5349	427950	4	0	0	101
				High	2172.5	434500	2075.39	415078	500		5417	433450	4	0	0	500
	15	79	Uplink	Low	1717.5	343500	1710.39	342078	0	-	-	-	-	-	-	-

				Mid	1745	349000	1647.89	329578	500		-	-	-	-	-	-
				High	1772.5	354500	1765.21	353042	1		-	-	-	-	-	-
20/20	20	106	Downlink	Low	2120	424000	2110.46	422092	0	15	5282	422650	18	4	2	4
				Mid	2145	429000	2117.28	423456	101		5343	427470	6	0	0	101
				High	2170	434000	2070.46	414092	500		5407	432530	2	2	1	502
	20	106	Uplink	Low	1720	344000	1710.46	342092	0	-	-	-	-	-	-	-
				Mid	1745	349000	1645.46	329092	500		-	-	-	-	-	-
				High	1770	354000	1760.28	352056	1		-	-	-	-	-	-
20/40	40	216	Downlink	Low	2130	426000	2110.56	422112	0	15	5283	422670	18	4	2	4
				Mid	2155	431000	2117.38	423476	101		5344	427490	6	0	0	101
				High	2180	436000	2070.56	414112	500		5405	432490	6	0	0	500
	20	106	Uplink	Low	1720	344000	1710.46	342092	0	-	-	-	-	-	-	-
				Mid	1745	349000	1645.46	329092	500		-	-	-	-	-	-
				High	1770	354000	1760.28	352056	1		-	-	-	-	-	-
40/40	40	216	Downlink	Low	2130	426000	2110.56	422112	0	15	5283	422670	18	4	2	4
				Mid	2145	429000	2107.38	421476	101		5319	425550	2	2	1	103
				High	2160	432000	2050.56	410112	500		5358	428670	18	4	2	504
	40	216	Uplink	Low	1730	346000	1710.56	342112	0	-	-	-	-	-	-	-
				Mid	1745	349000	1635.56	327112	500		-	-	-	-	-	-
				High	1760	352000	1740.38	348076	1		-	-	-	-	-	-
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 the four most significant bits of the IE pdcch-ConfigSIB1 in the MIB. 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 4.3.1.1.1.66-2: Test frequencies for NR operating band n66, uplink and downlink channel bandwidth combinations and SCS 30 kHz

UL/DL Band width combi nation	**Bandw idth [MHz]**	***carrier Bandw idth* [PRBs]**	**Range**		**Carrier centre [MHz]**	**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}	**CORE SET#0 Offset [RBs] Note 1**	**CORE SET#0 Index Note 1**	**offsetTo PointA (SIB1) [PRBs] Note 1**
10/10	10	24	Downlink	Low	2115	423000	2110.68	422136	0	15	5286	422910	18	5	0	10
				Mid	2145	429000	2104.32	420864	101		5361	428910	18	5	0	212
				High	2175	435000	1990.68	398136	500		5436	434910	18	5	0	1010
	10	24	Uplink	Low	1715	343000	1710.68	342136	0	-	-	-	-	-	-	-
				Mid	1745	349000	1560.68	312136	500		-	-	-	-	-	-
				High	1775	355000	1770.32	354064	1		-	-	-	-	-	-
10/20	20	51	Downlink	Low	2120	424000	2110.82	422164	0	15	5285	422890	2	5	0	10
				Mid	2150	430000	2104.46	420892	101		5360	428890	2	5	0	212
				High	2180	436000	1990.82	398164	500		5435	434890	2	5	0	1010
	10	24	Uplink	Low	1715	343000	1710.68	342136	0	-	-	-	-	-	-	-
				Mid	1745	349000	1560.68	312136	500		-	-	-	-	-	-
				High	1775	355000	1770.32	354064	1		-	-	-	-	-	-
10/40	40	106	Downlink	Low	2130	426000	2110.92	422184	0	15	5286	422910	2	5	0	10
				Mid	2160	432000	2104.56	420912	101		5361	428910	2	5	0	212
				High	2180	436000	1980.92	396184	500		5411	432970	22	5	0	1010
	10	24	Uplink	Low	1715	343000	1710.68	342136	0	-	-	-	-	-	-	-
				Mid	1745	349000	1560.68	312136	500		-	-	-	-	-	-
				High	1765	353000	1760.32	352064	1		-	-	-	-	-	-
15/15	15	38	Downlink	Low	2117.5	423500	2110.66	422132	0	15	5287	422930	2	6	1	12
				Mid	2145	429000	2101.8	420360	101		5355	428430	2	6	1	214
				High	2172.5	434500	1985.66	397132	500		5423	433930	2	6	1	1012
	15	38	Uplink	Low	1717.5	343500	1710.66	342132	0	-	-	-	-	-	-	-
				Mid	1745	349000	1558.16	311632	500		-	-	-	-	-	-
				High	1772.5	354500	1765.3	353060	1		-	-	-	-	-	-
20/20	20	51	Downlink	Low	2120	424000	2110.82	422164	0	15	5285	422890	2	5	0	10
				Mid	2145	429000	2099.46	419892	101		5349	427950	22	5	0	212
				High	2170	434000	1980.82	396164	500		5413	433010	18	6	1	1012
	20	51	Uplink	Low	1720	344000	1710.82	342164	0	-	-	-	-	-	-	-
				Mid	1745	349000	1555.82	311164	500		-	-	-	-	-	-
				High	1770	354000	1760.46	352092	1		-	-	-	-	-	-
20/40	40	106	Downlink	Low	2130	426000	2110.92	422184	0	15	5286	422910	2	5	0	10
				Mid	2155	431000	2099.56	419912	101		5350	427970	22	5	0	212
				High	2180	436000	1980.92	396184	500		5411	432970	22	5	0	1010
	20	51	Uplink	Low	1720	344000	1710.82	342164	0	-	-	-	-	-	-	-
				Mid	1745	349000	1555.82	311164	500		-	-	-	-	-	-
				High	1770	354000	1760.46	352092	1		-	-	-	-	-	-
40/40	40	106	Downlink	Low	2130	426000	2110.92	422184	0	15	5286	422910	2	5	0	10
				Mid	2145	429000	2089.56	417912	101		5325	426030	18	6	1	214
				High	2160	432000	1960.92	392184	500		5361	428910	2	5	0	1010
	40	106	Uplink	Low	1730	346000	1710.92	342184	0	-	-	-	-	-	-	-

				Mid	1745	349000	1545.92	309184	500		-	-	-	-	-	-
				High	1760	352000	1740.56	348112	1		-	-	-	-	-	-
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 the four most significant bits of the IE pdcch-ConfigSIB1 in the MIB. 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 4.3.1.1.1.66-3: Test frequencies for NR operating band n66, uplink and downlink channel bandwidth combinations and SCS 60 kHz

UL/DLBand width combination	Bandwidth [MHz]	*carrierBandwidth* [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	*absoluteFrequencyPointA* [ARFCN]	*offsetToCarrier* [Carrier PRBs]
10/10	10	11	Downlink	Low	2115	423000	2111.04	422208	0
				Mid	2145	429000	2068.32	413664	101
				High	2175	435000	1811.04	362208	500
	10	11	Uplink	Low	1715	343000	1711.04	342208	0
				Mid	1745	349000	1381.04	276208	500
				High	1775	355000	1770.32	354064	1
10/20	20	24	Downlink	Low	2120	424000	2111.36	422272	0
				Mid	2150	430000	2068.64	413728	101
				High	2180	436000	1811.36	362272	500
	10	11	Uplink	Low	1715	343000	1711.04	342208	0
				Mid	1745	349000	1381.04	276208	500
				High	1775	355000	1770.32	354064	1
10/40	40	51	Downlink	Low	2130	426000	2111.64	422328	0
				Mid	2160	432000	2068.92	413784	101
				High	2180	436000	1801.64	360328	500
	10	11	Uplink	Low	1715	343000	1711.04	342208	0
				Mid	1745	349000	1381.04	276208	500
				High	1765	353000	1760.32	352064	1
15/15	15	18	Downlink	Low	2117.5	423500	2111.02	422204	0
				Mid	2145	429000	2065.8	413160	101
				High	2172.5	434500	1806.02	361204	500
	15	18	Uplink	Low	1717.5	343500	1711.02	342204	0
				Mid	1745	349000	1378.52	275704	500
				High	1772.5	354500	1765.3	353060	1
20/20	20	24	Downlink	Low	2120	424000	2111.36	422272	0
				Mid	2145	429000	2063.64	412728	101
				High	2170	434000	1801.36	360272	500
	20	24	Uplink	Low	1720	344000	1711.36	342272	0
				Mid	1745	349000	1376.36	275272	500
				High	1770	354000	1760.64	352128	1
20/40	40	51	Downlink	Low	2130	426000	2111.64	422328	0
				Mid	2155	431000	2063.92	412784	101
				High	2180	436000	1801.64	360328	500
	20	24	Uplink	Low	1720	344000	1711.36	342272	0
				Mid	1745	349000	1376.36	275272	500
				High	1770	354000	1760.64	352128	1
40/40	40	51	Downlink	Low	2130	426000	2111.64	422328	0
				Mid	2145	429000	2053.92	410784	101
				High	2160	432000	1781.64	356328	500
	40	51	Uplink	Low	1730	346000	1711.64	342328	0
				Mid	1745	349000	1366.64	273328	500

				High	1760	352000	1740.92	348184	1

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

Editor's note: Test frequencies for the Tx-RX frequency separation of 295 Mhz option as specified in TS 38.101-1, Table 5.4.4-1 is FFS.

Table 4.3.1.1.1.70-1: 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 Band width combi nation	Bandw idth [MHz]	*carrier Bandw idth* [PRBs]	Range		Carrier centre [MHz]	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}	CORE SET#0 Offset [RBs] Note 1	CORE SET#0 Index Note 1	offsetTo PointA (SIB1) [PRBs] Note 1
5/5	5	25	Downlink	Low	1997.5	399500	1995.25	399050	0	15	4993	399410	0	0	0	0
				Mid	2002.5	400500	1982.07	396414	101		5007	400590	12	4	2	105
				High	2007.5	401500	1915.25	383050	500		5018	401530	16	2	1	502
	5	25	Uplink	Low	1697.5	339500	1695.25	339050	0	-	-	-	-	-	-	-
				Mid	1702.5	340500	1610.25	322050	500		-	-	-	-	-	-
				High	1707.5	341500	1705.07	341014	1		-	-	-	-	-	-
5/10	10	52	Downlink	Low	2000	400000	1995.32	399064	0	15	4994	399610	14	4	2	4
				Mid	2005	401000	1982.14	396428	101		5008	400610	14	4	2	105
				High	2010	402000	1915.32	383064	500		5019	401550	18	2	1	502
	5	25	Uplink	Low	1697.5	339500	1695.25	339050	0	-	-	-	-	-	-	-
				Mid	1702.5	340500	1610.25	322050	500		-	-	-	-	-	-
				High	1707.5	341500	1705.07	341014	1		-	-	-	-	-	-
5/15	15	79	Downlink	Low	2002.5	400500	1995.39	399078	0	15	4995	399630	16	4	2	4
				Mid	2007.5	401500	1982.21	396442	101		5006	400570	20	2	1	103
				High	2012.5	402500	1915.39	383078	500		5020	401570	20	2	1	502
	5	25	Uplink	Low	1697.5	339500	1695.25	339050	0	-	-	-	-	-	-	-
				Mid	1702.5	340500	1610.25	322050	500		-	-	-	-	-	-
				High	1707.5	341500	1705.07	341014	1		-	-	-	-	-	-
5/20	20	106	Downlink	Low	2005	401000	1995.46	399092	0	15	4996	399650	18	4	2	4
				Mid	2010	402000	1982.28	396456	101		5007	400590	22	2	1	103
				High												
	5	25	Uplink	Low	1697.5	339500	1695.25	339050	0	-	-	-	-	-	-	-
				Mid	1702.5	340500	1610.25	322050	500		-	-	-	-	-	-
				High												
5/25	25	133	Downlink	Low	2007.5	401500	1977.35	395470	101	15	4994	399610	0	4	2	105
				Mid												
				High												
	5	25	Uplink	Low	1697.5	339500	1605.25	321050	500	-	-	-	-	-	-	-
				Mid												
				High												
10/10	10	52	Downlink	Low	2000	400000	1995.32	399064	0	15	4994	399610	14	4	2	4
				Mid	2002.5	400500	1979.64	395928	101		5001	400110	14	4	2	105
				High	2005	401000	1910.32	382064	500		5008	400610	14	4	2	504
	10	52	Uplink	Low	1700	340000	1695.32	339064	0	-	-	-	-	-	-	-
				Mid	1702.5	340500	1607.82	321564	500		-	-	-	-	-	-
				High	1705	341000	1700.14	340028	1		-	-	-	-	-	-
10/20	20	106	Downlink	Low	2005	401000	1995.46	399092	0	15	4996	399650	18	4	2	4
				Mid	2007.5	401500	1979.78	395956	101		5000	400090	22	2	1	103
				High	2010	402000	1910.46	382092	500		5007	400590	22	2	1	502
	10	52	Uplink	Low	1700	340000	1695.32	339064	0	-	-	-	-	-	-	-

				Mid	1702.5	340500	1607.82	321564	500		-	-	-	-	-	-
				High	1705	341000	1700.14	340028	1		-	-	-	-	-	-
10/25	25	133	Downlink	Low	2007.5	401500	1977.35	395470	101	15	4994	399610	0	4	2	105
				Mid												
				High												
	10	52	Uplink	Low	1700	340000	1605.32	321064	500	-	-	-	-	-	-	-
				Mid												
				High												
15/15	15	79	Downlink	Low	2002.5	400500	1977.21	395442	101	15	4995	399630	16	4	2	105
				Mid												
				High												
	15	79	Uplink	Low	1702.5	340500	1605.39	321078	500	-	-	-	-	-	-	-
				Mid												
				High												
15/20	20	106	Downlink	Low	2005	401000	1977.28	395456	101	15	4996	399650	18	4	2	105
				Mid												
				High												
	15	79	Uplink	Low	1702.5	340500	1605.39	321078	500	-	-	-	-	-	-	-
				Mid												
				High												
15/25	25	133	Downlink	Low	2007.5	401500	1977.35	395470	101	15	4994	399610	0	4	2	105
				Mid												
				High												
	15	79	Uplink	Low	1702.5	340500	1605.39	321078	500	-	-	-	-	-	-	-
				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 the four most significant bits of the IE pdcch-ConfigSIB1 in the MIB. 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 4.3.1.1.1.70-2: Test frequencies for NR operating band n70, default Tx-RX frequency separation 300MHz, uplink and downlink channel bandwidth combinations and SCS 30 kHz

UL/DL Bandwidth combination	Bandwidth [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}	CORESET#0 Offset [RBs] Note 1	CORESET#0 Index Note 1	offsetToPointA (SIB1) [PRBs] Note 1
10/10	10	24	Downlink	Low	2000	400000	1995.68	399136	0	15	5000	400090	6	8	3	16
				Mid	2002.5	400500	1961.82	392364	101		5007	400590	6	8	3	218
				High	2005	401000	1820.68	364136	500		5014	401090	6	8	3	1016
	10	24	Uplink	Low	1700	340000	1695.68	339136	0	-	-	-	-	-	-	-
				Mid	1702.5	340500	1518.18	303636	500		-	-	-	-	-	-
				High	1705	341000	1700.32	340064	1		-	-	-	-	-	-
10/20	20	51	Downlink	Low	2005	401000	1995.82	399164	0	15	4999	399890	2	5	0	10
				Mid	2007.5	401500	1961.96	392392	101		5006	400570	14	7	2	216
				High	2010	402000	1820.82	364164	500		5013	401070	14	7	2	1014
	10	24	Uplink	Low	1700	340000	1695.68	339136	0	-	-	-	-	-	-	-
				Mid	1702.5	340500	1518.18	303636	500		-	-	-	-	-	-
				High	1705	341000	1700.32	340064	1		-	-	-	-	-	-
10/25	25	65	Downlink	Low	2007.5	401500	1959.44	391888	101	15	5000	400090	22	7	2	216
				Mid												
				High												
	10	24	Uplink	Low	1700	340000	1515.68	303136	500	-	-	-	-	-	-	-
				Mid												
				High												
15/15	15	38	Downlink	Low	2002.5	400500	1959.3	391860	101	15	4998	399870	6	5	0	212
				Mid												
				High												
	15	38	Uplink	Low	1702.5	340500	1515.66	303132	500	-	-	-	-	-	-	-
				Mid												
				High												
15/20	20	51	Downlink	Low	2005	401000	1959.46	391892	101	15	4999	399890	2	5	0	212
				Mid												
				High												
	15	38	Uplink	Low	1702.5	340500	1515.66	303132	500	-	-	-	-	-	-	-
				Mid												
				High												
15/25	25	65	Downlink	Low	2007.5	401500	1959.44	391888	101	15	5000	400090	22	7	2	216
				Mid												
				High												
	15	38	Uplink	Low	1702.5	340500	1515.66	303132	500	-	-	-	-	-	-	-
				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 the four most significant bits of the IE pdcch-ConfigSIB1 in the MIB. 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 4.3.1.1.1.70-3: Test frequencies for NR operating band n70, default Tx-RX frequency separation 300MHz, uplink and downlink channel bandwidth combinations and SCS 60 kHz

UL/DL Bandwidth combination	Bandwidth [MHz]	*carrierBandwidth* [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	*absoluteFrequencyPointA* [ARFCN]	*offsetToCarrier* [Carrier PRBs]
10/10	10	11	Downlink	Low	2000	400000	1996.04	399208	0
				Mid	2002.5	400500	1925.82	385164	101
				High	2005	401000	1641.04	328208	500
	10	11	Uplink	Low	1700	340000	1696.04	339208	0
				Mid	1702.5	340500	1338.54	267708	500
				High	1705	341000	1700.32	340064	1
10/20	20	24	Downlink	Low	2005	401000	1996.36	399272	0
				Mid	2007.5	401500	1926.14	385228	101
				High	2010	402000	1641.36	328272	500
	10	11	Uplink	Low	1700	340000	1696.04	339208	0
				Mid	1702.5	340500	1338.54	267708	500
				High	1705	341000	1700.32	340064	1
10/25	25	31	Downlink	Low	2007.5	401500	1923.62	384724	101
				Mid					
				High					
	10	11	Uplink	Low	1700	340000	1336.04	267208	500
				Mid					
				High					
15/15	15	18	Downlink	Low	2002.5	400500	1923.3	384660	101
				Mid					
				High					
	15	18	Uplink	Low	1702.5	340500	1336.02	267204	500
				Mid					
				High					
15/20	20	24	Downlink	Low	2005	401000	1923.64	384728	101
				Mid					
				High					
	15	18	Uplink	Low	1702.5	340500	1336.02	267204	500
				Mid					
				High					
15/25	25	31	Downlink	Low	2007.5	401500	1923.62	384724	101
				Mid					
				High					
	15	18	Uplink	Low	1702.5	340500	1336.02	267204	500
				Mid					
				High					

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

Band width [MHz]	*carrier Bandwidth* [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}	CORESET#0 Offset [RBs] Note 1	CORESET#0 Index Note 1	offsetToPointA (SIB1) [PRBs] Note 1
5	25	Downlink	Low	619.5	123900	617.25	123450	0	15	1548	123870	20	0	0	0
			Mid	634.5	126900	614.07	122814	101		1587	126990	12	4	2	105
			High	649.5	129900	557.25	111450	500		1623	129870	20	0	0	500
		Uplink	Low	665.5	133100	663.25	132650	0	-	-	-	-	-	-	-
			Mid	680.5	136100	588.25	117650	500		-	-	-	-	-	-
			High	695.5	139100	693.07	138614	1		-	-	-	-	-	-
10	52	Downlink	Low	622	124400	617.32	123464	0	15	1549	123890	22	0	0	0
			Mid	634.5	126900	611.64	122328	101		1581	126510	14	4	2	105
			High	647	129400	552.32	110464	500		1610	128890	22	0	0	500
		Uplink	Low	668	133600	663.32	132664	0	-	-	-	-	-	-	-
			Mid	680.5	136100	585.82	117164	500		-	-	-	-	-	-
			High	693	138600	688.14	137628	1		-	-	-	-	-	-
15	79	Downlink	Low	624.5	124900	617.39	123478	0	15	1547	123850	4	0	0	0
			Mid	634.5	126900	609.21	121842	101		1575	126030	16	4	2	105
			High	644.5	128900	547.39	109478	500		1600	127970	20	2	1	502
		Uplink	Low	670.5	134100	663.39	132678	0	-	-	-	-	-	-	-
			Mid	680.5	136100	583.39	116678	500		-	-	-	-	-	-
			High	690.5	138100	683.21	136642	1		-	-	-	-	-	-
20	106	Downlink	Low	627	125400	617.46	123492	0	15	1548	123870	6	0	0	0
			Mid	634.5	126900	606.78	121356	101		1569	125550	18	4	2	105
			High	642	128400	542.46	108492	500		1587	126990	22	2	1	502
		Uplink	Low	673	134600	663.46	132692	0	-	-	-	-	-	-	-
			Mid	680.5	136100	580.96	116192	500		-	-	-	-	-	-
			High	688	137600	678.28	135656	1		-	-	-	-	-	-

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 the four most significant bits of the IE pdcch-ConfigSIB1 in the MIB. 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 4.3.1.1.1.71-2: Test frequencies for NR operating band n71 and SCS 30 kHz

Band width [MHz]	*carrier Bandwidth* [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}	CORESET#0 Offset [RBs] Note 1	CORESET#0 Index Note 1	offsetToPointA (SIB1) [PRBs] Note 1
10	24	Downlink	Low	622	124400	617.68	123536	0	15	1555	124370	14	6	1	12
			Mid	634.5	126900	593.82	118764	101		1587	126990	6	8	3	218
			High	647	129400	462.68	92536	500		1616	129370	14	6	1	1012
		Uplink	Low	668	133600	663.68	132736	0	-	-	-	-	-	-	-
			Mid	680.5	136100	496.18	99236	500		-	-	-	-	-	-
			High	693	138600	688.32	137664	1		-	-	-	-	-	-
15	38	Downlink	Low	624.5	124900	617.66	123532	0	15	1553	124330	2	6	1	12
			Mid	634.5	126900	591.3	118260	101		1578	126270	6	5	0	212
			High	644.5	128900	457.66	91532	500		1606	128450	18	7	2	1014
		Uplink	Low	670.5	134100	663.66	132732	0	-	-	-	-	-	-	-
			Mid	680.5	136100	493.66	98732	500		-	-	-	-	-	-
			High	690.5	138100	683.3	136660	1		-	-	-	-	-	-
20	51	Downlink	Low	627	125400	617.82	123564	0	15	1554	124350	22	5	0	10
			Mid	634.5	126900	588.96	117792	101		1572	125790	2	5	0	212
			High	642	128400	452.82	90564	500		1593	127470	14	7	2	1014
		Uplink	Low	673	134600	663.82	132764	0	-	-	-	-	-	-	-
			Mid	680.5	136100	491.32	98264	500		-	-	-	-	-	-
			High	688	137600	678.46	135692	1		-	-	-	-	-	-

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 the four most significant bits of the IE pdcch-ConfigSIB1 in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.

4.3.1.1.1.72 – 4.3.1.1.1.74 FFS

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

Bandwidth [MHz]	*carrierBandwidth* [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	*absoluteFrequencyPointA* [ARFCN]	*offsetToCarrier* [PRBs]
5	25	Downlink	Low	1434.5	286900	1432.25	286450	0
			Mid	1474.5	294900	1454.07	290814	101
			High	1514.5	302900	1422.25	284450	500
10	52	Downlink	Low	1437	287400	1432.32	286464	0
			Mid	1474.5	294900	1451.64	290328	101
			High	1512	302400	1417.32	283464	500
15	79	Downlink	Low	1439.5	287900	1432.39	286478	0
			Mid	1474.5	294900	1449.21	289842	101
			High	1509.5	301900	1412.39	282478	500
20	106	Downlink	Low	1442	288400	1432.46	286492	0
			Mid	1474.5	294900	1446.78	289356	101
			High	1507	301400	1407.46	281492	500

Table 4.3.1.1.1.75-2: Test frequencies for NR operating band n75 and SCS 30 kHz

Bandwidth [MHz]	*carrierBandwidth* [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	*absoluteFrequencyPointA* [ARFCN]	*offsetToCarrier* [PRBs]
10	24	Downlink	Low	1437	287400	1432.68	286536	0
			Mid	1474.5	294900	1433.82	286764	101
			High	1512	302400	1327.68	265536	500
15	38	Downlink	Low	1439.5	287900	1432.66	286532	0
			Mid	1474.5	294900	1431.3	286260	101
			High	1509.5	301900	1322.66	264532	500
20	51	Downlink	Low	1442	288400	1432.82	286564	0
			Mid	1474.5	294900	1428.96	285792	101
			High	1507	301400	1317.82	263564	500

Table 4.3.1.1.1.75-3: Test frequencies for NR operating band n75 and SCS 60 kHz

Bandwidth [MHz]	*carrierBandwidth* [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	*absoluteFrequencyPointA* [ARFCN]	*offsetToCarrier* [PRBs]
10	11	Downlink	Low	1437	287400	1433.04	286608	0
			Mid	1474.5	294900	1397.82	279564	101
			High	1512	302400	1148.04	229608	500
15	18	Downlink	Low	1439.5	287900	1433.02	286604	0
			Mid	1474.5	294900	1395.3	279060	101
			High	1509.5	301900	1143.02	228604	500
20	24	Downlink	Low	1442	288400	1433.36	286672	0
			Mid	1474.5	294900	1393.14	278628	101
			High	1507	301400	1138.36	227672	500

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

Table 4.3.1.1.1.76-1: Test frequencies for NR operating band n76 and SCS 15 kHz

Bandwidth [MHz]	*carrierBandwidth* [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	*absoluteFrequencyPointA* [ARFCN]	*offsetToCarrier* [PRBs]
5	25	Downlink	Low, Mid, High	1429.5	285900	1427.25	285450	0

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 and SCS 15 kHz

Bandwidth [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}	CORESET#0 Offset [RBs] Note 1	CORESET#0 Index Note 1	offsetToPointA (SIB1) [PRBs] Note 1
10	52	Downlink & Uplink	Low	3305.01	620334	3300.33	620022	0	30	7711	620352	18	6	1	6
			Mid	3750	650000	3727.14	648476	101		8020	650016	16	6	1	107
			High	4194.99	679666	4100.31	673354	500		8329	679680	14	6	1	506
15	79	Downlink & Uplink	Low	3307.5	620500	3300.39	620026	0	30	7711	620352	14	6	1	6
			Mid	3750.165	650011	3724.875	648325	101		8018	649824	23	2	0	103
			High	4192.5	679500	4095.39	673026	500		8325	679296	6	2	0	502
20	106	Downlink & Uplink	Low	3310.005	620667	3300.465	620031	0	30	7711	620352	9	6	1	6
			Mid	3750	650000	3722.28	648152	101		8016	649632	4	2	0	103
			High	4189.98	679332	4090.44	672696	500		8322	679008	0	6	1	506
40	216	Downlink & Uplink	Low	3320.01	621334	3300.57	620038	0	30	7711	620352	2	6	1	6
			Mid	3749.88	649992	3712.26	647484	101		8009	648960	0	2	0	103
			High	4179.72	678648	4070.28	671352	500		8308	677664	0	6	1	506
50	270	Downlink & Uplink	Low	3325.275	621685	3300.975	620065	0	30	7711	620352	23	2	0	2
			Mid	3750.075	650005	3707.595	647173	101		8006	648672	23	2	0	103
			High	4174.995	678333	4060.695	670713	500		8301	676992	15	2	0	502

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 the four most significant bits of the IE pdcch-ConfigSIB1 in the MIB. 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 4.3.1.1.1.77-2: Test frequencies for NR operating band n77 and SCS 30 kHz

Band width [MHz]	*carrier Bandwidth* [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}	CORESET#0 Offset [RBs] Note 1	CORESET#0 Index Note 1	offsetToPointA (SIB1) [PRBs] Note 1
10	24	Downlink & Uplink	Low	3305.01	620334	3300.69	620046	0	30	7711	620352	18	2	2	4
			Mid	3750	650000	3709.32	647288	101		8020	650016	16	2	2	206
			High	4194.99	679666	4010.67	667378	500		8329	679680	14	2	2	1004
15	38	Downlink & Uplink	Low	3307.5	620500	3300.66	620044	0	30	7711	620352	20	2	2	4
			Mid	3750	650000	3706.8	647120	101		8018	649824	16	1	1	204
			High	4192.5	679500	4005.66	667044	500		8325	679296	12	0	0	1000
20	51	Downlink & Uplink	Low	3310.02	620668	3300.84	620056	0	30	7711	620352	8	2	2	4
			Mid	3750	650000	3704.46	646964	101		8016	649632	4	0	0	202
			High	4189.98	679332	4000.8	666720	500		8322	679008	0	2	2	1004
40	106	Downlink & Uplink	Low	3320.01	621334	3300.93	620062	0	30	7711	620352	2	2	2	4
			Mid	3750	650000	3694.56	646304	101		8010	649056	16	3	3	208
			High	4179.99	678666	3980.91	665394	500		8308	677664	6	1	1	1002
50	133	Downlink & Uplink	Low	3325.02	621668	3301.08	620072	0	30	7711	620352	16	1	1	2
			Mid	3750	650000	3689.7	645980	101		8006	648672	4	1	1	204
			High	4174.98	678332	3971.04	664736	500		8301	676992	16	0	0	1000
60	162	Downlink & Uplink	Low	3330	622000	3300.84	620056	0	30	7711	620352	8	2	2	4
			Mid	3750	650000	3684.48	645632	101		8003	648384	16	3	3	208
			High	4170	678000	3960.84	664056	500		8294	676320	0	1	1	1002
80	217	Downlink & Uplink	Low	3340.02	622668	3300.96	620064	0	30	7711	620352	0	2	2	4
			Mid	3750	650000	3674.58	644972	101		7996	647712	4	3	3	208
			High	4159.98	677332	3940.92	662728	500		8280	674976	8	0	0	1000
90	245	Downlink & Uplink	Low	3345	623000	3300.9	620060	0	30	7711	620352	4	2	2	4
			Mid	3750	650000	3669.54	644636	101		7992	647328	4	1	1	204
			High	4155	677000	3930.9	662060	500		8273	674304	4	0	0	1000
100	273	Downlink & Uplink	Low	3350.01	623334	3300.87	620058	0	30	7711	620352	6	2	2	4
			Mid	3750	650000	3664.5	644300	101		7989	647040	4	3	3	208
			High	4149.99	676666	3920.85	661390	500		8266	673632	2	0	0	1000

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 the four most significant bits of the IE pdcch-ConfigSIB1 in the MIB. 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 4.3.1.1.1.77-3: Test frequencies for NR operating band n77 and SCS 60 kHz

Bandwidth [MHz]	*carrierBandwidth* [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	*absoluteFrequencyPointA* [ARFCN]	*offsetToCarrier* [PRBs]
10	11	Downlink & Uplink	Low	3305.01	620334	3301.05	620070	0
			Mid	3750	650000	3673.32	644888	101
			High	4194.99	679666	3831.03	655402	500
15	18	Downlink & Uplink	Low	3307.5	620500	3301.02	620068	0
			Mid	3750	650000	3670.8	644720	101
			High	4192.5	679500	3826.02	655068	500
20	24	Downlink & Uplink	Low	3310.005	620667	3301.365	620091	0
			Mid	3750	650000	3668.64	644576	101
			High	4189.995	679333	3821.355	654757	500
40	51	Downlink & Uplink	Low	3320.01	621334	3301.65	620110	0
			Mid	3750	650000	3658.92	643928	101
			High	4179.99	678666	3801.63	653442	500
50	65	Downlink & Uplink	Low	3325.005	621667	3301.605	620107	0
			Mid	3750	650000	3653.88	643592	101
			High	4174.995	678333	3791.595	652773	500
60	79	Downlink & Uplink	Low	3330	622000	3301.56	620104	0
			Mid	3750	650000	3648.84	643256	101
			High	4170	678000	3781.56	652104	500
80	107	Downlink & Uplink	Low	3340.005	622667	3301.485	620099	0
			Mid	3750	650000	3638.76	642584	101
			High	4159.995	677333	3761.475	650765	500
90	121	Downlink & Uplink	Low	3345	623000	3301.44	620096	0
			Mid	3750	650000	3633.72	642248	101
			High	4155	677000	3751.44	650096	500
100	135	Downlink & Uplink	Low	3350.01	623334	3301.41	620094	0
			Mid	3750	650000	3628.68	641912	101
			High	4149.99	676666	3741.39	649426	500

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 and SCS 15 kHz

Band width [MHz]	*carrier Bandwidth* [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}	CORESET#0 Offset [RBs] Note 1	CORESET#0 Index Note 1	offsetToPointA (SIB1) [PRBs] Note 1
10	52	Downlink & Uplink	Low	3305.01	620334	3300.33	620022	0	30	7711	620352	18	6	1	6
			Mid	3550.005	636667	3527.145	635143	101		7881	636672	5	6	1	107
			High	3794.88	652992	3700.2	646680	500		8051	652992	0	6	1	506
15	79	Downlink & Uplink	Low	3307.5	620500	3300.39	620026	0	30	7711	620352	14	6	1	6
			Mid	3550.005	636667	3524.715	634981	101		7879	636480	23	2	0	103
			High	3792.27	652818	3695.16	646344	500		8047	652608	0	2	0	502
20	106	Downlink & Uplink	Low	3310.005	620667	3300.465	620031	0	30	7711	620352	9	6	1	6
			Mid	3549.9	636660	3522.18	634812	101		7877	636288	0	2	0	103
			High	3789.66	652644	3690.12	646008	500		8044	652320	0	6	1	506
40	216	Downlink & Uplink	Low	3320.01	621334	3300.57	620038	0	30	7711	620352	2	6	1	6
			Mid	3550.095	636673	3512.475	634165	101		7871	635712	23	6	1	107
			High	3780	652000	3670.56	644704	500		8030	650976	8	2	0	502
50	270	Downlink & Uplink	Low	3325.275	621685	3300.975	620065	0	30	7711	620352	23	2	0	2
			Mid	3550.005	636667	3507.525	633835	101		7867	635328	17	2	0	103
			High	3774.9	651660	3660.6	644040	500		8023	650304	0	2	0	502

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 the four most significant bits of the IE pdcch-ConfigSIB1 in the MIB. 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 4.3.1.1.1.78-2: Test frequencies for NR operating band n78 and SCS 30 kHz

Band width [MHz]	*carrier Bandwidth* [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}	CORESET#0 Offset [RBs] Note 1	CORESET#0 Index Note 1	offsetToPointA (SIB1) [PRBs] Note 1
10	24	Downlink & Uplink	Low	3305.01	620334	3300.69	620046	0	30	7711	620352	18	2	2	4
			Mid	3549.99	636666	3509.31	633954	101		7881	636672	6	2	2	206
			High	3795	653000	3610.68	640712	500		8051	652992	16	1	1	1002
15	38	Downlink & Uplink	Low	3307.5	620500	3300.66	620044	0	30	7711	620352	20	2	2	4
			Mid	3549.99	636666	3506.79	633786	101		7879	636480	6	1	1	204
			High	3792.48	652832	3605.64	640376	500		8048	652704	16	3	3	1006
20	51	Downlink & Uplink	Low	3310.02	620668	3300.84	620056	0	30	7711	620352	8	2	2	4
			Mid	3549.99	636666	3504.45	633630	101		7878	636384	18	3	3	208
			High	3789.99	652666	3600.81	640054	500		8044	652320	2	1	1	1002
40	106	Downlink & Uplink	Low	3320.01	621334	3300.93	620062	0	30	7711	620352	2	2	2	4
			Mid	3549.99	636666	3494.55	632970	101		7871	635712	6	3	3	208
			High	3780	652000	3580.92	638728	500		8030	650976	8	0	0	1000
50	133	Downlink & Uplink	Low	3325.02	621668	3301.08	620072	0	30	7711	620352	16	1	1	2
			Mid	3549.99	636666	3489.69	632646	101		7867	635328	18	0	0	202
			High	3774.99	651666	3571.05	638070	500		8024	650400	18	3	3	1006
60	162	Downlink & Uplink	Low	3330	622000	3300.84	620056	0	30	7711	620352	8	2	2	4
			Mid	3549.99	636666	3484.47	632298	101		7864	635040	6	3	3	208
			High	3769.98	651332	3560.82	637388	500		8016	649632	4	0	0	1000
80	217	Downlink & Uplink	Low	3340.02	622668	3300.96	620064	0	30	7711	620352	0	2	2	4
			Mid	3549.99	636666	3474.57	631638	101		7857	634368	18	2	2	206
			High	3759.99	650666	3540.93	636062	500		8003	648384	10	3	3	1006
90	245	Downlink & Uplink	Low	3345	623000	3300.9	620060	0	30	7711	620352	4	2	2	4
			Mid	3549.99	636666	3469.53	631302	101		7853	633984	18	0	0	202
			High	3754.98	650332	3530.88	635392	500		7996	647712	8	3	3	1006
100	273	Downlink & Uplink	Low	3350.01	623334	3300.87	620058	0	30	7711	620352	6	2	2	4
			Mid	3549.99	636666	3464.49	630966	101		7850	633696	18	2	2	206
			High	3750	650000	3520.86	634724	500		7989	647040	4	3	3	1006

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 the four most significant bits of the IE pdcch-ConfigSIB1 in the MIB. 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 4.3.1.1.1.78-3: Test frequencies for NR operating band n78 and SCS 60 kHz

Bandwidth [MHz]	*carrierBandwidth* [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	*absoluteFrequencyPointA* [ARFCN]	*offsetToCarrier* [PRBs]
10	11	Downlink & Uplink	Low	3305.01	620334	3301.05	620070	0
			Mid	3550.005	636667	3473.325	631555	101
			High	3795	653000	3431.04	628736	500
15	18	Downlink & Uplink	Low	3307.5	620500	3301.02	620068	0
			Mid	3550.005	636667	3470.805	631387	101
			High	3792.495	652833	3426.015	628401	500
20	24	Downlink & Uplink	Low	3310.005	620667	3301.365	620091	0
			Mid	3550.005	636667	3468.645	631243	101
			High	3789.99	652666	3421.35	628090	500
40	51	Downlink & Uplink	Low	3320.01	621334	3301.65	620110	0
			Mid	3550.005	636667	3458.925	630595	101
			High	3780	652000	3401.64	626776	500
50	65	Downlink & Uplink	Low	3325.005	621667	3301.605	620107	0
			Mid	3550.005	636667	3453.885	630259	101
			High	3774.99	651666	3391.59	626106	500
60	79	Downlink & Uplink	Low	3330	622000	3301.56	620104	0
			Mid	3550.005	636667	3448.845	629923	101
			High	3769.995	651333	3381.555	625437	500
80	107	Downlink & Uplink	Low	3340.005	622667	3301.485	620099	0
			Mid	3550.005	636667	3438.765	629251	101
			High	3759.99	650666	3361.47	624098	500
90	121	Downlink & Uplink	Low	3345	623000	3301.44	620096	0
			Mid	3550.005	636667	3433.725	628915	101
			High	3754.995	650333	3351.435	623429	500
100	135	Downlink & Uplink	Low	3350.01	623334	3301.41	620094	0
			Mid	3550.005	636667	3428.685	628579	101
			High	3750	650000	3341.4	622760	500

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 and SCS 15 kHz

Band width [MHz]	*carrier Bandwidth* [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}	CORESET#0 Offset [RBs] Note 1	CORESET#0 Index Note 1	offsetToPointA (SIB1) [PRBs] Note 1
40	216	Downlink	Low	4427.415	695161	4407.975	693865	0	30	8480	694176	23	4	0	4
		&	Mid	4703.895	713593	4666.275	711085	101		8672	712608	23	4	0	105
		Uplink	High	4957.68	730512	4848.24	723216	500		8848	729504	0	4	0	504
50	270	Downlink	Low	4432.275	695485	4407.975	693865	0	30	8480	694176	23	4	0	4
		&	Mid	4708.755	713917	4666.275	711085	101		8672	712608	23	4	0	105
		Uplink	High	4962.54	730836	4848.24	723216	500		8848	729504	0	4	0	504

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 the four most significant bits of the IE pdcch-ConfigSIB1 in the MIB. 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 4.3.1.1.1.79-2: Test frequencies for NR operating band n79 and SCS 30 kHz

Band width [MHz]	*carrier Bandwidth* [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}	CORESET#0 Offset [RBs] Note 1	CORESET#0 Index Note 1	offsetToPointA (SIB1) [PRBs] Note 1
40	106	Downlink	Low	4426.35	695090	4407.27	693818	0	30	8480	694176	22	4	1	8
		&	Mid	4702.83	713522	4647.39	709826	101		8672	712608	22	4	1	210
		Uplink	High	4979.64	731976	4780.56	718704	500		8864	731040	0	4	1	1008
50	133	Downlink	Low	4431.21	695414	4407.27	693818	0	30	8480	694176	22	4	1	8
		&	Mid	4707.69	713846	4647.39	709826	101		8672	712608	22	4	1	210
		Uplink	High	4962.9	730860	4758.96	717264	500		8848	729504	0	0	0	1000
60	162	Downlink	Low	4436.43	695762	4407.27	693818	0	30	8480	694176	22	4	1	8
		&	Mid	4691.64	712776	4626.12	708408	101		8656	711072	0	0	0	202
		Uplink	High	4968.12	731208	4758.96	717264	500		8848	729504	0	0	0	1000
80	217	Downlink	Low	4446.33	696422	4407.27	693818	0	30	8480	694176	22	4	1	8
		&	Mid	4700.01	713334	4624.59	708306	101		8656	711072	6	4	1	210
		Uplink	High	4954.98	730332	4735.92	715728	500		8832	727968	0	0	0	1000
100	273	Downlink	Low	4456.41	697094	4407.27	693818	0	30	8480	694176	22	4	1	8
		&	Mid	4709.85	713990	4624.35	708290	101		8656	711072	22	4	1	210
		Uplink	High	4942.02	729468	4712.88	714192	500		8816	726432	0	0	0	1000

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 the four most significant bits of the IE pdcch-ConfigSIB1 in the MIB. 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 4.3.1.1.1.79-3: Test frequencies for NR operating band n79 and SCS 60 kHz

Bandwidth [MHz]	*carrierBandwidth* [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	*absoluteFrequencyPointA* [ARFCN]	*offsetToCarrier* [PRBs]
40	51	Downlink & Uplink	Low	4420.005	694667	4401.645	693443	0
			Mid	4699.995	713333	4608.915	707261	101
			High	4980	732000	4601.64	706776	500
50	65	Downlink & Uplink	Low	4425	695000	4401.6	693440	0
			Mid	4699.995	713333	4603.875	706925	101
			High	4974.99	731666	4591.59	706106	500
60	79	Downlink & Uplink	Low	4430.01	695334	4401.57	693438	0
			Mid	4699.995	713333	4598.835	706589	101
			High	4969.995	731333	4581.555	705437	500
80	107	Downlink & Uplink	Low	4440	696000	4401.48	693432	0
			Mid	4699.995	713333	4588.755	705917	101
			High	4959.99	730666	4561.47	704098	500
100	135	Downlink	Low	4450.005	696667	4401.405	693427	0
			Mid	4699.995	713333	4578.675	705245	101
			High	4950	730000	3318.84	621256	2198

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]	*carrierBandwidth* [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	*absoluteFrequencyPointA* [ARFCN]	*offsetToCarrier* [PRBs]
5	25	Uplink	Low	1712.5	342500	1710.25	342050	0
			Mid	1747.5	349500	1349.61	269922	2198
			High	1782.5	356500	1780.07	356014	1
10	52	Uplink	Low	1715	343000	1710.32	342064	0
			Mid	1747.5	349500	1347.18	269436	2198
			High	1780	356000	1775.14	355028	1
15	79	Uplink	Low	1717.5	343500	1710.39	342078	0
			Mid	1747.5	349500	1344.75	268950	2198
			High	1777.5	355500	1770.21	354042	1
20	106	Uplink	Low	1720	344000	1710.46	342092	0
			Mid	1747.5	349500	1342.32	268464	2198
			High	1775	355000	1765.28	353056	1
25	133	Uplink	Low	1722.5	344500	1710.53	342106	0
			Mid	1747.5	349500	1339.89	267978	2198
			High	1772.5	354500	1760.35	352070	1
30	160	Uplink	Low	1725	345000	1710.6	342120	0
			Mid	1747.5	349500	1337.46	267492	2198
			High	1770	354000	1755.42	351084	1

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

Bandwidth [MHz]	*carrierBandwidth* [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	*absoluteFrequencyPointA* [ARFCN]	*offsetToCarrier* [PRBs]
10	24	Uplink	Low	1715	343000	1710.68	342136	0
			Mid	1747.5	349500	951.9	190380	2198
			High	1780	356000	1775.32	355064	1
15	38	Uplink	Low	1717.5	343500	1710.66	342132	0
			Mid	1747.5	349500	949.38	189876	2198
			High	1777.5	355500	1770.3	354060	1
20	51	Uplink	Low	1720	344000	1710.82	342164	0
			Mid	1747.5	349500	947.04	189408	2198
			High	1775	355000	1765.46	353092	1
25	65	Uplink	Low	1722.5	344500	1710.8	342160	0
			Mid	1747.5	349500	944.52	188904	2198
			High	1772.5	354500	1760.44	352088	1
30	78	Uplink	Low	1725	345000	1710.96	342192	0
			Mid	1747.5	349500	942.18	188436	2198
			High	1770	354000	1755.6	351120	1

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

Bandwidth [MHz]	*carrierBandwidth* [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	*absoluteFrequencyPointA* [ARFCN]	*offsetToCarrier* [PRBs]
10	11	Uplink	Low	1715	343000	1711.04	342208	0
			Mid	1747.5	349500	160.98	32196	2198
			High	1780	356000	1775.32	355064	1
15	18	Uplink	Low	1717.5	343500	1711.02	342204	0
			Mid	1747.5	349500	158.46	31692	2198
			High	1777.5	355500	1770.3	354060	1
20	24	Uplink	Low	1720	344000	1711.36	342272	0
			Mid	1747.5	349500	156.3	31260	2198
			High	1775	355000	1765.64	353128	1
25	31	Uplink	Low	1722.5	344500	1711.34	342268	0
			Mid	1747.5	349500	153.78	30756	2198
			High	1772.5	354500	1760.62	352124	1
30	38	Uplink	Low	1725	345000	1711.32	342264	0
			Mid	1747.5	349500	151.26	30252	2198
			High	1770	354000	1755.6	351120	1

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]	*carrierBandwidth* [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	*absoluteFrequencyPointA* [ARFCN]	*offsetToCarrier* [PRBs]
5	25	Uplink	Low	882.5	176500	880.25	176050	0
			Mid	897.5	179500	499.61	99922	2198
			High	912.5	182500	910.07	182014	1
10	52	Uplink	Low	885	177000	880.32	176064	0
			Mid	897.5	179500	497.18	99436	2198
			High	910	182000	905.14	181028	1
15	79	Uplink	Low	887.5	177500	880.39	176078	0
			Mid	897.5	179500	494.75	98950	2198
			High	907.5	181500	900.21	180042	1
20	106	Uplink	Low	890	178000	880.46	176092	0
			Mid	897.5	179500	492.32	98464	2198
			High	905	181000	895.28	179056	1

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

Bandwidth [MHz]	*carrierBandwidth* [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	*absoluteFrequencyPointA* [ARFCN]	*offsetToCarrier* [PRBs]
10	24	Uplink	Low	885	177000	880.68	176136	0
			Mid	897.5	179500	101.9	20380	2198
			High	910	182000	905.32	181064	1
15	38	Uplink	Low	887.5	177500	880.66	176132	0
			Mid	897.5	179500	99.38	19876	2198
			High	907.5	181500	900.3	180060	1
20	51	Uplink	Low	890	178000	880.82	176164	0
			Mid	897.5	179500	97.04	19408	2198
			High	905	181000	895.46	179092	1

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]	*carrierBandwidth* [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	*absoluteFrequencyPointA* [ARFCN]	*offsetToCarrier* [PRBs]
5	25	Uplink	Low	834.5	166900	832.25	166450	0
			Mid	847	169400	449.11	89822	2198
			High	859.5	171900	857.07	171414	1
10	52	Uplink	Low	837	167400	832.32	166464	0
			Mid	847	169400	446.68	89336	2198
			High	857	171400	852.14	170428	1
15	79	Uplink	Low	839.5	167900	832.39	166478	0
			Mid	847	169400	444.25	88850	2198
			High	854.5	170900	847.21	169442	1
20	106	Uplink	Low	842	168400	832.46	166492	0
			Mid	847	169400	441.82	88364	2198
			High	852	170400	842.28	168456	1

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

Bandwidth [MHz]	*carrierBandwidth* [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	*absoluteFrequencyPointA* [ARFCN]	*offsetToCarrier* [PRBs]
10	24	Uplink	Low	837	167400	832.68	166536	0
			Mid	847	169400	51.4	10280	2198
			High	857	171400	852.32	170464	1
15	38	Uplink	Low	839.5	167900	832.66	166532	0
			Mid	847	169400	48.88	9776	2198
			High	854.5	170900	847.3	169460	1
20	51	Uplink	Low	842	168400	832.82	166564	0
			Mid	847	169400	46.54	9308	2198
			High	852	170400	842.46	168492	1

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]	*carrierBandwidth* [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	*absoluteFrequencyPointA* [ARFCN]	*offsetToCarrier* [PRBs]
5	25	Uplink	Low	705.5	141100	703.25	140650	0
			Mid	725.5	145100	327.61	65522	2198
			High	745.5	149100	743.07	148614	1
10	52	Uplink	Low	708	141600	703.32	140664	0
			Mid	725.5	145100	325.18	65036	2198
			High	743	148600	738.14	147628	1
15	79	Uplink	Low	710.5	142100	703.39	140678	0
			Mid	725.5	145100	322.75	64550	2198
			High	740.5	148100	733.21	146642	1
20	106	Uplink	Low	713	142600	703.46	140692	0
			Mid	725.5	145100	320.32	64064	2198
			High	738	147600	728.28	145656	1

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

Bandwidth [MHz]	*carrierBandwidth* [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	*absoluteFrequencyPointA* [ARFCN]	*offsetToCarrier* [PRBs]
10	24	Uplink	Low	708	141600	703.68	140736	0
			Mid	725.5	145100	642.34	128468	219
			High	743	148600	738.32	147664	1
15	38	Uplink	Low	710.5	142100	703.66	140732	0
			Mid	725.5	145100	639.82	127964	219
			High	740.5	148100	733.3	146660	1
20	51	Uplink	Low	713	142600	703.82	140764	0
			Mid	725.5	145100	637.48	127496	219
			High	738	147600	728.46	145692	1

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]	*carrierBandwidth* [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	*absoluteFrequencyPointA* [ARFCN]	*offsetToCarrier* [PRBs]
5	25	Uplink	Low	1922.5	384500	1920.25	384050	0
			Mid	1950	390000	1552.11	310422	2198
			High	1977.5	395500	1975.07	395014	1
10	52	Uplink	Low	1925	385000	1920.32	384064	0
			Mid	1950	390000	1549.68	309936	2198
			High	1975	395000	1970.14	394028	1
15	79	Uplink	Low	1927.5	385500	1920.39	384078	0
			Mid	1950	390000	1547.25	309450	2198
			High	1972.5	394500	1965.21	393042	1
20	106	Uplink	Low	1930	386000	1920.46	384092	0
			Mid	1950	390000	1544.82	308964	2198
			High	1970	394000	1960.28	392056	1

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

Bandwidth [MHz]	*carrierBandwidth* [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	*absoluteFrequencyPointA* [ARFCN]	*offsetToCarrier* [PRBs]
10	24	Uplink	Low	1925	385000	1920.68	384136	0
			Mid	1950	390000	1154.4	230880	2198
			High	1975	395000	1970.32	394064	1
15	38	Uplink	Low	1927.5	385500	1920.66	384132	0
			Mid	1950	390000	1151.88	230376	2198
			High	1972.5	394500	1965.3	393060	1
20	51	Uplink	Low	1930	386000	1920.82	384164	0
			Mid	1950	390000	1149.54	229908	2198
			High	1970	394000	1960.46	392092	1

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

Bandwidth [MHz]	*carrierBandwidth* [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	*absoluteFrequencyPointA* [ARFCN]	*offsetToCarrier* [PRBs]
10	11	Uplink	Low	1925	385000	1921.04	384208	0
			Mid	1950	390000	363.48	72696	2198
			High	1975	395000	1970.32	394064	1
15	18	Uplink	Low	1927.5	385500	1921.02	384204	0
			Mid	1950	390000	360.96	72192	2198
			High	1972.5	394500	1965.3	393060	1
20	24	Uplink	Low	1930	386000	1921.36	384272	0
			Mid	1950	390000	358.8	71760	2198
			High	1970	394000	1960.64	392128	1

4.3.1.1.1.85 FFS

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]	*carrierBandwidth* [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	*absoluteFrequencyPointA* [ARFCN]	*offsetToCarrier* [PRBs]
5	25	Uplink	Low	1712.5	342500	1710.25	342050	0
			Mid	1745	349000	1347.11	269422	2198
			High	1777.5	355500	1775.07	355014	1
10	52	Uplink	Low	1715	343000	1710.32	342064	0
			Mid	1745	349000	1344.68	268936	2198
			High	1775	355000	1770.14	354028	1
15	79	Uplink	Low	1717.5	343500	1710.39	342078	0
			Mid	1745	349000	1342.25	368450	2198
			High	1772.5	354500	1765.21	353042	1
20	106	Uplink	Low	1720	344000	1710.46	342092	0
			Mid	1745	349000	1339.82	267964	2198
			High	1770	354000	1760.28	352056	1
40	216	Uplink	Low	1730	346000	1710.56	342112	0
			Mid	1745	349000	1329.92	265984	2198
			High	1760	352000	1740.38	348076	1

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

Bandwidth [MHz]	*carrierBandwidth* [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	*absoluteFrequencyPointA* [ARFCN]	*offsetToCarrier* [PRBs]
10	24	Uplink	Low	1715	343000	1710.68	342136	0
			Mid	1745	349000	949.4	189880	2198
			High	1775	355000	1770.32	354064	1
15	38	Uplink	Low	1717.5	343500	1710.66	342132	0
			Mid	1745	349000	946.88	189376	2198
			High	1772.5	354500	1765.3	353060	1
20	51	Uplink	Low	1720	344000	1710.82	342164	0
			Mid	1745	349000	944.54	188908	2198
			High	1770	354000	1760.46	352092	1
40	106	Uplink	Low	1730	346000	1710.92	342184	0
			Mid	1745	349000	934.64	186928	2198
			High	1760	352000	1740.56	348112	1

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

Bandwidth [MHz]	*carrierBandwidth* [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	*absoluteFrequencyPointA* [ARFCN]	*offsetToCarrier* [PRBs]
10	11	Uplink	Low	1715	343000	1711.04	342208	0
			Mid	1745	349000	158.48	31696	2198
			High	1775	355000	1770.32	354064	1
15	18	Uplink	Low	1717.5	343500	1711.02	342204	0
			Mid	1745	349000	155.96	31192	2198
			High	1772.5	354500	1765.3	353060	1
20	24	Uplink	Low	1720	344000	1711.36	342272	0
			Mid	1745	349000	153.8	30760	2198
			High	1770	354000	1760.64	352128	1
40	51	Uplink	Low	1730	346000	1711.64	342328	0
			Mid	1745	349000	144.08	28816	2198
			High	1760	352000	1740.92	348184	1

4.3.1.1.2 Intra-band CA in FR1

4.3.1.1.3 Inter-band CA in FR1

4.3.1.1.4 Operating bands for DC in FR1

4.3.1.1.5 Operating band combination for SUL in FR1

4.3.1.2 Test frequencies for NR operating bands in FR2

4.3.1.2.1 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 and SCS 60 kHz

Bandwidth [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}	CORESET#0 Offset [RBs] Note 1	CORESET#0 Index Note 1	offsetToPointA (SIB1) [PRBs] Note 1
50	66	Downlink & Uplink	Low	26533.98	2054732	26510.22	2054336	0	120	22388	2054683	11	8	1	8
			Mid	28002.78	2079212	27906.3	2077604	101		22473	2079163	11	8	1	109
			High	29472.24	2103703	29088.48	2097307	500		22558	2103643	0	8	1	508
100	132	Downlink & Uplink	Low	26557.74	2055128	26510.22	2054336	0	120	22388	2054683	11	8	1	8
			Mid	27998.4	2079139	27878.16	2077135	101		22471	2078587	0	0	0	101
			High	29449.92	2103331	29042.4	2096539	500		22555	2102779	0	0	0	500
200	264	Downlink & Uplink	Low	26605.26	2055920	26510.22	2054336	0	120	22388	2054683	11	8	1	8
			Mid	28004.94	2079248	27837.18	2076452	101		22469	2078011	11	8	1	109
			High	29393.76	2102395	28938.72	2094811	500		22549	2101051	0	0	0	500

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 the four most significant bits of the IE pdcch-ConfigSIB1 in the MIB. 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 4.3.1.2.1.1-2: Test frequencies for NR operating band n257 and SCS 120kHz

Band width [MHz]	*carrier Bandwidth* [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}	CORESET#0 Offset [RBs] Note 1	CORESET#0 Index Note 1	offsetToPointA (SIB1) [PRBs] Note 1
50	32	Downlink & Uplink	Low	26532.6	2054709	26509.56	2054325	0	120	22388	2054683	11	4	1	8
			Mid	28001.4	2079189	27832.92	2076381	101		22473	2079163	11	4	1	210
			High	29471.52	2103691	28728.48	2091307	500		22558	2103643	0	4	1	1008
100	66	Downlink & Uplink	Low	26557.08	2055117	26509.56	2054325	0	120	22388	2054683	11	4	1	8
			Mid	27998.4	2079139	27805.44	2075923	101		22471	2078587	0	0	0	202
			High	29449.92	2103331	28682.4	2090539	500		22555	2102779	0	0	0	1000
200	132	Downlink & Uplink	Low	26604.6	2055909	26509.56	2054325	0	120	22388	2054683	11	4	1	8
			Mid	28004.28	2079237	27763.8	2075229	101		22469	2078011	11	4	1	210
			High	29393.76	2102395	28578.72	2088811	500		22549	2101051	0	0	0	1000
400	264	Downlink & Uplink	Low	26700	2057499	26509.92	2054331	0	120	22388	2054683	8	4	1	8
			Mid	28001.4	2079189	27665.88	2073597	101		22463	2076283	11	0	0	202
			High	29298.72	2100811	28388.64	2085643	500		22538	2097883	0	0	0	1000

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 the four most significant bits of the IE pdcch-ConfigSIB1 in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.

4.3.1.2.1.1

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 and SCS 60 kHz

Band width [MHz]	***carrier Bandwidth* [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}	**CORESET#0 Offset [RBs] Note 1**	**CORESET#0 Index Note 1**	**offsetToPointA (SIB1) [PRBs] Note 1**
50	66	Downlink & Uplink	Low	24276.06	2017100	24252.3	2016704	0	120	22257	2016955	11	0	0	0
			Mid	25877.34	2043788	25780.86	2042180	101		22350	2043739	11	8	1	109
			High	27473.52	2070391	27089.76	2063995	500		22442	2070235	0	0	0	500
100	132	Downlink & Uplink	Low	24300	2017499	24252.48	2016707	0	120	22257	2016955	8	0	0	0
			Mid	25872.96	2043715	25752.72	2041711	101		22348	2043163	0	0	0	101
			High	27445.44	2069923	27037.92	2063131	500		22439	2069371	0	0	0	500
200	264	Downlink & Uplink	Low	24358.86	2018480	24263.82	2016896	0	120	22258	2017243	11	8	1	8
			Mid	25879.5	2043824	25711.74	2041028	101		22346	2042587	11	8	1	109
			High	27389.28	2068987	26934.24	2061403	500		22433	2067643	0	0	0	500

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 the four most significant bits of the IE pdcch-ConfigSIB1 in the MIB. 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 4.3.1.2.1.2: Test frequencies for NR operating band n258 and SCS 120kHz

Band width [MHz]	*carrier Bandwidth* [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}	CORESET#0 Offset [RBs] Note 1	CORESET#0 Index 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
			Mid	25875.96	2043765	25707.48	2040957	101		22350	2043739	11	4	1	210
			High	27472.8	2070379	26729.76	2057995	500		22442	2070235	0	0	0	1000
100	66	Downlink & Uplink	Low	24300	2017499	24252.48	2016707	0	120	22257	2016955	4	0	0	0
			Mid	25872.96	2043715	25680	2040499	101		22348	2043163	0	0	0	202
			High	27445.44	2069923	26677.92	2057131	500		22439	2069371	0	0	0	1000
200	132	Downlink & Uplink	Low	24358.2	2018469	24263.16	2016885	0	120	22258	2017243	11	4	1	8
			Mid	25878.84	2043813	25638.36	2039805	101		22346	2042587	11	4	1	210
			High	27399.96	2069165	26584.92	2055581	500		22434	2067931	7	4	1	1008
400	264	Downlink & Uplink	Low	24453.24	2020053	24263.16	2016885	0	120	22258	2017243	11	4	1	8
			Mid	25875.96	2043765	25540.44	2038173	101		22340	2040859	11	0	0	202
			High	27294.24	2067403	26384.16	2052235	500		22422	2064475	0	0	0	1000
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 the four most significant bits of the IE pdcch-ConfigSIB1 in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.															

4.3.1.2.1.3 FFS

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 and SCS 60 kHz

Band width [MHz]	*carrier Bandwidth* [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}	CORESET#0 Offset [RBs] Note 1	CORESET#0 Index Note 1	offsetToPointA (SIB1) [PRBs] Note 1
50	66	Downlink & Uplink	Low	37028.7	2229644	37004.94	2229248	0	120	22995	2229499	11	0	0	0
			Mid	38498.16	2254135	38401.68	2252527	101		23080	2253979	0	0	0	101
			High	39966.96	2278615	39583.2	2272219	500		23165	2278459	0	0	0	500
100	132	Downlink & Uplink	Low	37052.46	2230040	37004.94	2229248	0	120	22995	2229499	11	0	0	0
			Mid	38498.88	2254147	38378.64	2252143	101		23079	2253691	0	8	1	109
			High	39949.98	2278332	39542.46	2271540	500		23163	2277883	7	8	1	508
200	264	Downlink & Uplink	Low	37100.04	2230833	37005	2229249	0	120	22995	2229499	10	0	0	0
			Mid	38500.02	2254166	38332.26	2251370	101		23076	2252827	5	0	0	101
			High	39900	2277499	39444.96	2269915	500		23157	2276155	0	0	0	500

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 the four most significant bits of the IE pdcch-ConfigSIB1 in the MIB. 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 4.3.1.2.1.4-2: Test frequencies for NR operating band n260 and SCS 120kHz

Band width [MHz]	*carrier Bandwidth* [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}	CORESET#0 Offset [RBs] Note 1	CORESET#0 Index Note 1	offsetToPointA (SIB1) [PRBs] Note 1
50	32	Downlink & Uplink	Low	37027.32	2229621	37004.28	2229237	0	120	22995	2229499	11	0	0	0
			Mid	38497.44	2254123	38328.96	2251315	101		23080	2253979	0	0	0	202
			High	39966.24	2278603	39223.2	2266219	500		23165	2278459	0	0	0	1000
100	66	Downlink & Uplink	Low	37051.8	2230029	37004.28	2229237	0	120	22995	2229499	11	0	0	0
			Mid	38498.88	2254147	38305.92	2250931	101		23079	2253691	0	4	1	210
			High	39949.92	2278331	39182.4	2265539	500		23163	2277883	4	4	1	1008
200	132	Downlink & Uplink	Low	37100.04	2230833	37005	2229249	0	120	22995	2229499	5	0	0	0
			Mid	38499.96	2254165	38259.48	2250157	101		23076	2252827	3	0	0	202
			High	39900	2277499	39084.96	2263915	500		23157	2276155	0	0	0	1000
400	264	Downlink & Uplink	Low	37205.88	2232597	37015.8	2229429	0	120	22996	2229787	11	4	1	8
			Mid	38501.88	2254197	38166.36	2248605	101		23071	2251387	11	4	1	210
			High	39799.2	2275819	38889.12	2260651	500		23146	2272987	0	4	1	1008

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 the four most significant bits of the IE pdcch-ConfigSIB1 in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.

4.3.1.2.1.5 Reference test frequencies for NR operating band n261

Table 4.3.1.2.1.5-1: Test frequencies for NR operating band n261 and SCS 60 kHz

Band width [MHz]	*carrier Bandwidth* [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}	CORESET#0 Offset [RBs] Note 1	CORESET#0 Index Note 1	offsetToPointA (SIB1) [PRBs] Note 1
50	66	Downlink & Uplink	Low	27536.22	2071436	27512.46	2071040	0	120	22446	2071387	11	8	1	8
			Mid	27922.8	2077879	27826.32	2076271	101		22468	2077723	0	0	0	101
			High	28320.24	2084503	27936.48	2078107	500		22491	2084347	0	0	0	500
100	132	Downlink & Uplink	Low	27559.98	2071832	27512.46	2071040	0	120	22446	2071387	11	8	1	8
			Mid	27923.52	2077891	27803.28	2075887	101		22467	2077435	0	8	1	109
			High	28292.16	2084035	27884.64	2077243	500		22488	2083483	0	0	0	500
200	264	Downlink & Uplink	Low	27607.5	2072624	27512.46	2071040	0	120	22446	2071387	11	8	1	8
			Mid	27924.96	2077915	27757.2	2075119	101		22464	2076571	0	0	0	101
			High	28247.52	2083291	27792.48	2075707	500		22483	2082043	0	8	1	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 the four most significant bits of the IE pdcch-ConfigSIB1 in the MIB. 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 4.3.1.2.1.5-2: Test frequencies for NR operating band n261 and SCS 120kHz

Band width [MHz]	*carrier Bandwidth* [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}	CORESET#0 Offset [RBs] Note 1	CORESET#0 Index Note 1	offsetToPointA (SIB1) [PRBs] Note 1
50	32	Downlink & Uplink	Low	27534.84	2071413	27511.8	2071029	0	120	22446	2071387	11	4	1	8
			Mid	27922.08	2077867	27753.6	2075059	101		22468	2077723	0	0	0	202
			High	28319.52	2084491	27576.48	2072107	500		22491	2084347	0	0	0	1000
100	66	Downlink & Uplink	Low	27559.32	2071821	27511.8	2071029	0	120	22446	2071387	11	4	1	8
			Mid	27923.52	2077891	27730.56	2074675	101		22467	2077435	0	4	1	210
			High	28292.16	2084035	27524.64	2071243	500		22488	2083483	0	0	0	1000
200	132	Downlink & Uplink	Low	27606.84	2072613	27511.8	2071029	0	120	22446	2071387	11	4	1	8
			Mid	27924.96	2077915	27684.48	2073907	101		22464	2076571	0	0	0	202
			High	28247.52	2083291	27432.48	2069707	500		22483	2082043	0	4	1	1008
400	264	Downlink & Uplink	Low	27701.88	2074197	27511.8	2071029	0	120	22446	2071387	11	4	1	8
			Mid	27926.52	2077941	27591	2072349	101		22459	2075131	11	4	1	210
			High	28140.96	2081515	27230.88	2066347	500		22471	2078587	0	0	0	1000
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 the four most significant bits of the IE pdcch-ConfigSIB1 in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.															

4.3.1.2.2 Intra-band CA in FR2

4.3.1.2.3 Inter-band CA in FR2

4.3.1.3 Test frequencies for NR operation with other radios

4.3.1.3.1 Inter-band CA

Table 4.3.1.3.1-1: Inter-band CA combination CA_n71A_n257A

Range	FFS	NR FR1					NR FR2				
		BW [RB]	FFS	f_{UL} [MHz]	FFS	f_{DL} [MHz]	BW [RB]	FFS	f_{UL} [MHz]	FFS	f_{DL} [MHz]
Low	FFS										
	FFS										
Mid	FFS										
	FFS										
High	FFS										
	FFS										

4.3.1.3.2 EN-DC (two bands)

4.3.1.3.2.0 Default reference test frequencies for EN-DC combinations (two bands)

For inter-band EN-DC configurations as listed in Table 4.3.1.3.2.0-1, the following apply:

For the E-UTRA band, test frequencies as specified in TS 36.508 [2] Table 4.3.1.1.1-1 are used.

For the NR band, test frequencies as specified in clause 4.3.1 are used.

Table 4.3.1.3.2.0-1: Inter-band EN-DC configurations (FR1, two bands)

EN-DC configuration	Uplink EN-DC configuration	E-UTRA configuration	NR configuration
DC_1A_n28A	DC_1A_n28A	1	n28A
DC_1A_n77A	DC_1A_n77A	1A	n77A
DC_1A_n78A	DC_1A_n78A	1A	n78A
DC_1A_n79A	DC_1A_n79A	1A	n79A
DC_3A_n77A	DC_3A_n77A	3A	n77A
DC_3A_n78A	DC_3A_n78A	3A	n78A
DC_3A_n79A	DC_3A_n79A	3A	n79A
DC_19A_n77A	DC_19A_n77A	19A	n77A
DC_19A_n78A	DC_19A_n78A	19A	n78A
DC_19A_n79A	DC_19A_n79A	19A	n79A
DC_20A_n78A	DC_20A_n78A	20A	n78A
DC_21A_n77A	DC_21A_n77A	21A	n77A
DC_21A_n78A	DC_21A_n78A	21A	n78A
DC_21A_n79A	DC_21A_n79A	21A	n79A
DC_25A_n41A	DC_25A_n41A	25	n41A
DC_28A_n77A	DC_28A_n77A	28A	n77A
DC_28A_n78A	DC_28A_n78A	28A	n78A
DC_28A_n79A	DC_28A_n79A	28A	n79A

Table 4.3.1.3.2.0-2: Inter-band EN-DC configurations (FR1, three bands)

EN-DC configuration	Uplink EN-DC configuration	E-UTRA configuration	NR configuration
FFS	FFS	FFS	FFS

Table 4.3.1.3.2.0-3: Inter-band EN-DC configurations (FR1, four bands)

EN-DC configuration	Uplink EN-DC configuration	E-UTRA configuration	NR configuration
FFS	FFS	FFS	FFS

Table 4.3.1.3.2.0-4: FFS

Table 4.3.1.3.2.0-5: Inter-band EN-DC configurations (FR1, five bands)

EN-DC configuration	Uplink EN-DC configuration	E-UTRA configuration	NR configuration
FFS	FFS	FFS	FFS

Table 4.3.1.3.2.0-6: Inter-band EN-DC configurations (FR1, six bands)

EN-DC configuration	Uplink EN-DC configuration	E-UTRA configuration	NR configuration
FFS	FFS	FFS	FFS

Table 4.3.1.3.2.0-7: Inter-band EN-DC configurations (FR2, two bands)

EN-DC configuration	Uplink EN-DC configuration	E-UTRA configuration	NR configuration
DC_1A_n257A	DC_1A_n257A	1A	n257A
DC_3A_n257A	DC_3A_n257A	3A	n257A
DC_5A-n260A	DC_5A_n260A	5	n260A
DC_5A_n261A	DC_5A_n261A	5	n261A
DC_13A_n257A	DC_13A_n257A	13	n257A
DC_19A_n257A	DC_19A_n257A	19A	n257A
DC_21A_n257A	DC_21A_n257A	21A	n257A
DC_66A_n260A	DC_66A_n260A	66	n260A
DC_66A-n261A	DC_66A_n261A	66	n261A

Table 4.3.1.3.2.0-8: Inter-band EN-DC configurations (FR2, three bands)

EN-DC configuration	Uplink EN-DC configuration	E-UTRA configuration	NR configuration
FFS	FFS	FFS	FFS

Table 4.3.1.3.2.0-9: Inter-band EN-DC configurations (FR2, four bands)

EN-DC configuration	Uplink EN-DC configuration	E-UTRA configuration	NR configuration
FFS	FFS	FFS	FFS

Table 4.3.1.3.2.0-10: Inter-band EN-DC configurations (FR2, five bands)

EN-DC configuration	Uplink EN-DC configuration	E-UTRA configuration	NR configuration
FFS	FFS	FFS	FFS

Table 4.3.1.3.2.0-11: Inter-band EN-DC configurations (FR2, six bands)

EN-DC configuration	Uplink EN-DC configuration	E-UTRA configuration	NR configuration
FFS	FFS	FFS	FFS

4.3.1.3.2.1 Reference test frequencies for EN-DC combinations beginning with B1

Table 4.3.1.3.2.1-28: EN-DC combination DC_1_n28

Range	FFS	E-UTRA					NR				
		BW [RB]	N_{UL}	f_{UL} [MHz]	N_{DL}	f_{DL} [MHz]	BW [RB]	FFS	f_{UL} [MHz]	FFS	f_{DL} [MHz]
Low	FFS										
	FFS										
Mid	FFS										
	FFS										
High	FFS										
	FFS										

4.3.1.3.2.2 to 4.3.1.3.2.24 FFS

4.3.1.3.2.25 Reference test frequencies for EN-DC combinations beginning with B25

4.3.1.3.2.25.1 to 4.3.1.3.2.25.40FFS

4.3.1.3.2.25.41 Reference test frequencies for EN-DC combination DC_25A_n41A / DC_25A_n41A

The test frequencies for B25A are found in TS 36.508 [2] Table 4.3.1.1.25-1.

The test frequencies for n41A are found in sub clause 4.3.1.1.1.41:

4.3.1.3.2.26 – 4.3.1.3.2.40 FFS

4.3.1.3.2.41 Reference test frequencies for EN-DC combinations beginning with B41

4.3.1.3.2.41.1 Reference test frequencies for intra-band contiguous EN-DC combination DC_(n)41

Table 4.3.1.3.2.41-1: EN-DC combination DC_(n)41AA, intra-band contiguous, SCS 15 kHz, 15 kHz NR raster

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}	CORESET#0 Offset [RBs] Note 1	CORESET#0 Index Note 1	offsetT[illegible] PointA (SIB1) [PRBs Note 1
E-UTRA: 25 + NR: 52	E-UTRA CC1	5	25	Downlink & Uplink	Low	2508.600	39776	-	-	-	-	-	-	-	-	-	-
					Mid	2600.400	40694	-	-	-	-	-	-	-	-	-	-
					High	2677.500	41465	-	-	-	-	-	-	-	-	-	-
	NR CC1	10	52	Downlink & Uplink	Low	2501.100	500220	2496.42	499284	0	15	6246	500220	22	0	0	0
					Mid	2592.900	518580	2570.04	514008	101		6477	518580	14	4	2	105
					High	2685.000	537000	2590.32	518064	500		6705	537000	2	0	0	500
E-UTRA: 25 + NR: 79	E-UTRA CC1	5	25	Downlink & Uplink	Low	2513.700	39827	-	-	-	-	-	-	-	-	-	-
					Mid	2603.100	40721	-	-	-	-	-	-	-	-	-	-
					High	2672.400	41414	-	-	-	-	-	-	-	-	-	-
	NR CC1	15	79	Downlink & Uplink	Low	2503.695	500739	2496.585	499317	0	15	6246	500739	11	0	0	0
					Mid	2593.095	518619	2567.805	513561	101		6471	518619	3	4	2	105
					High	2682.405	536481	2585.295	517059	500		6693	536481	17	0	0	500
E-UTRA: 25 + NR: 106	E-UTRA CC1	5	25	Downlink & Uplink	Low	2518.500	39875	-	-	-	-	-	-	-	-	-	-
					Mid	2605.500	40745	-	-	-	-	-	-	-	-	-	-
					High	2667.300	41363	-	-	-	-	-	-	-	-	-	-
	NR CC1	20	106	Downlink & Uplink	Low	2506.005	501201	2496.465	499293	0	15	6246	501201	19	0	0	0
					Mid	2593.005	518601	2565.285	513057	101		6465	518601	11	4	2	105
					High	2679.795	535959	2580.255	516051	500		6681	535959	9	2	1	502
E-UTRA: 25 + NR: 216	E-UTRA CC1	5	25	Downlink & Uplink	Low	2538.600	40076	-	-	-	-	-	-	-	-	-	-
					Mid	2615.400	40844	-	-	-	-	-	-	-	-	-	-
					High	2647.500	41165	-	-	-	-	-	-	-	-	-	-
	NR CC1	40	216	Downlink & Uplink	Low	2516.100	503220	2496.66	499332	0	15	6246	503220	6	0	0	0
					Mid	2592.900	518580	2555.28	511056	101		6438	518580	6	0	0	101
					High	2670.000	534000	2560.56	512112	500		6633	534000	18	4	2	504
E-UTRA: 25 + NR: 270	E-UTRA CC1	5	25	Downlink & Uplink	Low	2548.500	40175	-	-	-	-	-	-	-	-	-	-
					Mid	2620.500	40895	-	-	-	-	-	-	-	-	-	-
					High	2637.300	41063	-	-	-	-	-	-	-	-	-	-
	NR CC1	50	270	Downlink & Uplink	Low	2521.005	504201	2496.705	499341	0	15	6246	504201	3	0	0	0
					Mid	2593.005	518601	2550.525	510105	101		6426	518601	3	0	0	101
					High	2664.795	532959	2550.495	510099	500		6606	532959	17	0	0	500
E-UTRA: 50 + NR: 52	E-UTRA CC1	10	50	Downlink & Uplink	Low	2511.300	39803	-	-	-	-	-	-	-	-	-	-
					Mid	2603.100	40721	-	-	-	-	-	-	-	-	-	-
					High	2674.800	41438	-	-	-	-	-	-	-	-	-	-
	NR CC1	10	52	Downlink & Uplink	Low	2501.295	500259	2496.615	499323	0	15	6246	500259	9	0	0	0
					Mid	2593.095	518619	2570.235	514047	101		6477	518619	1	4	2	105
					High	2684.805	536961	2590.125	518025	500		6705	536961	15	0	0	500
	E-UTRA	10	50	Downlink	Low	2516.100	39851	-	-	-	-	-	-	-	-	-	-

E-UTRA: 50 + NR: 79	CC1			& Uplink	Mid	2605.500	40745	-	-	-	-	-	-	-	-	-	-
					High	2670.000	41390	-	-	-	-	-	-	-	-	-	-
	NR CC1	15	79	Downlink & Uplink	Low	2503.605	500721	2496.495	499299	0	15	6246	500721	17	0	0	0
					Mid	2593.005	518601	2567.715	513543	101		6471	518601	9	4	2	105
					High	2682.495	536499	2585.385	517077	500		6693	536499	11	0	0	500
E-UTRA: 50 + NR: 106	E-UTRA CC1	10	50	Downlink & Uplink	Low	2521.200	39902	-	-	-	-	-	-	-	-	-	-
					Mid	2607.900	40769	-	-	-	-	-	-	-	-	-	-
					High	2664.900	41339	-	-	-	-	-	-	-	-	-	-
	NR CC1	20	106	Downlink & Uplink	Low	2506.200	501240	2496.66	499332	0	15	6246	501240	6	0	0	0
					Mid	2592.900	518580	2565.18	513036	101		6465	518580	18	4	2	105
					High	2679.900	535980	2580.36	516072	500		6681	535980	2	2	1	502
E-UTRA: 50 + NR: 216	E-UTRA CC1	10	50	Downlink & Uplink	Low	2541.600	40106	-	-	-	-	-	-	-	-	-	-
					Mid	2618.400	40874	-	-	-	-	-	-	-	-	-	-
					High	2644.500	41135	-	-	-	-	-	-	-	-	-	-
	NR CC1	40	216	Downlink & Uplink	Low	2516.595	503319	2497.155	499431	0	15	6249	503319	5	4	2	4
					Mid	2593.395	518679	2555.775	511155	101		6441	518679	5	4	2	105
					High	2669.505	533901	2560.065	512013	500		6630	533901	19	0	0	500
E-UTRA: 50 + NR: 270	E-UTRA CC1	10	50	Downlink & Uplink	Low	2551.200	40202	-	-	-	-	-	-	-	-	-	-
					Mid	2622.900	40919	-	-	-	-	-	-	-	-	-	-
					High	2634.900	41039	-	-	-	-	-	-	-	-	-	-
	NR CC1	50	270	Downlink & Uplink	Low	2521.200	504240	2496.9	499380	0	15	6249	504240	22	4	2	4
					Mid	2592.900	518580	2550.42	510084	101		6426	518580	10	0	0	101
					High	2664.900	532980	2550.6	510120	500		6606	532980	10	0	0	500
E-UTRA: 75 + NR: 52	E-UTRA CC1	15	75	Downlink & Uplink	Low	2513.700	39827	-	-	-	-	-	-	-	-	-	-
					Mid	2605.500	40745	-	-	-	-	-	-	-	-	-	-
					High	2672.400	41414	-	-	-	-	-	-	-	-	-	-
	NR CC1	10	52	Downlink & Uplink	Low	2501.205	500241	2496.525	499305	0	15	6246	500241	15	0	0	0
					Mid	2593.005	518601	2570.145	514029	101		6477	518601	7	4	2	105
					High	2684.895	536979	2590.215	518043	500		6705	536979	9	0	0	500
E-UTRA: 75 + NR: 79	E-UTRA CC1	15	75	Downlink & Uplink	Low	2518.500	39875	-	-	-	-	-	-	-	-	-	-
					Mid	2607.900	40769	-	-	-	-	-	-	-	-	-	-
					High	2667.300	41363	-	-	-	-	-	-	-	-	-	-
	NR CC1	15	79	Downlink & Uplink	Low	2503.500	500700	2496.39	499278	0	15	6246	500700	0	2	1	2
					Mid	2592.900	518580	2567.61	513522	101		6471	518580	16	4	2	105
					High	2682.300	536460	2585.19	517038	500		6693	536460	0	2	1	502
E-UTRA: 75 + NR: 106	E-UTRA CC1	15	75	Downlink & Uplink	Low	2523.600	39926	-	-	-	-	-	-	-	-	-	-
					Mid	2610.600	40796	-	-	-	-	-	-	-	-	-	-
					High	2662.200	41312	-	-	-	-	-	-	-	-	-	-
	NR CC1	20	106	Downlink & Uplink	Low	2506.095	501219	2496.555	499311	0	15	6246	501219	13	0	0	0
					Mid	2593.095	518619	2565.375	513075	101		6465	518619	5	4	2	105
					High	2679.705	535941	2580.165	516033	500		6681	535941	15	2	1	502
E-UTRA: 75 + NR: 216	E-UTRA CC1	15	75	Downlink & Uplink	Low	2544.000	40130	-	-	-	-	-	-	-	-	-	-
					Mid	2620.800	40898	-	-	-	-	-	-	-	-	-	-
					High	2642.100	41111	-	-	-	-	-	-	-	-	-	-

	NR CC1	40	216	Downlink & Uplink	Low	2516.505	503301	2497.065	499413	0	15	6249	503301	11	4	2	4
					Mid	2593.305	518661	2555.685	511137	101		6441	518661	11	4	2	105
					High	2669.595	533919	2560.155	512031	500		6630	533919	13	0	0	500
E-UTRA: 75 + NR: 270	E-UTRA CC1	15	75	Downlink & Uplink	Low	2553.900	40229	-	-	-	-	-	-	-	-	-	-
					Mid	2625.900	40949	-	-	-	-	-	-	-	-	-	-
					High	2632.200	41012	-	-	-	-	-	-	-	-	-	-
	NR CC1	50	270	Downlink & Uplink	Low	2521.395	504279	2497.095	499419	0	15	6249	504279	9	4	2	4
					Mid	2593.395	518679	2550.915	510183	101		6429	518679	9	4	2	105
					High	2664.705	532941	2550.405	510081	500		6606	532941	23	0	0	500
E-UTRA: 100 + NR:52	E-UTRA CC1	20	100	Downlink & Uplink	Low	2516.100	39851	-	-	-	-	-	-	-	-	-	-
					Mid	2607.900	40769	-	-	-	-	-	-	-	-	-	-
					High	2670.000	41390	-	-	-	-	-	-	-	-	-	-
	NR CC1	10	52	Downlink & Uplink	Low	2501.100	500220	2496.42	499284	0	15	6246	500220	22	0	0	0
					Mid	2592.900	518580	2570.04	514008	101		6477	518580	14	4	2	105
					High	2685.000	537000	2590.32	518064	500		6705	537000	2	0	0	500
E-UTRA: 100 + NR:79	E-UTRA CC1	20	100	Downlink & Uplink	Low	2521.200	39902	-	-	-	-	-	-	-	-	-	-
					Mid	2610.600	40796	-	-	-	-	-	-	-	-	-	-
					High	2664.900	41339	-	-	-	-	-	-	-	-	-	-
	NR CC1	15	79	Downlink & Uplink	Low	2503.695	500739	2496.585	499317	0	15	6246	500739	11	0	0	0
					Mid	2593.095	518619	2567.805	513561	101		6471	518619	3	4	2	105
					High	2682.405	536481	2585.295	517059	500		6693	536481	17	0	0	500
E-UTRA: 100 + NR:106	E-UTRA CC1	20	100	Downlink & Uplink	Low	2526.000	39950	-	-	-	-	-	-	-	-	-	-
					Mid	2613.000	40820	-	-	-	-	-	-	-	-	-	-
					High	2659.800	41288	-	-	-	-	-	-	-	-	-	-
	NR CC1	20	106	Downlink & Uplink	Low	2506.005	501201	2496.465	499293	0	15	6246	501201	19	0	0	0
					Mid	2593.005	518601	2565.285	513057	101		6465	518601	11	4	2	105
					High	2679.795	535959	2580.255	516051	500		6681	535959	9	2	1	502
E-UTRA: 100 + NR: 216	E-UTRA CC1	20	100	Downlink & Uplink	Low	2546.100	40151	-	-	-	-	-	-	-	-	-	-
					Mid	2622.900	40919	-	-	-	-	-	-	-	-	-	-
					High	2640.000	41090	-	-	-	-	-	-	-	-	-	-
	NR CC1	40	216	Downlink & Uplink	Low	2516.100	503220	2496.66	499332	0	15	6246	503220	6	0	0	0
					Mid	2592.900	518580	2555.28	511056	101		6438	518580	6	0	0	101
					High	2670.000	534000	2560.56	512112	500		6633	534000	18	4	2	504
E-UTRA: 100 + NR: 270	E-UTRA CC1	20	100	Downlink & Uplink	Low	2556.000	40250	-	-	-	-	-	-	-	-	-	-
					Mid	2628.000	40970	-	-	-	-	-	-	-	-	-	-
					High	2629.800	40988	-	-	-	-	-	-	-	-	-	-
	NR CC1	50	270	Downlink & Uplink	Low	2521.005	504201	2496.705	499341	0	15	6246	504201	3	0	0	0
					Mid	2593.005	518601	2550.525	510105	101		6426	518601	3	0	0	101
					High	2664.795	532959	2550.495	510099	500		6606	532959	17	0	0	500

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 the four most significant bits of th IE pdcch. ConfigSIB1 in the MIB. 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.

Table 4.3.1.3.2.41-2: EN-DC combination DC_(n)41AA, intra-band contiguous, SCS 30 kHz, 30 kHz NR raster

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}	CORESET#0 Offset [RBs] Note 1	CORESET#0 Index Note 1	offsetTPointA (SIB1) [PRBs] Note 1
E-UTRA: 25 + NR: 24	E-UTRA CC1	5	25	Downlink	Low	2508.600	39776	-	-	-	-	-	-	-	-	-	-
				&	Mid	2600.400	40694	-	-	-	-	-	-	-	-	-	-
				Uplink	High	2677.500	41465	-	-	-	-	-	-	-	-	-	-
	NR CC1	10	24	Downlink	Low	2501.100	500220	2496.78	499356	0	30	6252	500220	14	1	1	2
				&	Mid	2592.900	518580	2552.22	510444	101		6483	518580	6	3	3	208
				Uplink	High	2685.000	537000	2500.68	500136	500		6711	537000	18	0	0	1000
E-UTRA: 25 + NR: 38	E-UTRA CC1	5	25	Downlink	Low	2513.700	39827	-	-	-	-	-	-	-	-	-	-
				&	Mid	2603.100	40721	-	-	-	-	-	-	-	-	-	-
				Uplink	High	2672.400	41414	-	-	-	-	-	-	-	-	-	-
	NR CC1	15	38	Downlink	Low	2503.710	500742	2496.87	499374	0	30	6252	500742	8	1	1	2
				&	Mid	2593.110	518622	2549.91	509982	101		6477	518622	0	3	3	208
				Uplink	High	2682.390	536478	2495.55	499110	500		6699	536478	16	1	1	1002
E-UTRA: 25 + NR: 51	E-UTRA CC1	5	25	Downlink	Low	2518.800	39878	-	-	-	-	-	-	-	-	-	-
				&	Mid	2605.500	40745	-	-	-	-	-	-	-	-	-	-
				Uplink	High	2667.300	41363	-	-	-	-	-	-	-	-	-	-
	NR CC1	20	51	Downlink	Low	2506.290	501258	2497.11	499422	0	30	6252	501258	16	0	0	0
				&	Mid	2592.990	518598	2547.45	509490	101		6471	518598	4	3	3	208
				Uplink	High	2679.810	535962	2490.63	498126	500		6687	535962	0	2	2	1004
E-UTRA: 25 + NR: 106	E-UTRA CC1	5	25	Downlink	Low	2538.600	40076	-	-	-	-	-	-	-	-	-	-
				&	Mid	2615.400	40844	-	-	-	-	-	-	-	-	-	-
				Uplink	High	2647.500	41165	-	-	-	-	-	-	-	-	-	-
	NR CC1	40	106	Downlink	Low	2516.100	503220	2497.02	499404	0	30	6252	503220	22	0	0	0
				&	Mid	2592.900	518580	2537.46	507492	101		6444	518580	22	0	0	202
				Uplink	High	2670.000	534000	2470.92	494184	500		6636	534000	2	0	0	1000
E-UTRA: 25 + NR: 133	E-UTRA CC1	5	25	Downlink	Low	2548.800	40178	-	-	-	-	-	-	-	-	-	-
				&	Mid	2620.500	40895	-	-	-	-	-	-	-	-	-	-
				Uplink	High	2637.300	41063	-	-	-	-	-	-	-	-	-	-
	NR CC1	50	133	Downlink	Low	2521.290	504258	2497.35	499470	0	30	6252	504258	0	0	0	0
				&	Mid	2592.990	518598	2532.69	506538	101		6432	518598	20	0	0	202
				Uplink	High	2664.810	532962	2460.87	492174	500		6612	532962	8	1	1	1002
E-UTRA: 25 + NR: 162	E-UTRA CC1	5	25	Downlink	Low	2558.700	40277	-	-	-	-	-	-	-	-	-	-
				&	Mid	2625.600	40946	-	-	-	-	-	-	-	-	-	-
				Uplink	High	2627.400	40964	-	-	-	-	-	-	-	-	-	-
	NR CC1	60	162	Downlink	Low	2526.210	505242	2497.05	499410	0	30	6252	505242	20	0	0	0
				&	Mid	2593.110	518622	2527.59	505518	101		6420	518622	16	1	1	204
				Uplink	High	2659.890	531978	2450.73	490146	500		6588	531978	20	2	2	1004
	E-UTRA	5	25	Downlink	Low	2578.800	40478	-	-	-	-	-	-	-	-	-	-

E-UTRA: 25 + NR: 217	CC1			& Uplink	Mid	2635.500	41045	-	-	-	-	-	-	-	-	-	-
					High	2607.300	40763	-	-	-	-	-	-	-	-	-	-
	NR CC1	80	217	Downlink & Uplink	Low	2536.290	507258	2497.23	499446	0	30	6252	507258	8	0	0	0
					Mid	2592.990	518598	2517.57	503514	101		6396	518598	20	2	2	206
					High	2649.810	529962	2430.75	486150	500		6537	529962	16	1	1	1002
E-UTRA: 25 + NR: 245	E-UTRA CC1	5	25	Downlink & Uplink	Low	2588.700	40577	-	-	-	-	-	-	-	-	-	-
					Mid	2640.600	41096	-	-	-	-	-	-	-	-	-	-
					High	2597.400	40664	-	-	-	-	-	-	-	-	-	-
	NR CC1	90	245	Downlink & Uplink	Low	2541.210	508242	2497.11	499422	0	30	6252	508242	16	0	0	0
					Mid	2593.110	518622	2512.65	502530	101		6384	518622	4	3	3	208
					High	2644.890	528978	2420.79	484158	500		6513	528978	16	2	2	1004
E-UTRA: 25 + NR: 273	E-UTRA CC1	5	25	Downlink & Uplink	Low	2598.600	40676	-	-	-	-	-	-	-	-	-	-
					Mid	2645.400	41144	-	-	-	-	-	-	-	-	-	-
					High	2587.500	40565	-	-	-	-	-	-	-	-	-	-
	NR CC1	100	273	Downlink & Uplink	Low	2546.100	509220	2496.96	499392	0	30	6252	509220	2	1	1	2
					Mid	2592.900	518580	2507.4	501480	101		6369	518580	2	1	1	204
					High	2640.000	528000	2410.86	482172	500		6486	528000	6	0	0	1000
E-UTRA: 50 + NR: 24	E-UTRA CC1	10	50	Downlink & Uplink	Low	2511.000	39800	-	-	-	-	-	-	-	-	-	-
					Mid	2603.100	40721	-	-	-	-	-	-	-	-	-	-
					High	2674.800	41438	-	-	-	-	-	-	-	-	-	-
	NR CC1	10	24	Downlink & Uplink	Low	2501.010	500202	2496.69	499338	0	30	6252	500202	20	1	1	2
					Mid	2593.110	518622	2552.43	510486	101		6483	518622	16	2	2	206
					High	2684.790	536958	2500.47	500094	500		6711	536958	8	1	1	1002
E-UTRA: 50 + NR: 38	E-UTRA CC1	10	50	Downlink & Uplink	Low	2516.100	39851	-	-	-	-	-	-	-	-	-	-
					Mid	2605.500	40745	-	-	-	-	-	-	-	-	-	-
					High	2669.700	41387	-	-	-	-	-	-	-	-	-	-
	NR CC1	15	38	Downlink & Uplink	Low	2503.590	500718	2496.75	499350	0	30	6252	500718	16	1	1	2
					Mid	2592.990	518598	2549.79	509958	101		6474	518598	0	0	0	202
					High	2682.210	536442	2495.37	499074	500		6699	536442	4	2	2	1004
E-UTRA: 50 + NR: 51	E-UTRA CC1	10	50	Downlink & Uplink	Low	2521.200	39902	-	-	-	-	-	-	-	-	-	-
					Mid	2607.900	40769	-	-	-	-	-	-	-	-	-	-
					High	2664.900	41339	-	-	-	-	-	-	-	-	-	-
	NR CC1	20	51	Downlink & Uplink	Low	2506.200	501240	2497.02	499404	0	30	6252	501240	22	0	0	0
					Mid	2592.900	518580	2547.36	509472	101		6468	518580	2	0	0	202
					High	2679.900	535980	2490.72	498144	500		6687	535980	18	1	1	1002
E-UTRA: 50 + NR: 106	E-UTRA CC1	10	50	Downlink & Uplink	Low	2541.000	40100	-	-	-	-	-	-	-	-	-	-
					Mid	2618.100	40871	-	-	-	-	-	-	-	-	-	-
					High	2644.800	41138	-	-	-	-	-	-	-	-	-	-
	NR CC1	40	106	Downlink & Uplink	Low	2516.010	503202	2496.93	499386	0	30	6252	503202	4	1	1	2
					Mid	2593.110	518622	2537.67	507534	101		6444	518622	8	0	0	202
					High	2669.790	533958	2470.71	494142	500		6636	533958	16	0	0	1000
E-UTRA: 50 + NR: 133	E-UTRA CC1	10	50	Downlink & Uplink	Low	2551.200	40202	-	-	-	-	-	-	-	-	-	-
					Mid	2622.900	40919	-	-	-	-	-	-	-	-	-	-
					High	2634.900	41039	-	-	-	-	-	-	-	-	-	-

	NR CC1	50	133	Downlink & Uplink	Low	2521.200	504240	2497.26	499452	0	30	6252	504240	6	0	0	0
					Mid	2592.900	518580	2532.6	506520	101		6432	518580	2	1	1	204
					High	2664.900	532980	2460.96	492192	500		6612	532980	2	1	1	1002
E-UTRA: 50 + NR: 162	E-UTRA CC1	10	50	Downlink & Uplink	Low	2561.100	40301	-	-	-	-	-	-	-	-	-	-
					Mid	2628.000	40970	-	-	-	-	-	-	-	-	-	-
					High	2624.700	40937	-	-	-	-	-	-	-	-	-	-
	NR CC1	60	162	Downlink & Uplink	Low	2526.090	505218	2496.93	499386	0	30	6252	505218	4	1	1	2
					Mid	2592.990	518598	2527.47	505494	101		6420	518598	0	2	2	206
					High	2659.710	531942	2450.55	490110	500		6585	531942	0	0	0	1000
E-UTRA: 50 + NR: 217	E-UTRA CC1	10	50	Downlink & Uplink	Low	2581.200	40502	-	-	-	-	-	-	-	-	-	-
					Mid	2637.900	41069	-	-	-	-	-	-	-	-	-	-
					High	2604.900	40739	-	-	-	-	-	-	-	-	-	-
	NR CC1	80	217	Downlink & Uplink	Low	2536.200	507240	2497.14	499428	0	30	6252	507240	14	0	0	0
					Mid	2592.900	518580	2517.48	503496	101		6396	518580	2	3	3	208
					High	2649.900	529980	2430.84	486168	500		6537	529980	10	1	1	1002
E-UTRA: 50 + NR: 245	E-UTRA CC1	10	50	Downlink & Uplink	Low	2591.100	40601	-	-	-	-	-	-	-	-	-	-
					Mid	2643.000	41120	-	-	-	-	-	-	-	-	-	-
					High	2594.700	40637	-	-	-	-	-	-	-	-	-	-
	NR CC1	90	245	Downlink & Uplink	Low	2541.090	508218	2496.99	499398	0	30	6252	508218	0	1	1	2
					Mid	2592.990	518598	2512.53	502506	101		6381	518598	4	0	0	202
					High	2644.710	528942	2420.61	484122	500		6513	528942	4	3	3	1006
E-UTRA: 50 + NR: 273	E-UTRA CC1	10	50	Downlink & Uplink	Low	2601.000	40700	-	-	-	-	-	-	-	-	-	-
					Mid	2648.100	41171	-	-	-	-	-	-	-	-	-	-
					High	2584.800	40538	-	-	-	-	-	-	-	-	-	-
	NR CC1	100	273	Downlink & Uplink	Low	2546.010	509202	2496.87	499374	0	30	6252	509202	8	1	1	2
					Mid	2593.110	518622	2507.61	501522	101		6369	518622	12	0	0	202
					High	2639.790	527958	2410.65	482130	500		6486	527958	20	0	0	1000
E-UTRA: 75 + NR: 24	E-UTRA CC1	15	75	Downlink & Uplink	Low	2513.700	39827	-	-	-	-	-	-	-	-	-	-
					Mid	2605.500	40745	-	-	-	-	-	-	-	-	-	-
					High	2672.400	41414	-	-	-	-	-	-	-	-	-	-
	NR CC1	10	24	Downlink & Uplink	Low	2501.190	500238	2496.87	499374	0	30	6252	500238	8	1	1	2
					Mid	2592.990	518598	2552.31	510462	101		6483	518598	0	3	3	208
					High	2684.910	536982	2500.59	500118	500		6711	536982	0	1	1	1002
E-UTRA: 75 + NR: 38	E-UTRA CC1	15	75	Downlink & Uplink	Low	2518.500	39875	-	-	-	-	-	-	-	-	-	-
					Mid	2607.900	40769	-	-	-	-	-	-	-	-	-	-
					High	2667.300	41363	-	-	-	-	-	-	-	-	-	-
	NR CC1	15	38	Downlink & Uplink	Low	2503.500	500700	2496.66	499332	0	30	6252	500700	22	1	1	2
					Mid	2592.900	518580	2549.7	509940	101		6474	518580	6	0	0	202
					High	2682.300	536460	2495.46	499092	500		6699	536460	22	1	1	1002
E-UTRA: 75 + NR: 51	E-UTRA CC1	15	75	Downlink & Uplink	Low	2523.600	39926	-	-	-	-	-	-	-	-	-	-
					Mid	2610.600	40796	-	-	-	-	-	-	-	-	-	-
					High	2662.500	41315	-	-	-	-	-	-	-	-	-	-
	NR CC1	20	51	Downlink &	Low	2506.110	501222	2496.93	499386	0	30	6252	501222	4	1	1	2
					Mid	2593.110	518622	2547.57	509514	101		6471	518622	20	2	2	206

				Uplink	High	2679.990	535998	2490.81	498162	500		6687	535998	12	1	1	1002
E-UTRA: 75 + NR: 106	E-UTRA CC1	15	75	Downlink & Uplink	Low	2543.700	40127	-	-	-	-	-	-	-	-	-	-
					Mid	2620.500	40895	-	-	-	-	-	-	-	-	-	-
					High	2642.400	41114	-	-	-	-	-	-	-	-	-	-
	NR CC1	40	106	Downlink & Uplink	Low	2516.190	503238	2497.11	499422	0	30	6252	503238	16	0	0	0
					Mid	2592.990	518598	2537.55	507510	101		6444	518598	16	0	0	202
					High	2669.910	533982	2470.83	494166	500		6636	533982	8	0	0	1000
E-UTRA: 75 + NR: 133	E-UTRA CC1	15	75	Downlink & Uplink	Low	2553.600	40226	-	-	-	-	-	-	-	-	-	-
					Mid	2625.600	40946	-	-	-	-	-	-	-	-	-	-
					High	2632.500	41015	-	-	-	-	-	-	-	-	-	-
	NR CC1	50	133	Downlink & Uplink	Low	2521.110	504222	2497.17	499434	0	30	6252	504222	12	0	0	0
					Mid	2593.110	518622	2532.81	506562	101		6432	518622	12	0	0	202
					High	2664.990	532998	2461.05	492210	500		6612	532998	20	0	0	1000
E-UTRA: 75 + NR: 162	E-UTRA CC1	15	75	Downlink & Uplink	Low	2563.500	40325	-	-	-	-	-	-	-	-	-	-
					Mid	2630.400	40994	-	-	-	-	-	-	-	-	-	-
					High	2622.300	40913	-	-	-	-	-	-	-	-	-	-
	NR CC1	60	162	Downlink & Uplink	Low	2526.000	505200	2496.84	499368	0	30	6252	505200	10	1	1	2
					Mid	2592.900	518580	2527.38	505476	101		6420	518580	6	2	2	206
					High	2659.800	531960	2450.64	490128	500		6588	531960	2	3	3	1006
E-UTRA: 75 + NR: 217	E-UTRA CC1	15	75	Downlink & Uplink	Low	2583.600	40526	-	-	-	-	-	-	-	-	-	-
					Mid	2640.600	41096	-	-	-	-	-	-	-	-	-	-
					High	2602.500	40715	-	-	-	-	-	-	-	-	-	-
	NR CC1	80	217	Downlink & Uplink	Low	2536.110	507222	2497.05	499410	0	30	6252	507222	20	0	0	0
					Mid	2593.110	518622	2517.69	503538	101		6396	518622	12	2	2	206
					High	2649.990	529998	2430.93	486186	500		6537	529998	4	1	1	1002
E-UTRA: 75 + NR: 245	E-UTRA CC1	15	75	Downlink & Uplink	Low	2593.500	40625	-	-	-	-	-	-	-	-	-	-
					Mid	2645.400	41144	-	-	-	-	-	-	-	-	-	-
					High	2592.300	40613	-	-	-	-	-	-	-	-	-	-
	NR CC1	90	245	Downlink & Uplink	Low	2541.000	508200	2496.9	499380	0	30	6252	508200	6	1	1	2
					Mid	2592.900	518580	2512.44	502488	101		6381	518580	10	0	0	202
					High	2644.800	528960	2420.7	484140	500		6513	528960	22	2	2	1004
E-UTRA: 75 + NR: 273	E-UTRA CC1	15	75	Downlink & Uplink	Low	2603.700	40727	-	-	-	-	-	-	-	-	-	-
					Mid	2650.500	41195	-	-	-	-	-	-	-	-	-	-
					High	2582.400	40514	-	-	-	-	-	-	-	-	-	-
	NR CC1	100	273	Downlink & Uplink	Low	2546.190	509238	2497.05	499410	0	30	6252	509238	20	0	0	0
					Mid	2592.990	518598	2507.49	501498	101		6369	518598	20	0	0	202
					High	2639.910	527982	2410.77	482154	500		6486	527982	12	0	0	1000
E-UTRA: 100 + NR: 24	E-UTRA CC1	20	100	Downlink & Uplink	Low	2516.100	39851	-	-	-	-	-	-	-	-	-	-
					Mid	2607.900	40769	-	-	-	-	-	-	-	-	-	-
					High	2670.000	41390	-	-	-	-	-	-	-	-	-	-
	NR CC1	10	24	Downlink & Uplink	Low	2501.100	500220	2496.78	499356	0	30	6252	500220	14	1	1	2
					Mid	2592.900	518580	2552.22	510444	101		6483	518580	6	3	3	208
					High	2685.000	537000	2500.68	500136	500		6711	537000	18	0	0	1000
	E-UTRA	20	100	Downlink	Low	2521.200	39902	-	-	-	-	-	-	-	-	-	-

E-UTRA: 100 + NR: 38	CC1			& Uplink	Mid	2610.600	40796	-	-	-	-	-	-	-	-	-	-
					High	2664.900	41339	-	-	-	-	-	-	-	-	-	-
	NR CC1	15	38	Downlink & Uplink	Low	2503.710	500742	2496.87	499374	0	30	6252	500742	8	1	1	2
					Mid	2593.110	518622	2549.91	509982	101		6477	518622	0	3	3	208
					High	2682.390	536478	2495.55	499110	500		6699	536478	16	1	1	1002
E-UTRA: 100 + NR: 51	E-UTRA CC1	20	100	Downlink & Uplink	Low	2526.300	39953	-	-	-	-	-	-	-	-	-	-
					Mid	2613.000	40820	-	-	-	-	-	-	-	-	-	-
					High	2659.800	41288	-	-	-	-	-	-	-	-	-	-
	NR CC1	20	51	Downlink & Uplink	Low	2506.290	501258	2497.11	499422	0	30	6252	501258	16	0	0	0
					Mid	2592.990	518598	2547.45	509490	101		6471	518598	4	3	3	208
					High	2679.810	535962	2490.63	498126	500		6687	535962	0	2	2	1004
E-UTRA: 100 + NR: 106	E-UTRA CC1	20	100	Downlink & Uplink	Low	2546.100	40151	-	-	-	-	-	-	-	-	-	-
					Mid	2622.900	40919	-	-	-	-	-	-	-	-	-	-
					High	2640.000	41090	-	-	-	-	-	-	-	-	-	-
	NR CC1	40	106	Downlink & Uplink	Low	2516.100	503220	2497.02	499404	0	30	6252	503220	22	0	0	0
					Mid	2592.900	518580	2537.46	507492	101		6444	518580	22	0	0	202
					High	2670.000	534000	2470.92	494184	500		6636	534000	2	0	0	1000
E-UTRA: 100 + NR: 133	E-UTRA CC1	20	100	Downlink & Uplink	Low	2556.300	40253	-	-	-	-	-	-	-	-	-	-
					Mid	2628.000	40970	-	-	-	-	-	-	-	-	-	-
					High	2629.800	40988	-	-	-	-	-	-	-	-	-	-
	NR CC1	50	133	Downlink & Uplink	Low	2521.290	504258	2497.35	499470	0	30	6252	504258	0	0	0	0
					Mid	2592.990	518598	2532.69	506538	101		6432	518598	20	0	0	202
					High	2664.810	532962	2460.87	492174	500		6612	532962	8	1	1	1002
E-UTRA: 100 + NR: 162	E-UTRA CC1	20	100	Downlink & Uplink	Low	2566.200	40352	-	-	-	-	-	-	-	-	-	-
					Mid	2633.100	41021	-	-	-	-	-	-	-	-	-	-
					High	2619.900	40889	-	-	-	-	-	-	-	-	-	-
	NR CC1	60	162	Downlink & Uplink	Low	2526.210	505242	2497.05	499410	0	30	6252	505242	20	0	0	0
					Mid	2593.110	518622	2527.59	505518	101		6420	518622	16	1	1	204
					High	2659.890	531978	2450.73	490146	500		6588	531978	20	2	2	1004
E-UTRA: 100 + NR: 217	E-UTRA CC1	20	100	Downlink & Uplink	Low	2586.300	40553	-	-	-	-	-	-	-	-	-	-
					Mid	2643.000	41120	-	-	-	-	-	-	-	-	-	-
					High	2599.800	40688	-	-	-	-	-	-	-	-	-	-
	NR CC1	80	217	Downlink & Uplink	Low	2536.290	507258	2497.23	499446	0	30	6252	507258	8	0	0	0
					Mid	2592.990	518598	2517.57	503514	101		6396	518598	20	2	2	206
					High	2649.810	529962	2430.75	486150	500		6537	529962	16	1	1	1002
E-UTRA: 100 + NR: 245	E-UTRA CC1	20	100	Downlink & Uplink	Low	2596.200	40652	-	-	-	-	-	-	-	-	-	-
					Mid	2648.100	41171	-	-	-	-	-	-	-	-	-	-
					High	2589.900	40589	-	-	-	-	-	-	-	-	-	-
	NR CC1	90	245	Downlink & Uplink	Low	2541.210	508242	2497.11	499422	0	30	6252	508242	16	0	0	0
					Mid	2593.110	518622	2512.65	502530	101		6384	518622	4	3	3	208
					High	2644.890	528978	2420.79	484158	500		6513	528978	16	2	2	1004
E-UTRA: 100 + NR: 273	E-UTRA CC1	20	100	Downlink & Uplink	Low	2606.100	40751	-	-	-	-	-	-	-	-	-	-
					Mid	2652.900	41219	-	-	-	-	-	-	-	-	-	-
					High	2580.000	40490	-	-	-	-	-	-	-	-	-	-

	NR CC1	100	273	Downlink & Uplink	Low	2546.100	509220	2496.96	499392	0	30	6252	509220	2	1	1	2
					Mid	2592.900	518580	2507.4	501480	101		6369	518580	2	1	1	204
					High	2640.000	528000	2410.86	482172	500		6486	528000	6	0	0	1000

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 the four most significant bits of th IE pdcch. ConfigSIB1 in the MIB. 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.

Table 4.3.1.3.2.41-3: EN-DC combination DC_(n)41AA, intra-band contiguous, SCS 60 kHz, 15 kHz NR raster

EN-DC channel bandwidth combination	CC	Bandwidth [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: 25 + NR: 11	E-UTRA CC1	5	25	Downlink & Uplink	Low	2508.600	39776	-	-	-	-	-	-
					Mid	2600.400	40694	-	-	-	-	-	-
					High	2677.500	41465	-	-	-	-	-	-
	NR CC1	10	11	Downlink & Uplink	Low	2501.100	500220	2497.14	499428	0	15	6249	500220
					Mid	2592.900	518580	2516.22	503244	101		6477	518580
					High	2685.000	537000	2321.04	464208	500		6708	537000
E-UTRA: 25 + NR: 18	E-UTRA CC1	5	25	Downlink & Uplink	Low	2513.700	39827	-	-	-	-	-	-
					Mid	2603.100	40721	-	-	-	-	-	-
					High	2672.400	41414	-	-	-	-	-	-
	NR CC1	15	18	Downlink & Uplink	Low	2503.695	500739	2497.215	499443	0	15	6249	500739
					Mid	2593.095	518619	2513.895	502779	101		6471	518619
					High	2682.405	536481	2315.925	463185	500		6696	536481
E-UTRA: 25 + NR: 24	E-UTRA CC1	5	25	Downlink & Uplink	Low	2518.500	39875	-	-	-	-	-	-
					Mid	2605.500	40745	-	-	-	-	-	-
					High	2667.300	41363	-	-	-	-	-	-
	NR CC1	20	24	Downlink & Uplink	Low	2506.005	501201	2497.365	499473	0	15	6249	501201
					Mid	2593.005	518601	2511.645	502329	101		6468	518601
					High	2679.795	535959	2311.155	462231	500		6684	535959
E-UTRA: 25 + NR: 51	E-UTRA CC1	5	25	Downlink & Uplink	Low	2538.600	40076	-	-	-	-	-	-
					Mid	2615.400	40844	-	-	-	-	-	-
					High	2647.500	41165	-	-	-	-	-	-
	NR CC1	40	51	Downlink & Uplink	Low	2516.100	503220	2497.74	499548	0	15	6249	503220
					Mid	2592.900	518580	2501.82	500364	101		6441	518580
					High	2670.000	534000	2291.64	458328	500		6636	534000
E-UTRA: 25 + NR: 65	E-UTRA CC1	5	25	Downlink & Uplink	Low	2548.500	40175	-	-	-	-	-	-
					Mid	2620.500	40895	-	-	-	-	-	-
					High	2637.300	41063	-	-	-	-	-	-
	NR CC1	50	65	Downlink & Uplink	Low	2521.005	504201	2497.605	499521	0	15	6249	504201
					Mid	2593.005	518601	2496.885	499377	101		6429	518601
					High	2664.795	532959	2281.395	456279	500		6609	532959
E-UTRA: 25 + NR: 79	E-UTRA CC1	5	25	Downlink & Uplink	Low	2558.700	40277	-	-	-	-	-	-
					Mid	2625.600	40946	-	-	-	-	-	-
					High	2627.400	40964	-	-	-	-	-	-
	NR CC1	60	79	Downlink & Uplink	Low	2526.195	505239	2497.755	499551	0	15	6249	505239
					Mid	2593.095	518619	2491.935	498387	101		6417	518619
					High	2659.905	531981	2271.465	454293	500		6585	531981
	E-UTRA	5	25	Downlink	Low	2578.500	40475	-	-	-	-	-	-

E-UTRA: 25 + NR: 107	CC1			&	Mid	2635.500	41045	-	-	-	-	-	-
				Uplink	High	2607.300	40763	-	-	-	-	-	-
	NR CC1	80	107	Downlink	Low	2536.005	507201	2497.485	499497	0	15	6249	507201
				&	Mid	2593.005	518601	2481.765	496353	101		6393	518601
				Uplink	High	2649.795	529959	2251.275	450255	500		6534	529959
E-UTRA: 25 + NR: 121	E-UTRA CC1	5	25	Downlink	Low	2588.700	40577	-	-	-	-	-	-
				&	Mid	2640.600	41096	-	-	-	-	-	-
				Uplink	High	2597.400	40664	-	-	-	-	-	-
	NR CC1	90	121	Downlink	Low	2541.195	508239	2497.635	499527	0	15	6249	508239
				&	Mid	2593.095	518619	2476.815	495363	101		6378	518619
				Uplink	High	2644.905	528981	2241.345	448269	500		6510	528981
E-UTRA: 25 + NR: 135	E-UTRA CC1	5	25	Downlink	Low	2598.600	40676	-	-	-	-	-	-
				&	Mid	2645.400	41144	-	-	-	-	-	-
				Uplink	High	2587.500	40565	-	-	-	-	-	-
	NR CC1	100	135	Downlink	Low	2546.100	509220	2497.5	499500	0	15	6249	509220
				&	Mid	2592.900	518580	2471.58	494316	101		6366	518580
				Uplink	High	2640.000	528000	2231.4	446280	500		6483	528000
E-UTRA: 50 + NR: 11	E-UTRA CC1	10	50	Downlink	Low	2511.300	39803	-	-	-	-	-	-
				&	Mid	2603.100	40721	-	-	-	-	-	-
				Uplink	High	2674.800	41438	-	-	-	-	-	-
	NR CC1	10	11	Downlink	Low	2501.295	500259	2497.335	499467	0	15	6249	500259
				&	Mid	2593.095	518619	2516.415	503283	101		6477	518619
				Uplink	High	2684.805	536961	2320.845	464169	500		6708	536961
E-UTRA: 50 + NR: 18	E-UTRA CC1	10	50	Downlink	Low	2516.100	39851	-	-	-	-	-	-
				&	Mid	2605.500	40745	-	-	-	-	-	-
				Uplink	High	2670.000	41390	-	-	-	-	-	-
	NR CC1	15	18	Downlink	Low	2503.605	500721	2497.125	499425	0	15	6249	500721
				&	Mid	2593.005	518601	2513.805	502761	101		6471	518601
				Uplink	High	2682.495	536499	2316.015	463203	500		6696	536499
E-UTRA: 50 + NR: 24	E-UTRA CC1	10	50	Downlink	Low	2521.200	39902	-	-	-	-	-	-
				&	Mid	2607.900	40769	-	-	-	-	-	-
				Uplink	High	2664.900	41339	-	-	-	-	-	-
	NR CC1	20	24	Downlink	Low	2506.200	501240	2497.56	499512	0	15	6249	501240
				&	Mid	2592.900	518580	2511.54	502308	101		6465	518580
				Uplink	High	2679.900	535980	2311.26	462252	500		6684	535980
E-UTRA: 50 + NR: 51	E-UTRA CC1	10	50	Downlink	Low	2541.300	40103	-	-	-	-	-	-
				&	Mid	2618.100	40871	-	-	-	-	-	-
				Uplink	High	2644.800	41138	-	-	-	-	-	-
	NR CC1	40	51	Downlink	Low	2516.295	503259	2497.935	499587	0	15	6249	503259
				&	Mid	2593.095	518619	2502.015	500403	101		6441	518619
				Uplink	High	2669.805	533961	2291.445	458289	500		6633	533961
E-UTRA: 50 + NR: 65	E-UTRA CC1	10	50	Downlink	Low	2551.200	40202	-	-	-	-	-	-
				&	Mid	2622.900	40919	-	-	-	-	-	-
				Uplink	High	2634.900	41039	-	-	-	-	-	-

	NR CC1	50	65	Downlink	Low	2521.200	504240	2497.8	499560	0	15	6249	504240
				&	Mid	2592.900	518580	2496.78	499356	101		6429	518580
				Uplink	High	2664.900	532980	2281.5	456300	500		6609	532980
E-UTRA: 50 + NR: 79	E-UTRA CC1	10	50	Downlink	Low	2561.100	40301	-	-	-	-	-	-
				&	Mid	2628.000	40970	-	-	-	-	-	-
				Uplink	High	2625.000	40940	-	-	-	-	-	-
	NR CC1	60	79	Downlink	Low	2526.105	505221	2497.665	499533	0	15	6249	505221
				&	Mid	2593.005	518601	2491.845	498369	101		6417	518601
				Uplink	High	2659.995	531999	2271.555	454311	500		6585	531999
E-UTRA: 50 + NR: 107	E-UTRA CC1	10	50	Downlink	Low	2581.200	40502	-	-	-	-	-	-
				&	Mid	2637.900	41069	-	-	-	-	-	-
				Uplink	High	2604.900	40739	-	-	-	-	-	-
	NR CC1	80	107	Downlink	Low	2536.200	507240	2497.68	499536	0	15	6249	507240
				&	Mid	2592.900	518580	2481.66	496332	101		6393	518580
				Uplink	High	2649.900	529980	2251.38	450276	500		6534	529980
E-UTRA: 50 + NR: 121	E-UTRA CC1	10	50	Downlink	Low	2591.100	40601	-	-	-	-	-	-
				&	Mid	2643.000	41120	-	-	-	-	-	-
				Uplink	High	2595.000	40640	-	-	-	-	-	-
	NR CC1	90	121	Downlink	Low	2541.105	508221	2497.545	499509	0	15	6249	508221
				&	Mid	2593.005	518601	2476.725	495345	101		6378	518601
				Uplink	High	2644.995	528999	2241.435	448287	500		6510	528999
E-UTRA: 50 + NR: 135	E-UTRA CC1	10	50	Downlink	Low	2601.300	40703	-	-	-	-	-	-
				&	Mid	2648.100	41171	-	-	-	-	-	-
				Uplink	High	2584.800	40538	-	-	-	-	-	-
	NR CC1	100	135	Downlink	Low	2546.295	509259	2497.695	499539	0	15	6249	509259
				&	Mid	2593.095	518619	2471.775	494355	101		6366	518619
				Uplink	High	2639.805	527961	2231.205	446241	500		6483	527961
E-UTRA: 75 + NR: 11	E-UTRA CC1	15	75	Downlink	Low	2513.700	39827	-	-	-	-	-	-
				&	Mid	2605.500	40745	-	-	-	-	-	-
				Uplink	High	2672.400	41414	-	-	-	-	-	-
	NR CC1	10	11	Downlink	Low	2501.205	500241	2497.245	499449	0	15	6249	500241
				&	Mid	2593.005	518601	2516.325	503265	101		6477	518601
				Uplink	High	2684.895	536979	2320.935	464187	500		6708	536979
E-UTRA: 75 + NR: 18	E-UTRA CC1	15	75	Downlink	Low	2518.500	39875	-	-	-	-	-	-
				&	Mid	2607.900	40769	-	-	-	-	-	-
				Uplink	High	2667.300	41363	-	-	-	-	-	-
	NR CC1	15	18	Downlink	Low	2503.500	500700	2497.02	499404	0	15	6249	500700
				&	Mid	2592.900	518580	2513.7	502740	101		6471	518580
				Uplink	High	2682.300	536460	2315.82	463164	500		6696	536460
E-UTRA: 75 + NR: 24	E-UTRA CC1	15	75	Downlink	Low	2523.600	39926	-	-	-	-	-	-
				&	Mid	2610.600	40796	-	-	-	-	-	-
				Uplink	High	2662.200	41312	-	-	-	-	-	-
	NR CC1	20	24	Downlink	Low	2506.095	501219	2497.455	499491	0	15	6249	501219
				&	Mid	2593.095	518619	2511.735	502347	101		6468	518619

				Uplink	High	2679.705	535941	2311.065	462213	500		6684	535941
E-UTRA: 75 + NR: 51	E-UTRA CC1	15	75	Downlink	Low	2543.700	40127	-	-	-	-	-	-
				&	Mid	2620.500	40895	-	-	-	-	-	-
				Uplink	High	2642.400	41114	-	-	-	-	-	-
	NR CC1	40	51	Downlink	Low	2516.205	503241	2497.845	499569	0	15	6249	503241
				&	Mid	2593.005	518601	2501.925	500385	101		6441	518601
				Uplink	High	2669.895	533979	2291.535	458307	500		6633	533979
E-UTRA: 75 + NR: 65	E-UTRA CC1	15	75	Downlink	Low	2553.600	40226	-	-	-	-	-	-
				&	Mid	2625.600	40946	-	-	-	-	-	-
				Uplink	High	2632.200	41012	-	-	-	-	-	-
	NR CC1	50	65	Downlink	Low	2521.095	504219	2497.695	499539	0	15	6249	504219
				&	Mid	2593.095	518619	2496.975	499395	101		6429	518619
				Uplink	High	2664.705	532941	2281.305	456261	500		6609	532941
E-UTRA: 75 + NR: 79	E-UTRA CC1	15	75	Downlink	Low	2563.500	40325	-	-	-	-	-	-
				&	Mid	2630.400	40994	-	-	-	-	-	-
				Uplink	High	2622.300	40913	-	-	-	-	-	-
	NR CC1	60	79	Downlink	Low	2526.000	505200	2497.56	499512	0	15	6249	505200
				&	Mid	2592.900	518580	2491.74	498348	101		6417	518580
				Uplink	High	2659.800	531960	2271.36	454272	500		6585	531960
E-UTRA: 75 + NR: 107	E-UTRA CC1	15	75	Downlink	Low	2583.600	40526	-	-	-	-	-	-
				&	Mid	2640.600	41096	-	-	-	-	-	-
				Uplink	High	2602.200	40712	-	-	-	-	-	-
	NR CC1	80	107	Downlink	Low	2536.095	507219	2497.575	499515	0	15	6249	507219
				&	Mid	2593.095	518619	2481.855	496371	101		6393	518619
				Uplink	High	2649.705	529941	2251.185	450237	500		6534	529941
E-UTRA: 75 + NR: 121	E-UTRA CC1	15	75	Downlink	Low	2593.500	40625	-	-	-	-	-	-
				&	Mid	2645.400	41144	-	-	-	-	-	-
				Uplink	High	2592.300	40613	-	-	-	-	-	-
	NR CC1	90	121	Downlink	Low	2541.000	508200	2497.44	499488	0	15	6249	508200
				&	Mid	2592.900	518580	2476.62	495324	101		6378	518580
				Uplink	High	2644.800	528960	2241.24	448248	500		6510	528960
E-UTRA: 75 + NR: 135	E-UTRA CC1	15	75	Downlink	Low	2603.700	40727	-	-	-	-	-	-
				&	Mid	2650.500	41195	-	-	-	-	-	-
				Uplink	High	2582.400	40514	-	-	-	-	-	-
	NR CC1	100	135	Downlink	Low	2546.205	509241	2497.605	499521	0	15	6249	509241
				&	Mid	2593.005	518601	2471.685	494337	101		6366	518601
				Uplink	High	2639.895	527979	2231.295	446259	500		6483	527979
E-UTRA: 100 + NR: 11	E-UTRA CC1	20	100	Downlink	Low	2516.100	39851	-	-	-	-	-	-
				&	Mid	2607.900	40769	-	-	-	-	-	-
				Uplink	High	2670.000	41390	-	-	-	-	-	-
	NR CC1	10	11	Downlink	Low	2501.100	500220	2497.14	499428	0	15	6249	500220
				&	Mid	2592.900	518580	2516.22	503244	101		6477	518580
				Uplink	High	2685.000	537000	2321.04	464208	500		6708	537000
	E-UTRA	20	100	Downlink	Low	2521.200	39902	-	-	-	-	-	-

E-UTRA: 100 + NR: 18	CC1			&	Mid	2610.600	40796	-	-	-	-	-	-
				Uplink	High	2664.900	41339	-	-	-	-	-	-
	NR CC1	15	18	Downlink	Low	2503.695	500739	2497.215	499443	0	15	6249	500739
				&	Mid	2593.095	518619	2513.895	502779	101		6471	518619
				Uplink	High	2682.405	536481	2315.925	463185	500		6696	536481
E-UTRA: 100 + NR: 24	E-UTRA CC1	20	100	Downlink	Low	2526.000	39950	-	-	-	-	-	-
				&	Mid	2613.000	40820	-	-	-	-	-	-
				Uplink	High	2659.800	41288	-	-	-	-	-	-
	NR CC1	20	24	Downlink	Low	2506.005	501201	2497.365	499473	0	15	6249	501201
				&	Mid	2593.005	518601	2511.645	502329	101		6468	518601
				Uplink	High	2679.795	535959	2311.155	462231	500		6684	535959
E-UTRA: 100 + NR: 51	E-UTRA CC1	20	100	Downlink	Low	2546.100	40151	-	-	-	-	-	-
				&	Mid	2622.900	40919	-	-	-	-	-	-
				Uplink	High	2640.000	41090	-	-	-	-	-	-
	NR CC1	40	51	Downlink	Low	2516.100	503220	2497.74	499548	0	15	6249	503220
				&	Mid	2592.900	518580	2501.82	500364	101		6441	518580
				Uplink	High	2670.000	534000	2291.64	458328	500		6636	534000
E-UTRA: 100 + NR: 65	E-UTRA CC1	20	100	Downlink	Low	2556.000	40250	-	-	-	-	-	-
				&	Mid	2628.000	40970	-	-	-	-	-	-
				Uplink	High	2629.800	40988	-	-	-	-	-	-
	NR CC1	50	65	Downlink	Low	2521.005	504201	2497.605	499521	0	15	6249	504201
				&	Mid	2593.005	518601	2496.885	499377	101		6429	518601
				Uplink	High	2664.795	532959	2281.395	456279	500		6609	532959
E-UTRA: 100 + NR: 79	E-UTRA CC1	20	100	Downlink	Low	2566.200	40352	-	-	-	-	-	-
				&	Mid	2633.100	41021	-	-	-	-	-	-
				Uplink	High	2619.900	40889	-	-	-	-	-	-
	NR CC1	60	79	Downlink	Low	2526.195	505239	2497.755	499551	0	15	6249	505239
				&	Mid	2593.095	518619	2491.935	498387	101		6417	518619
				Uplink	High	2659.905	531981	2271.465	454293	500		6585	531981
E-UTRA: 100 + NR: 107	E-UTRA CC1	20	100	Downlink	Low	2586.000	40550	-	-	-	-	-	-
				&	Mid	2643.000	41120	-	-	-	-	-	-
				Uplink	High	2599.800	40688	-	-	-	-	-	-
	NR CC1	80	107	Downlink	Low	2536.005	507201	2497.485	499497	0	15	6249	507201
				&	Mid	2593.005	518601	2481.765	496353	101		6393	518601
				Uplink	High	2649.795	529959	2251.275	450255	500		6534	529959
E-UTRA: 100 + NR: 121	E-UTRA CC1	20	100	Downlink	Low	2596.200	40652	-	-	-	-	-	-
				&	Mid	2648.100	41171	-	-	-	-	-	-
				Uplink	High	2589.900	40589	-	-	-	-	-	-
	NR CC1	90	121	Downlink	Low	2541.195	508239	2497.635	499527	0	15	6249	508239
				&	Mid	2593.095	518619	2476.815	495363	101		6378	518619
				Uplink	High	2644.905	528981	2241.345	448269	500		6510	528981
E-UTRA: 100 + NR: 135	E-UTRA CC1	20	100	Downlink	Low	2606.100	40751	-	-	-	-	-	-
				&	Mid	2652.900	41219	-	-	-	-	-	-
				Uplink	High	2580.000	40490	-	-	-	-	-	-

	NR CC1	100	135	Downlink & Uplink	Low	2546.100	509220	2497.5	499500	0	15	6249	509220
					Mid	2592.900	518580	2471.58	494316	101		6366	518580
					High	2640.000	528000	2231.4	446280	500		6483	528000
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.													

4.3.1.3.2.41.2 to 4.3.1.3.2.41.40FFS

4.3.1.3.2.41.41 Void

4.3.1.3.2.41.41A Reference test frequencies for EN-DC combination DC_41A_n41A / DC_41A_n41A

Table 4.3.1.3.2.41.41A-1 identifies the EARFCN and frequency of the LTE CC for each NR CC. Test frequencies for NR operating band n41, SCS 30 kHz, are defined in 4.3.1.1.1.41.2.

Table 4.3.1.3.2.41.41A-1: Test frequencies for EN-DC combination DC_41A_n41A / DC_41A_n41A (two bands)

Test Frequency ID	NR Bandwidth [MHz]	LTE Bandwidth [MHz]	LTE EARFCN	LTE Freq [kHz]
Low Range (LTE-NR)	40	20	FFS	FFS
	60	20	FFS	FFS
	80	20	FFS	FFS
	100	20	FFS	FFS
(NR-LTE)	40	20	FFS	FFS
	60	20	FFS	FFS
	80	20	FFS	FFS
	100	20	FFS	FFS
Mid Range (LTE-NR)	40	20	40224	2553.43
	60	20	40124	2543.35
	80	20	40026	2533.63
	100	20	39926	2523.55
(NR-LTE)	40	20	41006	2631.59
	60	20	41107	2641.67
	80	20	41208	2651.75
	100	20	41308	2661.83
High Range (LTE-NR)	40	20	FFS	FFS
	60	20	FFS	FFS
	80	20	FFS	FFS
	100	20	FFS	FFS
(NR-LTE)	40	20	FFS	FFS
	60	20	FFS	FFS
	80	20	FFS	FFS
	100	20	FFS	FFS

4.3.1.3.2.42.to 4.3.1.3.2.70 FFS

4.3.1.3.2.71 Reference test frequencies for EN-DC combinations beginning with B71

4.3.1.3.2.71.1 Reference test frequencies for EN-DC combination DC_(n)71

Table 4.3.1.3.2.71-1: EN-DC combination DC_(n)71, intra-band contiguous, SCS 15 kHz

Range	E-UTRA					NR		
	BW [MHz]	N_{UL}	f_{UL} [MHz]	N_{DL}	f_{DL} [MHz]	BW [MHz]	f_{UL} [MHz]	f_{DL} [MHz]
Low	5	133197	670.5	68661	624.5	5	665.5	619.5
Mid	5	133347	685.5	68811	639.5	5	680.5	634.5
High	5	133397	690.5	68861	644.5	5	695.5	649.5
Low	5	133247	675.5	68711	629.5	10	668	622
Mid	5	133372	688	68836	642	10	680.5	634.5
High	5	133347	685.5	68811	639.5	10	693	647
Low	5	133297	680.5	68761	634.5	15	670.5	624.5
Mid	5	133397	690.5	68861	644.5	15	680.5	634.5
High	5	133297	680.5	68761	634.5	15	690.5	644.5
Low	5	133347	685.5	68811	639.5	20	673	627
Mid	5	133422	693	68886	647	20	680.5	634.5
High	5	133247	675.5	68711	629.5	20	688	642
Low	10	133222	673	68686	627	5	665.5	619.5
Mid	10	133372	688	68836	642	5	680.5	634.5
High	10	133372	688	68836	642	5	695.5	649.5
Low	10	133272	678	68736	632	10	668	622
Mid	10	133397	690.5	68861	644.5	10	680.5	634.5
High	10	133322	683	68786	637	10	693	647
Low	10	133322	683	68786	637	15	670.5	624.5
Mid	10	133422	693	68886	647	15	680.5	634.5
High	10	133272	678	68736	632	15	690.5	644.5
Low	10	133372	688	68836	642	20	673	627
Mid	10	133447	695.5	68911	649.5	20	680.5	634.5
High	10	133222	673	68686	627	20	688	642
Low	15	133247	675.5	68711	629.5	5	665.5	619.5
Mid	15	133397	690.5	68861	644.5	5	680.5	634.5
High	15	133347	685.5	68811	639.5	5	695.5	649.5
Low	15	133297	680.5	68761	634.5	10	668	622
Mid	15	133422	693	68886	647	10	680.5	634.5
High	15	133297	680.5	68761	634.5	10	693	647
Low	15	133347	685.5	68811	639.5	15	670.5	624.5
Mid	15	133447	695.5	68911	649.5	15	680.5	634.5
High	15	133247	675.5	68711	629.5	15	690.5	644.5
Low	15	133397	690.5	68861	644.5	20	673	627
Mid	15	133472	698	68936	652	20	680.5	634.5
High	15	133197	670.5	68661	624.5	20	688	642
Low	20	133272	678	68736	632	5	665.5	619.5
Mid	20	133422	693	68886	647	5	680.5	634.5
High	20	133322	683	68786	637	5	695.5	649.5
Low	20	133322	683	68786	637	10	668	622
Mid	20	133447	695.5	68911	649.5	10	680.5	634.5
High	20	133272	678	68736	632	10	693	647
Low	20	133372	688	68836	642	15	670.5	624.5
Mid	20	133472	698	68936	652	15	680.5	634.5
High	20	133222	673	68686	627	15	690.5	644.5
Low	20	133422	693	68886	647	20	673	627
Mid	20	133497	700.5	68961	654.5	20	680.5	634.5
High	20	133172	668	68636	622	20	688	642
NOTE 1: NR test frequencies are defined in sub-clause 4.3.1.1.1.71								

Table 4.3.1.3.2.71-2: EN-DC combination DC_(n)71, intra-band contiguous, SCS 30 kHz

Range	E-UTRA					NR		
	BW [MHz]	N_{UL}	f_{UL} [MHz]	N_{DL}	f_{DL} [MHz]	BW [MHz]	f_{UL} [MHz]	f_{DL} [MHz]
Low	5	133247	675.5	68711	629.5	10	668	622
Mid	5	133372	688	68836	642	10	680.5	634.5
High	5	133347	685.5	68811	639.5	10	693	647
Low	5	133297	680.5	68761	634.5	15	670.5	624.5
Mid	5	133397	690.5	68863	644.7	15	680.5	634.7
High	5	133297	680.5	68761	634.5	15	690.5	644.5
Low	5	133347	685.5	68811	639.5	20	673	627
Mid	5	133422	693	68888	647,2	20	680.5	634.7
High	5	133247	675.5	68711	629.5	20	688	642
Low	10	133272	678	68736	632	10	668	622
Mid	10	133397	690,5	68861	644,5	10	680.5	634.5
High	10	133322	683	68786	637	10	693	647
Low	10	133322	683	68786	637	15	670.5	624.5
Mid	10	133422	693	68888	647,2	15	680.5	634.7
High	10	133272	678	68736	632	15	690.5	644.5
Low	10	133372	688	68836	642	20	673	627
Mid	10	133447	695,5	68913	649,7	20	680.5	634.7
High	10	133222	673	68686	627	20	688	642
Low	15	133297	680,5	68761	634,5	10	668	622
Mid	15	133422	693	68886	647	10	680.5	634.5
High	15	133297	680,5	68761	634,5	10	693	647
Low	15	133347	685,5	68811	639,5	15	670.5	624.5
Mid	15	133447	695,5	68913	649,7	15	680.5	634.7
High	15	133247	675,5	68711	629,5	15	690.5	644.5
Low	15	133397	690,5	68861	644,5	20	673	627
Mid	15	133472	698	68938	652,2	20	680.5	634.7
High	15	133197	670,5	68661	624,5	20	688	642
Low	20	133322	683	68786	637	10	668	622
Mid	20	133447	695,5	68911	649,5	10	680.5	634.5
High	20	133272	678	68736	632	10	693	647
Low	20	133372	688	68836	642	15	670.5	624.5
Mid	20	133472	698	68938	652,2	15	680.5	634.7
High	20	133222	673	68686	627	15	690.5	644.5
Low	20	133422	693	68886	647	20	673	627
Mid	20	133497	700,5	68963	654,7	20	680.5	634.7
High	20	133172	668	68636	622	20	688	642
NOTE 1: NR test frequencies are defined in sub-clause 4.3.1.1.1.71								

4.3.1.3.3 EN-DC (three bands)

4.3.1.3.4 EN-DC (four bands)

4.3.1.3.5 EN-DC (five bands)

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 CSI-RS to SSS	dB	0
EPRE ratio of PTRS to PDSCH	dB	0
Note 1: Power level chosen to align with cell power level as specified in clause 6.2.2.		

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

$N_{\mathrm{ID}}^{\mathrm{cell}}$, 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
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 PDSCH-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	Depending on test parameters	-
TPC command for scheduled PUSCH	[0 dB (accumulated TPC) as per Table 7.1.1-1 in TS 38.213]	["01"]
UL/SUL indicator	[Not present (0 bit for UEs not configured with SUL in the cell]	-

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)]	-	-
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 *BWP-Id* as per Table 4.6.3-4)]	-	-
Frequency domain resource assignment	Dependent on test parameters	-	-
Time domain resource assignment	Indicating the first entry of PDSCH-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	-	-
Redundancy version	Dependent on test parameters	-	-
HARQ process number	Depending on test parameters	-	-
1st downlink assignment index	[$V_{\mathrm{T-DAI}}^{\mathrm{UL}}$ = 1 as per Table 9.1.3-2 in TS 38.213]	[“00”]	-
2nd 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]	[“01”]	-
SRS resource indicator	[Not present]	-	-
Precoding information and number of layers	Depending on test parameters Number of bits determined by determined by antenna ports , *txConfig, and* higher layer parameters *transformPrecoder*, *maxRank*, and *codebookSubset* in Table 4.6.3-89: *PUSCH-Config* (NOTE 1) Value is determined by number of layer and the selected TPMI as per clause 7.3.1.1.2 TS 38.212	-	-
	2	[“10”]	2TX_UL_MIMO
Antenna ports	[0 DMRS ports (PUSCH-tp=Disabled, UL-DMRS-config-type=1, UL-DMRS-max-len=1, rank = 1)]	[“000”]	-
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”]	-
CSI request	[Not present]	-	-
CBG transmission information	[Not present]	-	-
PTRS-DMRS association	[DMRS port 0]	[“00”]	PTRS_UL_CONFIG
		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_{SCID} = 0 (ScramblingID0 is not present as per Table 4.6.3-36)]	[“0”]	-
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.	-	-
NOTE 1: codebookSubset = nonCoherent, 2 layers,TPMI = 0 as specified in TS 38.212 [27] Table 7.3.1.1.2-4			

Condition	Explanation
2TX_UL_MIMO	For the purpose of 2TX Uplink MIMO test.
PTRS_UL_CONFIG	When PTRS Uplink is configured

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
Identifier for DCI formats	Indicating a DL DCI format	[“01”]
Frequency domain resource assignment	Dependent on test parameters	-
Time domain resource assignment	Indicating the first entry of PDSCH-TimeDomainResourceAllocationList to be used Dependent on test parameters	[“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	Depending on test parameters	-
Downlink assignment index	[$V_{\mathrm{C-DAI}}^{\mathrm{DL}}$ / $V_{\mathrm{T-DAI}}^{\mathrm{DL}}$ = 1 as per Table 9.1.3-1 in TS 38.213]	[“00”]
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-ResourceId[1]* = [0] as defined in Table 4.6.3-84 (Mapping as per Table 9.2.3-2 in TS 38.213)]	[“000”]
PDSCH-to-HARQ_feedback timing indicator	[2 slots as specified in 9.2.3 in TS 38.213]	[“001”]

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
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	[Non-interleaved]	[“0”]
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	-
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	-
Redundancy version (TB2)	Dependent on test parameters	-
HARQ process number	Depending on test parameters	-
Downlink assignment index	[$V_{\mathrm{C-DAI}}^{\mathrm{DL}} / V_{\mathrm{T-DAI}}^{\mathrm{DL}}$ = 1 as per Table 9.1.3-1 in TS 38.213]	[“00”]
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-ResourceId[1]* = [0] as defined in Table 4.6.3-84 (Mapping as per Table 9.2.3-2 in TS 38.213)]	[“000”]
PDSCH-to-HARQ_feedback timing indicator	[2 slots] as per Table 9.2.3-1 in TS 38.213 and *dl-DataToUL-ACK* in Table [4.6.3-84]	[“010”]
Antenna port(s)	[DMRS port 0 as per Table 7.3.1.2.2-1 in TS 38.212 (*dmrs-Type* = [Not present] and *maxLength* = [Not present] as per Table 4.6.3-29)]	[“0000”]
Transmission configuration indication	[Not present (0 bits, *tci-PresentInDCI* = [Not present] as per Table 4.6.3-17)]	-
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”]
CBG transmission information	[Not present]	-
CBG flushing out information	[Not present]	-
DMRS sequence initialization	[n_{SCID} = 0 (scramblingID0 is not present as per Table 4.6.3-29)]	[“0”]

4.3.6.1.3 Physical layer parameters for other purposes

4.3.6.1.3.1 Physical layer parameters for DCI format 2_0

DCI format 2_0 is used for notifying the slot format.

Default physical layer parameters for DCI format 2_0 are specified in table 4.3.6.1.3.1-1.

Table 4.3.6.1.3.1-1: Physical layer parameters for DCI format 2_0

Parameter	Value	Value in binary
Identifier for DCI formats	TBD	TBD
Slot format indicator 1	TBD	TBD
Slot format indicator 2	TBD	TBD
Slot format indicator *N*	TBD	TBD

4.3.6.1.3.2 Physical layer parameters for DCI format 2_1

DCI format 2_1 is used for notifying the PRB(s) and OFDM symbol(s) where UE may assume no transmission is intended for the UE.

Default physical layer parameters for DCI format 2_1 are specified in table 4.3.6.1.3.2-1.

Table 4.3.6.1.3.2-1: Physical layer parameters for DCI format 2_1

Parameter	Value	Value in binary
Identifier for DCI formats	TBD	TBD
Pre-emption indication 1	TBD	TBD
Pre-emption indication 2	TBD	TBD
Pre-emption indication N	TBD	TBD

4.3.6.1.3.3 Physical layer parameters for DCI format 2_2

DCI format 2_2 is used for the transmission of TPC commands for PUCCH and PUSCH.

Default physical layer parameters for DCI format 2_2 are specified in table 4.3.6.1.3.3-1.

Table 4.3.6.1.3.3-1: Physical layer parameters for DCI format 2_2

Parameter	Value	Value in binary
Identifier for DCI formats	TBD	TBD
TPC command number 1	[0 dB (accumulated TPC) as per Table 7.1.1-1 and Table 7.2.1-1 in TS 38.213]	[“01”]
TPC command number 2	[0 dB (accumulated TPC) as per Table 7.1.1-1 and Table 7.2.1-1 in TS 38.213]	[“01”]
TPC command number N	[0 dB (accumulated TPC) as per Table 7.1.1-1 and Table 7.2.1-1 in TS 38.213]	[“01”]

4.3.6.1.3.4 Physical layer parameters for DCI format 2_3

DCI format 2_3 is used for the transmission of a group of TPC commands for SRS transmissions by one or more UEs. Along with a TPC command, a SRS request may also be transmitted.

Default physical layer parameters for DCI format 2_3 are specified in table 4.3.6.1.3.4-1.

Table 4.3.6.1.3.4-1: Physical layer parameters for DCI format 2_3

Parameter	Value	Value in binary
Identifier for DCI formats	TBD	TBD
block number 1	TBD	TBD
SRS request (block number 1)	TBD	TBD
TPC command number (block number 1)	[0 dB (accumulated TPC) as per Table 7.1.1-1 in TS 38.213]	[“01”]
block number 2	TBD	TBD
SRS request (block number 2)	TBD	TBD
TPC command number (block number 2)	[0 dB (accumulated TPC) as per Table 7.1.1-1 in TS 38.213]	[“01”]
block number B	TBD	TBD
SRS request (block number B)	TBD	TBD
TPC command number (block number B)	[0 dB (accumulated TPC) as per Table 7.1.1-1 in TS 38.213]	[“01”]

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).

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 sub-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 or E-UTRA TDD 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.

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.

4.4.2 Simulated cells

NOTE 1: For NAS test cases see subclause 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 cells are defined in TS 36.508 [2] table 4.4.2-1.

For NR cells, NRf1 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 4.4.2-1A and table 4.4.2-2.

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.

Common parameters for NR simulated cells are specified in clauses 4.4.3 to 4.4.6A.

Common parameters for E-UTRA simulated cells are specified in TS 36.508 [2] clauses 4.4.3 to 4.4.6A.

Other cell specific parameters are specified in clause 4.4.7.

Editor's note: Notes 2 to 6 in Table 4.4.2-1 for NR cells have been inherited from TS 36.508 [2] Table 4.4.2-1 for E-UTRA cells assuming that similar notes will be needed for NR cells. The notes and the references in the table to the notes are marked by []-brackets pending the confirmation if the notes are needed or not.

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], [Note 6])	NR Cell 1, NR Cell 2, NR Cell 4, NR Cell 11 ([Note 2])
NRf2	NR	Operating band under test	High (Note 1, [Note 4], [Note 6])	NR Cell 3, NR Cell 12, NR Cell 23
NRf3	NR	Operating band under test	Low (Note 1, [Note 5], [Note 6])	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
Note 1: For signalling test, see clause [6.2.3]. [Note 2: For signalling test, simultaneous co-existence of NR Cell 2 with NR Cell 11 is not allowed.] [Note 3: For RRM test with intra-band contiguous CA, the set of contiguous component carriers are "Mid", with the test frequencies specified in clauses [4.3.1.1.xA] for FDD and [4.3.1.2.xA] for TDD] [Note 4: For RRM test with intra-band contiguous CA, the set of contiguous component carriers are "High", with the test frequencies specified in clauses [4.3.1.1.xA] for FDD and [4.3.1.2.xA] for TDD] [Note 5: For RRM test with intra-band contiguous CA, the set of contiguous component carriers are "Low", with the test frequencies specified in clauses [4.3.1.1.xA] for FDD and [4.3.1.2.xA] for TDD.] [Note 6: For RRM test with intra-band non-contiguous CA, the test frequencies for the set of non-contiguous component carriers are specified in clauses [4.3.1.1.xA] for FDD and [4.3.1.2.xA] for TDD without any 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.]				

Table 4.4.2-2: Default NR parameters for simulated NR cells

cell ID	NR Cell Identifier		Physical layer cell identity	PRACH-rootSequenceIndex FDD	PRACH-rootSequenceIndex TDD
	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	0	0
NR Cell 2	'00 0000 0000 0000 0000 0000 0001'B	'00 0000 0010'B	2	32	32
NR Cell 3	'00 0000 0000 0000 0000 0000 0010'B	'00 0000 0011'B	3	0	0
NR Cell 4	'00 0000 0000 0000 0000 0000 0011'B	'00 0000 0100'B	4	64	64
NR Cell 6	'00 0000 0000 0000 0000 0000 0100'B	'00 0000 0110'B	6	0	0
NR Cell 10	'00 0000 0000 0000 0000 0000 0101'B	'00 0000 1010'B	10	0	0
NR Cell 11	'00 0000 0000 0000 0000 0000 0110'B	'00 0000 1011'B	11	96	96
NR Cell 12	'00 0000 0000 0000 0000 0000 0010'B	'00 0000 1100'B	12	32	32
NR Cell 13	'00 0000 0000 0000 0000 0000 0100'B	'00 0000 1101'B	13	32	32
NR Cell 14	'00 0000 0000 0000 0000 0000 0111'B	'00 0000 1110'B	14	0	0
NR Cell 23	'00 0000 0000 0000 0000 0000 0110'B	'00 0001 0111'B	23	64	64
NR Cell 28	'00 0000 0000 0000 0000 0000 0010'B	'00 0001 1100'B	28	0	0
NR Cell 29	'00 0000 0000 0000 0000 0000 0100'B	'00 0001 1101'B	29	32	32
NR Cell 30	'00 0000 0000 0000 0000 0000 0111'B	'00 0001 1110'B	30	32	32
NR Cell 31	'00 0000 0000 0000 0000 0000 0110'B	'00 0001 1111'B	31	64	64

NR Cell 32	'00 0000 0000 0000 0000 0001'B	'00 0010 0000'B	32	-	-
NR Cell 33	'00 0000 0000 0000 0000 0001'B	'00 0010 0001'B	33	-	-
Note 1: To avoid collision of the preambles between intra-frequency cells, with the default *zeroCorrelationZoneConfig* value set to 15, the *PRACH-rootSequenceIndex* values have been separated by 32 root sequences per intra-frequency cell.					

Table 4.4.2-3: Default NAS parameters for simulated NR cells

cell ID	Tracking Area				TA# list (Note 1)	5G-GUTI (Note 2)			
	TA#	PLMN		TAC		AMF Identifier			5G-TMSI
		MCC	MNC			AMF region ID	AMF Set ID	AMF Pointer	
NR Cell 1	TAI-1	(Note 3)		1	TAI-1	254	1	1	Arbitrarily selected according to TS 23.003 subclause 2.10 [26].
NR Cell 2	TAI-1	(Note 3)		1	TAI-1	254	1	1	
NR Cell 3	TAI-1	(Note 3)		1	TAI-1	254	1	1	
NR Cell 4	TAI-1	(Note 3)		1	TAI-1	254	1	1	
NR Cell 6	TAI-1	(Note 3)		1	TAI-1	254	1	1	
NR Cell 10	TAI-1	(Note 3)		1	TAI-1	254	1	1	
NR Cell 11	TAI-2	(Note 3)		2	TAI-2	254	1	1	
NR Cell 23	TAI-2	(Note 3)		2	TAI-2	254	1	1	
NR Cell 12, NR Cell 28	TAI-3	002	11	1	TAI-3	253	1	1	
NR Cell 13, NR Cell 29	TAI-4	003	21	1	TAI-4	252	1	1	
NR Cell 14, NR Cell 30	TAI-5	004	31	1	TAI-5	251	1	1	
NR Cell 31	TAI-2	(Note 3)		2	TAI-2	254	1	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 corresponding cell. Note 2: 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).									

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, the following combinations of system information blocks are defined.

Combination NR-1 is the default combination which applies to the following test case scenarios:

- NR FDD single cell scenario
- NR TDD single 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

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

Table 4.4.3.1.2-1: Combinations of system information blocks

	System information block type							
Combination No.	SIB1	SIB2	SIB3	SIB4	SIB5	SIB6	SIB7	SIB8
NR-1	X							
NR-2	X	X						
NR-3	X	X	X					
NR-4	X	X		X				
NR-5	X	X	X	X				
NR-6	X	X			X			
NR-7	X	X		X	X			
NR-8	X	X				X	X	
NR-9	X	X						X

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	SIB2
2	32	SIB6
3	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	SIB2
2	32	SIB8

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 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 protocol states for UE Switched Off

5GS state ID	Connectivity	RRC state	5GMM modes	5GMM sublayer	Number of PDU sessions established	5GSM sublayer	Comments
0-A	-	-	-	-	-	-	UE switched off. UE has not the PLMN under test stored
0N-B	NR	-	-	-	-	-	UE switched off with the PLMN under test stored
0E-B	E-UTRA	-	-	-	-	-	

Table 4.4A.2-1: 5GC and RRC protocol states for IDLE

5GS state ID	Connectivity	RRC state	5GMM modes	5GMM sublayer	Number of PDU sessions established	5GSM sublayer
1N-A	NR	NR RRC_IDLE	5GMM-IDLE	5GMM-REGISTERED	0	PDU SESSION INACTIVE
					1 or 2	PDU SESSION ACTIVE
1E-A	E-UTRA	EUTRA RRC_IDLE	5GMM-IDLE	5GMM-REGISTERED	0	PDU SESSION INACTIVE
					1 or 2	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	Number of PDU sessions established	5GSM sublayer
2N-A	NR	NR RRC_INACTIVE	5GMM-CONNECTED	5GMM-REGISTERED	0	PDU SESSION INACTIVE
					1 or 2	PDU SESSION ACTIVE
2E-A	E-UTRA	EUTRA RRC_ INACTIVE	5GMM-CONNECTED	5GMM-REGISTERED	0	PDU SESSION INACTIVE
					1 or 2	PDU SESSION ACTIVE

Table 4.4A.2-3: 5GC and RRC protocol states for CONNECTED

5GS state ID	Connectivity	RRC state	5GMM modes	5GMM sublayer	Number of PDU sessions established	5GSM sublayer
3N-A	NR	NR RRC_ CONNECTED	5GMM-CONNECTED	5GMM-REGISTERED	0	PDU SESSION INACTIVE
					1 or 2	PDU SESSION ACTIVE
3E-A	E-UTRA	EUTRA RRC_ CONNECTED	5GMM-CONNECTED	5GMM-REGISTERED	0	PDU SESSION INACTIVE
					1 or 2	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*.

Editor's 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
UE test loop mode <X> prepared	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 or B. (Note 1, Note 2, Note 3)
UE test loop mode <X> active	If included the UE Test Mode and UE test loop mode <X> will be activated in the preamble, where <X> is A or B. (Note 1, Note 2, Note 3)
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.	

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>	1	Indicates that the requested test state will end up in RRC_IDLE 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 state.
<Connectivity>	E	E-UTRA is used as the initial access.
	N	NR is used as the initial access.
<Variant>	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

Editor's Note: The procedure associated with test states 0_A, 0N_B and 0E_B is FFS. It is FFS if the procedures 0N_B and 0E_B are conditional performed depending if the PLMN is already stored in the UE or not. It is also FFS if test state 0_A should be associated with securing that the PLMN is not stored in the UE.

Depending on the test case preamble requested test state ID and test parameters the SS shall:

1> If RRC state field > 0:

2> use the applicable generic procedure as specified in Table 4.4A.5-1 using the:

3> applicable generic procedure parameters as specified in Table 4.4A.5-1 and Table 4.4A.5-2; and

3> applicable message conditions as specified in Table 4.4A.5-2.

1> otherwise:

2> FFS

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**
1	N	A	RRC_IDLE	Connectivity=*NR*	4.5.2
1	E	A	RRC_IDLE	Connectivity=*E-UTRA*	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
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**
UE test loop mode A prepared	Test Mode=*On*	Note 1	Note 1
UE test loop mode B prepared	Test Mode=*On*	ACTIVATE UE TEST MODE (Table FFS)	UE test loop mode B
UE test loop mode A active	Test Loop Function=*On*	Note 1	Note 1
UE test loop mode B active	Test Loop Function=*On*	ACTIVATE UE TEST MODE (Table FFS)	UE test loop mode B
		CLOSE UE TEST LOOP (Table FFS)	UE test loop mode B
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 RRC_IDLE, RRC_INACTIVE or RRC_CONNECTED 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 *EN-DC* is MR-DC via E-UTRA-NR Dual Connectivity. This is a UE connected to the EPC. The connectivity *E-UTRA, NR, NGEN-DC, NE-DC* are all a UE connected to the 5GC.

MULTI_PDN configuration is defined in TS 36.508 [2], clause 4.5.2.

Table 4.5.1-1: Generic procedure parameters

Parameter	Values	Description	Parameter condition
Connectivity	*E-UTRA*	NG-RAN E-UTRA Radio Access	Mandatory
	NR	NG-RAN NR Radio Access	
	EN-DC	E-UTRA-NR Dual Connectivity	
	NGEN-DC	NG-RAN E-UTRA-NR Dual Connectivity	
	NE-DC	NR-E-UTRA Dual Connectivity	
Bearers	*MCG(s) and SCG*	MCG and SCG	Mandatory when Connectivity is set to *EN-*

	MCG(s) and split	MCG and split	*DC*, *NGEN-DC* or *NE-DC* 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. Optional otherwise.
	MCG(s) only	MCG only	
Test Mode	*On*	UE test mode active as specified in TS 38.509 [11], clause5.2.2.	Optional
Test Loop Function	*On*	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	*On*	Enter RRC_Connected without any release.	Optional

Editor's Note: The following values are not available to use in the current version of this specification because details are still FFS: Connectivity (E-UTRA, NR, NGEN-DC, NE-DC).

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 *NR*

2> use 1 NR cell, default parameters;

2> if connected without release is not present:

3> 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	
		U - S	Message
1-9	Same as TS 36.508 [2] table 4.5.2.3-1, steps 1-9a2.	-	-
-	EXCEPTION: Steps 10a1 to 10a2 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 - 10a2	IF Test Mode = *On* OR Test Loop Function = *On* 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 11b9b1 describe the SS sequence depending on procedure parameters; the "lower case letter" identifies a step sequence that take place if a proc8edure parameter has a particular value.	-	-
11a1 -11a	IF Test Mode = *On* OR Test Loop Function = *On* THEN same as TS 36.508 [2] table 4.5.2A.3-1, steps 12-19.	-	-
11b1 - 11b8	ELSE, same as TS 36.508 [2] table 4.5.2.3-1, steps 10-17.	-	-

Table 4.5.2.2-2: NR RRC_IDLE

St	Procedure	Message Sequence	
		U – S	Message
1		<--	NR RRC: SYSTEM INFORMATION (BCCH)
2	The UE transmits an *RRCSetupRequest* message.	-->	NR RRC: *RRCSetupRequest*
3	The SS transmits an *RRCSetup* message.	<--	NR RRC: *RRCSetup*
4	The UE transmits an *RRCConnectionSetupComplete* message and a REGISTRATION REQUEST message.	-->	NR RRC: *RRCSetupComplete* 5GMM: REGISTRATION REQUEST
5	The SS transmits a *DLInformationTransfer* message and an AUTHENTICATION REQUEST message.	<--	NR RRC: *DLInformationTransfer* 5GMM: AUTHENTICATION REQUEST
6	The UE transmits an *ULInformationTransfer* message and an AUTHENTICATION RESPONSE message.	-->	NR RRC: *ULInformationTransfer* 5GMM: AUTHENTICATION RESPONSE
8	The SS transmits a *DLInformationTransfer* message and a SECURITY MODE COMMAND message.	<--	NR RRC: *DLInformationTransfer* 5GMM: SECURITY MODE COMMAND
9	The UE transmits an *ULInformationTransfer* message and a SECURITY MODE COMPLETE message.	-->	NR RRC: *ULInformationTransfer* 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 take 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: *DLInformationTransfer* TC: ACTIVATE TEST MODE
9a2	The UE transmits an ACTIVATE TEST MODE COMPLETE message.	-->	RRC: *ULInformationTransfer* TC: ACTIVATE TEST MODE COMPLETE
10	The SS transmits a *SecurityModeCommand* message.	<--	NR RRC: *SecurityModeCommand*
11	The UE transmits a *SecurityModeComplete* message.	-->	NR RRC: *SecurityModeComplete*
12	The SS transmits a *UECapabilityEnquiry* message.	<--	NR RRC: *UECapabilityEnquiry*
13	The UE transmits a *UECapabilityInformation* message.	-->	NR RRC: *UECapabilityInformation*
14	The SS transmits a *DLInformationTransfer* message and a REGISTRATION ACCEPT message.	<--	NR RRC: *DLInformationTransfer* 5GMM: REGISTRATION ACCEPT
15	The UE transmits an *ULInformationTransfer* message and a REGISTRATION COMPLETE message.	-->	NR RRC: *ULInformationTransfer* 5GMM: REGISTRATION COMPLETE
16	The UE transmits an *ULInformationTransfer* message and a PDU SESSION ESTABLISHMENT REQUEST.	-->	NR RRC: *ULInformationTransfer* 5GMM: UL NAS TRANSPORT 5GSM: PDU SESSION ESTABLISHMENT REQUEST
17	The SS transmits an *RRCReconfiguration* message to establish SRB2 and DRB.	<--	NR RRC: *RRCReconfiguration* 5GMM: DL NAS TRANSPORT 5GSM: PDU SESSION ESTABLISHMENT ACCEPT
18	The UE transmits an *RRCReconfigurationComplete* message.	-->	NR RRC: *RRCReconfigurationComplete*
-	EXCEPTION: Step 19a1 describes behaviour depending UE implementation; the "lower case letter" identifies a step sequence that take place if the UE performs a specific action.	-	-
19a1	If initiated by the UE, the generic procedure for IP address allocation in the user plane, specified in subclause 4.5.6, takes place performing IP address allocation in the user plane.	-	-
20	The SS transmits an *RRCRelease* message.	<--	NR RRC: *RRCRelease*

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.

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	
		U – S	Message
1-19a1	Same as table 4.5.2.2-2, steps 1-19a1.	-	-
20	The SS transmits an *RRCRelease* message with suspend.	<--	NR RRC: *RRCRelease*

Editor's Note: Details for specific message is FFS.

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 *NR*

2> use 1 NR cell, default parameters;

2> if connected without release is *On*:

3> perform according to the table 4.5.4.2-4: RF NR RRC_CONNECTED;

2> else:

3> perform according to the table 4.5.4.2-3: NR RRC_CONNECTED;

4.5.4.2 Procedures

Table 4.5.4.2-1: E-UTRA RRC_CONNECTED

St	Procedure	Message Sequence	
		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 *RRCConnectionReconfiguration* is using condition EN-DC_SRB2-DRB for bearers *MCG(s) and SCG* or *MCG(s) only*. The *RRCConnectionReconfiguration* is using an associated condition MCG_and_SCG for bearers *MCG(s) and SCG or* condition MCG_and_split for bearers *MCG(s) and split.* For bearers *MCG(s) only* there's no associated condition.	<--	*RRC: RRCConnectionReconfiguration* NAS: ACTIVATE DEDICATED EPS BEARER CONTEXT REQUEST
-	EXCEPTION: 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	Same as TS 36.508 [2] table 4.5.3.3-1, steps 9-10a1	-	-
-	EXCEPTION: Steps 10a1 to 10a2 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.	-	-
10a1 - 10a2	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 4.5.4.2-2: RF E-UTRA RRC_CONNECTED

St	Procedure	Message Sequence	
		U - S	Message
1-9	Same as table 4.5.2.2-1, steps 1-9.	-	-
10a1 - 10a2	IF Test Mode = *On* OR Test Loop Function = *On* 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 11b9b1 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 - 11a8	IF Test Mode = *On* OR Test Loop Function = *On* THEN same as TS 36.508 [2] table 4.5.2A.3-1, steps 12-18.	-	-
11b1 - 11b8	ELSE, same as TS 36.508 [2] table 4.5.2.3-1, steps 10-16.	-	-
12-15	Same as table 4.5.4.2-1, steps 7-10.		

Table 4.5.4.2-3: NR RRC_CONNECTED

St	Procedure	Message Sequence	
		U – S	Message
1	The SS transmits a *Paging* message.	<--	NR RRC: *Paging*
2	The UE transmits an *RRCSetupRequest* message.	-->	NR RRC: *RRCSetupRequest*
3	The SS transmits an *RRCSetup* message.	<--	NR RRC: *RRCSetup*
4	The UE transmits an *RRCSetupComplete* message and a SERVICE REQUEST message.	-->	NR RRC: *RRCSetupComplete* 5GMM: SERVICE REQUEST
5	The SS transmits a *SecurityModeCommand* message.	<--	NR RRC: *SecurityModeCommand*
6	The UE transmits a *SecurityModeComplete* message.	-->	NR RRC: *SecurityModeComplete*
7	The SS transmits an *RRCReconfiguration* message and a SERVICE ACCEPT message to establish SRB2 and DRB.	<--	NR RRC: *RRCReconfiguration* 5GMM: SERVICE ACCEPT
8	The UE transmits an *RRCReconfigurationComplete* message.	-->	NR RRC: *RRCReconfigurationComplete*
-	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: *DLInformationTransfer* 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: *ULInformationTransfer* TC: CLOSE UE TEST LOOP COMPLETE

Table 4.5.4.2-4: RF NR RRC_CONNECTED

St	Procedure	Message Sequence	
		U – S	Message
1-19a1	Same as table 4.5.2.2-2, steps 1-19a1.	-	-

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: 36.508 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	MCG(s) only
dedicatedInfoNASList SEQUENCE (SIZE(1..maxDRB)) OF	1 entry		MCG_and_SCG OR MCG_and_split
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: Message 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		

4.5.5 Void

4.5.6 Procedure for IP address allocation in the user plane

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.

Table 4.5.6-1: 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 4.5.6-2 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 4.5.6-2 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 4.5.6-2: 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.	-	-

4.6 Default NG-RAN RRC message and information elements contents

4.6.1 Contents of RRC messages

– *CounterCheck*

Table 4.6.1-0AA: *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 SEQUENCE {			
drb-Identity	DRB-Identity		
countMSB-Uplink	FFS		
countMSB-Downlink	FFS		
}			
lateNonCriticalExtension	Not present		
nonCriticalExtension SEQUENCE {}	Not present		
}			
}			
}			

Condition	Explanation
FFS	

– *CounterCheckResponse*

Table 4.6.1-0AB: *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 SEQUENCE {			
drb-Identity	DRB-Identity		
count-Uplink	FFS		
count-Downlink	FFS		
}			
lateNonCriticalExtension	Not present		
nonCriticalExtension SEQUENCE {}	Not present		
}			
}			
}			

Condition	Explanation
FFS	

– *DLInformationTransfer*

Table 4.6.1-0A: *DLInformationTransfer*

Derivation Path: TS 38.331 [6], clause 6.2.2			
Information Element	**Value/remark**	**Comment**	**Condition**
DLInformationTransfer ::= SEQUENCE {			
rrc-TransactionIdentifier	RRC-TransactionIdentifier		
criticalExtensions CHOICE {			
dlInformationTransfer ::= SEQUENCE {			
dedicatedNAS-Message	DedicatedNAS-Message		
lateNonCriticalExtension	Not present		
nonCriticalExtension SEQUENCE {}	Not present		
}			
}			
}			

– *LocationMeasurementIndication*

Table 4.6.1-0B: *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 present		
nonCriticalExtension	Not present		
}			
}			
}			

– *MIB*

Table 4.6.1-1: *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		SCS_15kHz
	scs30or120		SCS_30kHz OR SCS_120kHz
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 subclause 6.2.3. Otherwise, see subclause 4.3.1.	
dmrs-TypeA-Position	pos2		
pdcch-ConfigSIB1	PDCCH-ConfigSIB1		
cellBarred	notBarred		
intraFreqReselection	allowed		
spare	0		
}			

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
SCS_120kHz	SCS=120kHz for frequency of the cell according to clause 6.2.3 for signalling test cases and clause 4.3.1 otherwise

– *MeasurementReport*

Table 4.6.1-2: *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 present		
nonCriticalExtension SEQUENCE {}	Not present		
}			
}			
}			

– *MobilityFromNRCommand*

Table 4.6.1-2A: *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	FFS		
targetRAT-MessageContainer	FFS		
nas-SecurityParamFromNR	FFS		
lateNonCriticalExtension	Not present		
nonCriticalExtension SEQUENCE {}	Not present		
}			
}			
}			

– *Paging*

Table 4.6.1-2B: *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 SEQUENCE {	1 entry		
ue-Identity CHOICE {			
ng-5G-S-TMSI	NG-5G-S-TMSI		
i-RNTI	I-RNTI-Value		I-RNTI-Value
}			
accessType	Not present		
}			
lateNonCriticalExtension	Not present		
nonCriticalExtension SEQUENCE {}	Not present		
}			

Condition	Explanation
I-RNTI-Value	Indicates the I-RNTI-Value

– *RRCReestablishment*

Table 4.6.1-2C: *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 SEQUENCE {}	Not present		
}			
}			
}			

– *RRCReestablishmentComplete*

Table 4.6.1-2D: *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 SEQUENCE {}	Not checked		
}			
}			
}			

– *RRCReestablishmentRequest*

Table 4.6.1-2E: *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		
shortMAC-I	ShortMAC-I		
}			
reestablishmentCause	Not checked		
spare	Present but contents not checked		
}			

– *RRCReconfiguration*

Table 4.6.1-3: RRCReconfiguration

Derivation Path: TS 38.331 [6], clause 6.2.2			
Information Element	**Value/remark**	**Comment**	**Condition**
RRCReconfiguration ::= SEQUENCE {			
rrc-TransactionIdentifier	RRC-TransactionIdentifier	Table 4.6.5-1.	
criticalExtensions CHOICE {			
rrcReconfiguration ::= SEQUENCE {			
radioBearerConfig	Not present		
	RadioBearerConfig with conditions SRB2 and DRB1		NR
secondaryCellGroup	CellGroupConfig	OCTET STRING (CONTAINING CellGroupConfig)	EN-DC
	Not present		
measConfig	Not present		
	MeasConfig	Measurements configuration	MEAS
lateNonCriticalExtension	Not present		
nonCriticalExtension	Not present		
nonCriticalExtension SEQUENCE {			NR
masterCellGroup	CellGroupConfig with condition SRB2_DRB1	OCTET STRING (CONTAINING CellGroupConfig)	
fullConfig	Not present		
dedicatedNAS-MessageList SEQUENCE (SIZE(1..maxDRB)) OF DedicatedNAS-Message {}	DedicatedNAS-Message	A sequence of OCTET STRING (s) containing one or more DedicatedNAS-Message(s)	
masterKeyUpdate	Not present		
dedicatedSIB1-Delivery	Not present		
dedicatedSystemInformationDelivery	Not present		
otherConfig	Not present		
nonCriticalExtension	Not present		
}			
}			
}			
}			

Condition	Explanation
EN-DC	E-UTRA-NR Dual Connectivity
MEAS	A NR measurement is configured
NR	NG-RAN NR Radio Access

– *RRCReconfigurationComplete*

Table 4.6.1-4: RRCReconfigurationComplete

Derivation Path: TS 38.331 [6], clause 6.2.2			
Information Element	**Value/remark**	**Comment**	**Condition**
RRCReconfigurationComplete ::= SEQUENCE {			
rrc-TransactionIdentifier	Not checked		
criticalExtensions CHOICE {			
rrcReconfigurationComplete ::= SEQUENCE {			
lateNonCriticalExtension	Not checked		
nonCriticalExtension	Not checked		
}			
}			
}			

– *RRCReject*

Table 4.6.1-4A: 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 SEQUENCE {}	Not present		
}			
}			
}			

– *RRCRelease*

Table 4.6.1-4B: 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 {			
redirectedCarrierInfo	Not present		
cellReselectionPriorities	Not present		
suspendConfig	Not present		
suspendConfig SEQUENCE {			NR_RRC_INACTIVE
FFS			
}			
deprioritisationReq	Not present		
lateNonCriticalExtension	Not present		
nonCriticalExtension SEQUENCE {}	Not present		
}			
}			
}			

Condition	Explanation
NR_RRC_INACTIVE	NR RRC state RRC_INACTIVE

– *RRCResume*

Table 4.6.1-4C: 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	Not present		
masterCellGroup	Not present		
measConfig	Not present		
fullConfig	Not present		
lateNonCriticalExtension	Not present		
nonCriticalExtension SEQUENCE {}	Not present		
}			
}			
}			

– *RRCResumeComplete*

Table 4.6.1-4CA: *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 SEQUENCE {}	Not checked		
}			
}			
}			

– *RRCResumeRequest*

Table 4.6.1-4D: RRCResumeRequest

Derivation Path: TS 38.331 [6], clause 6.2.2			
Information Element	**Value/remark**	**Comment**	**Condition**
RRCResumeRequest ::= SEQUENCE {			
rrcResumeRequest SEQUENCE {			
resumeIdentity	ShortI-RNTI-Value		
resumeMAC-I	Not checked		
resumeCause	ResumeCause		
spare	Not checked		
}			
}			

– *RRCResumeRequest1*

Table 4.6.1-4E: RRCResumeRequest1

Derivation Path: TS 38.331 [6], clause 6.2.2			
Information Element	**Value/remark**	**Comment**	**Condition**
RRCResumeRequest1 ::= SEQUENCE {			
rrcResumeRequest1 SEQUENCE {			
resumeIdentity	I-RNTI-Value		
resumeMAC-I	Not checked		
resumeCause	ResumeCause		
spare	Not checked		
}			
}			

– *RRCSetup*

Table 4.6.1-4F: *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 SEQUENCE {}	Not present		
}			
}			
}			

– *RRCSetupComplete*

Table 4.6.1-4G: *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		
registeredAMF	Not checked		
guami-Type	Not checked		
s-nssai-List	Not checked		
dedicatedNAS-Message	DedicatedNAS-Message		
ng-5G-S-TMSI-Value	Not checked		
lateNonCriticalExtension	Not present		
nonCriticalExtension SEQUENCE {}	Not present		
}			
}			
}			

– *RRCSetupRequest*

Table 4.6.1-4H: *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		
}			
establishmentCause	Not checked		
spare	Not checked		
}			
}			

– *RRCSystemInfoRequest*

Table 4.6.1-4I: *RRCSystemInfoRequest*

Derivation Path: TS 38.331 [6], clause 6.2.2			
Information Element	**Value/remark**	**Comment**	**Condition**
RRCSystemInfoRequest ::= SEQUENCE {			
criticalExtensions CHOICE {			
rrcSystemInfoRequest-r15 SEQUENCE {			
requested-SI-List	Not checked		
spare	Not checked		
}			
}			
}			

– *SecurityModeCommand*

Table 4.6.1-4J: *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 SEQUENCE {}	Not present		
}			
}			
}			

– *SecurityModeComplete*

Table 4.6.1-4K: *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 present		
nonCriticalExtension SEQUENCE {}	Not present		
}			
}			
}			

– *SecurityModeFailure*

Table 4.6.1-4L: *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 present		
nonCriticalExtension SEQUENCE {}	Not present		
}			
}			
}			

– *SIB1*

Table 4.6.1-5: *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
	[-53]	-106 dBm	SIG
q-RxLevMinOffset	Not present		
q-RxLevMinSUL	[-70]	-140 dBm	RF
	[-53]	-106 dBm	SIG
q-QualMin	[-20]	-20dB	
q-QualMinOffset	Not present		
}			
cellAccessRelatedInfo	CellAccessRelatedInfo		
connEstFailureControl	ConnEstFailureControl		
si-SchedulingInfo	Not present		NR_1
	SI-SchedulingInfo		
servingCellConfigCommon	ServingCellConfigCommonSIB		
ims-EmergencySupport	Not present		
eCallOverIMS-Support	Not present		
ue-TimersAndConstants	UE-TimersAndConstants		
uac-BarringInfo SEQUENCE {}	Not present		
useFullResumeID	Not present		
lateNonCriticalExtension	Not present		
nonCriticalExtension SEQUENCE {}	Not present		
}			

Condition	Explanation
RF	For RF, performance and RRM testing
SIG	For protocol testing
NR_1	System information combination NR_1 is applied

– *SystemInformation*

Table 4.6.1-6: *SystemInformation*

Derivation Path: TS 38.331 [6], clause 6.2.2			
Information Element	**Value/remark**	**Comment**	**Condition**
SystemInformation ::= SEQUENCE {			
criticalExtensions CHOICE {			
systemInformation-r15 SEQUENCE {			
sib-TypeAndInfo SEQUENCE (SIZE (1..maxSIB)) OF CHOICE {			
FFS			
}			
lateNonCriticalExtension	Not present		
nonCriticalExtension SEQUENCE {}	Not present		
}			
}			
}			

– *UEAssistanceInformation*

Table 4.6.1-6A: *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 present		
nonCriticalExtension SEQUENCE {}	Not present		
}			
}			
}			

– *UECapabilityEnquiry*

Table 4.6.1-7: 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		
nonCriticalExtension SEQUENCE {}	Not present		
}			
}			
}			

– *UECapabilityInformation*

Table 4.6.1-8: 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 present		
nonCriticalExtension SEQUENCE {}	Not present		
}			
}			
}			

– *ULInformationTransfer*

Table 4.6.1-9: *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 present		
nonCriticalExtension SEQUENCE {}	Not present		
}			
}			
}			

4.6.2 System information blocks

– *SIB2*

SIB2 contains cell re-selection information common for intra-frequency, inter-frequency and/ or inter-RAT cell re-selection (i.e. applicable for more than one type of cell re-selection but not necessarily all) as well as intra-frequency cell re-selection information other than neighbouring cell related.

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 4.6.3-114	
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 (-140 dBm)]	For RF/RRM test cases	
	[-53 (-106 dBm)]	For signalling test cases	
q-RxLevMinSUL	[-70 (-140 dBm)]	For RF/RRM test cases	SUL

	[-53 (-106 dBm)]	For signalling test cases	
q-QualMin	Not present		
	[-20 (-20dB)]		QBASED
s-IntraSearchP	0	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 4.6.3-138A	
ss-RSSI-Measurement	Not present		
ssb-ToMeasure CHOICE {			
shortBitmap	'0100'B		(FREQ <= 3GHz AND (FR1_FDD OR NOT CASE C)) OR (FREQ <= 2.4GHz AND FR1_TDD)
mediumBitmap	'01000000'B		(FREQ > 3GHz AND FR1) OR (FREQ > 2.4GHz AND FR1_TDD AND CASE C)
longBitmap	'01000000 00000000 00000000 00000000 00000000 00000000 00000000 00000000'B		FR2
}			
deriveSSB-IndexFromCell	FALSE		
}			
}			

Condition	Explanation
SUL	If the UE supports SUL frequency for the serving cell, Qrxlevmin is obtained from *q-RxLevMin-sul.*
QBASED	This condition applies to Quality based cell (re)selection signalling test cases.
FREQ<=2.4GHz	Frequency range <= 2.4GHz
FREQ>2.4GHz	Frequency range > 2.4GHz
FREQ<=3GHz	Frequency range <= 3GHz
FREQ>3GHz	Frequency range > 3GHz
FR1_TDD	TDD frequency range < 6GHz
FR2_TDD	TDD frequency range > 6GHz
FR1_FDD	FDD frequency range < 6GHz
CASE_C	SS Block pattern “Case C” to be applied for the given band and subcarrier spacing according to TS 38.101-1 [7] Table 5.4.3.3-1

SIB9 contains information related to GPS time and Coordinated Universal Time (UTC). The UE may use the parameters provided in this system information block to obtain the UTC, the GPS and the local time.

NOTE 1: The UE may use the time information for numerous purposes, possibly involving upper layers e.g. to assist GPS initialisation, to synchronise the UE clock.

NOTE 2: SIB9 is not defined in the common test environment as test requirements have not been identified.

– *SIB3*

SIB3 contains neighbouring cell related information relevant only for intra-frequency cell re-selection. The IE includes cells with specific re-selection parameters as well as blacklisted cells.

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 SEQUENCE (SIZE (1..maxCellIntra)) OF SEQUENCE {}	Not present	Not required unless Qoffset configuration is tested. When Qoffset configuration is tested, see clause 6.3 table FFS (The defination of Intra-frequency neighbouring cell list in SIB3 for NR cells is FFS).	
intraFreqBlackCellList SEQUENCE (SIZE (1..maxCellBlack)) OF SEQUENCE {}	Not present	Not required unless Blacklisted cell list configuration is tested. When Blacklisted cell list configuration is tested, see clause 6.3 table FFS (The defination of Intra-frequency neighbouring cell list in SIB3 for NR cells is FFS).	
lateNonCriticalExtension	Not present		
}			

– *SIB4*

SIB4 contains information relevant only for inter-frequency cell re-selection i.e. information about other NR frequencies and inter-frequency neighbouring cells relevant for cell re-selection. The IE includes cell re-selection parameters common for a frequency as well as cell specific re-selection parameters.

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 SEQUENCE {	The same number of entries as the configured inter-freq carriers defined in clause 6.3 table FFS (The defination of inter-frequency carrier frequency list in SIB4 for NR cells is FFS)	*n* denotes the index of the entry	
dl-CarrierFreq[n]	Downlink NR ARFCN See table FFS (The defination of inter-frequency carrier frequency list in SIB4 for NR cells is FFS in clause 6.3)		
frequencyBandList[n]	Not present		
frequencyBandListSUL[n]	Not present		
nrofSS-BlocksToAverage[n]	[2]		
absThreshSS-BlocksConsolidation[n] SEQUENCE{			
thresholdRSRP	RSRP-Range	Table 4.6.3-114	
thresholdRSRQ	Not present		
thresholdSINR	Not present		
}			
smtc[*n*]	SSB-MTC	Table 4.6.3-138A	
ssbSubcarrierSpacing[*n*]	SubcarrierSpacing	Table 4.6.3-139	
ssb-ToMeasure[*n*] CHOICE {			
shortBitmap	'0100'B		(FREQ <= 3GHz AND (FR1_FDD OR NOT CASE C)) OR (FREQ <= 2.4GHz AND FR1_TDD)
mediumBitmap	'01000000'B		(FREQ > 3GHz AND FR1) OR (FREQ > 2.4GHz AND FR1_TDD AND CASE C)
longBitmap	'01000000 00000000 00000000 00000000 00000000 00000000 00000000 00000000'B		FR2
}			
deriveSSB-IndexFromCell[*n*]	FALSE		
ss-RSSI-Measurement[*n*] SEQUENCE {	Not present		
q-RxLevMin[*n*]	[-70 (-140 dBm)]	For RF/RRM test cases	
	[-53 (-106 dBm)]	For signalling test cases	
q-RxLevMinSUL[*n*]	[-70 (-140 dBm)]	For RF/RRM test cases	SUL
	[-53 (-106 dBm)]	For signalling test cases	
q-QualMin[*n*]	Not present		
	[-20 (-20dB)]		QBASED
p-Max[*n*]	Not present		
t-ReselectionNR[*n*]	0		

t-ReselectionNR-SF[*n*]	Not present	Not required unless speed-dependent cell re-selection is tested.	
threshX-HighP[*n*]	2 (4 dB)	This value should be higher than threshServingLow of the serving cell to avoid ping-pong with lower priority cells.	
threshX-LowP[*n*]	1 (2 dB)		
threshX-Q[*n*] SEQUENCE {}	Not present		
threshX-Q[*n*] SEQUENCE {			QBASED
threshX-HighQ	5 (5dB)		
threshX-LowQ	5 (5dB)		
}			
cellReselectionPriority[*n*]	4	The same priority as the one used for serving cell in SIB 2.	
cellReselectionSubPriority[*n*]	Not present	The same subpriority as the one used for serving cell in SIB 2.	
q-OffsetFreq[*n*]	dB0	Qoffset doesn't apply by default.	
interFreqNeighCellList[*n*] SEQUENCE (SIZE (1..maxCellInter)) OF SEQUENCE {}	Not present	Not required unless Qoffset configuration is tested.	
interFreqBlackCellList[*n*] SEQUENCE (SIZE (1..maxCellBlack)) OF SEQUENCE {}	Not present	Not required unless Blacklisted cell list configuration is tested.	
}			
lateNonCriticalExtension	Not present		
}			

Condition	Explanation
SUL	If the UE supports SUL frequency for inter-frequency NR cells, Qrxlevmin is obtained from *q-RxLevMin-sul.*
QBASED	This condition applies to Quality based cell (re)selection signalling test cases.
FREQ<=2.4GHz	Frequency range <= 2.4GHz
FREQ>2.4GHz	Frequency range > 2.4GHz
FREQ<=3GHz	Frequency range <= 3GHz
FREQ>3GHz	Frequency range > 3GHz
FR1_TDD	TDD frequency range < 6GHz
FR2_TDD	TDD frequency range > 6GHz
FR1_FDD	FDD frequency range < 6GHz
CASE_C	SS Block pattern "Case C" to be applied for the given band and subcarrier spacing according to TS 38.101-1 [7] Table 5.4.3.3-1

– *SIB5*

SIB5 contains information relevant only for inter-RAT cell re-selection i.e. information about E-UTRA frequencies and E-UTRAs neighbouring cells relevant for cell re-selection. The IE includes cell re-selection parameters common for a frequency.

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 SEQUENCE {	The same number of entries as the configured EUTRA carriers defined in clause 6.3 table FFS (The defination of EUTRA carriersfrequency list in SIB5 is FFS).	*n* denotes the index of the entry	
carrierFreq[*n*]	Downlink EUTRA ARFCN See table FFS (The defination of EUTRA carriersfrequency list in SIB5 is FFS).		
eutra-multiBandInfoList[*n*] SEQUENCE (SIZE (1..maxMultiBands)) OF SEQUENCE {}	Not present		
eutra-FreqNeighCellList[*n*] SEQUENCE (SIZE (1..maxCellEUTRA)) OF SEQUENCE {}	Not present	Not required unless EUTRA Qoffset configuration is tested.	
eutra-BlackCellList[*n*] SEQUENCE (SIZE (1..maxEUTRA-CellBlack)) OF SEQUENCE {}	Not present	Not required unless Blacklisted cell list configuration is tested.	
allowedMeasBandwidth[*n*]	*EUTRA-*AllowedMeasBandwidth	The value of *EUTRA-*AllowedMeasBandwidth in Table 4.6.5-0A is FFS.	
presenceAntennaPort1[*n*]	FALSE		
	TRUE	At least two cell-specific antenna ports are used in all neighbouring cells.	All neighCells with port1
cellReselectionPriority[*n*]	3		
threshX-High	2 (4 dB)		
threshX-Low	1 (2 dB)		
q-RxLevMin	[-70 (-140 dBm)]	For RF/RRM test cases	
	[-53 (-106 dBm)]	For signalling test cases	
q-QualMin	Not present		
	[-20 (-20dB)]		QBASED
p-MaxEUTRA	23		
threshX-Q SEQUENCE {}	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*

SIB6 contains an ETWS primary notification.

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*

SIB7 contains an ETWS secondary notification.

Table 4.6.2-7: *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 ≥ 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 4.6.2-8: *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 ≥ 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 4.6.2-9: *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*

SIB8 contains a CMAS notification.

Table 4.6.2-10: *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 4.6.2-11: *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 ≥ 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 4.6.2-12: *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 ≥ 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*

Editor's Note: Based on ongoing RAN2 work on CR 100 for TS 38.331, R2-1812411 (CR 100r3).

Table 4.6.2-8: *SIB9*

Derivation Path: TS 38.331 [6], clause 6.3.1			
Information Element	**Value/remark**	**Comment**	**Condition**
SIB9 ::= SEQUENCE {			
FFS			
}			

Condition	**Explanation**
FFS	

4.6.3 Radio resource control information elements

– *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		

– *Alpha*

Table 4.6.3-2: *Alpha*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
Alpha	alpha0		

– *AMF-Identifier*

Table 4.6.3-2A: *AMF-Identifier*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
AMF-Identifier	FFS		

– *ARFCN-ValueEUTRA*

Table 4.6.3-2B: *ARFCN-ValueEUTRA*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
ARFCN-ValueEUTRA	FFS		

– *ARFCN-ValueNR*

Table 4.6.3-3: *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
	absoluteFrequencyPointA 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
	absoluteFrequencyPointA 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

Condition	Explanation
DL_SSB	IE absoluteFrequencySSB for downlink
DL_PointA	IE absoluteFrequencyPointA for downlink
UL_PointA	IE absoluteFrequencyPointA for uplink

– *BeamFailureRecoveryConfig*

Table 4.6.3-3A: *BeamFailureRecoveryConfig*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
BeamFailureRecoveryConfig	FFS		

– *BSR-Config*

Table 4.6.3-3B: *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 4.6.3-4: *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 4.3.1.0b-1 for the bandwidth and subcarrier spacing under test.		FR1
	Set to value of locationAndBandwidth in Table 4.3.1.0b-2 for the bandwidth and subcarrier spacing under test.		FR2
subcarrierSpacing	SubcarrierSpacing		
cyclicPrefix	Not present		
}			

– *BWP-Downlink*

Table 4.6.3-5: *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		
bwp-Common	BWP-DownlinkCommon		
bwp-Dedicated	BWP-DownlinkDedicated		
}			

– *BWP-DownlinkCommon*

Table 4.6.3-6: *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		
}			
pdsch-ConfigCommon CHOICE {			
setup	PDSCH-ConfigCommon		
}			
}			

– *BWP-DownlinkDedicated*

Table 4.6.3-7: *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 {			
setup	PDSCH-Config		
}			
sps-Config	Not present		
radioLinkMonitoringConfig	Not present		
}			

Table 4.6.3-7AA: *BWP-Id*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
BWP-Id	0		

– *BWP-Uplink*

Table 4.6.3-7A: *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		
bwp-Common	BWP-UplinkCommon		
bwp-Dedicated	BWP-UplinkDedicated		
}			

– *BWP-UplinkCommon*

Table 4.6.3-7B: *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		
}			
pusch-ConfigCommon CHOICE {			
setup	PUSCH-ConfigCommon		
}			
pucch-ConfigCommon CHOICE {			
setup	PUCCH-ConfigCommon		
}			
}			

– *BWP-UplinkDedicated*

Table 4.6.3-7C: *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		
}			
pusch-Config CHOICE {			
setup	PUSCH-Config		
}			
configuredGrantConfig	Not present		
srs-Config	Not present		
beamFailureRecoveryConfig	Not present		
}			

Table 4.6.3-8: Void

Table 4.6.3-9:Void

Table 4.6.3-10: *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 {			
setup	PDSCH-Config		
}			
sps-Config	Not present		
radioLinkMonitoringConfig	Not present		
}			

Table 4.6.3-11: *Void*

Table 4.6.3-12: Void

– *CellAccessRelatedInfo*

Table 4.6.3-12A: *CellAccessRelatedInfo*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
CellAccessRelatedInfo ::= SEQUENCE {			
plmn-IdentityList	PLMN-IdentityInfoList		
cellReservedForOtherUse	Not present		
}			

– *CellAccessRelatedInfo-EUTRA-5GC*

Table 4.6.3-12AA: *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 4.6.3-12AB: *CellAccessRelatedInfo-EUTRA-EPC*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
CellAccessRelatedInfo-EUTRA-EPC::= SEQUENCE {			
FFS			
}			

Table 4.6.3-12B: *Void*

– *CellGroupConfig*

Table 4.6.3-13: CellGroupConfig

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
CellGroupConfig ::= SEQUENCE {			
cellGroupId	CellGroupId		
rlc-BearerToAddModList SEQUENCE (SIZE(1..maxLCH)) OF SEQUENCE {	1 entry		EN-DC
RLC-Bearer-Config[1]	RLC-Bearer-Config		
}			
rlc-BearerToAddModList SEQUENCE (SIZE(1..maxLCH)) OF SEQUENCE {	1 entry		SRB1
RLC-Bearer-Config[1]	RLC-Bearer-Config with condition SRB1		
}			
rlc-BearerToAddModList SEQUENCE (SIZE(1..maxLCH)) OF SEQUENCE {	2 entries		SRB2_DRB1
RLC-Bearer-Config[1]	RLC-Bearer-Config with condition SRB2		
RLC-Bearer-Config[2]	RLC-Bearer-Config		
}			
rlc-BearerToReleaseList	Not present		
mac-CellGroupConfig	MAC-CellGroupConfig		
	Not present		SRB2_DRB1
physicalCellGroupConfig	PhysicalCellGroupConfig		
	Not present		SRB2_DRB1
spCellConfig SEQUENCE {}	Not present		SRB2_DRB1
spCellConfig SEQUENCE {			
servCellIndex	Not present		
	ServCellIndex		EN-DC
reconfigurationWithSync	Not present		
reconfigurationWithSync SEQUENCE {			EN-DC
spCellConfigCommon	ServingCellConfigCommon		
newUE-Identity	RNTI-Value		
t304	ms1000		
rach-ConfigDedicated	Not present		
rach-ConfigDedicated CHOICE {			CFRA
uplink	RACH-ConfigDedicated		
supplementaryUplink	RACH-ConfigDedicated		SUL
}			
}			
rlf-TimersAndConstants CHOICE {			
setup	RLF-TimersAndConstants		
}			
rlmInSyncOutOfSyncThreshold	Not present		
spCellConfigDedicated	ServingCellConfig		
}			
sCellToAddModList	Not present		
sCellToReleaseList	Not present		
}			

Condition	Explanation
EN-DC	E-UTRA-NR Dual Connectivity
CFRA	This condition applies when CFRA is configured
SUL	Supplementary Uplink
SRB1	Establishment of SRB1
SRB2_DRB1	Establishment of SRB2 and DRB1

– *CellGroupId*

Table 4.6.3-14: *CellGroupId*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
CellGroupId	1		

– *CellIdentity*

Table 4.6.3-14A: *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 4.6.3-14C: *CellReselectionPriority*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
CellReselectionPriority	FFS		

– *CellReselectionSubPriority*

Table 4.6.3-14D: *CellReselectionSubPriority*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
CellReselectionSubPriority	FFS		

– *CGI-Info*

Table 4.6.3-14E: *CGI-Info*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
CGI-Info	FFS		

– *CodebookConfig*

Table 4.6.3-15: *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 {			
typeI-SinglePanel SEQUENCE {			
nrOfAntennaPorts CHOICE {			
moreThanTwo SEQUENCE {			
n1-n2 CHOICE {			
two-one-TypeI-SinglePanel-Restriction	11111111		FR2
four-one-TypeI-SinglePanel-Restriction	11111111 11111111		FR1
},			
typeI-SinglePanel-codebookSubsetRestriction-i2	Not present		
}			
},			
typeI-SinglePanel-ri-Restriction	11111111		
},			
},			
codebookMode	1		
},			
}			
}			

– *ConfiguredGrantConfig*

Table 4.6.3-16: ConfiguredGrantConfig

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
ConfiguredGrantConfig ::= SEQUENCE {			
FFS			
}			

– *ConnEstFailureControl*

Table 4.6.3-16A: *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 4.6.3-17: 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 00000	CORESET to use the least significant 24 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 4.6.3-18: ControlResourceSetId

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
ControlResourceSetId	1		

– *ControlResourceSetZero*

Table 4.6.3-18A: *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.	

– *CrossCarrierSchedulingConfig*

Table 4.6.3-19: CrossCarrierSchedulingConfig

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
CrossCarrierSchedulingConfig::= SEQUENCE {			
FFS			
}			

– *CSI-AperiodicTriggerStateList*

Table 4.6.3-20: 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 {	1 entry		
CSI-AperiodicTriggerState[1] SEQUENCE (SIZE(1..maxNrofReportConfigPerAperiodicTrigger)) OF {	[1 entry]		
reportConfigId[1]	CSI-ReportConfigId		
resourcesForChannel[1] CHOICE {			
nzp-CSI-RS SEQUENCE {			
resourceSet	8		FR1
	16		FR2
qcl-info SEQUENCE (SIZE(1..maxNrofAP-CSI-RS-ResourcesPerSet)) OF {	1 entry		
TCI-StateId[1]	TCI-StateId		
}			
}			
}			
csi-IM-ResourcesforInteference[1]	8		FR1
	16		FR2
nzp-CSI-RS-ResourcesforInterference[1]	8		FR1
	16		FR2
}			
}			

– *CSI-FrequencyOccupation*

Table 4.6.3-21: 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_60MHz
	216		FR1_80MHz
	272		FR1_100MHz
	64		FR2_100MHz
	52		TRS
}			

Condition	Explanation
FR1_60MHz	FR1 is used under the test. CBW is set to 60MHz.
FR1_80MHz	FR1 is used under the test. CBW is set to 80MHz.
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.
TRS	Tracking-Reference Signal

– *CSI-IM-Resource*

Table 4.6.3-22: 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 4.6.3-23: 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 4.6.3-24: 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		
}			
}			

– *CSI-IM-ResourceSetId*

Table 4.6.3-25: CSI-IM-ResourceSetId

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
CSI-IM-ResourceSetId	0		

– *CSI-MeasConfig*

Table 4.6.3-26: *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 {	1 entry		
NZP-CSI-RS-Resource[1]	NZP-CSI-RS-Resource		
}			
nzp-CSI-RS-ResourceToReleaseList	Not present		
nzp-CSI-RS-ResourceSetToAddModList SEQUENCE {	1 entry		
NZP-CSI-RS-ResourceSet[1]	NZP-CSI-RS-ResourceSet		
}			
nzp-CSI-RS-ResourceSetToReleaseList	Not present		
csi-IM-ResourceToAddModList SEQUENCE {	1 entry		
CSI-IM-Resource[1]	CSI-IM-Resource		
}			
csi-IM-ResourceToReleaseList	Not present		
csi-IM-ResourceSetToAddModList SEQUENCE {	1 entry		
CSI-IM-ResourceSet[1]	CSI-IM-ResourceSet		
}			
csi-IM-ResourceSetToReleaseList	Not present		
csi-SSB-ResourceSetToAddModList SEQUENCE {	1 entry		
CSI-SSB-ResourceSet[1]	CSI-SSB-ResourceSet		
}			
csi-SSB-ResourceSetToAddReleaseList	Not present		
csi-ResourceConfigToAddModList SEQUENCE {	1 entry		
CSI-ResourceConfig[1]	CSI-ResourceConfig		
}			
csi-ResourceConfigToReleaseList	Not present		
csi-ReportConfigToAddModList	1 entry		
CSI-ReportConfig[1]	CSI-ReportConfig		
}			
csi-ReportConfigToReleaseList	Not present		
reportTriggerSize	0		
aperiodicTriggerStateList SetupRelease {			
setup	CSI-AperiodicTriggerStateList		
}			
semiPersistentOnPUSCH-TriggerStateList	Not present		
}			

– *CSI-ReportConfig*

Table 4.6.3-27: 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	14		
}			
}			
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		
nrofCQIsPerReport	n2		
groupBasedBeamReporting CHOICE {			
disabled SEQUENCE {			
nrofReportedRS	n1		
}			
}			
cqi-Table	table2		FR1
	table1		FR2
subbandSize	value2		
non-PMI-PortIndication	Not present		
}			

– *CSI-ReportConfigId*

Table 4.6.3-28: CCSI-ReportConfigId

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
CSI-ReportConfigID	0		

– *CSI-ResourceConfig*

Table 4.6.3-29: 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)) OF {	2 entries		
NZP-CSI-RS-ResourceSetId[0]	0		
NZP-CSI-RS-ResourceSetId[1]	1		
}			
csi-SSB-ResourceSetList	Not present		
}			
}			
bwp-Id	BWP-Id		
resourceType	periodic		
}			

– *CSI-ResourceConfigId*

Table 4.6.3-30: CSI-ResourceConfigId

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
CSI-ResourceConfigId	0		

– *CSI-ResourcePeriodicityAndOffset*

Table 4.6.3-31: 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 4.6.3-31A: 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 4.6.3-32: 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		TRS
row4	010		FR2
other	011110		FR1
}			
nrofPorts	p8		FR1
	p4		FR2
	p1		TRS
firstOFDMSymbolInTimeDomain	3		FR1
	13		FR2
	4		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

– *CSI-SemiPersistentOnPUSCH-TriggerStateList*

Table 4.6.3-33: CSI-SemiPersistentOnPUSCH-TriggerStateList

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
CSI-SemiPersistentOnPUSCH-TriggerStateList ::= SEQUENCE {			
FFS			
}			

– *CSI-SSB-ResourceSet*

Table 4.6.3-33A: CSI-SSB-ResourceSet

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
CSI-SSB-ResourceSet ::= SEQUENCE {			
FFS			
}			

– *CSI-SSB-ResourceSetId*

Table 4.6.3-34: CSI-SSB-ResourceId

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
CSI-SSB-ResourceSetId	FFS		

Table 4.6.3-35: Void

Table 4.6.3-35A: *Void*

– *DedicatedNAS-Message*

Table 4.6.3-35B: *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		

– *DMRS-DownlinkConfig*

Table 4.6.3-36: 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-AdditionalPosition	pos1		FR1_FDD, FR1_TDD
	pos0		FR2_TDD
maxLength	Not present		
scramblingID0	Not present		
scramblingID1	Not present		
phaseTrackingRS	Not present		FR1
phaseTrackingRS CHOICE {			FR2
setup	PTRS-DownlinkConfig		
}			
}			

Condition	Explanation
FR1_FDD	FDD frequency range < 6GHz
FR1_TDD	TDD frequency range < 6GHz
FR2_TDD	TDD frequency range > 6GHz

– *DMRS-UplinkConfig*

Table 4.6.3-37: 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-AdditionalPosition	pos1		FR1_FDD, FR1_TDD
	pos0		FR2_TDD
phaseTrackingRS	Not present		
phaseTrackingRS CHOICE {			PTRS_UL_CONFIG
setup	PTRS-UplinkConfig		
}			
maxLength	Not present		
transformPrecodingDisabled SEQUENCE {			
scramblingID0	Not present		
scramblingID1	Not present		
}			
transformPrecodingEnabled	Not present		
}			

Condition	Explanation
FR1_FDD	FDD frequency range < 6GHz
FR1_TDD	TDD frequency range < 6GHz
FR2_TDD	TDD frequency range > 6GHz
PTRS_UL_CONFIG	When PTRS Uplink is configured

– *DownlinkConfigCommon*

Table 4.6.3-37A: DownlinkConfigCommon

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
DownlinkConfigCommon ::= SEQUENCE {			
frequencyInfoDL	FrequencyInfoDL		
initialDownlinkBWP	BWP-DownlinkCommon		
}			

– *DownlinkConfigCommonSIB*

Table 4.6.3-37B: *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		
bcch-Config SEQUENCE {			
modificationPeriodCoeff	n4		
}			
pcch-Config SEQUENCE {			
defaultPagingCycle	rf128		
nAndPagingFrameOffset CHOICE {			
oneT	NULL		
}			
ns	one		
firstPDCCH-MonitoringOccasionOfPO CHOICE {}	Not present		
}			
}			

– *DownlinkPreemption*

Table 4.6.3-38: DownlinkPreemption

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
DownlinkPreemption ::= SEQUENCE {			
FFS			
}			

– *DRB-Identity*

Table 4.6.3-39: *DRB-Identity*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
DRB-Identity	2		
	1		DRB1

Condition	Explanation
DRB1	DRB-Identity 1

– *DRX-Config*

Table 4.6.3-39A: *DRX-Config*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
DRX-Config ::= CHOICE {			
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		
}			

Table 4.6.3-40: Void

Table 4.6.3-40A: *Void*

– *FilterCoefficient*

Table 4.6.3-41: FilterCoefficient

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
FilterCoefficient	fc4		

– *FreqBandIndicatorNR*

Table 4.6.3-42: FreqBandIndicatorNR

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
FreqBandIndicatorNR	Operating band under test		

– *FrequencyInfoDL*

Table 4.6.3-43: 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	1 entry		
SCS-SpecificCarrier[1]	SCS-SpecificCarrier with condition DL_PointA		
}			
}			

– *FrequencyInfoDL-SIB*

Table 4.6.3-43A: *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 SEQUENCE {	1 entry		
SCS-SpecificCarrier[1]	SCS-SpecificCarrier with condition DL_PointA		
}			
}			

– *FrequencyInfoUL*

Table 4.6.3-44: FrequencyInfoUL

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
FrequencyInfoUL::= SEQUENCE {			
frequencyBandList	MultiFrequencyBandList NR		
absoluteFrequencyPointA	ARFCN-ValueNR with condition UL_PointA		
scs-SpecificCarriers SEQUENCE (SIZE (1..maxSCSs)) OF {	1 entry		
SCS-SpecificCarrier1	SCS-SpecificCarrier with condition UL_PointA		
}			
additionalSpectrumEmission	AdditionalSpectrumEmission		
p-Max	P-Max		
frequencyShift7p5khz	Not present		
}			

– *FrequencyInfoUL-SIB*

Table 4.6.3-44A: *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		
absoluteFrequencyPointA	ARFCN-ValueNR with condition UL_PointA		
scs-SpecificCarrierList SEQUENCE (SIZE (1..maxSCSs)) OF SEQUENCE {	1 entry		
SCS-SpecificCarrier[1]	SCS-SpecificCarrier with condition UL_PointA		
}			
p-Max	P-Max		
frequencyShift7p5khz	Not present		
}			

Table 4.6.3-45: Void

– *Hysteresis*

Table 4.6.3-46: *Hysteresis*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
Hysteresis	4		

– *I-RNTI-Value*

Table 4.6.3-46A: *I-RNTI-Value*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
I-RNTI-Value	FFS	BIT STRING (SIZE(40))	

– *LocationMeasurementInfo*

Table 4.6.3-46B: *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 SEQUENCE {			
carrierFreq	ARFCN-ValueEUTRA		
measPRS-Offset	FFS		
}			
}			

– *LogicalChannelConfig*

Table 4.6.3-47: LogicalChannelConfig

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
LogicalChannelConfig ::= SEQUENCE {			
ul-SpecificParameters SEQUENCE {			
priority	1		
prioritisedBitRate	infinity		
bucketSizeDuration	ms50		
allowedServingCells	Not present		
allowedSCS-List	Not present		
maxPUSCH-Duration	Not present		
configuredGrantType1Allowed	Not present		
logicalChannelGroup	1		HI
	2		LO
schedulingRequestID	Not present		
logicalChannelSR-Mask	false		
logicalChannelSR-DelayTimerApplied	false		
bitRateQueryProhibitTimer	Not present		
}			
}			

Condition	Explanation
HI	Used for DRBs with high logical channel priority
LO	Used for DRBs with low logical channel priority

– *LogicalChannelIdentity*

Table 4.6.3-48: LogicalChannelIdentity

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
LogicalChannelIdentity	1		
LogicalChannelIdentity	3		SRB3

Condition	Explanation
SRB3	Establishment of SRB3

– *MAC-CellGroupConfig*

Table 4.6.3-49: 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	SchedulingRequest-Config		
bsr-Config	BSR-Config		
tag-Config	TAG-Config		
phr-Config CHOICE {			
setup	PHR-Config		
}			
skipUplinkTxDynamic	false		
}			

Condition	Explanation
DRX	This condition applies when DRX is configured

– *MeasConfig*

Table 4.6.3-50: *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		
}			

– *MeasGapConfig*

Table 4.6.3-51: *MeasGapConfig*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
MeasGapConfig ::= SEQUENCE {			
gapFR2 CHOICE {			
setup SEQUENCE {			
gapOffset	159		
mgl	ms3dot5		
mgrp	ms160		
mgta	ms0		
}			
}			
}			

– *MeasGapSharingConfig*

Table 4.6.3-51A: MeasGapSharingConfig

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
MeasGapSharingConfig ::= SEQUENCE {			
gapSharingFR2	Not present		
}			

– *MeasId*

Table 4.6.3-52: *MeasId*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
MeasId	1		

– *MeasIdToAddModList*

Table 4.6.3-53: MeasIdToAddModList

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
MeasIdToAddModList::= SEQUENCE (SIZE (1..maxNrofMeasId)) OF SEQUENCE {	1 entry		
measId[1]	MeasId		
measObjectId[1]	MeasObjectId		
reportConfigId[1]	ReportConfigId		
}			

– *MeasObjectEUTRA*

Table 4.6.3-54: MeasObjectEUTRA

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
FFS			

– *MeasObjectId*

Table 4.6.3-55: *MeasObjectId*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
MeasObjectId	1		

– *MeasObjectNR*

Table 4.6.3-56: *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	true		
ss-RSSI-Measurement	[Not present]	This value is temporarily set in RAN5#79.	
}			
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]	This value is temporarily set in RAN5#79.	
nrofCSI-RS-ResourcesToAverage	Not present		
quantityConfigIndex	[1]	This value is temporarily set in RAN5#79.	
offsetMO SEQUENCE {			
rsrpOffsetSSB	dB0		
rsrqOffsetSSB	dB0		
sinrOffsetSSB	dB0		
rsrpOffsetCSI-RS	dB0		
rsrqOffsetCSI-RS	dB0		
sinrOffsetCSI-RS	dB0		
}			
cellsToRemoveList	Not present		
cellsToAddModList	Not present		
blackCellsToRemoveList	Not present		
blackCellsToAddModList	Not present		
whiteCellsToRemoveList	Not present		
whiteCellsToAddModList	Not present		
}			

– *MeasObjectToAddModList*

Table 4.6.3-57: MeasObjectToAddModList

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
MeasObjectToAddModList::= SEQUENCE (SIZE (1..maxNrofMeasId)) OF SEQUENCE {	1 entry		
measObjectId[1]	MeasObjectId		
measObject CHOICE {			
measObjectNR	MeasObjectNR		
}			
}			

– *MeasResultCellListSFTD*

Table 4.6.3-57A: MeasResultCellListSFTD

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
MeasResultCellListSFTD ::= SEQUENCE {			
FFS			
}			

– *MeasResults*

Table 4.6.3-58: *MeasResults*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
MeasResults::= SEQUENCE {			
measId	MeasId		
measResultServingMOList::= SEQUENCE (SIZE (1.. maxNrofServingCells)) OF SEQUENCE {	1 entry		
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
	Set according to specific message content		A3, A4, A5, A6
}			

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

– *MeasResultSCG-Failure*

Table 4.6.3-59: MeasResultSCG-Failure

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
MeasResultSCG-Failure ::= SEQUENCE {		*measResultPerMOList* for each *MeasOjectNR* for which a *measId* is configured (by the NR *RRCConfiguration message*) and measurement results are available include an entry	
measResultPerMOList SEQUENCE (SIZE (1..maxFreq)) OF SEQUENCE {	*n* entries of MeasResult2NR	MOList [1] *n* denotes the number of non-serving frequencies being measured	
MeasResult2NR SEQUENCE {	entry [1]		
ssbFrequency	ARFCN-ValueNR with condition DL_SSB	the ARFCN if there is a *measId* configured with the *MeasObjectNR* and a *reportConfig* which has *rsType* set to *sbb*	
refFreqCSI-RS	INTEGER (0..3279165)	the ARFCN if there is a *measId* configured with the *MeasObjectNR* and a *reportConfig* which has *rsType* set to *csi-rs*	
measResultServingCell SEQUENCE {		if a serving cell is associated with the *MeasObjectNR*	
physCellId	INTEGER (0..1007)	the *physCellId* configured for this serving cell	
measResult SEQUENCE {			
cellResults SEQUENCE {			
resultsSSB-Cell SEQUENCE {			
rsrp	as specified in Table 4.6.3-114	Integer value for RSRP measurements	
rsrq	as specified in Table 4.6.3-115	Integer value for RSRQ measurements	
sinr	as specified in Table 4.6.3-130	Integer value for SINR measurements	
}			
resultsCSI-RS-Cell SEQUENCE {			
rsrp	as specified in Table 4.6.3-114	Integer value for RSRP measurements	
rsrq	as specified in Table 4.6.3-115	Integer value for RSRQ measurements	

sinr	as specified in Table 4.6.3-130	Integer value for SINR measurements	
}			
}			
rsIndexResults SEQUENCE {			
resultsSSB-Indexes SEQUENCE (SIZE (1..maxNrofSSBs)) OF SEQUENCE {	*n* entires of ResultsPerSSB-Index	*ResultsPerSSB-IndexList*	
ResultsPerSSB-Index SEQUENCE {	entry [1]		
ssb-Index	SSB-Index	an SS-Block within an SS-Burst	
ssb-Results SEQUENCE {		*MeasQuantityResults*	
rsrp	as specified in Table 4.6.3-114	Integer value for RSRP measurements	
rsrq	as specified in Table 4.6.3-115	Integer value for RSRQ measurements	
sinr	as specified in Table 4.6.3-130	Integer value for SINR measurements	
}			
}			
...		*ResultsPerSSB-Index* entry [x] if any	
}			
resultsCSI-RS-Indexes SEQUENCE (SIZE (1..maxNrofCSI-RS)) OF SEQUENCE {	*n* entires of ResultsPerCSI-RS-Index	*ResultsPerCSI-RS-IndexList*	
ResultsPerCSI-RS-Index 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 {		*MeasQuantityResults*	
rsrp	as specified in Table 4.6.3-114	Integer value for RSRP measurements	
rsrq	as specified in Table 4.6.3-115	Integer value for RSRQ measurements	
sinr	as specified in Table 4.6.3-130	Integer value for SINR measurements	
}			
}			
...		*ResultsPerCSI-RS-Index* entry [x] if any	
}			
}			
}			
}			

measResultNeighCellListNR SEQUENCE (SIZE (1..maxCellReport)) OF SEQUENCE {	*n* 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 SEQUENCE {	entry [1]		
physCellId	INTEGER (0..1007)	the *physCellId* configured for the measured cell	
measResult SEQUENCE {			
cellResults SEQUENCE {			
resultsSSB-Cell SEQUENCE {			
rsrp	as specified in Table 4.6.3-114	Integer value for RSRP measurements	
rsrq	as specified in Table 4.6.3-115	Integer value for RSRQ measurements	
sinr	as specified in Table 4.6.3-130	Integer value for SINR measurements	
}			
resultsCSI-RS-Cell SEQUENCE {			
rsrp	as specified in Table 4.6.3-114	Integer value for RSRP measurements	
rsrq	as specified in Table 4.6.3-115	Integer value for RSRQ measurements	
sinr	as specified in Table 4.6.3-130	Integer value for SINR measurements	
}			
}			
}			
}			
...		*MeasResultNR* entry [x] if any	
}			
...		*MeasResult2NR* entry [x] if any	
}			
..		MOList [x] if any	
}			
}			

Table 4.6.3-60: Void

– *MobilityStateParameters*

Table 4.6.3-60A: *MobilityStateParameters*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
MobilityStateParameters ::= SEQUENCE{			
FFS			
}			

– *MultiFrequencyBandListNR*

Table 4.6.3-61: MultiFrequencyBandListNR

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
MultiFrequencyBandListNR ::= SEQUENCE (SIZE (1..maxNrofMultiBands)) OF {	1 entry		
FreqBandIndicatorNR[1]	FreqBandIndicatorNR		
}			

– *NextHopChainingCount*

Table 4.6.3-61A: *NextHopChainingCount*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
NextHopChainingCount	0		

– *NG-5G-S-TMSI*

Table 4.6.3-61B: *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))	

– *NZP-CSI-RS-Resource*

Table 4.6.3-62: 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		
}			

– *NZP-CSI-RS-ResourceId*

Table 4.6.3-63: 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 4.6.3-64: 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 {	[1 entry]		
NZP-CSI-RS-ResourceId[1]	NZP-CSI-RS-ResourceId		
}			
repetition	off		
aperiodicTriggeringOffset	Not present		
trs-Info	Not present		
	true		TRS
}			

Condition	Explanation
TRS	Tracking-Reference Signal

Table 4.6.3-65: Void

– *NZP-CSI-RS-ResourceSetId*

Table 4.6.3-65A: 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		

– *P-Max*

Table 4.6.3-66: *P-Max*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
P-Max	23		FR1
	Not present		FR1_RF_PC3
	26		FR2 FR1_RF_PC2

Condition	Explanation
FR1_RF_PC3	FR1 RF testing with Power Class 3
FR1_RF_PC2	FR1 RF testing with Power Class 2

– *PCI-List*

Table 4.6.3-67: *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 4.6.3-68: *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 4.6.3-69: 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 4.6.3-70: *PCI-RangeIndex*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
PCI-RangeIndex	0		

– *PCI-RangeIndexList*

Table 4.6.3-71: 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 4.6.3-72: *PDCCH-Config*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
PDCCH-Config::= SEQUENCE {			
controlResourceSetToAddModList	Not present		
controlResourceSetToReleaseList	Not present		
searchSpacesToAddModList SEQUENCE(SIZE (1..10)) OF SEQUENCE {	1 entry		
SearchSpace[1]	SearchSpace with condition USS		
}			
searchSpacesToReleaseList	Not present		
downlinkPreemption	Not present		
tpc-PUSCH	Not present		
tpc-PUCCH	Not present		
tpc-SRS	Not present		
}			

– *PDCCH-ConfigCommon*

Table 4.6.3-73: PDCCH-ConfigCommon

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
PDCCH-ConfigCommon::= SEQUENCE {			
controlResourceSetZero	ControlResourceSetZero		
commonControlResourceSet	ControlResourceSet		
searchSpaceZero	SearchSpaceZero		
commonSearchSpaceList SEQUENCE(SIZE (1..4)) OF {	1entry		
SearchSpace[1]	SearchSpace with condition CSS		
}			
searchSpaceSIB1	Not present		
searchSpaceOtherSystemInformation	Not present		
pagingSearchSpace	Not present		
ra-SearchSpace	SearchSpaceId with condition CSS		
}			

– *PDCCH-ConfigSIB1*

Table 4.6.3-73A: *PDCCH-ConfigSIB1*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
PDCCH-ConfigSIB1 ::= SEQUENCE {			
controlResourceSetZero	ControlResourceSetZero		
searchSpaceZero	SearchSpaceZero		
}			

– *PDCCH-ServingCellConfig*

Table 4.6.3-73B: *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 4.6.3-74: *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		
pdcp-SN-Size-DL	len18bits		
headerCompression CHOICE {			
notUsed	Null		
}			
integrityProtection	Not present		
statusReportRequired	true		
outOfOrderDelivery	Not present		
}			
drb SEQUENCE {}	Not present		SRB
moreThanOneRLC	Not present		
moreThanOneRLC SEQUENCE {			Split
primaryPath SEQUENCE {			
cellGroup	CellGroupId		
logicalChannel	LogicalChannelIdentity		
}			
ul-DataSplitThreshold	infinity		
pdcp-Duplication	false		
}			
t-Reordering	Not present		
}			

Condition	Explanation
Split	More than one RLC.
SRB	SRB

– *PDSCH-Config*

Table 4.6.3-75: *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 SEQUENCE(SIZE (1.. maxNrofTCI-States)) OF {			
TCI-State[1]	TCI-State		
}			
tci-StatesToReleaseList	Not present		
vrb-ToPRB-Interleaver	n2		
resourceAllocation	resourceAllocationType0		
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	qam256		FR1
	Not present	qam64 per default	FR2
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-ConfigCommon*

Table 4.6.3-76: 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 4.6.3-77: 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	n16		
pucch-Cell	Not present		
}			

– *PDSCH-TimeDomainResourceAllocationList*

Table 4.6.3-78: 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 {	2 entries		FR1
PDSCH-TimeDomainResourceAllocation[1] SEQUENCE {			
k0	Not present		
mappingType	typeA		
startSymbolAndLength	53	Start symbol(S)=2, Length(L)=12	
}			
PDSCH-TimeDomainResourceAllocation2 SEQUENCE {			
k0	Not present		
mappingType	typeA		
startSymbolAndLength	72	S=2, L=6	
}			
}			
PDSCH-TimeDomainResourceAllocationList ::= SEQUENCE (SIZE(1..maxNrofDL-Allocations)) OF {	1 entry		FR2
PDSCH-TimeDomainResourceAllocation1 SEQUENCE {			
k0	Not present		
mappingType	typeA		
startSymbolAndLength	53	S=2, L=12	
}			
}			

– *PHR-Config*

Table 4.6.3-78A: *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	true		
dummy	false		
phr-Type2OtherCell	false		
phr-ModeOtherCG	real		
}			
}			

Table 4.6.3-79: Void

– *PhysCellId*

Table 4.6.3-80: *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 4.6.3-80A: PhysicalCellGroupConfig

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
PhysicalCellGroupConfig ::= SEQUENCE {			
harq-ACK-SpatialBundlingPUCCH	true		
harq-ACK-SpatialBundlingPUSCH	true		
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		
}			

– *PLMN-Identity*

Table 4.6.3-80B: *PLMN-Identity*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
PLMN-Identity ::= SEQUENCE {			
mcc	See table 4.4.2-3	SEQUENCE (SIZE (3)) OF INTEGER	
mnc	See table 4.4.2-3	SEQUENCE (SIZE (2..3)) OF INTEGER	
}			

– *PLMN-IdentityInfoList*

Table 4.6.3-80C: *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 SEQUENCE {	1 entry		
plmn-IdentityList SEQUENCE (SIZE (1..maxPLMN)) OF PLMN-Identity {}	PLMN-Identity		
trackingAreaCode	TrackingAreaCode		
ranac	RAN-AreaCode		
cellIdentity	CellIdentity		
cellReservedForOperatorUse	notReserved		
}			

– *PRB-Id*

Table 4.6.3-81: *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 number of RBs - 1 corresponding to 10 MHz channel bandwidth in clause 4.3.1 for the carrier and subcarrier under test.		secondHop PRB

Condition	Explanation
secondHopPRB	The IE secondHopPRB in PUCCH-Resource is now set.

– *PTRS-DownlinkConfig*

Table 4.6.3-82: 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 4.6.3-83: PTRS-UplinkConfig

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
PTRS-UplinkConfig ::= SEQUENCE {			
transformPrecoderDisabled SEQUENCE {}	Not present		
transformPrecoderDisabled SEQUENCE {		CP-OFDM	CP-OFDM
frequencyDensity	Not present		
timeDensity	Not present		
maxNrofPorts	n1		
resourceElementOffset	Not present		
ptrs-Power	p00		
}			
transformPrecoderEnabled SEQUENCE {		DFT-S-OFDM	
sampleDensity SEQUENCE (SIZE (5)) OF INTEGER {			
INTEGER[1]	[1]		
INTEGER[2]	[2]		
INTEGER[3]	[2]		
INTEGER[4]	[2]		
INTEGER[5]	[2]		
}			
timeDensityTransformPrecoding	[Not present]		
}			
}			

Condition	Explanation
CP-OFDM	CP-OFDM waveform is configured

– *PUCCH-Config*

Table 4.6.3-84: *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 SEQUENCE {	4 entries		
{			
pucch-ResourceSetId[1]	0		
resourceList[[1] SEQUENCE (SIZE (0..maxNrofPUCCH-ResourcesPerSet)) OF {	8 enties		
PUCCH-ResourceId[1]	0		
PUCCH-ResourceId[2]	1		
PUCCH-ResourceId[3]	2		
PUCCH-ResourceId[4]	3		
PUCCH-ResourceId[5]	4		
PUCCH-ResourceId[6]	5		
PUCCH-ResourceId[7]	6		
PUCCH-ResourceId[8]	7		
}			
maxPayloadMinus1[1]	Not present		
}			
{			
pucch-ResourceSetId[2]	1		
resourceList[2] SEQUENCE (SIZE (8..maxNrofPUCCH-ResourcesPerSet)) OF {	8 entries		
PUCCH-ResourceId[1]	8		
PUCCH-ResourceId[2]	9		
PUCCH-ResourceId[3]	10		
PUCCH-ResourceId[4]	11		
PUCCH-ResourceId[5]	12		
PUCCH-ResourceId[6]	13		
PUCCH-ResourceId[7]	14		
PUCCH-ResourceId[8]	15		
}			
}			
{			
maxPayloadMinus1[2]	256		
pucch-ResourceSetId[3]	2		
resourceList[3] SEQUENCE (SIZE (8..maxNrofPUCCH-ResourcesPerSet)) OF {	8 entries		
PUCCH-ResourceId[1]	8		
PUCCH-ResourceId[2]	9		
PUCCH-ResourceId[3]	10		
PUCCH-ResourceId[4]	11		
PUCCH-ResourceId[5]	12		
PUCCH-ResourceId[6]	13		
PUCCH-ResourceId[7]	14		
PUCCH-ResourceId[8]	15		
}			
}			
{			
maxPayloadMinus1[3]	256		
pucch-ResourceSetId[4]	3		
resourceList[4] SEQUENCE (SIZE (8..maxNrofPUCCH-ResourcesPerSet)) OF {	8 entries		
PUCCH-ResourceId[1]	8		
PUCCH-ResourceId[2]	9		
PUCCH-ResourceId[3]	10		
PUCCH-ResourceId[4]	11		
PUCCH-ResourceId[5]	12		
PUCCH-ResourceId[6]	13		
PUCCH-ResourceId[7]	14		
PUCCH-ResourceId[8]	15		
}			
maxPayloadMinus1[4]	Not present		
}			

}			
resourceSetToReleaseList	Not present		
resourceToAddModList SEQUENCE (SIZE (1..maxNrofPUCCH-Resources)) OF SEQUENCE {	[16 entries]		
{			
pucch-ResourceId[1]	0		
startingPRB[1]	PRB-Id		
intraSlotFrequencyHopping[[1]	enabled		
secondHopPRB[1]	PRB-Id with condition secondHopPRB		
format[1] CHOICE {			
format0 SEQUENCE {			
initialCyclicShift	0		
nrofSymbols	2		
startingSymbolIndex	[0		
}			
}			
}			
{			
pucch-ResourceId[2]	1		
startingPRB[2]	PRB-Id		
intraSlotFrequencyHopping[[2]	enabled		
secondHopPRB[2]	PRB-Id with condition secondHopPRB		
format[2] CHOICE {			
format0 SEQUENCE {			
initialCyclicShift	0		
nrofSymbols	2		
startingSymbolIndex	2		
}			
}			
}			
{			
pucch-ResourceId[3]	2		
startingPRB[3]	PRB-Id		
intraSlotFrequencyHopping[[3]	enabled		
secondHopPRB[3]	PRB-Id with condition secondHopPRB		
format[3] CHOICE {			
format0 SEQUENCE {			
initialCyclicShift	0		
nrofSymbols	2		
startingSymbolIndex	4		
}			
}			
}			
{			
pucch-ResourceId[4]	3		
startingPRB[4]	PRB-Id		
intraSlotFrequencyHopping[[4]	enabled		
secondHopPRB[4]	PRB-Id with condition secondHopPRB		
format[4] CHOICE {			
format0 SEQUENCE {			
initialCyclicShift	0		
nrofSymbols	2		
startingSymbolIndex	6		
}			
}			
}			
{			
pucch-ResourceId[5]	4		
startingPRB[5]	PRB-Id		
intraSlotFrequencyHopping[[5]	enabled		
secondHopPRB[5]	PRB-Id with condition secondHopPRB		

format[5] CHOICE {			
format0 SEQUENCE {			
initialCyclicShift	0		
nrofSymbols	2		
startingSymbolIndex	8		
}			
}			
}			
{			
pucch-ResourceId[6]	5		
startingPRB[6]	PRB-Id		
intraSlotFrequencyHopping[[6]	enabled		
secondHopPRB[6]	PRB-Id with condition secondHopPRB		
format[6] CHOICE {			
format0 SEQUENCE {			
initialCyclicShift	0		
nrofSymbols	2		
startingSymbolIndex	10		
}			
}			
}			
{			
pucch-ResourceId[7]	6		
startingPRB[7]	PRB-Id		
intraSlotFrequencyHopping[[7]	enabled		
secondHopPRB[7]	PRB-Id with condition secondHopPRB		
format[7] CHOICE {			
format0 SEQUENCE {			
initialCyclicShift	0		
nrofSymbols	2		
startingSymbolIndex	12		
}			
}			
}			
{			
pucch-ResourceId[8]	7		
startingPRB[8]	PRB-Id		
intraSlotFrequencyHopping[[8]	enabled		
secondHopPRB[8]	PRB-Id with condition secondHopPRB		
format[8] CHOICE {			
format1 SEQUENCE {			
initialCyclicShift	0		
nrofSymbols	14		
startingSymbolIndex	0		
timeDomainOCC	0		
}			
}			
}			
{			
pucch-ResourceId[9]	8		
startingPRB[9]	PRB-Id		
intraSlotFrequencyHopping[[9]	enabled		
secondHopPRB[9]	PRB-Id with condition secondHopPRB		
format[9] CHOICE {			
format2 SEQUENCE {			
nrofPRBs	6		
nrofSymbols	2		
startingSymbolIndex	0		
}			
}			
}			

{			
pucch-ResourceId[10]	9		
startingPRB[10]	PRB-Id		
intraSlotFrequencyHopping[[10]	enabled		
secondHopPRB[10]	PRB-Id with condition secondHopPRB		
format[10] CHOICE {			
format2 SEQUENCE {			
nrofPRBs	6		
nrofSymbols	2		
startingSymbolIndex	2		
}			
}			
}			
{			
pucch-ResourceId[11]	10		
startingPRB[11]	PRB-Id		
intraSlotFrequencyHopping[[11]	enabled		
secondHopPRB[11]	PRB-Id with condition secondHopPRB		
format[11] CHOICE {			
format2 SEQUENCE {			
nrofPRBs	6		
nrofSymbols	2		
startingSymbolIndex	4		
}			
}			
}			
{			
pucch-ResourceId[12]	11		
startingPRB[12]	PRB-Id		
intraSlotFrequencyHopping[[12]	enabled		
secondHopPRB[12]	PRB-Id with condition secondHopPRB		
format[12] CHOICE {			
format2 SEQUENCE {			
nrofPRBs	6		
nrofSymbols	2		
startingSymbolIndex	6		
}			
}			
}			
{			
pucch-ResourceId[13]	12		
startingPRB[13]	PRB-Id		
intraSlotFrequencyHopping[[13]	enabled		
secondHopPRB[13]	PRB-Id with condition secondHopPRB		
format[13] CHOICE {			
format2 SEQUENCE {			
nrofPRB	6		
nrofSymbols	2		
startingSymbolIndex	8		
}			
}			
}			
{			
pucch-ResourceId[14]	13		
startingPRB[14]	PRB-Id		
intraSlotFrequencyHopping[[14]	enabled		
secondHopPRB[14]	PRB-Id with condition secondHopPRB		
format[14] CHOICE {			
format2 SEQUENCE {			
nrofPRBsinitial	6		
nrofSymbols	2		

startingSymbolIndex	10		
}			
}			
}			
{			
pucch-ResourceId[15]	14		
startingPRB[15]	PRB-Id		
intraSlotFrequencyHopping[[15]	enabled		
secondHopPRB[15]	PRB-Id with condition secondHopPRB		
format[15] CHOICE {			
format2 SEQUENCE {			
nrofPRB	6		
nrofSymbols	2		
startingSymbolIndex	12		
}			
}			
}			
{			
pucch-ResourceId[16]	15		
startingPRB[16]	PRB-Id		
intraSlotFrequencyHopping[[16]	enabled		
secondHopPRB[16]	PRB-Id with condition secondHopPRB		
format[16] CHOICE {			
format3 SEQUENCE {			
nrofPRBs	1		
nrofSymbols	14		
startingSymbolIndex	0		
}			
}			
}			
}			
resourceToReleaseList	Not present		
format1CHOICE {			
setup SEQUENCE {			
interslotFrequencyHopping	enabled		
additionalDMRS	true		
maxCodeRate	zeroDot25		
nrofSlots	Not present		
pi2BPSK	Not present		
simultaneousHARQ-ACK-CSI	true		
}			
}			
format2 CHOICE {			
setup SEQUENCE {			
interslotFrequencyHopping	enabled		
additionalDMRS	true		
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 SEQUENCE {	1 entry		
SchedulingRequestResourceConfig[1]	SchedulingRequestResourceConfig		
}			
schedulingRequestResourceToReleaseList	Not present		
multi-CSI-PUCCH-ResourceList	Not present		
dl-DataToUL-ACK SEQUENCE (SIZE (1..8)) OF {			
INTEGER[1]	2		
INTEGER[2]	3		
INTEGER[3]	4		
INTEGER[4]	5		
INTEGER[5]	6		
INTEGER[6]	7		
INTEGER[7]	8		
INTEGER[8]	9		
}			
spatialRelationInfoToAddModList	Not present		
spatialRelationInfoToReleaseList	Not present		
pucch-PowerControl	PUCCH-PowerControl		
}			

– *PUCCH-ConfigCommon*

Table 4.6.3-85: PUCCH-ConfigCommon

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
PUCCH-ConfigCommon ::= SEQUENCE {			
pucch-ResourceCommon	Not present		
pucch-GroupHopping	enable		
hoppingId	Not present		
p0-nominal	-90		
}			

– *PUCCH-PathlossReferenceRS-Id*

Table 4.6.3-86: 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 4.6.3-87: 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 SEQUENCE {	1 entry		
pucch-PathlossReferenceRS-Id[1]	PUCCH-PathlossReferenceRS-Id		
referenceSignal CHOICE {			
ssb-Index	SSB-Index		
}			
}			
twoPUCCH-PC-AdjustmentStates	Not present		
}			

– *PUCCH-SpatialRelationInfo*

Table 4.6.3-87A: *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-TPC-CommandConfig*

Table 4.6.3-88: 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 4.6.3-89: *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		
	codebook		DCI_0_1
dmrs-UplinkForPUSCH-MappingTypeA	Not present		
dmrs-UplinkForPUSCH-MappingTypeB CHOICE {			
setup	DMRS-UplinkConfig		
}			
pusch-PowerControl	PUSCH-PowerControl		
frequencyHopping	Not present		
frequencyHoppingOffsetLists	Not present		
resourceAllocation	resourceAllocationType1		
pusch-TimeDomainAllocationList	Not present		
pusch-AggregationFactor	Not present		
mcs-Table	qam256		FR1
	Not present		FR2
mcs-TableTransformPrecoder	qam256		FR1
	Not present		FR2
transformPrecoder	enabled	DFT-s-OFDM	
	Not present		CP-OFDM
codebookSubset	nonCoherent		
maxRank	2		
rbg-Size	Not present		
uci-OnPUSCH CHOICE {			
setup SEQUENCE {			
betaOffsets CHOICE {			
semiStatic 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		
}			
}			
scaling	f1		
}			
}			
tp-pi2BPSK	Not present		
}			

Condition	Explanation
CP-OFDM	CP-OFDM waveform is configured
DCI_0_1	DCI_0_1 is used

– *PUSCH-ConfigCommon*

Table 4.6.3-90: PUSCH-ConfigCommon

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
PUSCH-ConfigCommon ::= SEQUENCE {			
groupHoppingEnabledTransformPrecoding	enabled		
pusch-TimeDomainAllocationList	PUSCH-TimeDomainResourceAllocationList		
msg3-DeltaPreamble	1		
p0-NominalWithGrant	-90		
}			

– *PUSCH-PowerControl*

Table 4.6.3-91: 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 SEQUENCE {	1 entry		
p0-PUSCH-AlphaSetId	0		
p0	0		
alpha	alpha08		
}			
pathlossReferenceRSToAddModList SEQUENCE (SIZE (1..maxNrofPUSCH-PathlossReferenceRSs)) OF SEQUENCE {	1 entry		
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 SEQUENCE {	1 entry		
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 4.6.3-92: 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 4.6.3-93: 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 SEQUENCE {	1 entry		
k2	7		FR1
	6		FR2
mappingType	typeB		
startSymbolAndLength	27	Start symbol(S)=0, Length(L)=14	FR1
	14	S=0, L=2	FR2
}			

– *PUSCH-TPC-CommandConfig*

Table 4.6.3-94: 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		
}			

– *Q-OffsetRange*

Table 4.6.3-95: *Q-OffsetRange*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
Q-OffsetRange	dB0		

– *Q-QualMin*

Table 4.6.3-95A: *Q-QualMin*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
Q-QualMin	FFS		

– *Q-RxLevMin*

Table 4.6.3-95B: *Q-RxLevMin*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
Q-RxLevMin	FFS		

– *QuantityConfig*

Table 4.6.3-96: *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 SEQUENCE {	2 entries		
quantityConfigCell[1] SEQUENCE {			
ssb-FilterConfig SEQUENCE {			
filterCoefficientRSRP	FilterCoefficient		
filterCoefficientRSRQ	FilterCoefficient		
filterCoefficientRS-SINR	FilterCoefficient		
}			
cs-RS-FilterConfig SEQUENCE {			
filterCoefficientRSRP	FilterCoefficient		
filterCoefficientRSRQ	FilterCoefficient		
filterCoefficientRS-SINR	FilterCoefficient		
}			
}			
quantityConfigRS-Index[1] SEQUENCE {			
ssb-FilterConfig SEQUENCE {			
filterCoefficientRSRP	FilterCoefficient		
filterCoefficientRSRQ	FilterCoefficient		
filterCoefficientRS-SINR	FilterCoefficient		
}			
cs-RS-FilterConfig SEQUENCE {			
filterCoefficientRSRP	FilterCoefficient		
filterCoefficientRSRQ	FilterCoefficient		
filterCoefficientRS-SINR	FilterCoefficient		
}			
}			
quantityConfigCell[2] SEQUENCE {			
ssb-FilterConfig SEQUENCE {			
filterCoefficientRSRP	FilterCoefficient		
filterCoefficientRSRQ	FilterCoefficient		
filterCoefficientRS-SINR	FilterCoefficient		
}			
cs-RS-FilterConfig SEQUENCE {			
filterCoefficientRSRP	FilterCoefficient		
filterCoefficientRSRQ	FilterCoefficient		
filterCoefficientRS-SINR	FilterCoefficient		
}			
}			
quantityConfigRS-Index[2] SEQUENCE {			
ssb-FilterConfig SEQUENCE {			
filterCoefficientRSRP	FilterCoefficient		
filterCoefficientRSRQ	FilterCoefficient		
filterCoefficientRS-SINR	FilterCoefficient		
}			
cs-RS-FilterConfig SEQUENCE {			
filterCoefficientRSRP	FilterCoefficient		
filterCoefficientRSRQ	FilterCoefficient		
filterCoefficientRS-SINR	FilterCoefficient		
}			
}			
}			

– *RACH-ConfigCommon*

Table 4.6.3-97: 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		
}			

Condition	Explanation
SUL	Supplementary uplink

– *RACH-ConfigDedicated*

Table 4.6.3-97A: 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 {	1 entry		
ssb[1]	SSB-Index		
ra-PreambleIndex[1]	8		
}			
ra-ssb-OccasionMaskIndex	0		
}			
}			
}			
ra-Prioritization	Not present		
}			

– *RACH-ConfigGeneric*

Table 4.6.3-98: 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
	149		FR2
msg1-FDM	four		FR1
	one		FR2
msg1-FrequencyStart	0		
zeroCorrelationZoneConfig	15		
preambleReceivedTargetPower	-118		
preambleTransMax	n7		
powerRampingStep	dB4		
ra-ResponseWindow	sl20		
}			

Table 4.6.3-99: Void

– *RA-Prioritization*

Table 4.6.3-99A: *RA-Prioritization*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
RA-Prioritization	0		

– *RadioBearerConfig*

Table 4.6.3-100: 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 SEQUENCE {	1 entry		SRB1
SRB-Identity	SRB-Identity with condition SRB1		
reestablishPDCP	Not present		
discardOnPDCP	Not present		
pdcp-Config	Not present	Default	
}			
srb-ToAddModList SEQUENCE (SIZE (1..2)) OF SEQUENCE {	1 entry		SRB2
SRB-Identity	SRB-Identity with condition SRB2		
reestablishPDCP	Not present		
discardOnPDCP	Not present		
pdcp-Config	Not present	Default	
}			
srb-ToAddModList SEQUENCE (SIZE (1..2)) OF SEQUENCE {	1 entry		SRB3
srb-Identity	SRB-Identity with condition SRB3		
reestablishPDCP	Not present		
discardOnPDCP	Not present		
pdcp-Config	Not present	Default	
}			
srb-ToAddModList SEQUENCE (SIZE (1..2)) OF SEQUENCE {	2 entries		SRB_NR_PDCP
SRB-Identity[1]	SRB-Identity with condition SRB1		
reestablishPDCP[1]	Not present		
discardOnPDCP[1]	Not present		
pdcp-Config[1]	Not present	Default	
SRB-Identity[2]	SRB-Identity with condition SRB2		
reestablishPDCP[2]	Not present		
discardOnPDCP[2]	Not present		
pdcp-Config[2]	Not present	Default	
}			
srb3-ToRelease	Not present		
drb-ToAddModList	Not present		
drb-ToAddModList SEQUENCE (SIZE (1..maxDRB)) OF SEQUENCE {	1 entry		EN-DC
cnAssociation CHOICE {			
eps-BearerIdentity	6		
}			
drb-Identity	DRB-Identity		
reestablishPDCP	Not present		
recoverPDCP	Not present		
pdcp-Config	PDCP-Config		
}			
drb-ToAddModList SEQUENCE (SIZE (1..maxDRB)) OF SEQUENCE {	1 entry		MCG_NR_PDCP
cnAssociation CHOICE {			
eps-BearerIdentity	5		
}			
drb-Identity	DRB-Identity using condition DRB1		
reestablishPDCP	Not present		
recoverPDCP	Not present		
pdcp-Config	PDCP-Config		
}			
drb-ToAddModList SEQUENCE (SIZE (1..maxDRB)) OF SEQUENCE {	1 entry		DRB1

cnAssociation CHOICE {			
sdap-Config	SDAP-Config		
}			
drb-Identity	DRB-Identity using condition DRB1		
reestablishPDCP	Not present		
recoverPDCP	Not present		
pdcp-Config	PDCP-Config		
}			
drb-ToReleaseList	Not present		
securityConfig SEQUENCE {			
securityAlgorithmConfig	SecurityAlgorithmConfig		
keyToUse	Master		
	secondary		SRB3, EN-DC
	master		SRB_NR_PDCP, NR
}			
}			

Condition	Explanation
EN-DC	E-UTRA-NR Dual Connectivity
SRB3	Establishment of SRB3
MCG_NR_PDCP	EN-DC MCG DRB configured with NR PDCP
SRB_NR_PDCP	EN-DC SRB1 and SRB2 configured with NR PDCP
SRB1	Establishment of SRB1
SRB2	Establishment of SRB2
DRB1	Establishment of DRB1

– *RadioLinkMonitoringConfig*

Table 4.6.3-101: RadioLinkMonitoringConfig

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
RadioLinkMonitoringConfig ::= SEQUENCE {			
failureDetectionResourcesToAddModList SEQUENCE (SIZE(1..maxNrofFailureDetectionResources)) OF SEQUENCE {	1 entry		
radioLinkMonitoringRS-Id	RadioLinkMonitoringRS-Id		
purpose	rlf		
detectionResource CHOICE {			
ssb-Index	SSB-Index		
}			
}			
failureDetectionResourcesToReleaseList	Not present		
beamFailureInstanceMaxCount	Not present		
beamFailureDetectionTimer	Not present		
}			

– *RadioLinkMonitoringRSId*

Table 4.6.3-102: RadioLinkMonitoringRSId

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
RadioLinkMonitoringRSId	0		

– *RAN-AreaCode*

Table 4.6.3-102A: *RAN-AreaCode*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
RAN-AreaCode	1		

– *RateMatchPattern*

Table 4.6.3-103: 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 4.6.3-104: RateMatchPatternId

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
RateMatchPatternId	0		

– *RateMatchPatternLTE-CRS*

Table 4.6.3-105: RateMatchPatternLTE-CRS

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
RateMatchPatternLTE-CRS ::= SEQUENCE {			
FFS			
}			

– *ReportConfigId*

Table 4.6.3-106: *ReportConfigId*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
ReportConfigId	1		

– *ReportConfigInterRAT*

Table 4.6.3-106A: *ReportConfigInterRAT*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
ReportConfigInterRAT ::= SEQUENCE {			
FFS			
}			

– *ReportConfigNR*

Table 4.6.3-107: *ReportConfigNR*(Thres)

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
ReportConfigNR::= SEQUENCE {			
reportType CHOICE {			
eventTriggered SEQUENCE {			
eventId CHOICE {			
eventA1 SEQUENCE {			EVENT_A1
a1-Threshold CHOICE {			
rsrp	Thres	Thres is an entry value into a mapping table in TS 38.133 [13].	
}			
reportOnLeave	[false]	This value is temporarily set in RAN5#79.	
hysteresis	Hysteresis		
timeToTrigger	TimeToTrigger with condition EVENT_A1		
}			
eventA2 SEQUENCE {			EVENT_A2
a2-Threshold CHOICE {			
rsrp	Thres	Thres is an entry value into a mapping table in TS 38.133 [13].	
}			
reportOnLeave	[false]	This value is temporarily set in RAN5#79.	
hysteresis	Hysteresis		
timeToTrigger	TimeToTrigger		
}			
eventA3 SEQUENCE {			EVENT_A3
a3-Offset SEQUENCE {			
rsrp	Thres	Thres is an entry value into a mapping table in TS 38.133 [13].	
}			
reportOnLeave	false		
hysteresis	Hysteresis		
timeToTrigger	TimeToTrigger with condition EVENT_A3		
useWhiteCellList	false		
}			
eventA4 SEQUENCE {			EVENT_A4
a4-Threshold CHOICE {			
rsrp	Thres	Thres is an entry value into a mapping table in TS 38.133 [13].	
}			
reportOnLeave	[false]	This value is temporarily set in RAN5#79.	
hysteresis	Hysteresis		
timeToTrigger	TimeToTrigger		
useWhiteCellList	[false]	This value is temporarily set in RAN5#79.	
}			
eventA5 SEQUENCE {			EVENT_A5
a5-Threshold1 CHOICE {			

rsrp	Thres	Thres is an entry value into a mapping table in TS 38.133 [13].	
}			
a5-Threshold2 CHOICE {			
rsrp	Thres	Thres is an entry value into a mapping table in TS 38.133 [13].	
}			
reportOnLeave	[false]	This value is temporarily set in RAN5#79.	
hysteresis	Hysteresis		
timeToTrigger	TimeToTrigger		
useWhiteCellList	[false]	This value is temporarily set in RAN5#79.	
}			
eventA6 SEQUENCE {			EVENT_A6
a6-Offset CHOICE {			
rsrp	Thres	Thres is an entry value into a mapping table in TS 38.133 [13].	
}			
reportOnLeave	[false]	This value is temporarily set in RAN5#79.	
hysteresis	Hysteresis		
timeToTrigger	TimeToTrigger		
useWhiteCellList	[false]	This value is temporarily set in RAN5#79.	
}			
}			
rsType	ssb		
reportInterval	ReportInterval		
reportAmount	r2		
reportQuantityCell SEQUENCE {			
rsrp	true		
rsrq	true		
sinr	true		
}			
maxReportCells	8		
reportQuantityRsIndexes	Not present		
maxNrofRSIndexesToReport	Not present		
includeBeamMeasurements	false		
reportAddNeighMeas	Not present		
}			
}			
}			

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

– *ReportConfigToAddModList*

Table 4.6.3-108: ReportConfigToAddModList

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
ReportConfigToAddModList::= SEQUENCE(SIZE (1..maxReportConfigId)) OF SEQUENCE {	1 entry		
reportConfigId[1]	ReportConfigId		
reportConfig[1] CHOICE {			
reportConfigNR	ReportConfigNR		
}			
}			

– *ReportInterval*

Table 4.6.3-109: *ReportInterval*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
ReportInterval	ms480		

– *ReselectionThreshold*

Table 4.6.3-109A: *ReselectionThreshold*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
ReselectionThreshold	FFS		

– *ReselectionThresholdQ*

Table 4.6.3-109B: *ReselectionThresholdQ*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
ReselectionThresholdQ	FFS		

– *ResumeCause*

Table 4.6.3-109C: *ReselectionThresholdQ*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
ResumeCause	FFS		

– *RLC-BearerConfig*

Table 4.6.3-110: RLC-BearerConfig

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
RLC-BearerConfig ::= SEQUENCE {			
logicalChannelIdentity[1]	LogicalChannelIdentity		
servedRadioBearer[1] CHOICE {			
srb-Identity	SRB-Identity with condition SRB1		SRB1
srb-Identity	SRB-Identity with condition SRB2		SRB2
drb-Identity	DRB-Identity		
}			
servedRadioBearer[1] CHOICE {			SRB3
srb-Identity	SRB-Identity with condition SRB3		
}			
reestablishRLC[1]	Not present		
RLC-Config[1]	RLC-Config using condition AM		AM
	RLC-Config using condition UM.		UM
	Not present	Use default parameters as per TS 38.331 [6] clause 9.2.1	SRB3
mac-LogicalChannelConfig[1] }	LogicalChannelConfig using condition HI		AM
	LogicalChannelConfig using condition LO		UM
	Not present	Use default parameters as per TS 38.331 [6] clause 9.2.1	SRB3

Condition	Explanation
AM	RLC AM
UM	RLC UM
SRB1	SRB1 identity
SRB2	SRB2 identity
SRB3	Establishment of SRB3

– *RLC-Config*

Table 4.6.3-111: *RLC-Config*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
RLC-Config ::= CHOICE {			
am SEQUENCE {			AM
ul-AM-RLC SEQUENCE {			
sn-FieldLength	size18		
t-PollRetransmit	ms80		FR1
	ms30		FR2
pollPDU	p32768		
pollByte	kB750		
maxRetxThreshold	t8		
}			
dl-AM-RLC SEQUENCE {			
sn-FieldLength	size18		
t-Reassembly	ms80		FR1
	ms30		FR2
t-StatusProhibit	ms30		
}			
}			
am SEQUENCE {		9.2.1.3 /TS 36.331	SRB3
ul-AM-RLC SEQUENCE {			
sn-FieldLength	size18		
t-PollRetransmit	ms80		FR1
	ms30		FR2
pollPDU	p32768		
pollByte	kB750		
maxRetxThreshold	t8		
}			
dl-AM-RLC SEQUENCE {			
sn-FieldLength	size18		
t-Reassembly	ms80		FR1
	ms30		FR2
t-StatusProhibit	ms30		
}			
}			
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
}			
}			
}			

Condition	Explanation
AM	RLC AM
UM	RLC UM
SRB3	Establishment of SRB3

– *RLF-TimersAndConstants*

Table 4.6.3-112: 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-v1530	ms1000		
}			

– *RNTI-Value*

Table 4.6.3-113: *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		

– *RSRP-Range*

Table 4.6.3-114: *RSRP-Range*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
RSRP-Range	[0]	Mapping table is not yet specified in 38.133. This value is temporarily set in RAN5#79.	

– *RSRQ-Range*

Table 4.6.3-115: *RSRQ-Range*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
RSRQ-Range	[0]	Mapping table is not yet specified in 38.133. This value is temporarily set in RAN5#79.	

– *SCellIndex*

Table 4.6.3-116: *SCellIndex*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
SCellIndex	1		

– *SchedulingRequestConfig*

Table 4.6.3-117: SchedulingRequestConfig

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
SchedulingRequestConfig ::= SEQUENCE { schedulingRequestToAddModList (SIZE(1..maxNrofSR-ConfigPerCellGroup)) OF SEQUENCE {	1 entry		
schedulingRequestId	SchedulingRequestId		
sr-ProhibitTimer	Not present		
sr-TransMax	n16		
}			
schedulingRequestToReleaseList	Not present		
}			

– *SchedulingRequestId*

Table 4.6.3-117A: SchedulingRequestId

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
SchedulingRequestId	0		

– *SchedulingRequestResourceConfig*

Table 4.6.3-118: SchedulingRequestResourceConfig

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
SchedulingRequestResourceConfig ::= SEQUENCE {			
schedulingRequestResourceId	SchedulingRequestResourceId		
schedulingRequestID	0		
periodicityAndOffset CHOICE {			
sl10	0	With SCS = kHz15 results in repetition every 10 ms	SCS_15kHz
sl20	0	With SCS = kHz30 results in repetition every 10 ms	SCS_30kHz
sl80	0	With SCS = kHz120 results in repetition every 10 ms	SCS_120kHz
}			
resource	0		
}			

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
SCS_120kHz	SCS=120kHz for frequency of the cell according to clause 6.2.3 for signalling test cases and clause 4.3.1 otherwise

– *SchedulingRequestResourceId*

Table 4.6.3-119: SchedulingRequestResourceId

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
SchedulingRequestResourceId	1		

– *ScramblingId*

Table 4.6.3-120: *ScramblingId*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
ScramblingId	0		

– *SCS-SpecificCarrier*

Table 4.6.3-121: 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
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.	
txDirectCurrentLocation-v1530	Not present		
}			

Condition	Explanation
DL_PointA	IE absoluteFrequencyPointA for downlink
UL_PointA	IE absoluteFrequencyPointA for uplink

– *SDAP-Config*

Table 4.6.3-122: *SDAP-Config*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
SDAP-Config ::= SEQUENCE {			
pdu-Session	0		
sdap-HeaderDL	present		
sdap-HeaderUL	present		
defaultDRB	true		
mappedQoS-FlowsToAdd SEQUENCE (SIZE (1..maxNrofQFIs)) OF {	1 entry		
INTEGER	0		
}			
mappedQoS-FlowsToRelease SEQUENCE (SIZE (1..maxNrofQFIs)) OF {}	Not present		
}			

– *SearchSpace*

Table 4.6.3-123: *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
controlResourceSetId	ControlResourceSetId		
monitoringSlotPeriodicityAndOffset CHOICE {			
sl1	NULL		
}			
duration	Not present	1 slot per default	
monitoringSymbolsWithinSlot	10000000000000		
nrofCandidates SEQUENCE {			
aggregationLevel1	n0		
aggregationLevel2	n8		
	n2		FR1_5MHz OR FR1_10MHz
aggregationLevel4	n8		
	[n1]		FR1_5MHz OR FR1_10MHz
	[n2]		FR2_100MHz
aggregationLevel8	[n8]		
	[n6]		FR1_60MHz
	[n0]		FR1_5MHz OR FR1_10MHz
	[n1]		FR2_100MHz
aggregationLevel16	n0		
}			
searchSpaceType CHOICE {			
common SEQUENCE {			CSS
dci-Format0-0-AndFormat1-0 SEQUENCE {			
}			
dci-Format2-0	Not present		
dci-Format2-1	Not present		
dci-Format2-2	Not present		
dci-Format2-3	Not present		
}			
ue-Specific SEQUENCE {			USS
dci-Formats	formats0-0-And-1-0		
}			
}			
}			

Condition	Explanation
FR1_5MHz	FR1 is used under the test. CBW is set to 5MHz.
FR1_10MHz	FR1 is used under the test. CBW is set to 10MHz.
FR1_60MHz	FR1 is used under the test. CBW is set to 60MHz.
FR1_80MHz	FR1 is used under the test. CBW is set to 80MHz.
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.
CSS	Common SearchSpace
USS	UE-Specific SearchSpace

Table 4.6.3-124: Void

– *SearchSpaceId*

Table 4.6.3-125: *SearchSpaceId*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
SearchSpaceID	1		CSS
	2		USS

Condition	Explanation
CSS	Common SearchSpace
USS	UE-Specific SearchSpace

– *SearchSpaceZero*

Table 4.6.3-125A: *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 4.6.3-126: SecurityAlgorithmConfig

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
SecurityAlgorithmConfig ::= SEQUENCE {			
cipheringAlgorithm	nea2		
	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
}			

Condition	Explanation
SIG	Used for signalling test cases
RF	Used for RF/RRM test cases

– *ServCellIndex*

Table 4.6.3-127: *ServCellIndex*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
ServCellIndex	0		

– *ServingCellConfig*

Table 4.6.3-128: 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		
downlinkBWP-ToReleaseList	Not present		
downlinkBWP-ToAddModList	Not present		
firstActiveDownlinkBWP-Id	BWP-Id		
bwp-InactivityTimer	Not present		
defaultDownlinkBWP-Id	BWP-Id		
uplinkConfig	Not present		PUSCH_PUCCH_ON_SUL
uplinkConfig SEQUENCE {			
initialUplinkBWP	BWP-UplinkDedicated		
uplinkBWP-ToReleaseList	Not present		
uplinkBWP-ToAddModList	Not present		
firstActiveUplinkBWP-Id	BWP-Id		
pusch-ServingCellConfig CHOICE {			
setup	PUSCH-ServingCellConfig		
}			
carrierSwitching	Not present		
}			
supplementaryUplink	Not present		
supplementaryUplink SEQUENCE {			PUSCH_PUCCH_ON_SUL
initialUplinkBWP	BWP-UplinkDedicated		
uplinkBWP-ToReleaseList	Not present		
uplinkBWP-ToAddModList	Not present		
firstActiveUplinkBWP-Id	BWP-Id		
pusch-ServingCellConfig CHOICE {			
setup	PUSCH-ServingCellConfig		
}			
}			
pdcch-ServingCellConfig CHOICE {			
setup	PDCCH-ServingCellConfig		
}			
pdsch-ServingCellConfig CHOICE {			
setup	PDSCH-ServingCellConfig		
}			
csi-MeasConfig	Not present		
sCellDeactivationTimer	Not present		
crossCarrierSchedulingConfig	Not present		
tag-Id	0		
ue-BeamLockFunction	Not present		
pathlossReferenceLinking	Not present		
servingCellMO	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.

– *ServingCellConfigCommon*

Table 4.6.3-129: ServingCellConfigCommon

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
ServingCellConfigCommon ::= SEQUENCE {			
physCellId	PhysCellId		
downlinkConfigCommon	DownlinkConfigCommon		
uplinkConfigCommon	UplinkConfigCommon		
supplementaryUplinkConfig	Not present		
n-TimingAdvanceOffset	Not present		
ssb-PositionsInBurst CHOICE {			
shortBitmap	0100		(FREQ<=3GHz AND (FR1_FDD OR NOT CASE_C)) OR (FREQ<=2.4GHz AND FR1_TDD)
mediumBitmap	01000000		(FREQ>3GHz AND FR1) OR (FREQ>2.4GHz AND FR1_TDD AND CASE_C)
longBitmap	0100000000000000000000000000000000000000000000000000000000000000		FR2
}			
ssb-periodicityServingCell	ms20		
dmrs-TypeA-Position	pos2		
lte-CRS-ToMatchAround	Not present		
rateMatchPatternToAddModList	Not present		
rateMatchPatternToReleaseList	Not present		
subcarrierSpacing	SubcarrierSpacing		
tdd-UL-DL-ConfigurationCommon	TDD-UL-DL-ConfigCommon		FR1_TDD, FR2_TDD
ss-PBCH-BlockPower	[0]		
}			

Condition	Explanation
FREQ<=2.4GHz	Frequency range <= 2.4GHz
FREQ>2.4GHz	Frequency range > 2.4GHz
FREQ<=3GHz	Frequency range <= 3GHz
FREQ>3GHz	Frequency range > 3GHz
FR1_TDD	TDD frequency range < 6GHz
FR2_TDD	TDD frequency range > 6GHz
FR1_FDD	FDD frequency range < 6GHz
CASE_C	SS Block pattern “Case C” to be applied for the given band and subcarrier spacing according to TS 38.101-1 [7] Table 5.4.3.3-1

– *ServingCellConfigCommonSIB*

Table 4.6.3-129A: *ServingCellConfigCommonSIB*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
ServingCellConfigCommonSIB ::= SEQUENCE {			
downlinkConfigCommon	DownlinkConfigCommonSIB		
uplinkConfigCommon	UplinkConfigCommonSIB		
supplementaryUplink	Not present		
	UplinkConfigCommonSIB		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;	
groupPresence	Not present		
	'1000 0000'B		FR2
}			
ssb-PeriodicityServingCell	ms20		
tdd-UL-DL-ConfigurationCommon	TDD-UL-DL-ConfigCommon		FR1_TDD, FR2_TDD
ss-PBCH-BlockPower	0		
}			

Condition	Explanation
FR1_TDD	TDD frequency range < 6GHz
FR2_TDD	TDD frequency range > 6GHz
SUL	Supplementary uplink

– *ShortI-RNTI-Value*

Editor's Note: Based on ongoing RAN2 work on CR 100 for TS 38.331, R2-1812411 (CR 100r3).

Table 4.6.3-129B: *ShortI-RNTI-Value*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
ShortI-RNTI-Value	FFS	BIT STRING (SIZE(24))	

– *ShortMAC-I*

Table 4.6.3-129C: *ShortMAC-I*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
ShortMAC-I	FFS		

– *ShortMAC-I*

Table 4.6.3-129C: *ShortMAC-I*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
ShortMAC-I	0		

– *SINR-Range*

Table 4.6.3-130: *SINR-Range*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
SINR-Range	[0]	Mapping table is not yet specified in 38.133. This value is temporarily set in RAN5#79.	

– *SI-SchedulingInfo*

Table 4.6.3-130A: *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 SEQUENCE {	See subclause 4.4.3.1		
si-BroadcastStatus	broadcasting		
si-Periodicity	See subclause 4.4.3.1		
sib-MappingInfo SEQUENCE (SIZE (1..maxSIB)) OF SEQUENCE {			
type	See subclause 4.4.3.1		
valueTag	0		
areaScope	Not present		
}			
}			
si-WindowLength	s80		FR1
	s160		FR2
si-RequestConfig SEQUENCE {}	Not present		
si-RequestConfigSUL SEQUENCE {}	Not present		
systemInformationAreaID	'0000 0000 0000 0000 0000 0001'B		
}			

– *SlotFormatCombinationsPerCell*

Table 4.6.3-131: SlotFormatCombinationsPerCell

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
SlotFormatCombinationsPerCell ::= SEQUENCE {			
FFS			
}			

– *SlotFormatIndicator*

Table 4.6.3-132: SlotFormatIndicator

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
SlotFormatIndicator ::= SEQUENCE {			
FFS			
}			

– *S-NSSAI*

Editor's Note: Based on ongoing RAN2 work on CR 100 for TS 38.331, R2-1812411 (CR 100r3).

Table 4.6.3-132A: *S-NSSAI*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
S-NSSAI ::= CHOICE {			
FFS			
}			

– *SpeedStateScaleFactors*

Table 4.6.3-132B: *SpeedStateScaleFactors*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
SpeedStateScaleFactors ::= SEQUENCE {			
FFS			
}			

– *SS-RSSI-Measurement*

Table 4.6.3-132C: *SS-RSSI-Measurement*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
SS-RSSI-Measurement ::= SEQUENCE {			
FFS			
}			

– *SPS-Config*

Table 4.6.3-133: *SPS-Config*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
SPS-Config ::= SEQUENCE {			
FFS			
}			

– *SRB-Identity*

Table 4.6.3-134: *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

– *SRS-CarrierSwitching*

Table 4.6.3-134B: 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 4.6.3-135: *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 SEQUENCE {	[1 entry]		
srs-ResourceSetId	0		
srs-ResourceIdList SEQUENCE (SIZE(1..maxNrofSRS-ResourcesPerSet)) OF {	1 entry		
SRS-ResourceId[1]	0		
}			
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 SEQUENCE {	1 entry		
srs-ResourceId	0		
nrofSRS-Ports	ports2		2TX_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	63		FR1_100MHz
	17		FR2_100MHz
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	For the purpose of 2TX Uplink MIMO test.

Table 4.6.3-136: Void

– *SRS-TPC-CommandConfig*

Table 4.6.3-137: 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 4.6.3-138: *SSB-Index*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
SSB-Index	1		

– *SSB-MTC*

Table 4.6.3-138A: *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		FR1
sf160	0		FR2
}			
duration	sf2		FR1
	sf3		FR2
}			

Table 4.6.3-138B: *SSB-MTC2*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
SSB-MTC2 ::= SEQUENCE {			
FFS			
}			

– *SSB-ToMeasure*

Table 4.6.3-138C: *SSB-ToMeasure*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
SSB-ToMeasure ::= CHOICE {			
shortBitmap	0100		(FREQ<=3GHz AND (FR1_FDD OR NOT CASE_C)) OR (FREQ<=2.4GHz AND FR1_TDD)
mediumBitmap	01000000		(FREQ>3GHz AND FR1) OR (FREQ>2.4GHz AND FR1_TDD AND CASE_C)
longBitmap	01000000 00000000 00000000 00000000 00000000 00000000 00000000 00000000		FR2
}			

Condition	Explanation
FREQ<=2.4GHz	Frequency range <= 2.4GHz
FREQ>2.4GHz	Frequency range > 2.4GHz
FREQ<=3GHz	Frequency range <= 3GHz
FREQ>3GHz	Frequency range > 3GHz
FR1_TDD	TDD frequency range < 6GHz
FR2_TDD	TDD frequency range > 6GHz
FR1_FDD	FDD frequency range < 6GHz
CASE_C	SS Block pattern "Case C" to be applied for the given band and subcarrier spacing according to TS 38.101-1 [7] Table 5.4.3.3-1

– *SubcarrierSpacing*

Table 4.6.3-139: SubcarrierSpacing

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
SubcarrierSpacing	kHz15		SCS_15kHz
	kHz30		SCS_30kHz
	kHz120		SCS_120kHz

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
SCS_120kHz	SCS=120kHz for frequency of the cell according to clause 6.2.3 for signalling test cases and clause 4.3.1 otherwise

– *TAG-Config*

Table 4.6.3-139A: *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 SEQUENCE {	1 entry		
tag-Id	0		
timeAlignmentTimer	infinity		
}			
}			

– *TCI-State*

Table 4.6.3-140: *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		
}			

– *TCI-StateId*

Table 4.6.3-141: *TCI-StateId*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
TCI-StateId	0		

– *TDD-UL-DL-Config*

Table 4.6.3-142: TDD-UL-DL-Config

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		FR2
nrofDownlinkSlots	7		FR1_30kHz
	3		FR1_15kHz, FR2
nrofDownlinkSymbols	6		FR1_30kHz
	10		FR1_15kHz
	10		FR2
nrofUplinkSlots	2		FR1_30kHz
	1		FR1_15kHz, FR2
nrofUplinkSymbols	4		FR1_30kHz
	2		FR1_15kHz, FR2
}			
pattern2	Not present		
}			

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.

– *TrackingAreaCode*

Table 4.6.3-142A: *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))	

– *T-Reselection*

Table 4.6.3-142B: *T-Reselection*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
T-Reselection	FFS		

– *TimeToTrigger*

Table 4.6.3-143: *TimeToTrigger*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
TimeToTrigger	[ms0]		EVENT_A1
	ms320		EVENT_A3

Condition	Explanation
EVENT_A1	Configuration of Event A1
EVENT_A3	Configuration of Event A3

– *UE-TimersAndConstants*

Table 4.6.3-143A: *UE-TimersAndConstants*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
UE-TimersAndConstants ::= SEQUENCE {			
t300	ms1000		
t301	ms1000		
t310	ms1000		
n310	n1		
t311	ms30000		
n311	n1		
t319	ms1000		
}			

– *UAC-BarringInfoSetIndex*

Table 4.6.3-143AA: *UAC-BarringInfoSetIndex*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
UAC-BarringInfoSetIndex	FFS		

– *UAC-BarringInfoSetList*

Table 4.6.3-143AB: *UAC-BarringInfoSetList*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
UAC-BarringInfoSetList	FFS		

– *UAC-BarringPerCatList*

Table 4.6.3-143AC: *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 4.6.3-143AD: *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 4.6.3-143AE: *UE-TimersAndConstants*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
UE-TimersAndConstants ::= SEQUENCE {			
t300	ms1000		
t301	ms1000		
t310	ms1000		
n310	n1		
t311	ms30000		
n311	n1		
t319	ms1000		
}			

– *UplinkConfigCommon*

Table 4.6.3-143A: *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 4.6.3-143AAA: *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		
timeAlignmentTimerCommon	infinity		
}			

– *UplinkTxDirectCurrentList*

Table 4.6.3-143B: *UplinkTxDirectCurrentList*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
UplinkTxDirectCurrentList ::= SEQUENCE (SIZE (1..maxNrofServingCells)) OF SEQUENCE {			
FFS			
}			

Table 4.6.3-143C: *Void*

– *ZP-CSI-RS-Resource*

Table 4.6.3-144: 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-ResourceSet*

Table 4.6.3-145: 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 {	1 entry		
ZP-CSI-RS-ResourceId[1]	FFS		
}			
}			

– *ZP-CSI-RS-ResourceSetId*

Table 4.6.3-146: ZP-CSI-RS-ResourceSetId

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
ZP-CSI-RS-ResourceSetId	FFS		

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]		

– *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 SEQUENCE {	1 entry		
bandList[1] SEQUENCE (SIZE (1..maxSimultaneousBands)) OF CHOiCE {			
eutra SEQUENCE {			
bandEUTRA	FreqBandIndicatorEUTRA		
ca-BandwidthClassDL-EUTRA	CA-BandwidthClassEUTRA		
ca-BandwidthClassUL-EUTRA	CA-BandwidthClassEUTRA		
}			
nr SEQUENCE {			
bandNR	FreqBandIndicatorNR		
ca-BandwidthClassDL-NR	CA-BandwidthClassNR		
ca-BandwidthClassUL-NR	CA-BandwidthClassNR		
}			
}			
featureSetCombination	FeatureSetCombinationId		
ca-ParametersEUTRA	CA-ParametersEUTRA		
ca-ParametersNR	CA-ParametersNR		
mrdc-Parameters	MRDC-Parameters		
supportedBandwidthCombinationSet	BIT STRING (SIZE (1..32))		
powerClass-v1530	Not Checked		

Table 4.6.4-3: *Void*

Table 4.6.4-4: *Void*

Table 4.6.4-5: *Void*

– *CA-BandwidthClassEUTRA*

Table 4.6.4-5A: 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 4.6.4-6: CA-BandwidthClassNR

Derivation Path: TS 38.331 [6], clause 6.3.3			
Information Element	**Value/remark**	**Comment**	**Condition**
CA-BandwidthClassNR	Not checked		

Table 4.6.4-7: Void

– *CA-ParametersEUTRA*

Table 4.6.4-7AA: 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 4.6.4-7a: CA- ParametersNR

Derivation Path: TS 38.331 [6], clause 6.3.3			
Information Element	**Value/remark**	**Comment**	**Condition**
CA-ParametersNR ::= SEQUENCE {			
multipleTimingAdvances	Not checked		
parallelTxSRS-PUCCH-PUSCH	Not checked		
parallelTxPRACH-SRS-PUCCH-PUSCH	Not checked		
simultaneousRxTxInterBandCA	Not checked		
simultaneousRxTxSUL	Not checked		
diffNumerologyAcrossPUCCH-Group	Not checked		
diffNumerologyWithinPUCCH-Group	Not checked		
supportedNumberTAG	Not checked		
}			

Table 4.6.4-7b: Void

– *FeatureSetCombination*

Table 4.6.4-7c: FeatureSetCombination

Derivation Path: TS 38.331 [6], clause 6.3.3			
Information Element	**Value/remark**	**Comment**	**Condition**
FeatureSetCombination ::= SEQUENCE (SIZE (1..maxSimultaneousBands)) OF SEQUENCE (SIZE (1..maxFeatureSetsPerBand) CHOICE {			
eutra SEQUENCE {			
downlinkSetEUTRA	Not checked		
uplinkSetEUTRA	Not checked		
}			
nr SEQUENCE {			
downlinkSetNR	Not checked		
uplinkSetNR	Not checked		
}			
}			

– *FeatureSetCombinationId*

Table 4.6.4-7d: FeatureSetCombinationId

Derivation Path: TS 38.331 [6], clause 6.3.3			
Information Element	**Value/remark**	**Comment**	**Condition**
FeatureSetCombinationId	Not checked		

– *FeatureSetDownlink*

Table 4.6.4-7e: 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]	Not checked		
intraBandFreqSeparationDL	FreqSeparationClass		
scalingFactor	Not checked		
crossCarrierSchedulingDL-OtherSCS	Not checked		
scellWithoutSSB	Not checked		
csi-RS-MeasSCellWithoutSSB	Not checked		
srs-AssocCSI-RS	Not checked		
type1-3-CSS	Not checked		
pdcchMonitoringAnyOccasions	Not checked		
pdcchMonitoringAnyOccasionsWithSpanGap	Not checked		
ue-SpecificUL-DL-Assignment	Not checked		
searchSpaceSharingCA-DL	Not checked		
timeDurationForQCL SEQUENCE {			
scs-60kHz	Not checked		
sch-120kHz	Not checked		
}			
pdsch-DifferentTB-PerSlot SEQUENCE {			
scs-15kHz	Not checked		
scs-30kHz	Not checked		
scs-60kHz	Not checked		
scs-120kHz	Not checked		
}			
csi-RS-IM-ReceptionForFeedback SEQUENCE {			
maxNumberNZP-CSI-RS-PerCC	Not checked		
maxNumberPortsAcrossNZP-CSI-RS-PerCC	Not checked		
maxNumberCS-IM-PerCC	Not checked		
maxNumberSimultaneousCSI-RS-ActBWP-AllCC	Not checked		
totalNumberPortsSimultaneousCSI-RS-ActBWP-AllCC	Not checked		
}			
typeI-SinglePanelCodebookList SEQUENCE (SIZE (1.. maxNrofCodebooks)) OF SEQUENCE {			
maxNumberTxPortsPerResource[1]	Not checked		
maxNumberResources[1]	Not checked		
totalNumberTxPorts[1]	Not checked		
supportedCodebookMode[1]	Not checked		
maxNumberCSI-RS-PerResourceSet[1]	Not checked		
}			
typeI-MultiPanelCodebookList SEQUENCE (SIZE (1.. maxNrofCodebooks)) OF SEQUENCE {			
maxNumberTxPortsPerResource[1]	Not checked		
maxNumberResources[1]	Not checked		
totalNumberTxPorts[1]	Not checked		
supportedCodebookMode[1]	Not checked		
supportedNumberPanels[1]	Not checked		
maxNumberCSI-RS-PerResourceSet[1]	Not checked		
}			
typeII-CodebookList SEQUENCE (SIZE (1.. maxNrofCodebooks)) OF SEQUENCE {			
maxNumberTxPortsPerResource[1]	Not checked		
maxNumberResources[1]	Not checked		
totalNumberTxPorts[1]	Not checked		
parameterLx[1]	Not checked		
amplitudeScalingType[1]	Not checked		
amplitudeSubsetRestriction[1]	Not checked		
maxNumberCSI-RS-PerResourceSet[1]	Not checked		
}			
typeII-CodebookPortSelectionList SEQUENCE (SIZE (1.. maxNrofCodebooks)) OF SEQUENCE {			
maxNumberTxPortsPerResource[1]	Not checked		
maxNumberResources[1]	Not checked		

totalNumberTxPorts[1]	Not checked		
parameterLx[1]	Not checked		
amplitudeScalingType[1]	Not checked		
maxNumberCSI-RS-PerResourceSet[1]	Not checked		
}			
}			

– *FeatureSetDownlinkId*

Table 4.6.4-7e: FeatureSetDownlinkId

Derivation Path: TS 38.331 [6], clause 6.3.3			
Information Element	**Value/remark**	**Comment**	**Condition**
FeatureSetDownlinkId	Not checked		

Table 4.6.4-7f: Void

– *FeatureSetDownlinkPerCC*

Table 4.6.4-7g: 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 4.6.4-7h: 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 4.6.4-7hA: 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 4.6.4-7hB: FeatureSetEUTRA-UplinkId

Derivation Path: TS 38.331 [6], clause 6.3.3			
Information Element	**Value/remark**	**Comment**	**Condition**
FeatureSetEUTRA-UplinkId	Not checked		

– *FeatureSets*

Table 4.6.4-7hC: *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			
FeatureSetDownlink[1]	FeatureSetDownlink		
featureSetsDownlinkPerCC SEQUENCE (SIZE (1..maxPerCC-FeatureSets)) OF FeatureSetDownlinkPerCC			
FeatureSetDownlinkPerCC[1]	FeatureSetDownlinkPerCC		
featureSetsUplink SEQUENCE (SIZE (1..maxUplinkFeatureSets)) OF FeatureSetUplink			
FeatureSetUplink[1]	FeatureSetUplink		
featureSetsUplinkPerCC SEQUENCE (SIZE (1..maxPerCC-FeatureSets)) OF FeatureSetUplinkPerCC			
FeatureSetUplinkPerCC[1]	FeatureSetUplinkPerCC		
}			

– *FeatureSetUplink*

Table 4.6.4-7i: 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			
FeatureSetUplinkPerCC-Id[1]	Not checked		
scalingFactor	Not checked		
crossCarrierSchedulingUL-OtherSCS	Not checked		
intraBandFreqSeparationUL	FreqSeparationClass		
searchSpaceSharingCA-UL	Not checked		
srs-TxSwitch SEQUENCE {			
supportedSRS-TxPortSwitch	Not checked		
txSwitchImpactToRx	Not checked		
}			
supportedSRS-Resources SEQUENCE {			
maxNumberAperiodicSRS-PerBWP	Not Checked		
maxNumberAperiodicSRS-PerBWP-PerSlot	Not Checked		
maxNumberPeriodicSRS-PerBWP	Not Checked		
maxNumberPeriodicSRS-PerBWP-PerSlot	Not Checked		
maxNumberSemiPersitentSRS-PerBWP	Not Checked		
maxNumberSP-SRS-PerBWP-PerSlot	Not Checked		
maxNumberSRS-Ports-PerResource	Not Checked		
}			
twoPUCCH-Group	Not checked		
dynamicSwitchSUL	Not checked		
pusch-DifferentTB-PerSlot SEQUENCE {			
scs-15kHz	Not checked		
scs-30kHz	Not checked		
scs-60kHz	Not checked		
scs-120kHz	Not checked		
}			
csi-ReportFramework SEQUENCE {			
maxNumberPeriodicCSI-ReportPerBWP	Not checked		
maxNumberAperiodicCSI-ReportPerBWP	Not checked		
maxNumberSemiPersistentCSI-ReportPerBWP	Not checked		
simultaneousCSI-ReportsAllCC	Not checked		
}			
}			

– *FeatureSetUplinkId*

Table 4.6.4-7j: FeatureSetUplinkId

Derivation Path: TS 38.331 [6], clause 6.3.3			
Information Element	**Value/remark**	**Comment**	**Condition**
FeatureSetUplinkId	Not checked		

Table 4.6.4-7k: Void

– *FeatureSetUplinkPerCC*

Table 4.6.4-7l: 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 checke		
}			
maxNumberMIMO-LayersNonCB-PUSCH	MIMO-LayersUL		
supportedModulationOrderUL	ModulationOrder		
}			

– *FeatureSetUplinkPerCC-Id*

Table 4.6.4-7m: FeatureSetUplinkPerCC-Id

Derivation Path: TS 38.331 [6], clause 6.3.3			
Information Element	**Value/remark**	**Comment**	**Condition**
FeatureSetUplinkPerCC-Id	Not checked		

Table 4.6.4-7n: *Void*

– *FreqBandIndicatorEUTRA*

Table 4.6.4-8: 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 4.6.4-9: *FreqBandList*

Derivation Path: TS 38.331 [6], clause 6.3.3			
Information Element	**Value/remark**	**Comment**	**Condition**
FreqBandList::= SEQUENCE (SIZE (1..maxBandsMRDC)) OF CHOICE {			
bandInformationEUTRA SEQUENCE {			
bandEUTRA	FreqBandIndicatorEUTRA		
ca-BandwidthClassDL-EUTRA	CA-BandwidthClassEUTRA		
ca-BandwidthClassUL-EUTRA	CA-BandwidthClassEUTRA		
}			
bandInformationNR SEQUENCE {			
bandNR	FreqBandIndicatorNR		
maxBandwidthRequestedDL	Not checked		
maxBandwidthRequestedUL	Not checked		
maxCarriersRequestedDL	Not checked		
maxCarriersRequestedUL	Not checked		
}			
}			

– *FreqSeparationClass*

Table 4.6.4-10: *FreqSeparationClass*

Derivation Path: TS 38.331 [6], clause 6.3.3			
Information Element	**Value/remark**	**Comment**	**Condition**
FreqSeparationClass	Not checked		

– *InterRAT-Parameters*

Table 4.6.4-10A: *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	FreqBandIndicatorEUTRA		
eutra-ParametersCommon SEQUENCE {			
mfbi-EUTRA	Not Checked		
modifiedMRP-BehaviorEUTRA	Not Checked		
multiNS-Pmax-EUTRA	Not Checked		
rs-SINR-MeasEUTRA	Not Checked		
}			
eutra-ParametersXDD-Diff SEQUENCE {			
rsrqMeasWidebandEUTRA	Not Checked		
}			
}			
}			

– *MAC-Parameters*

Table 4.6.4-10B: *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		
pucch-SpatialRelInfoMAC-CE	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 4.6.4-10C: *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		
}			
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 4.6.4-10D: *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 4.6.4-11: *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 4.6.4-11A: *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		
beamCorrespondence	Not checked		
periodicBeamReport	Not checked		
aperiodicBeamReport	Not checked		
sp-BeamReportPUCCH	Not checked		
sp-BeamReportPUSCH	Not checked		
beamManagementSSB-CSI-RS SEQUENCE {			
maxNumberSSB-CSI-RS-ResourceOneTx	Not checked		
maxNumberSSB-CSI-RS-ResourceTwoTx	Not checked		
supportedCSI-RS-Density	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-BFR	Not checked		
maxNumberSSB-BFR	Not checked		
maxNumberCSI-RS-SSB-BFR	Not checked		
twoPortsPTRS-DL	Not checked		
twoPortsPTRS-UL	Not checked		
supportedSRS-Resources SEQUENCE {			
maxNumberAperiodicSRS-PerBWP	Not checked		
maxNumberAperiodicSRS-PerBWP-PerSlot	Not checked		
maxNumberPeriodicSRS-PerBWP	Not checked		
maxNumberPeriodicSRS-PerBWP-PerSlot	Not checked		
maxNumberSemiPersitentSRS-PerBWP	Not checked		
maxNumberSP-SRS-PerBWP-PerSlot	Not checked		
maxNumberSRS-Ports-PerResource	Not checked		
}			
maxNumberSimultaneousSRS-PerCC	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		

}			
csi-RS-ForTracking SEQUENCE {			
burstLength	Not checked		
maxSimultaneousResourceSetsPerCC	Not checked		
maxConfiguredResourceSetsPerCC	Not checked		
maxConfiguredResourceSetsAllCC	Not checked		
}			
aperiodicTRS	Not checked		
}			

– *ModulationOrder*

Table 4.6.4-12: *ModulationOrder*

Derivation Path: TS 38.331 [6], clause 6.3.3			
Information Element	**Value/remark**	**Comment**	**Condition**
ModulationOrder	Not checked		

– *MRDC-Parameters*

Table 4.6.4-12a: *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		
dynamicPowerSharing	Not checked		
tdm-Pattern	Not checke		
ul-SharingEUTRA-NR	Not checked		
ul-SwitchingTimeEUTRA-NR	Not checked		
simultaneousRxTxInterBandENDC	Not checked		
asyncIntraBandENDC	Not checked		
}			

– *PDCP-Parameters*

Table 4.6.4-12B: *PDCP-Parameters*

Derivation Path: TS 38.331 [6], clause 6.3.3			
Information Element	**Value/remark**	**Comment**	**Condition**
PDCP-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-DuplicationSRB3	Not checked		
pdcp-DuplicationMCG-OrSCG	Not checked		
}			

– *PDCP-ParametersMRDC*

Table 4.6.4-12C: *PDCP-ParametersMRDC*

Derivation Path: TS 38.331 [6], clause 6.3.3			
Information Element	**Value/remark**	**Comment**	**Condition**
PDCP-ParametersMRDC ::= SEQUENCE {			
pdcp-DuplicationSplitSRB	Not checked		
pdcp-DuplicationSplitDRB	Not checked		
}			

– *Phy-Parameters*

Table 4.6.4-12D: *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		
oneFL-DMRS-TwoAdditionalDMRS	Not checked		
twoFL-DMRS	Not checked		
twoFL-DMRS-TwoAdditionalDMRS	Not checked		
oneFL-DMRS-ThreeAdditionalDMRS	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	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 {			
pdcchMonitoringSingleOccasion	Not checked		
scs-60kHz	Not checked		
pdsch-256QAM-FR1	Not checked		
pdsch-RE-MappingFR1	Not checked		
}			
phy-ParametersFR2 SEQUENCE {			
calibrationGapPA	Not checked		
pdsch-RE-MappingFR2	Not checked		
}			
}			

– *Phy-ParametersMRDC*

Table 4.6.4-12E: *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 SEQUENCE {			
numberOfNAICS-CapableCC[1]	Not checked		
numberOfAggregatedPRB[1]	Not checked		
}			

– *RAT-Type*

Table 4.6.4-13: *RAT-Type*

Derivation Path: TS 38.331 [6], clause 6.3.3			
Information Element	**Value/remark**	**Comment**	**Condition**
RAT-Type	eutra-nr		EN-DC
	nr		
	nr		

Condition	Explanation
EN-DC	E-UTRA-NR Dual Connectivity

Table 4.6.4-14: Void

– *RF-Parameters*

Table 4.6.4-14A: *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 SEQUENCE {	1 Entry		
F bandNR[1]	FreqBandIndicatorNR		
modifiedMPR-Behaviour[1]	Not checked		
mimo-ParametersPerBand[1]	MIMO-ParametersPerBand		
extendedCP[1]	Not checked		
multipleTCI[1]	Not checked		
bwp-WithoutRestriction [1]	Not checked		
bwp-SameNumerology[1]	Not checked		
bwp-DiffNumerology[1]	Not checked		
crossCarrierScheduling-SameSCS [1]	Not checked		
pdsch-256QAM-FR2[1]	Not checked		
pusch-256QAM[1]	Not checked		
ue-PowerClass[1]	Not checked		
rateMatchingLTE-CRS[1]	Not checked		
channelBWs-DL-v1530[1] 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-v1530[1] 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		
}			
}			
}			
supportedBandCombinationList	BandCombinationList		
appliedFreqBandListFilter	FreqBandList		
}			

– *RF-ParametersMRDC*

Table 4.6.4-14B: 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		
}			

– *RLC-Parameters*

Table 4.6.4-14C: *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		
}			

– *SupportedBandwidth*

Table 4.6.4-13a: SupportedBandwidth

Derivation Path: TS 38.331 [6], clause 6.3.3			
Information Element	**Value/remark**	**Comment**	**Condition**
SupportedBandwidth ::= CHOICE {			
fr1	Not checked		
fr2	Not checked		
}			

– *UE-CapabilityRAT-ContainerList*

Table 4.6.4-15: 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 SEQUENCE {	1 entry		
rat-Type[1]	RAT-Type		
ue-CapabilityRAT-Container[1]	UE-MRDC-Capability		EN-DC
}			
}			

– *UE-CapabilityRAT-RequestList*

Table 4.6.4-15A: *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 SEQUENCE {	1 entry		
rat-Type[1]	RAT-Type		
capabilityRequestFilter	Not Present		
}			
}			

– *UE-CapabilityRequestFilterNR*

Table 4.6.4-15B: *UE-CapabilityRequestFilterNR*

Derivation Path: TS 38.331 [6], clause 6.3.3			
Information Element	**Value/remark**	**Comment**	**Condition**
UE-CapabilityRequestFilterNR::= SEQUENCE {			
frequencyBandList	Not Present		
nonCriticalExtension	Not Present		
}			
}			

– *UE-MRDC-Capability*

Table 4.6.4-16: UE-MRDC-Capability

Derivation Path: TS 38.331 [6], clause 6.3.3			
Information Element	**Value/remark**	**Comment**	**Condition**
UE-MRDC-Capability::= SEQUENCE {			
measAndMobParametersMRDC	MeasAndMobParametersMRDC		
phy-ParametersMRDC-v1530	PHY-ParametersMRDC		
rf-ParametersMRDC	RF-ParametersMRDC		
generalParametersMRDC SEQUENCE {			
splitSRB-WithOneUL-Path	Not checked		
splitDRB-withUL-Both-MCG-SCG	Not checked		
srb3	Not checked		
v2x-EUTRA-v1530	Not checked		
}			
fdd-Add-UE-MRDC-Capabilities SEQUENCE {			
measAndMobParametersMRDC-XDD-Diff SEQUENCE {			
sftd-MeasPSCell	Not checked		
sftd-MeasNR-Cell	Not checked		
}			
generalParametersMRDC SEQUENCE {			
splitSRB-WithOneUL-Path	Not checked		
splitDRB-withUL-Both-MCG-SCG	Not checked		
srb3	Not checked		
v2x-EUTRA-v1530	Not checked		
}			
}			
tdd-Add-UE-MRDC-Capabilities SEQUENCE {			
measAndMobParametersMRDC-XDD-Diff SEQUENCE {			
sftd-MeasPSCell	Not checked		
sftd-MeasNR-Cell	Not checked		
}			
generalParametersMRDC SEQUENCE {			
splitSRB-WithOneUL-Path	Not checked		
splitDRB-withUL-Both-MCG-SCG	Not checked		
srb3	Not checked		
v2x-EUTRA-v1530	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 SEQUENCE (SIZE (1..maxFeatureSetCombinations)) OF FeatureSetCombination	FeatureSetCombination		
pdcp-ParametersMRDC-v1530	PDCP-ParametersMRDC		
lateNonCriticalExtension	Not checked		
nonCriticalExtension SEQUENCE {	Not checked		
}			
}			

Table 4.6.4-16a: *Void*

Table 4.6.4-16b: Void

– *UE-NR-Capability*

Table 4.6.4-17: 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	PDCP-Parameters		
rlc-Parameters	RLC-Parameters		
mac-Parameters	MAC-Parameters		
phy-Parameters	Phy-Parameters		
rf-Parameters	RF-Parameters		
measAndMobParameters	MeasAndMobParameters		
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		
oneFL-DMRS-TwoAdditionalDMRS	Not checked		
twoFL-DMRS	Not checked		
twoFL-DMRS-TwoAdditionalDMRS	Not checked		
oneFL-DMRS-ThreeAdditionalDMRS	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	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		
oneFL-DMRS-TwoAdditionalDMRS	Not checked		
twoFL-DMRS	Not checked		
twoFL-DMRS-TwoAdditionalDMRS	Not checked		
oneFL-DMRS-ThreeAdditionalDMRS	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	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	FeatureSets		
featureSetCombinations SEQUENCE (SIZE (1..maxFeatureSetCombinations)) OF FeatureSetCombination	FeatureSetCombination		
lateNonCriticalExtension	Not checked		
nonCriticalExtension SEQUENCE {			
fdd-Add-UE-NR-Capabilities-1530 SEQUENCE {			
eutra-ParametersXDD-Diff SEQUENCE {			
rsrqMeasWidebandEUTRA	Not Checked		
}			
}			
tdd-Add-UE-NR-Capabilities-1530 SEQUENCE {			
eutra-ParametersXDD-Diff SEQUENCE {			
rsrqMeasWidebandEUTRA Not Checked			
}			
}			
voiceOverMCG-Bearer	Not Checked		
interRAT-Parameters	InterRAT-Parameters		
inactiveState	Not Checked		
delayBudgetReporting	Not Checked		
nonCriticalExtension	Not Checked		
}			
}			

Table 4.6.4-18: ***Void***

Table 4.6.4-19: ***Void***

Table 4.6.4-20: ***Void***

Table 4.6.4-22: ***Void***

Table 4.6.4-23: ***Void***

Table 4.6.4-24: ***Void***

4.6.5 Other information elements

– *EUTRA-AllowedMeasBandwidth*

Table 4.6.5-0A: *EUTRA-AllowedMeasBandwidth*

Derivation Path: TS 38.331 [6], clause 6.3.4			
Information Element	**Value/remark**	**Comment**	**Condition**
EUTRA-AllowedMeasBandwidth	FFS		

– *EUTRA-MBSFN-SubframeConfigList*

Table 4.6.5-0AA: *EUTRA-MBSFN-SubframeConfigList*

Derivation Path: TS 38.331 [6], clause 6.3.4			
Information Element	**Value/remark**	**Comment**	**Condition**
EUTRA-MBSFN-SubframeConfigList ::=			
radioframeAllocationPeriod[1]	FFS		
radioframeAllocationOffset[1]	FFS		
subframeAllocation1[1] CHOICE {			
oneFrame	FFS		
fourFrames	FFS		
}			
subframeAllocation2[1] CHOICE {			
oneFrame	FFS		
fourFrames	FFS		
}			
}			

– *EUTRA-MultiBandInfoList*

Table 4.6.5-0B: *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 SEQUENCE {			
eutra-FreqBandIndicator[1]	FreqBandIndicatorEUTRA		
eutra-NS-PmaxList[1]	EUTRA-NS-PmaxList		
}			

– *EUTRA-NS-PmaxList*

Table 4.6.5-0C: *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 SEQUENCE {			
additionalPmax[1]	FFS		
additionalSpectrumEmission[1]	FFS		
}			

– *EUTRA-PhysCellId*

Table 4.6.5-0D: *EUTRA-PhysCellId*

Derivation Path: TS 38.331 [6], clause 6.3.4			
Information Element	**Value/remark**	**Comment**	**Condition**
EUTRA-PhysCellId	FFS		

– *EUTRA-PhysCellIdRange*

Table 4.6.5-0E: *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	FFS		
}			

– *EUTRA-PresenceAntennaPort1*

Table 4.6.5-0F: *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 4.6.5-0G: *EUTRA-Q-OffsetRange*

Derivation Path: TS 38.331 [6], clause 6.3.4			
Information Element	**Value/remark**	**Comment**	**Condition**
EUTRA-Q-OffsetRange	FFS		

– *MultiFrequencyBandListNR-SIB*

Table 4.6.5-0H: *MultiFrequencyBandListNR-SIB*

Derivation Path: TS 38.331 [6], clause 6.3.4			
Information Element	**Value/remark**	**Comment**	**Condition**
MultiFrequencyBandListNR-SIB ::= SEQUENCE (SIZE (1.. maxNrofMultiBands)) OF SEQUENCE {			
freqBandIndicatorNR[1]	FreqBandIndicatorNR		
nr-NS-PmaxList[1]	NR-NS-PmaxList		
}			

– *NR-NS-PmaxList*

Table 4.6.5-0I: *NR-NS-PmaxList*

Derivation Path: TS 38.331 [6], clause 6.3.4			
Information Element	**Value/remark**	**Comment**	**Condition**
NR-NS-PmaxList ::= SEQUENCE (SIZE (1.. maxNrofMultiBands)) OF SEQUENCE {			
additionalPmax [1]	P-Max		
additionalSpectrumEmission[1]	AdditionalSpectrumEmission		
}			

– *OtherConfig*

Table 4.6.5-0J: *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		
}			
}			
}			

– *RRC-TransactionIdentifier*

Table 4.6.5-1: *RRC-TransactionIdentifier*

Derivation Path: TS 38.331 [6], clause 6.3.4			
Information Element	**Value/remark**	**Comment**	**Condition**
RRC-TransactionIdentifier	0		

4.7 Default 5GC NAS message and information elements contents

4.7.0 General

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.

4.7.0.1 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.
- "If present: contents not checked": IE may or may not 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.
- "Present if <condition>: contents not checked: test cases fail if condition is fulfilled and IE is not present. Contents of IE are not checked, even if present.
- "Present if <condition>: <specific values>": test cases fail if condition is fulfilled and IE is not present. When IE shall be present, its contents shall be as specified.

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		
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
ABBA	‘0000 0000 0000 0000’B		5G-AKA
	Not Present		EAP-AKA
EAP message	Not Present		5G-AKA
	FFS	See TS 24.501 [28] subclause 9.11.2.2	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	FFS	See TS 24.501 [28] subclause 9.11.2.2	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 may be sent integrity protected when a valid security context exists and without integrity protection 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	FFS		
Spare half octet	'0000'B		
EAP message	FFS	See TS 24.501 [28] subclause 9.11.2.2	

Condition	Explanation

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	If present: contents not checked		

Condition	Explanation

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		

Condition	Explanation

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
SMS requested	Present but contents not checked		
FOR	Present but contents not checked		
NG-RAN-RCU	‘0’B	NG-RAN radio capability update not needed	
ngKSI	Present but contents not checked		
Spare half octet	'0000'B		
5GS mobile identity	Present but contents not checked		
Non-current native NAS key set identifier	If present: contents not checked		
5GMM capability	If present: contents not checked		
UE security capability	If present: contents not checked		
Requested NSSAI	If present: contents not checked		
Last visited registered TAI	If present: contents not checked		
S1 UE network capability	If present: contents not checked		
Uplink data status	If present: contents not checked		
PDU session status	If present: contents not checked		
MICO indication	If present: contents not checked		
UE status	If present: contents not checked		
Additional GUTI	If present: contents not checked		
Allowed PDU session status	If present: contents not checked		
UE's usage setting	If present: contents not checked		
Requested DRX parameters	If present: contents not checked		
EPS NAS message container	If present: contents not checked		
LADN indication	If present: contents not checked		
Payload container	If present: contents not checked		

Condition	Explanation
INITIAL	Initial registration
MOBILITY	Mobility registration updating
PERIODIC	Periodic registration updating
EMERGENCY	Emergency registration

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.

Editor's Note: The value of FOR is FFS.

– *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			
S-NSSAI			
Length of S-NSSAI contents	‘0000 0001’B	SST	
SST	‘0000 0001’B	SST value 1 (eMBB)	
Rejected NSSAI	Not Present		
Configured NSSAI	Not Present		
5GS network feature support	‘0000 0000 0000 0000’B		
PDU session status	Not Present		INITIAL
	FFS		FFS
PDU session reactivation result	Not Present		
PDU session reactivation result error cause	Not Present		
LADN information	Not Present		
MICO 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		

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	If present: contents not checked		

Condition	Explanation

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		

Condition	Explanation

NOTE: The security protection of this message is the same as the previous REGISTRATION REQUEST message.

– *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		
Spare half octet	'0000'B		
Payload container	Set according to specific message content		
PDU session ID	If present: contents not checked		
Old PDU session ID	If present: contents not checked		
Request type	If present: contents not checked		
S-NSSAI	If present: contents not checked		
DNN	If present: contents not checked		
Additional information	If present: contents not checked		

Condition	Explanation

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		
Spare half octet	'0000'B		
Payload container	Set according to specific message content		
PDU session ID	Not Present		
Additional information	Not Present		
5GMM cause	Not Present		
Back-off timer value	Not Present		

Condition	Explanation

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	FFS		
5GS mobile identity	FFS		

Condition	Explanation
NORMAL	Normal de-registration
SWITCH_OFF	Switch off

NOTE: This message is sent with integrity protection 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		

Condition	Explanation

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		

Condition	Explanation

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		

Condition	Explanation

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	‘0000’B	signalling	
5G-S-TMSI	The valid 5G-S-TMSI of the UE		
Uplink data status	If present: contents not checked		
PDU session status	If present: contents not checked		
Allowed PDU session status	If present: contents not checked		

Condition	Explanation

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

– *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	Not Present		
PDU session reactivation result	Not Present		
PDU session reactivation result error cause	Not Present		
EAP message	Not Present		

Condition	Explanation

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		

Condition	Explanation

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		
Configured NSSAI	Not Present		
Rejected NSSAI	Not Present		

Condition	Explanation

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		

Condition	Explanation
FFS	

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		

Condition	Explanation

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		

Condition	Explanation

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		

Condition	Explanation

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	If present: contents not checked		

Condition	Explanation

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	‘0000’B	5G integrity algorithm 5G-IA0 (null integrity protection algorithm)	
Type of integrity protection algorithm	‘0000’B	5G encryption algorithm 5G-EA0 (null ciphering 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		
$Hash_{AMF}$	Not Present		
	Value calculated according to TS 33.501 Annex H.2		INITIAL_NOT_PROTECTED
Selected EPS NAS security algorithms	Not Present		
Additional 5G security information	Not Present		
EAP message	Not Present		

Condition	Explanation
INITIAL_NOT_PROTECTED	Initial NAS message was sent without integrity protection

NOTE: This message is always sent integrity protected with new 5GS NAS security context.

Editor’s Note: It is FFS how to select specific ciphering and integrity protection algorithms.

– *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		INITIAL_NOT_PROTECTED

Condition	Explanation
INITIAL_NOT_PROTECTED	Initial NAS message was sent without integrity protection

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		

Condition	Explanation

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
	Any allowed value		SENT-BY-UE
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.

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		
PDU session type	Any value between '001'B, '010'B and '011'B	The allowed values are respectively IPv4, IPv6 and IPv4v6	
SSC mode	If present: contents not checked		
5GSM capability	If present: contents not checked		
Maximum number of supported packet filters	If present: contents not checked		
Integrity protection maximum data rate	If present: contents not checked		
Always-on PDU session requested	If present: contents not checked		
SM PDU DN request container	If present: contents not checked		
Extended protocol configuration options	If present: contents 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.	

Condition	Explanation

– *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
Selected SSC mode	'001'B	SSC mode 1	
DNN	The SS defines a Default DNN		
Authorized QoS rules	Reference QoS rule #1 as defined in Table 4.8.2.1-1.		
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)	
Always-on PDU session indication	Not Present		
Mapped EPS bearer contexts	Not Present		
EAP message	Not Present		
Authorized QoS flow descriptions	Reference QoS flow #1 as defined in Table 4.8.2.3-1.		
Extended protocol configuration options	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 = '000B00H' ("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.

– *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		
Extended protocol configuration options	Not Present		

Condition	Explanation

– *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	FFS	See TS 24.501 [25] subclause 9.11.2.2	
Extended protocol configuration options	Not Present		

Condition	Explanation

– *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	FFS	See TS 24.501 [25] subclause 9.11.2.2	
Extended protocol configuration options	If present: contents not checked		

Condition	Explanation

– *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	FFS	See TS 24.501 [25] subclause 9.11.2.2	
Extended protocol configuration options	Not Present		

Condition	Explanation

– *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	If present: contents not checked		
5GSM cause	If present: contents not checked		
Maximum number of supported packet filters	If present: contents not checked		
Always-on PDU session requested	If present: contents not checked		
Integrity protection maximum data rate	If present: contents not checked		
Requested QoS rules	If present: contents not checked		
Requested QoS flow descriptions	If present: contents not checked		
Extended protocol configuration options	If present: contents not checked		

Condition	Explanation

– *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		
Extended protocol configuration options	Not Present		

Condition	Explanation

– *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.		
PTI	'0000 0000'B	No procedure transaction identity assigned	
PDU SESSION MODIFICATION COMMAND message identity	‘1100 1011’B		
5GSM cause	Not Present		
Session AMBR	Not Present		
RQ timer value	Not Present		
Not Present	Not Present		
Authorized QoS rules	Not Present		
Mapped EPS bearer contexts	Not Present		
Authorized QoS flow descriptions	Not Present		
Extended protocol configuration options	Not Present		

Condition	Explanation

– *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	
PDU SESSION MODIFICATION COMPLETE message identity	‘1100 1100’B		
Extended protocol configuration options	If present: contents not checked		

Condition	Explanation

– *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	If present: contents not checked		
Extended protocol configuration options	If present: contents not checked		

Condition	Explanation

– *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		
Extended protocol configuration options	If present: contents not checked		

Condition	Explanation

– *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 RELEASE REJECT message identity	‘1101 0010’B		
5GSM cause	Set according to specific message content.		
Extended protocol configuration options	Not Present		

Condition	Explanation

– *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		
Extended protocol configuration options	Not Present		

Condition	Explanation

– *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		
Extended protocol configuration options	If present: contents not checked		

Condition	Explanation

– *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	FFS		
PTI	FFS		
5GSM STATUS message identity	‘1101 0110’B		
5GSM cause	FFS		

Condition	Explanation

4.8 Reference configurations

4.8.1 Radio configurations

– *RRCReconfiguration-DRB(n, m)*

Table 4.8.1-1: RRCReconfiguration-DRB (n, m)

Derivation Path: TS 38.508-1, table 4.6.1-3			
Information Element	**Value/remark**	**Comment**	**Condition**
RRCReconfiguration::= SEQUENCE {			
criticalExtensions CHOICE {			
c1 CHOICE {			
rrcReconfiguration ::= SEQUENCE {			
radioBearerConfig	RadioBearerConfig-DRB(n,m)		
secondaryCellGroup	CellGroupConfig-DRB(n.m)		
}			
}			
}			

– *CellGroupConfig-DRB(n, m)*

Table 4.8.1-2: CellGroupConfig-DRB(n, m)

Derivation Path: TS 38.508-1, table 4.6.3-13: CellGroupConfig			
Information Element	**Value/remark**	**Comment**	**Condition**
CellGroupConfig::= SEQUENCE {			
cellGroupId	1		
rlc-BearerToAddModList SEQUENCE (SIZE(1..maxLCH)) OF SEQUENCE {	n+m entries	BID is the total number of established DRBs in the UE, before applying the contents of this IE	
logicalChannelIdentity[k, k=1..n+m]	k, k=1..n+m		
servedRadioBearer[k, k=BID+n..BID+n+m] CHOICE {			
drb-Identity	k, k=BID+n..BID+n+m		
}			
reestablishRLC[k, k=1..n+m]	[Not present]		
RLC-Config[k, k=BID+1..BID+n]	RLC-Config using condition AM.	n AM RLC DRBs	n>0
RLC-Config[k, k=BID+n..BID+n+m]	RLC-Config using condition UM.	m UM RLC DRBs	m>0
mac-LogicalChannelConfig[k, k=1..n+m]	k, k=1..n+m		
}			
}			

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: TS 38.331 [6], clause 6.3.2			
Information Element	**Value/remark**	**Comment**	**Condition**
CellGroupConfig ::= SEQUENCE {			
cellGroupId	CellGroupId		
rlc-BearerToAddModList SEQUENCE (SIZE(1..maxLCH)) OF SEQUENCE {	2 entry		
RLC-BearerConfig[1]	RLC-BearerConfig		
RLC-BearerConfig[2]	RLC-BearerConfig with condition SRB3		
}			
rlc-BearerToReleaseList	Not present		
mac-CellGroupConfig	MAC-CellGroupConfig		
physicalCellGroupConfig	PhysicalCellGroupConfig		
spCellConfig SEQUENCE {			
servCellIndex	ServCellIndex		
reconfigurationWithSync	Not present		
reconfigurationWithSync SEQUENCE {			
spCellConfigCommon	ServingCellConfigCommon		
newUE-Identity	RNTI-Value		
t304	ms1000		
rach-ConfigDedicated CHOICE {			
uplink	RACH-ConfigDedicated		
}			
smtc	Not present		
}			
rlf-TimersAndConstants CHOICE {			
setup	RLF-TimersAndConstants		
}			
rlmInSyncOutOfSyncThreshold	Not present		
spCellConfigDedicated	ServingCellConfig		
}			
sCellToAddModList	Not present		
sCellToReleaseList	Not present		
reportUplinkTxDirectCurrent-v1530	Not present		
}			

– *RadioBearerConfig-DRB (n, m)*

Table 4.8.1-3: RadioBearerConfig-DRB (n, m)

Derivation Path: TS 38.508-1, table 4.6.3-100 and condition EN-DC			
Information Element	**Value/remark**	**Comment**	**Condition**
RadioBearerConfig ::= SEQUENCE {			
drb-ToAddModList SEQUENCE (SIZE (1..maxDRB)) OF SEQUENCE {	n+m entries	BID is the total number of established DRBs in the UE, before applying the contents of this IE	
cnAssociation[k] CHOICE {			
eps-BearerIdentity	k, k=BID+5..BID+4+n+m		
sdap-Config	Not present		
}			
drb-Identity[k]	k, k=BID+1..BID+n+m		
reestablishPDCP[k]	Not present		
recoverPDCP[k]	Not present		
pdcp-Config[k]	PDCP-Config		
}			
}			
}			

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		
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	‘0000’B	0 packet filters	
Packet filter list	Not present		
QoS rule precedence	‘0000 0001’B	1	
QoS flow identifier (QFI)	’00 0001’B	QFI 1 (Table 4.8.2.3-1)	

4.8.2.2 Reference packet filters

FFS

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 0011’B	3 parameters	
5QI	‘0000 1001’B	5QI 9	
MFBR uplink			
Unit for maximum flow bit rate	‘0000 0101’	Value is incremented in multiples of 256 Kbps	
Maximum flow bit rate for uplink	‘0000 0000 0000 0100’B	1024 Kbps	
MFBR downlink			
Unit for maximum flow bit rate	‘0000 0101’	Value is incremented in multiples of 256 Kbps	
Maximum flow bit rate for downlink	‘0000 0000 0000 0100’B	1024 Kbps	

4.8.3 Common test 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].

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.

Editor's Note: Authentication via 5GC using EAP based primary authentication and key agreement (EAP-AKA, EAP-AKA' or EAP-TLS) is FFS.

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.

Editor's Note: Review of default parameters for authentication via 5GC using EAP based primary authentication and key agreement (EAP-AKA, EAP-AKA' or EAP-TLS) is FFS.

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.

Editor's Note: Review of default parameters for authentication via 5GC using EAP based primary authentication and key agreement (EAP-AKA, EAP-AKA' or EAP-TLS) is FFS.

4.8.3.3.1 Modified contents of the USIM Elementary Files

$EF_{PLMNwAcT}$ (Administrative Data)

Editor's Note: Definition of contents is FFS

Note: NG-RAN refers to E-UTRA or NR connected to 5GC.

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
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: 18 Bytes

Default values: Bytes 1 to 12 (HEX): FF FF FF FF FF FF FF FF FF FF FF FF (5G-GUTI)

Bytes 13 to 17 (HEX): 42 F6 18 FF FE (Last visited registered TAI in 5GS for 3GPP access)

Byte 18 (BIN): 00000001 (5GS update status for 3GPP access = "5U2 not updated")

Bytes 13 to 17: TAI-MCC = 246 (bytes 13 to 14) and TAI-MNC = 81 (byte 15) are frequently used. The TAC (bytes 16 to 17) is set to "FF FE" since this, in conjunction with byte 18 setting of "01", is used to ensure that the UE performs Attach at the beginning of a test.

Bytes in this file (e.g. GUTI in bytes 1 to 12) may be updated as a result of a tracking area update attempt by the UE.

$EF_{5GSN3GPPLOCI}$ (5GS non-3GPP location information)

Editor's Note: FFS

$EF_{5GS3GPPNSC}$ (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.

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.	<--	*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.	<--	*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.	-	-	-	-
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					

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

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 0 1		Tx Only
UE Beamlock test Function	0 0 0 0 0 0 1 0		Rx Only
UE Beamlock test Function	0 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 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

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		

4.9.3 [duplication] Test procedure to check that UE is camped on a new cell belonging to a new TA

This procedure aims at checking whether the UE performs a mobility registration updating (Tracking Area (TA) update) proceudre when it camps on a new cell (as specified in the test case) belonging to a new TA.

Editor's notes: The procedure specified in Table 4.9.3-1 at the moment covers UE camping on a NR/NGC cell; the case of UE camping on an E-UTRA cell is FFS.

Table 4.9.3-1: 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 *RRCConnectionRequest* message.	-->	NR RRC: *RRCSetupRequest*	-	-
2	SS transmit an *RRCConnectionSetup* message.	<--	NR RRC: *RRCSetup*	-	-
3	The UE transmits an *RRCConnectionSetupComplete* 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: *RRCSetupComplete* 5GMM: REGISTRATION REQUEST	-	-
4	SS sends a REGISTRATION ACCEPT message containing a 5G-GUTI. (NOTE 1, NOTE 2)	<--	NR RRC: *DLInformationTransfer* 5GMM: REGISTRATION ACCEPT	-	-
5	Check: Does the UE send a REGISTRATION COMPLETE?	-->	NR RRC: *ULInformationTransfer* 5GMM: REGISTRATION COMPLETE	-	P
6	The SS transmits an *RRCConnectionRelease* message to release RRC connection and move to RRC_IDLE.	<--	NR RRC: *RRCRelease*	-	-
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.					

4.9.4 Test procedure to check that UE is in state 5GC RRC_IDLE on a certain cell

This procedure aims at checking whether the UE is in state 5GC RRC_IDLE on a certain cell (as specified in the test case).

Editor's notes: The procedure specified in Table 4.9.4-1 at the moment covers 5GC RRC_IDLE on a NR/NGC cell; the case of UE being in 5GC RRC_IDLE on an E-UTRA cell is FFS.

Table 4.9.4-1: 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 *RRCSetupRequest* message on the cell specified in the test case?	-->	NR RRC: *RRCSetupRequest*	-	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.	-	-	-	-
9	The SS transmits an *RRCRelease* message.	<--	NR RRC: *RRCRelease*	-	-

5 Test environments for RF test

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

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.

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 Requirements common for conducted and OTA tests

Editor's Note: This subclause is intended to describe the test equipment requirements which are specific to performance tests and common for conducted and OTA tests.

5.1.2.2 Requirements for conducted test method

Editor's Note: This subclause is intended to describe the test equipment requirements which are specific to conducted test environment for performance tests.

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.

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 38.521-2 [15] 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].

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 test cases in which Power Class 3 requirements applies, refer to Table 5.4.1-1; For Tx test cases in which Power Class 2 requirements applies, refer to Table 5.4.1-2.

Table 5.4.1-1: *P-Max-PC3*

Derivation Path: Table 4.6.3-66 with condition FR1_RF_PC3

Table 5.4.1-2: *P-Max-PC2*

Derivation Path: Table 4.6.3-66 with condition FR1_RF_PC2

6 Test environments for Signalling test

6.1 Requirements of test equipment

6.1.1 Requirements common for conducted and OTA tests

Editor's Note: This subclause is intended to describe the test equipment requirements which are specific to signalling tests and common for conducted and OTA tests.

6.1.2 Requirements for conducted test method

Editor's Note: This subclause is intended to describe the test equipment requirements which are specific to conducted test environment for signalling tests.

6.1.3 Requirements for OTA test method

6.1.3.1 General

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, which is the current scope for FR2 testing, usage of NF test methodology is not precluded

The section 6.1.3.2 describes a sample OTA measurement test setup and section 6.1.3.3 describes an optional procedure to find the optimum UE orientation.

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.

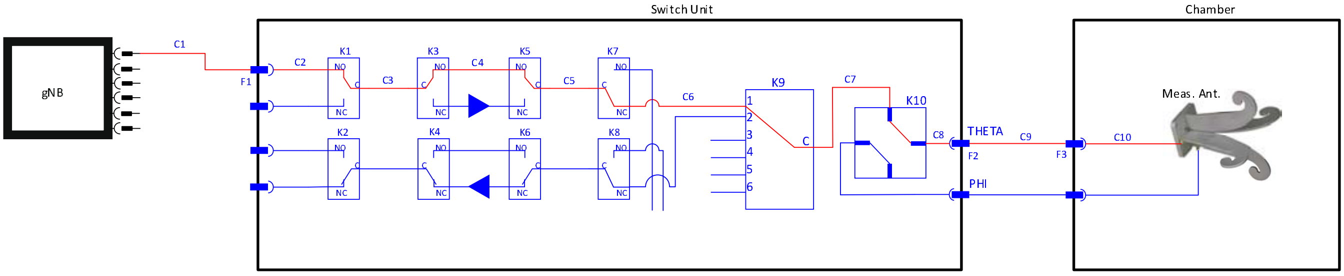

Figure 6.1.3.2-1: Sample OTA measurement setup

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" test cases, the gNB emulator can be directly connected to the feed horn.

6.1.3.3 RSRP Based Procedure for finding the optimum UE Orientation

Editors Note: A RSRP based power beam-search can be performed after the procedure mentioned in 6.1.3.3, RAN4 dependencies to provide for Antenna gain and Beamforming uncertainty along with linearity uncertainty, which are currently FFS.

Set calibrated power level at the centre of the QZ for each polarization individually [FFS].

Before starting the test, optimum UE orientation needs to be identified in order to obtain reasonable link budget.

Hence a beam-search routine needs to be performed. The beam-search steps are mentioned below for both NSA as well as SA mode of operation. The beam-search procedure would be fundamentally based on finding Rx Beam Peak where the DUT reports best RSRP.

The beam-search steps are divided into 3 stages, from "single point" to "fine". The DUT may or may not go through all stages of beam-search depending on outcome of current stage.

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.

Level 1 Beam-search-Single point:

1. Set the UE in test fixture in the chamber forming a [boresight] or [Antenna panel side aligning] with TRxP (wireless cable model). This is default position and can be denoted as ($\theta_{default}$, $\varphi_{default}$). Two main approaches can be used in Level 1 Beam-search:

   Approach 1

      UE vendor declares the direction in which the measurement has to be made

a. This may be the boresight direction of any of the antenna panels on the DUT which has the best antenna gain, hence giving best dynamic range.

Approach 2

In case UE vendor gives no declaration

- the DUT is positioned such that the 2 faces (front/back) and 4 edges (top/bottom, left/right) towards the measurement antenna one by one
- follow the procedure given below (2 to 3) to identify the direction which gives the best RSRP reported value

2. Wait for the beam to be formed (dwell time = [30sec]).
3. If the DUT reported RSRP is within [±10dB] of expected RSRP mentioned in Table 6.2.2.2-1, Level 1 Beam-search passes and DUT exits this stage of beam-search moving on to the actual test. The actual test is performed at position ($\theta_{default}$, $\varphi_{default}$).
4. If the DUT doesn't report RSRP within [±10dB] of expected RSRP mentioned in Table 6.2.2.2-1, ,then DUT exits first stage of beam-search moving on to the Level 2 Beam-search.

Level 2 Beam-search-Coarse:

1. Start rotating the DUT with step size of 5 degrees in θ-plane, keeping the φ constant.
2. Wait for the beam to be formed (dwell time= [30sec]).
3. Check for reported RSRP is within [±10dB] of expected RSRP mentioned in Table 6.2.2.2-1, Level 2 Beam-search passes and DUT exits this stage of beam-search moving on to the actual test.
4. If the RSRP is not as expected, proceed with rotating the DUT with Step size of 5 degrees to cover ±45 degrees around the[boresight] or [Antenna panel side aligned with TxRxP], with a total coverage of 90 degrees in θ-plane, recording the RSRP at each step.
5. If after completing the 90 degrees in θ-plane, DUT's reported RSRP is still not as desired, repeat the Level 2 Beam-search for φ-plane again covering ±45 degrees around the [boresight] or [Antenna panel side aligned with TxRxP], keeping the θ constant, with a total coverage of 90 degrees in φ-plane, recording the RSRP at each step.
6. Exit condition at any of the above step during θ-plane & φ-plane remains a check of reported RSRP within [±10dB] of expected RSRP mentioned in Table 6.2.2.2-1.
7. If DUT still fails to report the desired RSRP, Level 3 Beam-search is started.

Level 3 Beam-search-Fine:

1. Follow EIS Spherical Procedure Coverage as mentioned in TR 38.810, covering the θ-plane & φ-plane in 10K constant step/7K constant density points, covering the 360 degrees in either plane, and recording the RSRP at each step with dwell time = FFS sec.
2. Exit condition at any of the above step during θ-plane & φ-plane remains a check of reported RSRP within [±10dB] of expected RSRP mentioned in Table 6.2.2.2-1.

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

Power allocation of downlink physical channels for Signalling test cases is specified in table 6.2.1.2-1.

Table 6.2.1.2-1: Power allocation for OFDM symbols and reference signals for Signalling test cases

Physical Channel	EPRE Ratio	Comment
PBCH	PBCH = 0 dB	Absolute EPRE conveyed to DUT by *SS-PBCH-BlockPower*(38.214 4.1)
PSS	PSS = 0 dB	Absolute EPRE conveyed to DUT by *SS-PBCH-BlockPower*(38.214 4.1)
SSS	SSS = 0 dB	Absolute EPRE conveyed to DUT by *SS-PBCH-BlockPower*(38.214 4.1)
PDCCH	PDCCH = 0 dB	0dB EPRE ratio to SSS
PDCCH DM-RS	PDCCH DM-RS = 0dB	0dB EPRE ratio to SSS
PDSCH	PDSCH = -3 dB	To reduce interference from PDSCH of intra-frequency neighbour cells. Conveyed to DUT by *Pc* as EPRE ratio to CSI-RS (38.214 5.2.2.3.1)
PDSCH DM-RS	PDSCH DM-RS = 0dB	0dB EPRE ratio to SSS
PDSCH PT-RS	PDSCH PT-RS=0dB	0dB EPRE ratio to SSS (38.214 4.1) (Note 1)
PBCH DM-RS	PBCH DM-RS = 0dB	0dB EPRE ratio to SSS (38.214 4.1)
CSI-RS	CSI-RS = 0dB	Conveyed to DUT by *Pc_SS* as EPRE ratio to SS/PBCH block *(38.215* 5.2.2.3.1) (Note 1)
Note 1: CSI-RS configured if the test cases defined in 38.523-1 [12] requires		

6.2.2 Signal levels

6.2.2.1 Signal Levels for conducted testing

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).

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
	Unit	Power level	
Serving cell	dBm/SCS	-88	Table 6.2.2.1-1 [2]
Suitable neighbour intra-frequency cell	dBm/SCS	-94	Table 6.2.2.1-1 [2]
Suitable neighbour inter-frequency cell	dBm/SCS	-99	Table 6.2.2.1-1 [2]
Non-suitable cell	dBm/SCS	-115	Table 6.2.2.1-1 [2]
Non-suitable "Off" cell	dBm/SCS	≤ -145	Table 6.2.2.1-1 [2]
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.

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 Io 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 ≥ [-124] dBm

- RSRP Ês/Iot >[-6] dB

- Io : 117.5 dBm/SCS for 15kHz SCS and -114.5 dBm/SCS for 15kHz SCS dBm/SCS … -50 dBm/BWChannel (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

The power levels defined in this section are based on the following assumptions:

- For EN-DC, no more than one E-UTRA and one NR cell is configured in the test case
- For SA option 2, no more than one NR cell is configured in the test case
- AWGN is not configured in the test case

For NR FR2 cell, the downlink power settings in Table 6.2.2.2-1 are used unless otherwise specified in a test case.

Table 6.2.2.2-1: Default Downlink power levels for FR2 NR cell (50MHz - 400MHz)

	SCS(kHz)	Unit	Channel bandwidth			
			50MHz	100MHz	200MHz	400MHz
Channel BW Power	60	dBm	-66	-63	[-60]	NA
	120	dBm	-69	-66	[-63]	[-60]
SS/PBCH SSS EPRE	All	dBm/SCS	-95	-95	[-95]	[-95]
Note 1: The channel bandwidth powers are informative, based on -95 dBm/SCS 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 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 of -95 dBm/SCS(SubCarrier Spacing).						

The default settings of suitable cells and non-suitable cells for NR are specified in table 6.2.2.2-2.

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.

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	-95
Suitable neighbour intra-frequency cell	dBm/SCS	TBD
Suitable neighbour inter-frequency cell	dBm/SCS	TBD
Non-suitable cell	dBm/SCS	TBD
Non-suitable "Off" cell	dBm/SCS	TBD
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 of -95 dBm/SCS(SubCarrier Spacing).		

For E-UTRA cell in EN-DC with FR2 NR, since the LTE OTA link is uncalibrated in the signalling test setup, the table 6.2.2.2-3 provides only suggestive value. It is left to the TE vendor to ensure that LTE cell power level fulfils the cell selection criteria.

Table 6.2.2.2-3: Default Downlink power levels

	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 settings of suitable cells and non-suitable cells for E-UTRA in EN-DC with FR2 NR are specified in table 6.2.2.2-4.

E-UTRA Cells in EN-DC 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.

Table 6.2.2.2-4: Default settings of suitable / non-suitable E-UTRA cells in EN-DC with NR FR2

Power level type	E-UTRAN (Note 1-2)	
	Unit	Power level
Serving cell	dBm/15KHz	-96
Suitable neighbour intra-frequency cell	dBm/15KHz	TBD
Suitable neighbour inter-frequency cell	dBm/15KHz	TBD
Non-suitable cell	dBm/15KHz	TBD
Non-suitable "Off" cell	dBm/15KHz	TBD
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.		

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 some NR bands (e.g. n51 or n76), only one test frequency NRf1 is defined. All other operating bands can accommodate at least three test frequencies NRf1, NRf2 and NRf3 (NRf3<NRf1<NRf2). The fourth test frequency NRf4 (NRf3<NRf1<NRf4<NRf2) is applicable to the operating bands which have at least quadruple of the default bandwidth.

The signalling test frequencies NRf1, NRf2, NRf3, and NRf4 and associated signalling parameters for bands with up to three frequencies are mapped as follows: Low Range (NRf3), Mid Range (NRf1) and High Range (NRf2). For bands with up to four frequencies, the frequencies are mapped as follows: Low Range (NRf3), High Range (NRf2), Mid-Low Range (NRf1) and Mid-High Range (NRf4). For bands with up to two frequencies, the frequencies are mapped as follows: Low Range (NRf1), High Range (NRf2). For bands with only one test frequency, the frequency is mapped as follows: Mid Range (NRf1).

The test frequencies, subcarrier spacing, default channel bandwidth, SS/PBCH block and CORESET#0 parameters for signalling is specified in Table 6.2.3.1-1 (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 6.2.3.1-5 (TDD FR1 BW 100MHz) and Table 6.2.3.1-6 (TDD FR2 BW 100MHz).

Table 6.2.3.1-1: Test frequencies for NR FDD FR1 bands using 5 MHz channel bandwidth

NR Band	SCS [kHz]	Band width [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}	CORESET#0 Offset [RBs] Note 1	CORESET#0 Index Note 1	offsetToPointA (SIB1) [PRBs] Note 1
n5	15	5	25	Downlink	Low, High	Same values as for Low and High range in clause 4.3.1.5 for bandwidth=5 MHz and SCS=15 kHz.											
					Mid-Low	878.2	175640	874.15	174830	10	15	2197	175730	12	4	2	14
					Mid-High	884.8	176960	878.59	175718	22		2212	176930	20	0	0	22
				Uplink	Low, High	Same values as for Low and High range in clause 4.3.1.5 for bandwidth=5 MHz and SCS=15 kHz.											
					Mid-Low	833.2	166640	825.19	165038	32	-	-	-	-	-	-	-
					Mid-High	839.8	167960	817.21	163442	113	-	-	-	-	-	-	-
n8	15	5	25	Downlink	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	937.5	187500	933.45	186690	10	15	2343	187470	20	0	0	10
					Mid-High	947.5	189500	941.29	188258	22		2368	189410	0	0	0	22
				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	884.49	176898	32	-	-	-	-	-	-	-
					Mid-High	902.5	180500	879.91	175982	113	-	-	-	-	-	-	-
n12	15	5	25	Downlink	Low, Mid, High	Same values as for Low, Mid and High range in clause 4.3.1.12 for bandwidth=5 MHz and SCS=15 kHz.											
				Uplink	Low, Mid, High	Same values as for Low, Mid and High range in clause 4.3.1.12 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 4.3.1.20 for bandwidth=5 MHz and SCS=15 kHz.											
					Mid-Low	801.8	160360	797.75	159550	10	15	2003	160330	20	0	0	10
					Mid-High	810.2	162040	803.99	160798	22		2024	162010	20	0	0	22
				Uplink	Low, High	Same values as for Low and High range in clause 4.3.1.20 for bandwidth=5 MHz and SCS=15 kHz.											
					Mid-Low	842.8	168560	834.79	166958	32	-	-	-	-	-	-	-
					Mid-High	851.2	170240	828.61	165722	113	-	-	-	-	-	-	-
n70	15	5	25	Downlink	Low, Mid, High	Same values as for Low, Mid and High range in clause 4.3.1.70 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 4.3.1.70 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 4.3.1.71 for bandwidth=5 MHz and SCS=15 kHz.											
					Mid-Low	629.5	125900	625.45	125090	10	15	1573	125810	0	0	0	10
					Mid-High	639.5	127900	633.29	126658	22		1598	127930	16	2	1	24
				Uplink	Low, High	Same values as for Low and High range in clause 4.3.1.71 for bandwidth=5 MHz and SCS=15 kHz.											
					Mid-Low	675.5	135100	667.49	133498	32	-	-	-	-	-	-	-
					Mid-High	685.5	137100	662.91	132582	113	-	-	-	-	-	-	-

n76	15	5	25	Downlink (SDL)	Mid	Same values as for Mid range in clause 4.3.1.76 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 the four most significant bits of the IE pdcch-ConfigSIB1 in the MIB. 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]	Band width [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}	CORESET#0 Offset [RBs] Note 1	CORESET#0 Index 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 for bandwidth=10 MHz and SCS=15 kHz.											
					Mid-Low	2131.7	426340	2125.22	425044	10	15	5321	425770	2	0	0	10
					Mid-High	2148.3	429660	2139.66	427932	22		5364	429150	22	0	0	22
				Uplink	Low, High	Same values as for Low and High range in clause 4.3.1.1 for bandwidth=10 MHz and SCS=15 kHz.											
					Mid-Low	1941.7	388340	1931.26	386252	32	-	-	-	-	-	-	-
					Mid-High	1958.3	391660	1933.28	386656	113	-	-	-	-	-	-	-
n2	15	10	52	Downlink	Low, High	Same values as for Low and High range in clause 4.3.1.2 for bandwidth=10 MHz and SCS=15 kHz.											
					Mid-Low	1951.7	390340	1945.22	389044	10	15	4871	389770	2	0	0	10
					Mid-High	1968.3	393660	1959.66	391932	22		4914	393150	22	0	0	22
				Uplink	Low, High	Same values as for Low and High range in clause 4.3.1.2 for bandwidth=10 MHz and SCS=15 kHz.											
					Mid-Low	1871.7	374340	1861.26	372252	32	-	-	-	-	-	-	-
					Mid-High	1888.3	377660	1863.28	372656	113	-	-	-	-	-	-	-
n3	15	10	52	Downlink	Low, High	Same values as for Low and High range in clause 4.3.1.3 for bandwidth=10 MHz and SCS=15 kHz.											
					Mid-Low	1831.7	366340	1825.22	365044	10	15	4571	365770	2	0	0	10
					Mid-High	1853.3	370660	1844.66	368932	22		4625	370090	2	0	0	22
				Uplink	Low, High	Same values as for Low and High range in clause 4.3.1.3 for bandwidth=10 MHz and SCS=15 kHz.											
					Mid-Low	1736.7	347340	1726.26	345252	32	-	-	-	-	-	-	-
					Mid-High	1758.3	351660	1733.28	346656	113	-	-	-	-	-	-	-
n7	15	10	52	Downlink	Low, High	Same values as for Low and High range in clause 4.3.1.7 for bandwidth=10 MHz and SCS=15 kHz.											
					Mid-Low	2645	529000	2638.52	527704	10	15	6605	528490	22	0	0	10
					Mid-High	2665	533000	2656.36	531272	22		6658	532610	14	4	2	26
				Uplink	Low, High	Same values as for Low and High range in clause 4.3.1.7 for bandwidth=10 MHz and SCS=15 kHz.											
					Mid-Low	2525	505000	2514.56	502912	32	-	-	-	-	-	-	-
					Mid-High	2545	509000	2519.98	503996	113	-	-	-	-	-	-	-
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	1946.82	389364	10	15	4878	390270	14	4	2	14
					Mid-High	1971.7	394340	1963.06	392612	22		4924	393890	18	2	1	24
				Uplink	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	1873.3	374660	1862.86	372572	32	-	-	-	-	-	-	-
					Mid-High	1891.7	378340	1866.68	373336	113	-	-	-	-	-	-	-

n28	15	10	52	Downlink	Low, High	Same values as for Low and High range in clause 4.3.1.28 for bandwidth=10 MHz and SCS=15 kHz.											
					Mid-Low	774.7	154940	768.22	153644	10	15	1930	154370	2	0	0	10
					Mid-High	786.3	157260	777.66	155532	22		1959	156750	22	0	0	22
				Uplink	Low, High	Same values as for Low and High range in clause 4.3.1.28 for bandwidth=10 MHz and SCS=15 kHz.											
					Mid-Low	719.7	143940	709.26	141852	32	-	-	-	-	-	-	-
					Mid-High	731.3	146260	706.28	141256	113	-	-	-	-	-	-	-
n66	15	10	52	Downlink	Low, High	Same values as for Low and High range in clause 4.3.1.66 for DL bandwidth=10 MHz, UL bandwidth=10 MHz and SCS=15 kHz.											
					Mid-Low	2141.7	428340	2135.22	427044	10	15	5349	427950	14	4	2	14
					Mid-High	2168.3	433660	2159.66	431932	22		5414	433210	18	2	1	24
				Uplink	Low, High	Same values as for Low and High range in clause 4.3.1.66 for DL bandwidth=10 MHz, UL bandwidth=10 MHz and SCS=15 kHz.											
					Mid-Low	1741.7	348340	1731.26	346252	32	-	-	-	-	-	-	-
					Mid-High	1768.3	353660	1743.28	348656	113	-	-	-	-	-	-	-
n75	15	10	52	Downlink (SDL)	Low, High	Same values as for Low and High range in clause 4.3.1.75 for bandwidth=10 MHz and SCS=15 kHz.											
					Mid-Low	1462	292400	1455.52	291104	10	-	-	-	-	-	-	-
					Mid-High	1487	297400	1478.36	295672	22	-	-	-	-	-	-	-
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 the four most significant bits of the IE pdcch-ConfigSIB1 in the MIB. 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 6.2.3.1-3: Test frequencies for NR TDD FR1 bands using 5 MHz channel bandwidth

NR Band	SCS [kHz]	Band width [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}	CORESET#0 Offset [RBs] Note 1	CORESET#0 Index 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 4.3.1.12 for bandwidth=5 MHz and SCS=15 kHz.											
n51	15	5	25	Downlink & Uplink	Mid	Same values as for Mid range in clause 4.3.1.51 for bandwidth=5 MHz and SCS=15 kHz.											

Table 6.2.3.1-4: Test frequencies for NR TDD FR1 bands using 10 MHz channel bandwidth

NR Band	SCS [kHz]	Band width [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}	CORESET#0 Offset [RBs] Note 1	CORESET#0 Index Note 1	offsetToPointA (SIB1) [PRBs] Note 1
n38	15	10	52	Downlink	Low, High	Same values as for Low and High range in clause 4.3.1.38 for bandwidth=10 MHz and SCS=15 kHz.											
				&	Mid-Low	2588.3	517660	2581.82	516364	10	15	6464	517210	18	2	1	12
				Uplink	Mid-High	2601.7	520340	2593.06	518612	22		6499	519890	18	2	1	24
n39	15	10	52	Downlink	Low, High	Same values as for Low and High range in clause 4.3.1.39 for bandwidth=10 MHz and SCS=15 kHz.											
				&	Mid-Low	1895	379000	1888.52	377704	10	15	4730	378490	22	0	0	10
				Uplink	Mid-High	1905	381000	1896.36	379272	22		4755	380430	2	0	0	22
n40	15	10	52	Downlink	Low, High	Same values as for Low and High range in clause 4.3.1.40 for bandwidth=10 MHz and SCS=15 kHz.											
				&	Mid-Low	2335	467000	2328.52	465704	10	15	5833	466610	14	4	2	14
				Uplink	Mid-High	2365	473000	2356.36	471272	22		5908	472610	14	4	2	26
Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-1 in TS 38.213 [22] for all bands in the table. The value of CORESET#0 Index is signalled in the four most significant bits of the IE pdcch-ConfigSIB1 in the MIB. 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

NR Band	SCS [kHz]	Band width [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}	CORESET#0 Offset [RBs] Note 1	CORESET#0 Index Note 1	offsetToPointA (SIB1) [PRBs] Note 1
n41	30	60	162	Downlink & Uplink	Low, Mid, High	Same values as for Low, Mid and High range in clause 4.3.1.41 for bandwidth=60 MHz and SCS=30 kHz.											

Table 6.2.3.1-5: Test frequencies for NR TDD FR1 bands using 100 MHz channel bandwidth

NR Band	SCS [kHz]	Band width [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}	CORESET#0 Offset [RBs] Note 1	CORESET#0 Index 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 4.3.1.77 for bandwidth=100 MHz and SCS=30 kHz.											
					Mid-Low	3616.68	641112	3563.94	637596	10	30	7896	638112	12	1	1	22
					Mid-High	3883.32	658888	3826.26	655084	22		8081	655872	20	0	0	44
n78	30	100	273	Downlink & Uplink	Low, High	Same values as for Low and High range in clause 4.3.1.78 for bandwidth=100 MHz and SCS=30 kHz.											
					Mid-Low	3483.33	632222	3430.59	628706	10	30	7804	629280	22	3	3	26
					Mid-High	3616.68	641112	3559.62	637308	22		7896	638112	12	1	1	46
n79	30	100	273	Downlink & Uplink	Low, High	Same values as for Low and High range in clause 4.3.1.79 for bandwidth=100 MHz and SCS=30 kHz.											
					Mid-Low	4617.69	707846	4564.95	704330	10	30	8592	704928	22	4	1	28
					Mid-High	4780.74	718716	4723.68	714912	22		8704	715680	0	0	0	44
Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-6 in TS 38.213 [22] for all bands in the table except for band n79 where Table 13-6 apply. The value of CORESET#0 Index is signalled in the four most significant bits of the IE pdcch-ConfigSIB1 in the MIB. 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]	Band width [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}	CORESET#0 Offset [RBs] Note 1	CORESET#0 Index 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	27514.56	2071075	27452.64	2070043	10	120	22443	2070523	0	0	0	20
				Uplink	Mid-High	28482.24	2087203	28403.04	2085883	22		22499	2086651	0	0	0	44
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	25348.8	2034979	25286.88	2033947	10	120	22318	2034523	0	4	1	28
				Uplink	Mid-High	26401.56	2052525	26322.36	2051205	22		22379	2052091	11	4	1	52
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	38015.04	2246083	37953.12	2245051	10	120	23051	2245627	0	4	1	28
				Uplink	Mid-High	38982.72	2262211	38903.52	2260891	22		23107	2261755	0	4	1	52
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	27801.24	2075853	27739.32	2074821	10	120	22460	2075419	11	4	1	28
				Uplink	Mid-High	28050	2079999	27970.8	2078679	22		22474	2079451	2	0	0	44
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 the four most significant bits of the IE pdcch-ConfigSIB1 in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.																	

6.2.3.2 Test frequencies for EN-DC band combinations for signalling testing

For EN-DC Inter-band case (2 bands) the EN-DC configurations are specified in clause 4.3.1.3.2.0 and 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).

For EN-DC Intra-Band Contiguous case (2 bands) and EN-DC Intra-Band Non-Contiguous case (2 bands) for NR bands with up to 3 frequencies use:

- for NR: the test frequencies as specified for Low (NRf2), Mid (NRf1) and High (NRf3) in clause 4.3.1.3.2using the default bandwidth of the NR cell as specified in clause 6.2.3.1; and
- for E-UTRA: the test frequencies as specified for Low (f2), Mid (f1) and High (f3) in clause 4.3.1.3.2 and .using default bandwidth for the E-UTRA cell as specified in TS 36.508 [2], clause 6.2.3.1

For EN-DC Intra-Band Contiguous case (2 bands) and up to 4 frequencies use the test frequencies as specified in clause [4.3.FFS].

6.3 Reference system configurations

6.3.1 Cell configurations

Editor's Note: To define different types of SS cell configurations. It may be similar as defined in 3GPP TS 36.508 [2], clause 6.3.3 and 6.3.4 i.e. full, minimum uplink, broadcast only and virtual cell configuration. But details are FFS and depending on different connectivity options (MR-DC and SA).

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.

NOTE: 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 Table [FFS] for such information.

Any combination is allowed with the following restrictions:

- NGC Cell B shall not be used if Cell NGC Cell D is used
- 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 parameters are specified in Table 6.3.2.2-1

Unless otherwise specified, the default parameters specified in section 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)			
	TA#	PLMN		TAC		AMF Identifier			5G-TMSI
		MCC	MNC			AMF Region ID	AMF Set ID	AMF Pointer	
NGC Cell A	TAI-1	(Note 3)		1	TAI-1	254	1	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	1	
NGC Cell C	TAI-3	(Note 3)		3	TAI-3	252	1	1	
NGC Cell D	TAI-4	(Note 3)		4	TAI-4	252	1	1	
NGC Cell E	TAI-12	002	101	3	TAI-12	244	1	1	
NGC Cell F	TAI-11	003	101	2	TAI-11	239	1	1	
NGC Cell G	TAI-7	(Note 4)	02	1	TAI-7	238	1	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 FFS). Note 4: Set to the same Mobile Country Code stored in EF_{IMSI} on the test USIM card (subclause FFS).									

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	f1	NR Cell 1
NGC Cell B	f1	NR Cell 2
NGC Cell C	f1	NR Cell 4
NGC Cell D	f1	NR Cell 11
NGC Cell E	NA	NA
NGC Cell F	f2	NR Cell 3
NGC Cell G	NA	NA
NGC Cell H	NA	NA
NGC Cell I	NA	NA
NGC Cell J	f2	NR Cell 12
Note 1: Default NR parameters for simulated NR cells are as specified in Table 4.4.2-2 Note 2: for signalling tests, simultaneous co-existence of NGC Cells B and D is not allowed (In line with Table 4.4.2-1)		

Table 6.3.2.2-3: Default PLMN and radio parameters for simulated NAS cells when cells are in different PLMN and access stratum is NR

NAS cell ID	PLMN	Frequency	NR Cell ID (Note 1)
NGC Cell A	MCC/MNC=MCC/MNC in USIM	f1	NR Cell 1
NGC Cell B	MCC/MNC=MCC/MNC in USIM	f1	NR Cell 2
NGC Cell C	MCC/MNC=MCC/MNC in USIM	f1	NR Cell 4
NGC Cell D	MCC/MNC=MCC/MNC in USIM	f1	NR Cell 11
NGC Cell E	MCC=002 MNC=101	f2	NR Cell 3
NGC Cell F	MCC=003 MNC=101	f4	NR Cell 14
NGC Cell G	MCC = MCC in USIM MNC=02	f2	NR Cell 12
NGC Cell H	MCC = MCC in USIM MNC=02	f2	NR Cell 23
NGC Cell I	MCC=002 MNC=101	f3	NR Cell 6
NGC Cell J	MCC=002 MNC=101	f3	NR Cell 13
Note 1: Default NR parameters for simulated NR cells are as specified in Table 4.4.2-2 Note 2: for signalling tests, simultaneous co-existence of NGC Cells B and D is not allowed (In line with Table 4.4.2-1)			

7 Test environments for RRM tests

7.1 Requirements of test equipment

7.1.1 Requirements common for conducted and OTA tests

Editor's Note: This subclause is intended to describe the test equipment requirements which are specific to RRM tests and common for conducted and OTA tests.

7.1.2 Requirements for conducted test method

Editor's Note: This subclause is intended to describe the test equipment requirements which are specific to conducted test environment for RRM tests.

7.1.3 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 RRM tests.

7.2 Reference test conditions

7.2.1 Signal levels

7.2.1.1 Signal Levels for conducted testing

TBD

7.2.1.2 Signal Levels for OTA testing

TBD

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 TS38.521-1, TS38.521-2, TS38.521-3, TS 38.523-1 and TS38.533 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.

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

Editor's note: RAN4 has not defined yet any interferer requirement for NSA in TS 38.101-3 then Receiver tests using Signal Generator connection diagrams do not include LTE part.

A.3.1.1 Basic Transmitter/Receiver tests

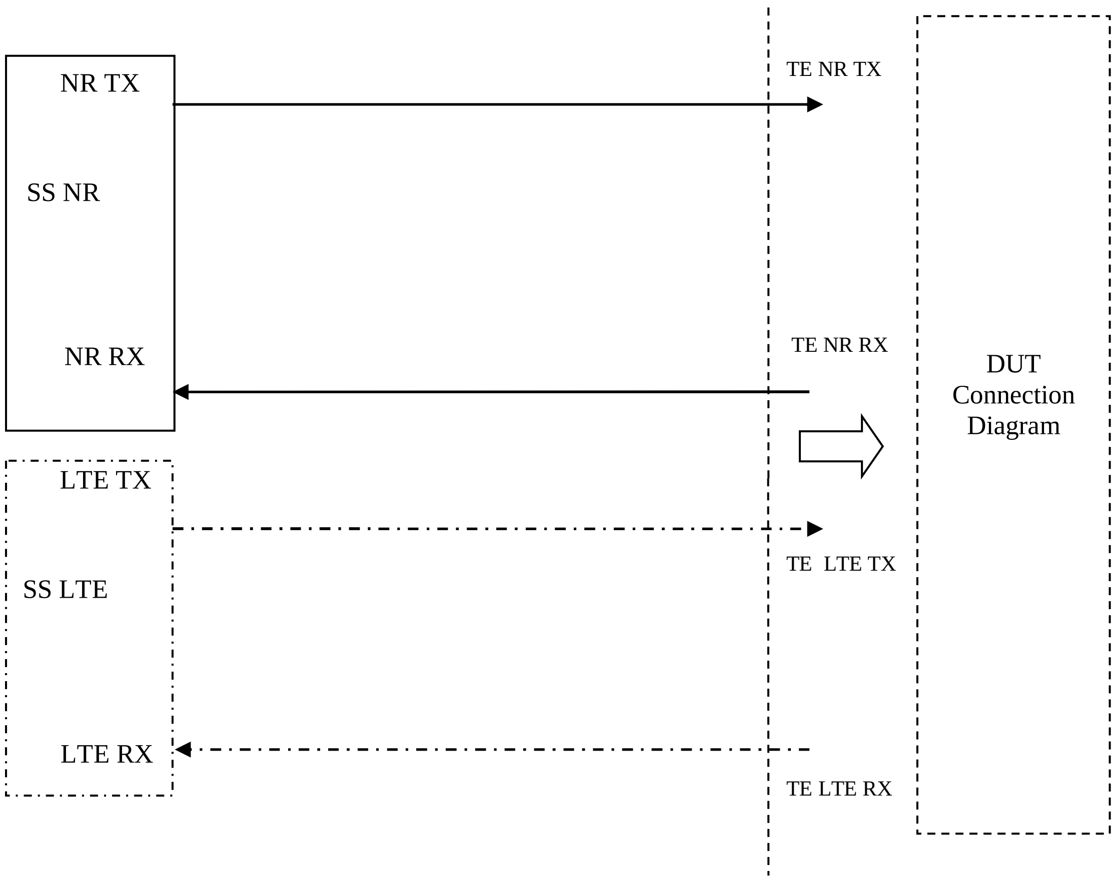

Figure A.3.1.1.1: Test Equipment connection for basic single cell, RX and TX tests

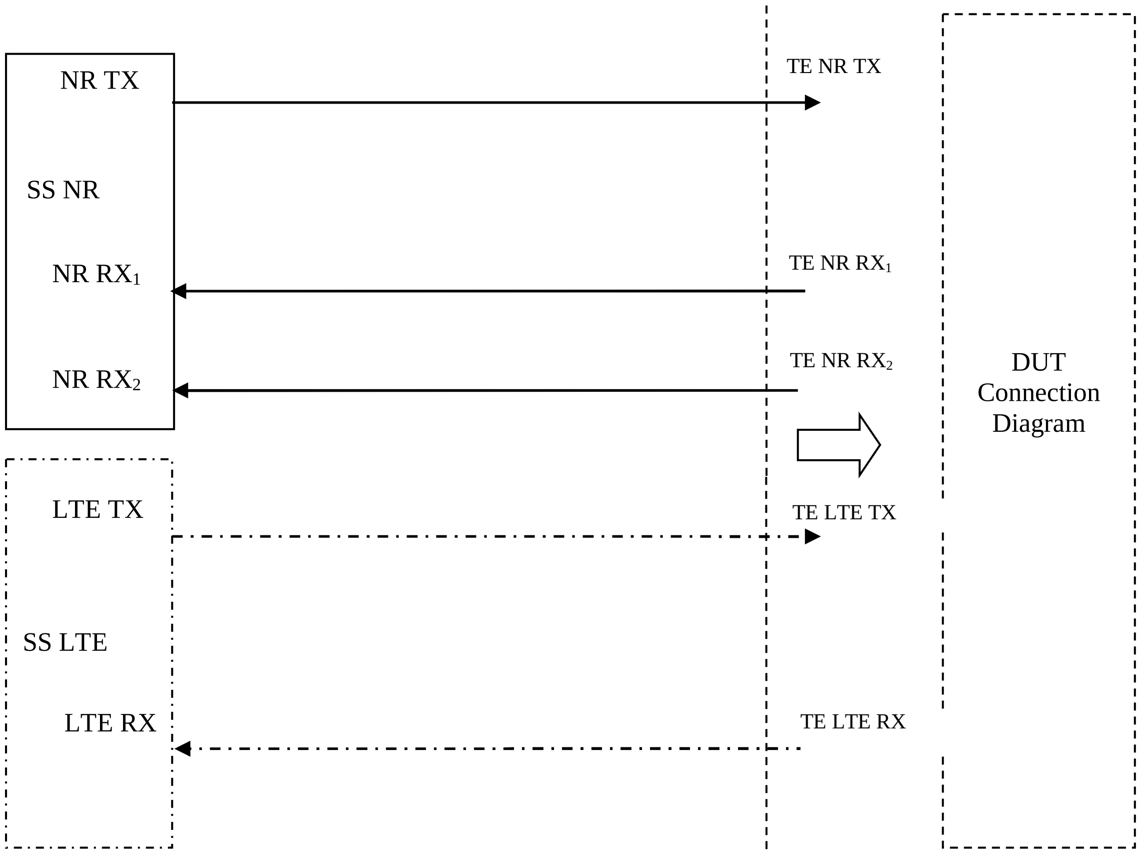

Figure A.3.1.1.2: Test Equipment connection for single cell, RX and TX tests for NR UL MIMO

A.3.1.2 Transmitter tests using Spectrum Analyser

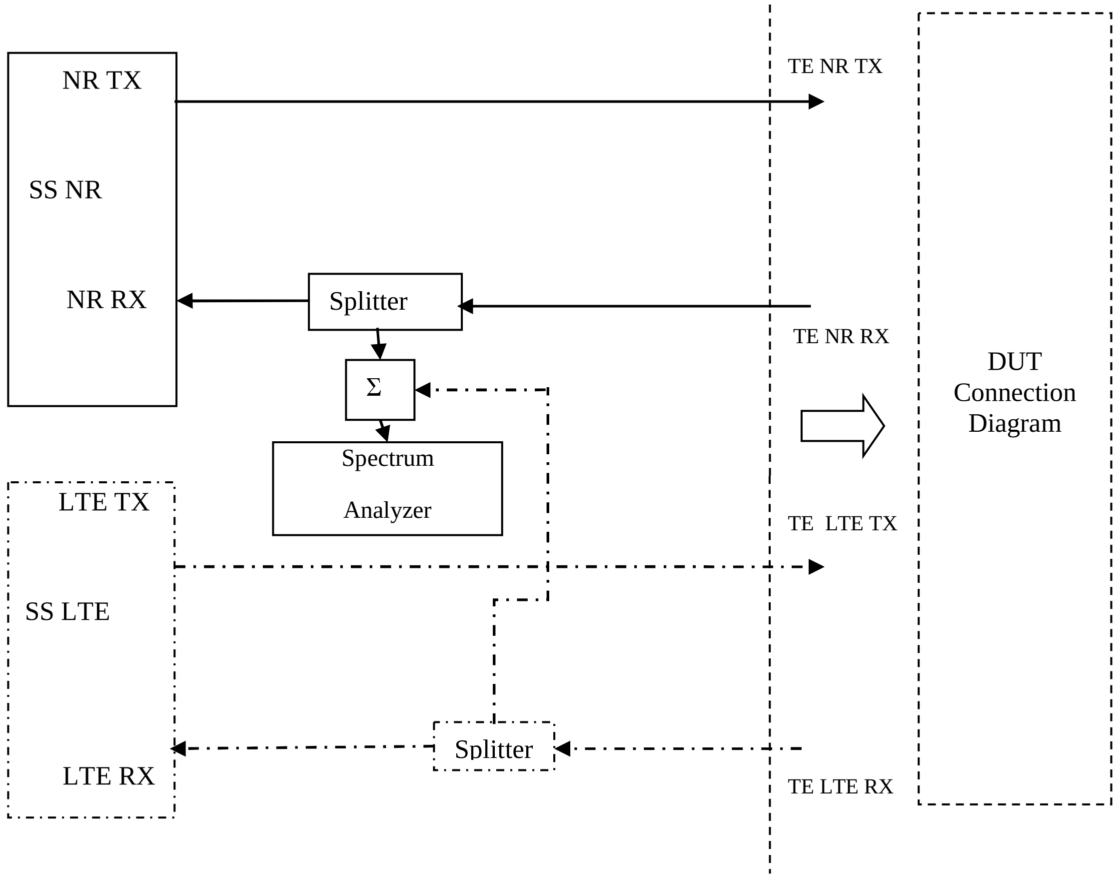

Figure A.3.1.2.1: Test Equipment connection for TX-tests with additional Spectrum Analyzer

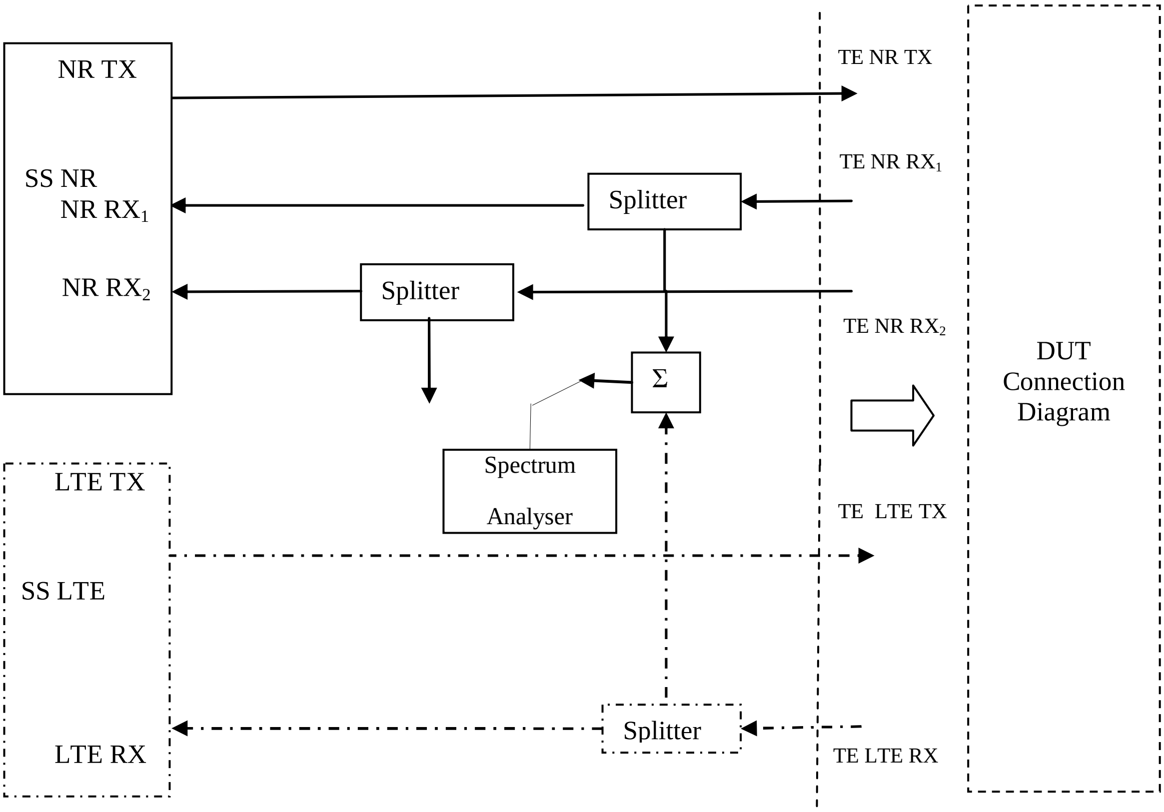

Figure A.3.1.2.2: Test Equipment connection for TX-tests for UL MIMO with additional Spectrum Analyser

A.3.1.3 Transmitter tests using Spectrum Analyser and Signal Generator

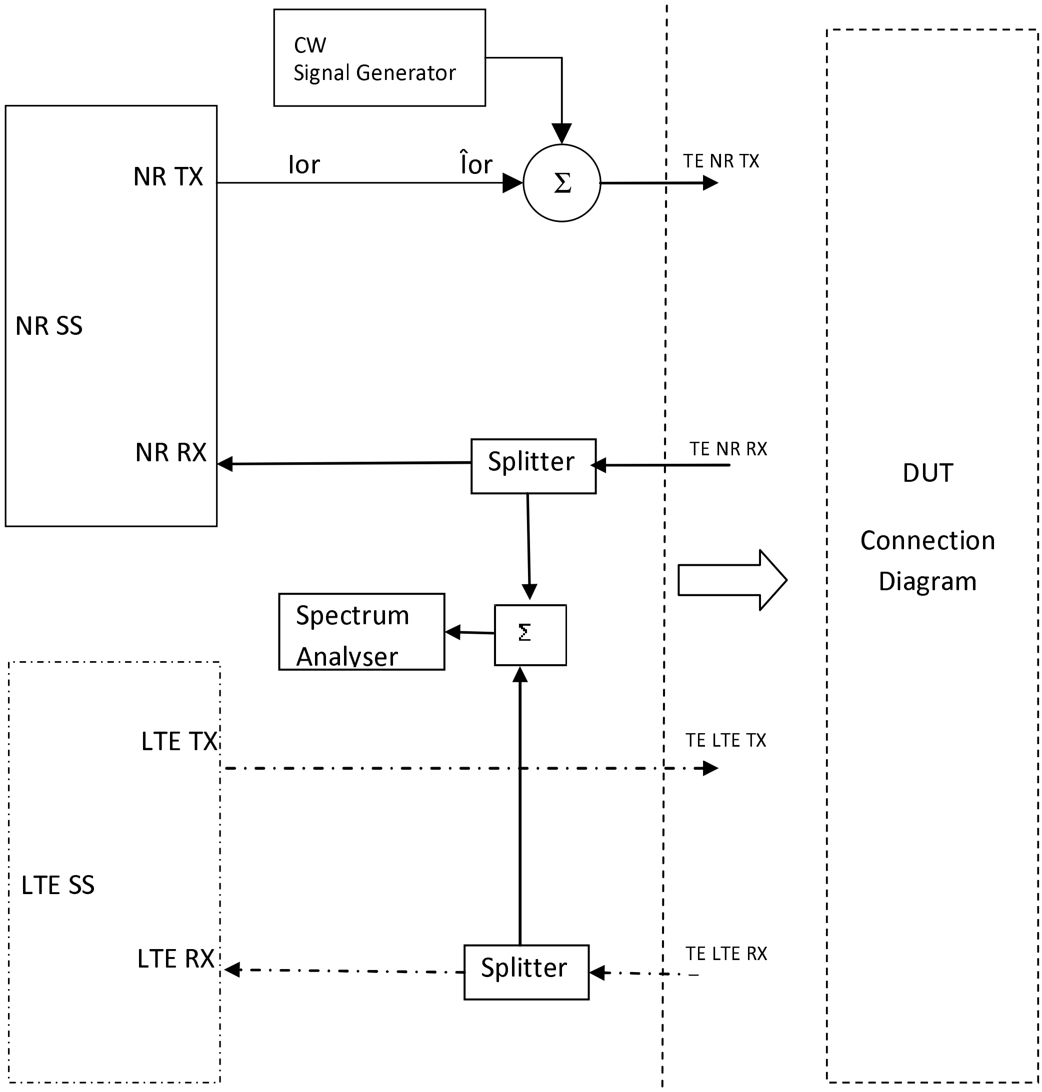

Figure A.3.1.3.1: Test Equipment connection for Transmitter tests with CW Interference and spectrum analyser

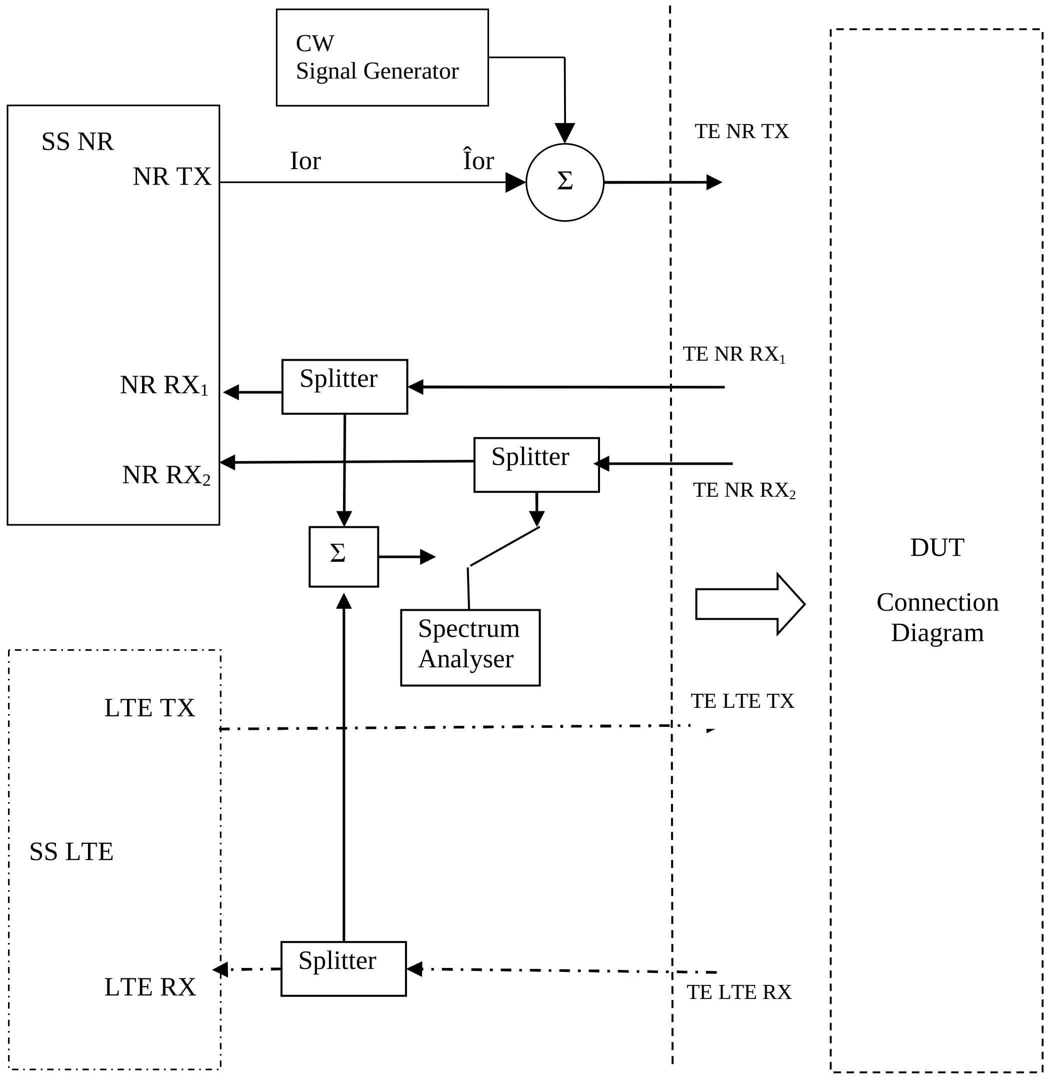

Figure A.3.1.3.2: Test Equipment connection for Transmitter tests for UL MIMO with CW Interference and spectrum analyser

A.3.1.4 Receiver tests using Signal Generator

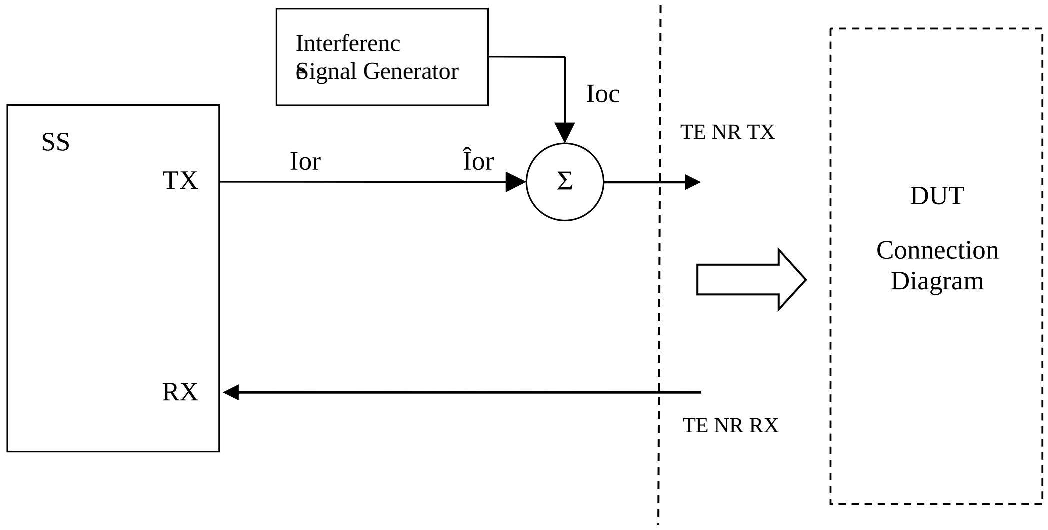

Figure A.3.1.4.1: Test Equipment connection for Receiver tests with Modulated Interference

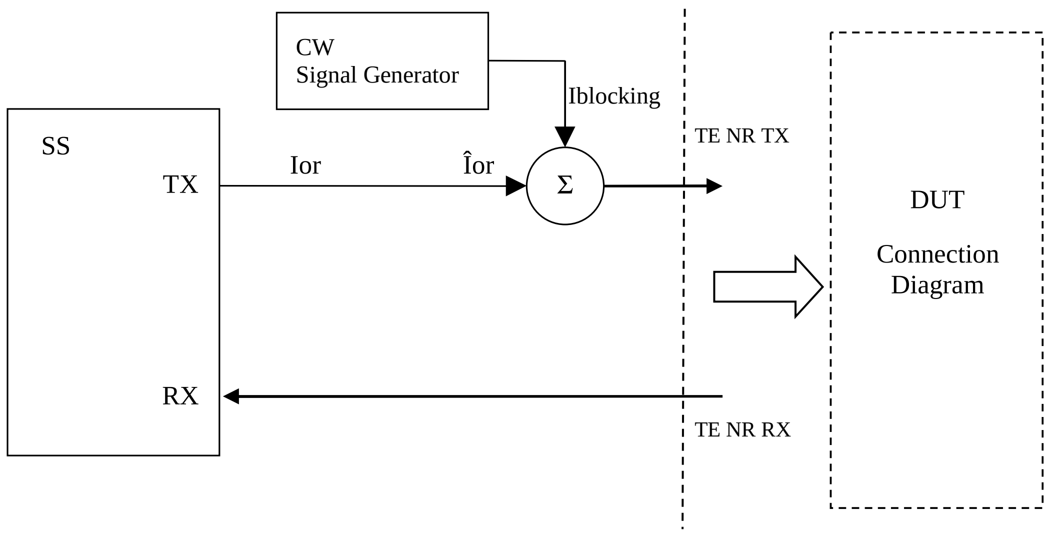

Figure A.3.1.4.2: Test Equipment connection for Receiver tests with CW Interference

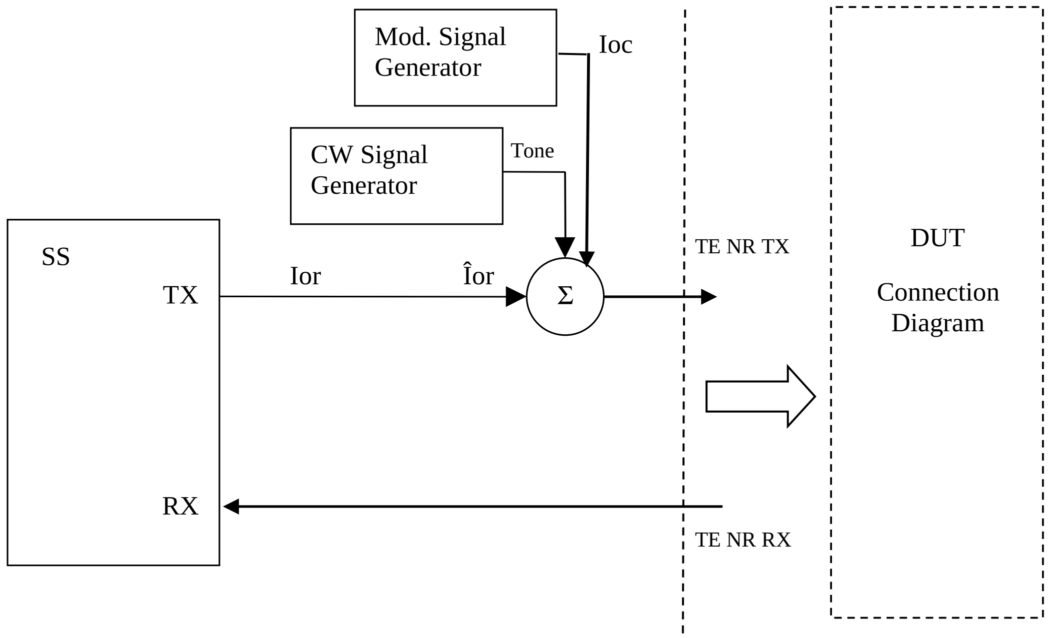

Figure A.3.1.4.3: Test Equipment connection for Receiver tests both Modulated and additional CW Interference signal

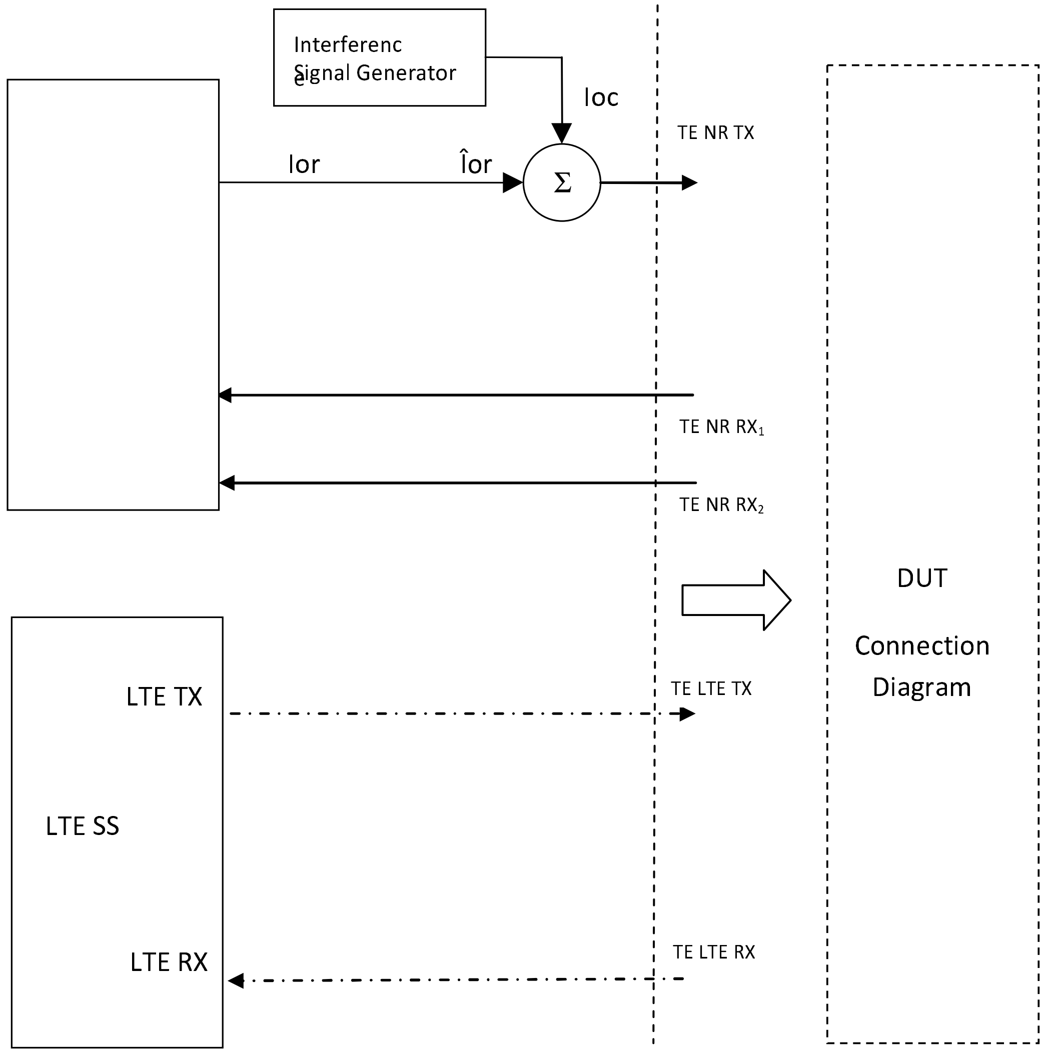

Figure A.3.1.4.4: Test Equipment connection for Receiver tests for UL MIMO with Modulated Interference

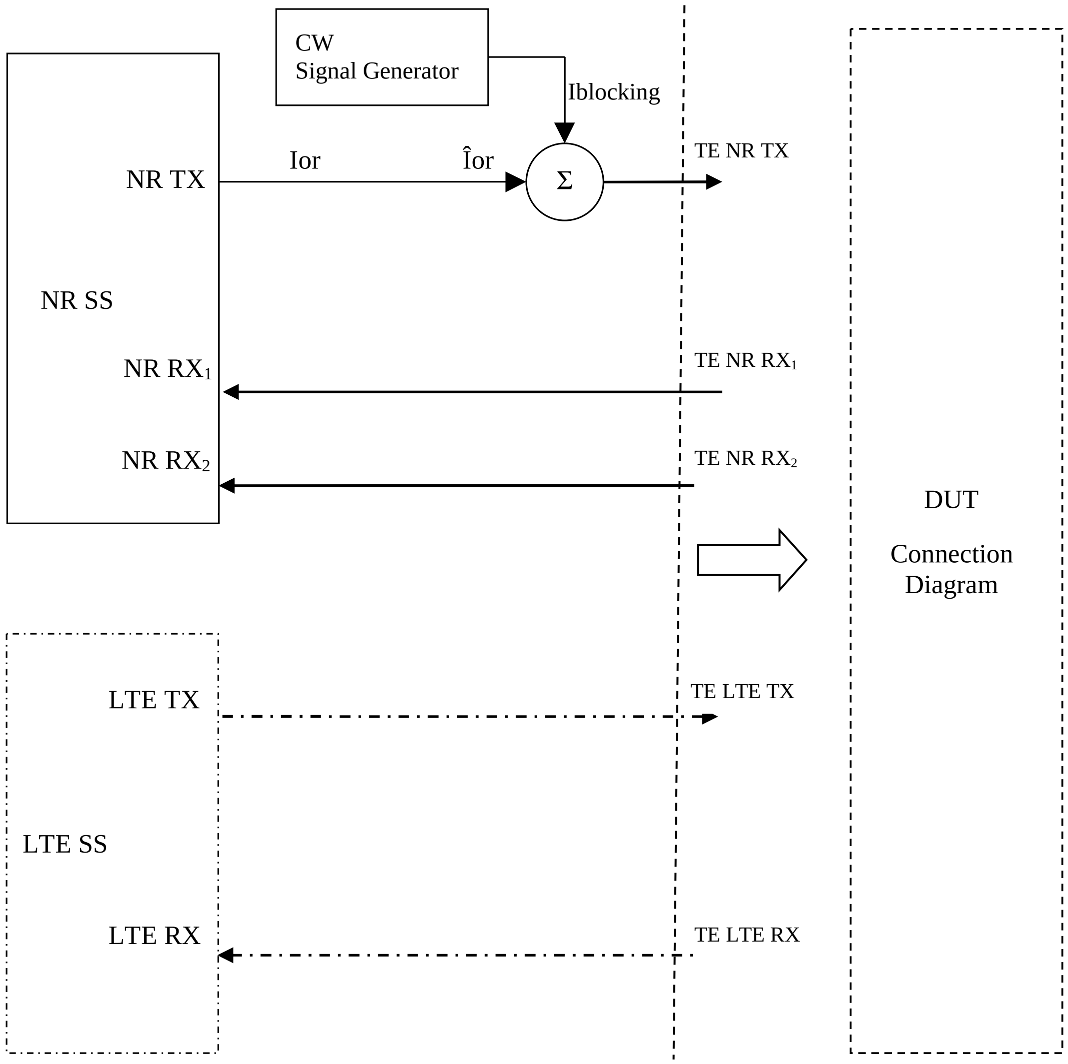

Figure A.3.1.4.5: Test Equipment connection for Receiver tests for UL MIMO with CW Interference

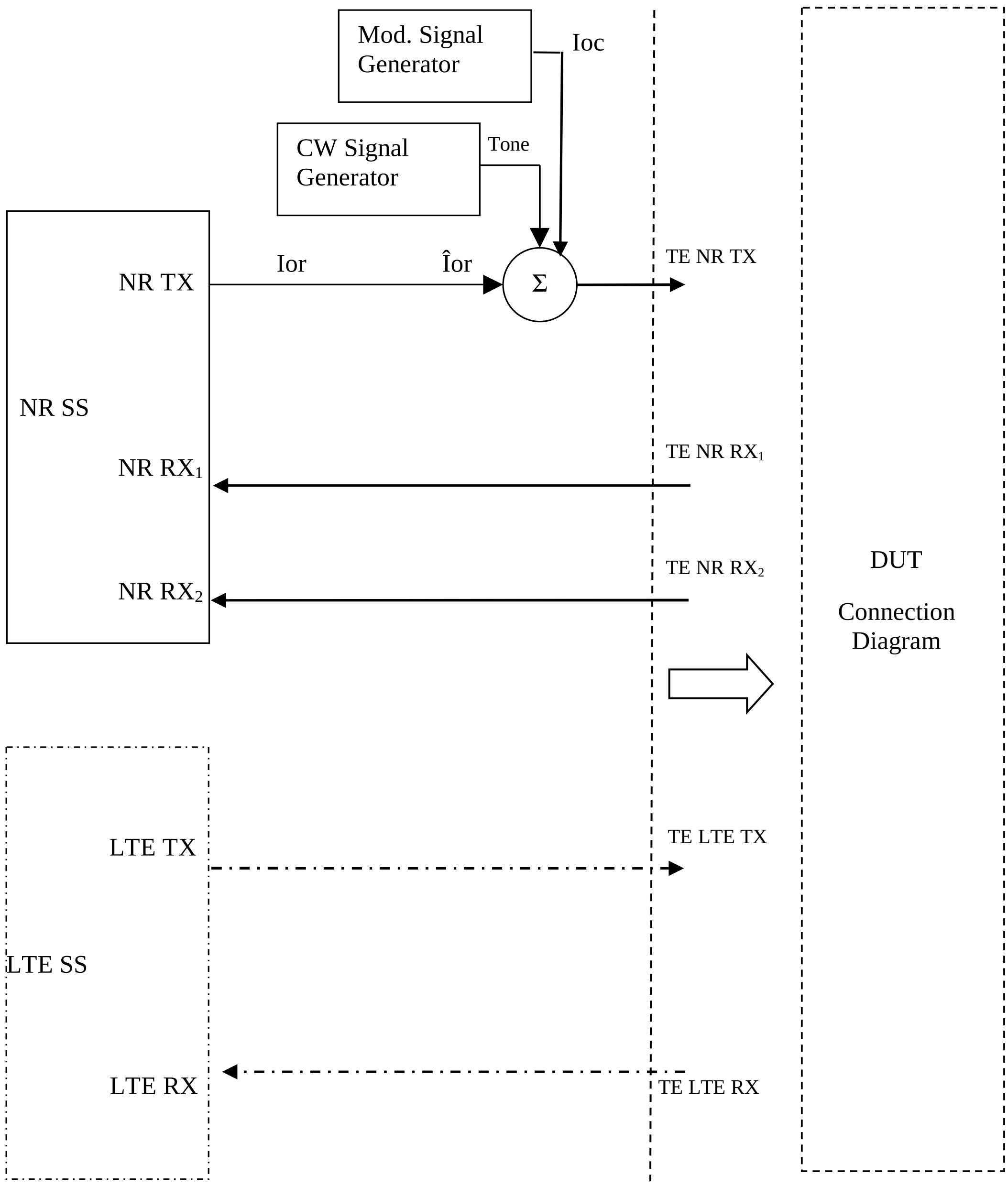

Figure A.3.1.4.6: Test Equipment connection for Receiver tests for UL MIMO with both Modulated and additional CW Interference signal

A.3.1.5 Receiver tests using Spectrum Analyser

FFS

A.3.1.6 Receiver Performance tests

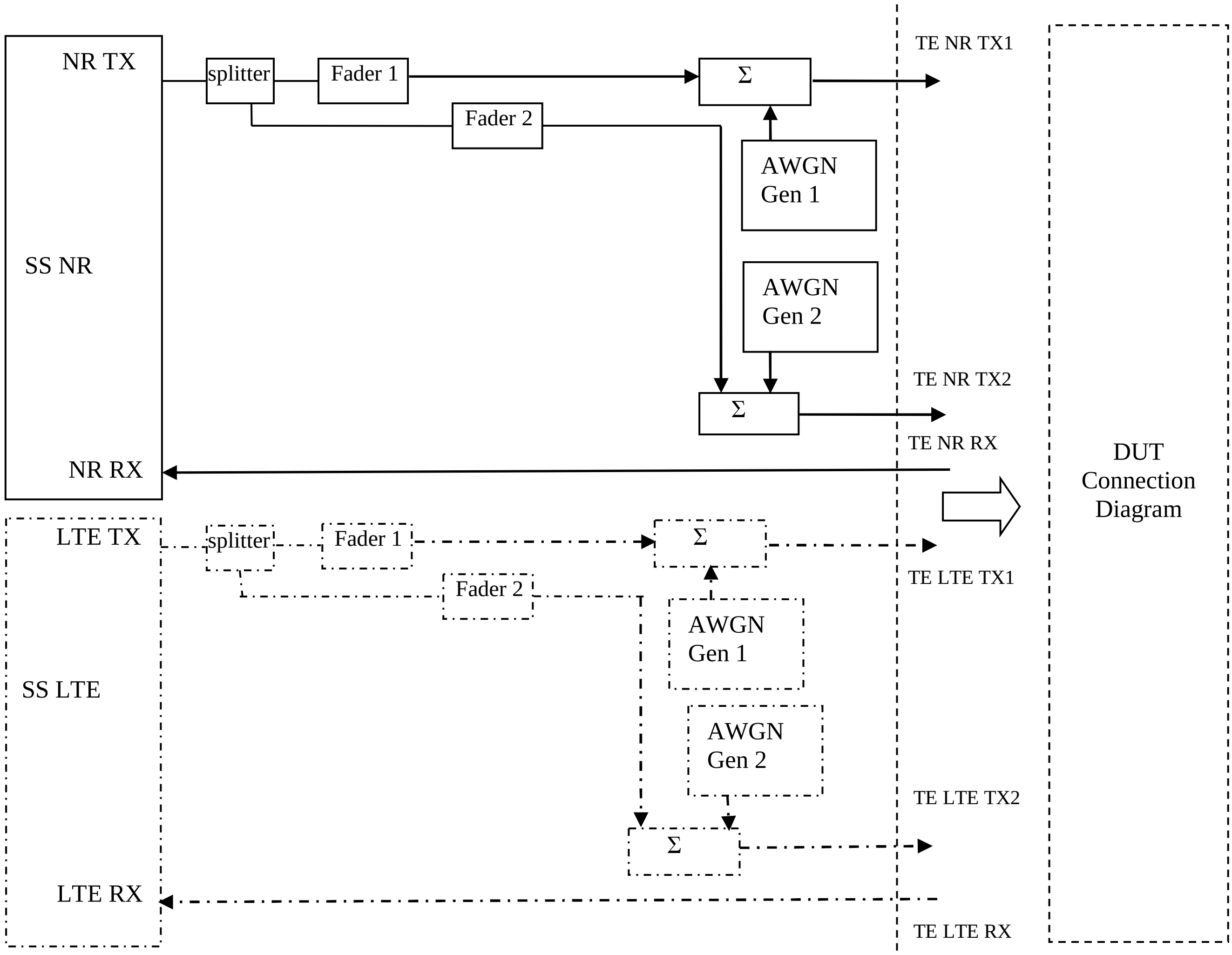

Figure A.3.1.6.1: Test Equipment connection for Receiver Performance tests with antenna configuration 1x2

A.3.2 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

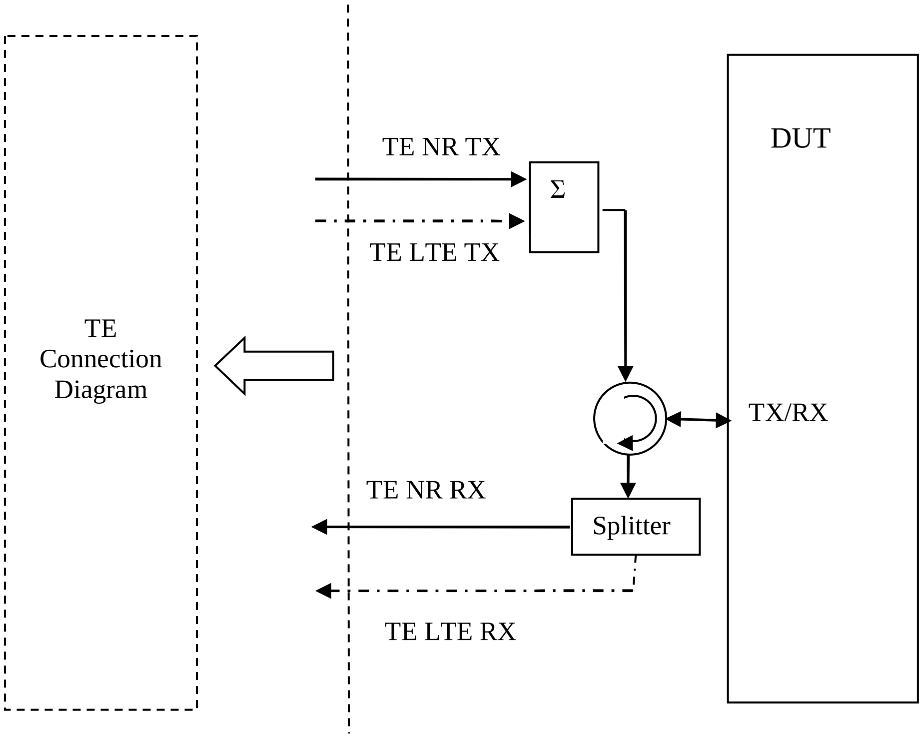

Figure A.3.2.2.1: User Equipment connection for single basic cell

A.3.2.3 Two Antenna Connectors

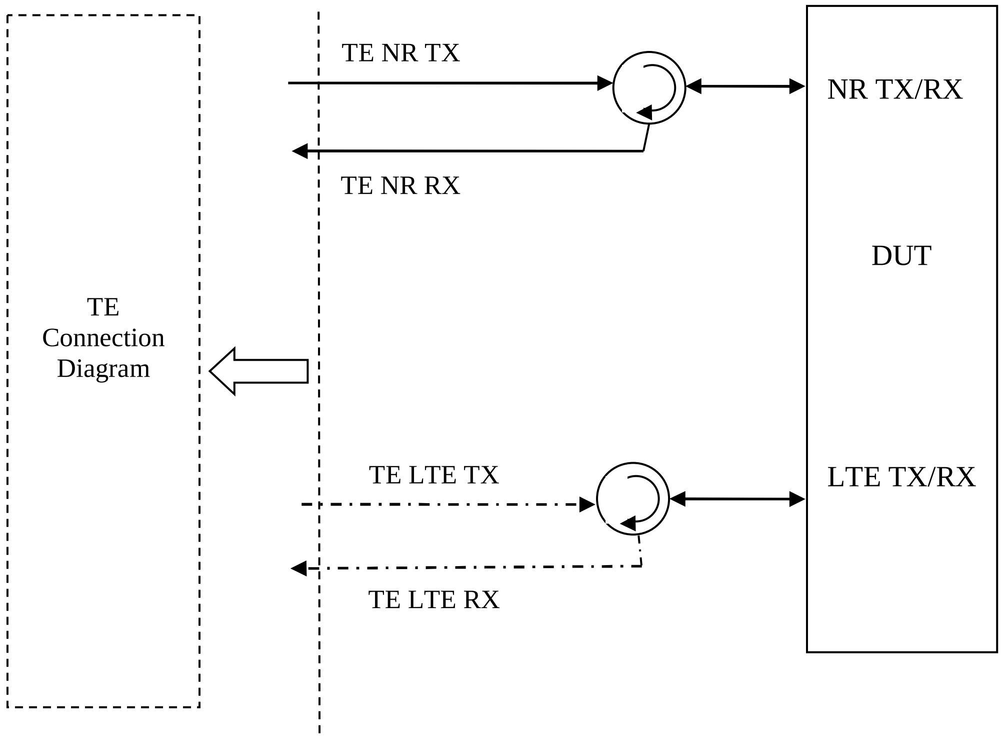

Figure A.3.2.3.1: User Equipment connection for single basic cell with NR and LTE cells at different separated connectors

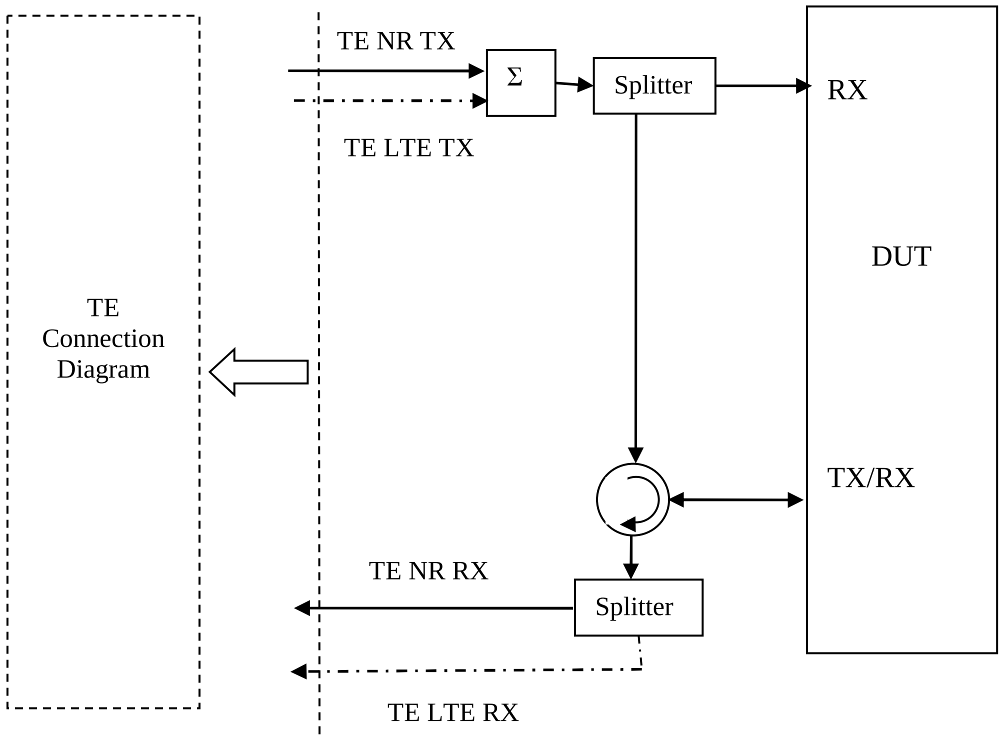

Figure A.3.2.3.2: User Equipment connection for single basic cell with NR and LTE cells at the same connectors for both cells

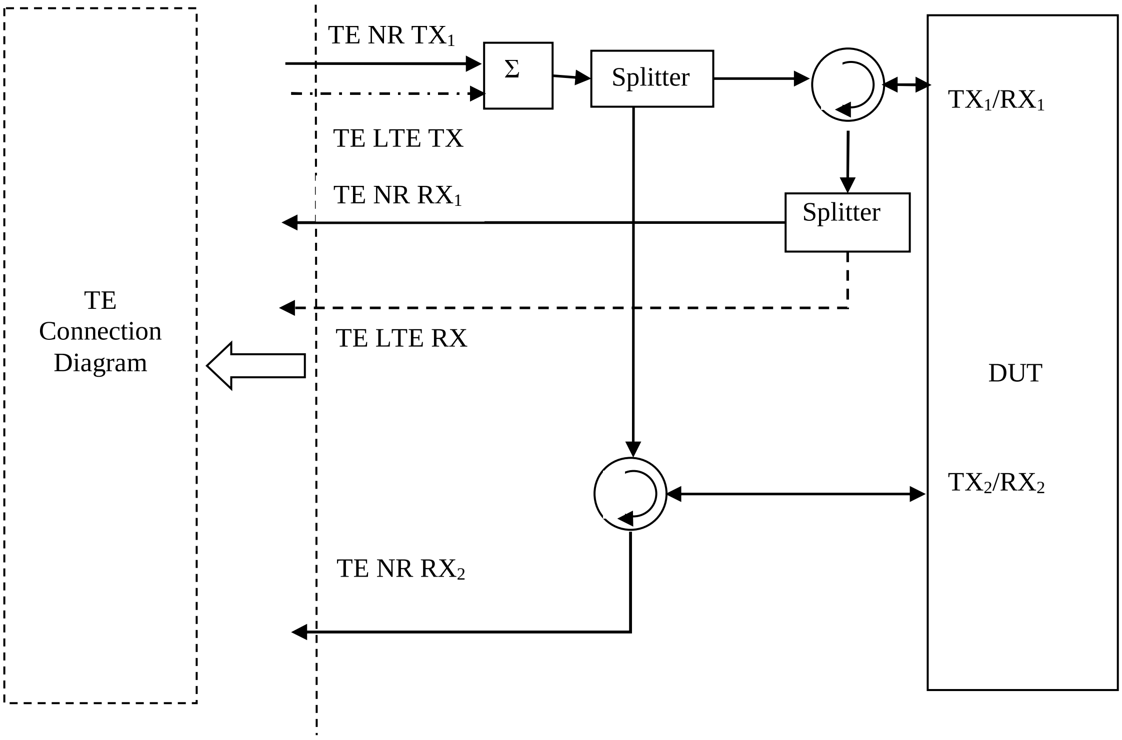

Figure A.3.2.3.3: 2 Tx User Equipment connection for single basic cell with NR and LTE cells at the same connectors for both cells and 2TX UL MIMO supported

A.3.2.4 Three Antenna Connectors

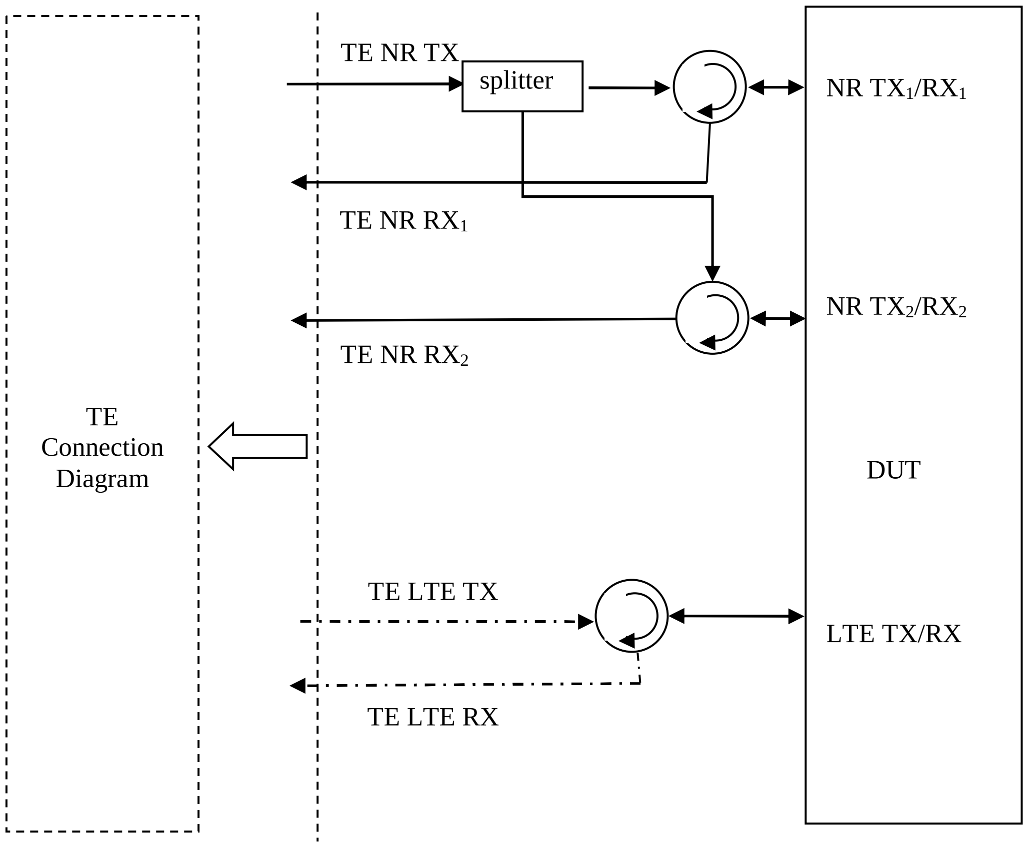

Figure A.3.2.4.1: 2Tx User Equipment connection for single basic cell with NR and LTE cells at different separated connectors and 2TX UL MIMO supported

A.3.2.5 Four Antenna Connectors

FFS

A.3.3 Test Equipment Parts for Radiated Measurements

A.3.3.1 Basic 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.

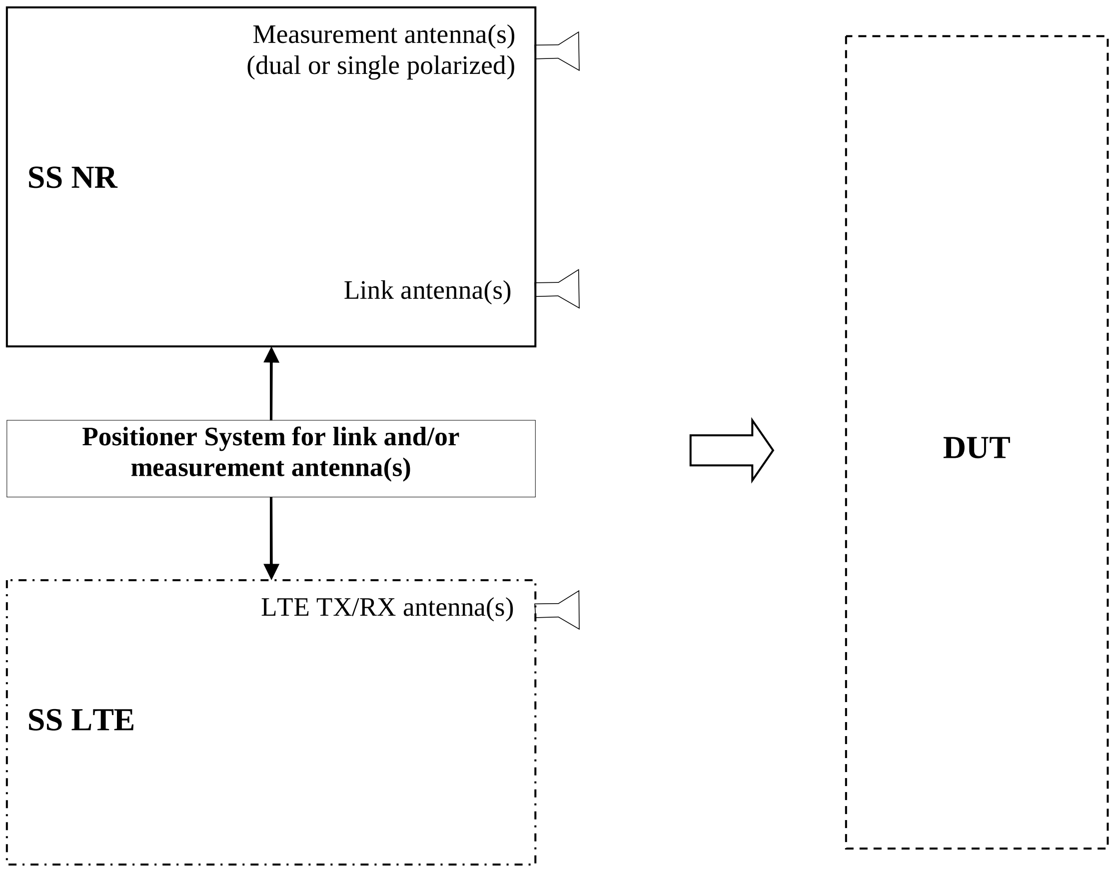

Figure A.3.3.1.1: TE diagram for radiated RX and TX tests

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.

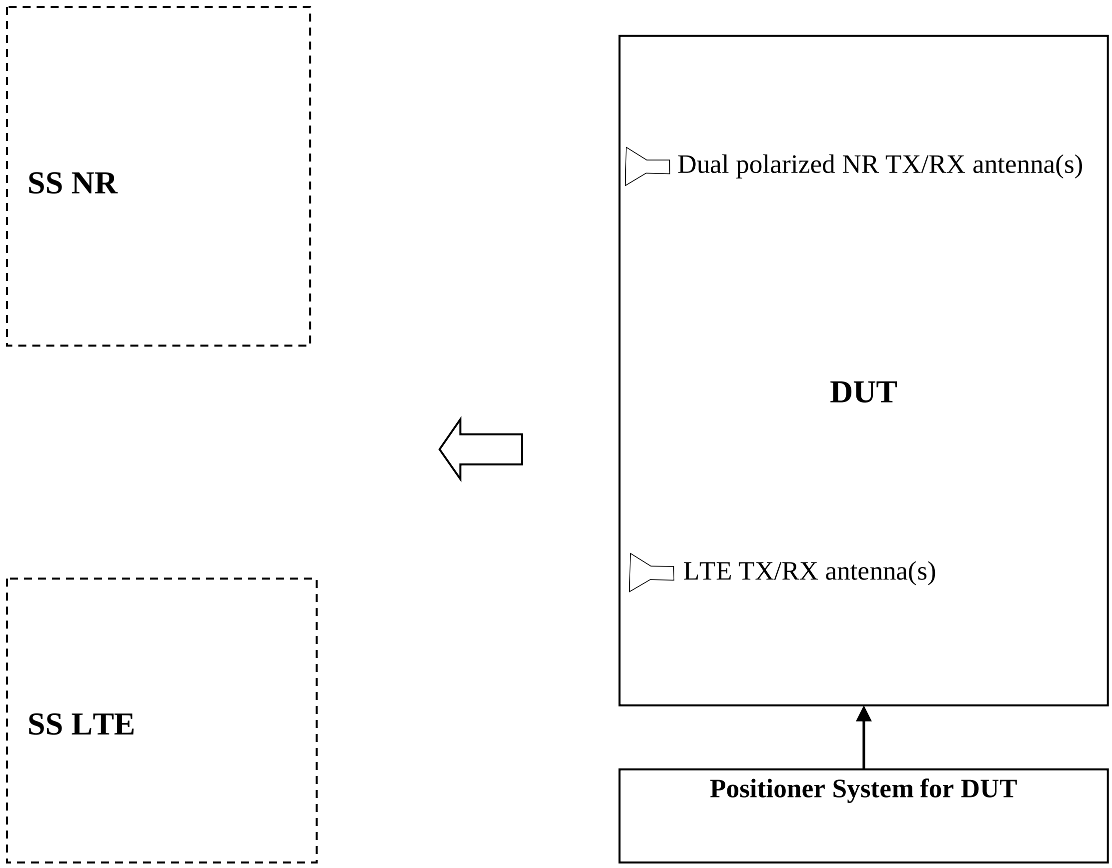

Figure A.3.4.1.1: UE diagram for radiated RX and TX tests

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

B.1 General

Editor's Note: The working assumption is that the DFF or IFF based OTA test methodologies defined in clause 5.2.1 and 5.2.3 respectively of TR 38.810 [22] should be used for Signalling test The exact text of Annex B is TBD.

B.2 Permitted Test Methods

B.2.1 General

B.2.2 Direct far field (DFF)

B.2.2.1 Description

B.2.2.2 Quiet zone dimension

B.2.2.3 Quality of the quiet zone

B.2.2.4 Measurement Distance

B.2.3 Direct far field (DFF) setup simplification for centre of beam measurements

B.2.3.1 Description

B.2.3.2 Quiet zone dimension

B.2.3.3 Quality of the quiet zone

B.2.3.4 Measurement Distance

B.2.4 Indirect far field (IFF) method 1

B.2.4.1 Description

B.2.4.2 Quiet zone dimension

B.2.4.3 Quality of the quiet zone

B.2.4.4 Measurement Distance

B.2.5 Near field to far field transform (NFTF)

B.2.5.1 Description

B.2.5.2 Quiet zone dimension

B.2.5.3 Quality of the quiet zone

Annex C (informative): Calculation of test frequencies

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 for a given band.

C.1 Definitions and Parameters

Figure C.1-1 shows SSB and CORESET#0 and related parameters.

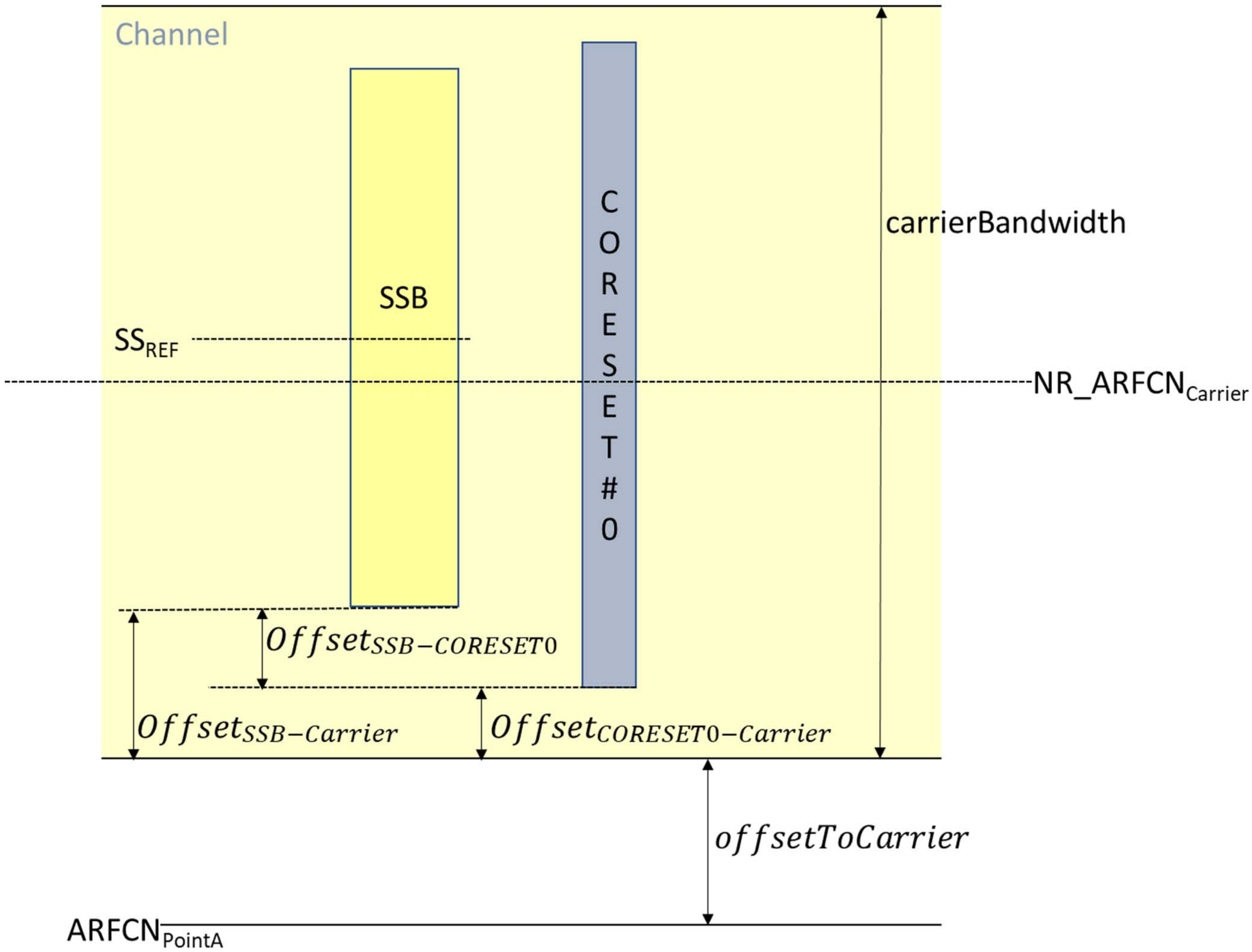

Figure C.1-1: location of SSB and CORESET#0 within a channel

The following definitions are used in figure C.1-1:

$NR\_ARFCN_{Carrier}$	Centre frequency of the carrier according to the channel raster of the band (TS 38.101-1 [7] clause 5.4.2.3)
$ARFCN_{SSB}$	ARFCN as provided as absoluteFrequencySSB to the UE (FrequencyInfoDL); corresponds to the GSCN of the SSB (i.e. the GSCN corresponds to the same frequency as absoluteFrequencySSB)
$ARFCN_{PointA}$	ARFCN as provided as absoluteFrequencyPointA to the UE (FrequencyInfoDL)
carrierBandwidth	carrierBandwidth as provided to the UE (SCS-SpecificCarrier)
offsetToCarrier	offsetToCarrier as provided to the UE (SCS-SpecificCarrier)
$Offset_{SSB-CORESET0}$	offset between the lowest subcarrier of the SSB and the lowest subcarrier of CORESET#0; the offset consists of the number of RBs given by Offset(RBs) in tables 13-X of TS 38.213 [22], the number of 15kHz subcarriers given by k_{SSB}
$Offset_{CORESET0-Carrier}$	offset between the lowest subcarrier of CORESET#0 and the lowest subcarrier of the carrier; the offset is a multiple of resource blocks.
$Offset_{SSB-Carrier}$	offset between the lowest subcarrier of the SSB and the lowest subcarrier of the carrier

Further definitions used in this annex:

k_{SSB}	as defined in TS 38.211 [XX] clause 7.4.3.1
$SCS_{Carrier}$	subcarrier spacing for the carrier: 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_{kSSB}	Step size for k_{SSB} (see TS 38.211 [XX] clause 7.4.3.1): 15kHz for $SCS_{SSB} \in$ {15kHz, 30kHz} $SCS_{Carrier}$ otherwise
SS_{REF}	Centre frequency of SSB corresponding to a valid GSCN value according to clause 5.4.3.1 of TS 38.101-1 [7] and TS 38.101-2 [8].
F_{Low}	as defined in clause 5.2 of TS 38.101-1 [7] and TS 38.101-2 [8]
F_{High}	as defined in clause 5.2 of TS 38.101-1 [7] and TS 38.101-2 [8]
ΔF_{Raster}	as defined in clause 5.4.2.3 of TS 38.101-1 [7] and TS 38.101-2 [8]
$F_{Channel}$	Centre frequency of a channel corresponding to its NR-ARFCN value
$BW_{Channel}$	$\mathbf{BW_{Channel}} = 12 * SCS_{Carrier} * N_{RB}$ with N_{RB} according to Table 5.3.2-1 of TS 38.101-1 [7] and TS 38.101-2 [8]
BW_{SSB}	$\mathbf{BW_{SSB}} = 12 * SCS_{SSB} * 20$
ΔGSCN	GSCN step size 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 tables of clause 13 in TS 38.213 [22]
$Offset_{RBs,max}$	Maximum value for Offset (RBs) according to table 13.X in TS 38.213 [22] for a given band and {SCS_{SSB}, $SCS_{Carrier}$} combination
$Offset_{RBs,min}$	Minimum value for Offset (RBs) according to table 13.X in TS 38.213 [22] for a given band and {SCS_{SSB}, $SCS_{Carrier}$} combination

C.2 Frequency determination

Test frequencies are determined in two major steps: Firstly, the test frequencies are determined without consideration of any SSB and CORESET#0 alignment. Then, if the cell corresponds to a frequency channel that is selectable as PCell (i.e. has SSB scheduling), the lowest GSCN value is determined so that the SSB is fully within the channel (see figure C.1-1); k_{SSB} and $Offset_{RBs}$ are determined depending on the subcarrier spacing ($SCS_{Carrier}$, SCS_{SSB}). If no valid values for k_{SSB} and $Offset_{RBs}$ can be found for a given channel, the channel frequency is shifted to the nearest frequency allowing valid values.

C.2.1 Frequency determination independent from GSCN raster

Channel frequencies are determined taking into account 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.2.1.1 Determination of Low-, Mid- and High-Range

$\mathbf{F_{LowRange}} = \mathbf{Ceil}((F_{Low} + BW_{Channel}/2) / \Delta F_{Raster}) * \Delta F_{Raster}$	C.2.1.1-Eq1
$\mathbf{F_{MidRange}} = \mathbf{Round}((F_{Low} + (F_{High} - F_{Low})/2) / \Delta F_{Raster}) * \Delta F_{Raster}$	C.2.1.1-Eq2
$\mathbf{F_{HighRange}} = \mathbf{Floor}(F_{High} - BW_{Channel}/2) / \Delta F_{Raster}) * \Delta F_{Raster}$	C.2.1.1-Eq3

$F_{LowRange}$ is rounded up and $F_{HighRange}$ 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].

C.2.1.2 Determination of Mid-Low and Mid-High-Range for signalling tests

$\mathbf{F_{Mid\text{-}LowRange}} = \mathbf{Round}((F_{LowRange}+ (F_{HighRange} - F_{LowRange})/3) / \Delta F_{Raster}) * \Delta F_{Raster}$	C.2.1.2-Eq1
$\mathbf{F_{Mid\text{-}HighRange}} = \mathbf{Round}((F_{LowRange} + 2*(F_{HighRange} - F_{LowRange})/3) / \Delta F_{Raster}) * \Delta F_{Raster}$	C.2.1.2-Eq2

C.2.2 GSCN determination

C.2.2.1 Calculation of lower bound for SS_{REF} and $Offset_{SSB\text{-}Carrier}$

$\mathbf{Offset_{SSB\text{-}Carrier}} = SS_{REF} - BW_{SSB} / 2 – (F_{Channel} – BW_{Channel} / 2)$	C.2.2.1-Eq1
$\mathbf{F_{ssb,min}} = F_{Channel} - BW_{Channel} / 2 + BW_{SSB} /2 + Offset_{RBs,min} * 12 * SCS_{Carrier}$	C.2.2.1-Eq2

C.2.2.2 Calculation of GSCN

Calculation of GSCN according to clause 5.4.3.1 of TS 38.101-1 [7] and TS 38.101-2 [8] so that the GSCN has the minimum value for the corresponding SSB being fully above the lower edge of the channel. $\Rightarrow$ $F_{ssb,min}$ is rounded up to the next valid SS_{REF}

IF FR1 **AND** $F_{Channel}$ < 3GHz **THEN**	
N = **Ceil**(($F_{ssb,min}$ – M * 50) / 1.2MHz) with M ∈ {1, 3, 5} for ΔF_{Raster} = 100kHz M = 3 otherwise	C.2.2.2-Eq1a
GSCN' = 3 * N + (M - 3) / 2 for ΔF_{Raster} = 100kHz M is selected out of {1, 3, 5} so that $Offset_{SSB\text{-}Carrier}$ (according to equation C.2.2.1-Eq1) is a multiple of 15kHz (SCS_{kSSB} for bands with 100kHz raster)	C.2.2.2-Eq2a
ELSE IF FR1 **AND** $F_{Channel}$ >= 3GHz **THEN**	
N = **Ceil**(($F_{ssb,min}$ – 3000MHz) / 1.44MHz)	C.2.2.2-Eq1b
GSCN' = 7499 + N	C.2.2.2-Eq2b
ELSE IF FR2 **THEN**	
N = **Ceil**(($F_{ssb,min}$ – 24250.08MHz) / 17.28MHz)	C.2.2.2-Eq1c
GSCN' = 22256 + N	C.2.2.2-Eq2c
END	
GSCN = **Ceil**(GSCN' / ΔGSCN) * ΔGSCN	C.2.2.2-Eq3

C.2.2.3 Calculation of $Offset_{RBs}$ and k_{SSB}

$Offset_{RBs}$ and k_{SSB} are calculated based on the assumption that CORESET#0 is at the bottom of the channel i.e. $Offset_{CORESET0\text{-}Carrier}$ = 0 and therefore $Offset_{SSB\text{-}Carrier} = Offset_{SSB\text{-}CORESET0}$ as according to equation C.2.2.1-Eq1.

$\mathbf{Offset_{RBs}}'$ = Floor($Offset_{SSB\text{-}Carrier}$ / (12 * $SCS_{Carrier}$))	C.2.2.3-Eq1
$\mathbf{k_{SSB}}'$ = **Floor**(($Offset_{SSB\text{-}Carrier}$ - 12 * $SCS_{Carrier}$ * $Offset_{RBs}'$) / SCS_{kSSB})	C.2.2.3-Eq2
IF $SCS_{Carrier}$ == 15kHz **AND** ($Offset_{RBs}$ **MODULO** 2) > 0 **THEN**	
$\mathbf{Offset_{RBs}}$ = $Offset_{RBs}'$ - 1	C.2.2.3-Eq3a
$\mathbf{k_{SSB}}$ = k_{SSB}' + 12	C.2.2.3-Eq4a

ELSE	
$Offset_{RBs}$ = $Offset_{RBs}$'	C.2.2.3-Eq3b
k_{SSB} = k_{SSB}'	C.2.2.3-Eq4b
END	

If the calculated value of $Offset_{RBs}$ is valid according to TS 38.213 [22] clause 13, CORESET#0 is at the bottom of the channel and no channel shifting is required. Otherwise to achieve a valid $Offset_{RBs}$ and $Offset_{CORESET0\text{-}Carrier}$ to be 0 the channel frequency can be aligned as per C.2.3.

C.2.3 Channel alignment to GSCN raster

If the value of $Offset_{RBs}$ is not valid according to TS 38.213 [22] clause 13, $F_{Channel}$ may be shifted up or down to $F_{Channel,shifted}$:
The shifting is done so that the following requirements are fulfilled:

$Offset_{RBs,shifted}$ and $k_{SSB,shifted}$ are valid according TS 38.213 [22] clause 13	(C.2.3-R1)
$Offset_{CORESET0\text{-}Carrier,shifted}$ = 0, i.e. CORESET#0 is at the bottom of the channel	(C.2.3-R2)
ΔF_{Shift} = Abs($F_{Channel}$ – $F_{Channel,shifted}$) has a minimum value	(C.2.3-R3)

C.2.3.1 Further definitions

ΔF_{Shift}	Absolute value of the difference between the channel frequency as calculated according to C.2.1.1 or C.2.1.2 and the shifted value as according to this clause.
$\Delta F_{Shift,down}$	Distance between $F_{Channel}$ and the next frequency below $F_{Channel}$ fulfilling the requirements
$\Delta F_{Shift,up}$	Distance between $F_{Channel}$ and the next frequency above $F_{Channel}$ fulfilling the requirements
$Offset_{RBs,below}$	Maximum value for offset (RBs) in the applicable table of TS 38.213 [22] clause 13 below $Offset_{RBs}$ as calculated in C.2.2.3
$Offset_{RBs,above}$	Minimum value for offset (RBs) in the applicable table of TS 38.213 [22] clause 13 above $Offset_{RBs}$ as calculated in C.2.2.3; NOTE: for $Offset_{RBs}$ > $Offset_{RBs,max}$ there is no $Offset_{RBs,above}$
$k_{SSB,max}$	Maximum value for k_{SSB} depending on $SCS_{Carrier}$: $k_{SSB,max}$ = 23 for $SCS_{Carrier}$ = 15kHz $k_{SSB,max}$ = 22 for $SCS_{Carrier}$ = 30kHz (NOTE) $k_{SSB,max}$ = 11 otherwise NOTE: In accordance to C.2.2.1-Eq1 $Offset_{SSB\text{-}Carrier}$ needs to be a multiple of 30kHz for SCS spaced channel raster with SCS=30kHz and therefore k_{SSB} needs to be even. The case of 100kHz channel raster does not need to be considered as there is no band which requires channel shifting.
$GSCN_{prev}$	$GSCN_{prev}$ = GSCN - ΔGSCN
$SS_{REF,prev}$	SSB centre frequency corresponding to $GSCN_{prev}$

C.2.3.2 Calculation of shifted channel frequency

$\Delta F_{Shift,up}$ = $Offset_{SSB\text{-}Carrier}$ – ($Offset_{RBs,below}$ * $SCS_{Carrier}$ * 12 + $k_{SSB,max}$ * SCS_{kSSB})	C.2.3.2-Eq1
IF $Offset_{RBs}$ < $Offset_{RBs,max}$ **THEN**	
$\Delta F_{Shift,down}$ = $Offset_{RBs,above}$ * $SCS_{Carrier}$ * 12 - $Offset_{SSB\text{-}Carrier}$	C.2.3.2-Eq2a
ELSE	
$\Delta F_{Shift,down}$ = SS_{REF} – $SS_{REF,prev}$ - $Offset_{SSB\text{-}Carrier}$ + $Offset_{RBs,min}$ * $SCS_{Carrier}$ * 12	C.2.3.2-Eq2b NOTE 1
END	
IF $F_{Channel}$ == $F_{LowRange}$ **OR** ($\Delta F_{Shift,up}$ < $\Delta F_{Shift,down}$ **AND** $F_{Channel}$ ≠ $F_{HighRange}$) **THEN**	
$F_{Channel,shifted}$ = $F_{Channel}$ + $\Delta F_{Shift,up}$	C.2.3.2-Eq3a
ELSE	
$F_{Channel,shifted}$ = $F_{Channel}$ - $\Delta F_{Shift,down}$	C.2.3.2-Eq3b
IF $Offset_{RBs}$ > $Offset_{RBs,max}$ **THEN**	

$GSCN_{shifted}$ = GSCN - ΔGSCN	C.2.3.2-Eq4
END	
END	
NOTE 1: when $Offset_{RBs} > Offset_{RBs,max}$ then $\Delta F_{Shift,down}$ is calculated using $GSCN_{prev}$	

Annex D (informative): Change history

Change history							
Date	Meeting	TDoc	CR	Rev	Cat	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

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