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**User Equipment (UE) conformance specification;  
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# Foreword

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

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

Version x.y.z

where:

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

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

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

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# 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).

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# 2 References

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

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

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

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

- [42] 3GPP TS 36.523-1: "Evolved Universal Terrestrial Radio Access (E-UTRA) and Evolved Packet Core (EPC); User Equipment (UE) conformance specification; Part 1: Protocol conformance specification".
- [43] 3GPP TS 33.501: "Security architecture and procedures for 5G system".
- [44] 3GPP TS 34.229-1: "Internet Protocol (IP) multimedia call control protocol based on Session Initiation Protocol (SIP) and Session Description Protocol (SDP); User Equipment (UE) conformance specification; Part 1: Protocol conformance specification".
- [45] 3GPP TS 26.114: "IP Multimedia Subsystem (IMS);Multimedia Telephony;Media handling and interaction".
- [46] IETF RFC 4566: "SDP: Session Description Protocol".
- [47] 3GPP TS 34.229-5: "Internet Protocol (IP) multimedia call control protocol based on Session Initiation Protocol (SIP) and Session Description Protocol (SDP); User Equipment (UE) conformance specification; Part 5: Protocol conformance specification using 5G System (5GS)".
- [48] 3GPP TS 36.101: "Evolved Universal Terrestrial Radio Access (E-UTRA); User Equipment (UE) radio transmission and reception".
- [49] 3GPP TS 37.571-5: "User Equipment (UE) conformance specification for UE positioning; Part 5: Test scenarios and assistance data".
- [50] STANAG 4294: "NATO STANAG 4294. Navstar Global Positioning System (GPS) System Characteristics".
- [51] 3GPP TS 34.229-2: "Internet Protocol (IP) multimedia call control protocol based on Session Initiation Protocol (SIP) and Session Description Protocol (SDP);User Equipment (UE) conformance specification;Part 2: Implementation Conformance Statement (ICS) specification".
- [52] 3GPP TS 34.108: "Common Test Environments for User Equipment (UE); Conformance testing".
- [53] 3GPP TS 23.287: "Architecture enhancements for 5G System (5GS) to support Vehicle-to-Everything (V2X) services".
- [54] 3GPP TS 24.587: "Vehicle-to-Everything (V2X) services in 5G System (5GS)".
- [55] 3GPP TS 38.306: "User equipment (UE) radio access capabilities".

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## 3 Definitions, symbols and abbreviations

### 3.1 Definitions

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

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

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

### 3.2 Symbols

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

## 3.3 Abbreviations

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

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

---

## 4 Common test environments

### 4.1 Environmental conditions

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

#### 4.1.1 Temperature

**Editor's note: Lower humidity limit is under discussion as it is not aligned with previous technologies.**

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 TS 38.101-1 [7] clause 6.2 for extreme operation.

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

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

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

**Table 4.1.1-2: Temperature conditions for FR2**

+15°C to +35°C	For normal (room temperature) conditions with relative humidity 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] clause 6.2 for extreme operation.

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

Some tests are performed also in extreme temperature conditions. These test conditions are denoted as TL (temperature low,  $-10^{\circ}\text{C}$ ) and TH (temperature high,  $+55^{\circ}\text{C}$ ).

## 4.1.2 Voltage

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

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

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

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

**Table 4.1.2-1: Voltage conditions**

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

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

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

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

## 4.2 Common requirements of test equipment

Mobile conformance testing can be categorized into 3 distinct areas:

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

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



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

## 4.2.1 General functional requirements

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

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

- Conducted test method

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

- OTA test method

All test equipment used to perform conformance testing on a UE shall provide a platform suitable for testing UE's 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.

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

All test equipment shall provide the following minimum functionality.

- The capability of emulating a single NR cell and a single E-UTRA (for 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 TS 38.523-1 [12] (Signalling), TS 38.521-1 [14], TS 38.521-2 [15], TS 38.521-3 [16] (TRx), TS 38.521-4 [17] (Performance), TS 38.533 [18] (RRM), TS 37.571-1 [39] and TS 37.571-2 [40] (Positioning)).

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

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

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

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

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

#### 4.2.2.1.2 Supported Channels for a NR cell

##### 4.2.2.1.2.1 Logical channels

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

##### 4.2.2.1.2.2 Transport channels

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

##### 4.2.2.1.2.3 Physical channels

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

##### 4.2.2.1.2.4 Physical signals

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

Physical signal	Minimum number	Comments
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

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

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

NR Band	UE Mid Test Channel bandwidth [MHz] <sup>1, 1a, 1b</sup>	RedCap UE Mid Test Channel bandwidth [MHz]
n1	25	15
n2	20	15
n3	20	15
n5	15	15
n7	25	15
n8	15	15
n12	10	10
n14	10	10
n20	15	15
n24	10	10
n25	20	15
n26	10	15
n28	15	15
n29	10 <sup>2</sup>	N/A
n30	10	10
n34	10	10
n38	20	15
n39	20	15
n40	30	15
n41	60	15
n48	20 <sup>4</sup> , 40 <sup>5</sup>	15
n50	20	15
n51	5	5
n53	10	10
n65	15	15
n66	20	10 <sup>8</sup>
n70	15	10
n71	10	10
n74	15	15
n75	15 <sup>2</sup>	N/A
n76	5 <sup>2</sup>	N/A
n77	50	15
n78	50	15
n79	60	20
n80	20 <sup>3</sup>	[15]
n81	15 <sup>3</sup>	[15]
n82	15 <sup>3</sup>	[15]
n83	15 <sup>3</sup>	[15]
n84	25 <sup>3</sup>	[15]
n86	20 <sup>3</sup>	[15]
n95	10 <sup>3</sup>	[10]
n97	50 <sup>3</sup>	[15]
n99	10 <sup>3</sup>	[10]

Note 1: Mid channel BW is the closest channel BW to the arithmetic average channel BW of all the possible channel BWs per band in Table 5.3.5-1 of TS 38.521-1 [14] among all SCSs. If there are two channel bandwidths that have same distance to the average value, the higher one is selected.

In case such bandwidth is not applicable for a given subcarrier spacing, the closer bandwidth to the value in this table applicable for such subcarrier spacing shall be tested.

In case such bandwidth is not defined in the UE release specification according to 38.101-1 [7] Table 5.3.5-1:

channel BW to the according to 38.101-1 [7] Table 5.3.5-1 closest

the closer bandwidth to the value in this table defined for that band in the UE release specification shall be tested.

If there are two channel bandwidths that have same distance to the arithmetic average, the higher one is selected

Note 1a: Values listed in this table assume that the (non-optional) channel bandwidths specified in Table 5.3.5-1 of TS 38.101-1 [7] lower than the maximum are supported. However, these channel bandwidths are mandatory with capability parameter as defined in [55] TS 38.306 clause 4.2.1 for *channelBWs-DL/channelBWs-UL* parameters. Hence the UE might indicate them as not supported. In such case, select the closest channel bandwidth in both DL and UL.

Note 1b: For CA, DC, SDL and SUL, the mid-test channel bandwidth per component carrier is chosen to test the closest aggregated bandwidth to the mathematical centre between minimum and maximum aggregated bandwidth defined for and within a given bandwidth combination set. In case no set of channel bandwidths per component carrier supported by the UE can achieve such aggregated bandwidth, select one combination of bandwidths per component carrier within the bandwidth combination set that minimizes the difference to the target aggregated bandwidth.

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

Note 3: This UE channel bandwidth is applicable only to uplink.

Note 4: Applicable when for use as single carrier, PCell in CA or PCell in DC configuration.

Note 5: Applicable for use as SCell in CA or SCell in DC configuration.

Note 6: Void

Note 7: Void

Note 8: Void

Note 9: Void

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

NR Band	UE Mid Test Channel bandwidth [MHz] <sup>1, 2, 3</sup>
n257	200
n258	200
n260	200
n261	200
Note 1:	<p>Mid channel BW is the closest channel BW to the arithmetic average channel BW of all the possible channel BWs per band in Table 5.3.5-1 of TS 38.521-1 [14] among all SCSs. If there are two channel bandwidths that have same distance to the average value, the higher one is selected.</p> <p>In case such bandwidth is not applicable for a given subcarrier spacing, the closer bandwidth to the value in this table applicable for such subcarrier spacing shall be tested.</p> <p>In case such bandwidth is not defined in the UE release specification according to 38.101-2 [8] Table 5.3.5-1, the closer bandwidth to the value in this table defined for that band in the UE release specification shall be tested.</p> <p>If there are two channel bandwidths that have same distance to the arithmetic average, the higher one is selected.</p>
Note 2:	<p>Values listed in this table assume that the (non-optional) channel bandwidths specified in Table 5.3.5-1 of TS 38.101-2 [8] lower than the maximum are supported. However, these channel bandwidths are mandatory with capability parameter as defined in [55] TS 38.306 clause 4.2.1 for <i>channelBWs-DL/channelBWs-UL</i> parameters. Hence the UE might indicate them as not supported. In such case, select the closest channel bandwidth in both DL and UL.</p>
Note 3:	<p>For CA and DC, the mid-test channel bandwidth per component carrier is chosen to test the closest aggregated bandwidth to the mathematical centre between minimum and maximum aggregated bandwidth defined for and within a given bandwidth combination set. In case no set of channel bandwidths per component carrier supported by the UE can achieve such aggregated bandwidth, select one combination of bandwidths per component carrier within the bandwidth combination set that minimizes the difference to the target aggregated bandwidth.</p>

#### 4.3.1.0B Low test channel bandwidth

The low test channel bandwidth definition for RF is given in Table 4.3.1.0B-1 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 [MHz] <sup>1, 1a, 1b</sup>	RedCap UE Low Test Channel bandwidth [MHz]
n1	5	5
n2	5	5
n3	5	5
n5	5	5
n7	5	5
n8	5	5
n12	5	5
n14	5	5
n20	5	5
n24	5	5
n25	5	5
n26	5	5
n28	5	5
n29	5 <sup>2</sup>	N/A
n30	5	5
n34	5	5
n38	5	5
n39	5	5
n40	5 <sup>4</sup> , 10 <sup>5</sup>	10
n41	10	10
n48	5 <sup>4</sup> , 10 <sup>5</sup>	10
n50	5 <sup>4</sup> , 10 <sup>5</sup>	10
n51	5	5
n53	5	5
n65	5	5
n66	5	5
n70	5	5
n71	5	5
n74	5	5
n75	5 <sup>2</sup>	N/A
n76	5 <sup>2</sup>	N/A
n77	10	10
n78	10	10
n79	10	10
n80	5 <sup>3</sup>	[5]
n81	5 <sup>3</sup>	[5]
n82	5 <sup>3</sup>	[5]
n83	5 <sup>3</sup>	[5]
n84	5 <sup>3</sup>	[5]
n86	5 <sup>3</sup>	[5]
n95	5 <sup>3</sup>	[5]
n97	5 <sup>3</sup>	[5]
n99	5 <sup>3</sup>	[5]



Note 1:	Minimum values among all the possible channel BW combinations per band in Table 5.3.5-1 of TS 38.521-1 [14] are listed. In case such bandwidth is not applicable for a given subcarrier spacing, the minimum bandwidth applicable for such subcarrier spacing shall be tested. In case such bandwidth is not defined in the UE release specification according to 38.101-1 [7] Table 5.3.5-1, the minimum bandwidth defined for that band in the UE release specification shall be tested.
Note 1a:	Values listed in this table assume that the (non-optional) channel bandwidths specified in Table 5.3.5-1 of TS 38.101-1 [7] lower than the maximum are supported. However, these channel bandwidths are mandatory with capability parameter as defined in [55] TS 38.306 clause 4.2.1 for <i>channelBWs-DL/channelBWs-UL</i> parameters. Hence the UE might indicate them as not supported. In such case, select the closest channel bandwidth in both DL and UL.
Note 1b:	For CA, DC, SDL and SUL, the low-test channel bandwidth per component carrier is chosen to allow minimum aggregated bandwidth defined for a given bandwidth combination set. In case no set of channel bandwidths per component carrier supported by the UE can achieve minimum aggregated bandwidth, select one combination of bandwidths per component carrier within the bandwidth combination set that minimizes the aggregated bandwidth.
Note 2:	This UE channel bandwidth is applicable only to downlink.
Note 3:	This UE channel bandwidth is applicable only to uplink.
Note 4:	Applicable for use as SCell in CA or SCell in DC configuration.
Note 5:	Applicable for use as single carrier, PCell in CA or PCell in DC configuration.

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

<b>NR Band</b>	<b>UE Low Test Channel bandwidth [MHz]<sup>1, 2, 3</sup></b>
n257	50
n258	50
n260	50
n261	50
Note 1:	Minimum values among all the possible channel BW combinations per band in Table 5.3.5-1 of TS 38.521-2 [15] are listed. In case such bandwidth is not applicable for a given subcarrier spacing, the minimum bandwidth applicable for such subcarrier spacing shall be tested. In case such bandwidth is not defined in the UE release specification according to 38.101-2 [8] Table 5.3.5-1, the minimum bandwidth defined for that band in the UE release specification shall be tested.
Note 2:	Values listed in this table assume that the (non-optional) channel bandwidths specified in Table 5.3.5-1 of TS 38.101-2 [8] lower than the maximum are supported. However, these channel bandwidths are mandatory with capability parameter as defined in [55] TS 38.306 clause 4.2.1 for <i>channelBWs-DL/channelBWs-UL</i> parameters. Hence the UE might indicate them as not supported. In such case, select the closest channel bandwidth in both DL and UL.
Note 3:	For CA and DC, the low-test channel bandwidth per component carrier is chosen to allow minimum aggregated bandwidth defined for a given bandwidth combination set. In case no set of channel bandwidths per component carrier supported by the UE can achieve minimum aggregated bandwidth, select one combination of bandwidths per component carrier within the bandwidth combination set that minimizes the aggregated bandwidth.

#### 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 [MHz] <sup>10, 11, 12</sup>	RedCap UE High Test Channel bandwidth [MHz]
n1	50	20
n2	40	20
n3	50	20
n5	20 <sup>1</sup> , 25 <sup>2</sup>	20
n7	50	20
n8	20 <sup>1</sup> , 35 <sup>2,10</sup>	20
n12	15	15
n14	10	10
n20	20	20
n24	10	10
n25	40 <sup>1</sup> , 45 <sup>2</sup>	20
n26	20	20
n28	30	20
n29	10 <sup>2</sup>	N/A
n30	10	10
n34	15	15
n38	25, 40 <sup>139</sup>	15
n39	40	20
n40	100	20
n41	100	20
n48	40 <sup>1,3</sup> , 100 <sup>4</sup>	20
n50	60 <sup>1</sup> , 80 <sup>2</sup>	20
n51	5	5
n53	10	10
n65	50	20
n66	45	20
n70	15 <sup>1</sup> , 25 <sup>2</sup>	15 <sup>1</sup> /20 <sup>2</sup>
n71	20 <sup>1</sup> , 35 <sup>2</sup>	20
n74	20	20
n75	50	N/A
n76	5 <sup>2</sup>	N/A
n77	100	20
n78	100	20
n79	100	20
n80	40	[20]
n81	20 <sup>1</sup>	[20]
n82	20 <sup>1</sup>	[20]
n83	30 <sup>1</sup>	[20]
n84	50 <sup>1</sup>	[20]
n86	40 <sup>1</sup>	[20]
n95	15 <sup>1</sup>	[15]
n97	100 <sup>1</sup>	[20]
n99	10 <sup>1</sup>	[10]

Note 1:	This UE channel bandwidth is applicable only to uplink.
Note 2:	This UE channel bandwidth is applicable only to downlink.
Note 3:	Applicable for use as single carrier, PCell in CA or PCell in DC configuration.
Note 4:	Applicable for use as DL SCell in CA or DL SCell in DC configuration.
Note 5:	Void
Note 6:	Void
Note 7:	Void
Note 8:	Void
Note 9:	Void
Note 10:	<p>Maximum values among all the possible channel BW combinations per band in Table 5.3.5-1 of TS 38.521-1 [14] are listed.</p> <p>In case such bandwidth is not applicable for a given subcarrier spacing, the maximum bandwidth applicable for such subcarrier spacing shall be tested.</p> <p>In case such bandwidth is not defined in the UE release specification according to 38.101-1 [7] Table 5.3.5-1, the maximum bandwidth defined for that band in the UE release specification shall be tested.</p> <p>In case such bandwidth is optional in the UE release specification according to 38.101-1 [7] Table 5.3.5-1 and not supported by the UE, the maximum non-optional bandwidth for the UE release specification shall be tested.</p>
Note 11:	<p>Values listed in this table assume that the maximum (non-optional) channel bandwidth specified in Table 5.3.5-1 of TS 38.101-1 [7] is mandatory without capability parameter (i.e., purely mandatory) as defined in [55] TS 38.306 clause 4.2.1 for <i>supportedBandwidthDL/supportedBandwidthUL</i> parameters in a band combination with a single band entry and a single CC entry (i.e., non-CA band combination).</p>
Note 12:	<p>For CA, DC, SDL and SUL, the High-test channel bandwidth per component carrier is chosen to allow maximum aggregated bandwidth defined for a given bandwidth combination set. In case no set of channel bandwidths per component carrier supported by the UE can achieve maximum aggregated bandwidths in CA, DC, SDL or SUL, some flexibility could be provided to the ecosystem for Rel-15 and Rel-16 so one combination of bandwidth per component carrier within the bandwidth combination set that maximizes the aggregated bandwidth is tested instead values described in Note 12 in Table 4.3.1.0C-1.</p>
Note 13:	These UE channel bandwidths are applicable to sidelink operation

NOTE 1 (Informative): In case values listed in table above are higher than those signalled by the UE in *supportedBandwidthDL/supportedBandwidthUL*, some flexibility could be provided to the ecosystem for Rel-15 and Rel-16 so the value signalled by the UE in *supportedBandwidthDL/supportedBandwidthUL* is used in single carrier operation instead values described in Table 4.3.1.0C-1.

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

NR Band	UE High Test Channel bandwidth [MHz] <sup>1, 2, 3</sup>
n257	400
n258	400
n260	400
n261	400
Note 1:	<p>Maximum values among all the possible channel BW combinations per band in Table 5.3.5-1 of TS 38.521-2 [15] are listed. In case such bandwidth is not applicable for a given subcarrier spacing, the maximum bandwidth applicable for such subcarrier spacing shall be tested.</p> <p>In case such bandwidth is not defined in the UE release specification according to 38.101-2 [8] Table 5.3.5-1, the maximum bandwidth defined for that band in the UE release specification shall be tested.</p> <p>In case such bandwidth is optional in the UE release specification according to 38.101-2 [8] Table 5.3.5-1 and not supported by the UE, the maximum non-optional bandwidth for the UE release specification shall be tested.</p>
Note 2:	<p>Values listed in this table assume that the maximum (non-optional) channel bandwidth specified in Table 5.3.5-1 of TS 38.101-2 [8] is mandatory without capability parameter (i.e., purely mandatory) as defined in [55] TS 38.306 clause 4.2.1 for <i>supportedBandwidthDL/supportedBandwidthUL</i> parameters in a band combination with a single band entry and a single CC entry (i.e., non-CA band combination).</p>
Note 3:	<p>For CA and DC, the High-test channel bandwidth per component carrier is chosen to allow maximum aggregated bandwidth defined for a given bandwidth combination set. In case no set of channel bandwidths per component carrier supported by the UE can achieve maximum aggregated bandwidths in CA and DC, some flexibility could be provided to the ecosystem for Rel-15 and Rel-16 so one combination of bandwidth per component carrier within the bandwidth combination set that maximizes the aggregated bandwidth is tested instead values described in Note 3 in Table 4.3.1.0C-2.</p>

NOTE 1 (Informative): In case values listed in table above are higher than those signalled by the UE in *supportedBandwidthDL/supportedBandwidthUL*, some flexibility could be provided to the ecosystem for Rel-15 and Rel-16 so the value signalled by the UE is used in single carrier operation instead values described in Table 4.3.1.0C-2.

#### 4.3.1.0D Bandwidth part

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

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

BW (MHz)	SCS (kHz)	$L_{RBs}$ (Note 2)	<i>locationAndBandwidth</i> (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
45	15	242	9624
45	30	119	32450
45	60	58	15675
50	15	270	1924
50	30	133	36300
50	60	65	17600
60	15	N/A	N/A
60	30	162	31624
60	60	79	21450
70	15	N/A	N/A
70	30	189	24199
70	60	93	25300
80	15	N/A	N/A
80	30	217	16499
80	60	107	29150
90	15	N/A	N/A
90	30	245	8799
90	60	121	33000
100	15	N/A	N/A
100	30	273	1099
100	60	135	36850
Note 1:	The value for <i>locationAndBandwidth</i> parameter is calculated as the RIV value in accordance to TS 38.214 [21] with $N_{BWP}^{size} = 275$ , $RB_{start} = 0$ and $L_{RBs}$ for each bandwidth and subcarrier spacing.		
Note 2:	$L_{RBs} = \text{Max } N_{RB}$ is the default configuration, unless explicitly specified.		

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

<b>BW (MHz)</b>	<b>SCS (kHz)</b>	<b><math>L_{RBs}</math> (Note 2)</b>	<b><i>locationAndBandwidth</i> (Note 1)</b>
50	60	66	17875
50	120	32	8525
100	60	132	36025
100	120	24 <sup>(Note 3)</sup>	6325
100	120	48 <sup>(Note 3)</sup>	12925
100	120	66	17875
200	60	264	3574
200	120	132	36025
400	60	N/A	N/A
400	120	264	3574

Note 1: The value for *locationAndBandwidth* parameter is calculated as the RIV value in accordance to TS 38.214 [21] with  $N_{BWP}^{size} = 275$  and  $RB_{start} = 0$  for each bandwidth and subcarrier spacing.

Note 2:  $L_{RBs} = \text{Max } N_{RB}$  is the default configuration, unless explicitly specified.

Note 3: For configurations where the  $L_{RBs}$  is explicitly specified to be  $L_{RBs} < \text{Max } N_{RB}$ .

4.3.1.0E Void



4.3.1.1 Test frequencies for NR operating bands in FR1

4.3.1.1.1 NR operating bands in FR1

4.3.1.1.1.1 Reference test frequencies for NR operating band n1

Table 4.3.1.1.1-1: Test frequencies for NR operating band n1 and SCS 15 kHz

CBW [MHz]	carrier Bandwidth [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absolute FrequencyPointA [ARFCN]	offsetTo Carrier [Carrier PRBs]	SS block SCS [kHz]	GSCN	absolute FrequencySSB [ARFCN]	$k_{SSB}$	Offset Carrier CORES ET#0 [RBs] Note 2	CORES ET#0 Index (Offset [RBs]) 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)	0
			Mid	2140	428000	2119.39	423878	102		5350	427970	8	1	0 (0)	103
			High	2167.5	433500	2074.53	414906	504		5418	433470	8	1	0 (0)	505
		Uplink	Low	1922.5	384500	1920.25	384050	0	-	-	-	-	-	-	-
			Mid	1950	390000	1857.03	371406	504		-	-	-	-	-	-
			High	1977.5	395500	1974.17	394834	6		-	-	-	-	-	-
10	52	Downlink	Low	2115	423000	2110.32	422064	0	15	5280	422430	2	0	0 (0)	0
			Mid	2140	428000	2116.96	423392	102		5344	427490	10	1	0 (0)	103
			High	2165	433000	2069.6	413920	504		5405	432490	10	1	0 (0)	505
		Uplink	Low	1925	385000	1920.32	384064	0	-	-	-	-	-	-	-
			Mid	1950	390000	1854.6	370920	504		-	-	-	-	-	-
			High	1975	395000	1969.24	393848	6		-	-	-	-	-	-
15	79	Downlink	Low	2117.5	423500	2110.39	422078	0	15	5281	422450	4	0	0 (0)	0
			Mid	2140	428000	2114.53	422906	102		5338	427010	0	0	1 (2)	104
			High	2162.5	432500	2064.67	412934	504		5395	431570	8	1	1 (2)	507
		Uplink	Low	1927.5	385500	1920.39	384078	0	-	-	-	-	-	-	-
			Mid	1950	390000	1852.17	370434	504		-	-	-	-	-	-
			High	1972.5	394500	1964.31	392862	6		-	-	-	-	-	-
20	106	Downlink	Low	2120	424000	2110.46	422092	0	15	5282	422650	6	1	2 (4)	5
			Mid	2140	428000	2112.1	422420	102		5332	426530	2	0	1 (2)	104
			High	2160	432000	2059.74	411948	504		5382	430590	10	1	1 (2)	507
		Uplink	Low	1930	386000	1920.46	384092	0	-	-	-	-	-	-	-
			Mid	1950	390000	1849.74	369948	504		-	-	-	-	-	-
			High	1970	394000	1959.38	391876	6		-	-	-	-	-	-
25	133	Downlink	Low	2122.5	424500	2110.53	422106	0	15	5283	422670	8	1	2 (4)	5

		Uplink	Mid	2140	428000	2109.67	421934	102	-	5326	426050	4	0	1 (2)	104
			High	2157.5	431500	2054.81	410962	504		5369	429610	0	0	2 (4)	508
			Low	1932.5	386500	1920.53	384106	0		-	-	-	-	-	-
			Mid	1950	390000	1847.31	369462	504		-	-	-	-	-	-
			High	1967.5	393500	1954.45	390890	6		-	-	-	-	-	-
30	160	Downlink	Low	2125	425000	2110.6	422120	0	15	5284	422690	10	1	2 (4)	5
			Mid	2140	428000	2107.24	421448	102		5320	425570	6	0	1 (2)	104
			High	2155	431000	2049.88	409976	504		5359	428690	10	1	2 (4)	509
		Uplink	Low	1935	387000	1920.6	384120	0	-	-	-	-	-	-	-
			Mid	1950	390000	1844.88	368976	504		-	-	-	-	-	-
			High	1965	393000	1949.52	389904	6		-	-	-	-	-	-
40	216	Downlink	Low	2130	426000	2110.56	422112	0	15	5283	422670	6	1	2 (4)	5
			Mid	2140	428000	2102.2	420440	102		5308	424610	10	1	1 (2)	105
			High	2150	430000	2039.84	407968	504		5330	426490	6	0	0 (0)	504
		Uplink	Low	1940	388000	1920.56	384112	0	-	-	-	-	-	-	-
			Mid	1950	390000	1839.84	367968	504		-	-	-	-	-	-
			High	1960	392000	1939.48	387896	6		-	-	-	-	-	-
45	242	Downlink	Low	2132.5	426500	2110.72	422144	0	15	5284	422690	2	1	2(4)	5
			Mid	2140	428000	2099.86	419972	102		5302	424130	6	1	1(2)	105
			High	2147.5	429500	2035	407000	504		5320	425570	10	1	0(0)	505
		Uplink	Low	1942.5	388500	1920.72	384144	0	-	-	-	-	-	-	-
			Mid	1950	390000	1837.5	367500	504		-	-	-	-	-	-
			High	1957.5	391500	1934.64	386928	6		-	-	-	-	-	-
50	270	Downlink	Low	2135	427000	2110.7	422140	0	15	5282	422650	2	0	2 (4)	4
			Mid	2140	428000	2097.34	419468	102		5296	423650	2	0	2 (4)	106
			High	2145	429000	2029.98	405996	504		5307	424590	6	0	1 (2)	506
		Uplink	Low	1945	389000	1920.7	384140	0	-	-	-	-	-	-	-
			Mid	1950	390000	1834.98	366996	504		-	-	-	-	-	-
			High	1955	391000	1929.62	385924	6		-	-	-	-	-	-

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

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

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

CBW [MHz]	carrier Bandwidth [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absolute FrequencyPointA [ARFCN]	offsetTo Carrier [Carrier PRBs]	SS block SCS [kHz]	GSCN	absolute FrequencySSB [ARFCN]	$k_{SSB}$	Offset Carrier CORES ET#0 [RBs] Note 2	CORES ET#0 Index (Offset [RBs]) Note 1	offsetTo PointA (SIB1) [PRBs] Note 1
10	24	Downlink	Low	2115	423000	2110.68	422136	0	15	5286	422910	18	0	0 (5)	10
			Mid	2140	428000	2098.96	419792	102		5350	427970	14	0	1 (6)	216
			High	2165	433000	1979.24	395848	504		5411	432970	14	0	1 (6)	1020
		Uplink	Low	1925	385000	1920.68	384136	0	-	-	-	-	-	-	-
			Mid	1950	390000	1764.24	352848	504		-	-	-	-	-	-
			High	1975	395000	1968.52	393704	6		-	-	-	-	-	-
15	38	Downlink	Low	2117.5	423500	2110.66	422132	0	15	5287	422930	2	0	1 (6)	12
			Mid	2140	428000	2096.44	419288	102		5344	427490	22	0	1 (6)	216
			High	2162.5	432500	1974.22	394844	504		5401	432050	18	0	2 (7)	1022
		Uplink	Low	1927.5	385500	1920.66	384132	0	-	-	-	-	-	-	-
			Mid	1950	390000	1761.72	352344	504		-	-	-	-	-	-
			High	1972.5	394500	1963.5	392700	6		-	-	-	-	-	-
20	51	Downlink	Low	2120	424000	2110.82	422164	0	15	5285	422890	2	0	0 (5)	10
			Mid	2140	428000	2094.1	418820	102		5338	427010	18	0	1 (6)	216
			High	2160	432000	1969.38	393876	504		5388	431070	14	0	2 (7)	1022
		Uplink	Low	1930	386000	1920.82	384164	0	-	-	-	-	-	-	-
			Mid	1950	390000	1759.38	351876	504		-	-	-	-	-	-
			High	1970	394000	1958.66	391732	6		-	-	-	-	-	-
25	65	Downlink	Low	2122.5	424500	2110.8	422160	0	15	5286	422910	10	0	0 (5)	10
			Mid	2140	428000	2091.58	418316	102		5332	426530	2	0	2 (7)	218
			High	2157.5	431500	1964.36	392872	504		5375	430090	22	0	2 (7)	1022
		Uplink	Low	1932.5	386500	1920.8	384160	0	-	-	-	-	-	-	-
			Mid	1950	390000	1756.86	351372	504		-	-	-	-	-	-
			High	1967.5	393500	1953.64	390728	6		-	-	-	-	-	-
30	78	Downlink	Low	2125	425000	2110.96	422192	0	15	5287	422930	6	0	0 (5)	10
			Mid	2140	428000	2089.24	417848	102		5326	426050	22	0	1 (6)	216
			High	2155	431000	1959.52	391904	504		5362	428930	6	0	0 (5)	1018
		Uplink	Low	1935	387000	1920.96	384192	0	-	-	-	-	-	-	-
			Mid	1950	390000	1754.52	350904	504		-	-	-	-	-	-
			High	1965	393000	1948.8	389760	6		-	-	-	-	-	-
40	106	Downlink	Low	2130	426000	2110.92	422184	0	15	5286	422910	2	0	0 (5)	10
			Mid	2140	428000	2084.2	416840	102		5314	425090	14	0	2 (7)	218

45	119	Uplink	High	2150	430000	1949.48	389896	504	-	5336	426970	22	0	0 (5)	1018
			Low	1940	388000	1920.92	384184	0		-	-	-	-	-	
			Mid	1950	390000	1749.48	349896	504		-	-	-	-	-	
			High	1960	392000	1938.76	387752	6		-	-	-	-	-	
		Downlink	Low	2132.5	426500	2111.08	422216	0	15	5290	423170	6	0	3(8)	16
			Mid	2140	428000	2081.86	416372	102		5308	424610	10	0	2(7)	218
			High	2147.5	429500	1944.64	388928	504		5326	426050	14	0	1(6)	1020
		Uplink	Low	1942.5	388500	1921.08	384216	0	-	-	-	-	-	-	-
			Mid	1950	390000	1747.14	349428	504		-	-	-	-	-	-
			High	1957.5	391500	1933.92	386784	6		-	-	-	-	-	-

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

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

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

CBW [MHz]	carrierBand width [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absoluteF requency PointA [ARFCN]	offsetToC arrier [PRBs]	SS block SCS [kHz]	GSCN	absoluteF requency SSB [ARFCN]
10	11	Downlink	Low	2115	423000	2111.04	422208	0	15	-	422568
			Mid	2140	428000	2062.6	412520	102		-	427568
			High	2165	433000	1798.16	359632	504		-	432568
		Uplink	Low	1925	385000	1921.04	384208	0	-	-	-
			Mid	1950	390000	1583.16	316632	504		-	-
			High	1975	395000	1966.72	393344	6		-	-
15	18	Downlink	Low	2117.5	423500	2111.02	422204	0	15	-	422564
			Mid	2140	428000	2060.08	412016	102		-	427064
			High	2162.5	432500	1793.14	358628	504		-	431564
		Uplink	Low	1927.5	385500	1921.02	384204	0	-	-	-
			Mid	1950	390000	1580.64	316128	504		-	-
			High	1972.5	394500	1961.7	392340	6		-	-

20	24	Downlink	Low	2120	424000	2111.36	422272	0	15	-	422632
			Mid	2140	428000	2057.92	411584	102		-	426632
			High	2160	432000	1788.48	357696	504		-	430632
		Uplink	Low	1930	386000	1921.36	384272	0	-	-	-
			Mid	1950	390000	1578.48	315696	504		-	-
			High	1970	394000	1957.04	391408	6		-	-
25	31	Downlink	Low	2122.5	424500	2111.34	422268	0	15	-	422628
			Mid	2140	428000	2055.4	411080	102		-	426128
			High	2157.5	431500	1783.46	356692	504		-	429628
		Uplink	Low	1932.5	386500	1921.34	384268	0	-	-	-
			Mid	1950	390000	1575.96	315192	504		-	-
			High	1967.5	393500	1952.02	390404	6		-	-
30	38	Downlink	Low	2125	425000	2111.32	422264	0	15	-	422624
			Mid	2140	428000	2052.88	410576	102		-	425624
			High	2155	431000	1778.44	355688	504		-	428624
		Uplink	Low	1935	387000	1921.32	384264	0	-	-	-
			Mid	1950	390000	1573.44	314688	504		-	-
			High	1965	393000	1947	389400	6		-	-
40	51	Downlink	Low	2130	426000	2111.64	422328	0	15	-	422688
			Mid	2140	428000	2048.2	409640	102		-	424688
			High	2150	430000	1768.76	353752	504		-	426688
		Uplink	Low	1940	388000	1921.64	384328	0	-	-	-
			Mid	1950	390000	1568.76	313752	504		-	-
			High	1960	392000	1937.32	387464	6		-	-
45	58	Downlink	Low	2132.5	426500	2111.62	422324	0	15	-	422684
			Mid	2140	428000	2045.68	409136	102		-	424184
			High	2147.5	429500	1763.74	352748	504		-	425684
		Uplink	Low	1942.5	388500	1921.62	384324	0	-	-	-
			Mid	1950	390000	1566.24	313248	504		-	-
			High	1957.5	391500	1932.3	386460	6		-	-
50	65	Downlink	Low	2135	427000	2111.6	422320	0	15	-	422680
			Mid	2140	428000	2043.16	408632	102		-	423680
			High	2145	429000	1758.72	351744	504		-	424680
		Uplink	Low	1945	389000	1921.6	384320	0	-	-	-
			Mid	1950	390000	1563.72	312744	504		-	-
			High	1955	391000	1927.28	385456	6		-	-
<p>Note: FR1 carrier without CORESET#0 is indicated in the MIB by setting <math>k_{SSB}=31</math>, <i>controlResourceSetZero</i>=0 and <i>searchSpaceZero</i> = 0 (TS 38.213 [22], clause 13).</p>											

4.3.1.1.1.2 Reference test frequencies for NR operating band n2

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

CBW [MHz]	carrierBandwidth [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequencyPointA [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS [kHz]	GSCN	absoluteFrequencySSB [ARFCN]	$k_{SSB}$	Offset Carrier CORES ET#0 [RBs] Note 2	CORES ET#0 Index (Offset [RBs]) Note 1	offsetToPointA (SIB1) [PRBs] Note 1	
5	25	Downlink	Low	1932.5	386500	1930.25	386050	0	15	4829	386410	0	0	0 (0)	0	
			Mid	1960	392000	1939.39	387878	102		4900	391970	8	1	0 (0)	103	
			High	1987.5	397500	1894.53	378906	504		4968	397470	8	1	0 (0)	505	
		Uplink	Low	1852.5	370500	1850.25	370050	0	-	-	-	-	-	-	-	-
			Mid	1880	376000	1787.03	357406	504		-	-	-	-	-	-	-
			High	1907.5	381500	1904.17	380834	6		-	-	-	-	-	-	-
10	52	Downlink	Low	1935	387000	1930.32	386064	0	15	4830	386430	2	0	0 (0)	0	
			Mid	1960	392000	1936.96	387392	102		4894	391490	10	1	0 (0)	103	
			High	1985	397000	1889.6	377920	504		4955	396490	10	1	0 (0)	505	
		Uplink	Low	1855	371000	1850.32	370064	0	-	-	-	-	-	-	-	-
			Mid	1880	376000	1784.6	356920	504		-	-	-	-	-	-	-
			High	1905	381000	1899.24	379848	6		-	-	-	-	-	-	-
15	79	Downlink	Low	1937.5	387500	1930.39	386078	0	15	4831	386450	4	0	0 (0)	0	
			Mid	1960	392000	1934.53	386906	102		4888	391010	0	0	1 (2)	104	
			High	1982.5	396500	1884.67	376934	504		4945	395570	8	1	1 (2)	507	
		Uplink	Low	1857.5	371500	1850.39	370078	0	-	-	-	-	-	-	-	-
			Mid	1880	376000	1782.17	356434	504		-	-	-	-	-	-	-
			High	1902.5	380500	1894.31	378862	6		-	-	-	-	-	-	-
20	106	Downlink	Low	1940	388000	1930.46	386092	0	15	4832	386650	6	1	2 (4)	5	
			Mid	1960	392000	1932.1	386420	102		4882	390530	2	0	1 (2)	104	
			High	1980	396000	1879.74	375948	504		4932	394590	10	1	1 (2)	507	
		Uplink	Low	1860	372000	1850.46	370092	0	-	-	-	-	-	-	-	-
			Mid	1880	376000	1779.74	355948	504		-	-	-	-	-	-	-
			High	1900	380000	1889.38	377876	6		-	-	-	-	-	-	-
25	133	Downlink	Low	1942.5	388500	1930.53	386106	0	15	4833	386670	8	1	2 (4)	5	
			Mid	1960	392000	1929.67	385934	102		4876	390050	4	0	1 (2)	104	
			High	1977.5	395500	1874.81	374962	504		4919	393610	0	0	2 (4)	508	
		Uplink	Low	1862.5	372500	1850.53	370106	0	-	-	-	-	-	-	-	-
			Mid	1880	376000	1777.31	355462	504		-	-	-	-	-	-	-
			High	1897.5	379500	1884.45	376890	6		-	-	-	-	-	-	-
30	160	Downlink	Low	1945	389000	1930.6	386120	0	15	4834	386690	10	1	2 (4)	5	

40	216	Uplink	Mid	1960	392000	1927.24	385448	102	-	4870	389570	6	0	1 (2)	104
			High	1975	395000	1869.88	373976	504		4909	392690	10	1	2 (4)	509
			Low	1865	373000	1850.6	370120	0		-	-	-	-	-	-
			Mid	1880	376000	1774.88	354976	504		-	-	-	-	-	-
			High	1895	379000	1879.52	375904	6		-	-	-	-	-	-
		Downlink	Low	1950	390000	1930.56	386112	0	15	4833	386670	6	1	2 (4)	5
			Mid	1960	392000	1922.2	384440	102		4858	388610	10	1	1 (2)	105
			High	1970	394000	1859.84	371968	504		4880	390490	6	0	0 (0)	504
			Low	1870	374000	1850.56	370112	0		-	-	-	-	-	-
			Mid	1880	376000	1769.84	353968	504		-	-	-	-	-	-
Uplink	High	1890	378000	1869.48	373896	6	-	-	-	-	-	-			
	Mid	1880	376000	1769.84	353968	504	-	-	-	-	-	-			
	Low	1870	374000	1850.56	370112	0	-	-	-	-	-	-			

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

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

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

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

25	65	Uplink	Low	1860	372000	1850.82	370164	0	-	-	-	-	-	-	-		
			Mid	1880	376000	1689.38	337876	504	-	-	-	-	-	-			
			High	1900	380000	1888.66	377732	6	-	-	-	-	-	-			
		Downlink	Low	1942.5	388500	1930.8	386160	0	15	4836	386910	10	0	0 (5)	10		
			Mid	1960	392000	1911.58	382316	102	4882	390530	2	0	2 (7)	218			
			High	1977.5	395500	1784.36	356872	504	4925	394090	22	0	2 (7)	1022			
		Uplink	Low	1862.5	372500	1850.8	370160	0	-	-	-	-	-	-			
			Mid	1880	376000	1686.86	337372	504	-	-	-	-	-	-			
			High	1897.5	379500	1883.64	376728	6	-	-	-	-	-	-			
30	78	Downlink	Low	1945	389000	1930.96	386192	0	15	4837	386930	6	0	0 (5)	10		
			Mid	1960	392000	1909.24	381848	102	4876	390050	22	0	1 (6)	216			
			High	1975	395000	1779.52	355904	504	4912	392930	6	0	0 (5)	1018			
		Uplink	Low	1865	373000	1850.96	370192	0	-	-	-	-	-	-			
			Mid	1880	376000	1684.52	336904	504	-	-	-	-	-	-			
			High	1895	379000	1878.8	375760	6	-	-	-	-	-	-			
		40	106	Downlink	Low	1950	390000	1930.92	386184	0	15	4836	386910	2	0	0 (5)	10
					Mid	1960	392000	1904.2	380840	102	4864	389090	14	0	2 (7)	218	
					High	1970	394000	1769.48	353896	504	4886	390970	22	0	0 (5)	1018	
Uplink	Low			1870	374000	1850.92	370184	0	-	-	-	-	-	-			
	Mid			1880	376000	1679.48	335896	504	-	-	-	-	-	-			
	High			1890	378000	1868.76	373752	6	-	-	-	-	-	-			

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

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

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

CBW [MHz]	carrierBand width [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absoluteF requency PointA [ARFCN]	offsetToC arrier [PRBs]	SS block SCS [kHz]	GSCN	absoluteF requency SSB [ARFCN]
10	11	Downlink	Low	1935	387000	1931.04	386208	0	15	-	386568
			Mid	1960	392000	1882.6	376520	102		-	391568
			High	1985	397000	1618.16	323632	504		-	396568
		Uplink	Low	1855	371000	1851.04	370208	0	-	-	-
			Mid	1880	376000	1513.16	302632	504		-	-
			High	1905	381000	1896.72	379344	6		-	-
15	18	Downlink	Low	1937.5	387500	1931.02	386204	0	15	-	386564



			Mid	1960	392000	1880.08	376016	102		-	391064
			High	1982.5	396500	1613.14	322628	504		-	395564
		Uplink	Low	1857.5	371500	1851.02	370204	0	-	-	-
			Mid	1880	376000	1510.64	302128	504		-	-
			High	1902.5	380500	1891.7	378340	6		-	-
20	24	Downlink	Low	1940	388000	1931.36	386272	0	15	-	386632
			Mid	1960	392000	1877.92	375584	102		-	390632
			High	1980	396000	1608.48	321696	504		-	394632
		Uplink	Low	1860	372000	1851.36	370272	0	-	-	-
			Mid	1880	376000	1508.48	301696	504		-	-
			High	1900	380000	1887.04	377408	6		-	-
25	31	Downlink	Low	1942.5	388500	1931.34	386268	0	15	-	386628
			Mid	1960	392000	1875.4	375080	102		-	390128
			High	1977.5	395500	1603.46	320692	504		-	393628
		Uplink	Low	1862.5	372500	1851.34	370268	0	-	-	-
			Mid	1880	376000	1505.96	301192	504		-	-
			High	1897.5	379500	1882.02	376404	6		-	-
30	38	Downlink	Low	1945	389000	1931.32	386264	0	15	-	386624
			Mid	1960	392000	1872.88	374576	102		-	389624
			High	1975	395000	1598.44	319688	504		-	392624
		Uplink	Low	1865	373000	1851.32	370264	0	-	-	-
			Mid	1880	376000	1503.44	300688	504		-	-
			High	1895	379000	1877	375400	6		-	-
40	51	Downlink	Low	1950	390000	1931.64	386328	0	15	-	386688
			Mid	1960	392000	1868.2	373640	102		-	388688
			High	1970	394000	1588.76	317752	504		-	390688
		Uplink	Low	1870	374000	1851.64	370328	0	-	-	-
			Mid	1880	376000	1498.76	299752	504		-	-
			High	1890	378000	1867.32	373464	6		-	-
Note: FR1 carrier without CORESET#0 is indicated in the MIB by setting $k_{SSB}=31$ , <i>controlResourceSetZero</i> =0 and <i>searchSpaceZero</i> = 0 (TS 38.213 [22], clause 13).											

4.3.1.1.1.3 Reference test frequencies for NR operating band n3

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

CBW [MHz]	carrier Bandwidth [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absolute FrequencyPointA [ARFCN]	offsetTo Carrier [Carrier PRBs]	SS block SCS [kHz]	GSCN	absolute FrequencySSB [ARFCN]	$k_{SSB}$	Offset Carrier CORES ET#0 [RBs] Note 2	CORES ET#0 Index (Offset [RBs]) Note 1	offsetTo PointA (SIB1) [PRBs] Note 1	
5	25	Downlink	Low	1807.5	361500	1805.25	361050	0	15	4518	361470	8	1	0 (0)	1	
			Mid	1842.5	368500	1821.89	364378	102		4604	368410	0	0	0 (0)	102	
			High	1877.5	375500	1784.53	356906	504		4693	375410	0	0	0 (0)	504	
		Uplink	Low	1712.5	342500	1710.25	342050	0	-	-	-	-	-	-	-	-
			Mid	1747.5	349500	1654.53	330906	504		-	-	-	-	-	-	-
			High	1782.5	356500	1779.17	355834	6		-	-	-	-	-	-	-
10	52	Downlink	Low	1810	362000	1805.32	361064	0	15	4519	361490	10	1	0 (0)	1	
			Mid	1842.5	368500	1819.46	363892	102		4598	367930	2	0	0 (0)	102	
			High	1875	375000	1779.6	355920	504		4680	374430	2	0	0 (0)	504	
		Uplink	Low	1715	343000	1710.32	342064	0	-	-	-	-	-	-	-	-
			Mid	1747.5	349500	1652.1	330420	504		-	-	-	-	-	-	-
			High	1780	356000	1774.24	354848	6		-	-	-	-	-	-	-
15	79	Downlink	Low	1812.5	362500	1805.39	361078	0	15	4517	361450	4	0	0 (0)	0	
			Mid	1842.5	368500	1817.03	363406	102		4592	367450	4	0	0 (0)	102	
			High	1872.5	374500	1774.67	354934	504		4667	373450	4	0	0 (0)	504	
		Uplink	Low	1717.5	343500	1710.39	342078	0	-	-	-	-	-	-	-	-
			Mid	1747.5	349500	1649.67	329934	504		-	-	-	-	-	-	-
			High	1777.5	355500	1769.31	353862	6		-	-	-	-	-	-	-
20	106	Downlink	Low	1815	363000	1805.46	361092	0	15	4518	361470	6	0	0 (0)	0	
			Mid	1842.5	368500	1814.6	362920	102		4586	366970	6	0	0 (0)	102	
			High	1870	374000	1769.74	353948	504		4657	372530	2	0	1 (2)	506	
		Uplink	Low	1720	344000	1710.46	342092	0	-	-	-	-	-	-	-	-
			Mid	1747.5	349500	1647.24	329448	504		-	-	-	-	-	-	-
			High	1775	355000	1764.38	352876	6		-	-	-	-	-	-	-
25	133	Downlink	Low	1817.5	363500	1805.53	361106	0	15	4519	361490	8	0	0 (0)	0	
			Mid	1842.5	368500	1812.17	362434	102		4580	366490	8	0	0 (0)	102	
			High	1867.5	373500	1764.81	352962	504		4644	371550	4	0	1 (2)	506	
		Uplink	Low	1722.5	344500	1710.53	342106	0	-	-	-	-	-	-	-	-
			Mid	1747.5	349500	1644.81	328962	504		-	-	-	-	-	-	-
			High	1772.5	354500	1759.45	351890	6		-	-	-	-	-	-	-
30	160	Downlink	Low	1820	364000	1805.6	361120	0	15	4520	361690	10	1	2 (4)	5	

		Uplink	Mid	1842.5	368500	1809.74	361948	102	-	4574	366010	10	0	0 (0)	102
			High	1865	373000	1759.88	351976	504		4631	370570	6	0	1 (2)	506
			Low	1725	345000	1710.6	342120	0		-	-	-	-	-	-
			Mid	1747.5	349500	1642.38	328476	504		-	-	-	-	-	-
			High	1770	354000	1754.52	350904	6		-	-	-	-	-	-
40	216	Downlink	Low	1825	365000	1805.56	361112	0	15	4519	361490	6	0	0 (0)	0
			Mid	1842.5	368500	1804.7	360940	102		4562	365050	2	0	1 (2)	104
			High	1860	372000	1749.84	349968	504		4608	368670	6	1	2 (4)	509
		Uplink	Low	1730	346000	1710.56	342112	0	-	-	-	-	-	-	-
			Mid	1747.5	349500	1637.34	327468	504		-	-	-	-	-	-
High	1765		353000	1744.48	348896	6	-	-		-	-	-	-		
50	270	Downlink	Low	1830	366000	1805.7	361140	0	15	4521	361710	10	1	2 (4)	5
			Mid	1842.5	368500	1799.84	359968	102		4550	364090	6	0	1 (2)	104
			High	1855	371000	1739.98	347996	504		4582	366530	10	0	0 (0)	504
		Uplink	Low	1735	347000	1710.7	342140	0	-	-	-	-	-	-	-
			Mid	1747.5	349500	1632.48	326496	504		-	-	-	-	-	-
High	1760		352000	1734.62	346924	6	-	-		-	-	-	-		
<p>Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-1 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.</p> <p>Note 2: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter <math>\Delta f_{\text{OffsetCORESET-0-Carrier}}</math> in Annex C expressed in number of common RBs.</p>															

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

CBW [MHz]	carrier Bandwidth [PRBs]	Range	Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absolute FrequencyPointA [ARFCN]	offsetTo Carrier [Carrier PRBs]	SS block SCS [kHz]	GSCN	absolute FrequencySSB [ARFCN]	$k_{SSB}$	Offset Carrier CORESET#0 [RBs] Note 2	CORES ET#0 Index (Offset [RBs]) Note 1	offsetTo PointA (SIB1) [PRBs] Note 1	
10	24	Downlink	Low	1810	362000	1805.68	361136	0	15	4525	361970	14	0	1 (6)	12
			Mid	1842.5	368500	1801.46	360292	102		4604	368410	18	0	0 (5)	214
			High	1875	375000	1689.24	337848	504		4686	374910	18	0	0 (5)	1018
		Uplink	Low	1715	343000	1710.68	342136	0	-	-	-	-	-	-	-
			Mid	1747.5	349500	1561.74	312348	504		-	-	-	-	-	-
High	1780		356000	1773.52	354704	6	-	-		-	-	-	-		
15	38	Downlink	Low	1812.5	362500	1805.66	361132	0	15	4523	361930	2	0	1 (6)	12
			Mid	1842.5	368500	1798.94	359788	102		4598	367930	2	0	1 (6)	216
			High	1872.5	374500	1684.22	336844	504		4673	373930	2	0	1 (6)	1020

		Uplink	Low	1717.5	343500	1710.66	342132	0	-	-	-	-	-	-	
			Mid	1747.5	349500	1559.22	311844	504	-	-	-	-	-	-	
			High	1777.5	355500	1768.5	353700	6	-	-	-	-	-	-	
20	51	Downlink	Low	1815	363000	1805.82	361164	0	15	4524	361950	22	0	0 (5)	10
			Mid	1842.5	368500	1796.6	359320	102		4592	367450	22	0	0 (5)	214
			High	1870	374000	1679.38	335876	504		4663	373010	18	0	1 (6)	1020
		Uplink	Low	1720	344000	1710.82	342164	0	-	-	-	-	-	-	-
			Mid	1747.5	349500	1556.88	311376	504		-	-	-	-	-	-
			High	1775	355000	1763.66	352732	6		-	-	-	-	-	-
25	65	Downlink	Low	1817.5	363500	1805.8	361160	0	15	4525	361970	6	0	1 (6)	12
			Mid	1842.5	368500	1794.08	358816	102		4586	366970	6	0	1 (6)	216
			High	1867.5	373500	1674.36	334872	504		4650	372030	2	0	2 (7)	1022
		Uplink	Low	1722.5	344500	1710.8	342160	0	-	-	-	-	-	-	-
			Mid	1747.5	349500	1554.36	310872	504		-	-	-	-	-	-
			High	1772.5	354500	1758.64	351728	6		-	-	-	-	-	-
30	78	Downlink	Low	1820	364000	1805.96	361192	0	15	4523	361930	6	0	0 (5)	10
			Mid	1842.5	368500	1791.74	358348	102		4580	366490	2	0	1 (6)	216
			High	1865	373000	1669.52	333904	504		4637	371050	22	0	1 (6)	1020
		Uplink	Low	1725	345000	1710.96	342192	0	-	-	-	-	-	-	-
			Mid	1747.5	349500	1552.02	310404	504		-	-	-	-	-	-
			High	1770	354000	1753.8	350760	6		-	-	-	-	-	-
40	106	Downlink	Low	1825	365000	1805.92	361184	0	15	4525	361970	22	0	0 (5)	10
			Mid	1842.5	368500	1786.7	357340	102		4568	365530	18	0	1 (6)	216
			High	1860	372000	1659.48	331896	504		4611	368910	2	0	0 (5)	1018
		Uplink	Low	1730	346000	1710.92	342184	0	-	-	-	-	-	-	-
			Mid	1747.5	349500	1546.98	309396	504		-	-	-	-	-	-
			High	1765	353000	1743.76	348752	6		-	-	-	-	-	-
50	133	Downlink	Low	1830	366000	1806.06	361212	0	15	4524	361950	6	0	0 (5)	10
			Mid	1842.5	368500	1781.84	356368	102		4556	364570	22	0	1 (6)	216
			High	1855	371000	1649.62	329924	504		4588	367010	2	0	1(6)	1020
		Uplink	Low	1735	347000	1711.06	342212	0	-	-	-	-	-	-	-
			Mid	1747.5	349500	1542.12	308424	504		-	-	-	-	-	-
			High	1760	352000	1733.9	346780	6		-	-	-	-	-	-

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

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

Table 4.3.1.1.1.3-3: Test frequencies for NR operating band n3 and SCS 60 kHz without CORESET#0

CBW [MHz]	carrierBand width [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absoluteF requency PointA [ARFCN]	offsetToC arrier [PRBs]	SS block SCS [kHz]	GSCN	absoluteF requency SSB [ARFCN]
10	11	Downlink	Low	1810	362000	1806.04	361208	0	15	-	361568
			Mid	1842.5	368500	1765.1	353020	102		-	368068
			High	1875	375000	1508.16	301632	504		-	374568
		Uplink	Low	1715	343000	1711.04	342208	0	-	-	-
			Mid	1747.5	349500	1380.66	276132	504		-	-
			High	1780	356000	1771.72	354344	6		-	-
15	18	Downlink	Low	1812.5	362500	1806.02	361204	0	15	-	361564
			Mid	1842.5	368500	1762.58	352516	102		-	367564
			High	1872.5	374500	1503.14	300628	504		-	373564
		Uplink	Low	1717.5	343500	1711.02	342204	0	-	-	-
			Mid	1747.5	349500	1378.14	275628	504		-	-
			High	1777.5	355500	1766.7	353340	6		-	-
20	24	Downlink	Low	1815	363000	1806.36	361272	0	15	-	361632
			Mid	1842.5	368500	1760.42	352084	102		-	367132
			High	1870	374000	1498.48	299696	504		-	372632
		Uplink	Low	1720	344000	1711.36	342272	0	-	-	-
			Mid	1747.5	349500	1375.98	275196	504		-	-
			High	1775	355000	1762.04	352408	6		-	-
25	31	Downlink	Low	1817.5	363500	1806.34	361268	0	15	-	361628
			Mid	1842.5	368500	1757.9	351580	102		-	366628
			High	1867.5	373500	1493.46	298692	504		-	371628
		Uplink	Low	1722.5	344500	1711.34	342268	0	-	-	-
			Mid	1747.5	349500	1373.46	274692	504		-	-
			High	1772.5	354500	1757.02	351404	6		-	-
30	38	Downlink	Low	1820	364000	1806.32	361264	0	15	-	361624
			Mid	1842.5	368500	1755.38	351076	102		-	366124
			High	1865	373000	1488.44	297688	504		-	370624
		Uplink	Low	1725	345000	1711.32	342264	0	-	-	-
			Mid	1747.5	349500	1370.94	274188	504		-	-
			High	1770	354000	1752	350400	6		-	-
40	51	Downlink	Low	1825	365000	1806.64	361328	0	15	-	361688
			Mid	1842.5	368500	1750.7	350140	102		-	365188
			High	1860	372000	1478.76	295752	504		-	368688
		Uplink	Low	1730	346000	1711.64	342328	0	-	-	-
			Mid	1747.5	349500	1366.26	273252	504		-	-

50	65	Downlink	High	1765	353000	1742.32	348464	6	15	-	-
			Low	1830	366000	1806.6	361320	0		-	361680
			Mid	1842.5	368500	1745.66	349132	102		-	364180
			High	1855	371000	1468.72	293744	504		-	366680
		Uplink	Low	1735	347000	1711.6	342320	0	-	-	
			Mid	1747.5	349500	1361.22	272244	504	-	-	
			High	1760	352000	1732.28	346456	6	-	-	
Note: FR1 carrier without CORESET#0 is indicated in the MIB by setting $k_{SSB}=31$ , <i>controlResourceSetZero</i> =0 and <i>searchSpaceZero</i> = 0 (TS 38.213 [22], clause 13).											

4.3.1.1.1.4 FFS

4.3.1.1.1.5 Reference test frequencies for NR operating band n5

**Table 4.3.1.1.1.5-1: Test frequencies for NR operating band n5 and SCS 15 kHz**

CBW [MHz]	carrier Bandwidth [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absolute FrequencyPointA [ARFCN]	offsetTo Carrier [Carrier PRBs]	SS block SCS [kHz]	GSCN	absolute FrequencySSB [ARFCN]	$k_{SSB}$	Offset Carrier CORES ET#0 [RBs] Note 2	CORES ET#0 Index (Offset [RBs]) Note 1	offsetTo PointA (SIB1) [PRBs] Note 1
5	25	Downlink	Low	871.5	174300	869.25	173850	0	15	2178	174270	8	1	0 (0)	1
			Mid	881.5	176300	860.89	172178	102		2203	176210	0	0	0 (0)	102
			High	891.5	178300	798.53	159706	504		2228	178330	4	1	1 (2)	507
		Uplink	Low	826.5	165300	824.25	164850	0	-	-	-	-	-	-	-
			Mid	836.5	167300	743.53	148706	504	-	-	-	-	-	-	-
			High	846.5	169300	843.17	168634	6	-	-	-	-	-	-	-
10	52	Downlink	Low	874	174800	869.32	173864	0	15	2179	174290	10	1	0 (0)	1
			Mid	881.5	176300	858.46	171692	102		2197	175730	2	0	0 (0)	102
			High	889	177800	793.6	158720	504		2218	177410	2	1	2 (4)	509
		Uplink	Low	829	165800	824.32	164864	0	-	-	-	-	-	-	-
			Mid	836.5	167300	741.1	148220	504	-	-	-	-	-	-	-
			High	844	168800	838.24	167648	6	-	-	-	-	-	-	-
15	79	Downlink	Low	876.5	175300	869.39	173878	0	15	2177	174250	4	0	0 (0)	0
			Mid	881.5	176300	856.03	171206	102		2191	175250	4	0	0 (0)	102
			High	886.5	177300	788.67	157734	504		2205	176430	4	1	2 (4)	509
		Uplink	Low	831.5	166300	824.39	164878	0	-	-	-	-	-	-	-
			Mid	836.5	167300	738.67	147734	504	-	-	-	-	-	-	-
			High	844	168800	838.24	167648	6	-	-	-	-	-	-	-

20	106	Downlink	High	841.5	168300	833.31	166662	6	15	-	-	-	-	-	-
			Low	879	175800	869.46	173892	0		2178	174270	6	0	0 (0)	0
			Mid	881.5	176300	853.6	170720	102		2185	174770	6	0	0 (0)	102
		Uplink	High	884	176800	783.74	156748	504	-	2192	175450	6	1	2 (4)	509
			Low	834	166800	824.46	164892	0		-	-	-	-	-	-
			Mid	836.5	167300	736.24	147248	504		-	-	-	-	-	-
25	133	Downlink	High	839	167800	828.38	165676	6	-	-	-	-	-	-	
Note 3		Downlink	Low	881.5	176300	869.53	173906	0	15	2179	174290	8	0	0 (0)	0
			Mid												
			High												

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

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

Note 3: This UE channel bandwidth is applicable only to downlink.

Table 4.3.1.1.1.5-2: Test frequencies for NR operating band n5 and SCS 30 kHz

CBW [MHz]	carrierBandwidth [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequencyPointA [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS [kHz]	GSCN	absoluteFrequencySSB [ARFCN]	$k_{SSB}$	Offset Carrier CORESET#0 [RBs] Note 2	CORESET#0 Index (Offset [RBs]) Note 1	offsetToPointA (SIB1) [PRBs] Note 1	
10	24	Downlink	Low	874	174800	869.68	173936	0	30	2185	174770	14	0	1 (1)	2	
			Mid	881.5	176300	840.46	168092	102		2203	176210	18	0	0 (0)	204	
			High	889	177800	703.24	140648	504		2224	177890	6	0	3 (3)	1014	
		Uplink	Low	829	165800	824.68	164936	0	-	-	-	-	-	-	-	-
			Mid	836.5	167300	650.74	130148	504		-	-	-	-	-	-	-
			High	844	168800	837.52	167504	6		-	-	-	-	-	-	-
15	38	Downlink	Low	876.5	175300	869.66	173932	0	30	2183	174730	2	0	1 (1)	2	
			Mid	881.5	176300	837.94	167588	102		2197	175730	2	0	1 (1)	206	
			High	886.5	177300	698.22	139644	504		2208	176670	6	0	0 (0)	1008	
		Uplink	Low	831.5	166300	824.66	164932	0	-	-	-	-	-	-	-	-
			Mid	836.5	167300	648.22	129644	504		-	-	-	-	-	-	-
			High	841.5	168300	832.5	166500	6		-	-	-	-	-	-	-
20	51	Downlink	Low	879	175800	869.82	173964	0	30	2184	174750	22	0	0 (0)	0	
			Mid	881.5	176300	835.6	167120	102		2191	175250	22	0	0 (0)	204	
			High	884	176800	693.38	138676	504		2195	175690	2	0	0 (0)	1008	
		Uplink	Low	834	166800	824.82	164964	0	-	-	-	-	-	-	-	-
			Mid	836.5	167300	645.88	129176	504		-	-	-	-	-	-	-
			High	839	167800	827.66	165532	6		-	-	-	-	-	-	-
25	65	Downlink	Low	881.5	176300	869.8	173960	0	30	2185	174770	6	0	1 (1)	2	
Note 3			Mid													
			High													

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

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

Note 3: This UE channel bandwidth is applicable only to downlink.



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**

CBW [MHz]	carrierBandwidth [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequency PointA [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS [kHz]	GSCN	absoluteFrequency SSB [ARFCN]	$k_{SSB}$	Offset Carrier CORESET#0 [RBs] Note 2	CORESET#0 Index (Offset [RBs]) 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)	0	
			Mid	2655	531000	2634.39	526878	102		6636	530910	0	0	0 (0)	102	
			High	2687.5	537500	2594.53	518906	504		6718	537410	0	0	0 (0)	504	
		Uplink	Low	2502.5	500500	2500.25	500050	0	-	-	-	-	-	-	-	-
			Mid	2535	507000	2442.03	488406	504	-	-	-	-	-	-	-	-
			High	2567.5	513500	2564.17	512834	6	-	-	-	-	-	-	-	-
10	52	Downlink	Low	2625	525000	2620.32	524064	0	15	6555	524430	2	0	0 (0)	0	
			Mid	2655	531000	2631.96	526392	102		6630	530430	2	0	0 (0)	102	
			High	2685	537000	2589.6	517920	504		6705	536430	2	0	0 (0)	504	
		Uplink	Low	2505	501000	2500.32	500064	0	-	-	-	-	-	-	-	-
			Mid	2535	507000	2439.6	487920	504	-	-	-	-	-	-	-	-
			High	2565	513000	2559.24	511848	6	-	-	-	-	-	-	-	-
15	79	Downlink	Low	2627.5	525500	2620.39	524078	0	15	6556	524450	4	0	0 (0)	0	
			Mid	2655	531000	2629.53	525906	102		6624	529950	4	0	0 (0)	102	
			High	2682.5	536500	2584.67	516934	504		6692	535450	4	0	0 (0)	504	
		Uplink	Low	2507.5	501500	2500.39	500078	0	-	-	-	-	-	-	-	-
			Mid	2535	507000	2437.17	487434	504	-	-	-	-	-	-	-	-
			High	2562.5	512500	2554.31	510862	6	-	-	-	-	-	-	-	-
20	106	Downlink	Low	2630	526000	2620.46	524092	0	15	6557	524650	6	1	2 (4)	5	
			Mid	2655	531000	2627.1	525420	102		6618	529470	6	0	0 (0)	102	
			High	2680	536000	2579.74	515948	504		6682	534530	2	0	1 (2)	506	
		Uplink	Low	2510	502000	2500.46	500092	0	-	-	-	-	-	-	-	-
			Mid	2535	507000	2434.74	486948	504	-	-	-	-	-	-	-	-
			High	2560	512000	2549.38	509876	6	-	-	-	-	-	-	-	-

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

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

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

CBW [MHz]	carrierBandwidth [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequencyPointA [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS [kHz]	GSCN	absoluteFrequencySSB [ARFCN]	$k_{SSB}$	Offset Carrier CORESET#0 [RBs] Note 2	CORESET#0 Index (Offset [RBs]) Note 1	offsetToPointA (SIB1) [PRBs] Note 1	
10	24	Downlink	Low	2625	525000	2620.68	524136	0	15	6561	524910	18	0	0 (5)	10	
			Mid	2655	531000	2613.96	522792	102		6636	530910	18	0	0 (5)	214	
			High	2685	537000	2499.24	499848	504		6711	536910	18	0	0 (5)	1018	
		Uplink	Low	2505	501000	2500.68	500136	0	-	-	-	-	-	-	-	-
			Mid	2535	507000	2349.24	469848	504		-	-	-	-	-	-	-
			High	2565	513000	2558.52	511704	6		-	-	-	-	-	-	-
15	38	Downlink	Low	2627.5	525500	2620.66	524132	0	15	6562	524930	2	0	1 (6)	12	
			Mid	2655	531000	2611.44	522288	102		6630	530430	2	0	1 (6)	216	
			High	2682.5	536500	2494.22	498844	504		6698	535930	2	0	1 (6)	1020	
		Uplink	Low	2507.5	501500	2500.66	500132	0	-	-	-	-	-	-	-	-
			Mid	2535	507000	2346.72	469344	504		-	-	-	-	-	-	-
			High	2562.5	512500	2553.5	510700	6		-	-	-	-	-	-	-
20	51	Downlink	Low	2630	526000	2620.82	524164	0	15	6560	524890	2	0	0 (5)	10	
			Mid	2655	531000	2609.1	521820	102		6624	529950	22	0	0 (5)	214	
			High	2680	536000	2489.38	497876	504		6688	535010	18	0	1 (6)	1020	
		Uplink	Low	2510	502000	2500.82	500164	0	-	-	-	-	-	-	-	-
			Mid	2535	507000	2344.38	468876	504		-	-	-	-	-	-	-
			High	2560	512000	2548.66	509732	6		-	-	-	-	-	-	-

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

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

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

CBW [MHz]	carrierBand width [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequency PointA [ARFCN]	offsetToCarrier [PRBs]	SS block SCS [kHz]	GSCN	absoluteFrequency SSB [ARFCN]
10	11	Downlink	Low	2625	525000	2621.04	524208	0	15	-	524568
			Mid	2655	531000	2577.6	515520	102		-	530568
			High	2685	537000	2318.16	463632	504		-	536568
		Uplink	Low	2505	501000	2501.04	500208	0	-	-	-
			Mid	2535	507000	2168.16	433632	504		-	-
			High	2565	513000	2556.72	511344	6		-	-
15	18	Downlink	Low	2627.5	525500	2621.02	524204	0	15	-	524564
			Mid	2655	531000	2575.08	515016	102		-	530064
			High	2682.5	536500	2313.14	462628	504		-	535564
		Uplink	Low	2507.5	501500	2501.02	500204	0	-	-	-
			Mid	2535	507000	2165.64	433128	504		-	-
			High	2562.5	512500	2551.7	510340	6		-	-
20	24	Downlink	Low	2630	526000	2621.36	524272	0	15	-	524632
			Mid	2655	531000	2572.92	514584	102		-	529632
			High	2680	536000	2308.48	461696	504		-	534632
		Uplink	Low	2510	502000	2501.36	500272	0	-	-	-
			Mid	2535	507000	2163.48	432696	504		-	-
			High	2560	512000	2547.04	509408	6		-	-
Note: FR1 carrier without CORESET#0 is indicated in the MIB by setting $k_{SSB}=31$ , <i>controlResourceSetZero</i> =0 and <i>searchSpaceZero</i> = 0 (TS 38.213 [22], clause 13).											

4.3.1.1.1.8 Reference test frequencies for NR operating band n8

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

CBW [MHz]	carrierBand width [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequency PointA [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS [kHz]	GSCN	absoluteFrequency SSB [ARFCN]	$k_{SSB}$	Offset Carrier CORESET#0 [RBs] Note 2	CORESET#0 Index (Offset [RBs]) Note 1	offsetToPointA (SIB1) [PRBs] Note 1
5	25	Downlink	Low	927.5	185500	925.25	185050	0	15	2318	185530	4	1	1 (2)	3

			Mid	942.5	18850	921.	184378	102		235	188410	0	0	0 (0)	102
			High	957.5	19150	864.	172906	504		239	191530	4	1	1 (2)	507
			Uplink	Low	882.5	17650	880.	176050		0	-	-	-	-	-
		Mid	897.5	17950	804.	160906	504	-		-	-	-	-	-	-
		High	912.5	18250	909.	181834	6	-		-	-	-	-	-	-
		Downlink	Low	930	18600	925.	185064	0		15	231	185550	6	1	1 (2)
10	52	Downlink	Mid	942.5	18850	919.	183892	102		234	187930	2	0	0 (0)	102
			High	955	19100	859.	171920	504		238	190610	2	1	2 (4)	509
			Uplink	Low	885	17700	880.	176064		0	-	-	-	-	-
		Mid	897.5	17950	802.	160420	504	-		-	-	-	-	-	-
		High	910	18200	904.	180848	6	-		-	-	-	-	-	-
		Downlink	Low	932.5	18650	925.	185078	0		15	232	185570	8	1	1 (2)
15	79	Downlink	Mid	942.5	18850	917.	183406	102		234	187450	4	0	0 (0)	102
			High	952.5	19050	854.	170934	504		237	189630	4	1	2 (4)	509
			Uplink	Low	887.5	17750	880.	176078		0	-	-	-	-	-
		Mid	897.5	17950	799.	159934	504	-		-	-	-	-	-	-
		High	907.5	18150	899.	179862	6	-		-	-	-	-	-	-
		Downlink	Low	935	18700	925.	185092	0		15	231	185530	2	0	1 (2)
20	106	Downlink	Mid	942.5	18850	914.	182920	102		233	186970	6	0	0 (0)	102
			High	950	19000	849.	169948	504		235	188650	6	1	2 (4)	509
			Uplink	Low	890	17800	880.	176092		0	-	-	-	-	-

		Mid	897.50	17950	797.24	159448	504	-	-	-	-	-	-
		High	905	18100	894.38	178876	6	-	-	-	-	-	-
<p>Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-1 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.</p> <p>Note 2: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter <math>\Delta F_{\text{OffsetCORESET-0-Carrier}}</math> in Annex C expressed in number of common RBs.</p>													

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

CBW [MHz]	carrierBandwidth [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequencyPointA [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS [kHz]	GSCN	absoluteFrequencySSB [ARFCN]	$k_{SSB}$	Offset Carrier CORESET#0 [RBs] Note 2	CORESET#0 Index (Offset [RBs]) Note 1	offsetToPointA (SIB1) [PRBs] Note 1	
10	24	Downlink	Low	930	186000	925.68	185136	0	15	2325	186030	10	0	2 (7)	14	
			Mid	942.5	188500	901.46	180292	102		2354	188410	18	0	0 (5)	214	
			High	955	191000	769.24	153848	504		2389	191090	6	0	3 (8)	1024	
		Uplink	Low	885	177000	880.68	176136	0	-	-	-	-	-	-	-	-
			Mid	897.5	179500	711.74	142348	504		-	-	-	-	-	-	-
			High	910	182000	903.52	180704	6		-	-	-	-	-	-	-
15	38	Downlink	Low	932.5	186500	925.66	185132	0	15	2326	186050	18	0	2 (7)	14	
			Mid	942.5	188500	898.94	179788	102		2348	187930	2	0	1 (6)	216	
			High	952.5	190500	764.22	152844	504		2373	189870	6	0	0 (5)	1018	
		Uplink	Low	887.5	177500	880.66	176132	0	-	-	-	-	-	-	-	-
			Mid	897.5	179500	709.22	141844	504		-	-	-	-	-	-	-
			High	907.5	181500	898.5	179700	6		-	-	-	-	-	-	-
20	51	Downlink	Low	935	187000	925.82	185164	0	15	2324	186010	18	0	1 (6)	12	
			Mid	942.5	188500	896.6	179320	102		2342	187450	22	0	0 (5)	214	
			High	950	190000	759.38	151876	504		2360	188890	2	0	0 (5)	1018	
		Uplink	Low	890	178000	880.82	176164	0	-	-	-	-	-	-	-	-
			Mid	897.5	179500	706.88	141376	504		-	-	-	-	-	-	-
			High	905	181000	893.66	178732	6		-	-	-	-	-	-	-
<p>Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-2 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.</p> <p>Note 2: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter <math>\Delta F_{\text{OffsetCORESET-0-Carrier}}</math> in Annex C expressed in number of common RBs.</p>																

4.3.1.1.1.9 to 4.3.1.1.1.11 FFS

4.3.1.1.1.12 Reference test frequencies for NR operating band n12

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

CBW [MHz]	carrierBandwidth [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequencyPointA [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS [kHz]	GSCN	absoluteFrequencySSB [ARFCN]	$k_{SSB}$	Offset Carrier CORESET#0 [RBs] Note 2	CORESET#0 Index (Offset [RBs]) Note 1	offsetToPointA (SIB1) [PRBs] Note 1	
5	25	Downlink	Low	731.5	146300	729.25	145850	0	15	1828	146210	0	0	0 (0)	0	
			Mid	737.5	147500	716.89	143378	102		1843	147410	0	0	0 (0)	102	
			High	743.5	148700	650.53	130106	504		1858	148610	0	0	0 (0)	504	
		Uplink	Low	701.5	140300	699.25	139850	0	-	-	-	-	-	-	-	-
			Mid	707.5	141500	614.53	122906	504	-	-	-	-	-	-	-	-
			High	713.5	142700	710.17	142034	6	-	-	-	-	-	-	-	-
10	52	Downlink	Low	734	146800	729.32	145864	0	15	1829	146410	2	1	2 (4)	5	
			Mid	737.5	147500	714.46	142892	102		1837	146930	2	0	0 (0)	102	
			High	741	148200	645.6	129120	504		1845	147630	2	0	0 (0)	504	
		Uplink	Low	704	140800	699.32	139864	0	-	-	-	-	-	-	-	-
			Mid	707.5	141500	612.1	122420	504	-	-	-	-	-	-	-	-
			High	711	142200	705.24	141048	6	-	-	-	-	-	-	-	-
15	79	Downlink	Low	736.5	147300	729.39	145878	0	15	1830	146430	4	1	2 (4)	5	
			Mid	737.5	147500	712.03	142406	102		1831	146450	4	0	0 (0)	102	
			High	738.5	147700	640.67	128134	504		1832	146650	4	0	0 (0)	504	
		Uplink	Low	706.5	141300	699.39	139878	0	-	-	-	-	-	-	-	-
			Mid	707.5	141500	609.67	121934	504	-	-	-	-	-	-	-	-
			High	708.5	141700	700.31	140062	6	-	-	-	-	-	-	-	-

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

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

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

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

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

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



4.3.1.1.1.13 FFS

4.3.1.1.1.14 Reference test frequencies for NR operating band n14

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

CBW [MHz]	carrierBandwidth [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequency PointA [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS [kHz]	GSCN	absoluteFrequency SSB [ARFCN]	$k_{SSB}$	Offset Carrier CORESET#0 [RBs] Note 2	CORESET#0 Index (Offset [RBs]) Note 1	offsetToPointA (SIB1) [PRBs] Note 1
5	25	Downlink	Low	760.5	152100	758.25	151650	0	15	1902	152190	0	1	2 (4)	5
			Mid	763	152600	742.39	148478	102		1909	152690	0	1	2 (4)	107
			High	765.5	153100	672.53	134506	504		1913	153130	4	1	1 (2)	507
		Uplink	Low	790.5	158100	788.25	157650	0	-	-	-	-	-	-	-
			Mid	793	158600	700.03	140006	504	-	-	-	-	-	-	-
			High	795.5	159100	792.17	158434	6	-	-	-	-	-	-	-
10	52	Downlink	Low	763	152600	758.32	151664	0	15	1903	152210	2	1	2 (4)	5
			Mid												
			High												
		Uplink	Low	793	158600	788.32	157664	0	-	-	-	-	-	-	-
			Mid												
			High												

Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-1 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcchConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.

Note 2: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter  $\Delta F_{\text{OffsetCORESET0Carrier}}$  in Annex C expressed in number of common RBs.

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

**Table 4.3.1.1.1.14-2: Test frequencies for NR operating band n14 and SCS 30 kHz**

CBW [MHz]	carrierBandwidth [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequencyPointA [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS [kHz]	GSCN	absoluteFrequencySSB [ARFCN]	$k_{SSB}$	Offset Carrier CORESET#0 [RBs] Note 2	CORESET#0 Index (Offset [RBs]) Note 1	offsetToPointA (SIB1) [PRBs] Note 1		
10	24	Downlink	Low	763	152600	758.68	151736	0	15	1909	152690	6	0	3 (8)	16		
			Mid														
			High														
		Uplink	Low	793	158600	788.68	157736	0	-	-	-	-	-	-	-	-	-
			Mid														
			High														

Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-2 in TS 38.213 [22]. The value of CORESET#0 Index is signalled controlResourceSetZero (pdchConfigSIB1 in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.

Note 2: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter  $\Delta F_{OffsetCORESET0Carrier}$  in Annex C expressed in number of common RBs.

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

4.3.1.1.1.15 to 4.3.1.1.1.19 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**

CBW [MHz]	carrierBandwidth [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequency PointA [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS [kHz]	GSCN	absoluteFrequency SSB [ARFCN]	$k_{SSB}$	Offset Carrier CORESET#0 [RBs] Note 2	CORESET#0 Index (Offset [RBs]) Note 1	offsetToPointA (SIB1) [PRBs] Note 1
5	25	Downlink	Low	793.5	158700	791.25	158250	0	15	1983	158670	8	1	0 (0)	1
			Mid	806	161200	785.39	157078	102		2015	161290	0	1	2 (4)	107
			High	818.5	163700	725.53	145106	504		2047	163730	4	1	1 (2)	507
		Uplink	Low	834.5	166900	832.25	166450	0	-	-	-	-	-	-	-
			Mid	847	169400	754.03	150806	504	-	-	-	-	-	-	-
			High	859.5	171900	856.17	171234	6	-	-	-	-	-	-	-
10	52	Downlink	Low	796	159200	791.32	158264	0	15	1984	158690	10	1	0 (0)	1
			Mid	806	161200	782.96	156592	102		2009	160810	2	1	2 (4)	107
			High	816	163200	720.6	144120	504		2034	162750	6	1	1 (2)	507
		Uplink	Low	837	167400	832.32	166464	0	-	-	-	-	-	-	-
			Mid	847	169400	751.6	150320	504	-	-	-	-	-	-	-
			High	857	171400	851.24	170248	6	-	-	-	-	-	-	-
15	79	Downlink	Low	798.5	159700	791.39	158278	0	15	1982	158650	4	0	0 (0)	0
			Mid	806	161200	780.53	156106	102		2003	160330	4	1	2 (4)	107
			High	813.5	162700	715.67	143134	504		2021	161770	8	1	1 (2)	507
		Uplink	Low	839.5	167900	832.39	166478	0	-	-	-	-	-	-	-
			Mid	847	169400	749.17	149834	504	-	-	-	-	-	-	-
			High	854.5	170900	846.31	169262	6	-	-	-	-	-	-	-
20	106	Downlink	Low	801	160200	791.46	158292	0	15	1983	158670	6	0	0 (0)	0
			Mid	806	161200	778.1	155620	102		1997	159850	6	1	2 (4)	107
			High	811	162200	710.74	142148	504		2011	160850	6	1	2 (4)	509
		Uplink	Low	842	168400	832.46	166492	0	-	-	-	-	-	-	-
			Mid	847	169400	746.74	149348	504	-	-	-	-	-	-	-
			High	852	170400	841.38	168276	6	-	-	-	-	-	-	-

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

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

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

CBW [MHz]	carrierBandwidth [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequencyPointA [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS [kHz]	GSCN	absoluteFrequencySSB [ARFCN]	$k_{SSB}$	Offset Carrier CORESET#0 [RBs] Note 2	CORESET#0 Index (Offset [RBs]) Note 1	offsetToPointA (SIB1) [PRBs] Note 1	
10	24	Downlink	Low	796	159200	791.68	158336	0	15	1990	159170	14	0	1 (6)	12	
			Mid	806	161200	764.96	152992	102		2015	161290	6	0	3 (8)	220	
			High	816	163200	630.24	126048	504		2040	163230	10	0	2 (7)	1022	
		Uplink	Low	837	167400	832.68	166536	0	-	-	-	-	-	-	-	-
			Mid	847	169400	661.24	132248	504		-	-	-	-	-	-	-
			High	857	171400	850.52	170104	6		-	-	-	-	-	-	-
15	38	Downlink	Low	798.5	159700	791.66	158332	0	15	1988	159130	2	0	1 (6)	12	
			Mid	806	161200	762.44	152488	102		2006	160570	6	0	0 (5)	214	
			High	813.5	162700	625.22	125044	504		2027	162250	18	0	2 (7)	1022	
		Uplink	Low	839.5	167900	832.66	166532	0	-	-	-	-	-	-	-	-
			Mid	847	169400	658.72	131744	504		-	-	-	-	-	-	-
			High	854.5	170900	845.5	169100	6		-	-	-	-	-	-	-
20	51	Downlink	Low	801	160200	791.82	158364	0	15	1989	159150	22	0	0 (5)	10	
			Mid	806	161200	760.1	152020	102		2000	160090	2	0	0 (5)	214	
			High	811	162200	620.38	124076	504		2014	161090	2	0	0 (5)	1018	
		Uplink	Low	842	168400	832.82	166564	0	-	-	-	-	-	-	-	-
			Mid	847	169400	656.38	131276	504		-	-	-	-	-	-	-
			High	852	170400	840.66	168132	6		-	-	-	-	-	-	-

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

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

4.3.1.1.1.21 to 4.3.1.1.1.23 FFS

4.3.1.1.1.24 Reference test frequencies for NR operating band n24

**Table 4.3.1.1.1.24-1a: Test frequencies for NR operating band n24 and SCS 15 kHz**

UL/DL CBW [MHz]	carrierB andwidth h [PRBs]	Range		Carrier centre [MHz] Note 3	Carrier centre [ARFCN]	point A [MHz]	absoluteF requency PointA [ARFCN]	offsetToC arrier [Carrier PRBs]	SS block SCS [kHz]	GSCN	absoluteF requency SSB [ARFCN]	$k_{SSB}$	Offset Carrier CORESET#0 [RBs] Note 2	CORESET#0 Index (Offset [RBs]) Note 1	offsetToP ointA (SIB1) [PRBs] Note 1	
5/5	25	Downlink	Low	1528.5	305700	1526.25	305250	0	15	3822	305790	0	1	2 (4)	5	
			Mid	1533.5	306700	1512.89	302578	102		3833	306730	4	1	1 (2)	105	
			High	1533.5	306700	1440.53	288106	504		3833	306730	4	1	1 (2)	507	
		Uplink	Low	1630.0	326000	1627.75	325550	0	-	-	-	-	-	-	-	-
			Mid	1635.0	327000	1542.03	308406	504		-	-	-	-	-	-	-
			High	1654.0	330800	1650.67	330134	6		-	-	-	-	-	-	-
10/5 (Note 4)	25	Downlink	Low	1528.5	305700	1526.25	305250	0	15	3822	305790	0	1	2 (4)	5	
			Mid	1533.5	306700	1440.53	288106	504		3833	306730	4	1	1 (2)	507	
			High	1533.5	306700	1440.53	288106	504		3833	306730	4	1	1 (2)	507	
	52	Uplink	Low	1632.5	326500	1627.82	325564	0	-	-	-	-	-	-	-	
			Mid	1632.5	326500	1627.82	325564	0		-	-	-	-	-	-	
			High	1651.5	330300	1645.74	329148	6		-	-	-	-	-	-	
10/10	52	Downlink	Low	1531.0	306200	1526.32	305264	0	15	3823	305810	2	1	2 (4)	5	
			Mid	1531.0	306200	1435.6	287120	504		3823	305810	2	1	2 (4)	509	
			High	1531.0	306200	1435.6	287120	504		3823	305810	2	1	2 (4)	509	
		Uplink	Low	1632.5	326500	1627.82	325564	0	-	-	-	-	-	-	-	
			Mid	1632.5	326500	1627.82	325564	0		-	-	-	-	-	-	
			High	1651.5	330300	1645.74	329148	6		-	-	-	-	-	-	

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

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

Note 3: For symmetric CBW combinations, Low and Mid test frequencies are specified using Tx-Rx spacing of -101.5 MHz and High test frequency is specified using Tx-Rx spacing of -120.5 MHz

Note 4: For asymmetric CBW combination UL=10MHz and DL=5MHz, Low and Mid test frequencies are specified using Tx-Rx spacing of -104 MHz and High test frequency is specified using Tx-Rx spacing of -118 MHz.

**Table 4.3.1.1.1.24-2a: Test frequencies for NR operating band n24 and SCS 30 kHz**

CBW [MHz]	carrierBandwidth [PRBs]	Range		Carrier centre [MHz] Note 3	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequency PointA [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS [kHz]	GSCN	absoluteFrequency SSB [ARFCN]	$k_{SSB}$	Offset Carrier CORESET#0 [RBs] Note 2	CORESET#0 Index (Offset [RBs]) Note 1	offsetToPointA (SIB1) [PRBs] Note 1	
10	24	Downlink	Low Mid	1531.0	306200	1526.68	305336	0	30	3829	306290	6	0	3 (3)	6	
			High	1531.0	306200	1345.24	269048	504								3829
		Uplink	Low Mid	1632.5	326500	1628.18	325636	0	-	-	-	-	-	-	-	-
			High	1651.5	330300	1645.02	329004	6	-	-	-	-	-	-	-	-

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

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

Note 3: Low and Mid test frequencies are specified using Tx-Rx spacing of -101.5 MHz and High test frequency is specified using Tx-Rx spacing of -120.5 MHz

**Table 4.3.1.1.1.24-3a: Test frequencies for NR operating band n24 and SCS 60 kHz without CORESET#0**

CBW [MHz]	carrierBandwidth [PRBs]	Range		Carrier centre [MHz] Note 2	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequency PointA [ARFCN]	offsetToCarrier [PRBs]	SS block SCS [kHz]	GSCN	absoluteFrequency SSB [ARFCN]
10	11	Downlink	Low Mid	1531.0	306200	1527.04	305408	0	15	-	305768
			High	1531.0	306200	1164.16	232832	504			-
		Uplink	Low Mid	1632.5	326500	1628.54	325708	0	-	-	-
			High	1651.5	330300	1643.22	328644	6	-	-	-

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

Note 2: Low and Mid test frequencies are specified using Tx-Rx spacing of -101.5 MHz and High test frequency is specified using Tx-Rx spacing of -120.5 MHz

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

CBW [MHz]	carrier Bandwidth [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absolute FrequencyPointA [ARFCN]	offsetTo Carrier [Carrier PRBs]	SS block SCS [kHz]	GSCN	absolute FrequencySSB [ARFCN]	$k_{SSB}$	Offset Carrier CORET#0 [RBs] Note 2	CORET#0 Index (Offset [RBs]) Note 1	offsetTo PointA (SIB1) [PRBs] Note 1
5	25	Downlink	Low	1932.5	386500	1930.25	386050	0	15	4829	386410	0	0	0 (0)	0
			Mid	1962.5	392500	1941.89	388378	102		4904	392410	0	0	0 (0)	102
			High	1992.5	398500	1899.53	379906	504		4979	398410	0	0	0 (0)	504
		Uplink	Low	1852.5	370500	1850.25	370050	0	-	-	-	-	-	-	-
			Mid	1882.5	376500	1789.53	357906	504		-	-	-	-	-	-
			High	1912.5	382500	1909.17	381834	6		-	-	-	-	-	-
10	52	Downlink	Low	1935	387000	1930.32	386064	0	15	4830	386430	2	0	0 (0)	0
			Mid	1962.5	392500	1939.46	387892	102		4898	391930	2	0	0 (0)	102
			High	1990	398000	1894.6	378920	504		4969	397490	10	1	0 (0)	505
		Uplink	Low	1855	371000	1850.32	370064	0	-	-	-	-	-	-	-
			Mid	1882.5	376500	1787.1	357420	504		-	-	-	-	-	-
			High	1910	382000	1904.24	380848	6		-	-	-	-	-	-
15	79	Downlink	Low	1937.5	387500	1930.39	386078	0	15	4831	386450	4	0	0 (0)	0
			Mid	1962.5	392500	1937.03	387406	102		4892	391450	4	0	0 (0)	102
			High	1987.5	397500	1889.67	377934	504		4956	396510	0	0	1 (2)	506
		Uplink	Low	1857.5	371500	1850.39	370078	0	-	-	-	-	-	-	-
			Mid	1882.5	376500	1784.67	356934	504		-	-	-	-	-	-
			High	1907.5	381500	1899.31	379862	6		-	-	-	-	-	-
20	106	Downlink	Low	1940	388000	1930.46	386092	0	15	4832	386650	6	1	2 (4)	5
			Mid	1962.5	392500	1934.6	386920	102		4886	390970	6	0	0 (0)	102
			High	1985	397000	1884.74	376948	504		4943	395530	2	0	1 (2)	506
		Uplink	Low	1860	372000	1850.46	370092	0	-	-	-	-	-	-	-
			Mid	1882.5	376500	1782.24	356448	504		-	-	-	-	-	-
			High	1905	381000	1894.38	378876	6		-	-	-	-	-	-
25	133	Downlink	Low	1942.5	388500	1930.53	386106	0	15	4833	386670	8	1	2 (4)	5
			Mid	1962.5	392500	1932.17	386434	102		4880	390490	8	0	0 (0)	102
			High	1982.5	396500	1879.81	375962	504		4933	394610	0	0	2 (4)	508
		Uplink	Low	1862.5	372500	1850.53	370106	0	-	-	-	-	-	-	-
			Mid	1882.5	376500	1779.81	355962	504		-	-	-	-	-	-
			High	1902.5	380500	1889.45	377890	6		-	-	-	-	-	-
30	160	Downlink	Low	1945	389000	1930.6	386120	0	15	4834	386690	10	1	2 (4)	5

40	216	Uplink	Mid	1962.5	392500	1929.74	385948	102	-	4874	390010	10	0	0 (0)	102
			High	1980	396000	1874.88	374976	504		4920	393630	2	0	2 (4)	508
			Low	1865	373000	1850.6	370120	0		-	-	-	-	-	-
			Mid	1882.5	376500	1777.38	355476	504		-	-	-	-	-	-
			High	1900	380000	1884.52	376904	6		-	-	-	-	-	-
	Downlink	15	Low	1950	390000	1930.56	386112	0	4833	386670	6	1	2 (4)	5	
			Mid	1962.5	392500	1924.7	384940	102	4862	389050	2	0	1 (2)	104	
			High	1975	395000	1864.84	372968	504	4894	391490	6	0	0 (0)	504	
			Uplink	Low	1870	374000	1850.56	370112	0	-	-	-	-	-	-
				Mid	1882.5	376500	1772.34	354468	504	-	-	-	-	-	-
High	1895	379000		1874.48	374896	6	-	-	-	-	-	-			

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

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

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

CBW [MHz]	carrier Bandwidth [PRBs]	Range	Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absolute FrequencyPointA [ARFCN]	offsetTo Carrier [Carrier PRBs]	SS block SCS [kHz]	GSCN	absolute FrequencySSB [ARFCN]	$k_{\text{SSB}}$	Offset Carrier CORES ET#0 [RBs] Note 2	CORES ET#0 Index (Offset [RBs]) Note 1	offsetTo PointA (SIB1) [PRBs] Note 1	
10	24	Downlink	Low	1935	387000	1930.68	386136	0	15	4836	386910	18	0	0 (5)	10
			Mid	1962.5	392500	1921.46	384292	102		4904	392410	18	0	0 (5)	214
			High	1990	398000	1804.24	360848	504		4975	397970	14	0	1 (6)	1020
		Uplink	Low	1855	371000	1850.68	370136	0	-	-	-	-	-	-	-
			Mid	1882.5	376500	1696.74	339348	504		-	-	-	-	-	-
			High	1910	382000	1903.52	380704	6		-	-	-	-	-	-
15	38	Downlink	Low	1937.5	387500	1930.66	386132	0	15	4837	386930	2	0	1 (6)	12
			Mid	1962.5	392500	1918.94	383788	102		4898	391930	2	0	1 (6)	216
			High	1987.5	397500	1799.22	359844	504		4962	396990	22	0	1 (6)	1020
		Uplink	Low	1857.5	371500	1850.66	370132	0	-	-	-	-	-	-	-
			Mid	1882.5	376500	1694.22	338844	504		-	-	-	-	-	-
			High	1907.5	381500	1898.5	379700	6		-	-	-	-	-	-
20	51	Downlink	Low	1940	388000	1930.82	386164	0	15	4835	386890	2	0	0 (5)	10
			Mid	1962.5	392500	1916.6	383320	102		4892	391450	22	0	0 (5)	214
			High	1985	397000	1794.38	358876	504		4949	396010	18	0	1 (6)	1020



25	65	Uplink	Low	1860	372000	1850.82	370164	0	-	-	-	-	-	-			
			Mid	1882.5	376500	1691.88	338376	504	-	-	-	-	-	-			
			High	1905	381000	1893.66	378732	6	-	-	-	-	-	-			
		Downlink	Low	1942.5	388500	1930.8	386160	0	15	4836	386910	10	0	0 (5)	10		
			Mid	1962.5	392500	1914.08	382816	102		4886	390970	6	0	1 (6)	216		
			High	1982.5	396500	1789.36	357872	504		4939	395090	22	0	2 (7)	1022		
		Uplink	Low	1862.5	372500	1850.8	370160	0	-	-	-	-	-	-	-		
			Mid	1882.5	376500	1689.36	337872	504	-	-	-	-	-	-	-		
			High	1902.5	380500	1888.64	377728	6	-	-	-	-	-	-	-		
30	78	Downlink	Low	1945	389000	1930.96	386192	0	15	4837	386930	6	0	0 (5)	10		
			Mid	1962.5	392500	1911.74	382348	102		4880	390490	2	0	1 (6)	216		
			High	1980	396000	1784.52	356904	504		4926	394110	18	0	2 (7)	1022		
		Uplink	Low	1865	373000	1850.96	370192	0	-	-	-	-	-	-	-		
			Mid	1882.5	376500	1687.02	337404	504	-	-	-	-	-	-	-		
			High	1900	380000	1883.8	376760	6	-	-	-	-	-	-	-		
		40	106	Downlink	Low	1950	390000	1930.92	386184	0	15	4836	386910	2	0	0 (5)	10
					Mid	1962.5	392500	1906.7	381340	102		4868	389530	18	0	1 (6)	216
					High	1975	395000	1774.48	354896	504		4900	391970	22	0	0 (5)	1018
Uplink	Low			1870	374000	1850.92	370184	0	-	-	-	-	-	-	-		
	Mid			1882.5	376500	1681.98	336396	504	-	-	-	-	-	-	-		
	High			1895	379000	1873.76	374752	6	-	-	-	-	-	-	-		
<p>Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-2 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.</p> <p>Note 2: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter <math>\Delta F_{\text{OffsetCORESET-0-Carrier}}</math> in Annex C expressed in number of common RBs.</p>																	

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

CBW [MHz]	carrierBand width [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absoluteF requency PointA [ARFCN]	offsetToC arrier [PRBs]	SS block SCS [kHz]	GSCN	absoluteF requency SSB [ARFCN]
10	11	Downlink	Low	1935	387000	1931.04	386208	0	15	-	386568
			Mid	1962.5	392500	1885.1	377020	102		-	392068
			High	1990	398000	1623.16	324632	504		-	397568
		Uplink	Low	1855	371000	1851.04	370208	0	-	-	-
			Mid	1882.5	376500	1515.66	303132	504		-	-
			High	1910	382000	1901.72	380344	6		-	-
15	18	Downlink	Low	1937.5	387500	1931.02	386204	0	15	-	386564

			Mid	1962.5	392500	1882.58	376516	102		-	391564
			High	1987.5	397500	1618.14	323628	504		-	396564
		Uplink	Low	1857.5	371500	1851.02	370204	0	-	-	-
			Mid	1882.5	376500	1513.14	302628	504		-	-
			High	1907.5	381500	1896.7	379340	6		-	-
20	24	Downlink	Low	1940	388000	1931.36	386272	0	15	-	386632
			Mid	1962.5	392500	1880.42	376084	102		-	391132
			High	1985	397000	1613.48	322696	504		-	395632
		Uplink	Low	1860	372000	1851.36	370272	0	-	-	-
			Mid	1882.5	376500	1510.98	302196	504		-	-
			High	1905	381000	1892.04	378408	6		-	-
25	31	Downlink	Low	1942.5	388500	1931.34	386268	0	15	-	386628
			Mid	1962.5	392500	1877.9	375580	102		-	390628
			High	1982.5	396500	1608.46	321692	504		-	394628
		Uplink	Low	1862.5	372500	1851.34	370268	0	-	-	-
			Mid	1882.5	376500	1508.46	301692	504		-	-
			High	1902.5	380500	1887.02	377404	6		-	-
30	38	Downlink	Low	1945	389000	1931.32	386264	0	15	-	386624
			Mid	1962.5	392500	1875.38	375076	102		-	390124
			High	1980	396000	1603.44	320688	504		-	393624
		Uplink	Low	1865	373000	1851.32	370264	0	-	-	-
			Mid	1882.5	376500	1505.94	301188	504		-	-
			High	1900	380000	1882	376400	6		-	-
40	51	Downlink	Low	1950	390000	1931.64	386328	0	15	-	386688
			Mid	1962.5	392500	1870.7	374140	102		-	389188
			High	1975	395000	1593.76	318752	504		-	391688
		Uplink	Low	1870	374000	1851.64	370328	0	-	-	-
			Mid	1882.5	376500	1501.26	300252	504		-	-
			High	1895	379000	1872.32	374464	6		-	-
Note: FR1 carrier without CORESET#0 is indicated in the MIB by setting $k_{SSB}=31$ , <i>controlResourceSetZero</i> =0 and <i>searchSpaceZero</i> = 0 (TS 38.213 [22], clause 13).											

4.3.1.1.1.26 Reference test frequencies for NR operating band n26

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

CBW [MHz]	carrierBandwidth [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequencyPointA [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS [kHz]	GSCN	absoluteFrequencySSB [ARFCN]	$k_{SSB}$	Offset carrier CORESET#0 [RBs] Note 2	CORESET#0 Index (Offset [RBs]) Note 1	offsetToPointA (SIB1) [PRBs] Note 1	
5	25	Downlink	Low	861.5	172300	859.25	171850	0	15	2153	172330	4	1	1 (2)	3	
			Mid	876.5	175300	855.89	171178	102		2189	175210	0	0	0 (0)	102	
			High	891.5	178300	798.53	159706	504		2228	178330	4	1	1 (2)	507	
		Uplink	Low	816.5	163300	814.25	162850	0	-	-	-	-	-	-	-	-
			Mid	831.5	166300	738.53	147706	504		-	-	-	-	-	-	-
			High	846.5	169300	843.17	168634	6		-	-	-	-	-	-	-
10	52	Downlink	Low	864	172800	859.32	171864	0	15	2154	172350	6	1	1 (2)	3	
			Mid	876.5	175300	853.46	170692	102		2183	174730	2	0	0 (0)	102	
			High	889	177800	793.6	158720	504		2218	177410	2	1	2 (4)	509	
		Uplink	Low	819	163800	814.32	162864	0	-	-	-	-	-	-	-	-
			Mid	831.5	166300	736.1	147220	504		-	-	-	-	-	-	-
			High	844	168800	838.24	167648	6		-	-	-	-	-	-	-
15	79	Downlink	Low	866.5	173300	859.39	171878	0	15	2155	172370	8	1	1 (2)	3	
			Mid	876.5	175300	851.03	170206	102		2177	174250	4	0	0 (0)	102	
			High	886.5	177300	788.67	157734	504		2205	176430	4	1	2 (4)	509	
		Uplink	Low	821.5	164300	814.39	162878	0	-	-	-	-	-	-	-	-
			Mid	831.5	166300	733.67	146734	504		-	-	-	-	-	-	-
			High	841.5	168300	833.31	166662	6		-	-	-	-	-	-	-
20	106	Downlink	Low	869	173800	859.46	171892	0	15	2153	172330	2	0	1 (2)	2	
			Mid	876.5	175300	848.6	169720	102		2171	173770	6	0	0 (0)	102	
			High	884	176800	783.74	156748	504		2192	175450	6	1	2 (4)	509	
		Uplink	Low	824	164800	814.46	162892	0	-	-	-	-	-	-	-	-
			Mid	831.5	166300	731.24	146248	504		-	-	-	-	-	-	-
			High	839	167800	828.38	165676	6		-	-	-	-	-	-	-

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

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

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

CBW [MHz]	carrierBandwidth [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequencyPointA [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS [kHz]	GSCN	absoluteFrequencySSB [ARFCN]	$k_{SSB}$	Offset carrier CORESET#0 [RBs] Note 2	CORESET#0 Index (Offset [RBs]) Note 1	offsetToPointA (SIB1) [PRBs] Note 1	
10	24	Downlink	Low	864	172800	859.68	171936	0	15	2160	172830	10	0	2 (7)	14	
			Mid	876.5	175300	835.46	167092	102		2189	175210	18	0	0 (5)	214	
			High	889	177800	703.24	140648	504		2224	177890	6	0	3 (8)	1024	
		Uplink	Low	819	163800	814.68	162936	0	-	-	-	-	-	-	-	-
			Mid	831.5	166300	645.74	129148	504		-	-	-	-	-	-	-
			High	844	168800	837.52	167504	6		-	-	-	-	-	-	-
15	38	Downlink	Low	866.5	173300	859.66	171932	0	15	2161	172850	18	0	2 (7)	14	
			Mid	876.5	175300	832.94	166588	102		2183	174730	2	0	1 (6)	216	
			High	886.5	177300	698.22	139644	504		2208	176670	6	0	0 (5)	1018	
		Uplink	Low	821.5	164300	814.66	162932	0	-	-	-	-	-	-	-	-
			Mid	831.5	166300	643.22	128644	504		-	-	-	-	-	-	-
			High	841.5	168300	832.5	166500	6		-	-	-	-	-	-	-
20	51	Downlink	Low	869	173800	859.82	171964	0	15	2159	172810	18	0	1 (6)	12	
			Mid	876.5	175300	830.6	166120	102		2177	174250	22	0	0 (5)	214	
			High	884	176800	693.38	138676	504		2195	175690	2	0	0 (5)	1018	
		Uplink	Low	824	164800	814.82	162964	0	-	-	-	-	-	-	-	-
			Mid	831.5	166300	640.88	128176	504		-	-	-	-	-	-	-
			High	839	167800	827.66	165532	6		-	-	-	-	-	-	-

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

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

4.3.1.1.1.27 FFS

4.3.1.1.1.28 Reference test frequencies for NR operating band n28

Table 4.3.1.1.1.28-1: Test frequencies for NR operating band n28 and SCS 15 kHz

CBW [MHz]	carrierBandwidth [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequency PointA [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS [kHz]	GSCN	absoluteFrequency SSB [ARFCN]	$k_{SSB}$	Offset Carrier CORES ET#0 [RBs] Note 3	CORES ET#0 Index (Offset [RBs]) Note 1	offsetToPointA (SIB1) [PRBs] Note 1
5	25	Downlink	Low	760.5	152100	758.25	151650	0	15	1902	152190	0	1	2 (4)	5
			Mid	780.5	156100	759.89	151978	102		1949	156010	0	0	0 (0)	102
			High	800.5	160100	707.53	141506	504		2002	160130	4	1	1 (2)	507
		Uplink	Low	705.5	141100	703.25	140650	0	-	-	-	-	-	-	-
			Mid	725.5	145100	632.53	126506	504	-	-	-	-	-	-	-
			High	745.5	149100	742.17	148434	6	-	-	-	-	-	-	-
10	52	Downlink	Low	763	152600	758.32	151664	0	15	1903	152210	2	1	2 (4)	5
			Mid	780.5	156100	757.46	151492	102		1943	155530	2	0	0 (0)	102
			High	798	159600	702.6	140520	504		1989	159150	6	1	1 (2)	507
		Uplink	Low	708	141600	703.32	140664	0	-	-	-	-	-	-	-
			Mid	725.5	145100	630.1	126020	504	-	-	-	-	-	-	-
			High	743	148600	737.24	147448	6	-	-	-	-	-	-	-
15	79	Downlink	Low	765.5	153100	758.39	151678	0	15	1901	152170	8	1	1 (2)	3
			Mid	780.5	156100	755.03	151006	102		1937	155050	4	0	0 (0)	102
			High	795.5	159100	697.67	139534	504		1976	158170	8	1	1 (2)	507
		Uplink	Low	710.5	142100	703.39	140678	0	-	-	-	-	-	-	-
			Mid	725.5	145100	627.67	125534	504	-	-	-	-	-	-	-
			High	740.5	148100	732.31	146462	6	-	-	-	-	-	-	-
20 (Note 2)	106	Downlink	Low	768	153600	758.46	151692	0	15	1902	152190	10	1	1 (2)	3
			Mid	783	156600	755.1	151020	102		1938	155070	6	0	0 (0)	102
			High	793	158600	692.74	138548	504		1966	157250	6	1	2 (4)	509
		Uplink	Low	713	142600	703.46	140692	0	-	-	-	-	-	-	-
			Mid	728	145600	627.74	125548	504	-	-	-	-	-	-	-
			High	738	147600	727.38	145476	6	-	-	-	-	-	-	-
30 (Note 4)	160	Downlink	Low	773	154600	758.6	151720	0	15	1901	152170	6	0	1 (2)	2
			High	788	157600	682.88	136576	504		1940	155290	10	1	2 (4)	509
		Uplink	Low	718	143600	703.6	140720	0	-	-	-	-	-	-	-
			High	733	146600	717.52	143504	6	-	-	-	-	-	-	-

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

Note 2: Carrier centre frequency moved for Mid Range and CBW=20 MHz due to Note 7 in TS 38.101-1 [7], Table 5.3.5-1.

Note 3: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter  $\Delta F_{\text{OffsetCORESET-0-Carrier}}$  in Annex C expressed in number of common RBs.

Note 4: No carrier centre frequency specified for Mid Range and CBW=30 MHz due to Note 7 in TS 38.101-1 [7], Table 5.3.5-1. For test cases specifying Mid range and CBW=30 MHz to be tested, use Low range and CBW=30 MHz instead.

**Table 4.3.1.1.1.28-2: Test frequencies for NR operating band n28 and SCS 30 kHz**

CBW [MHz]	carrierBandwidth [PRBs]	Range	Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequencyPointA [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS [kHz]	GSCN	absoluteFrequencySSB [ARFCN]	$k_{SSB}$	Offset Carrier CORESET#0 [RBs] Note 3	CORESET#0 Index (Offset [RBs]) Note 1	offsetToPointA (SIB1) [PRBs] Note 1	
10	24	Downlink	Low	763	152600	758.68	151736	0	15	1909	152690	6	0	3 (8)	16
			Mid	780.5	156100	739.46	147892	102		1949	156010	18	0	0 (5)	214
			High	798	159600	612.24	122448	504		1995	159630	10	0	2 (7)	1022
		Uplink	Low	708	141600	703.68	140736	0	-	-	-	-	-	-	-
			Mid	725.5	145100	539.74	107948	504	-	-	-	-	-	-	-
			High	743	148600	736.52	147304	6	-	-	-	-	-	-	-
15	38	Downlink	Low	765.5	153100	758.66	151732	0	15	1907	152650	18	0	2 (7)	14
			Mid	780.5	156100	736.94	147388	102		1943	155530	2	0	1 (6)	216
			High	795.5	159100	607.22	121444	504		1982	158650	18	0	2 (7)	1022
		Uplink	Low	710.5	142100	703.66	140732	0	-	-	-	-	-	-	-
			Mid	725.5	145100	537.22	107444	504	-	-	-	-	-	-	-
			High	740.5	148100	731.5	146300	6	-	-	-	-	-	-	-
20 (Note 2)	51	Downlink	Low	768	153600	758.82	151764	0	15	1908	152670	14	0	2 (7)	14
			Mid	783	156600	737.1	147420	102		1944	155550	22	0	0 (5)	214
			High	793	158600	602.38	120476	504		1969	157490	2	0	0 (5)	1018
		Uplink	Low	713	142600	703.82	140764	0	-	-	-	-	-	-	-
			Mid	728	145600	537.38	107476	504	-	-	-	-	-	-	-
			High	738	147600	726.66	145332	6	-	-	-	-	-	-	-
30 (Note 4)	78	Downlink	Low	773	154600	758.96	151792	0	15	1907	152650	22	0	1 (6)	12
			High	788	157600	592.52	118504	504		1943	155530	6	0	0 (5)	1018
		Uplink	Low	718	143600	703.96	140792	0	-	-	-	-	-	-	-
			High	733	146600	716.8	143360	6	-	-	-	-	-	-	-

- Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-2 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.
- Note 2: Carrier centre frequency moved for Mid Range and CBW=20 MHz due to Note 7 in TS 38.101-1 [7], Table 5.3.5-1.
- Note 3: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter  $\Delta F_{\text{OffsetCORESET0-Carrier}}$  in Annex C expressed in number of common RBs.
- Note 4: No carrier centre frequency specified for Mid Range and CBW=30 MHz due to Note 7 in TS 38.101-1 [7], Table 5.3.5-1.

4.3.1.1.1.29 Reference test frequencies for NR operating band n29 (SDL)

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

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

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

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

CBW [MHz]	carrierBand width [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absoluteF requency PointA [ARFCN]	offsetToC arrier [PRBs]	SS block SCS [kHz]	GSCN	absoluteF requency SSB [ARFCN]
10	24	Downlink	Low	722	144400	717.68	143536	0	15	-	143896
			Mid	722.5	144500	681.46	136292	102		-	143996
			High	723	144600	537.24	107448	504		-	144096

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

4.3.1.1.1.30 Reference test frequencies for NR operating band n30

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

CBW [MHz]	carrierBandwidth [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequencyPointA [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS [kHz]	GSCN	absoluteFrequencySSB [ARFCN]	$k_{SSB}$	Offset Carrier CORESET#0 [RBs] Note 2	CORESET#0 Index (Offset [RBs]) Note 1	offsetToPointA (SIB1) [PRBs] Note 1	
5	25	Downlink	Low	2352.5	470500	2350.25	470050	0	15	5879	470410	0	0	0 (0)	0	
			Mid	2355	471000	2334.39	466878	102		5886	470910	0	0	0 (0)	102	
			High	2357.5	471500	2264.53	452906	504		5893	471410	0	0	0 (0)	504	
		Uplink	Low	2307.5	461500	2305.25	461050	0	-	-	-	-	-	-	-	-
			Mid	2310	462000	2217.03	443406	504		-	-	-	-	-	-	
			High	2312.5	462500	2309.17	461834	6		-	-	-	-	-	-	
10	52	Downlink	Low	2355	471000	2350.32	470064	0	15	5880	470430	2	0	0 (0)	0	
			Mid	2355	471000	2331.96	466392	102		5880	470430	2	0	0 (0)	102	
			High	2355	471000	2259.6	451920	504		5880	470430	2	0	0 (0)	504	
		Uplink	Low	2310	462000	2305.32	461064	0	-	-	-	-	-	-	-	-
			Mid													
			High													

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

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



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

CBW [MHz]	carrierBandwidth [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequencyPointA [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS [kHz]	GSCN	absoluteFrequencySSB [ARFCN]	$k_{SSB}$	Offset Carrier CORESET#0 [RBs] Note 2	CORESET#0 Index (Offset [RBs]) Note 1	offsetToPointA (SIB1) [PRBs] Note 1
10	24	Downlink	Low	2355	471000	2350.68	470136	0	15	5886	470910	18	0	0 (5)	10
			Mid	2355	471000	2313.96	462792	102		5886	470910	18	0	0 (5)	214
			High	2355	471000	2169.24	433848	504		5886	470910	18	0	0 (5)	1018
		Uplink	Low	2310	462000	2305.68	461136	0	-	-	-	-	-	-	-
			Mid												
			High												
<p>Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-2 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcc-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.</p> <p>Note 2: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter <math>\Delta F_{\text{OffsetCORESET-0-Carrier}}</math> in Annex C expressed in number of common RBs.</p>															

4.3.1.1.1.31 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

CBW [MHz]	carrier bandwidth [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absolute frequency PointA [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS [kHz]	GSCN	absolute frequency SSB [ARFCN]	$k_{SSB}$	Offset Carrier CORESET#0 [RBs] Note 2	CORESET#0 Index (Offset [RBs]) Note 1	offsetToPointA (SIB1) [PRBs] Note 1
5	25	Downlink & Uplink	Low	2012.5	402500	2010.25	402050	0	15	5032	402530	4	1	1 (2)	3
			Mid	2017.5	403500	1996.89	399378	102		5043	403470	8	1	0 (0)	103
			High	2022.5	404500	1929.53	385906	504		5054	404410	0	0	0 (0)	504
10	52	Downlink & Uplink	Low	2015	403000	2010.32	402064	0	30	5036	402970	2	3	0 (2)	5
			Mid	2017.5	403500	1994.46	398892	102		5043	403470	2	3	0 (2)	107
			High	2020	404000	1924.6	384920	504		5050	403970	2	3	0 (2)	509
15	79	Downlink & Uplink	Low	2017.5	403500	2010.39	402078	0	30	5037	402990	4	3	0 (2)	5
			Mid												
			High												

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

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

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

CBW [MHz]	carrierBandwidth [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequencyPointA [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS [kHz]	GSCN	absoluteFrequencySSB [ARFCN]	$k_{SSB}$	Offset Carrier CORESET#0 [RBs] Note 2	CORESET#0 Index (Offset [RBs]) Note 1	offsetToPointA (SIB1) [PRBs] Note 1
10	24	Downlink & Uplink	Low	2015	403000	2010.68	402136	0	30	5036	402970	14	0	1 (1)	2
			Mid	2017.5	403500	1976.46	395292	102		5043	403470	14	0	1 (1)	206
			High	2020	404000	1834.24	366848	504		5050	403970	14	0	1 (1)	1010
15	38	Downlink & Uplink	Low	2017.5	403500	2010.66	402132	0	30	5037	402990	22	0	1 (1)	2
			Mid												
			High												

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

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

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

CBW [MHz]	carrierBandwidth [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequencyPointA [ARFCN]	offsetToCarrier [PRBs]	SS block SCS [kHz]	GSCN	absoluteFrequencySSB [ARFCN]
10	11	Downlink & Uplink	Low	2015	403000	2011.04	402208	0	15	-	402568
			Mid	2017.5	403500	1940.1	388020	102		-	403068
			High	2020	404000	1653.16	330632	504		-	403568
15	18	Downlink & Uplink	Low	2017.5	403500	2011.02	402204	0	15	-	402564
			Mid								
			High								

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

4.3.1.1.1.35 to 4.3.1.1.1.37 FFS

4.3.1.1.1.38 Reference test frequencies for NR operating band n38

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

CBW [MHz]	carrierBandwidth [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequency PointA [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS [kHz]	GSCN	absoluteFrequency SSB [ARFCN]	$k_{SSB}$	Offset Carrier CORESET#0 [RBs] Note 2	CORESET#0 Index (Offset [RBs]) Note 1	offsetToPointA (SIB1) [PRBs] Note 1
5	25	Downlink & Uplink	Low	2572.5	514500	2570.25	514050	0	15	6432	514590	0	1	2 (4)	5
			Mid	2592.5	518500	2571.89	514378	102		6479	518410	0	0	0 (0)	102
			High	2617.5	523500	2524.53	504906	504		6543	523470	8	1	0 (0)	505
10	52	Downlink & Uplink	Low	2575	515000	2570.32	514064	0	30	6439	515090	6	2	1 (6)	8
			Mid	2595	519000	2571.96	514392	102		6486	518910	6	1	0 (2)	105
			High	2615	523000	2519.6	503920	504		6536	522970	2	3	0 (2)	509
15	79	Downlink & Uplink	Low	2577.5	515500	2570.39	514078	0	30	6437	515050	0	1	1 (6)	7
			Mid	2595	519000	2569.53	513906	102		6480	518430	8	1	0 (2)	105
			High	2612.5	522500	2514.67	502934	504		6526	522050	0	1	1 (6)	511
20	106	Downlink & Uplink	Low	2580	516000	2570.46	514092	0	30	6438	515070	2	1	1 (6)	7
			Mid	2595	519000	2567.1	513420	102		6474	517950	10	1	0 (2)	105
			High	2610	522000	2509.74	501948	504		6513	521070	2	1	1 (6)	511
25	133	Downlink & Uplink	Low	2582.5	516500	2570.53	514106	0	30	6439	515090	4	1	1 (6)	7
			Mid	2595	519000	2564.67	512934	102		6468	517470	0	2	0 (2)	106
			High	2607.5	521500	2504.81	500962	504		6500	520090	4	1	1 (6)	511
30	160	Downlink & Uplink	Low	2585	517000	2570.6	514120	0	30	6437	515050	10	3	0 (2)	5
			Mid	2595	519000	2562.24	512448	102		6462	516990	2	2	0 (2)	106
			High	2605	521000	2499.88	499976	504		6487	518930	6	0	0 (2)	506
40	216	Downlink & Uplink	Low	2590	518000	2570.56	514112	0	30	6439	515090	2	1	1 (6)	7
			Mid	2595	519000	2557.2	511440	102		6450	516030	6	3	0 (2)	107
			High	2600	520000	2489.84	497968	504		6461	516970	10	1	0 (2)	507

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

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

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

CBW [MHz]	carrierBandwidth [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequencyPointA [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS [kHz]	GSCN	absoluteFrequencySSB [ARFCN]	$k_{SSB}$	Offset Carrier CORESET#0 [RBs] Note 2	CORESET#0 Index (Offset [RBs]) Note 1	offsetToPointA (SIB1) [PRBs] Note 1
10	24	Downlink & Uplink	Low	2575	515000	2570.68	514136	0	30	6439	515090	6	0	3 (3)	6
			Mid	2595	519000	2553.96	510792	102		6486	518910	18	0	0 (0)	204
			High	2615	523000	2429.24	485848	504		6536	522970	14	0	1 (1)	1010
15	38	Downlink & Uplink	Low	2577.5	515500	2570.66	514132	0	30	6437	515050	18	0	2 (2)	4
			Mid	2595	519000	2551.44	510288	102		6480	518430	2	0	1 (1)	206
			High	2612.5	522500	2424.22	484844	504		6526	522050	18	0	2 (2)	1012
20	51	Downlink & Uplink	Low	2580	516000	2570.82	514164	0	30	6438	515070	14	0	2 (2)	4
			Mid	2595	519000	2549.1	509820	102		6474	517950	22	0	0 (0)	204
			High	2610	522000	2419.38	483876	504		6513	521070	14	0	2 (2)	1012
25	65	Downlink & Uplink	Low	2582.5	516500	2570.8	514160	0	30	6439	515090	22	0	2 (2)	4
			Mid	2595	519000	2546.58	509316	102		6468	517470	6	0	1 (1)	206
			High	2607.5	521500	2414.36	482872	504		6500	520090	22	0	2 (2)	1012
30	78	Downlink & Uplink	Low	2585	517000	2570.96	514192	0	30	6437	515050	22	0	1 (1)	2
			Mid	2595	519000	2544.24	508848	102		6462	516990	2	0	1 (1)	206
			High	2605	521000	2409.52	481904	504		6487	518930	6	0	0 (0)	1008
40	106	Downlink & Uplink	Low	2590	518000	2570.92	514184	0	30	6439	515090	14	0	2 (2)	4
			Mid	2595	519000	2539.2	507840	102		6450	516030	18	0	1 (1)	206
			High	2600	520000	2399.48	479896	504		6461	516970	22	0	0 (0)	1008

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

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

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

CBW [MHz]	carrierBandwidth [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequencyPointA [ARFCN]	offsetToCarrier [PRBs]	SS block SCS [kHz]	GSCN	absoluteFrequencySB [ARFCN]
10	11	Downlink & Uplink	Low	2575	515000	2571.04	514208	0	30	-	514928
			Mid	2595	519000	2517.6	503520	102		-	518928
			High	2615	523000	2248.16	449632	504		-	522928
15	18	Downlink & Uplink	Low	2577.5	515500	2571.02	514204	0	30	-	514924
			Mid	2595	519000	2515.08	503016	102		-	518424
			High	2612.5	522500	2243.14	448628	504		-	521924
20	24	Downlink & Uplink	Low	2580	516000	2571.36	514272	0	30	-	514992
			Mid	2595	519000	2512.92	502584	102		-	517992
			High	2610	522000	2238.48	447696	504		-	520992
25	31	Downlink & Uplink	Low	2582.5	516500	2571.34	514268	0	30	-	514988
			Mid	2595	519000	2510.4	502080	102		-	517488
			High	2607.5	521500	2233.46	446692	504		-	519988
30	38	Downlink & Uplink	Low	2585	517000	2571.32	514264	0	30	-	514984
			Mid	2595	519000	2507.88	501576	102		-	516984
			High	2605	521000	2228.44	445688	504		-	518984
40	51	Downlink & Uplink	Low	2590	518000	2571.64	514328	0	15	-	514688
			Mid	2595	519000	2503.2	500640	102		-	515688
			High	2600	520000	2218.76	443752	504		-	516688

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

4.3.1.1.1.39 Reference test frequencies for NR operating band n39

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

CBW [MHz]	carrierBandwidth [PRBs]	Range	Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequencyPointA [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS [kHz]	GSCN	absoluteFrequencySSB [ARFCN]	$k_{SSB}$	Offset Carrier CORESET#0 [RBs] Note 2	CORESET#0 Index (Offset [RBs]) Note 1	offsetToPointA (SIB1) [PRBs] Note 1	
5	25	Downlink & Uplink	Low	1882.5	376500	1880.25	376050	0	15	4707	376590	0	1	2 (4)	5
			Mid	1899.1	379820	1878.49	375698	102		4747	379730	0	0	0 (0)	102
			High	1917.5	383500	1824.53	364906	504		4793	383530	4	1	1 (2)	507
10	52	Downlink & Uplink	Low	1885	377000	1880.32	376064	0	30	4714	377090	6	2	1 (6)	8
			Mid	1900	380000	1876.96	375392	102		4750	379970	2	3	0 (2)	107
			High	1915	383000	1819.6	363920	504		4789	383090	6	2	1 (6)	512
15	79	Downlink & Uplink	Low	1887.5	377500	1880.39	376078	0	30	4712	377050	0	1	1 (6)	7
			Mid	1900	380000	1874.53	374906	102		4744	379490	4	3	0 (2)	107
			High	1912.5	382500	1814.67	362934	504		4773	381870	0	0	0 (2)	506
20	106	Downlink & Uplink	Low	1890	378000	1880.46	376092	0	30	4713	377070	2	1	1 (6)	7
			Mid	1900	380000	1872.1	374420	102		4738	379010	6	3	0 (2)	107
			High	1910	382000	1809.74	361948	504		4760	380890	2	0	0 (2)	506
25	133	Downlink & Uplink	Low	1892.5	378500	1880.53	376106	0	30	4714	377090	4	1	1 (6)	7
			Mid	1900	380000	1869.67	373934	102		4732	378530	8	3	0 (2)	107
			High	1907.5	381500	1804.81	360962	504		4750	379970	0	2	0 (2)	508
30	160	Downlink & Uplink	Low	1895	379000	1880.6	376120	0	30	4712	377050	10	3	0 (2)	5
			Mid	1900	380000	1867.24	373448	102		4726	378050	10	3	0 (2)	107
			High	1905	381000	1799.88	359976	504		4737	378990	2	2	0 (2)	508
40	216	Downlink & Uplink	Low	1900	380000	1880.56	376112	0	30	4714	377090	2	1	1 (6)	7
			Mid												
			High												

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

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

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

CBW [MHz]	carrierBandwidth [PRBs]	Range	Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequencyPointA [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS [kHz]	GSCN	absoluteFrequencySSB [ARFCN]	$k_{SSB}$	Offset Carrier CORESET#0 [RBs] Note 2	CORESET#0 Index (Offset [RBs]) Note 1	offsetToPointA (SIB1) [PRBs] Note 1	
10	24	Downlink & Uplink	Low	1885	377000	1880.68	376136	0	30	4714	377090	6	0	3 (3)	6
			Mid	1900	380000	1858.96	371792	102		4750	379970	14	0	1 (1)	206
			High	1915	383000	1729.24	345848	504		4789	383090	6	0	3 (3)	1014
15	38	Downlink & Uplink	Low	1887.5	377500	1880.66	376132	0	30	4712	377050	18	0	2 (2)	4
			Mid	1900	380000	1856.44	371288	102		4744	379490	22	0	1 (1)	206
			High	1912.5	382500	1724.22	344844	504		4773	381870	6	0	0 (0)	1008
20	51	Downlink & Uplink	Low	1890	378000	1880.82	376164	0	30	4713	377070	14	0	2 (2)	4
			Mid	1900	380000	1854.1	370820	102		4738	379010	18	0	1 (1)	206
			High	1910	382000	1719.38	343876	504		4760	380890	2	0	0 (0)	1008
25	65	Downlink & Uplink	Low	1892.5	378500	1880.8	376160	0	30	4714	377090	22	0	2 (2)	4
			Mid	1900	380000	1851.58	370316	102		4732	378530	2	0	2 (2)	208
			High	1907.5	381500	1714.36	342872	504		4750	379970	6	0	1 (1)	1010
30	78	Downlink & Uplink	Low	1895	379000	1880.96	376192	0	30	4712	377050	22	0	1 (1)	2
			Mid	1900	380000	1849.24	369848	102		4726	378050	22	0	1 (1)	206
			High	1905	381000	1709.52	341904	504		4737	378990	2	0	1 (1)	1010
40	106	Downlink & Uplink	Low	1900	380000	1880.92	376184	0	30	4714	377090	14	0	2 (2)	4
			Mid												
			High												

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

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



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

CBW [MHz]	carrierBand width [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absoluteF requency PointA [ARFCN]	offsetToC arrier [PRBs]	SS block SCS [kHz]	GSCN	absoluteF requency SSB [ARFCN]
10	11	Downlink & Uplink	Low	1885	377000	1881.04	376208	0	30	-	376928
			Mid	1900	380000	1822.6	364520	102		-	379928
			High	1915	383000	1548.16	309632	504		-	382928
15	18	Downlink & Uplink	Low	1887.5	377500	1881.02	376204	0	30	-	376924
			Mid	1900	380000	1820.08	364016	102		-	379424
			High	1912.5	382500	1543.14	308628	504		-	381924
20	24	Downlink & Uplink	Low	1890	378000	1881.36	376272	0	30	-	376992
			Mid	1900	380000	1817.92	363584	102		-	378992
			High	1910	382000	1538.48	307696	504		-	380992
25	31	Downlink & Uplink	Low	1892.5	378500	1881.34	376268	0	30	-	376988
			Mid	1900	380000	1815.4	363080	102		-	378488
			High	1907.5	381500	1533.46	306692	504		-	379988
30	38	Downlink & Uplink	Low	1895	379000	1881.32	376264	0	30	-	376984
			Mid	1900	380000	1812.88	362576	102		-	377984
			High	1905	381000	1528.44	305688	504		-	378984
40	51	Downlink & Uplink	Low	1900	380000	1881.64	376328	0	30	-	377048
			Mid								
			High								

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

4.3.1.1.1.40 Reference test frequencies for NR operating band n40

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

CBW [MHz]	carrierBandwidth [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequencyPointA [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS [kHz]	GSCN	absoluteFrequencySSB [ARFCN]	$k_{SSB}$	Offset Carrier CORESET#0 [RBs] Note 2	CORESET#0 Index (Offset [RBs]) Note 1	offsetToPointA (SIB1) [PRBs] Note 1
5	25	Downlink & Uplink	Low	2302.5	460500	2300.25	460050	0	(Note 3)	-	460770	-	-	-	-
			Mid	2350	470000	2329.39	465878	102		-	470270	-	-	-	-
			High	2397.5	479500	2304.53	460906	504		-	479770	-	-	-	-
10	52	Downlink & Uplink	Low	2305	461000	2300.32	460064	0	30	5764	461090	6	2	1 (6)	8
			Mid	2350	470000	2326.96	465392	102		5875	469970	2	3	0 (2)	107
			High	2395	479000	2299.6	459920	504		5989	479090	6	2	1 (6)	512
15	79	Downlink & Uplink	Low	2307.5	461500	2300.39	460078	0	30	5762	461050	0	1	1 (6)	7
			Mid	2350	470000	2324.53	464906	102		5869	469490	4	3	0 (2)	107
			High	2392.5	478500	2294.67	458934	504		5973	477870	0	0	0 (2)	506
20	106	Downlink & Uplink	Low	2310	462000	2300.46	460092	0	30	5763	461070	2	1	1 (6)	7
			Mid	2350	470000	2322.1	464420	102		5863	469010	6	3	0 (2)	107
			High	2390	478000	2289.74	457948	504		5960	476890	2	0	0 (2)	506
25	133	Downlink & Uplink	Low	2312.5	462500	2300.53	460106	0	30	5764	461090	4	1	1 (6)	7
			Mid	2350	470000	2319.67	463934	102		5857	468530	8	3	0 (2)	107
			High	2387.5	477500	2284.81	456962	504		5950	475970	0	2	0 (2)	508
30	160	Downlink & Uplink	Low	2315	463000	2300.6	460120	0	30	5762	461050	10	3	0 (2)	5
			Mid	2350	470000	2317.24	463448	102		5851	468050	10	3	0 (2)	107
			High	2385	477000	2279.88	455976	504		5937	474990	2	2	0 (2)	508
40	216	Downlink & Uplink	Low	2320	464000	2300.56	460112	0	30	5764	461090	2	1	1 (6)	7
			Mid	2350	470000	2312.2	462440	102		5839	467090	2	1	1 (6)	109
			High	2380	476000	2269.84	453968	504		5914	473090	2	1	1 (6)	511
50	270	Downlink & Uplink	Low	2325	465000	2300.7	460140	0	30	5763	461070	10	3	0 (2)	5
			Mid	2350	470000	2307.34	461468	102		5827	466130	6	1	1 (6)	109
			High	2375	475000	2259.98	451996	504		5888	471130	6	1	1 (6)	511

- Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-1 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.
- Note 2: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter  $\Delta F_{\text{OffsetCORESET-0-Carrier}}$  in Annex C expressed in number of common RBs.
- Note 3: No SS/PBCH block fits within the channel bandwidth. The channel bandwidth can only be used as SCell

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

CBW [MHz]	carrierBandwidth [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequencyPointA [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS [kHz]	GSCN	absoluteFrequencySSB [ARFCN]	$k_{SSB}$	Offset Carrier CORESET#0 [RBs] Note 2	CORESET#0 Index (Offset [RBs]) Note 1	offsetToPointA (SIB1) [PRBs] Note 1
10	24	Downlink & Uplink	Low	2305	461000	2300.68	460136	0	30	5764	461090	6	0	3 (3)	6
			Mid	2350	470000	2308.96	461792	102		5875	469970	14	0	1 (1)	206
			High	2395	479000	2209.24	441848	504		5989	479090	6	0	3 (3)	1014
15	38	Downlink & Uplink	Low	2307.5	461500	2300.66	460132	0	30	5762	461050	18	0	2 (2)	4
			Mid	2350	470000	2306.44	461288	102		5869	469490	22	0	1 (1)	206
			High	2392.5	478500	2204.22	440844	504		5973	477870	6	0	0 (0)	1008
20	51	Downlink & Uplink	Low	2310	462000	2300.82	460164	0	30	5763	461070	14	0	2 (2)	4
			Mid	2350	470000	2304.1	460820	102		5863	469010	18	0	1 (1)	206
			High	2390	478000	2199.38	439876	504		5960	476890	2	0	0 (0)	1008
25	65	Downlink & Uplink	Low	2312.5	462500	2300.8	460160	0	30	5764	461090	22	0	2 (2)	4
			Mid	2350	470000	2301.58	460316	102		5857	468530	2	0	2 (2)	208
			High	2387.5	477500	2194.36	438872	504		5950	475970	6	0	1 (1)	1010
30	78	Downlink & Uplink	Low	2315	463000	2300.96	460192	0	30	5762	461050	22	0	1 (1)	2
			Mid	2350	470000	2299.24	459848	102		5851	468050	22	0	1 (1)	206
			High	2385	477000	2189.52	437904	504		5937	474990	2	0	1 (1)	1010
40	106	Downlink & Uplink	Low	2320	464000	2300.92	460184	0	30	5764	461090	14	0	2 (2)	4
			Mid	2350	470000	2294.2	458840	102		5839	467090	14	0	2 (2)	208
			High	2380	476000	2179.48	435896	504		5914	473090	14	0	2 (2)	1012
50	133	Downlink & Uplink	Low	2325	465000	2301.06	460212	0	30	5763	461070	22	0	1 (1)	2
			Mid	2350	470000	2289.34	457868	102		5827	466130	18	0	2 (2)	208
			High	2375	475000	2169.62	433924	504		5888	471130	18	0	2 (2)	1012
60	162	Downlink & Uplink	Low	2330	466000	2300.84	460168	0	30	5762	461050	6	0	2 (2)	4
			Mid	2350	470000	2284.12	456824	102		5812	464930	14	0	0 (0)	204
			High	2370	474000	2159.4	431880	504		5862	468990	10	0	1 (1)	1010
80	217	Downlink & Uplink	Low	2340	468000	2300.94	460188	0	30	5763	461070	6	0	2 (2)	4
			Mid	2350	470000	2274.22	454844	102		5788	463010	10	0	1 (1)	206
			High	2360	472000	2139.5	427900	504		5813	465130	2	0	3 (3)	1014

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

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

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

CBW [MHz]	carrierBand width [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absoluteF requency PointA [ARFCN]	offsetToC arrier [PRBs]	SS block SCS [kHz]	GSCN	absoluteF requency SSB [ARFCN]
10	11	Downlink & Uplink	Low	2305	461000	2301.04	460208	0	30	-	460928
			Mid	2350	470000	2272.6	454520	102		-	469928
			High	2395	479000	2028.16	405632	504		-	478928
15	18	Downlink & Uplink	Low	2307.5	461500	2301.02	460204	0	30	-	460924
			Mid	2350	470000	2270.08	454016	102		-	469424
			High	2392.5	478500	2023.14	404628	504		-	477924
20	24	Downlink & Uplink	Low	2310	462000	2301.36	460272	0	30	-	460992
			Mid	2350	470000	2267.92	453584	102		-	468992
			High	2390	478000	2018.48	403696	504		-	476992
25	31	Downlink & Uplink	Low	2312.5	462500	2301.34	460268	0	30	-	460988
			Mid	2350	470000	2265.4	453080	102		-	468488
			High	2387.5	477500	2013.46	402692	504		-	475988
30	38	Downlink & Uplink	Low	2315	463000	2301.32	460264	0	30	-	460984
			Mid	2350	470000	2262.88	452576	102		-	467984
			High	2385	477000	2008.44	401688	504		-	474984
40	51	Downlink & Uplink	Low	2320	464000	2301.64	460328	0	30	-	461048
			Mid	2350	470000	2258.2	451640	102		-	467048
			High	2380	476000	1998.76	399752	504		-	473048
50	65	Downlink & Uplink	Low	2325	465000	2301.6	460320	0	30	-	461040
			Mid	2350	470000	2253.16	450632	102		-	466040
			High	2375	475000	1988.72	397744	504		-	471040
60	79	Downlink & Uplink	Low	2330	466000	2301.56	460312	0	30	-	461032
			Mid	2350	470000	2248.12	449624	102		-	465032
			High	2370	474000	1978.68	395736	504		-	469032
80	107	Downlink & Uplink	Low	2340	468000	2301.48	460296	0	30	-	461016
			Mid	2350	470000	2238.04	447608	102		-	463016
			High	2360	472000	1958.6	391720	504		-	465016

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

4.3.1.1.1.41 Reference test frequencies for NR operating band n41

**Table 4.3.1.1.1.41-1: Test frequencies for NR operating band n41, SCS 15 kHz and  $\Delta F_{\text{Raster}}$  15 kHz**

CBW [MHz]	carrier bandwidth [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absolute Frequency PointA [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS [kHz]	GSCN	absolute Frequency SSB [ARFCN]	$k_{\text{SSB}}$	Offset Carrier CORESET#0 [RBs] Note 2	CORESET#0 Index (Offset [RBs]) Note 1	offsetToPointA (SIB1) [PRBs] Note 1
10	52	Downlink & Uplink	Low	2501.01	500202	2496.33	499266	0	15	6246	499710	4	0	1 (2)	2
			Mid	2593.005	518601	2569.965	513993	102		6477	518190	7	0	2 (4)	106
			High	2685	537000	2589.6	517920	504		6705	536430	2	0	0 (0)	504
15	79	Downlink & Uplink	Low	2503.5	500700	2496.39	499278	0	15	6246	499710	0	0	1 (2)	2
			Mid	2593.005	518601	2567.535	513507	102		6471	517710	9	0	2 (4)	106
			High	2682.495	536499	2584.665	516933	504		6693	535470	11	0	0 (0)	504
20	106	Downlink & Uplink	Low	2506.005	501201	2496.465	499293	0	15	6246	499710	7	1	0 (0)	1
			Mid	2593.005	518601	2565.105	513021	102		6465	517230	11	0	2 (4)	106
			High	2679.99	535998	2579.73	515946	504		6681	534510	8	1	0 (0)	505
30	160	Downlink & Uplink	Low	2511	502200	2496.6	499320	0	15	6246	499710	10	0	0 (0)	0
			Mid	2593.005	518601	2560.245	512049	102		6453	516270	3	1	2 (4)	107
		Uplink	High	2674.995	534999	2569.875	513975	504	6657	532590	1	1	1 (2)	507	
40	216	Downlink & Uplink	Low	2516.01	503202	2496.57	499314	0	15	6246	499710	0	1	0 (0)	1
			Mid	2593.005	518601	2555.205	511041	102		6441	515310	7	2	2 (4)	108
			High	2670	534000	2559.84	511968	504		6633	530670	6	1	2 (4)	509
50	270	Downlink & Uplink	Low	2521.005	504201	2496.705	499341	0	15	6246	499710	3	0	0 (0)	0
			Mid	2593.005	518601	2550.345	510069	102		6426	514110	3	0	0 (0)	102
			High	2664.99	532998	2549.97	509994	504		6606	528510	4	0	0 (0)	504

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

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

Table 4.3.1.1.1.41-2: Test frequencies for NR operating band n41, SCS 30 kHz and  $\Delta F_{\text{Raster}}$  30 kHz

CBW [MHz]	carrier bandwidth [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absolute Frequency PointA [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS [kHz]	GSCN	absolute Frequency SSB [ARFCN]	$k_{\text{SSB}}$	Offset Carrier CORES ET#0 [RBs] Note 2	CORES ET#0 Index (Offset [RBs]) Note 1	offsetToPointA (SIB1) [PRBs] Note 1
10	24	Downlink & Uplink	Low	2501.01	500202	2496.69	499338	0	30	6252	500190	20	0	1 (1)	2
			Mid	2592.99	518598	2551.95	510390	102		6483	518670	0	0	3 (3)	210
			High	2685	537000	2499.24	499848	504		6711	536910	18	0	0 (0)	1008
15	38	Downlink & Uplink	Low	2503.5	500700	2496.66	499332	0	30	6252	500190	22	0	1 (1)	2
			Mid	2592.99	518598	2549.43	509886	102		6474	517950	0	0	0 (0)	204
			High	2682.48	536496	2494.2	498840	504		6699	535950	10	0	1 (1)	1010
20	51	Downlink & Uplink	Low	2506.02	501204	2496.84	499368	0	30	6252	500190	10	0	1 (1)	2
			Mid	2592.99	518598	2547.09	509418	102		6471	517710	4	0	3 (3)	210
			High	2679.99	535998	2489.37	497874	504		6687	534990	12	0	1 (1)	1010
30	78	Downlink & Uplink	Low	2511	502200	2496.96	499392	0	30	6252	500190	2	0	1 (1)	2
			Mid	2592.99	518598	2542.23	508446	102		6456	516510	0	0	0 (0)	204
			High	2674.98	534996	2479.5	495900	504		6663	533070	6	0	2 (2)	1012
40	106	Downlink & Uplink	Low	2516.01	503202	2496.93	499386	0	30	6252	500190	4	0	1 (1)	2
			Mid	2592.99	518598	2537.19	507438	102		6444	515550	16	0	0 (0)	204
			High	2670	534000	2469.48	493896	504		6636	530910	2	0	0 (0)	1008
50	133	Downlink & Uplink	Low	2521.02	504204	2497.08	499416	0	30	6252	500190	18	0	0 (0)	0
			Mid	2592.99	518598	2532.33	506466	102		6432	514590	20	0	0 (0)	204
			High	2664.99	532998	2459.61	491922	504		6612	528990	20	0	0 (0)	1008
60	162	Downlink & Uplink	Low	2526	505200	2496.84	499368	0	30	6252	500190	10	0	1 (1)	2
			Mid	2592.99	518598	2527.11	505422	102		6420	513630	0	0	2 (2)	208
			High	2659.98	531996	2449.38	489876	504		6588	527070	14	0	2 (2)	1012
70	189	Downlink & Uplink	Low	2531.01	506202	2496.99	499398	0	30	6252	500190	0	0	1 (1)	2
			Mid	2592.99	518598	2522.25	504450	102		6408	512670	4	0	2 (2)	208
			High	2655	531000	2439.54	487908	504		6564	525150	6	0	3 (3)	1014
80	217	Downlink & Uplink	Low	2536.02	507204	2496.96	499392	0	30	6252	500190	2	0	1 (1)	2
			Mid	2592.99	518598	2517.21	503442	102		6396	511710	20	0	2 (2)	208
			High	2649.99	529998	2429.49	485898	504		6537	522990	4	0	1 (1)	1010
90	245	Downlink & Uplink	Low	2541	508200	2496.9	499380	0	30	6252	500190	6	0	1 (1)	2
			Mid	2592.99	518598	2512.17	502434	102		6381	510510	4	0	0 (0)	204
			High	2644.98	528996	2419.44	483888	504		6513	521070	10	0	2 (2)	1012
100	273	Downlink & Uplink	Low	2546.01	509202	2496.87	499374	0	30	6252	500190	8	0	1 (1)	2
			Mid	2592.99	518598	2507.13	501426	102		6369	509550	20	0	0 (0)	204
			High	2640	528000	2409.42	481884	504		6486	518910	6	0	0 (0)	1008

- Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-4 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.
- Note 2: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter  $\Delta F_{\text{OffsetCORESET-0-Carrier}}$  in Annex C expressed in number of common RBs.

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

CBW [MHz]	carrierBand width [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequencyPointA [ARFCN]	offsetToCarrier [PRBs]	SS block SCS [kHz]	GSCN	absoluteFrequencySSB [ARFCN]
10	11	Downlink & Uplink	Low	2501.01	500202	2497.05	499410	0	15	-	499770
			Mid	2593.005	518601	2515.605	503121	102		-	518169
			High	2685	537000	2318.16	463632	504		-	536568
15	18	Downlink & Uplink	Low	2503.5	500700	2497.02	499404	0	15	-	499764
			Mid	2593.005	518601	2513.085	502617	102		-	517665
			High	2682.495	536499	2313.135	462627	504		-	535563
20	24	Downlink & Uplink	Low	2506.005	501201	2497.365	499473	0	15	-	499833
			Mid	2593.005	518601	2510.925	502185	102		-	517233
			High	2679.99	535998	2308.47	461694	504		-	534630
30	38	Downlink & Uplink	Low	2511	502200	2497.32	499464	0	15	-	499824
			Mid	2593.005	518601	2505.885	501177	102		-	516225
		Uplink	High	2674.995	534999	2298.435	459687	504		-	532623
40	51	Downlink & Uplink	Low	2516.01	503202	2497.65	499530	0	15	-	499890
			Mid	2593.005	518601	2501.205	500241	102		-	515289
			High	2670	534000	2288.76	457752	504		-	530688
50	65	Downlink & Uplink	Low	2521.005	504201	2497.605	499521	0	15	-	499881
			Mid	2593.005	518601	2496.165	499233	102		-	514281
			High	2664.99	532998	2278.71	455742	504		-	528678
60	79	Downlink & Uplink	Low	2526	505200	2497.56	499512	0	15	-	499872
			Mid	2593.005	518601	2491.125	498225	102		-	513273
			High	2659.995	531999	2268.675	453735	504		-	526671
70	93	Downlink & Uplink	Low	2531.01	506202	2497.53	499506	0	15	-	499866
			Mid	2593.005	518601	2486.085	497217	102		-	512265
			High	2655	531000	2258.64	451728	504		-	524664
80	107	Downlink & Uplink	Low	2536.005	507201	2497.485	499497	0	15	-	499857
			Mid	2593.005	518601	2481.045	496209	102		-	511257
			High	2649.99	529998	2248.59	449718	504		-	522654
90	121	Downlink & Uplink	Low	2541	508200	2497.44	499488	0	15	-	499848
			Mid	2593.005	518601	2476.005	495201	102		-	510249
			High	2644.995	528999	2238.555	447711	504		-	520647
100	135	Downlink & Uplink	Low	2546.01	509202	2497.41	499482	0	15	-	499842
			Mid	2593.005	518601	2470.965	494193	102		-	509241
			High	2640	528000	2228.52	445704	504		-	518640

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



4.3.1.1.1.42 to 4.3.1.1.1.47 FFS

4.3.1.1.1.48 Reference test frequencies for NR operating band n48

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

CBW [MHz]	carrier bandwidth [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absolute Frequency Point A [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS [kHz]	GSCN	absolute Frequency SSB [ARFCN]	$k_{SSB}$ (Note 4)	Offset Carrier CORESET#0 [RBs] Note 2	CORESET#0 Index (Offset [RBs]) Note 1	offsetToPointA (SIB1) [PRBs] Note 1
5	25	Downlink &	Low	3552.51	636834	3550.26	636684	0	(Note 3)	-	-	-	-	-	-
			Mid	3625.005	641667	3604.395	640293	102		-	-	-	-	-	-
		Uplink	High	3697.5	646500	3604.53	640302	504		-	-	-	-	-	-
10	52	Downlink & Uplink	Low	3555	637000	3550.32	636688	0	30	7884	636960	8	0	0 (2)	2
			Mid	3624.99	641666	3601.95	640130	102		7933	641664	10	3	0 (2)	107
			High	3694.98	646332	3599.58	639972	504		7982	646368	0	3	1 (6)	513
15	79	Downlink & Uplink	Low	3557.52	637168	3550.41	636694	0	30	7884	636960	2	0	0 (2)	2
			Mid	3624.99	641666	3599.52	639968	102		7931	641472	4	1	0 (2)	105
			High	3692.49	646166	3594.66	639644	504		7978	645984	4	2	0 (2)	508
20	106	Downlink & Uplink	Low	3560.01	637334	3550.47	636698	0	30	7885	637056	10	3	1 (6)	9
			Mid	3624.99	641666	3597.09	639806	102		7930	641376	10	2	1 (6)	110
			High	3690	646000	3589.74	639316	504		7975	645696	8	1	1 (6)	511
30	160	Downlink & Uplink	Low	3565.02	637668	3550.62	636708	0	30	7885	637056	0	3	1 (6)	9
			Mid	3624.99	641666	3592.23	639482	102		7926	640992	10	1	0 (2)	105
			High	3684.99	645666	3579.87	638658	504		7968	645024	6	0	1 (6)	510
40	216	Downlink & Uplink	Low	3570	638000	3550.56	636704	0	30	7885	637056	4	3	1 (6)	9
			Mid	3624.99	641666	3587.19	639146	102		7923	640704	10	1	1 (6)	109
			High	3679.98	645332	3569.82	637988	504		7961	644352	4	0	1 (6)	510
50	270	Downlink (Note 4) & Uplink	Low	3575.01	638334	3550.71	636714	0	30		637056	31			
			Mid	3624.99	641666	3582.33	638822	102			640320	31			
			High	3675	645000	3559.98	637332	504			643680	31			

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

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

Note 3: No SS/PBCH block fits within the channel bandwidth. The channel bandwidth can only be used as SCell.  
 Note 4: For this bandwidth, the minimum requirements are restricted to operation when carrier is configured as a downlink only SCell part of a CA configuration. As the bandwidth is limited to SCell then absence of CORESET#0 is indicated in the MIB by setting  $k_{SSB}=31$ ,  $controlResourceSetZero=0$  and  $searchSpaceZero = 0$  (TS 38.213 [22], clause 13).

Table 4.3.1.1.1.48-2: Test frequencies for NR operating band n48 and SCS 30 kHz

CBW [MHz]	carrierBandwidth [PRBs]	Range	Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequencyPointA [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS [kHz]	GSCN	absoluteFrequencySSB [ARFCN]	$k_{SSB}$	Offset Carrier CORESET#0 [RBs] Note 2	CORESET#0 Index (Offset [RBs]) Note 1	offsetToPointA (SIB1) [PRBs] Note 1	
10	24	Downlink & Uplink	Low	3555	637000	3550.68	636712	0	30	7884	636960	8	0 (0)	0	
			Mid	3624.99	641666	3583.95	638930	102		7933	641664	22	0	1 (1)	206
			High	3694.98	646332	3509.22	633948	504		7982	646368	12	0	3 (3)	1014
15	38	Downlink & Uplink	Low	3557.52	637168	3550.68	636712	0	30	7884	636960	8	0	0 (0)	0
			Mid	3624.99	641666	3581.43	638762	102		7931	641472	22	0	0 (0)	204
			High	3692.49	646166	3504.21	633614	504		7978	645984	10	0	1 (1)	1010
20	51	Downlink & Uplink	Low	3560.01	637334	3550.83	636722	0	30	7885	637056	22	0	3 (3)	6
			Mid	3624.99	641666	3579.09	638606	102		7930	641376	10	0	3 (3)	210
			High	3690	646000	3499.38	633292	504		7975	645696	20	0	2 (2)	1012
30	78	Downlink & Uplink	Low	3565.02	637668	3550.98	636732	0	30	7885	637056	12	0	3 (3)	6
			Mid	3624.99	641666	3574.23	638282	102		7926	640992	22	0	0 (0)	204
			High	3684.99	645666	3489.51	632634	504		7968	645024	6	0	2 (2)	1012
40	106	Downlink & Uplink	Low	3570	638000	3550.92	636728	0	30	7885	637056	16	0	3 (3)	6
			Mid	3624.99	641666	3569.19	637946	102		7923	640704	22	0	2 (2)	208
			High	3679.98	645332	3479.46	631964	504		7961	644352	4	0	2 (2)	1012
50	133	Downlink (Note 3) (Note 3)	Low	3575.01	638334	3551.07	636738	0	30		637056	31			
			Mid	3624.99	641666	3564.33	637622	102			640320	31			
			High	3675	645000	3469.62	631308	504			643680	31			
60	162	Downlink (Note 3) (Note 3)	Low	3580.02	638668	3550.86	636724	0	30		637056	31			
			Mid	3624.99	641666	3559.11	637274	102			640032	31			
			High	3669.99	644666	3459.39	630626	504			643008	31			
70	189	Downlink (Note 3)	Low	3585	639000	3550.98	636732	0	30	-	637056	31	-	-	
			Mid	3624.99	641666	3554.25	636950	102			639648	31	-	-	
			High	3664.98	644332	3449.52	629968	504			642336	31	-	-	
80	217	Downlink (Note 3) (Note 3)	Low	3590.01	639334	3550.95	636730	0	30		637056	31			
			Mid	3624.99	641666	3549.21	636614	102			639360	31			
			High	3660	644000	3439.5	629300	504			641664	31			

90	245	Downlink (Note 3) (Note 3)	Low	3595.02	639668	3550.92	636728	0	30		637056	31		
			Mid	3624.99	641666	3544.17	636278	102			638976	31		
			High	3654.99	643666	3429.45	628630	504			640992	31		
100	273	Downlink (Note 3) (Note 3)	Low	3600	640000	3550.86	636724	0	30		637056	31		
			Mid	3624.99	641666	3539.13	635942	102			638688	31		
			High	3649.98	643332	3419.4	627960	504			640320	31		

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

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

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

Table 4.3.1.1.48-3: Test frequencies for NR operating band n48 and SCS 60 kHz without CORESET#0 (Note 1)

CBW [MHz]	carrierBand width [PRBs]	Range	Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absoluteF requency PointA [ARFCN]	offsetToC arrier [PRBs]	SS block SCS [kHz]	GSCN	absoluteF requency SSB [ARFCN]	
10	11	Downlink & Uplink	Low	3555	637000	3551.04	636736	0	30	-	636976
			Mid	3624.99	641666	3547.59	636506	102		-	641642
			High	3694.98	646332	3328.14	621876	504		-	646308
15	18	Downlink & Uplink	Low	3557.52	637168	3551.04	636736	0	30	-	636976
			Mid	3624.99	641666	3545.07	636338	102		-	641474
			High	3692.49	646166	3323.13	621542	504		-	645974
20	24	Downlink & Uplink	Low	3560.01	637334	3551.37	636758	0	30	-	636998
			Mid	3624.99	641666	3542.91	636194	102		-	641330
			High	3690	646000	3318.48	621232	504		-	645664
30	78	Downlink & Uplink	Low	3565.02	637668	3550.98	636732	0	30	7885	637056
			Mid	3624.99	641666	3574.23	638282	102		7926	640992
			High	3684.99	645666	3489.51	632634	504		7968	645024
40	51	Downlink & Uplink	Low	3570	638000	3551.64	636776	0	30	-	637016
			Mid	3624.99	641666	3533.19	635546	102		-	640682
			High	3679.98	645332	3298.74	619916	504		-	644348
50	65	Downlink (Note 2)	Low	3575.01	638334	3551.61	636774	0	30	-	637014
			Mid	3624.99	641666	3528.15	635210	102		-	640346

60	79	Downlink( Note 2)	High	3675	645000	3288.72	619248	504	30	-	643680
			Low	3580.02	638668	3551.58	636772	0		-	637012
			Mid	3624.99	641666	3523.11	634874	102		-	640010
			High	3669.99	644666	3278.67	618578	504		-	643010
70	93	Downlink( Note 2)	Low	3585	639000	3551.52	636768	0	30	-	637008
			Mid	3624.99	641666	3518.07	634538	102		-	639674
			High	3664.98	644332	3268.62	617908	504		-	642340
80	107	Downlink( Note 2)	Low	3590.01	639334	3551.49	636766	0	30	-	637006
			Mid	3624.99	641666	3513.03	634202	102		-	639338
			High	3660	644000	3258.6	617240	504		-	641672
90	121	Downlink( Note 2)	Low	3595.02	639668	3551.46	636764	0	30	-	637004
			Mid	3624.99	641666	3507.99	633866	102		-	639002
			High	3654.99	643666	3248.55	616570	504		-	641002
100	135	Downlink( Note 2)	Low	3600	640000	3551.4	636760	0	30	-	637000
			Mid	3624.99	641666	3502.95	633530	102		-	638666
			High	3649.98	643332	3238.5	615900	504		-	640332
<p>Note: FR1 carrier without CORESET#0 is indicated in the MIB by setting <math>k_{SSB}=31</math>, <math>controlResourceSetZero=0</math> and <math>searchSpaceZero=0</math> (TS 38.213 [22], clause 13).</p> <p>Note 2: For this bandwidth, the minimum requirements are restricted to operation when carrier is configured as a downlink only SCell part of a CA configuration.</p>											

4.3.1.1.1.49 FFS

4.3.1.1.1.50 Reference test frequencies for NR operating band n50

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

CBW [MHz]	carrierBandwidth [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequencyPointA [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS [kHz]	GSCN	absoluteFrequencySSB [ARFCN]	$k_{SSE}$	Offset Carrier CORESET#0 [RBs] Note 2	CORESET#0 Index (Offset [RBs]) Note 1	offsetToPointA (SIB1) [PRBs] Note 1
5	25	Downlink & Uplink	Low	1434.5	286900	1432.25	286450	0	(Note 3)	-	287170	-	-	-	-
			Mid	1474.5	294900	1453.89	290778	102		-	295170	-	-	-	-
			High	1514.5	302900	1421.53	284306	504		-	303170	-	-	-	-
10	52	Downlink & Uplink	Low	1437	287400	1432.32	286464	0	30	3591	287310	6	1	0 (2)	3
			Mid	1474.5	294900	1451.46	290292	102		3687	294990	6	2	1 (6)	110
			High	1512	302400	1416.6	283320	504		3780	302430	10	0	1 (6)	510
15	79	Downlink & Uplink	Low	1439.5	287900	1432.39	286478	0	30	3592	287330	8	1	0 (2)	3
			Mid	1474.5	294900	1449.03	289806	102		3678	294270	0	0	0 (2)	104
			High	1509.5	301900	1411.67	282334	504		3767	301450	0	1	1 (6)	511
20	106	Downlink & Uplink	Low	1442	288400	1432.46	286492	0	30	3590	287290	2	0	0 (2)	2
			Mid	1474.5	294900	1446.6	289320	102		3672	293790	2	0	0 (2)	104
			High	1507	301400	1406.74	281348	504		3754	300290	2	0	0 (2)	506
40	216	Downlink & Uplink	Low	1452	290400	1432.56	286512	0	30	3591	287310	2	0	0 (2)	2
			Mid	1474.5	294900	1436.7	287340	102		3648	291870	10	1	0 (2)	105
			High	1497	299400	1386.84	277368	504		3705	296430	6	3	0 (2)	509
50	270	Downlink & Uplink	Low	1457	291400	1432.7	286540	0	30	3593	287530	6	1	1 (6)	7
			Mid	1474.5	294900	1431.84	286368	102		3636	290910	2	2	0 (2)	106
			High	1492	298400	1376.98	275396	504		3682	294530	6	1	1 (6)	511

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

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

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

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

CBW [MHz]	carrierBandwidth [PRBs]	Range	Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequencyPointA [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS [kHz]	GSCN	absoluteFrequencySSB [ARFCN]	$k_{SSE}$	Offset Carrier CORESET#0 [RBs] Note 2	CORESET#0 Index (Offset [RBs]) Note 1	offsetToPointA (SIB1) [PRBs] Note 1	
10	24	Downlink & Uplink	Low	1437	287400	1432.68	286536	0	30	3591	287310	18	0	0 (0)	0
			Mid	1474.5	294900	1433.46	286692	102		3687	294990	6	0	3 (3)	210
			High	1512	302400	1326.24	265248	504		3780	302430	10	0	2 (2)	1012
15	38	Downlink & Uplink	Low	1439.5	287900	1432.66	286532	0	30	3592	287330	2	0	1 (1)	2
			Mid	1474.5	294900	1430.94	286188	102		3678	294270	6	0	0 (0)	204
			High	1509.5	301900	1321.22	264244	504		3767	301450	18	0	2 (2)	1012
20	51	Downlink & Uplink	Low	1442	288400	1432.82	286564	0	30	3590	287290	2	0	0 (0)	0
			Mid	1474.5	294900	1428.6	285720	102		3672	293790	2	0	0 (0)	204
			High	1507	301400	1316.38	263276	504		3754	300290	2	0	0 (0)	1008
40	106	Downlink & Uplink	Low	1452	290400	1432.92	286584	0	30	3591	287310	2	0	0 (0)	0
			Mid	1474.5	294900	1418.7	283740	102		3648	291870	22	0	0 (0)	204
			High	1497	299400	1296.48	259296	504		3705	296430	18	0	1 (1)	1010
50	133	Downlink & Uplink	Low	1457	291400	1433.06	286612	0	30	3593	287530	18	0	2 (2)	4
			Mid	1474.5	294900	1413.84	282768	102		3636	290910	2	0	1 (1)	206
			High	1492	298400	1286.62	257324	504		3682	294530	18	0	2 (2)	1012
60	162	Downlink & Uplink	Low	1462	292400	1432.84	286568	0	30	3592	287330	14	0	0 (0)	0
			Mid	1474.5	294900	1408.62	281724	102		3624	289950	6	0	2 (2)	208
			High	1487	297400	1276.4	255280	504		3653	292330	14	0	0 (0)	1008
80 (Note 3)	217	Downlink	Low	1472	294400	1432.94	286588	0	30	3593	287530	2	0	3 (3)	6
			Mid	1474.5	294900	1398.72	279744	102		3600	288030	2	0	3 (3)	210
			High	1477	295400	1256.5	251300	504		3607	288530	2	0	3 (3)	1014

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

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

Note 3: This UE channel bandwidth is applicable only to downlink (TS 38.101-1 table 5.3.5-1).

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

CBW [MHz]	carrierBand width [PRBs]	Range	Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequencyPointA [ARFCN]	offsetToCarrier [PRBs]	SS block SCS [kHz]	GSCN	absoluteFrequencySSB [ARFCN]	
10	11	Downlink & Uplink	Low	1437	287400	1433.04	286608	0	30	-	287328
			Mid	1474.5	294900	1397.1	279420	102		-	294828
			High	1512	302400	1145.16	229032	504		-	302328
15	18	Downlink & Uplink	Low	1439.5	287900	1433.02	286604	0	30	-	287324
			Mid	1474.5	294900	1394.58	278916	102		-	294324
			High	1509.5	301900	1140.14	228028	504		-	301324
20	24	Downlink & Uplink	Low	1442	288400	1433.36	286672	0	30	-	287392
			Mid	1474.5	294900	1392.42	278484	102		-	293892
			High	1507	301400	1135.48	227096	504		-	300392
40	51	Downlink & Uplink	Low	1452	290400	1433.64	286728	0	30	-	287448
			Mid	1474.5	294900	1382.7	276540	102		-	291948
			High	1497	299400	1115.76	223152	504		-	296448
50	65	Downlink & Uplink	Low	1457	291400	1433.6	286720	0	30	-	287440
			Mid	1474.5	294900	1377.66	275532	102		-	290940
			High	1492	298400	1105.72	221144	504		-	294440
60	79	Downlink & Uplink	Low	1462	292400	1433.56	286712	0	30	-	287432
			Mid	1474.5	294900	1372.62	274524	102		-	289932
			High	1487	297400	1095.68	219136	504		-	292432
80 (Note 2)	107	Downlink	Low	1472	294400	1433.48	286696	0	30	-	287416
			Mid	1474.5	294900	1362.54	272508	102		-	287916
			High	1477	295400	1075.6	215120	504		-	288416

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

Note 2: This UE channel bandwidth is applicable only to downlink (TS 38.101-1 table 5.3.5-1).

4.3.1.1.1.51 Reference test frequencies for NR operating band n51

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

[MHz]	carrierBandwidth [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequencyPointA [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS [kHz]	GSCN	absoluteFrequencySSB [ARFCN]	$k_{SSB}$	Offset Carrier CORESET#0 [RBs] Note 2	CORESET#0 Index (Offset [RBs]) Note 1	offsetToPointA (SIB1) [PRBs] Note 1
5	25	Downlink & Uplink	Low	1429.5	285900	1427.25	285450	0	15	3573	285870	8	1	0 (0)	1
	Mid														
	High														
<p>Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-1 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdccch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.</p> <p>Note 2: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter <math>\Delta F_{\text{OffsetCORESET-0-Carrier}}</math> in Annex C expressed in number of common RBs.</p>															



4.3.1.1.1.52 FFS

4.3.1.1.1.53 Reference test frequencies for NR operating band n53

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

CBW [MHz]	carrierBandwidth [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequencyPointA [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS [kHz]	GSCN	absoluteFrequencySSB [ARFCN]	$k_{SSB}$	Offset Carrier CORESET#0 [RBs] Note 2	CORESET#0 Index (Offset [RBs]) Note 1	offsetToPointA (SIB1) [PRBs] Note 1
5	25	Downlink & Uplink	Low	2486	497200	2483.75	496750	0	15	6215	497290	0	1	2 (4)	5
			Mid	2489.3	497860	2468.69	493738	102		6221	497770	0	0	0 (0)	102
			High	2492.5	498500	2399.53	479906	504		6232	498530	4	1	1 (2)	507
10	52	Downlink & Uplink	Low	2488.5	497700	2483.82	496764	0	15	6216	497310	2	1	2 (4)	5
			Mid	2489.3	497860	2466.6	493252	102		6215	497290	2	0	0 (0)	102
			High	2490	498000	2394.6	478920	504		6219	497550	6	1	1 (2)	507

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

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

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

CBW [MHz]	carrierBandwidth [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequencyPointA [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS [kHz]	GSCN	absoluteFrequencySSB [ARFCN]	$k_{SSB}$	Offset Carrier CORESET#0 [RBs] Note 2	CORESET#0 Index (Offset [RBs]) Note 1	offsetToPointA (SIB1) [PRBs] Note 1
10	24	Downlink & Uplink	Low	2488.5	497700	2484.18	496836	0	15	6222	497790	6	0	3 (8)	16
			Mid	2489.3	497860	2448.26	489652	102		6221	497770	18	0	0 (5)	214
			High	2490	498000	2304.24	460848	504		6225	498030	10	0	2 (7)	1022

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

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

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

CBW [MHz]	carrierBandwidth [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequencyPointA [ARFCN]	offsetToCarrier [PRBs]	SS block SCS [kHz]	GSCN	absoluteFrequencySSB [ARFCN]
10	11	Downlink & Uplink	Low	2488.5	497700	2484.54	496908	0	15	-	497268
			Mid	2489.3	497860	2411.9	482380	102		-	497428
			High	2490	498000	2123.16	424632	504		-	497568

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

4.3.1.1.1.54 to 4.3.1.1.1.64 FFS

4.3.1.1.1.65 Reference test frequencies for NR operating band n65

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

CBW [MHz]	carrierBandwidth [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequencyPointA [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS [kHz]	GSCN	absoluteFrequencySSB [ARFCN]	$k_{SSB}$	Offset Carrier CORESET#0 [RBs] Note 2	CORESET#0 Index (Offset [RBs]) Note 1	offsetToPointA (SIB1) [PRBs] Note 1
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	[PRBs]					PointA [ARFCN]	[Carrier PRBs]	[kHz]		[ARFCN]		CORES ET#0 [RBs] Note 2	Index (Offset [RBs]) Note 1	[PRBs] Note 1	
5	25	Downlink	Low	2112.5	422500	2110.25	422050	0	15	5279	422410	0	0 (0)	0	
			Mid	2155	431000	2134.39	426878	102		5389	431090	0	1	2 (4)	107
			High	2197.5	439500	2104.53	420906	504		5493	439470	8	1	0 (0)	505
		Uplink	Low	1922.5	384500	1920.25	384050	0	-	-	-	-	-	-	-
			Mid	1965	393000	1872.03	374406	504		-	-	-	-	-	-
			High	2007.5	401500	2004.17	400834	6		-	-	-	-	-	-
10	52	Downlink	Low	2115	423000	2110.32	422064	0	15	5280	422430	2	0 (0)	0	
			Mid	2155	431000	2131.96	426392	102		5383	430610	2	1	2 (4)	107
			High	2195	439000	2099.6	419920	504		5480	438490	10	1	0 (0)	505
		Uplink	Low	1925	385000	1920.32	384064	0	-	-	-	-	-	-	-
			Mid	1965	393000	1869.6	373920	504		-	-	-	-	-	-
			High	2005	401000	1999.24	399848	6		-	-	-	-	-	-
15	79	Downlink	Low	2117.5	423500	2110.39	422078	0	15	5281	422450	4	0 (0)	0	
			Mid	2155	431000	2129.53	425906	102		5377	430130	4	1	2 (4)	107
			High	2192.5	438500	2094.67	418934	504		5470	437570	8	1	1 (2)	507
		Uplink	Low	1927.5	385500	1920.39	384078	0	-	-	-	-	-	-	-
			Mid	1965	393000	1867.17	373434	504		-	-	-	-	-	-
			High	2002.5	400500	1994.31	398862	6		-	-	-	-	-	-
20	106	Downlink	Low	2120	424000	2110.46	422092	0	15	5282	422650	6	1	2 (4)	5
			Mid	2155	431000	2127.1	425420	102		5371	429650	6	1	2 (4)	107
			High	2190	438000	2089.74	417948	504		5457	436590	10	1	1 (2)	507
		Uplink	Low	1930	386000	1920.46	384092	0	-	-	-	-	-	-	-
			Mid	1965	393000	1864.74	372948	504		-	-	-	-	-	-
			High	2000	400000	1989.38	397876	6		-	-	-	-	-	-

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

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

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

CBW [MHz]	carrierBandwidth [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequencyPointA [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS [kHz]	GSCN	absoluteFrequencySSB [ARFCN]	$k_{SSB}$	Offset Carrier CORESET#0 [RBs] Note 2	CORESET#0 Index (Offset [RBs]) Note 1	offsetToPointA (SIB1) [PRBs] Note 1	
10	24	Downlink	Low	2115	423000	2110.68	422136	0	15	5286	422910	18	0	0 (5)	10	
			Mid	2155	431000	2113.96	422792	102		5389	431090	6	0	3 (8)	220	
			High	2195	439000	2009.24	401848	504		5486	438970	14	0	1 (6)	1020	
		Uplink	Low	1925	385000	1920.68	384136	0	-	-	-	-	-	-	-	-
			Mid	1965	393000	1779.24	355848	504		-	-	-	-	-	-	-
			High	2005	401000	1998.52	399704	6		-	-	-	-	-	-	-
15	38	Downlink	Low	2117.5	423500	2110.66	422132	0	15	5287	422930	2	0	1 (6)	12	
			Mid	2155	431000	2111.44	422288	102		5380	430370	6	0	0 (5)	214	
			High	2192.5	438500	2004.22	400844	504		5476	438050	18	0	2 (7)	1022	
		Uplink	Low	1927.5	385500	1920.66	384132	0	-	-	-	-	-	-	-	-
			Mid	1965	393000	1776.72	355344	504		-	-	-	-	-	-	-
			High	2002.5	400500	1993.5	398700	6		-	-	-	-	-	-	-
20	51	Downlink	Low	2120	424000	2110.82	422164	0	15	5285	422890	2	0	0 (5)	10	
			Mid	2155	431000	2109.1	421820	102		5374	429890	2	0	0 (5)	214	
			High	2190	438000	1999.38	399876	504		5463	437070	14	0	2 (7)	1022	
		Uplink	Low	1930	386000	1920.82	384164	0	-	-	-	-	-	-	-	-
			Mid	1965	393000	1774.38	354876	504		-	-	-	-	-	-	-
			High	2000	400000	1988.66	397732	6		-	-	-	-	-	-	-

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

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

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

CBW [MHz]	carrierBand width [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequencyPointA [ARFCN]	offsetToCarrier [PRBs]	SS block SCS [kHz]	GSCN	absoluteFrequencySSB [ARFCN]
10	11	Downlink	Low	2115	423000	2111.04	422208	0	15	-	422568
			Mid	2155	431000	2077.6	415520	102		-	430568
			High	2195	439000	1828.16	365632	504		-	438568
		Uplink	Low	1925	385000	1921.04	384208	0	-	-	-
			Mid	1965	393000	1598.16	319632	504		-	-
			High	2005	401000	1996.72	399344	6		-	-
15	18	Downlink	Low	2117.5	423500	2111.02	422204	0	15	-	422564
			Mid	2155	431000	2075.08	415016	102		-	430064
			High	2192.5	438500	1823.14	364628	504		-	437564
		Uplink	Low	1927.5	385500	1921.02	384204	0	-	-	-
			Mid	1965	393000	1595.64	319128	504		-	-
			High	2002.5	400500	1991.7	398340	6		-	-
20	24	Downlink	Low	2120	424000	2111.36	422272	0	15	-	422632
			Mid	2155	431000	2072.92	414584	102		-	429632
			High	2190	438000	1818.48	363696	504		-	436632
		Uplink	Low	1930	386000	1921.36	384272	0	-	-	-
			Mid	1965	393000	1593.48	318696	504		-	-
			High	2000	400000	1987.04	397408	6		-	-
Note: FR1 carrier without CORESET#0 is indicated in the MIB by setting $k_{SSB}=31$ , <i>controlResourceSetZero</i> =0 and <i>searchSpaceZero</i> = 0 (TS 38.213 [22], clause 13).											

4.3.1.1.1.66 Reference test frequencies for NR operating band n66

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

UL/DLC BW Combination (Asymmetric BCS) Note 3	CBW [MHz]	carrierBand width [PRBs]	Range	Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequencyPointA [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS [kHz]	GSCN	absoluteFrequencySSB [ARFCN]	$k_{SSB}$	Offset Carrier CORESET#0 [RBs] Note 2	CORESET#0 Index (Offset [RBs]) Note 1	offsetToPointA (SIB1) [PRBs] Note 1
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5/5	5	25	Downlink	Low	2112.5	422500	2110.25	422050	0	15	5279	422410	0	0	0 (0)	0	
				Mid	21450	429000	2124.39	424878	102		5361	428910	0	0	0 (0)	102	
				High	2177.5	435500	2084.53	416906	504		5443	435410	0	0	0 (0)	504	
	5	25	Uplink	Low	1712.5	342500	1710.25	342050	0	-	-	-	-	-	-	-	-
				Mid	17450	349000	1652.03	330406	504		-	-	-	-	-	-	-
				High	1777.5	355500	1774.17	354834	6		-	-	-	-	-	-	
5/20 (0,1)	20	106	Downlink	Low	2120	424000	2110.46	422092	0	15	5282	422650	6	1	2 (4)	5	
				Mid	2152.5	430500	2124.6	424920	102		5364	429150	6	1	2 (4)	107	
				High	21850	437000	2084.74	416948	504		5446	435650	6	1	2 (4)	509	
	5	25	Uplink	Low	1712.5	342500	1710.25	342050	0	-	-	-	-	-	-	-	-
				Mid	17450	349000	1652.03	330406	504		-	-	-	-	-	-	
				High	1777.5	355500	1774.17	354834	6		-	-	-	-	-	-	
5/25 (1)	25	133	Downlink	Low	2122.5	424500	2110.53	422106	0	15	5283	422670	8	1	2 (4)	5	
				Mid	21550	431000	2124.67	424934	102		5365	429170	8	1	2 (4)	107	
				High	2187.5	437500	2084.81	416962	504		5444	435610	0	0	2 (4)	508	
	5	25	Uplink	Low	1712.5	342500	1710.25	342050	0	-	-	-	-	-	-	-	-
				Mid	17450	349000	1652.03	330406	504		-	-	-	-	-	-	
				High	1777.5	355500	1774.17	354834	6		-	-	-	-	-	-	
5/30 (1)	30	160	Downlink	Low	2125	425000	2110.6	422120	0	15	5284	422690	10	1	2 (4)	5	
				Mid	21550	431000	2122.24	424448	102		5359	428690	10	1	2 (4)	107	
				High	21850	437000	2079.88	415976	504		5434	434690	10	1	2 (4)	509	

	5	25	Uplink	Low	1712.5	342500	1710.25	342050	0	-	-	-	-	-	-	
				Mid	1742.5	348500	1649.53	329906	504	-	-	-	-	-		
				High	1772.5	354500	1769.17	353834	6	-	-	-	-	-		
5/40 (0,1)	40	216	Downlink	Low	2130	426000	2110.56	422112	0	15	5283	422670	6	1	2 (4)	5
				Mid	2155	431000	2117.2	423440	102		5344	427490	6	0	0 (0)	102
				High	2180	436000	2069.84	413968	504		5405	432490	6	0	0 (0)	504
	5	25	Uplink	Low	1712.5	342500	1710.25	342050	0	-	-	-	-	-	-	
				Mid	1737.5	347500	1644.53	328906	504	-	-	-	-	-		
				High	1762.5	352500	1759.17	351834	6	-	-	-	-	-		
10/10	10	52	Downlink	Low	2115	423000	2110.32	422064	0	15	5280	422430	2	0	0 (0)	0
				Mid	2145	429000	2121.96	424392	102		5355	428430	2	0	0 (0)	102
				High	2175	435000	2079.6	415920	504		5430	434430	2	0	0 (0)	504
	10	52	Uplink	Low	1715	343000	1710.32	342064	0	-	-	-	-	-	-	
				Mid	1745	349000	1649.6	329920	504	-	-	-	-	-		
				High	1775	355000	1769.24	353848	6	-	-	-	-	-		
10/20 (0,1)	20	106	Downlink	Low	2120	424000	2110.46	422092	0	15	5282	422650	6	1	2 (4)	5
				Mid	2150	430000	2122.1	424420	102		5357	428650	6	1	2 (4)	107
				High	2180	436000	2079.74	415948	504		5432	434650	6	1	2 (4)	509
	10	52	Uplink	Low	1715	343000	1710.32	342064	0	-	-	-	-	-	-	
				Mid	1745	349000	1649.6	329920	504	-	-	-	-	-		
				High	1775	355000	1769.24	353848	6	-	-	-	-	-		

10/25 (1)	25	133	Downlink	Low	2122.5	424500	2110.53	422106	0	15	5283	422670	8	1	2 (4)	5	
				Mid	2152.5	430500	2122.17	424434	102		5358	428670	8	1	2 (4)	107	
				High	2182.5	436500	2079.81	415962	504		5433	434670	8	1	2 (4)	509	
	10	52	Uplink	Low	1715	343000	1710.32	342064	0	-	-	-	-	-	-	-	-
				Mid	1745	349000	1649.6	329920	504		-	-	-	-	-	-	-
				High	1775	355000	1769.24	353848	6		-	-	-	-	-	-	-
10/30 (1)	30	160	Downlink	Low	2125	425000	2110.6	422120	0	15	5284	422690	10	1	2 (4)	5	
				Mid	2155	431000	2122.24	424448	102		5359	428690	10	1	2 (4)	107	
				High	2185	437000	2079.88	415976	504		5434	434690	10	1	2 (4)	509	
	10	52	Uplink	Low	1715	343000	1710.32	342064	0	-	-	-	-	-	-	-	-
				Mid	1745	349000	1649.6	329920	504		-	-	-	-	-	-	-
				High	1775	355000	1769.24	353848	6		-	-	-	-	-	-	-
10/40 (0,1)	40	216	Downlink	Low	2130	426000	2110.56	422112	0	15	5283	422670	6	1	2 (4)	5	
				Mid	2155	431000	2117.2	423440	102		5344	427490	6	0	0 (0)	102	
				High	2180	436000	2069.84	413968	504		5405	432490	6	0	0 (0)	504	
	10	52	Uplink	Low	1715	343000	1710.32	342064	0	-	-	-	-	-	-	-	-
				Mid	1740	348000	1644.6	328920	504		-	-	-	-	-	-	-
				High	1765	353000	1759.24	351848	6		-	-	-	-	-	-	-
15/15	15	79	Downlink	Low	2117.5	423500	2110.39	422078	0	15	5281	422450	4	0	0 (0)	0	
				Mid	2145	429000	2119.53	423906	102		5349	427950	4	0	0 (0)	102	
				High	2172.5	434500	2074.67	414934	504		5417	433450	4	0	0 (0)	504	



	15	79	Uplink	Low	1717.5	343500	1710.39	342078	0	-	-	-	-	-	-	
				Mid	17450	349000	1647.17	329434	504	-	-	-	-	-		
				High	1772.5	354500	1764.31	352862	6	-	-	-	-	-		
20/20	20	106	Downlink	Low	2120	424000	2110.46	422092	0	15	5282	422650	6	1	2 (4)	5
				Mid	21450	429000	2117.1	423420	102	5343	427470	6	0	0 (0)	102	
				High	2170	434000	2069.74	413948	504	5407	432530	2	0	1 (2)	506	
	20	106	Uplink	Low	1720	344000	1710.46	342092	0	-	-	-	-	-	-	
				Mid	17450	349000	1644.74	328948	504	-	-	-	-	-		
				High	1770	354000	1759.38	351876	6	-	-	-	-	-		
20/40 (0,1)	40	216	Downlink	Low	2130	426000	2110.56	422112	0	15	5283	422670	6	1	2 (4)	5
				Mid	21550	431000	2117.2	423440	102	5344	427490	6	0	0 (0)	102	
				High	2180	436000	2069.84	413968	504	5405	432490	6	0	0 (0)	504	
	20	106	Uplink	Low	1720	344000	1710.46	342092	0	-	-	-	-	-	-	
				Mid	17450	349000	1644.74	328948	504	-	-	-	-	-		
				High	1770	354000	1759.38	351876	6	-	-	-	-	-		
25/25	25	133	Downlink	Low	2122.5	424500	2110.53	422106	0	15	5283	422670	8	1	2 (4)	5
				Mid	21450	429000	2114.67	422934	102	5337	426990	8	0	0 (0)	102	
				High	2167.5	433500	2064.81	412962	504	5394	431550	4	0	1 (2)	506	
	25	133	Uplink	Low	1722.5	344500	1710.53	342106	0	-	-	-	-	-	-	
				Mid	17450	349000	1642.31	328462	504	-	-	-	-	-		
				High	1767.5	353500	1754.45	350890	6	-	-	-	-	-		

25/40 (1)	40	216	Downlink	Low	2130	42600 0	2110. 56	422112	0	15	528 3	422670	6	1	2 (4)	5	
				Mid	2152 .5	43050 0	2114. 7	422940	102		533 7	426990	6	0	0 (0)	102	
				High	2175	43500 0	2064. 84	412968	504		539 4	431550	2	0	1 (2)	506	
	25	133	Uplink	Low	1722 .5	34450 0	1710. 53	342106	0	-	-	-	-	-	-	-	-
				Mid	1745	34900 0	1642. 31	328462	504		-	-	-	-	-	-	-
				High	1767 .5	35350 0	1754. 45	350890	6		-	-	-	-	-	-	-
30/30	30	160	Downlink	Low	2125	42500 0	2110. 6	422120	0	15	528 4	422690	10	1	2 (4)	5	
				Mid	2145	42900 0	2112. 24	422448	102		533 1	426510	10	0	0 (0)	102	
				High	2165	43300 0	2059. 88	411976	504		538 1	430570	6	0	1 (2)	506	
	30	160	Uplink	Low	1725	34500 0	1710. 6	342120	0	-	-	-	-	-	-	-	-
				Mid	1745	34900 0	1639. 88	327976	504		-	-	-	-	-	-	-
				High	1765	35300 0	1749. 52	349904	6		-	-	-	-	-	-	-
30/40 (1)	40	216	Downlink	Low	2130	42600 0	2110. 56	422112	0	15	528 3	422670	6	1	2 (4)	5	
				Mid	2150	43000 0	2112. 2	422440	102		533 0	426490	6	0	0 (0)	102	
				High	2170	43400 0	2059. 84	411968	504		538 3	430610	10	1	1 (2)	507	
	30	160	Uplink	Low	1725	34500 0	1710. 6	342120	0	-	-	-	-	-	-	-	-
				Mid	1745	34900 0	1639. 88	327976	504		-	-	-	-	-	-	-
				High	1765	35300 0	1749. 52	349904	6		-	-	-	-	-	-	-
40/40	40	216	Downlink	Low	2130	42600 0	2110. 56	422112	0	15	528 3	422670	6	1	2 (4)	5	
				Mid	2145	42900 0	2107. 2	421440	102		531 9	425550	2	0	1 (2)	104	
				High	2160	43200 0	2049. 84	409968	504		535 8	428670	6	1	2 (4)	509	

	40	216	Uplink	Low	1730	346000	1710.56	342112	0	-	-	-	-	-	-
				Mid	1745	349000	1634.84	326968	504	-	-	-	-	-	
				High	1760	352000	1739.48	347896	6	-	-	-	-	-	
Note 1:	The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-1 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.														
Note 2:	The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs.														
Note 3:	Asymmetric CBW BCS refers to applicable asymmetric UL and DL channel bandwidth combination set as specified in TS 38.101-1 [7], Table 5.3.6-1 for NR band n66.														

Table 4.3.1.1.1.66-1A: Void

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

UL/DLC BW Combination (Asymmetric BCS) Note 3	CBW [MHz]	carrierBandwidth [PRBs]	Range	Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequencyPointA [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS [kHz]	GS CN	absoluteFrequencySSB [ARFCN]	$k_{SSB}$	Offset Carrier CORESET#0 [RBs] Note 2	CORESET#0 Index (Offset [RBs]) Note 1	offsetToPointA (SIB1) [PRBs] Note 1	
10/10	10	24	Downlink	Low	2115	423000	2110.68	422136	0	15	5286	18	0	0 (5)	10	
				Mid	2145	429000	2103.96	420792	102		5361	18	0	0 (5)	214	
				High	2175	435000	1989.24	397848	504		5436	18	0	0 (5)	1018	
	10	24	Uplink	Low	1715	343000	1710.68	342136	0	-	-	-	-	-	-	-
				Mid	1745	349000	1559.24	311848	504		-	-	-	-	-	-
				High	1775	355000	1768.52	353704	6		-	-	-	-	-	-

10/20 (0,1)	20	51	Downlink	Low	2120	42400 0	2110. 82	422164	0	15	528 5	422890	2	0	0 (5)	10	
				Mid	2150	43000 0	2104. 1	420820	102		536 0	428890	2	0	0 (5)	214	
				High	2180	43600 0	1989. 38	397876	504		543 5	434890	2	0	0 (5)	1018	
	10	24	Uplink	Low	1715	34300 0	1710. 68	342136	0	-	-	-	-	-	-	-	-
				Mid	1745	34900 0	1559. 24	311848	504		-	-	-	-	-	-	-
				High	1775	35500 0	1768. 52	353704	6		-	-	-	-	-	-	-
10/25 (1)	25	65	Downlink	Low	2122 .5	42450 0	2110. 8	422160	0	15	528 6	422910	10	0	0 (5)	10	
				Mid	2152 .5	43050 0	2104. 08	420816	102		536 1	428910	10	0	0 (5)	214	
				High	2182 .5	43650 0	1989. 36	397872	504		543 6	434910	10	0	0 (5)	1018	
	10	24	Uplink	Low	1715	34300 0	1710. 68	342136	0	-	-	-	-	-	-	-	-
				Mid	1745	34900 0	1559. 24	311848	504		-	-	-	-	-	-	-
				High	1775	35500 0	1768. 52	353704	6		-	-	-	-	-	-	-
10/30 (1)	30	78	Downlink	Low	2125	42500 0	2110. 96	422192	0	15	528 7	422930	6	0	0 (5)	10	
				Mid	2155	43100 0	2104. 24	420848	102		536 2	428930	6	0	0 (5)	214	
				High	2185	43700 0	1989. 52	397904	504		543 7	434930	6	0	0 (5)	1018	
	10	24	Uplink	Low	1715	34300 0	1710. 68	342136	0	-	-	-	-	-	-	-	-
				Mid	1745	34900 0	1559. 24	311848	504		-	-	-	-	-	-	-
				High	1775	35500 0	1768. 52	353704	6		-	-	-	-	-	-	-
10/40 (0,1)	40	106	Downlink	Low	2130	42600 0	2110. 92	422184	0	15	528 6	422910	2	0	0 (5)	10	
				Mid	2155	43100 0	2099. 2	419840	102		535 0	427970	22	0	0 (5)	214	
				High	2180	43600 0	1979. 48	395896	504		541 1	432970	22	0	0 (5)	1018	

	10	24	Uplink	Low	1715	34300	1710.	342136	0	-	-	-	-	-	-	
				Mid	1740	34800	1554.	310848	504	-	-	-	-	-		
				High	1765	35300	1758.	351704	6	-	-	-	-	-		
15/15	15	38	Downlink	Low	2117	42350	2110.	422132	0	15	528	422930	2	0	1 (6)	12
				Mid	2145	42900	2101.	420288	102	535	428430	2	0	1 (6)	216	
				High	2172	43450	1984.	396844	504	542	433930	2	0	1 (6)	1020	
	15	38	Uplink	Low	1717	34350	1710.	342132	0	-	-	-	-	-	-	
				Mid	1745	34900	1556.	311344	504	-	-	-	-	-		
				High	1772	35450	1763.	352700	6	-	-	-	-	-		
20/20	20	51	Downlink	Low	2120	42400	2110.	422164	0	15	528	422890	2	0	0 (5)	10
				Mid	2145	42900	2099.	419820	102	534	427950	22	0	0 (5)	214	
				High	2170	43400	1979.	395876	504	541	433010	18	0	1 (6)	1020	
	20	51	Uplink	Low	1720	34400	1710.	342164	0	-	-	-	-	-	-	
				Mid	1745	34900	1554.	310876	504	-	-	-	-	-		
				High	1770	35400	1758.	351732	6	-	-	-	-	-		
20/40 (0,1)	40	106	Downlink	Low	2130	42600	2110.	422184	0	15	528	422910	2	0	0 (5)	10
				Mid	2155	43100	2099.	419840	102	535	427970	22	0	0 (5)	214	
				High	2180	43600	1979.	395896	504	541	432970	22	0	0 (5)	1018	
	20	51	Uplink	Low	1720	34400	1710.	342164	0	-	-	-	-	-	-	
				Mid	1745	34900	1554.	310876	504	-	-	-	-	-		
				High	1770	35400	1758.	351732	6	-	-	-	-	-		

25/25	25	65	Downlink	Low	2122.5	424500	2110.8	422160	0	15	5286	422910	10	0	0 (5)	10	
				Mid	2145	429000	2096.58	419316	102		5343	427470	6	0	1 (6)	216	
				High	2167.5	433500	1974.36	394872	504		5400	432030	2	0	2 (7)	1022	
	25	65	Uplink	Low	1722.5	344500	1710.8	342160	0	-	-	-	-	-	-	-	-
				Mid	1745	349000	1551.86	310372	504		-	-	-	-	-	-	-
				High	1767.5	353500	1753.64	350728	6		-	-	-	-	-	-	-
25/40 (1)	40	106	Downlink	Low	2130	426000	2110.92	422184	0	15	5286	422910	2	0	0 (5)	10	
				Mid	2152.5	430500	2096.7	419340	102		5343	427470	22	0	0 (5)	214	
				High	2175	435000	1974.48	394896	504		5400	432030	18	0	1 (6)	1020	
	25	65	Uplink	Low	1722.5	344500	1710.8	342160	0	-	-	-	-	-	-	-	-
				Mid	1745	349000	1551.86	310372	504		-	-	-	-	-	-	-
				High	1767.5	353500	1753.64	350728	6		-	-	-	-	-	-	-
30/30	30	78	Downlink	Low	2125	425000	2110.96	422192	0	15	5287	422930	6	0	0 (5)	10	
				Mid	2145	429000	2094.24	418848	102		5337	426990	2	0	1 (6)	216	
				High	2165	433000	1969.52	393904	504		5387	431050	22	0	1 (6)	1020	
	30	78	Uplink	Low	1725	345000	1710.96	342192	0	-	-	-	-	-	-	-	-
				Mid	1745	349000	1549.52	309904	504		-	-	-	-	-	-	-
				High	1765	353000	1748.8	349760	6		-	-	-	-	-	-	-
30/40 (1)	40	106	Downlink	Low	2130	426000	2110.92	422184	0	15	5286	422910	2	0	0 (5)	10	
				Mid	2150	430000	2094.2	418840	102		5336	426970	22	0	0 (5)	214	
				High	2170	434000	1969.48	393896	504		5389	431090	14	0	2 (7)	1022	

	30	78	Uplink	Low	1725	34500 0	1710. 96	342192	0	-	-	-	-	-	-	
				Mid	1745	34900 0	1549. 52	309904	504	-	-	-	-	-		
				High	1765	35300 0	1748. 8	349760	6	-	-	-	-	-		
40/40	40	106	Downlink	Low	2130	42600 0	2110. 92	422184	0	15	528 6	422910	2	0	0 (5)	10
				Mid	2145	42900 0	2089. 2	417840	102		532 5	426030	18	0	1 (6)	216
				High	2160	43200 0	1959. 48	391896	504		536 1	428910	2	0	0 (5)	1018
	40	106	Uplink	Low	1730	34600 0	1710. 92	342184	0	-	-	-	-	-	-	
				Mid	1745	34900 0	1544. 48	308896	504	-	-	-	-	-		
				High	1760	35200 0	1738. 76	347752	6	-	-	-	-	-		
<p>Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-2 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.</p> <p>Note 2: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter <math>\Delta F_{\text{OffsetCORESET-0-Carrier}}</math> in Annex C expressed in number of common RBs.</p> <p>Note 3: Asymmetric CBW BCS refers to applicable asymmetric UL and DL channel bandwidth combination set as specified in TS 38.101-1 [7], Table 5.3.6-1 for NR band n66.</p>																

Table 4.3.1.1.1.66-2A: Void

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

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

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



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

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

Note 2: Asymmetric CBW BCS refers to applicable asymmetric UL and DL channel bandwidth combination set as specified in TS 38.101-1 [7], Table 5.3.6-1 for NR band n66.

Table 4.3.1.1.1.66-3A: Void

4.3.1.1.1.67 – 4.3.1.1.1.69 FFS

4.3.1.1.1.70 Reference test frequencies for NR operating band n70

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 Bandwidth combination	CBW [MHz]	carrierBandwidth [PRBs]	Range	Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequencyPointA [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS [kHz]	GS CN	absoluteFrequencySSB [ARFCN]	$k_{SSB}$	Offset Carrier CORESET#0 [RBs] Note 2	CORESET#0 Index (Offset [RBs]) Note 1	offsetToPointA (SIB1) [PRBs] Note 1	
5/5	5	25	Downlink	Low	1997.5	39950.0	1995.25	399050	0	15	4993	399410	0	0	0 (0)	0
				Mid	2002.5	40050.0	1981.89	396378	102		5007	400590	0	1	2 (4)	107
				High	2007.5	40150.0	1914.53	382906	504		5018	401530	4	1	1 (2)	507
	5	25	Uplink	Low	1697.5	33950.0	1695.25	339050	0	-	-	-	-	-	-	-
				Mid	1702.5	34050.0	1609.53	321906	504		-	-	-	-	-	-
				High	1707.5	34150.0	1704.17	340834	6		-	-	-	-	-	-
5/10	10	52	Downlink	Low	2000	40000.0	1995.32	399064	0	15	4994	399610	2	1	2 (4)	5
				Mid	2005	40100.0	1981.96	396392	102		5008	400610	2	1	2 (4)	107
				High	2010	40200.0	1914.6	382920	504		5019	401550	6	1	1 (2)	507
	5	25	Uplink	Low	1697.5	33950.0	1695.25	339050	0	-	-	-	-	-	-	

				Mi d	1702 .5	34050 0	1609 .53	321906	504		-	-	-	-	-	-
				Hi gh	1707 .5	34150 0	1704 .17	340834	6		-	-	-	-	-	-
5/15	15	79	Downl ink	Lo w	2002 .5	40050 0	1995 .39	399078	0	15	499 5	399630	4	1	2 (4)	5
				Mi d	2007 .5	40150 0	1982 .03	396406	102		500 6	400570	8	1	1 (2)	105
				Hi gh	2012 .5	40250 0	1914 .67	382934	504		502 0	401570	8	1	1 (2)	507
	5	25	Uplink	Lo w	1697 .5	33950 0	1695 .25	339050	0	-	-	-	-	-	-	-
				Mi d	1702 .5	34050 0	1609 .53	321906	504		-	-	-	-	-	-
				Hi gh	1707 .5	34150 0	1704 .17	340834	6		-	-	-	-	-	-
5/20	20	106	Downl ink	Lo w	2005	40100 0	1995 .46	399092	0	15	499 6	399650	6	1	2 (4)	5
				Mi d	2007 .5	40150 0	1979 .6	395920	102		500 0	400090	10	1	1 (2)	105
				Hi gh	2010	40200 0	1909 .74	381948	504		500 7	400590	10	1	1 (2)	507
	5	25	Uplink	Lo w	1697 .5	33950 0	1695 .25	339050	0	-	-	-	-	-	-	-
				Mi d	1700	34000 0	1607 .03	321406	504		-	-	-	-	-	-
				Hi gh	1702 .5	34050 0	1699 .17	339834	6		-	-	-	-	-	-
5/25	25	133	Downl ink	Lo w	2007 .5	40150 0	1995 .53	399106	0	15	499 4	399610	0	0	2 (4)	4
				Mi d												
				Hi gh												
	5	25	Uplink	Lo w	1697 .5	33950 0	1695 .25	339050	0	-	-	-	-	-	-	-
				Mi d												
				Hi gh												
10/10	10	52	Downl ink	Lo w	2000	40000 0	1995 .32	399064	0	15	499 4	399610	2	1	2 (4)	5

				Mid	2002.5	400500	1979.46	395892	102		5001	400110	2	1	2 (4)	107
				High	2005	401000	1909.6	381920	504		5008	400610	2	1	2 (4)	509
	10	52	Uplink	Low	1700	340000	1695.32	339064	0	-	-	-	-	-	-	-
				Mid	1702.5	340500	1607.1	321420	504		-	-	-	-	-	-
				High	1705	341000	1699.24	339848	6		-	-	-	-	-	-
10/20	20	106	Downlink	Low	2005	401000	1995.46	399092	0	15	4996	399650	6	1	2 (4)	5
				Mid	2007.5	401500	1979.6	395920	102		5000	400090	10	1	1 (2)	105
				High	2010	402000	1909.74	381948	504		5007	400590	10	1	1 (2)	507
	10	52	Uplink	Low	1700	340000	1695.32	339064	0	-	-	-	-	-	-	-
				Mid	1702.5	340500	1607.1	321420	504		-	-	-	-	-	-
				High	1705	341000	1699.24	339848	6		-	-	-	-	-	-
10/25	25	133	Downlink	Low	2007.5	401500	1995.53	399106	0	15	4994	399610	0	0	2 (4)	4
				Mid												
				High												
	10	52	Uplink	Low	1700	340000	1695.32	339064	0	-	-	-	-	-	-	-
				Mid												
				High												
15/15	15	79	Downlink	Low	2002.5	400500	1995.39	399078	0	15	4995	399630	4	1	2 (4)	5
				Mid												
				High												
	15	79	Uplink	Low	1702.5	340500	1695.39	339078	0	-	-	-	-	-	-	-

				Mid High												
15/20	20	106	Downlink	Low	2005	40100 0	1995 .46	399092	0	15	499 6	399650	6	1	2 (4)	5
				Mid High												
	15	79	Uplink	Low	1702 .5	34050 0	1695 .39	339078	0	-	-	-	-	-	-	-
				Mid High												
15/25	25	133	Downlink	Low	2007 .5	40150 0	1995 .53	399106	0	15	499 4	399610	0	0	2 (4)	4
				Mid High												
	15	79	Uplink	Low	1702 .5	34050 0	1695 .39	339078	0	-	-	-	-	-	-	-
				Mid High												
<p>Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-1 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.</p> <p>Note 2: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter <math>\Delta F_{\text{OffsetCORESET-0-Carrier}}</math> in Annex C expressed in number of common RBs.</p>																

**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	CBW [MHz]	carrierBandwidth [PRBs]	Range	Carrier centre	Carrier centre	point A [MHz]	absoluteFrequencyPointA [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block	GS CN	absoluteFrequencySSB [ARFCN]	$k_{SSB}$	Offset Carrier CORESET#0	CORESET#0 Index (Offset)	offsetToPointA (SIB1) [PRBs]
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					[MHz]	[ARF CN]				SC S [kHz]				[RBs] Note 2	[RBs] Note 1	Note 1	
10/10	10	24	Downlink	Low	2000	400000	1995.68	399136	0	15	5000	400090	6	0	3 (8)	16	
				Mid	2002.5	400500	1961.46	392292	102		5007	400590	6	0	3 (8)	220	
				High	2005	401000	1819.24	363848	504		5014	401090	6	0	3 (8)	1024	
	10	24	Uplink	Low	1700	340000	1695.68	339136	0	-	-	-	-	-	-	-	-
				Mid	1702.5	340500	1516.74	303348	504		-	-	-	-	-	-	
				High	1705	341000	1698.52	339704	6		-	-	-	-	-	-	
10/20	20	51	Downlink	Low	2005	401000	1995.82	399164	0	15	4999	399890	2	0	0 (5)	10	
				Mid	2007.5	401500	1961.6	392320	102		5006	400570	14	0	2 (7)	218	
				High	2010	402000	1819.38	363876	504		5013	401070	14	0	2 (7)	1022	
	10	24	Uplink	Low	1700	340000	1695.68	339136	0	-	-	-	-	-	-	-	
				Mid	1702.5	340500	1516.74	303348	504		-	-	-	-	-		
				High	1705	341000	1698.52	339704	6		-	-	-	-	-		
10/25	25	65	Downlink	Low	2007.5	401500	1995.8	399160	0	15	5000	400090	22	0	2 (7)	14	
				Mid													
				High													
	10	24	Uplink	Low	1700	340000	1695.68	339136	0	-	-	-	-	-	-	-	
				Mid													
				High													
15/15	15	38	Downlink	Low	2002.5	400500	1995.66	399132	0	15	4998	399870	6	0	0 (5)	10	

				Mid												
				High												
	15	38	Uplink	Low	1702.5	340500	1695.66	339132	0	-	-	-	-	-	-	-
				Mid												
				High												
15/20	20	51	Downlink	Low	2005	401000	1995.82	399164	0	15	4999	399890	2	0	0 (5)	10
				Mid												
				High												
	15	38	Uplink	Low	1702.5	340500	1695.66	339132	0	-	-	-	-	-	-	-
				Mid												
				High												
15/25	25	65	Downlink	Low	2007.5	401500	1995.8	399160	0	15	5000	400090	22	0	2 (7)	14
				Mid												
				High												
	15	38	Uplink	Low	1702.5	340500	1695.66	339132	0	-	-	-	-	-	-	-
				Mid												
				High												
<p>Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-2 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1 in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.</p> <p>Note 2: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter <math>\Delta F_{\text{OffsetCORESET-0-Carrier}}</math> in Annex C expressed in number of common RBs.</p>																

**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 without CORESET#0**

UL/DL Bandwidth combination	CBW [MHz]	carrierBandwidth [PRBs]	Range	Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequencyPointA [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS [kHz]	GSCN	absoluteFrequencySSB [ARFCN]	
10/10	10	11	Downlink	Low	2000	400000	1996.04	399208	0	15	-	399568
				Mid	2002.5	400500	1925.1	385020	102		-	400068
				High	2005	401000	1638.16	327632	504		-	400568
	10	11	Uplink	Low	1700	340000	1696.04	339208	0	-	-	-
				Mid	1702.5	340500	1335.66	267132	504		-	-
				High	1705	341000	1696.72	339344	6		-	-
10/20	20	24	Downlink	Low	2005	401000	1996.36	399272	0	15	-	399632
				Mid	2007.5	401500	1925.42	385084	102		-	400132
				High	2010	402000	1638.48	327696	504		-	400632
	10	11	Uplink	Low	1700	340000	1696.04	339208	0	-	-	-
				Mid	1702.5	340500	1335.66	267132	504		-	-
				High	1705	341000	1696.72	339344	6		-	-
10/25	25	31	Downlink	Low	2007.5	401500	1996.34	399268	0	15	-	399628
				Mid								
				High								
	10	11	Uplink	Low	1700	340000	1696.04	339208	0	-	-	-
				Mid								
				High								
15/15	15	18	Downlink	Low	2002.5	400500	1996.02	399204	0	15	-	399564
				Mid								
				High								
	15	18	Uplink	Low	1702.5	340500	1696.02	339204	0	-	-	-
				Mid								
				High								
15/20	20	24	Downlink	Low	2005	401000	1996.36	399272	0	15	-	399632
				Mid								
				High								
	15	18	Uplink	Low	1702.5	340500	1696.02	339204	0	-	-	-
				Mid								
				High								
15/25	25	31	Downlink	Low	2007.5	401500	1996.34	399268	0	15	-	399628
				Mid								
				High								



	15	18	Uplink	Low	1702.5	340500	1696.02	339204	0	-	-	-
				Mid								
				High								
<p>Note: FR1 carrier without CORESET#0 is indicated in the MIB by setting <math>k_{SSB}=31</math>, <math>controlResourceSetZero=0</math> and <math>searchSpaceZero=0</math> (TS 38.213 [22], clause 13).</p>												

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

CBW [MHz]	carrierBandwidth [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequencyPointA [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS [kHz]	GSCN	absoluteFrequencySSB [ARFCN]	$k_{SSB}$	Offset Carrier CORESET#0 [RBs] Note 2	CORESET#0 Index (Offset [RBs]) Note 1	offsetToPointA (SIB1) [PRBs] Note 1	
5	25	Downlink	Low	619.5	123900	617.25	123450	0	15	1548	123870	8	1	0 (0)	1	
			Mid	634.5	126900	613.89	122778	102		1587	126990	0	1	2 (4)	107	
			High	649.5	129900	556.53	111306	504		1623	129870	8	1	0 (0)	505	
		Uplink	Low	665.5	133100	663.25	132650	0	-	-	-	-	-	-	-	-
			Mid	680.5	136100	587.53	117506	504		-	-	-	-	-	-	-
			High	695.5	139100	692.17	138434	6		-	-	-	-	-	-	-
10	52	Downlink	Low	622	124400	617.32	123464	0	15	1549	123890	10	1	0 (0)	1	
			Mid	634.5	126900	611.46	122292	102		1581	126510	2	1	2 (4)	107	
			High	647	129400	551.6	110320	504		1610	128890	10	1	0 (0)	505	
		Uplink	Low	668	133600	663.32	132664	0	-	-	-	-	-	-	-	-
			Mid	680.5	136100	585.1	117020	504		-	-	-	-	-	-	-
			High	693	138600	687.24	137448	6		-	-	-	-	-	-	-
15	79	Downlink	Low	624.5	124900	617.39	123478	0	15	1547	123850	4	0	0 (0)	0	
			Mid	634.5	126900	609.03	121806	102		1575	126030	4	1	2 (4)	107	
			High	644.5	128900	546.67	109334	504		1600	127970	8	1	1 (2)	507	
		Uplink	Low	670.5	134100	663.39	132678	0	-	-	-	-	-	-	-	-
			Mid	680.5	136100	582.67	116534	504		-	-	-	-	-	-	-
			High	690.5	138100	682.31	136462	6		-	-	-	-	-	-	-
20	106	Downlink	Low	627	125400	617.46	123492	0	15	1548	123870	6	0	0 (0)	0	
			Mid	634.5	126900	606.6	121320	102		1569	125550	6	1	2 (4)	107	
			High	642	128400	541.74	108348	504		1587	126990	10	1	1 (2)	507	
		Uplink	Low	673	134600	663.46	132692	0	-	-	-	-	-	-	-	-
			Mid	680.5	136100	580.24	116048	504		-	-	-	-	-	-	-
			High	688	137600	677.38	135476	6		-	-	-	-	-	-	-

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

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

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

CBW [MHz]	carrierBandwidth [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequencyPointA [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS [kHz]	GSCN	absoluteFrequencySSB [ARFCN]	$k_{SSB}$	Offset Carrier CORESET#0 [RBs] Note 2	CORESET#0 Index (Offset [RBs]) Note 1	offsetToPointA (SIB1) [PRBs] Note 1	
10	24	Downlink	Low	622	124400	617.68	123536	0	15	1555	124370	14	0	1 (6)	12	
			Mid	634.5	126900	593.46	118692	102		1587	126990	6	0	3 (8)	220	
			High	647	129400	461.24	92248	504		1616	129370	14	0	1 (6)	1020	
		Uplink	Low	668	133600	663.68	132736	0	-	-	-	-	-	-	-	-
			Mid	680.5	136100	494.74	98948	504		-	-	-	-	-	-	-
			High	693	138600	686.52	137304	6		-	-	-	-	-	-	-
15	38	Downlink	Low	624.5	124900	617.66	123532	0	15	1553	124330	2	0	1 (6)	12	
			Mid	634.5	126900	590.94	118188	102		1578	126270	6	0	0 (5)	214	
			High	644.5	128900	456.22	91244	504		1606	128450	18	0	2 (7)	1022	
		Uplink	Low	670.5	134100	663.66	132732	0	-	-	-	-	-	-	-	-
			Mid	680.5	136100	492.22	98444	504		-	-	-	-	-	-	-
			High	690.5	138100	681.5	136300	6		-	-	-	-	-	-	-
20	51	Downlink	Low	627	125400	617.82	123564	0	15	1554	124350	22	0	0 (5)	10	
			Mid	634.5	126900	588.6	117720	102		1572	125790	2	0	0 (5)	214	
			High	642	128400	451.38	90276	504		1593	127470	14	0	2 (7)	1022	
		Uplink	Low	673	134600	663.82	132764	0	-	-	-	-	-	-	-	-
			Mid	680.5	136100	489.88	97976	504		-	-	-	-	-	-	-
			High	688	137600	676.66	135332	6		-	-	-	-	-	-	-

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

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

4.3.1.1.1.72 – 4.3.1.1.1.73

4.3.1.1.1.74 Reference test frequencies for NR operating band n74

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

CBW [MHz]	carrierBandwidth [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequencyPointA [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS [kHz]	GSCN	absoluteFrequencySSB [ARFCN]	$k_{SSE}$	Offset Carrier CORESET#0 [RBs] Note 2	CORESET#0 Index (Offset [RBs]) Note 1	offsetToPointA (SIB1) [PRBs] Note 1
5	25	Downlink	Low	1477.5	295500	1475.25	295050	0	15	3693	295470	8	1	0 (0)	1
			Mid	1496.5	299300	1475.89	295178	102		3742	299330	4	1	1 (2)	105
			High	1515.5	303100	1422.53	284506	504		3788	303130	4	1	1 (2)	507
		Uplink	Low	1429.5	285900	1427.25	285450	0	-	-	-	-	-	-	-
			Mid	1448.5	289700	1355.53	271106	504	-	-	-	-	-	-	-
			High	1467.5	293500	1464.17	292834	6	-	-	-	-	-	-	-
10	52	Downlink	Low	1480	296000	1475.32	295064	0	15	3694	295490	10	1	0 (0)	1
			Mid	1496.5	299300	1473.46	294692	102		3736	298850	6	1	1 (2)	105
			High	1513	302600	1417.6	283520	504		3778	302210	2	1	2 (4)	509
		Uplink	Low	1432	286400	1427.32	285464	0	-	-	-	-	-	-	-
			Mid	1448.5	289700	1353.1	270620	504	-	-	-	-	-	-	-
			High	1465	293000	1459.24	291848	6	-	-	-	-	-	-	-
15	79	Downlink	Low	1482.5	296500	1475.39	295078	0	15	3692	295450	4	0	0 (0)	0
			Mid	1496.5	299300	1471.03	294206	102		3730	298370	8	1	1 (2)	105
			High	1510.5	302100	1412.67	282534	504		3765	301230	4	1	2 (4)	509
		Uplink	Low	1434.5	286900	1427.39	285478	0	-	-	-	-	-	-	-
			Mid	1448.5	289700	1350.67	270134	504	-	-	-	-	-	-	-
			High	1462.5	292500	1454.31	290862	6	-	-	-	-	-	-	-
20	106	Downlink	Low	1485	297000	1475.46	295092	0	15	3693	295470	6	0	0 (0)	0
			Mid	1496.5	299300	1468.6	293720	102		3724	297890	10	1	1 (2)	105
			High	1508	301600	1407.74	281548	504		3752	300250	6	1	2 (4)	509
		Uplink	Low	1437	287400	1427.46	285492	0	-	-	-	-	-	-	-
			Mid	1448.5	289700	1348.24	269648	504	-	-	-	-	-	-	-
			High	1460	292000	1449.38	289876	6	-	-	-	-	-	-	-

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

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

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

CBW [MHz]	carrierBandwidth [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequency PointA [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS [kHz]	GSCN	absoluteFrequency SSB [ARFCN]	$k_{\text{SSE}}$	Offset Carrier CORESET#0 [RBs] Note 2	CORESET#0 Index (Offset [RBs]) Note 1	offsetToPointA (SIB1) [PRBs] Note 1	
10	24	Downlink	Low	1480	296000	1475.68	295136	0	15	3700	295970	14	0	1 (6)	12	
			Mid	1496.5	299300	1455.46	291092	102		3742	299330	10	0	2 (7)	218	
			High	1513	302600	1327.24	265448	504		3784	302690	6	0	3 (8)	1024	
		Uplink	Low	1432	286400	1427.68	285536	0	-	-	-	-	-	-	-	-
			Mid	1448.5	289700	1262.74	252548	504		-	-	-	-	-	-	-
			High	1465	293000	1458.52	291704	6		-	-	-	-	-	-	
15	38	Downlink	Low	1482.5	296500	1475.66	295132	0	15	3698	295930	2	0	1 (6)	12	
			Mid	1496.5	299300	1452.94	290588	102		3736	298850	18	0	2 (7)	218	
			High	1510.5	302100	1322.22	264444	504		3768	301470	6	0	0 (5)	1018	
		Uplink	Low	1434.5	286900	1427.66	285532	0	-	-	-	-	-	-	-	
			Mid	1448.5	289700	1260.22	252044	504		-	-	-	-	-	-	
			High	1462.5	292500	1453.5	290700	6		-	-	-	-	-	-	
20	51	Downlink	Low	1485	297000	1475.82	295164	0	15	3699	295950	22	0	0 (5)	10	
			Mid	1496.5	299300	1450.6	290120	102		3730	298370	14	0	2 (7)	218	
			High	1508	301600	1317.38	263476	504		3755	300490	2	0	0 (5)	1018	
		Uplink	Low	1437	287400	1427.82	285564	0	-	-	-	-	-	-	-	
			Mid	1448.5	289700	1257.88	251576	504		-	-	-	-	-	-	
			High	1460	292000	1448.66	289732	6		-	-	-	-	-	-	

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

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

Table 4.3.1.1.1.74-3: Test frequencies for NR operating band n74 and SCS 60 kHz without CORESET#0

CBW [MHz]	carrierBandwidth [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequencyPointA [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS [kHz]	GSCN	absoluteFrequencySSB [ARFCN]
10	11	Downlink	Low	1480	296000	1476.04	295208	0	15	-	295568
			Mid	1496.5	299300	1419.1	283820	102		-	298868
			High	1513	302600	1146.16	229232	504		-	302168
		Uplink	Low	1432	286400	1428.04	285608	0	-	-	-
			Mid	1448.5	289700	1081.66	216332	504		-	-
			High	1465	293000	1456.72	291344	6		-	-
15	18	Downlink	Low	1482.5	296500	1476.02	295204	0	15	-	295564
			Mid	1496.5	299300	1416.58	283316	102		-	298364
			High	1510.5	302100	1141.14	228228	504		-	301164
		Uplink	Low	1434.5	286900	1428.02	285604	0	-	-	-
			Mid	1448.5	289700	1079.14	215828	504		-	-
			High	1462.5	292500	1451.7	290340	6		-	-
20	24	Downlink	Low	1485	297000	1476.36	295272	0	15	-	295632
			Mid	1496.5	299300	1414.42	282884	102		-	297932
			High	1508	301600	1136.48	227296	504		-	300232
		Uplink	Low	1437	287400	1428.36	285672	0	-	-	-
			Mid	1448.5	289700	1076.98	215396	504		-	-
			High	1460	292000	1447.04	289408	6		-	-
<p>Note: FR1 carrier without CORESET#0 is indicated in the MIB by setting <math>k_{SSB}=31</math>, <math>controlResourceSetZero=0</math> and <math>searchSpaceZero = 0</math> (TS 38.213 [22], clause 13).</p>											

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

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

CBW [MHz]	carrierBand width [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absoluteF requency PointA [ARFCN]	offsetToC arrier [PRBs]	SS block SCS [kHz]	GSCN	absoluteF requency SSB [ARFCN]
5	25	Downlink	Low	1434.5	286900	1432.25	286450	0	15	-	286810
			Mid	1474.5	294900	1453.89	290778	102		-	294810
			High	1514.5	302900	1421.53	284306	504		-	302810
10	52	Downlink	Low	1437	287400	1432.32	286464	0	15	-	286824
			Mid	1474.5	294900	1451.46	290292	102		-	294324
			High	1512	302400	1416.6	283320	504		-	301824
15	79	Downlink	Low	1439.5	287900	1432.39	286478	0	15	-	286838
			Mid	1474.5	294900	1449.03	289806	102		-	293838
			High	1509.5	301900	1411.67	282334	504		-	300838
20	106	Downlink	Low	1442	288400	1432.46	286492	0	15	-	286852
			Mid	1474.5	294900	1446.6	289320	102		-	293352
			High	1507	301400	1406.74	281348	504		-	299852

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

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

CBW [MHz]	carrierBand width [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absoluteF requency PointA [ARFCN]	offsetToC arrier [PRBs]	SS block SCS [kHz]	GSCN	absoluteF requency SSB [ARFCN]
10	24	Downlink	Low	1437	287400	1432.68	286536	0	15	-	286896
			Mid	1474.5	294900	1433.46	286692	102		-	294396
			High	1512	302400	1326.24	265248	504		-	301896
15	38	Downlink	Low	1439.5	287900	1432.66	286532	0	15	-	286892
			Mid	1474.5	294900	1430.94	286188	102		-	293892
			High	1509.5	301900	1321.22	264244	504		-	300892
20	51	Downlink	Low	1442	288400	1432.82	286564	0	15	-	286924
			Mid	1474.5	294900	1428.6	285720	102		-	293424
			High	1507	301400	1316.38	263276	504		-	299924
Note: FR1 carrier without CORESET#0 is indicated in the MIB by setting $k_{SSB}=31$ , $controlResourceSetZero=0$ and $searchSpaceZero=0$ (TS 38.213 [22], clause 13).											

**Table 4.3.1.1.1.75-3: Test frequencies for NR operating band n75 and SCS 60 kHz without CORESET#0**

CBW [MHz]	carrierBand width [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absoluteF requency PointA [ARFCN]	offsetToC arrier [PRBs]	SS block SCS [kHz]	GSCN	absoluteF requency SSB [ARFCN]
10	11	Downlink	Low	1437	287400	1433.04	286608	0	15	-	286968
			Mid	1474.5	294900	1397.1	279420	102		-	294468
			High	1512	302400	1145.16	229032	504		-	301968
15	18	Downlink	Low	1439.5	287900	1433.02	286604	0	15	-	286964
			Mid	1474.5	294900	1394.58	278916	102		-	293964
			High	1509.5	301900	1140.14	228028	504		-	300964
20	24	Downlink	Low	1442	288400	1433.36	286672	0	15	-	287032
			Mid	1474.5	294900	1392.42	278484	102		-	293532
			High	1507	301400	1135.48	227096	504		-	300032
Note: FR1 carrier without CORESET#0 is indicated in the MIB by setting $k_{SSB}=31$ , $controlResourceSetZero=0$ and $searchSpaceZero=0$ (TS 38.213 [22], clause 13).											



## 4.3.1.1.1.76 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 without CORESET#0**

Bandwidth [MHz]	carrierBand width [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequencyPointA [ARFCN]	offsetToCarrier [PRBs]	SS block SCS [kHz]	GSCN	absoluteFrequencySSB [ARFCN]
5	25	Downlink	Low, Mid, High	1429.5	285900	1427.25	285450	0	15	-	285810

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

4.3.1.1.1.77 Reference test frequencies for NR operating band n77

**Table 4.3.1.1.1.77-1: Test frequencies for NR operating band n77, SCS 15 kHz and ΔFRaster 15 kHz**

CBW [MHz]	carrierBandwidth [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequencyPointA [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS [kHz]	GSCN	absoluteFrequencySSB [ARFCN]	$k_{SSB}$	Offset Carrier CORESET#0 [RBs] Note 2	CORESET#0 Index (Offset [RBs]) Note 1	offsetToPointA (SIB1) [PRBs] Note 1
10	52	Downlink & Uplink	Low	3305.01	620334	3300.33	620022	0	30	7711	620352	6	1	1 (6)	7
			Mid	3750	650000	3726.96	648464	102		8020	650016	4	1	1 (6)	109
			High	4194.99	679666	4099.59	673306	504		8329	679680	2	1	1 (6)	511
15	79	Downlink & Uplink	Low	3307.5	620500	3300.39	620026	0	30	7711	620352	2	1	1 (6)	7
			Mid	3750	650000	3724.53	648302	102		8018	649824	10	2	0 (2)	106
			High	4192.5	679500	4094.67	672978	504		8325	679296	6	0	0 (2)	506
20	106	Downlink & Uplink	Low	3310.02	620668	3300.48	620032	0	30	7711	620352	8	0	1 (6)	6
			Mid	3750	650000	3722.1	648140	102		8016	649632	4	0	0 (2)	104
			High	4189.98	679332	4089.72	672648	504		8322	679008	0	0	1 (6)	510
25	133	Downlink & Uplink	Low	3312.51	620834	3300.54	620036	0	30	7711	620352	4	0	1 (6)	6
			Mid	3750	650000	3719.67	647978	102		8015	649536	10	1	1 (6)	109
			High	4187.49	679166	4084.8	672320	504		8319	678720	4	3	1 (6)	513
30	160	Downlink & Uplink	Low	3315	621000	3300.6	620040	0	30	7711	620352	0	0	1 (6)	6
			Mid	3750	650000	3717.24	647816	102		8013	649344	4	3	0 (2)	107
			High	4185	679000	4079.88	671992	504		8315	678336	8	2	0 (2)	508
40	216	Downlink & Uplink	Low	3320.01	621334	3300.57	620038	0	30	7711	620352	2	0	1 (6)	6
			Mid	3750	650000	3712.2	647480	102		8010	649056	4	3	1 (6)	111
			High	4179.99	678666	4069.83	671322	504		8308	677664	6	2	0 (2)	508
50	270	Downlink & Uplink	Low	3325.02	621668	3300.72	620048	0	30	7711	620352	4	3	0 (2)	5
			Mid	3750	650000	3707.34	647156	102		8006	648672	4	2	0 (2)	106
			High	4174.98	678332	4059.96	670664	504		8301	676992	4	1	0 (2)	507

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

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

Table 4.3.1.1.1.77-2: Test frequencies for NR operating band n77, SCS 30 kHz and  $\Delta F_{\text{Raster}}$  30 kHz

CBW [MHz]	carrierBandwidth [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequencyPointA [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS [kHz]	GSCN	absoluteFrequencySSB [ARFCN]	$k_{\text{SSB}}$	Offset Carrier CORES ET#0 [RBs] Note 2	CORES ET#0 Index (Offset [RBs]) Note 1	offsetToPointA (SIB1) [PRBs] Note 1
10	24	Downlink & Uplink	Low	3305.01	620334	3300.69	620046	0	30	7711	620352	18	0	2 (2)	4
			Mid	3750	650000	3708.96	647264	102		8020	650016	16	0	2 (2)	208
			High	4194.99	679666	4009.23	667282	504		8329	679680	14	0	2 (2)	1012
15	38	Downlink & Uplink	Low	3307.5	620500	3300.66	620044	0	30	7711	620352	20	0	2 (2)	4
			Mid	3750	650000	3706.44	647096	102		8018	649824	16	0	1 (1)	206
			High	4192.5	679500	4004.22	666948	504		8325	679296	12	0	0 (0)	1008
20	51	Downlink & Uplink	Low	3310.02	620668	3300.84	620056	0	30	7711	620352	8	0	2 (2)	4
			Mid	3750	650000	3704.1	646940	102		8016	649632	4	0	0 (0)	204
			High	4189.98	679332	3999.36	666624	504		8322	679008	0	0	2 (2)	1012
25	65	Downlink & Uplink	Low	3312.51	620834	3300.81	620054	0	30	7711	620352	10	0	2 (2)	4
			Mid	3750	650000	3701.58	646772	102		8015	649536	4	0	3 (3)	210
			High	4187.49	679166	3994.35	666290	504		8319	678720	22	0	3 (3)	1014
30	78	Downlink & Uplink	Low	3315	621000	3300.96	620064	0	30	7711	620352	0	0	2 (2)	4
			Mid	3750	650000	3699.24	646616	102		8013	649344	16	0	1 (1)	206
			High	4185	679000	3989.52	665968	504		8315	678336	8	0	1 (1)	1010
40	106	Downlink & Uplink	Low	3320.01	621334	3300.93	620062	0	30	7711	620352	2	0	2 (2)	4
			Mid	3750	650000	3694.2	646280	102		8010	649056	16	0	3 (3)	210
			High	4179.99	678666	3979.47	665298	504		8308	677664	6	0	1 (1)	1010
50	133	Downlink & Uplink	Low	3325.02	621668	3301.08	620072	0	30	7711	620352	16	0	1 (1)	2
			Mid	3750	650000	3689.34	645956	102		8006	648672	4	0	1 (1)	206
			High	4174.98	678332	3969.6	664640	504		8301	676992	16	0	0 (0)	1008
60	162	Downlink & Uplink	Low	3330	622000	3300.84	620056	0	30	7711	620352	8	0	2 (2)	4
			Mid	3750	650000	3684.12	645608	102		8003	648384	16	0	3 (3)	210
			High	4170	678000	3959.4	663960	504		8294	676320	0	0	1 (1)	1010
70	189	Downlink & Uplink	Low	3335.01	622334	3300.99	620066	0	30	7711	620352	22	0	1 (1)	2
			Mid	3750	650000	3679.26	645284	102		7999	648000	4	0	1 (1)	206
			High	4164.99	677666	3949.53	663302	504		8287	675648	10	0	0 (0)	1008
80	217	Downlink & Uplink	Low	3340.02	622668	3300.96	620064	0	30	7711	620352	0	0	2 (2)	4
			Mid	3750	650000	3674.22	644948	102		7996	647712	4	0	3 (3)	210
			High	4159.98	677332	3939.48	662632	504		8280	674976	8	0	0 (0)	1008
90	245	Downlink	Low	3345	623000	3300.9	620060	0	30	7711	620352	4	0	2 (2)	4

		& Uplink	Mid	3750	650000	3669.18	644612	102		7992	647328	4	0	1 (1)	206
			High	4155	677000	3929.46	661964	504		8273	674304	4	0	0 (0)	1008
100	273	Downlink & Uplink	Low	3350.01	623334	3300.87	620058	0	30	7711	620352	6	0	2 (2)	4
			Mid	3750	650000	3664.14	644276	102		7989	647040	4	0	3 (3)	210
			High	4149.99	676666	3919.41	661294	504		8266	673632	2	0	0 (0)	1008

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

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

**Table 4.3.1.1.1.77-3: Test frequencies for NR operating band n77, SCS 60 kHz and  $\Delta F_{\text{Raster}}$  30 kHz without CORESET#0**

CBW [MHz]	carrierBand width [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absoluteF requency PointA [ARFCN]	offsetToC arrier [PRBs]	SS block SCS [kHz]	GSCN	absoluteF requency SSB [ARFCN]
10	11	Downlink & Uplink	Low	3305.01	620334	3301.05	620070	0	30	-	620310
			Mid	3750	650000	3672.6	644840	102		-	649976
			High	4194.99	679666	3828.15	655210	504		-	679642
15	18	Downlink & Uplink	Low	3307.5	620500	3301.02	620068	0	30	-	620308
			Mid	3750	650000	3670.08	644672	102		-	649808
			High	4192.5	679500	3823.14	654876	504		-	679308
20	24	Downlink & Uplink	Low	3310.02	620668	3301.38	620092	0	30	-	620332
			Mid	3750	650000	3667.92	644528	102		-	649664
			High	4189.98	679332	3818.46	654564	504		-	678996
25	31	Downlink & Uplink	Low	3312.51	620834	3301.35	620090	0	30	-	620330
			Mid	3750	650000	3665.4	644360	102		-	649496
			High	4187.49	679166	3813.45	654230	504		-	678662
30	38	Downlink & Uplink	Low	3315	621000	3301.32	620088	0	30	-	620328
			Mid	3750	650000	3662.88	644192	102		-	649328
			High	4185	679000	3808.44	653896	504		-	678328
40	51	Downlink & Uplink	Low	3320.01	621334	3301.65	620110	0	30	-	620350
			Mid	3750	650000	3658.2	643880	102		-	649016
			High	4179.99	678666	3798.75	653250	504		-	677682
50	65	Downlink & Uplink	Low	3325.02	621668	3301.62	620108	0	30	-	620348
			Mid	3750	650000	3653.16	643544	102		-	648680
			High	4174.98	678332	3788.7	652580	504		-	677012
60	79	Downlink & Uplink	Low	3330	622000	3301.56	620104	0	30	-	620344
			Mid	3750	650000	3648.12	643208	102		-	648344

70	93	Uplink	High	4170	678000	3778.68	651912	504	30	-	676344
		Downlink & Uplink	Low	3335.01	622334	3301.53	620102	0		-	620342
			Mid	3750	650000	3643.08	642872	102		-	648008
			High	4164.99	677666	3768.63	651242	504		-	675674
80	107	Downlink & Uplink	Low	3340.02	622668	3301.5	620100	0	30	-	620340
			Mid	3750	650000	3638.04	642536	102		-	647672
			High	4159.98	677332	3758.58	650572	504		-	675004
			Low	3345	623000	3301.44	620096	0		30	-
Downlink & Uplink	Mid	3750	650000	3633	642200	102	-	647336			
	High	4155	677000	3748.56	649904	504	-	674336			
100	135	Downlink & Uplink	Low	3350.01	623334	3301.41	620094	0	30	-	620334
			Mid	3750	650000	3627.96	641864	102		-	647000
			High	4149.99	676666	3738.51	649234	504		-	673666

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

4.3.1.1.1.78 Reference test frequencies for NR operating band n78

**Table 4.3.1.1.1.78-1: Test frequencies for NR operating band n78, SCS 15 kHz and  $\Delta F_{\text{Raster}}$  15 kHz**

CBW [MHz]	carrierBandwidth [PRBs]	Range	Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequencyPointA [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS [kHz]	GSCN	absoluteFrequencySSB [ARFCN]	$k_{\text{SSB}}$	Offset Carrier CORESET#0 [RBs] Note 2	CORESET#0 Index (Offset [RBs]) Note 1	offsetToPointA (SIB1) [PRBs] Note 1	
10	52	Downlink & Uplink	Low	3305.01	620334	3300.33	620022	0	30	7711	620352	6	1	1 (6)	7
			Mid	3549.99	636666	3526.95	635130	102		7881	636672	6	0	1 (6)	108
			High	3795	653000	3699.6	646640	504		8051	652992	4	3	0 (2)	509
15	79	Downlink & Uplink	Low	3307.5	620500	3300.39	620026	0	30	7711	620352	2	1	1 (6)	7
			Mid	3549.99	636666	3524.52	634968	102		7879	636480	0	2	0 (2)	106
			High	3792.48	652832	3694.65	646310	504		8048	652704	10	2	1 (6)	512
20	106	Downlink & Uplink	Low	3310.02	620668	3300.48	620032	0	30	7711	620352	8	0	1 (6)	6
			Mid	3549.99	636666	3522.09	634806	102		7878	636384	6	3	1 (6)	111
			High	3789.99	652666	3689.73	645982	504		8044	652320	2	2	0 (2)	508
25	133	Downlink & Uplink	Low	3312.51	620834	3300.54	620036	0	30	7711	620352	4	0	1 (6)	6
			Mid	3549.99	636666	3519.66	634644	102		7876	636192	0	1	1 (6)	109
			High	3787.5	652500	3684.81	645654	504		8041	652032	6	1	1 (6)	511
30	160	Downlink & Uplink	Low	3315	621000	3300.6	620040	0	30	7711	620352	0	0	1 (6)	6
			Mid	3549.99	636666	3517.23	634482	102		7874	636000	6	2	0 (2)	106
			High	3784.98	652332	3679.86	645324	504		8037	651648	0	1	0 (2)	507
40	216	Downlink & Uplink	Low	3320.01	621334	3300.57	620038	0	30	7711	620352	2	0	1 (6)	6
			Mid	3549.99	636666	3512.19	634146	102		7871	635712	6	2	1 (6)	110
			High	3780	652000	3669.84	644656	504		8030	650976	8	0	0 (2)	506
50	270	Downlink & Uplink	Low	3325.02	621668	3300.72	620048	0	30	7711	620352	4	3	0 (2)	5
			Mid	3549.99	636666	3507.33	633822	102		7867	635328	6	1	0 (2)	105
			High	3774.99	651666	3659.97	643998	504		8024	650400	6	3	1 (6)	513

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

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

Table 4.3.1.1.1.78-2: Test frequencies for NR operating band n78, SCS 30 kHz and  $\Delta F_{\text{Raster}}$  30 kHz

CBW [MHz]	carrier Bandwidth [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absolute Frequency PointA [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS [kHz]	GSCN	absolute Frequency SSB [ARFCN]	$k_{\text{SSB}}$	Offset Carrier CORES ET#0 [RBs] Note 2	CORES ET#0 Index (Offset [RBs]) Note 1	offsetToPointA (SIB1) [PRBs] Note 1
10	24	Downlink & Uplink	Low	3305.01	620334	3300.69	620046	0	30	7711	620352	18	0	2 (2)	4
			Mid	3549.99	636666	3508.95	633930	102		7881	636672	6	0	2 (2)	208
			High	3795	653000	3609.24	640616	504		8051	652992	16	0	1 (1)	1010
15	38	Downlink & Uplink	Low	3307.5	620500	3300.66	620044	0	30	7711	620352	20	0	2 (2)	4
			Mid	3549.99	636666	3506.43	633762	102		7879	636480	6	0	1 (1)	206
			High	3792.48	652832	3604.2	640280	504		8048	652704	16	0	3 (3)	1014
20	51	Downlink & Uplink	Low	3310.02	620668	3300.84	620056	0	30	7711	620352	8	0	2 (2)	4
			Mid	3549.99	636666	3504.09	633606	102		7878	636384	18	0	3 (3)	210
			High	3789.99	652666	3599.37	639958	504		8044	652320	2	0	1 (1)	1010
25	65	Downlink & Uplink	Low	3312.51	620834	3300.81	620054	0	30	7711	620352	10	0	2 (2)	4
			Mid	3549.99	636666	3501.57	633438	102		7876	636192	18	0	2 (2)	208
			High	3787.5	652500	3594.36	639624	504		8041	652032	0	0	3 (3)	1014
30	78	Downlink & Uplink	Low	3315	621000	3300.96	620064	0	30	7711	620352	0	0	2 (2)	4
			Mid	3549.99	636666	3499.23	633282	102		7874	636000	6	0	1 (1)	206
			High	3784.98	652332	3589.5	639300	504		8037	651648	12	0	0 (0)	1008
40	106	Downlink & Uplink	Low	3320.01	621334	3300.93	620062	0	30	7711	620352	2	0	2 (2)	4
			Mid	3549.99	636666	3494.19	632946	102		7871	635712	6	0	3 (3)	210
			High	3780	652000	3579.48	638632	504		8030	650976	8	0	0 (0)	1008
50	133	Downlink & Uplink	Low	3325.02	621668	3301.08	620072	0	30	7711	620352	16	0	1 (1)	2
			Mid	3549.99	636666	3489.33	632622	102		7867	635328	18	0	0 (0)	204
			High	3774.99	651666	3569.61	637974	504		8024	650400	18	0	3 (3)	1014
60	162	Downlink & Uplink	Low	3330	622000	3300.84	620056	0	30	7711	620352	8	0	2 (2)	4
			Mid	3549.99	636666	3484.11	632274	102		7864	635040	6	0	3 (3)	210
			High	3769.98	651332	3559.38	637292	504		8016	649632	4	0	0 (0)	1008
70	189	Downlink & Uplink	Low	3335.01	622334	3300.99	620066	0	30	7711	620352	22	0	1 (1)	2
			Mid	3549.99	636666	3479.25	631950	102		7860	634656	18	0	0 (0)	204
			High	3765	651000	3549.54	636636	504		8010	649056	12	0	3 (3)	1014
80	217	Downlink & Uplink	Low	3340.02	622668	3300.96	620064	0	30	7711	620352	0	0	2 (2)	4
			Mid	3549.99	636666	3474.21	631614	102		7857	634368	18	0	2 (2)	208
			High	3759.99	650666	3539.49	635966	504		8003	648384	10	0	3 (3)	1014
90	245	Downlink	Low	3345	623000	3300.9	620060	0	30	7711	620352	4	0	2 (2)	4

100	273	& Uplink	Mid	3549.99	636666	3469.17	631278	102	30	7853	633984	18	0	0 (0)	204
			High	3754.98	650332	3529.44	635296	504		7996	647712	8	0	3 (3)	1014
		Downlink & Uplink	Low	3350.01	623334	3300.87	620058	0		7711	620352	6	0	2 (2)	4
			Mid	3549.99	636666	3464.13	630942	102		7850	633696	18	0	2 (2)	208
		High	3750	650000	3519.42	634628	504	7989		647040	4	0	3 (3)	1014	

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

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

**Table 4.3.1.1.1.78-3: Test frequencies for NR operating band n78, SCS 60 kHz and  $\Delta F_{\text{Raster}}$  30 kHz without CORESET#0.**

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



70	93	Uplink	High	3769.98	651332	3378.66	625244	504	30	-	649676
		Downlink & Uplink	Low	3335.01	622334	3301.53	620102	0		620342	
			Mid	3549.99	636666	3443.07	629538	102		634674	
80	107	Downlink & Uplink	High	3765	651000	3368.64	624576	504	30	-	649008
			Low	3340.02	622668	3301.5	620100	0		620340	
		Mid	3549.99	636666	3438.03	629202	102	634338			
90	121	Downlink & Uplink	High	3759.99	650666	3358.59	623906	504	30	-	648338
			Low	3345	623000	3301.44	620096	0		620336	
		Mid	3549.99	636666	3432.99	628866	102	634002			
100	135	Downlink & Uplink	High	3754.98	650332	3348.54	623236	504	30	-	647668
			Low	3350.01	623334	3301.41	620094	0		620334	
		Mid	3549.99	636666	3427.95	628530	102	633666			
			High	3750	650000	3338.52	622568	504		-	647000

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

4.3.1.1.1.79 Reference test frequencies for NR operating band n79

Table 4.3.1.1.1.79-1: Test frequencies for NR operating band n79, SCS 15 kHz and  $\Delta F_{\text{Raster}}$  15 kHz

CBW [MHz]	carrierBandwidth [PRBs]	Range	Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequencyPointA [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS [kHz]	GSCN	absoluteFrequencySSB [ARFCN]	$k_{SSB}$	Offset Carrier CORESET#0 [RBs] Note 2	CORESET#0 Index (Offset [RBs]) Note 1	offsetToPointA (SIB1) [PRBs] Note 1	
40	216	Downlink & Uplink	Low	4420.02	694668	4400.58	693372	0	30	8480	694176	0	43	0 (4)	47
			Mid	4699.98	713332	4662.18	710812	102		8672	712608	8	23	0 (4)	129
			High	4980	732000	4869.84	724656	504		8864	731040	0	4	0 (4)	512
50	270	Downlink & Uplink	Low	4425	695000	4400.7	693380	0	30	8480	694176	4	42	0 (4)	46
			Mid	4699.98	713332	4657.32	710488	102		8672	712608	8	50	0 (4)	156
			High	4974.99	731666	4859.97	723998	504		8864	731040	10	58	0 (4)	566

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

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

Table 4.3.1.1.1.79-2: Test frequencies for NR operating band n79, SCS 30 kHz and  $\Delta F_{\text{Raster}}$  30 kHz

CBW [MHz]	carrierBandwidth [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequencyPointA [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS [kHz]	GSCN	absoluteFrequencySSB [ARFCN]	$k_{\text{SSB}}$	Offset Carrier CORESET#0 [RBs] Note 2	CORESET#0 Index (Offset [RBs]) Note 1	offsetToPointA (SIB1) [PRBs] Note 1
40	106	Downlink & Uplink	Low	4420.02	694668	4400.94	693396	0	30	8480	694176	12	18	1 (4)	44
			Mid	4700.01	713334	4644.21	709614	102		8672	712608	18	8	1 (4)	228
			High	4980	732000	4779.48	718632	504		8864	731040	0	3	0 (0)	1014
50	133	Downlink & Uplink	Low	4425	695000	4401.06	693404	0	30	8480	694176	4	18	1 (4)	44
			Mid	4700.01	713334	4639.35	709290	102		8672	712608	6	22	1 (4)	256
			High	4974.99	731666	4769.61	717974	504		8864	731040	10	26	1 (4)	1068
60	162	Downlink & Uplink	Low	4430.01	695334	4400.85	693390	0	30	8480	694176	18	18	1 (4)	44
			Mid	4700.01	713334	4634.13	708942	102		8672	712608	18	36	1 (4)	284
			High	4969.98	731332	4759.38	717292	504		8864	731040	20	54	1 (4)	1124
80	217	Downlink & Uplink	Low	4440	696000	4400.94	693396	0	30	8480	694176	12	18	1 (4)	44
			Mid	4700.01	713334	4624.23	708282	102		8656	711072	6	0	1 (4)	212
			High	4959.99	730666	4739.49	715966	504		8848	729504	2	46	1 (4)	1108
100	273	Downlink & Uplink	Low	4450.02	696668	4400.88	693392	0	30	8480	694176	16	18	1 (4)	44
			Mid	4700.01	713334	4614.15	707610	102		8656	711072	6	28	1 (4)	268
			High	4950	730000	4719.42	714628	504		8832	727968	20	37	1 (4)	1090

Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-6 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcc-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.

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

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

CBW [MHz]	carrierBand width [PRBs]	Range	Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequencyPointA [ARFCN]	offsetToCarrier [PRBs]	SS block SCS [kHz]	GSCN	absoluteFrequencySSB [ARFCN]	
40	51	Downlink & Uplink	Low	4420.02	694668	4401.66	693444	0	30	-	693684
			Mid	4700.01	713334	4608.21	707214	102		-	712350
			High	4980	732000	4598.76	706584	504		-	731016
50	65	Downlink & Uplink	Low	4425	695000	4401.6	693440	0	30	-	693680
			Mid	4700.01	713334	4603.17	706878	102		-	712014
			High	4974.99	731666	4588.71	705914	504		-	730346
60	79	Downlink & Uplink	Low	4430.01	695334	4401.57	693438	0	30	-	693678
			Mid	4700.01	713334	4598.13	706542	102		-	711678
			High	4969.98	731332	4578.66	705244	504		-	729676
80	107	Downlink & Uplink	Low	4440	696000	4401.48	693432	0	30	-	693672
			Mid	4700.01	713334	4588.05	705870	102		-	711006
			High	4959.99	730666	4558.59	703906	504		-	728338
100	135	Downlink & Uplink	Low	4450.02	696668	4401.42	693428	0	30	-	693668
			Mid	4700.01	713334	4577.97	705198	102		-	710334
			High	4950	730000	4538.52	702568	504		-	727000

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Bandwidth [MHz]	carrierBand width [PRBs]	Range	Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequencyPointA [ARFCN]	offsetToCarrier [PRBs]	
5	25	Uplink	Low	705.5	141100	703.25	140650	0
			Mid	725.5	145100	632.53	126506	504
			High	745.5	149100	742.17	148434	6
10	52	Uplink	Low	708	141600	703.32	140664	0
			Mid	725.5	145100	630.1	126020	504
			High	743	148600	737.24	147448	6
15	79	Uplink	Low	710.5	142100	703.39	140678	0
			Mid	725.5	145100	627.67	125534	504
			High	740.5	148100	732.31	146462	6
20	106	Uplink	Low	713	142600	703.46	140692	0
			Mid	725.5	145100	625.24	125048	504
			High	738	147600	727.3	145476	6
30	160	Uplink	Low	718	143600	703.6	140720	0
(Note 1)			High	733	146600	717.52	143504	6

Note 1: No carrier centre frequency specified for Mid Range and CBW=30 MHz due to Note 7 in TS 38.101-1 [7], Table 5.3.5-1

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

Bandwidth [MHz]	carrierBand width [PRBs]	Range	Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequencyPointA [ARFCN]	offsetToCarrier [PRBs]	
10	24	Uplink	Low	708	141600	703.68	140736	0
			Mid	725.5	145100	539.7	107948	504
			High	743	148600	736.52	147304	6
15	38	Uplink	Low	710.5	142100	703.66	140732	0
			Mid	725.5	145100	537.22	107444	504
			High	740.5	148100	731.5	146300	6
20	51	Uplink	Low	713	142600	703.82	140764	0
			Mid	725.5	145100	534.88	106976	504
			High	738	147600	726.66	145332	6
30	78	Uplink	Low	718	143600	703.96	140792	0
(Note 2)			High	733	146600	716.8	143360	6

Note 2: No carrier centre frequency specified for Mid Range and CBW=30 MHz due to Note 7 in TS 38.101-1 [7], Table 5.3.5-1

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

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

Bandwidth [MHz]	carrierBand width [PRBs]	Range	Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequencyPointA [ARFCN]	offsetToCarrier [PRBs]	
5	25	Uplink	Low	1922.5	384500	1920.25	384050	0
			Mid	1950	390000	1857.03	371406	504
			High	1977.5	395500	1974.17	394834	6
10	52	Uplink	Low	1925	385000	1920.32	384064	0
			Mid	1950	390000	1854.6	370920	504
			High	1975	395000	1969.24	393848	6
15	79	Uplink	Low	1927.5	385500	1920.39	384078	0
			Mid	1950	390000	1852.17	370434	504
			High	1972.5	394500	1964.31	392862	6
20	106	Uplink	Low	1930	386000	1920.46	384092	0
			Mid	1950	390000	1849.74	369948	504
			High	1970	394000	1959.38	391876	6
25	133	Uplink	Low	1932.5	386500	1920.53	384106	0
			Mid	1950	390000	1847.31	369462	504
			High	1967.5	393500	1954.45	390890	6
30	160	Uplink	Low	1935	387000	1920.6	384120	0
			Mid	1950	390000	1844.88	368976	504
			High	1965	393000	1949.52	389904	6
40	216	Uplink	Low	1940	388000	1920.56	384112	0
			Mid	1950	390000	1839.84	367968	504
			High	1960	392000	1939.48	387896	6
50	270	Uplink	Low	1945	389000	1920.7	384140	0
			Mid	1950	390000	1834.98	366996	504
			High	1955	391000	1929.62	385924	6



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

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

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

Bandwidth [MHz]	carrierBand width [PRBs]	Range	Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequencyPointA [ARFCN]	offsetToCarrier [PRBs]	
10	11	Uplink	Low	1925	385000	1921.04	384208	0
			Mid	1950	390000	1583.16	316632	504
			High	1975	395000	1966.72	393344	6
15	18	Uplink	Low	1927.5	385500	1921.02	384204	0
			Mid	1950	390000	1580.64	316128	504
			High	1972.5	394500	1961.7	392340	6
20	24	Uplink	Low	1930	386000	1921.36	384272	0
			Mid	1950	390000	1578.48	315696	504
			High	1970	394000	1957.04	391408	6
25	31	Uplink	Low	1932.5	386500	1921.34	384268	0
			Mid	1950	390000	1575.96	315192	504
			High	1967.5	393500	1952.02	390404	6
30	38	Uplink	Low	1935	387000	1921.32	384264	0
			Mid	1950	390000	1573.44	314688	504
			High	1965	393000	1947	389400	6
40	51	Uplink	Low	1940	388000	1921.64	384328	0
			Mid	1950	390000	1568.76	313752	504
			High	1960	392000	1937.32	387464	6
50	65	Uplink	Low	1945	389000	1921.6	384320	0
			Mid	1950	390000	1563.72	312744	504
			High	1955	391000	1927.28	385456	6

4.3.1.1.1.85 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]	carrierBand width [PRBs]	Range	Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absolut eFrequencyPointA [ARFCN]	offsetToCarrier [PRBs]	
5	25	Uplink	Low	1712.5	342500	1710.25	342050	0
			Mid	1745	349000	1652.03	330406	504
			High	1777.5	355500	1774.17	354834	6
10	52	Uplink	Low	1715	343000	1710.32	342064	0
			Mid	1745	349000	1649.6	329920	504
			High	1775	355000	1769.24	353848	6
15	79	Uplink	Low	1717.5	343500	1710.39	342078	0
			Mid	1745	349000	1647.17	329434	504
			High	1772.5	354500	1764.31	352862	6
20	106	Uplink	Low	1720	344000	1710.46	342092	0
			Mid	1745	349000	1644.74	328948	504
			High	1770	354000	1759.38	351876	6
40	216	Uplink	Low	1730	346000	1710.56	342112	0
			Mid	1745	349000	1634.84	326968	504
			High	1760	352000	1739.48	347896	6

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

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

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

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

4.3.1.1.1.87 to 4.3.1.1.1.94 FFS

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

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

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

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

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

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

CBW [MHz]	carrierBand width [PRBs]	Range	Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequencyPointA [ARFCN]	offsetToCarrier [PRBs]	
10	11	Uplink	Low	2015	403000	2011.04	402208	0
			Mid	2017.5	403500	1650.66	330132	504
			High	2020	404000	2011.72	402344	6
15	18	Uplink	Low, Mid, High	2017.5	403500	2011.02	402204	0

4.3.1.1.1.96 FFS

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

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

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

Table 4.3.1.1.1.97-2: Test frequencies for NR operating band n97 and SCS 30 kHz

CBW [MHz]	carrierBandwidth [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequencyPointA [ARFCN]	offsetToCarrier [Carrier PRBs]
10	24	Uplink	Low	2305	461000	2300.68	460136	0
			Mid	2350	470000	2308.96	461792	102
			High	2395	479000	2209.24	441848	504
15	38	Uplink	Low	2307.5	461500	2300.66	460132	0
			Mid	2350	470000	2306.44	461288	102
			High	2392.5	478500	2204.22	440844	504
20	51	Uplink	Low	2310	462000	2300.82	460164	0
			Mid	2350	470000	2304.1	460820	102
			High	2390	478000	2199.38	439876	504
25	65	Uplink	Low	2312.5	462500	2300.8	460160	0
			Mid	2350	470000	2301.58	460316	102
			High	2387.5	477500	2194.36	438872	504
30	78	Uplink	Low	2315	463000	2300.96	460192	0
			Mid	2350	470000	2299.24	459848	102
			High	2385	477000	2189.52	437904	504
40	106	Uplink	Low	2320	464000	2300.92	460184	0
			Mid	2350	470000	2294.2	458840	102
			High	2380	476000	2179.48	435896	504
50	133	Uplink	Low	2325	465000	2301.06	460212	0
			Mid	2350	470000	2289.34	457868	102
			High	2375	475000	2169.62	433924	504
60	162	Uplink	Low	2330	466000	2300.84	460168	0
			Mid	2350	470000	2284.12	456824	102
			High	2370	474000	2159.4	431880	504
70	189	Uplink	Low	2335	467000	2300.98	460196	0
			Mid	2350	470000	2279.26	455852	102
			High	2365	473000	2149.54	429908	504
80	217	Uplink	Low	2340	468000	2300.94	460188	0
			Mid	2350	470000	2274.22	454844	102
			High	2360	472000	2139.5	427900	504
90	245	Uplink	Low	2345	469000	2300.9	460180	0
			Mid	2350	470000	2269.18	453836	102
			High	2355	471000	2129.46	425892	504
100	273	Uplink	Low	2350	470000	2300.86	460172	0
			Mid	2350	470000	2264.14	452828	102
			High	2350	470000	2119.42	423884	504

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

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

4.3.1.1.1.98 FFS

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

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

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

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

UL CBW [MHz]	carrier Bandwidth [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absolute Frequency PointA [ARFCN]	offsetToCarrier [Carrier PRBs]
10	24	Uplink	Low	1632.5	326500	1627.82	325564	0
			Mid					
			High					

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

UL CBW [MHz]	carrier Bandwidth [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absolute Frequency PointA [ARFCN]	offsetToCarrier [Carrier PRBs]
10	11	Uplink	Low	1632.5	326500	1628.54	325708	0
			Mid					
			High					

## 4.3.1.1.2 NR inter-band CA configurations in FR1

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

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

NR CA configuration	Uplink NR CA configuration	NR CA downlink configuration band 1 (Note 3)	NR CA downlink configuration band 2	NR CA uplink configuration band 1	NR CA uplink configuration band 2	Applicable for protocol testing (Note 2)
CA_n1A-n3A	CA_n1A-n3A	n1A	n3A	n1A	n3A	Yes
CA_n1A-n8A	CA_n1A-n8A	n1A	n8A	n1A	n8A	Yes
CA_n1(2A)-n3A	-	CA_n1(2A)	n3A	n1A	n3A	No
CA_n1(2A)-n5A	-	CA_n1(2A)	n5A	-	-	No
CA_n1(2A)-n8A	-	CA_n1(2A)	n8A	-	-	No
CA_n1A-n77A	-	n1A	n77A	-	-	Yes
CA_n1A-n78A	CA_n1A-n78A	n1A	n78A	n1A	n78A	Yes
CA_n1A-n78(2A)	CA_n1A-n78A	n1A	CA_n78(2A)	n1A	n78A	No
CA_n1A-n78C	CA_n1A-n78A	n1A	CA_n78C	n1A	n78A	No
CA_n1(2A)-n78A	-	CA_n1(2A)	n78A	-	-	No
CA_n1A-n79A	CA_n1A-n79A	n1A	n79A	n1A	n79A	Yes
CA_n2A-n5A	CA_n2A-n5A	n2A	n5A	n2A	n5A	Yes
CA_n2A-n48A	CA_n2A-n48A	n2A	n48A	n2A	n48A	Yes
CA_n2A-n66A	CA_n2A-n66A	n2A	n66A	n2A	n66A	Yes
CA_n2A-n77A	CA_n2A-n77A	n2A	n77A	n2A	n77A	Yes
CA_n3A-n5A	CA_n3A-n5A	n3A	n5A	n3A	n5A	Yes
CA_n3(2A)-n5A	-	CA_n3(2A)	n5A	-	-	No
CA_n3(2A)-n8A	-	CA_n3(2A)	n8A	-	-	No
CA_n3A-n41A	CA_n3A-n41A	n3A	n41A	n3A	n41A	Yes
CA_n3A-n77A	-	n3A	n77A	-	-	Yes
CA_n3A-n78A	CA_n3A-n78A	n3A	n78A	n3A	n78A	Yes
CA_n3A-n78(2A)	CA_n3A-n78A	n3A	CA_n78(2A)	n3A	n78A	No
	CA_n78(2A)	n3A	CA_n78(2A)	-	CA_n78(2A)	No
CA_n3(2A)-n78A	-	CA_n3(2A)	n78A	-	-	No
CA_n3A-n79A	CA_n3A-n79A	n3A	n79A	n3A	n79A	Yes
CA_n5A-n7A	-	n5A	n7A	-	-	Yes
CA_n5A-n48A	CA_n5A-n48A	n5A	n48A	n5A	n48A	Yes
CA_n5A-n66A	CA_n5A-n66A	n5A	n66A	n5A	n66A	Yes



NR CA configuration	Uplink NR CA configuration	NR CA downlink configuration band 1 (Note 3)	NR CA downlink configuration band 2	NR CA uplink configuration band 1	NR CA uplink configuration band 2	Applicable for protocol testing (Note 2)
CA_n5A-n78A	-	n5A	n78A	-	-	Yes
CA_n5A-n78(2A)	CA_n5A-n78A	n5A	CA_n78(2A)	n5A	n78A	No
CA_n7A-n78A	-	n7A	n78A	-	-	Yes
CA_n8A-n75A	-	n8A	n75A	-	-	Yes
CA_n8A-n78A	CA_n8A-n78A	n8A	n78A	n8A	n78A	Yes
CA_n8A-n78(2A)	CA_n8A-n78A	n8A	CA_n78(2A)	n8A	CA_n78(2A)	No
CA_n8A-n79A	CA_n8A-n79A	n8A	n79A	n8A	n79A	Yes
CA_n24A-n41A	CA_n24A-n41A	n24A	n41A	n24A	n41A	Yes
CA_n24A-n41(2A)	CA_n24A-n41A	n24A	CA_n41(2A)	n24A	n41A	No
CA_n24A-n48A	CA_n24A-n48A	n24A	n48A	n24A	n48A	Yes
CA_n24A-n48B	CA_n24A-n48A	n24A	CA_n48B	n24A	n48A	No
CA_n24A-n48(2A)	CA_n24A-n48A	n24A	CA_n48(2A)	n24A	n48A	No
CA_n24A-n77A	CA_n24A-n77A	n24A	n77A	n24A	n77A	Yes
CA_n24A-n77C	CA_n24A-n77A	n24A	CA_n77C	n24A	n77A	No
CA_n26A-n66A	CA_n26A-n66A	n26A	n66A	n26A	n66A	Yes
CA_n26A-n66(2A)	CA_n26A-n66A	n26A	CA_n66(2A)	n26A	n66A	No
CA_n26A-n70A	CA_n26A-n70A	n26A	n70A	n26A	n70A	Yes
CA_n28A-n41A	CA_n28A-n41A	n28A	n41A	n28A	n41A	Yes
CA_n28A-n75A	-	n28A	n75A	-	-	Yes
CA_n28A-n78A	CA_n28A-n78A	n28A	n78A	n28A	n78A	Yes
CA_n28A-n79A	CA_n28A-n79A	n28A	n79A	n28A	n79A	Yes
CA_n29A-n66A	-	n29A	n66A (Note 1)	-	-	Yes
CA_n29B-n66B	-	n29A	CA_n66B (Note 1)	-	-	No
CA_n29A-n66(2A)	-	n29A	CA_n66(2A) (Note 1)	-	-	No
CA_n29A-n70A	-	n29A	n70A (Note 1)	-	-	Yes
CA_n29A-n71A	-	n29A	n71A (Note 1)	-	-	Yes
CA_n41A-n78A	-	n41A	n78A	-	-	Yes
CA_n41A-n79A	CA_n41A-n79A	n41A	n79A	n41A	n79A	Yes
CA_n41C-n79A	CA_n41A-n79A	CA_n41C	n79A	n41A	n79A	No
	CA_n41C	CA_n41C	n79A	CA_n41C	-	No
CA_n48A-n66A	CA_n48A-n66A	n48A	n66A	n48A	n66A	Yes

NR CA configuration	Uplink NR CA configuration	NR CA downlink configuration band 1 (Note 3)	NR CA downlink configuration band 2	NR CA uplink configuration band 1	NR CA uplink configuration band 2	Applicable for protocol testing (Note 2)
CA_n48A-n66(2A)	CA_n48A-n66A	n48A	CA_n66(2A)	n48A	n66A	No
CA_n48A-n70A	CA_n48A-n70A	n48A	n70A	n48A	n70A	Yes
CA_n48A-n71A	CA_n48A-n71A	n48A	n71A	n48A	n71A	Yes
CA_n48A-n71(2A)	CA_n48A-n71A	n48A	CA_n71(2A)	n48A	n71A	No
CA_n48B-n66A	CA_n48A-n66A	CA_n48B	n66	n48A	n66A	No
CA_n48B-n70A	CA_n48A-n70A	CA_n48B	n70A	n48A	n70A	No
CA_n48B-n71A	CA_n48A-n71A	CA_n48B	n71A	n48A	n71A	No
CA_n48(2A)-n66A	CA_n48A-n66A	CA_n48(2A)	n66	n48A	n66A	No
CA_n48(2A)-n70A	CA_n48A-n70A	CA_n48(2A)	n70A	n48A	n70A	No
CA_n48(2A)-n71A	CA_n48A-n71A	CA_n48(2A)	n71A	n48A	n71A	No
CA_n66A-n70A	-	n66A	n70A	-	-	Yes
CA_n66B-n70A	-	CA_n66B	n70A	-	-	No
CA_n66(2A)-n70A	-	CA_n66(2A)	n70A	-	-	No
CA_n66A-n71A	CA_n66A-n71A	n66A	n71A	n66A	n71A	Yes
CA_n66A-n71(2A)	CA_n66A-n71A	n66A	CA_n71(2A)	n66A	n71A	No
CA_n66B-n71A	CA_n66A-n71A	CA_n66B	n71A	n66A	n71A	No
CA_n66(2A)-n71A	CA_n66A-n71A	CA_n66(2A)	n71A	n66A	n71A	No
CA_n66(2A)-n71(2A)	CA_n66A-n71A	CA_n66(2A)	CA_n71(2A)	n66A	n71A	No
CA_n70A-n71A	CA_n70A-n71A	n70A	n71A	n70A	n71A	Yes
CA_n70A-n71(2A)	CA_n70A-n71A	n70A	CA_n71(2A)	n70A	n71A	No
CA_n75A-n78A	-	n75A	n78A (Note 1)	-	-	Yes
CA_n76A-n78A	-	n76A	n78A (Note 1)	-	-	Yes
CA_n77A-n79A	-	n77A	n79A	-	-	Yes
CA_n78A-n79A	-	n78A	n79A	-	-	Yes
Note 1: This band is used as PCell.						
Note 2: Protocol testing is limited to NR CA configurations with 2CC.						
Note 3: PCell is configured on this band unless otherwise stated.						

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

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

NR CA configuration (Note 3)	Uplink NR CA configuration	NR CA downlink configuration band 1 (Note 4)	NR CA downlink configuration band 2	NR CA downlink configuration band 3	NR CA uplink configuration on band 1	NR CA uplink configuration on band 2	NR CA uplink configuration on band 3	Applicable for protocol testing (Note 2)
CA_n26A-n66A-n70A	CA_n26A-n66A	n26A	n66A	n70A	n26A	n66A	-	No
	CA_n26A-n70A	n26A	n66A	n70A	n26A	-	n70A	No
CA_n29A-n66A-n70A	-	n29A (Note1)	n66A	n70A	-	-	-	No
CA_n29A-n66B-n70A	-	n29A (Note1)	CA_n66B	n70A	-	-	-	No
CA_n29A-n66(2A)-n70A	-	n29A (Note1)	CA_n66(2A)	n70A	-	-	-	No
CA_n48A-n66A-n70A	CA_n48A-n66A	n48A	n66A	n70A	n48A	n66A	-	No
	CA_n48A-n70A	n48A	n66A	n70A	n48A	-	n70A	No
CA_n48A-n66A-n71A	CA_n48A-n66A	n48A	n66A	n71A	n48A	n66A	-	No
	CA_n48A-n71A	n48A	n66A	n71A	n48A	-	n71A	No
	CA_n66A-n71A	n48A	n66A	n71A	-	n66A	n71A	No
CA_n48A-n70A-n71A	CA_n48A-n70A	n48A	n70A	n71A	n48A	n70A	-	No
	CA_n48A-n71A	n48A	n70A	n71A	n48A	-	n71A	No
	CA_n70A-n71A	n48A	n70A	n71A	-	n70A	n71A	No
CA_n66A-n70A-n71A	CA_n66A-n71A	n66A	n70A	n71A	n66A	-	n71A	No
	CA_n70A-n71A	n66A	n70A	n71A	-	n70A	n71A	No
CA_n66A-n70A-n71(2A)	CA_n66A-n71A	n66A	n70A	CA_n71(2A)	n66A	-	n71A	No
	CA_n70A-n71A	n66A	n70A	CA_n71(2A)	-	n70A	n71A	No
CA_n66B-n70A-n71A	CA_n66A-n71A	CA_n66B	n70A	n71A	n66A	-	n71A	No
	CA_n70A-n71A	CA_n66B	n70A	n71A	-	n70A	n71A	No
CA_n66(2A)-n70A-n71A	CA_n66A-n71A	CA_n66(2A)	n70A	n71A	n66A	-	n71A	No
	CA_n70A-n71A	CA_n66(2A)	n70A	n71A	-	n70A	n71A	No

Note 1: This band cannot be used as PCell.  
 Note 2: Protocol testing is limited to NR CA configurations with 3CC.  
 Note 3: The band with the lowest UL frequency is used as PCell if nothing else is specified for in the table or in the test case for the specific configuration.  
 Note 4: PCell is configured on this band unless otherwise stated.

4.3.1.1.3 NR intra-band contiguous CA in FR1

4.3.1.1.3.1 – 4.3.1.1.3.39 FFS

4.3.1.1.3.40 NR Intra-band contiguous configurations CA\_n40

4.3.1.1.3.40.1 CA\_n40B

Editor's note: Test frequencies for CA\_n40B with mixed numerology with SCS CC1=15 kHz and SCS CC2=30 kHz or 60 kHz; and SCS CC1=30 kHz and SCS CC2= 15 kHz or 60kHz is FFS.

Table 4.3.1.1.3.40.1-1: NR Intra-Band contiguous CA configuration CA\_n40B (PCC=CC1 and SCC=CC2), CC1 SCS = 15kHz, CC2 SCS = 15kHz

CBW combination [MHz]	C C Note 2	C B W [MHz]	S C [kHz]	carrierBandwidth [PRBs]	Range		Carrier centre [MHz] Note 2	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequencyPointA [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS [kHz]	GS CN	absoluteFrequencySSB [ARFCN]	k <sub>SSE</sub>	Offset carrier CORESET#0 [RBs] Note 3	CORESET#0 Index (Offset [RBs]) Note 4	offsetToPointA (SIB1) [PRBs] Note 4
					Downlink & Uplink	Low Mid High												
50+50	C C1	50	15	270	Downlink & Uplink	Low	2325	465000	2300.7	460140	0	30	5763	461070	10	3	0 (2)	5
						Mid												
						High	2325.2	465040	2210.18	442036	504		5762	461050	2	2	0 (2)	508
	Channel spacing CC1-CC2=49.8 MHz (Note 1)																	
C C2	50	15	270	Downlink & Uplink	Low	2374.8	474960	2350.5	470100	0	30	5886	470910	6	0	0 (2)	2	
					Mid													
					High	2375	475000	2259.98	451996	504		5888	471130	6	1	1 (6)	511	

Note 1: Corresponds to nominal channel spacing in accordance with TS 38.101-1 [7], clause 5.4A.1 for the CC1 and CC2 channel bandwidth combination.  
 Note 2: CCs are specified in increasing frequency order. CC1 is used as PCell if nothing else is specified in the test case.  
 Note 3: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter  $\Delta F_{\text{OffsetCORESET-0-Carrier}}$  in Annex C expressed in number of common RBs.

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

Table 4.3.1.1.3.40.1-2: NR Intra-Band contiguous CA configuration CA\_n40B (PCC=CC1 and SCC=CC2), CC1 SCS = 30kHz, CC2 SCS = 30kHz

CBW combination [MHz]	CC Note 2	CBW [MHz]	SCS [kHz]	carrierBandwidth [PRBs]	Range	Carrier centre [MHz] Note 2	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequencyPointA [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS [kHz]	GS CN	absoluteFrequencySSB [ARFCN]	$k_{SSE}$	Offset carrier CORESET#0 [RBs] Note 3	CORESET#0 Index (Offset [RBs]) Note 4	offsetToPointA (SIB1) [PRBs] Note 4
20+80	CC1	20	30	51	Downlink & Uplink	Low	2310	4620	2300.82	460164	0	30	5763	14	0	2 (2)	4
						Mid											
						High	2310.2	462040	2119.58	423916	504		5762	18	0	1 (1)	1010
	Channel spacing CC1-CC2=49.8 MHz (Note 1)																
CC2	80	30	217	Downlink & Uplink	Low	2359.8	471960	2320.74	464148	0	30	5811	14	0	0 (0)	0	
					Mid												
					High	2360	472000	2139.5	427900	504		5813	2	0	3 (3)	1014	
50+50	CC1	50	30	133	Downlink & Uplink	Low	2325	465000	2301.06	460212	0	30	5763	22	0	1 (1)	2
						Mid											
						High	2325.2	465040	2119.82	423964	504		5762	2	0	1 (1)	1010
	Channel spacing CC1-CC2=49.8 MHz (Note 1)																
CC2	50	30	133	Downlink & Uplink	Low	2374.8	474960	2350.86	470172	0	30	5886	6	0	0 (0)	0	
					Mid												
					High	2375	475000	2169.62	433924	504		5888	18	0	2 (2)	1012	

80+20	C C1	80	30	217	Down link &	Lo w	234 0	4680 00	2300 .94	460188	0	30	576 3	461070	6	0	2 (2)	4
					Mid													
	Uplink	Hi gh	234 0.2	4680 40	2119 .7	423940	504		576 2	461050	10	0	1 (1)	1010				
	Channel spacing CC1-CC2=49.8 MHz (Note 1)																	
C C2	20	30	51	Down link &	Lo w	238 9.8	4779 60	2380 .62	476124	0	30	596 1	476910	22	0	0 (0)	0	
				Uplink	Hi gh	239 0	4780 00	2199 .38	439876	504			596 0	476890	2	0	0 (0)	1008
<p>Note 1: Corresponds to nominal channel spacing in accordance with TS 38.101-1 [7], clause 5.4A.1 for the CC1 and CC2 channel bandwidth combination.</p> <p>Note 2: CCs are specified in increasing frequency order. CC1 is used as PCell if nothing else is specified in the test case.</p> <p>Note 3: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter <math>\Delta F_{\text{OffsetCORESET-0-Carrier}}</math> in Annex C expressed in number of common RBs.</p> <p>Note 4: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-4 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.</p>																		

4.3.1.1.3.41 NR Intra-band contiguous configurations CA\_n41

4.3.1.1.3.41.1 CA\_n41C

Editor's note: Test frequencies for CA\_n41C with mixed numerology with SCS CC1=15 kHz and SCS CC2=30 kHz or 60 kHz; and SCS CC1=30 kHz and SCS CC2= 30 kHz or 60kHz is FFS.

Table 4.3.1.1.3.41.1-1: NR Intra-Band contiguous CA configuration CA\_n41C (PCC=CC1 and SCC=CC2), CC1 SCS = 30kHz, CC2 SCS = 30 kHz

CBW combination	CC Note 2	CBW [MHz]	SCS [kHz]	carrierBandwidth [PRBs]	Range	Carrier centre [MHz] Note 2	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequencyPointA [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS [kHz]	GS CN	absoluteFrequencySSB [ARFCN]	$k_{SSE}$	carrier CORESET#0 [RBs] Note 3	CORESET#0 Index (Offset [RBs]) Note 4	offsetToPointA (SIB1) [PRBs] Note 4	
40+80	CC1	40	30	106	Downlink &	Low	2516.02	2496.93	499386	0	30	625.2	500190	4	0	1 (1)	2	
						Mid	2553.00	2497.2	499440	102			634.5	507630	18	0	1 (1)	206
					Uplink	High	2590.17	2389.65	477930	504			643.8	515070	20	0	1 (1)	1010
	Channel spacing CC1-CC2=59.82 MHz (Note 1)																	
	CC2	80	30	217	Downlink &	Low	2575.83	2536.77	507354	0	30	635.1	508110	12	0	0 (0)	0	
						Mid	2612.82	2537.04	507408	102			644.4	515550	2	0	1 (1)	206
Uplink					High	2649.99	2429.49	485898	504	653.7			522990	4	0	1 (1)	1010	
Channel spacing CC1-CC2=59.82 MHz (Note 1)																		
40+100	CC1	40	30	106	Downlink &	Low	2516.02	2496.93	499386	0	30	625.2	500190	4	0	1 (1)	2	
						Mid	2543.02	2487.21	497442	102			632.1	505710	20	0	2 (2)	208
					Uplink	High	2570.28	2369.76	473952	504			638.7	510990	10	0	0 (0)	1008
	Channel spacing CC1-CC2=69.72 MHz (Note 1)																	
	CC2	100	30	273	Downlink &	Low	2585.73	2536.59	507318	0	30	635.1	508110	0	0	1 (1)	2	
						Mid	2612.73	2526.87	505374	102			642.0	513630	16	0	2 (2)	208

50+60	C C1	50	30	133	Uplink	High	2640	5280	2409	481884	504	30	648	518910	6	0	0 (0)	1008						
					Downlink &	Low	2521	5042	2497	499416	0		625	500190	18	0	0 (0)	0						
						Mid	2562	5125	2502	500466	102		635	508590	20	0	0 (0)	204						
					Uplink	High	2605	5210	2399	479928	504		646	516990	18	0	0 (0)	1008						
Channel spacing CC1-CC2=54.96 MHz (Note 1)																								
50+80	C C2	60	30	162	Downlink &	Low	2575	5151	2546	509364	0	30	637	510270	14	0	2 (2)	4						
						Mid	2617	5235	2552	510414	102		648	518670	16	0	2 (2)	208						
					Uplink	High	2659	5319	2449	489876	504		658	527070	14	0	2 (2)	1012						
						Downlink &	Low	2521	5042	2497	499416		0	625	500190	18	0	0 (0)	0					
50+80	C C1	50	30	133	Downlink &	Mid	2553	5106	2492	498468	102	30	633	506670	22	0	1 (1)	206						
						Uplink	High	2585	5170	2379	475950		504	641	513150	16	0	2 (2)	1012					
					Channel spacing CC1-CC2=64.86 MHz (Note 1)																			
					C C2	80	30	217	Downlink &	Low	2585		5171	2546	509364	0	30	637	510270	14	0	2 (2)	4	
Mid	2617	5235	2542	508416						102	645	516510	10	0	0 (0)	204								
Uplink	High	2649	5299	2429					485898	504	653	522990	4	0	1 (1)	1010								
50+100	C C1	50	30	133	Downlink &	Low	2521	5042	2497	499416	0	30	625	500190	18	0	0 (0)	0						
						Mid	2543	5086	2482	496470	102		630	504750	0	0	3 (3)	210						
					Uplink	High	2565	5130	2359	471972	504		636	509070	6	0	1 (1)	1010						
						Channel spacing CC1-CC2=74.76 MHz (Note 1)																		
C C2	100	30	273	Downlink &	Low	2595	5191	2546	509328	0	30	637	510270	2	0	3(3)	6							
					Mid	2617	5235	2531	506382	102		643	514590	0	0	2(2)	208							
				Uplink	High	2640	5280	2409	481884	504		648	518910	6	0	0(0)	1008							



60+50	C C1	60	30	162	Down link &	Lo w	2526	5052 00	2496 .84	499368	0	30	625 2	500190	10	0	1 (1)	2
						Mi d	2568	5136 00	2502 .12	500424	102		635 7	508590	10	0	1 (1)	206
					Uplin k	Hi gh	2610 .03	5220 06	2399 .43	479886	504		646 2	516990	8	0	1 (1)	1010
	Channel spacing CC1-CC2=54.96 MHz (Note 1)																	
C C2	50	30	133	Down link &	Lo w	2580 .96	5161 92	2557 .02	511404	0	30	640 2	512190	22	0	0 (0)	0	
					Mi d	2622 .96	5245 92	2562 .3	512460	102		650 7	520590	22	0	0 (0)	204	
				Uplin k	Hi gh	2664 .99	5329 98	2459 .61	491922	504		661 2	528990	20	0	0 (0)	1008	
60+60	C C1	60	30	162	Down link &	Lo w	2526	5052 00	2496 .84	499368	0	30	625 2	500190	10	0	1 (1)	2
						Mi d	2562 .99	5125 98	2497 .11	499422	102		634 5	507630	0	0	2 (2)	208
					Uplin k	Hi gh	2599 .98	5199 96	2389 .38	477876	504		643 8	515070	14	0	2 (2)	1012
	Channel spacing CC1-CC2=60 MHz (Note 1)																	
C C2	60	30	162	Down link &	Lo w	2586	5172 00	2556 .84	511368	0	30	640 2	512190	10	0	1 (1)	2	
					Mi d	2622 .99	5245 98	2557 .11	511422	102		649 5	519630	0	0	2 (2)	208	
				Uplin k	Hi gh	2659 .98	5319 96	2449 .38	489876	504		658 8	527070	14	0	2 (2)	1012	
60+80	C C1	60	30	162	Down link &	Lo w	2526	5052 00	2496 .84	499368	0	30	625 2	500190	10	0	1 (1)	2
						Mi d	2553	5106 00	2487 .12	497424	102		632 1	505710	2	0	3 (3)	210
					Uplin k	Hi gh	2580 .09	5160 18	2369 .49	473898	504		638 7	510990	4	0	1 (1)	1010
	Channel spacing CC1-CC2=69.9 MHz (Note 1)																	
C C2	80	30	217	Down link &	Lo w	2595 .9	5191 80	2556 .84	511368	0	30	640 2	512190	10	0	1 (1)	2	
					Mi d	2622 .9	5245 80	2547 .12	509424	102		647 1	517710	2	0	3 (3)	210	
				Uplin k	Hi gh	2649 .99	5299 98	2429 .49	485898	504		653 7	522990	4	0	1 (1)	1010	
60+100	C C1	60	30	162	Down link	Lo w	2526	5052 00	2496 .84	499368	0	30	625 2	500190	10	0	1 (1)	2

					&	Mid	2543.01	508602	2477.13	495426	102		6294	503550	20	0	0 (0)	204
					Uplink	High	2560.2	512040	2349.6	469920	504		6339	507150	2	0	3 (3)	1014
Channel spacing CC1-CC2=79.8 MHz (Note 1)																		
	C C2	100	30	273	Downlink &	Low	2605.8	521160	2556.66	511332	0	30	6402	512190	22	0	1 (1)	2
						Mid	2622.81	524562	2536.95	507390	102		6444	515550	8	0	1 (1)	206
					Uplink	High	2640.00	528000	2409.42	481884	504		6486	518910	6	0	0 (0)	1008
80+40	C C1	80	30	217	Downlink &	Low	2536.02	507204	2496.96	499392	0	30	6252	500190	2	0	1 (1)	2
						Mid	2573.01	514602	2497.23	499446	102		6345	507630	16	0	1 (1)	206
					Uplink	High	2610.18	522036	2389.68	477936	504		6438	515070	18	0	1 (1)	1010
Channel spacing CC1-CC2=59.82 MHz (Note 1)																		
	C C2	40	30	106	Downlink &	Low	2595.84	519168	2576.76	515352	0	30	6453	516270	18	0	2 (2)	4
						Mid	2632.83	526566	2577.03	515406	102		6543	523470	0	0	0 (0)	204
					Uplink	High	2670.00	534000	2469.48	493896	504		6636	530910	2	0	0 (0)	1008
80+50	C C1	80	30	217	Downlink &	Low	2536.02	507204	2496.96	499392	0	30	6252	500190	2	0	1 (1)	2
						Mid	2568.00	513600	2492.22	498444	102		6333	506670	6	0	2 (2)	208
					Uplink	High	2600.13	520026	2379.63	475926	504		6414	513150	0	0	3 (3)	1014
Channel spacing CC1-CC2=64.86 MHz (Note 1)																		
	C C2	50	30	133	Downlink &	Low	2600.88	520176	2576.94	515388	0	30	6453	516270	6	0	2 (2)	4
						Mid	2632.86	526572	2572.2	514440	102		6531	522510	2	0	0 (0)	204
					Uplink	High	2664.99	532998	2459.61	491922	504		6612	528990	20	0	0 (0)	1008
80+60	C C1	80	30	217	Downlink &	Low	2536.02	507204	2496.96	499392	0	30	6252	500190	2	0	1 (1)	2
						Mid	2562.99	512598	2487.21	497442	102		6321	505710	20	0	2 (2)	208

					Uplink	High	2590.08	518016	2369.58	473916	504		6387	510990	22	0	0 (0)	1008
Channel spacing CC1-CC2=69.9 MHz (Note 1)																		
	C C2	60	30	162	Downlink &	Low	2605.92	521184	2576.76	515352	0	30	6453	516270	18	0	2 (2)	4
						Mid	2632.89	526578	2567.01	513402	102		6519	521550	4	0	1 (1)	206
					Uplink	High	2659.98	531996	2449.38	489876	504		6588	527070	14	0	2 (2)	1012
80+80	C C1	80	30	217	Downlink &	Low	2536.02	507204	2496.96	499392	0	30	6252	500190	2	0	1 (1)	2
						Mid	2553.00	510600	2477.22	495444	102		6294	503550	14	0	0 (0)	204
					Uplink	High	2570.01	514002	2349.51	469902	504		6336	506910	0	0	0 (0)	1008
Channel spacing CC1-CC2=79.98 MHz (Note 1)																		
	C C2	80	30	217	Downlink &	Low	2616.00	523200	2576.94	515388	0	30	6453	516270	6	0	2 (2)	4
						Mid	2632.98	526596	2557.2	511440	102		6495	519630	18	0	1 (1)	206
					Uplink	High	2649.99	529998	2429.49	485898	504		6537	522990	4	0	1 (1)	1010
80+100	C C1	80	30	217	Downlink &	Low	2536.02	507204	2496.96	499392	0	30	6252	500190	2	0	1 (1)	2
						Mid	2543.01	508602	2467.23	493446	102		6270	501630	16	0	1 (1)	206
					Uplink	High	2550.12	510024	2329.62	465924	504		6288	503070	22	0	1 (1)	1010
Channel spacing CC1-CC2=89.88 MHz (Note 1)																		
	C C2	100	30	273	Downlink &	Low	2625.9	525180	2576.76	515352	0	30	6453	516270	18	0	2 (2)	4
						Mid	2632.89	526578	2547.03	509406	102		6468	517470	0	0	0 (0)	204
					Uplink	High	2640.00	528000	2409.42	481884	504		6486	518910	6	0	0 (0)	1008
100+40	C C1	100	30	273	Downlink &	Low	2546.01	509202	2496.87	499374	0	30	6252	500190	8	0	1 (1)	2
						Mid	2573.01	514602	2487.15	497430	102		6321	505710	0	0	3 (3)	210
					Uplink	High	2600.28	520056	2369.7	473940	504		6387	510990	14	0	0 (0)	1008
Channel spacing CC1-CC2=69.72 MHz (Note 1)																		

	C C2	40	30	106	Down link & Uplink	Low	2615.73	523146	2596.65	519330	0	30	6501	520110	20	0	0 (0)	0
						Mid	2642.73	528546	2586.93	517386	102		6570	525630	12	0	2 (2)	208
						High	2670	534000	2469.48	493896	504		6636	530910	2	0	0 (0)	1008
100+50	C C1	100	30	273	Down link & Uplink	Low	2546.01	509202	2496.87	499374	0	30	6252	500190	8	0	1 (1)	2
						Mid	2568	513600	2482.14	496428	102		6306	504510	6	0	0 (0)	204
						High	2590.23	518046	2359.65	471930	504		6363	509070	20	0	1 (1)	1010
Channel spacing CC1-CC2=74.76 MHz (Note 1)																		
	C C2	50	30	133	Down link & Uplink	Low	2620.77	524154	2596.83	519366	0	30	6501	520110	8	0	0 (0)	0
						Mid	2642.76	528552	2582.1	516420	102		6558	524670	14	0	2 (2)	208
						High	2664.99	532998	2459.61	491922	504		6612	528990	20	0	0 (0)	1008
100+60	C C1	100	30	273	Down link & Uplink	Low	2546.01	509202	2496.87	499374	0	30	6252	500190	8	0	1 (1)	2
						Mid	2562.99	512598	2477.13	495426	102		6294	503550	20	0	0 (0)	204
						High	2580.18	516036	2349.6	469920	504		6339	507150	2	0	3 (3)	1014
Channel spacing CC1-CC2=79.8 MHz (Note 1)																		
	C C2	60	30	162	Down link & Uplink	Low	2625.81	525162	2596.65	519330	0	30	6501	520110	20	0	0 (0)	0
						Mid	2642.79	528558	2576.91	515382	102		6543	523470	8	0	0 (0)	204
						High	2659.98	531996	2449.38	489876	504		6588	527070	14	0	2 (2)	1012
100+80	C C1	100	30	273	Down link & Uplink	Low	2546.01	509202	2496.87	499374	0	30	6252	500190	8	0	1 (1)	2
						Mid	2553	510600	2467.14	493428	102		6270	501630	22	0	1 (1)	206
						High	2560.11	512022	2329.53	465906	504		6288	503070	4	0	2 (2)	1012
Channel spacing CC1-CC2=89.88 MHz (Note 1)																		
	C C2	80	30	217	Down link	Low	2635.89	527178	2596.83	519366	0	30	6501	520110	8	0	0 (0)	0

					&	Mi	2642	5285	2567	513420	102	651	521550	22	0	0 (0)	204
					Uplink	d	.88	76	.1			9					
						Hi	2649	5299	2429	485898	504	653	522990	4	0	1 (1)	1010
						gh	.99	98	.49			7					

Note 1: Corresponds to nominal channel spacing in accordance with TS 38.101-1 [7], clause 5.4A.1 for the CC1 and CC2 channel bandwidth combination.

Note 2: CCs are specified in increasing frequency order. CC1 is used as PCell if nothing else is specified in the test case.

Note 3: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter  $\Delta F_{\text{OffsetCORESET-0-Carrier}}$  in Annex C expressed in number of common RBs.

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

4.3.1.1.3.42 – 4.3.1.1.3.47 FFS

4.3.1.1.3.48 NR Intra-band contiguous configurations CA\_n48

4.3.1.1.3.48.1 CA\_n48B

Editor's note: Test frequencies for CA\_n48B with mixed numerology with SCS CC1=15 kHz and SCS CC2=30 kHz or 60 kHz; and SCS CC1=30 kHz and SCS CC2= 15 kHz or 60kHz is FFS.

Table 4.3.1.1.3.48.1-1: NR Intra-Band contiguous CA configuration CA\_n48B (PCC=CC1 and SCC=CC2), CC1 SCS = 15kHz, CC2 SCS = 15kHz

CBW combination [MHz] (BCS)	CC Note 2	CBW [MHz]	SCS [kHz]	carrierBandwidth [PRBs]	Range	Carrier centre [MHz] Note 2	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequencyPointA [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS [kHz]	GS CN	absoluteFrequencySSB [ARFCN]	$k_{SSB}$	Offset carrier CORES ET#0 [RBs] Note 3	CORES ET#0 Index (Offset [RBs]) Note 4	offsetToPointA (SIB1) [PRBs] Note 4	
10+10 (0,2) Note 6	CC1	10	15	52	Downlink	Low	3555	637000	3550.32	636688	0	30	7884	636960	8	0	0 (2)	2
						&	Mid	3619.98	641332	3596.94	639796		102	7930	641376	8	3	1 (6)
					Uplink	High	3685.02	645668	3589.62	639308	504		7975	645696	4	2	1 (6)	512
	Channel spacing CC1-CC2=9.96 MHz (Note 1)																	
	C C2	10	15	52	Downlink	Low	3564.96	637664	3560.28	637352	0	30	7891	637632	4	1	0 (2)	3
						&	Mid	3629.94	641996	3606.9	640460		102	7936	641952	4	0	0 (2)
Uplink					High	3694.98	646332	3599.58	639972	504	7982		646368	0	3	1 (6)	513	
Channel spacing CC1-CC2=9.96 MHz (Note 1)																		
10+15 (0,2) Note 6	CC1	10	15	52	Downlink	Low	3555	637000	3550.32	636688	0	30	7884	636960	8	0	0 (2)	2
						&	Mid	3617.49	641166	3594.45	639630		102	7928	641184	6	1	1 (6)
					Uplink	High	3680.01	645334	3584.61	638974	504		7971	645312	2	2	0 (2)	508
Channel spacing CC1-CC2=12.48 MHz (Note 1)																		

	C C2	15	15	79	Down link & Uplin k	Lo w	3567. 48	6378 32	3560. 37	637358	0	30	789 1	637632	10	0	0 (2)	2
						Mi d	3629. 97	6419 98	3604. 5	640300	102		793 5	641856	8	1	1 (6)	109
						Hi gh	3692. 49	6461 66	3594. 66	639644	504		797 8	645984	4	2	0 (2)	508
10+20 (0,2) Note 6	C C1	10	15	52	Down link & Uplin k	Lo w	3555	6370 00	3550. 32	636688	0	30	788 4	636960	8	0	0 (2)	2
						Mi d	3615	6410 00	3591. 96	639464	102		792 6	640992	4	3	0 (2)	107
						Hi gh	3675. 36	6450 24	3579. 96	638664	504		796 8	645024	0	0	1 (6)	510
Channel spacing CC1-CC2=14.64 MHz (Note 1)																		
	C C2	20	15	106	Down link & Uplin k	Lo w	3569. 64	6379 76	3560. 1	637340	0	30	789 1	637632	4	2	0 (2)	4
						Mi d	3629. 64	6419 76	3601. 74	640116	102		793 3	641664	0	1	1 (6)	109
						Hi gh	3690	6460 00	3589. 74	639316	504		797 5	645696	8	1	1 (6)	511
10+30 (2)	C C1	10	15	52	Down link & Uplin k	Lo w	3555	6370 00	3550. 32	636688	0	30	788 4	636960	8	0	0 (2)	2
						Mi d	3609. 99	6406 66	3586. 95	639130	102		792 3	640704	2	3	1 (6)	111
						Hi gh	3665. 31	6443 54	3569. 91	637994	504		796 1	644352	10	3	0 (2)	509
Channel spacing CC1-CC2=19.68 MHz (Note 1)																		
	C C2	30	15	160	Down link & Uplin k	Lo w	3574. 68	6383 12	3560. 28	637352	0	30	789 1	637632	4	1	0 (2)	3
						Mi d	3629. 67	6419 78	3596. 91	639794	102		793 0	641376	10	3	1 (6)	111
						Hi gh	3684. 99	6456 66	3579. 87	638658	504		796 8	645024	6	0	1 (6)	510
10+40 (2)	C C1	10	15	52	Down link & Uplin k	Lo w	3555	6370 00	3550. 32	636688	0	30	788 4	636960	8	0	0 (2)	2
						Mi d	3604. 98	6403 32	3581. 94	638796	102		791 9	640320	0	3	0 (2)	107
						Hi gh	3655. 62	6437 08	3560. 22	637348	504		795 4	643680	8	1	0 (2)	507
Channel spacing CC1-CC2=24.36 MHz (Note 1)																		
	C C2	40	15	216	Down link	Lo w	3579. 36	6386 24	3559. 92	637328	0	30	789 1	637632	4	3	0 (2)	5

						Mid	3629.34	6419.56	3591.54	639436	102		792.6	640992	8	1	1 (6)	109
						High	3679.98	6453.32	3569.82	637988	504		796.1	644352	4	0	1 (6)	510
10+50	C C1	10	15	52	Down link	Low	3555.00	6370.00	3550.32	636688	0	30	788.4	636960	8	0	0 (2)	2
(1,2)					&	Mid	3600.00	6400.00	3576.96	638464	102		791.6	640032	8	2	1 (6)	110
					Uplink	High	3645.6	6430.40	3550.2	636680	504		794.7	643008	4	1	0 (2)	507
Channel spacing CC1-CC2=29.4 MHz (Note 1)																		
	C C2	50	15	270	Down link	Low	3584.4	6389.60	3560.1	637340	0	30	789.1	637632	4	2	0 (2)	4
						Mid	3629.4	6419.60	3586.74	639116	102		792.2	640608	4	0	0 (2)	104
						High	3675.00	6450.00	3559.98	637332	504		795.4	643680	0	3	0 (2)	509
15+5	C C1	15	15	79	Down link &	Low	3557.52	6371.68	3550.41	636694	0	30	788.4	636960	2	0	0 (2)	2
(0)					Uplink	Mid	3622.5	6415.00	3597.03	639802	102		793.0	641376	2	3	1 (6)	111
						High	3687.63	6458.42	3589.8	639320	504		797.5	645696	4	1	1 (6)	511
Channel spacing CC1-CC2=9.855 MHz (Note 1)																		
	CC 2	5	15	25	Down link	Low	3567.375	6378.25	3565.125	637675	0	Note	-	-	-	-	-	-
					&	Mid	3632.355	6421.57	3611.745	640783	102	5	-	-	-	-	-	-
					Uplink	High	3697.485	6464.99	3604.515	640301	504		-	-	-	-	-	-
15+10	C C1	15	15	79	Down link &	Low	3557.52	6371.68	3550.41	636694	0	30	788.4	636960	2	0	0 (2)	2
(0)					Uplink	Mid	3619.98	6413.32	3594.51	639634	102		792.8	641184	2	1	1 (6)	109
						High	3682.5	6455.00	3584.67	638978	504		797.1	645312	10	1	0 (2)	507
Channel spacing CC1-CC2=12.48 MHz (Note 1)																		
	C C2	10	15	52	Down link &	Low	3570.00	6380.00	3565.32	637688	0	30	789.5	638016	4	1	1 (6)	7
						Mid	3632.46	6421.64	3609.42	640628	102		793.8	642144	4	2	0 (2)	106



15+15 (0,2) Note 6	C C1	15	15	79	Uplink	High	3694.98	646332	3599.58	639972	504	30	7982	646368	0	3	1 (6)	513	
					Downlink &	Low	3557.52	637168	3550.41	636694	0		7884	636960	2	0	0 (2)	2	
						Mid	3617.49	641166	3592.02	639468	102		7926	640992	0	3	0 (2)	107	
	Uplink	High	3677.49	645166	3579.66	638644	504	7968	645024	8	1	1 (6)	511						
	Channel spacing CC1-CC2=15 MHz (Note 1)																		
	C C2	15	15	79	Downlink &	Low	3572.52	638168	3565.41	637694	0	30	7895	638016	10	0	1 (6)	6	
						Mid	3632.49	642166	3607.02	640468	102		7937	642048	8	3	1 (6)	111	
						Uplink	High	3692.49	646166	3594.66	639644		504	7978	645984	4	2	0 (2)	508
	15+20 (0,2) Note 6	C C1	15	15	79	Downlink &	Low	3557.52	637168	3550.41	636694	0	30	7884	636960	2	0	0 (2)	2
							Mid	3615.00	641000	3589.53	639302	102		7924	640800	10	0	0 (2)	104
Uplink						High	3672.84	644856	3575.01	638334	504	7965		644736	6	3	1 (6)	513	
Channel spacing CC1-CC2=17.16 MHz (Note 1)																			
C C2	20	15	106	Downlink &	Low	3574.68	638312	3565.14	637676	0	30	7895	638016	4	2	1 (6)	8		
					Mid	3632.16	642144	3604.26	640284	102		7935	641856	0	3	1 (6)	111		
					Uplink	High	3690.00	646000	3589.74	639316		504	7975	645696	8	1	1 (6)	511	
15+30 (2)	C C1	15	15	79	Downlink &	Low	3557.52	637168	3550.41	636694	0	30	7884	636960	2	0	0 (2)	2	
						Mid	3609.99	640666	3584.52	638968	102		7921	640512	8	0	1 (6)	108	
					Uplink	High	3662.79	644186	3564.96	637664	504		7958	644064	4	3	1 (6)	513	
	Channel spacing CC1-CC2=22.2 MHz (Note 1)																		
C C2	30	15	160	Downlink	Low	3579.72	638648	3565.32	637688	0	30	7895	638016	4	1	1 (6)	7		
					Mid	3632.19	642146	3599.43	639962	102		7931	641472	10	1	0 (2)	105		
					High	3684.99	645666	3579.87	638658	504		7968	645024	6	0	1 (6)	510		

15+40 (0,1,2) Note 6	C C1	15	15	79	Down link	Lo w	3557. 52	6371 68	3550. 41	636694	0	30	788 4	636960	2	0	0 (2)	2	
					&	Mi d	3604. 98	6403 32	3579. 51	638634	102		791 7	640128	6	0	0 (2)	104	
					Uplin k	Hi gh	3653. 1	6435 40	3555. 27	637018	504		795 1	643392	2	1	1 (6)	511	
	Channel spacing CC1-CC2=26.88 MHz (Note 1)																		
	C C2	40	15	216	Down link	Lo w	3584. 4	6389 60	3564. 96	637664	0	30	789 5	638016	4	3	1 (6)	9	
						Mi d	3631. 86	6421 24	3594. 06	639604	102		792 8	641184	8	3	1 (6)	111	
					Hi gh	3679. 98	6453 32	3569. 82	637988	504		796 1	644352	4	0	1 (6)	510		
15+50 (0,1,2) Note 6	C C1	15	15	79	Down link	Lo w	3557. 52	6371 68	3550. 41	636694	0	30	788 4	636960	2	0	0 (2)	2	
					&	Mi d	3600 00	6400 00	3574. 53	638302	102		791 4	639840	2	0	1 (6)	108	
					Uplin k	Hi gh	3643. 08	6428 72	3545. 25	636350	504		794 4	642720	10	0	1 (6)	510	
	Channel spacing CC1-CC2=31.92 MHz (Note 1)																		
	C C2	50	15	270	Down link	Lo w	3589. 44	6392 96	3565. 14	637676	0	30	789 5	638016	4	2	1 (6)	8	
						Mi d	3631. 92	6421 28	3589. 26	639284	102		792 4	640800	4	2	0 (2)	106	
					Hi gh	3675 00	6450 00	3559. 98	637332	504		795 4	643680	0	3	0 (2)	509		
20+5 (0)	C C1	20	15	106	Down link & Uplin k	Lo w	3560. 01	6373 34	3550. 47	636698	0	30	788 5	637056	10	3	1 (6)	9	
						Mi d	3622. 5	6415 00	3594. 6	639640	102		792 8	641184	8	0	1 (6)	108	
						Hi gh	3685. 2	6456 80	3584. 94	638996	504		797 1	645312	4	0	0 (2)	506	
	Channel spacing CC1-CC2=12.285 MHz (Note 1)																		
	C C2	5	15	25	Down link & Uplin k	Lo w	3572. 295	6381 53	3570. 045	638003	0	Not e 5	-	-	-	-	-	-	
						Mi d	3634. 785	6423 19	3614. 175	640945	102		-	-	-	-	-	-	
					Hi gh	3697. 485	6464 99	3604. 515	640301	504		-	-	-	-	-	-		
20+10	C C1	20	15	106	Down link	Lo w	3560. 01	6373 34	3550. 47	636698	0	30	788 5	637056	10	3	1 (6)	9	

(0,2) Note 6					&	Mid	3619.98	6413.32	3592.08	639472	102		792.6	640992	8	2	0 (2)	106	
					Uplink	High	3680.34	6453.56	3580.08	638672	504		796.8	645024	4	3	0 (2)	509	
	Channel spacing CC1-CC2=14.64 MHz (Note 1)																		
C C2	10	15	52	Downlink & Uplink	Low & High	Low	3574.65	6383.10	3569.97	637998	0	30	789.8	638304	6	3	0 (2)	5	
						Mid	3634.62	6423.08	3611.58	640772	102		794.0	642336	4	2	1 (6)	110	
						High	3694.98	6463.32	3599.58	639972	504		798.2	646368	0	3	1 (6)	513	
20+15 (0,2) Note 6	C C1	20	15	106	Downlink & Uplink	Low & High	Low	3560.01	6373.34	3550.47	636698	0	30	788.5	637056	10	3	1 (6)	9
							Mid	3617.49	6411.66	3589.59	639306	102		792.4	640800	6	0	0 (2)	104
							High	3675.33	6450.22	3575.07	638338	504		796.5	644736	2	3	1 (6)	513
Channel spacing CC1-CC2=17.16 MHz (Note 1)																			
C C2	15	15	79	Downlink & Uplink	Low & High	Low	3577.17	6384.78	3570.06	638004	0	30	789.8	638304	0	3	0 (2)	5	
						Mid	3634.65	6423.10	3609.18	640612	102		793.8	642144	8	3	0 (2)	107	
						High	3692.49	6461.66	3594.66	639644	504		797.8	645984	4	2	0 (2)	508	
20+20 (0,2) Note 6	C C1	20	15	106	Downlink & Uplink	Low & High	Low	3560.01	6373.34	3550.47	636698	0	30	788.5	637056	10	3	1 (6)	9
							Mid	3615.00	6410.00	3587.01	639140	102		792.3	640704	4	2	1 (6)	110
							High	3670.02	6446.68	3569.76	637984	504		796.1	644352	8	0	1 (6)	510
Channel spacing CC1-CC2=19.98 MHz (Note 1)																			
C C2	20	15	106	Downlink & Uplink	Low & High	Low	3579.99	6386.66	3570.45	638030	0	30	789.8	638304	10	0	0 (2)	2	
						Mid	3634.98	6423.32	3607.08	640472	102		793.7	642048	4	3	1 (6)	111	
						High	3690.00	6460.00	3589.74	639316	504		797.5	645696	8	1	1 (6)	511	
20+30 (2)	C C1	20	15	106	Downlink & Uplink	Low & High	Low	3560.01	6373.34	3550.47	636698	0	30	788.5	637056	10	3	1 (6)	9
							Mid	3609.99	6406.66	3582.09	638806	102		791.9	640320	2	2	0 (2)	106

					Uplink	High	3660.03	6440.02	3559.77	637318	504		7954	643680	2	0	1 (6)	510
Channel spacing CC1-CC2=24.96 MHz (Note 1)																		
	C C2	30	15	160	Downlink	Low	3584.97	6389.98	3570.57	638038	0	30	7898	638304	2	0	0 (2)	2
						Mid	3634.95	6423.30	3602.19	640146	102		7933	641664	6	2	0 (2)	106
						High	3684.99	6456.66	3579.87	638658	504		7968	645024	6	0	1 (6)	510
30+30 (2)	C C1	30	15	160	Downlink	Low	3565.02	6376.68	3550.62	636708	0	30	7885	637056	0	3	1 (6)	9
					&	Mid	3609.99	6406.66	3577.23	638482	102		7916	640032	2	1	1 (6)	109
					Uplink	High	3654.99	6436.66	3549.87	636658	504		7947	643008	2	3	0 (2)	509
Channel spacing CC1-CC2=30 MHz (Note 1)																		
	C C2	30	15	160	Downlink	Low	3595.02	6396.68	3580.62	638708	0	30	7905	638976	4	0	0 (2)	2
						Mid	3639.99	6426.66	3607.23	640482	102		7937	642048	6	2	1 (6)	110
						High	3684.99	6456.66	3579.87	638658	504		7968	645024	6	0	1 (6)	510
40+30 (2)	C C1	40	15	216	Downlink	Low	3570.00	6380.00	3550.56	636704	0	30	7885	637056	4	3	1 (6)	9
					&	Mid	3609.99	6406.66	3572.19	638146	102		7912	639648	2	1	0 (2)	105
					Uplink	High	3650.31	6433.54	3540.15	636010	504		7940	642336	2	1	0 (2)	507
Channel spacing CC1-CC2=34.68 MHz (Note 1)																		
	C C2	30	15	160	Downlink	Low	3604.68	6403.12	3590.28	639352	0	30	7912	639648	8	2	0 (2)	4
						Mid	3644.67	6429.78	3611.91	640794	102		7940	642336	6	0	1 (6)	108
						High	3684.99	6456.66	3579.87	638658	504		7968	645024	6	0	1 (6)	510
20+40 (1,2)	C C1	20	15	106	Downlink	Low	3560.01	6373.34	3550.47	636698	0	30	7885	637056	10	3	1 (6)	9
					&	Mid	3604.98	6403.32	3577.08	638472	102		7916	640032	0	2	1 (6)	110
					Uplink	High	3650.28	6433.52	3550.02	636668	504		7947	643008	4	2	0 (2)	508
Channel spacing CC1-CC2=29.7 MHz (Note 1)																		

20+50 (1,2)	C C2	40	15	216	Down link	Lo w	3589. 71	6393 14	3570. 27	638018	0	30	789 8	638304	10	1	0 (2)	3
						Mi d	3634. 68	6423 12	3596. 88	639792	102		792 9	641280	0	0	0 (2)	104
						Hi gh	3679. 98	6453 32	3569. 82	637988	504		796 1	644352	4	0	1 (6)	510
	C C1	20	15	106	Down link	Lo w	3560. 01	6373 34	3550. 47	636698	0	30	788 5	637056	10	3	1 (6)	9
					&	Mi d	3600	6400 00	3572. 1	638140	102		791 2	639648	8	1	0 (2)	105
					Uplin k	Hi gh	3640. 26	6426 84	3540	636000	504		794 0	642336	0	2	0 (2)	508
Channel spacing CC1-CC2=34.74 MHz (Note 1)																		
40+40 (1,2)	C C2	50	15	270	Down link	Lo w	3594. 75	6396 50	3570. 45	638030	0	30	789 8	638304	10	0	0 (2)	2
						Mi d	3634. 74	6423 16	3592. 08	639472	102		792 6	640992	8	2	0 (2)	106
						Hi gh	3675	6450 00	3559. 98	637332	504		795 4	643680	0	3	0 (2)	509
	C C1	40	15	216	Down link	Lo w	3570	6380 00	3550. 56	636704	0	30	788 5	637056	4	3	1 (6)	9
					&	Mi d	3604. 98	6403 32	3567. 18	637812	102		790 9	639360	0	1	1 (6)	109
					Uplin k	Hi gh	3640. 02	6426 68	3529. 86	635324	504		793 3	641664	4	2	0 (2)	508
Channel spacing CC1-CC2=39.96 MHz (Note 1)																		
40+50 (1,2)	C C2	40	15	216	Down link	Lo w	3609. 96	6406 64	3590. 52	639368	0	30	791 2	639648	4	1	0 (2)	3
						Mi d	3644. 94	6429 96	3607. 14	640476	102		793 7	642048	0	3	1 (6)	111
						Hi gh	3679. 98	6453 32	3569. 82	637988	504		796 1	644352	4	0	1 (6)	510
	C C1	40	15	216	Down link	Lo w	3570	6380 00	3550. 56	636704	0	30	788 5	637056	4	3	1 (6)	9
					&	Mi d	3600	6400 00	3562. 2	637480	102		790 5	638976	8	0	0 (2)	104
					Uplin k	Hi gh	3630. 06	6420 04	3519. 9	634660	504		792 6	640992	8	1	0 (2)	507
Channel spacing CC1-CC2=44.94 MHz (Note 1)																		
C C2	50	15	270	Down link	Lo w	3614. 94	6409 96	3590. 64	639376	0	30	791 2	639648	8	0	0 (2)	2	

						Mi d	3644. 94	6429 96	3602. 28	640152	102		793 3	641664	0	2	0 (2)	106
						Hi gh	3675	6450 00	3559. 98	637332	504		795 4	643680	0	3	0 (2)	509

Note 1: Corresponds to nominal channel spacing in accordance with TS 38.101-1 [7], clause 5.4A.1 for the CC1 and CC2 channel bandwidth combination.  
 Note 2: CCs are specified in increasing frequency order. CC1 is used as PCell if nothing else is specified in the test case.  
 Note 3: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter  $\Delta F_{\text{OffsetCORESET-0-Carrier}}$  in Annex C expressed in number of common RBs.  
 Note 4: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-3 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.  
 Note 5: No SS/PBCH block fits within the channel bandwidth. The channel bandwidth can only be used as SCell.  
 Note 6: UL CA is only supported for BCS0. I.e.the test frequencies for uplink CC2 are only supported for BCS0.

Table 4.3.1.1.3.48.1-2: NR Intra-Band contiguous CA configuration CA\_n48B (PCC=CC1 and SCC=CC2), CC1 SCS = 30kHz, CC2 SCS = 30kHz

CBW combination [MHz] (BCS)	CC Note 2	CBW [MHz]	SCS [kHz]	carrierBandwidth [PRBs]	Range	Carrier centre [MHz] Note 2	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequencyPointA [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS [kHz]	GS CN	absoluteFrequencySSB [ARFCN]	$k_{\text{SSE}}$	Offset carrier CORESET#0 [RBs] Note 3	CORESET#0 Index (Offset [RBs]) Note 4	offsetToPointA (SIB1) [PRBs] Note 4		
10+10 (0,2) Note 5	CC 1	10	30	24	Downlink &	Low	3555	6370.00	3550.68	636712	0	30	7884	636960	8	0	0 (0)	0	
						Mid	3620.01	6413.34	3578.97	638598	102		7930	641376	18	0	3 (3)	210	
					Uplink	High	3685.02	6456.68	3499.26	633284	504		7975	645696	4	0	3 (3)	1014	
	Channel spacing CC1-CC2=9.96 MHz (Note 1)																		
	10+15 (0,2)	CC 1	10	30	24	Downlink &	Low	3555	6370.00	3550.68	636712	0	30	7884	636960	8	0	0 (0)	0
							Mid	3617.49	6411.66	3576.45	638430	102		7928	641184	18	0	2 (2)	208
Uplink						High	3694.98	6463.32	3509.22	633948	504	7982		646368	12	0	3 (3)	1014	

Note 5					Uplink	High	3680.01	6453.34	3494.25	632950	504		797.1	645312	2	0	1 (1)	1010
	Channel spacing CC1-CC2=12.48 MHz (Note 1)																	
10+20 (0,2) Note 5	CC 2	15	30	38	Downlink &	Low	3567.48	6378.32	3560.64	637376	0	30	789.1	637632	16	0	0 (0)	0
						Mid	3629.97	6419.98	3586.41	639094	102		793.5	641856	2	0	3 (3)	210
					Uplink	High	3692.49	6461.66	3504.21	633614	504		797.8	645984	10	0	1 (1)	1010
10+20 (0,2) Note 5	CC 1	10	30	24	Downlink &	Low	3555.00	6370.00	3550.68	636712	0	30	788.4	636960	8	0	0 (0)	0
						Mid	3615.00	6410.00	3573.96	638264	102		792.6	640992	16	0	1 (1)	206
					Uplink	High	3675.36	6450.24	3489.6	632640	504		796.8	645024	0	0	2 (2)	1012
Channel spacing CC1-CC2=14.64 MHz (Note 1)																		
10+30 (2)	CC 2	20	30	51	Downlink &	Low	3569.64	6379.76	3560.46	637364	0	30	789.1	637632	4	0	1 (1)	2
						Mid	3629.64	6419.76	3583.74	638916	102		793.3	641664	12	0	2 (2)	208
					Uplink	High	3690.00	6460.00	3499.38	633292	504		797.5	645696	20	0	2 (2)	1012
10+30 (2)	CC 1	10	30	24	Downlink &	Low	3555.00	6370.00	3550.68	636712	0	30	788.4	636960	8	0	0 (0)	0
						Mid	3609.99	6406.66	3568.95	637930	102		792.3	640704	14	0	3 (3)	210
					Uplink	High	3665.31	6443.54	3479.55	631970	504		796.1	644352	22	0	1 (1)	1010
Channel spacing CC1-CC2=19.68 MHz (Note 1)																		
10+40 (2)	CC 2	30	30	78	Downlink &	Low	3574.68	6383.12	3560.64	637376	0	30	789.1	637632	16	0	0 (0)	0
						Mid	3629.67	6419.78	3578.91	638594	102		793.0	641376	22	0	3 (3)	210
					Uplink	High	3684.99	6456.66	3489.51	632634	504		796.8	645024	6	0	2 (2)	1012
10+40 (2)	CC 1	10	30	24	Downlink &	Low	3555.00	6370.00	3550.68	636712	0	30	788.4	636960	8	0	0 (0)	0
						Mid	3605.01	6403.34	3563.97	637598	102		791.9	640320	10	0	1 (1)	206
					Uplink	High	3655.62	6437.08	3469.86	631324	504		795.4	643680	20	0	0 (0)	1008
Channel spacing CC1-CC2=24.36 MHz (Note 1)																		

	CC 2	40	30	106	Down link	Low	3579.36	638624	3560.28	637352	0	30	7891	637632	16	0	1 (1)	2
						Mid	3629.37	641958	3573.57	638238	102		7926	640992	18	0	2 (2)	208
						High	3679.98	645332	3479.46	631964	504		7961	644352	4	0	2 (2)	1012
10+70 (2)	CC 1	10	30	24	Down link	Low	3555	637000	3550.68	636712	0	30	7884	636960	8	0	0 (0)	0
					&	Mid	3590.01	639334	3548.97	636598	102		7909	639360	2	0	3 (3)	210
					Uplink	High	3625.5	641700	3439.74	629316	504		7933	641664	12	0	0 (0)	1008
Channel spacing CC1-CC2=39.48 MHz (Note 1)																		
	CC 2	70	30	189	Down link	Low	3594.48	639632	3560.46	637364	0	30	7891	637632	4	0	1 (1)	2
						Mid	3629.49	641966	3558.75	637250	102		7916	640032	22	0	3 (3)	210
						High	3664.98	644332	3449.52	629968	504		7940	642336	8	0	1 (1)	1010
10+50 (1,2)	CC 1	10	30	24	Down link	Low	3555	637000	3550.68	636712	0	30	7884	636960	8	0	0 (0)	0
					&	Mid	3600	640000	3558.96	637264	102		7916	640032	8	0	3 (3)	210
					Uplink	High	3645.6	643040	3459.84	630656	504		7947	643008	16	0	0 (0)	1008
Channel spacing CC1-CC2=29.4 MHz (Note 1)																		
	CC 2	50	30	133	Down link	Low	3584.4	638960	3560.46	637364	0	30	7891	637632	4	0	1 (1)	2
						Mid	3629.4	641960	3568.74	637916	102		7922	640608	4	0	0 (0)	204
						High	3675	645000	3469.62	631308	504		7954	643680	12	0	1 (1)	1010
10+60 (1,2)	CC 1	10	30	24	Down link	Low	3555	637000	3550.68	636712	0	30	7884	636960	8	0	0 (0)	0
					&	Mid	3594.99	639666	3553.95	636930	102		7912	639648	6	0	1 (1)	206
					Uplink	High	3635.55	642370	3449.79	629986	504		7940	642336	14	0	0 (0)	1008
Channel spacing CC1-CC2=34.44 MHz (Note 1)																		
	CC 2	60	30	162	Down link	Low	3589.44	639296	3560.28	637352	0	30	7891	637632	16	0	1 (1)	2



					Mid	3629 .43	6419 62	3563 .55	637570	102		791 9	640320	14	0	2 (2)	208	
					High	3669 .99	6446 66	3459 .39	630626	504		794 7	643008	22	0	1 (1)	1010	
10+80 (1,2)	CC 1	10	30	24	Down link	Low	3555 00	6370 .68	3550 .68	636712	0	30	788 4	636960	8	0	0 (0)	0
					&	Mid	3585 00	6390 00	3543 .96	636264	102		790 5	638976	0	0	1 (1)	206
					Uplink	High	3615 .48	6410 32	3429 .72	628648	504		792 6	640992	8	0	0 (0)	1008
Channel spacing CC1-CC2=44.52 MHz (Note 1)																		
	CC 2	80	30	217	Down link	Low	3599 .52	6399 68	3560 .46	637364	0	30	789 1	637632	4	0	1 (1)	2
						Mid	3629 .52	6419 68	3553 .74	636916	102		791 2	639648	20	0	1 (1)	206
						High	3660 00	6440 00	3439 .5	629300	504		793 3	641664	4	0	1 (1)	1010
10+90 (1,2)	CC 1	10	30	24	Down link	Low	3555 00	6370 .68	3550 .68	636712	0	30	788 4	636960	8	0	0 (0)	0
					&	Mid	3579 .99	6386 66	3538 .95	635930	102		790 2	638688	22	0	2 (2)	208
					Uplink	High	3605 .43	6403 62	3419 .67	627978	504		791 9	640320	6	0	0 (0)	1008
Channel spacing CC1-CC2=49.56 MHz (Note 1)																		
	CC 2	90	30	245	Down link	Low	3604 .56	6403 04	3560 .46	637364	0	30	789 1	637632	4	0	1 (1)	2
						Mid	3629 .55	6419 70	3548 .73	636582	102		790 9	639360	18	0	3 (3)	210
						High	3654 .99	6436 66	3429 .45	628630	504		792 6	640992	2	0	1 (1)	1010
15+10 (0,2) Note 5	CC 1	15	30	38	Down link & Uplink	Low	3557 .52	6371 68	3550 .68	636712	0	30	788 4	636960	8	0	0 (0)	0
						Mid	3620 .01	6413 34	3576 .45	638430	102		792 8	641184	18	0	2 (2)	208
						High	3682 .5	6455 00	3494 .22	632948	504		797 1	645312	4	0	1 (1)	1010
Channel spacing CC1-CC2=12.48 MHz (Note 1)																		
	CC 2	10	30	24	Down link &	Low	3570	6380 00	3565 .68	637712	0	30	789 5	638016	16	0	2 (2)	4
						Mid	3632 .49	6421 66	3591 .45	639430	102		793 8	642144	2	0	1 (1)	206

15+15 (0,2) Note 5	CC 1	15	30	38	Uplink	High	3694 .98	6463 32	3509 .22	633948	504	30	798 2	646368	12	0	3 (3)	1014	
					Downlink &	Low	3557 .52	6371 68	3550 .68	636712	0		788 4	636960	8	0	0 (0)	0	
						Mid	3617 .49	6411 66	3573 .93	638262	102		792 6	640992	18	0	1 (1)	206	
	Uplink	High	3677 .49	6451 66	3489 .21	632614	504	796 8	645024	2	0	3 (3)	1014						
	Channel spacing CC1-CC2=15 MHz (Note 1)																		
	CC 2	15	30	38	Downlink &	Low	3572 .52	6381 68	3565 .68	637712	0	30	789 5	638016	16	0	2 (2)	4	
						Mid	3632 .49	6421 66	3588 .93	639262	102		793 6	641952	2	0	0 (0)	204	
						Uplink	High	3692 .49	6461 66	3504 .21	633614		504	797 8	645984	10	0	1 (1)	1010
	15+20 (0,2) Note 5	CC 1	15	30	38	Downlink &	Low	3557 .52	6371 68	3550 .68	636712	0	30	788 4	636960	8	0	0 (0)	0
							Mid	3615 00	6410 00	3571 .44	638096	102		792 4	640800	16	0	0 (0)	204
Uplink						High	3672 .84	6448 56	3484 .56	632304	504	796 4		644640	0	0	0 (0)	1008	
Channel spacing CC1-CC2=17.16 MHz (Note 1)																			
CC 2		20	30	51	Downlink &	Low	3574 .68	6383 12	3565 .5	637700	0	30	789 5	638016	4	0	3 (3)	6	
						Mid	3632 .16	6421 44	3586 .26	639084	102		793 5	641856	12	0	3 (3)	210	
					Uplink	High	3690 00	6460 00	3499 .38	633292	504		797 5	645696	20	0	2 (2)	1012	
15+30 (2)		CC 1	15	30	38	Downlink &	Low	3557 .52	6371 68	3550 .68	636712	0	30	788 4	636960	8	0	0 (0)	0
							Mid	3609 .99	6406 66	3566 .43	637762	102		792 1	640512	14	0	2 (2)	208
						Uplink	High	3662 .79	6441 86	3474 .51	631634	504		795 8	644064	22	0	3 (3)	1014
	Channel spacing CC1-CC2=22.2 MHz (Note 1)																		
	CC 2	30	30	78	Downlink	Low	3579 .72	6386 48	3565 .68	637712	0	30	789 5	638016	16	0	2 (2)	4	
						Mid	3632 .19	6421 46	3581 .43	638762	102		793 1	641472	22	0	0 (0)	204	
High					3684 .99	6456 66	3489 .51	632634	504	796 8	645024		6	0	2 (2)	1012			

15+70 (2)	CC 1	15	30	38	Down link	Low	3557.52	637168	3550.68	636712	0	30	7884	636960	8	0	0 (0)	0	
					&	Mid	3590.01	639334	3546.45	636430	102		7907	639168	2	0	2 (2)	208	
					Uplink	High	3622.98	641532	3434.7	628980	504		7930	641376	12	0	2 (2)	1012	
	Channel spacing CC1-CC2=42 MHz (Note 1)																		
	CC 2	70	30	189	Down link	Low	3599.52	639968	3565.5	637700	0	30	7895	638016	4	0	3 (3)	6	
					Mid	3632.01	642134	3561.27	637418	102		7917	640128	22	0	0 (0)	204		
					High	3664.98	644332	3449.52	629968	504		7940	642336	8	0	1 (1)	1010		
15+40 (1,2)	CC 1	15	30	38	Down link	Low	3557.52	637168	3550.68	636712	0	30	7884	636960	8	0	0 (0)	0	
					&	Mid	3605.01	640334	3561.45	637430	102		7917	640128	10	0	0 (0)	204	
					Uplink	High	3653.1	643540	3464.82	630988	504		7951	643392	20	0	2 (2)	1012	
	Channel spacing CC1-CC2=26.88 MHz (Note 1)																		
	CC 2	40	30	106	Down link	Low	3584.4	638960	3565.32	637688	0	30	7895	638016	16	0	3 (3)	6	
					Mid	3631.89	642126	3576.09	638406	102		7928	641184	18	0	3 (3)	210		
					High	3679.98	645332	3479.46	631964	504		7961	644352	4	0	2 (2)	1012		
15+50 (1,2)	CC 1	15	30	38	Down link	Low	3557.52	637168	3550.68	636712	0	30	7884	636960	8	0	0 (0)	0	
					&	Mid	3600	640000	3556.44	637096	102		7914	639840	8	0	2 (2)	208	
					Uplink	High	3643.08	642872	3454.8	630320	504		7944	642720	16	0	2 (2)	1012	
	Channel spacing CC1-CC2=31.92 MHz (Note 1)																		
	CC 2	50	30	133	Down link	Low	3589.44	639296	3565.5	637700	0	30	7895	638016	4	0	3 (3)	6	
					Mid	3631.92	642128	3571.26	638084	102		7924	640800	4	0	1 (1)	206		
					High	3675	645000	3469.62	631308	504		7954	643680	12	0	1 (1)	1010		
15+60	CC 1	15	30	38	Down link	Low	3557.52	637168	3550.68	636712	0	30	7884	636960	8	0	0 (0)	0	

(1,2)					&	Mid	3594 .99	6396 66	3551 .43	636762	102		791 0	639456	6	0	0 (0)	204	
					Uplink	High	3633 .03	6422 02	3444 .75	629650	504		793 7	642048	14	0	2 (2)	1012	
	Channel spacing CC1-CC2=36.96 MHz (Note 1)																		
	CC 2	60	30	162	Downlink	Low	3594 .48	6396 32	3565 .32	637688	0	30	789 5	638016	16	0	3 (3)	6	
						Mid	3631 .95	6421 30	3566 .07	637738	102		792 1	640512	14	0	3 (3)	210	
					High	3669 .99	6446 66	3459 .39	630626	504		794 7	643008	22	0	1 (1)	1010		
15+80	CC 1	15	30	38	Downlink	Low	3557 .52	6371 68	3550 .68	636712	0	30	788 4	636960	8	0	0 (0)	0	
(1,2)					&	Mid	3585 00	6390 00	3541 .44	636096	102		790 3	638784	0	0	0 (0)	204	
					Uplink	High	3612 .96	6408 64	3424 .68	628312	504		792 3	640704	8	0	2 (2)	1012	
	Channel spacing CC1-CC2=47.04 MHz (Note 1)																		
	CC 2	80	30	217	Downlink	Low	3604 .56	6403 04	3565 .5	637700	0	30	789 5	638016	4	0	3 (3)	6	
						Mid	3632 .04	6421 36	3556 .26	637084	102		791 4	639840	20	0	2 (2)	208	
						High	3660 00	6440 00	3439 .5	629300	504		793 3	641664	4	0	1 (1)	1010	
20+10	CC 1	20	30	51	Downlink &	Low	3560 .01	6373 34	3550 .83	636722	0	30	788 5	637056	22	0	3 (3)	6	
Note 5						Mid	3620 .01	6413 34	3574 .11	638274	102		792 6	640992	6	0	1 (1)	206	
					Uplink	High	3680 .34	6453 56	3489 .72	632648	504		796 8	645024	16	0	1 (1)	1010	
Channel spacing CC1-CC2=14.64 MHz (Note 1)																			
	CC 2	10	30	24	Downlink &	Low	3574 .65	6383 10	3570 .33	638022	0	30	789 8	638304	18	0	1 (1)	2	
						Mid	3634 .65	6423 10	3593 .61	639574	102		794 0	642336	2	0	3 (3)	210	
					Uplink	High	3694 .98	6463 32	3509 .22	633948	504		798 2	646368	12	0	3 (3)	1014	
20+15	CC 1	20	30	51	Downlink &	Low	3560 .01	6373 34	3550 .83	636722	0	30	788 5	637056	22	0	3 (3)	6	
(0,2)						Mid	3617 .49	6411 66	3571 .59	638106	102		792 4	640800	6	0	0 (0)	204	

Note 5					Uplink	High	3675 .33	6450 22	3484 .71	632314	504		796 5	644736	14	0	3 (3)	1014
	Channel spacing CC1-CC2=17.16 MHz (Note 1)																	
20+20 (0,2)	CC 2	15	30	38	Downlink &	Low	3577 .17	6384 78	3570 .33	638022	0	30	789 8	638304	18	0	1 (1)	2
						Mid	3634 .65	6423 10	3591 .09	639406	102		793 8	642144	2	0	2 (2)	208
					Uplink	High	3692 .49	6461 66	3504 .21	633614	504		797 8	645984	10	0	1 (1)	1010
20+20 (0,2)	CC 1	20	30	51	Downlink &	Low	3560 .01	6373 34	3550 .83	636722	0	30	788 5	637056	22	0	3 (3)	6
						Mid	3615 00	6410 00	3569 .1	637940	102		792 3	640704	4	0	3 (3)	210
					Uplink	High	3670 .02	6446 68	3479 .4	631960	504		796 1	644352	8	0	2 (2)	1012
Channel spacing CC1-CC2=19.98 MHz (Note 1)																		
20+30 (2)	CC 2	20	30	51	Downlink &	Low	3579 .99	6386 66	3570 .81	638054	0	30	789 8	638304	10	0	0 (0)	0
						Mid	3634 .98	6423 32	3589 .08	639272	102		793 7	642048	16	0	3 (3)	210
					Uplink	High	3690 00	6460 00	3499 .38	633292	504		797 5	645696	20	0	2 (2)	1012
20+30 (2)	CC 1	20	30	51	Downlink &	Low	3560 .01	6373 34	3550 .83	636722	0	30	788 5	637056	22	0	3 (3)	6
						Mid	3609 .99	6406 66	3564 .09	637606	102		791 9	640320	2	0	1 (1)	206
					Uplink	High	3660 .03	6440 02	3469 .41	631294	504		795 4	643680	2	0	2 (2)	1012
Channel spacing CC1-CC2=24.96 MHz (Note 1)																		
20+70 (2)	CC 2	30	30	78	Downlink &	Low	3584 .97	6389 98	3570 .93	638062	0	30	789 8	638304	2	0	0 (0)	0
						Mid	3634 .95	6423 30	3584 .19	638946	102		793 3	641664	6	0	1 (1)	206
					Uplink	High	3684 .99	6456 66	3489 .51	632634	504		796 8	645024	6	0	2 (2)	1012
20+70 (2)	CC 1	20	30	51	Downlink &	Low	3560 .01	6373 34	3550 .83	636722	0	30	788 5	637056	22	0	3 (3)	6
						Mid	3590 .01	6393 34	3544 .11	636274	102		790 5	638976	14	0	0 (0)	204
					Uplink	High	3620 .16	6413 44	3429 .54	628636	504		792 6	640992	20	0	0 (0)	1008
Channel spacing CC1-CC2=44.82 MHz (Note 1)																		

	CC 2	70	30	189	Down link	Low	3604.83	640322	3570.81	638054	0	30	7898	638304	10	0	0 (0)	0
						Mid	3634.83	642322	3564.09	637606	102		7919	640320	2	0	1 (1)	206
						High	3664.98	644332	3449.52	629968	504		7940	642336	8	0	1 (1)	1010
30+10	CC 1	30	30	78	Down link	Low	3565.02	637668	3550.98	636732	0	30	7885	637056	12	0	3 (3)	6
(2)					&	Mid	3620.01	641334	3569.25	637950	102		7923	640704	18	0	2 (2)	208
					Uplink	High	3675.3	645020	3479.82	631988	504		7961	644352	4	0	1 (1)	1010
Channel spacing CC1-CC2=19.68 MHz (Note 1)																		
	CC 2	10	30	24	Down link	Low	3584.7	638980	3580.38	638692	0	30	7905	638976	20	0	1 (1)	2
						Mid	3639.69	642646	3598.65	639910	102		7943	642624	2	0	1 (1)	206
						High	3694.98	646332	3509.22	633948	504		7982	646368	12	0	3 (3)	1014
30+15	CC 1	30	30	78	Down link	Low	3565.02	637668	3550.98	636732	0	30	7885	637056	12	0	3 (3)	6
(2)					&	Mid	3617.49	641166	3566.73	637782	102		7921	640512	18	0	1 (1)	206
					Uplink	High	3670.29	644686	3474.81	631654	504		7958	644064	2	0	3 (3)	1014
Channel spacing CC1-CC2=22.2 MHz (Note 1)																		
	CC 2	15	30	38	Down link	Low	3587.22	639148	3580.38	638692	0	30	7905	638976	20	0	1 (1)	2
						Mid	3639.69	642646	3596.13	639742	102		7941	642432	2	0	0 (0)	204
						High	3692.49	646166	3504.21	633614	504		7978	645984	10	0	1 (1)	1010
30+20	CC 1	30	30	78	Down link	Low	3565.02	637668	3550.98	636732	0	30	7885	637056	12	0	3 (3)	6
(2)					&	Mid	3615.00	641000	3564.24	637616	102		7919	640320	16	0	0 (0)	204
					Uplink	High	3665.04	644336	3469.56	631304	504		7954	643680	16	0	1 (1)	1010
Channel spacing CC1-CC2=24.96 MHz (Note 1)																		
	CC 2	20	30	51	Down link	Low	3589.98	639332	3580.8	638720	0	30	7905	638976	16	0	0 (0)	0

					Mid	3639	6426	3594	639604	102		794	642336	20	0	1 (1)	206	
					High	3690	6460	3499	633292	504		797	645696	20	0	2 (2)	1012	
30+30 (2)	CC 1	30	30	78	Downlink	Low	3565	6376	3550	636732	0	30	788	637056	12	0	3 (3)	6
					&	Mid	3609	6406	3559	637282	102		791	640032	14	0	2 (2)	208
					Uplink	High	3654	6436	3459	630634	504		794	643008	14	0	1 (1)	1010
Channel spacing CC1-CC2=30 MHz (Note 1)																		
	CC 2	30	30	78	Downlink	Low	3595	6396	3580	638732	0	30	790	638976	4	0	0 (0)	0
						Mid	3639	6426	3589	639282	102		793	642048	6	0	3 (3)	210
						High	3684	6456	3489	632634	504		796	645024	6	0	2 (2)	1012
30+40 (2)	CC 1	30	30	78	Downlink	Low	3565	6376	3550	636732	0	30	788	637056	12	0	3 (3)	6
					&	Mid	3605	6403	3554	636950	102		791	639648	10	0	0 (0)	204
					Uplink	High	3645	6430	3449	629988	504		794	642336	12	0	0 (0)	1008
Channel spacing CC1-CC2=34.68 MHz (Note 1)																		
	CC 2	40	30	106	Downlink	Low	3599	6399	3580	638708	0	30	790	638976	4	0	1 (1)	2
						Mid	3639	6426	3583	638926	102		793	641664	2	0	2 (2)	208
						High	3679	6453	3479	631964	504		796	644352	4	0	2 (2)	1012
30+50 (2)	CC 1	30	30	78	Downlink	Low	3565	6376	3550	636732	0	30	788	637056	12	0	3 (3)	6
					&	Mid	3600	6400	3549	636616	102		790	639360	8	0	2 (2)	208
					Uplink	High	3635	6423	3439	629320	504		793	641664	8	0	0 (0)	1008
Channel spacing CC1-CC2=39.72 MHz (Note 1)																		
	CC 2	50	30	133	Downlink	Low	3604	6403	3580	638720	0	30	790	638976	16	0	0 (0)	0
						Mid	3639	6426	3579	638604	102		793	641376	12	0	3 (3)	210

						Hi gh	3675	6450	3469	631308	504		795	643680	12	0	1 (1)	1010
30+60 (2)	CC 1	30	30	78	Down link	Lo w	3565	6376	3550	636732	0	30	788	637056	12	0	3 (3)	6
					&	Mi d	3594	6396	3544	636282	102		790	638976	6	0	0 (0)	204
					Uplink	Hi gh	3625	6416	3429	628650	504		792	640992	6	0	0 (0)	1008
	Channel spacing CC1-CC2=44.76 MHz (Note 1)																	
	CC 2	60	30	162	Down link	Lo w	3609	6406	3580	638708	0	30	790	638976	4	0	1 (1)	2
						Mi d	3639	6426	3573	638258	102		792	640992	22	0	1 (1)	206
						Hi gh	3669	6446	3459	630626	504		794	643008	22	0	1 (1)	1010
30+70 (2)	CC 1	30	30	78	Down link	Lo w	3565	6376	3550	636732	0	30	788	637056	12	0	3 (3)	6
					&	Mi d	3590	6393	3539	635950	102		790	638688	2	0	2 (2)	208
					Uplink	Hi gh	3615	6410	3419	627980	504		791	640320	4	0	0 (0)	1008
	Channel spacing CC1-CC2=49.8 MHz (Note 1)																	
	CC 2	70	30	189	Down link	Lo w	3614	6409	3580	638720	0	30	790	638976	16	0	0 (0)	0
						Mi d	3639	6426	3569	637938	102		792	640704	6	0	3 (3)	210
						Hi gh	3664	6443	3449	629968	504		794	642336	8	0	1 (1)	1010
40+10 (2)	CC 1	40	30	106	Down link	Lo w	3570	6380	3550	636728	0	30	788	637056	16	0	3 (3)	6
					&	Mi d	3620	6413	3564	637614	102		791	640320	18	0	0 (0)	204
					Uplink	Hi gh	3670	6447	3470	631340	504		795	643680	4	0	0 (0)	1008
	Channel spacing CC1-CC2=24.36 MHz (Note 1)																	
	CC 2	10	30	24	Down link	Lo w	3594	6396	3590	639336	0	30	791	639648	0	0	3 (3)	6
						Mi d	3644	6429	3603	640222	102		794	642912	2	0	0 (0)	204
						Hi gh	3694	6463	3509	633948	504		798	646368	12	0	3 (3)	1014



40+15 (2)	CC 1	40	30	106	Down link	Low	3570	638000	3550.92	636728	0	30	7885	637056	16	0	3 (3)	6	
					&	Mid	3617.49	641166	3561.69	637446	102		7918	640224	18	0	3 (3)	210	
					Uplink	High	3665.61	644374	3465.09	631006	504		7951	643392	2	0	2 (2)	1012	
	Channel spacing CC1-CC2=26.88 MHz (Note 1)																		
	CC 2	15	30	38	Down link	Low	3596.88	639792	3590.04	639336	0	30	7912	639648	0	0	3 (3)	6	
						Mid	3644.37	642958	3600.81	640054	102		7945	642816	2	0	3 (3)	210	
						High	3692.49	646166	3504.21	633614	504		7978	645984	10	0	1 (1)	1010	
40+20 (2)	CC 1	40	30	106	Down link	Low	3570	638000	3550.92	636728	0	30	7885	637056	16	0	3 (3)	6	
					&	Mid	3615	641000	3559.2	637280	102		7916	640032	16	0	2 (2)	208	
					Uplink	High	3660.3	644020	3459.78	630652	504		7947	643008	20	0	0 (0)	1008	
	Channel spacing CC1-CC2=29.7 MHz (Note 1)																		
	CC 2	20	30	51	Down link	Low	3599.7	639980	3590.52	639368	0	30	7912	639648	16	0	1 (1)	2	
						Mid	3644.7	642980	3598.8	639920	102		7943	642624	16	0	0 (0)	204	
						High	3690	646000	3499.38	633292	504		7975	645696	20	0	2 (2)	1012	
40+30 (2)	CC 1	40	30	106	Down link	Low	3570	638000	3550.92	636728	0	30	7885	637056	16	0	3 (3)	6	
					&	Mid	3609.99	640666	3554.19	636946	102		7912	639648	14	0	0 (0)	204	
					Uplink	High	3650.31	643354	3449.79	629986	504		7940	642336	14	0	0 (0)	1008	
	Channel spacing CC1-CC2=34.68 MHz (Note 1)																		
	CC 2	30	30	78	Down link	Low	3604.68	640312	3590.64	639376	0	30	7912	639648	8	0	1 (1)	2	
						Mid	3644.67	642978	3593.91	639594	102		7940	642336	6	0	2 (2)	208	
						High	3684.99	645666	3489.51	632634	504		7968	645024	6	0	2 (2)	1012	
20+40	CC 1	20	30	51	Down link	Low	3560.01	637334	3550.83	636722	0	30	7885	637056	22	0	3 (3)	6	

(1,2)					&	Mid	3605	6403	3559	637274	102		791	640032	22	0	2 (2)	208
					Uplink	High	3650	6433	3459	630644	504		794	643008	4	0	1 (1)	1010
Channel spacing CC1-CC2=29.7 MHz (Note 1)																		
20+50	CC 2	40	30	106	Downlink	Low	3589	6393	3570	638042	0	30	789	638304	22	0	0 (0)	0
						Mid	3634	6423	3578	638594	102		793	641376	22	0	3 (3)	210
						High	3679	6453	3479	631964	504		796	644352	4	0	2 (2)	1012
(1,2)	CC 1	20	30	51	Downlink	Low	3560	6373	3550	636722	0	30	788	637056	22	0	3 (3)	6
(1,2)					&	Mid	3600	6400	3554	636940	102		791	639648	20	0	0 (0)	204
					Uplink	High	3640	6426	3449	629976	504		794	642336	0	0	1 (1)	1010
Channel spacing CC1-CC2=34.74 MHz (Note 1)																		
20+60	CC 2	50	30	133	Downlink	Low	3594	6396	3570	638054	0	30	789	638304	10	0	0 (0)	0
						Mid	3634	6423	3574	638272	102		792	640992	8	0	1 (1)	206
						High	3675	6450	3469	631308	504		795	643680	12	0	1 (1)	1010
(1,2)	CC 1	20	30	51	Downlink	Low	3560	6373	3550	636722	0	30	788	637056	22	0	3 (3)	6
(1,2)					&	Mid	3594	6396	3549	636606	102		790	639360	18	0	2 (2)	208
					Uplink	High	3630	6420	3439	629306	504		793	641664	22	0	0 (0)	1008
Channel spacing CC1-CC2=39.78 MHz (Note 1)																		
20+80	CC 2	60	30	162	Downlink	Low	3599	6399	3570	638042	0	30	789	638304	22	0	0 (0)	0
						Mid	3634	6423	3568	637926	102		792	640704	18	0	3 (3)	210
						High	3669	6446	3459	630626	504		794	643008	22	0	1 (1)	1010
(1,2)	CC 1	20	30	51	Downlink	Low	3560	6373	3550	636722	0	30	788	637056	22	0	3 (3)	6
(1,2)					&	Mid	3585	6390	3539	635940	102		790	638688	12	0	2 (2)	208

				Uplink	High	3610 .14	6406 76	3419 .52	627968	504		7919	640320	16	0	0 (0)	1008	
Channel spacing CC1-CC2=49.86 MHz (Note 1)																		
40+40 (0,1,2)	CC 2	80	30	217	Downlink	Low	3609 .87	6406 58	3570 .81	638054	0	30	7898	638304	10	0	0 (0)	0
						Mid	3634 .86	6423 24	3559 .08	637272	102		7916	640032	0	0	3 (3)	210
						High	3660	6440 00	3439 .5	629300	504		7933	641664	4	0	1 (1)	1010
	CC 1	40	30	106	Downlink	Low	3570	6380 00	3550 .92	636728	0	30	7885	637056	16	0	3 (3)	6
					&	Mid	3605 .01	6403 34	3549 .21	636614	102		7909	639360	10	0	2 (2)	208
					Uplink	High	3640 .02	6426 68	3439 .5	629300	504		7933	641664	4	0	1 (1)	1010
Channel spacing CC1-CC2=39.96 MHz (Note 1)																		
40+50 (1,2)	CC 2	40	30	106	Downlink	Low	3609 .96	6406 64	3590 .88	639392	0	30	7912	639648	16	0	0 (0)	0
						Mid	3644 .97	6429 98	3589 .17	639278	102		7937	642048	10	0	3 (3)	210
						High	3679 .98	6453 32	3479 .46	631964	504		7961	644352	4	0	2 (2)	1012
	CC 1	40	30	106	Downlink	Low	3570	6380 00	3550 .92	636728	0	30	7885	637056	16	0	3 (3)	6
					&	Mid	3600	6400 00	3544 .2	636280	102		7905	638976	8	0	0 (0)	204
					Uplink	High	3630 .06	6420 04	3429 .54	628636	504		7926	640992	20	0	0 (0)	1008
Channel spacing CC1-CC2=44.94 MHz (Note 1)																		
40+60 (1,2)	CC 2	50	30	133	Downlink	Low	3614 .94	6409 96	3591	639400	0	30	7912	639648	8	0	0 (0)	0
						Mid	3644 .94	6429 96	3584 .28	638952	102		7933	641664	0	0	1 (1)	206
						High	3675	6450 00	3469 .62	631308	504		7954	643680	12	0	1 (1)	1010
	CC 1	40	30	106	Downlink	Low	3570	6380 00	3550 .92	636728	0	30	7885	637056	16	0	3 (3)	6
					&	Mid	3594 .99	6396 66	3539 .19	635946	102		7902	638688	6	0	2 (2)	208
					Uplink	High	3620 .07	6413 38	3419 .55	627970	504		7919	640320	14	0	0 (0)	1008
Channel spacing CC1-CC2=49.92 MHz (Note 1)																		

	CC 2	60	30	162	Down link	Low	3619 .92	6413 28	3590 .76	639384	0	30	791 2	639648	0	0	1 (1)	2
						Mid	3644 .91	6429 94	3579 .03	638602	102		793 0	641376	14	0	3 (3)	210
						High	3669 .99	6446 66	3459 .39	630626	504		794 7	643008	22	0	1 (1)	1010

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

4.3.1.1.3.49 – 4.3.1.1.3.65 FFS

4.3.1.1.3.66 NR Intra-band contiguous configurations CA\_n66

4.3.1.1.3.66.1 CA\_n66B

Editor's note: Test frequencies for CA\_n66B with mixed numerology with SCS CC1=15kHz and SCS CC2=30 kHz or 60kHz; and SCS CC1=30kHz and SCS CC2=15 kHz or 60 kHz is FFS.

Table 4.3.1.1.3.66.1-1: NR Intra-Band contiguous CA configuration CA\_n66B (PCC=CC1 and SCC=CC2), SCS 15 kHz

CBW combination	CC Note 2	CBW [MHz]	SCS [kHz]	carrierBandwidth [PRBs]	Range	Carrier centre [MHz] Note 2	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequencyPointA [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS [kHz]	GS CN	absoluteFrequencySSB [ARFCN]	$k_{SSB}$	Offset carrier CORESET#0 [RBs] Note 3	CORESET#0 Index (Offset [RBs]) Note 4	offsetToPointA (SIB1) [PRBs] Note 4	
5+20	CC 1	5	15	25	Down link	Low	2112.5	422500	2110.25	422050	0	15	5279	422410	0	0	0 (0)	0
						Mid	2145	429000	2124.39	424878	102		5361	428910	0	0	0 (0)	102
						High	2177.5	435500	2084.53	416906	504		5443	435410	0	0	0 (0)	504

					Uplink	Low	171 2.5	3425 00	1710 .25	342050	0	-	-	-	-	-	-	
						Mid	174 5	3490 00	1652 .03	330406	504		-	-	-	-	-	
						High	177 7.5	3555 00	1774 .17	354834	6		-	-	-	-	-	
Channel spacing CC1-CC2=12 MHz (Note 1)																		
	CC 2	20	15	106	Downlink	Low	212 4.5	4249 00	2114 .96	422992	0	15	529 1	423370	6	0	0 (0)	0
						Mid	215 7	4314 00	2129 .1	425820	102		537 3	429870	6	0	0 (0)	102
						High	218 9.5	4379 00	2089 .24	417848	504		545 5	436370	6	0	0 (0)	504
5+40	CC 1	5	15	25	Downlink	Low	211 2.5	4225 00	2110 .25	422050	0	15	527 9	422410	0	0	0 (0)	0
						Mid	213 5.3	4270 60	2114 .69	422938	102		533 6	426970	0	0	0 (0)	102
						High	215 8.1	4316 20	2065 .13	413026	504		539 3	431530	0	0	0 (0)	504
					Uplink	Low	171 2.5	3425 00	1710 .25	342050	0	-	-	-	-	-	-	-
						Mid	173 5.3	3470 60	1642 .33	328466	504		-	-	-	-	-	-
						High	175 8.1	3516 20	1754 .77	350954	6		-	-	-	-	-	-
Channel spacing CC1-CC2=21.9 MHz (Note 1)																		
	CC 2	40	15	216	Downlink	Low	213 4.4	4268 80	2114 .96	422992	0	15	529 1	423370	6	0	0 (0)	0
						Mid	215 7.2	4314 40	2119 .4	423880	102		534 8	427930	6	0	0 (0)	102
						High	218 0	4360 00	2069 .84	413968	504		540 5	432490	6	0	0 (0)	504
10+15	CC 1	10	15	52	Downlink	Low	211 5	4230 00	2110 .32	422064	0	15	528 0	422430	2	0	0 (0)	0
						Mid	214 5	4290 00	2121 .96	424392	102		535 5	428430	2	0	0 (0)	102
						High	217 5	4350 00	2079 .6	415920	504		543 0	434430	2	0	0 (0)	504
					Uplink	Low	171 5	3430 00	1710 .32	342064	0	-	-	-	-	-	-	-
						Mid	174 5	3490 00	1649 .6	329920	504		-	-	-	-	-	-

					Hi gh	177 5	3550 00	1769 .24	353848	6		-	-	-	-	-	-		
Channel spacing CC1-CC2=12.3 MHz (Note 1)																			
	CC 2	15	15	79	Down link	Lo w	212 7.3	4254 60	2120 .19	424038	0	15	530 7	424590	4	1	2 (4)	5	
						Mi d	215 7.3	4314 60	2131 .83	426366	102			538 2	430590	4	1	2 (4)	107
						Hi gh	218 7.3	4374 60	2089 .47	417894	504			545 7	436590	4	1	2 (4)	509
10+20	CC 1	10	15	52	Down link	Lo w	211 5	4230 00	2110 .32	422064	0	15	528 0	422430	2	0	0 (0)	0	
						Mi d	214 5	4290 00	2121 .96	424392	102			535 5	428430	2	0	0 (0)	102
						Hi gh	217 5	4350 00	2079 .6	415920	504			543 0	434430	2	0	0 (0)	504
					Uplink	Lo w	171 5	3430 00	1710 .32	342064	0	-	-	-	-	-	-	-	
						Mi d	174 5	3490 00	1649 .6	329920	504			-	-	-	-	-	
						Hi gh	177 5	3550 00	1769 .24	353848	6			-	-	-	-	-	
Channel spacing CC1-CC2=14.4 MHz (Note 1)																			
	CC 2	20	15	106	Down link	Lo w	212 9.4	4258 80	2119 .86	423972	0	15	530 4	424350	6	0	0 (0)	0	
						Mi d	215 9.4	4318 80	2131 .5	426300	102			537 9	430350	6	0	0 (0)	102
						Hi gh	218 9.4	4378 80	2089 .14	417828	504			545 4	436350	6	0	0 (0)	504
10+40	CC 1	10	15	52	Down link	Lo w	211 5	4230 00	2110 .32	422064	0	15	528 0	422430	2	0	0 (0)	0	
						Mi d	213 5.4	4270 80	2112 .36	422472	102			533 1	426510	2	0	0 (0)	102
						Hi gh	215 5.7	4311 40	2060 .3	412060	504			538 1	430570	2	0	0 (0)	504
					Uplink	Lo w	171 5	3430 00	1710 .32	342064	0	-	-	-	-	-	-	-	
						Mi d	173 5.4	3470 80	1640	328000	504			-	-	-	-	-	
						Hi gh	175 5.7	3511 40	1749 .94	349988	6			-	-	-	-	-	
Channel spacing CC1-CC2=24.3 MHz (Note 1)																			

	CC 2	40	15	216	Down link	Lo w	213 9.3	4278 60	2119 .86	423972	0	15	530 4	424350	6	0	0 (0)	0					
						Mi d	215 9.7	4319 40	2121 .9	424380	102		535 5	428430	6	0	0 (0)	102					
						Hi gh	218 0	4360 00	2069 .84	413968	504		540 5	432490	6	0	0 (0)	504					
15+10	CC 1	15	15	79	Down link	Lo w	211 7.5	4235 00	2110 .39	422078	0	15	528 1	422450	4	0	0 (0)	0					
						Mi d	214 5	4290 00	2119 .53	423906	102		534 9	427950	4	0	0 (0)	102					
						Hi gh	217 2.5	4345 00	2074 .67	414934	504		541 7	433450	4	0	0 (0)	504					
					Uplink	Lo w	171 7.5	3435 00	1710 .39	342078	0	-	-	-	-	-	-	-					
						Mi d	174 5	3490 00	1647 .17	329434	504		-	-	-	-	-	-					
						Hi gh	177 2.5	3545 00	1764 .31	352862	6		-	-	-	-	-	-					
					Channel spacing CC1-CC2=12.3 MHz (Note 1)																		
						CC 2	10	15	52	Down link	Lo w	212 9.8	4259 60	2125 .12	425024	0	15	532 0	425570	2	1	2 (4)	5
											Mi d	215 7.3	4314 60	2134 .26	426852	102		538 8	431070	2	1	2 (4)	107
Hi gh	218 4.8	4369 60	2089 .4	417880							504	545 6	436570	2	1	2 (4)		509					
15+15	CC 1	15	15	79	Down link	Lo w	211 7.5	4235 00	2110 .39	422078	0	15	528 1	422450	4	0	0 (0)	0					
						Mi d	214 5	4290 00	2119 .53	423906	102		534 9	427950	4	0	0 (0)	102					
						Hi gh	217 2.5	4345 00	2074 .67	414934	504		541 7	433450	4	0	0 (0)	504					
					Uplink	Lo w	171 7.5	3435 00	1710 .39	342078	0	-	-	-	-	-	-						
						Mi d	174 5	3490 00	1647 .17	329434	504		-	-	-	-	-	-					
						Hi gh	177 2.5	3545 00	1764 .31	352862	6		-	-	-	-	-	-					
					Channel spacing CC1-CC2=15 MHz (Note 1)																		
						CC 2	15	15	79	Down link	Lo w	213 2.5	4265 00	2125 .39	425078	0	15	532 0	425570	8	1	1 (2)	3
											Mi d	216 0	4320 00	2134 .53	426906	102		538 8	431070	8	1	1 (2)	105

15+20	CC 1	15	15	79	Down link	Hi gh	218 7.5	4375 00	2089 .67	417934	504	15	545 6	436570	8	1	1 (2)	507	
						Lo w	211 7.5	4235 00	2110 .39	422078	0		528 1	422450	4	0	0 (0)	0	
						Mi d	214 5	4290 00	2119 .53	423906	102		534 9	427950	4	0	0 (0)	102	
						Hi gh	217 2.5	4345 00	2074 .67	414934	504		541 7	433450	4	0	0 (0)	504	
					Uplink	Lo w	171 7.5	3435 00	1710 .39	342078	0		-	-	-	-	-	-	
						Mi d	174 5	3490 00	1647 .17	329434	504		-	-	-	-	-	-	
	Hi gh	177 2.5	3545 00	1764 .31		352862	6	-	-	-	-	-	-						
	Channel spacing CC1-CC2=17.1 MHz (Note 1)																		
	CC 2	20	15	106	Down link	Lo w	213 4.6	4269 20	2125 .06	425012	0	15	532 0	425570	6	1	2 (4)	5	
						Mi d	216 2.1	4324 20	2134 .2	426840	102		538 8	431070	6	1	2 (4)	107	
Hi gh						218 9.6	4379 20	2089 .34	417868	504	545 6		436570	6	1	2 (4)	509		
20+5	CC 1	20	15	106	Down link	Lo w	212 0	4240 00	2110 .46	422092	0	15	528 2	422650	6	1	2 (4)	5	
						Mi d	214 5	4290 00	2117 .1	423420	102		534 3	427470	6	0	0 (0)	102	
						Hi gh	217 0	4340 00	2069 .74	413948	504		540 7	432530	2	0	1 (2)	506	
						Uplink	Lo w	172 0	3440 00	1710 .46	342092		0	-	-	-	-	-	-
					Mi d		174 5	3490 00	1644 .74	328948	504		-	-	-	-	-	-	
					Hi gh		177 0	3540 00	1759 .38	351876	6		-	-	-	-	-	-	
	Channel spacing CC1-CC2=12 MHz (Note 1)																		
	CC 2	5	15	25	Down link	Lo w	213 2	4264 00	2129 .75	425950	0	15	533 0	426490	0	1	2 (4)	5	
						Mi d	215 7	4314 00	2136 .39	427278	102		539 1	431310	0	0	0 (0)	102	
Hi gh						218 2	4364 00	2089 .03	417806	504	545 5		436370	8	1	0 (0)	505		
20+10	CC 1	20	15	106	Down link	Lo w	212 0	4240 00	2110 .46	422092	0	15	528 2	422650	6	1	2 (4)	5	



					Mid	2145	429000	2117.1	423420	102		5343	427470	6	0	0 (0)	102	
					High	2170	434000	2069.74	413948	504		5407	432530	2	0	1 (2)	506	
				Uplink	Low	1720	344000	1710.46	342092	0	-	-	-	-	-	-	-	
					Mid	1745	349000	1644.74	328948	504		-	-	-	-	-	-	
					High	1770	354000	1759.38	351876	6		-	-	-	-	-	-	
Channel spacing CC1-CC2=14.4 MHz (Note 1)																		
	CC 2	10	15	52	Downlink	Low	2134.4	426880	2129.72	425944	0	15	5330	426490	2	1	2 (4)	5
						Mid	2159.4	431880	2136.36	427272	102		5391	431310	2	0	0 (0)	102
						High	2184.4	436880	2089	417800	504		5455	436370	10	1	0 (0)	505
20+15	CC 1	20	15	106	Downlink	Low	2120	424000	2110.46	422092	0	15	5282	422650	6	1	2 (4)	5
						Mid	2145	429000	2117.1	423420	102		5343	427470	6	0	0 (0)	102
						High	2170	434000	2069.74	413948	504		5407	432530	2	0	1 (2)	506
					Uplink	Low	1720	344000	1710.46	342092	0	-	-	-	-	-	-	-
						Mid	1745	349000	1644.74	328948	504		-	-	-	-	-	-
						High	1770	354000	1759.38	351876	6		-	-	-	-	-	-
Channel spacing CC1-CC2=17.1 MHz (Note 1)																		
	CC 2	15	15	79	Downlink	Low	2137.1	427420	2129.99	425998	0	15	5330	426490	8	1	1 (2)	3
						Mid	2162.1	432420	2136.63	427326	102		5394	431550	4	1	2 (4)	107
						High	2187.1	437420	2089.27	417854	504		5455	436370	4	0	0 (0)	504
40+5	CC 1	40	15	216	Downlink	Low	2130	426000	2110.56	422112	0	15	5283	422670	6	1	2 (4)	5
						Mid	2145	429000	2107.2	421440	102		5319	425550	2	0	1 (2)	104
						High	2160	432000	2049.84	409968	504		5358	428670	6	1	2 (4)	509

					Uplink	Low	1730	346000	1710.56	342112	0	-	-	-	-	-	-	
						Mid	1745	349000	1634.84	326968	504		-	-	-	-	-	
						High	1760	352000	1739.48	347896	6		-	-	-	-	-	
Channel spacing CC1-CC2=21.9 MHz (Note 1)																		
	CC 2	5	15	25	Downlink	Low	2151.9	430380	2149.65	429930	0	15	5379	430350	8	1	0 (0)	1
						Mid	2166.9	433380	2146.29	429258	102		5418	433470	0	1	2 (4)	107
						High	2181.9	436380	2088.93	417786	504		5454	436350	8	1	0 (0)	505
40+10	CC 1	40	15	216	Downlink	Low	2130	426000	2110.56	422112	0	15	5283	422670	6	1	2 (4)	5
						Mid	2145	429000	2107.2	421440	102		5319	425550	2	0	1 (2)	104
						High	2160	432000	2049.84	409968	504		5358	428670	6	1	2 (4)	509
					Uplink	Low	1730	346000	1710.56	342112	0	-	-	-	-	-	-	-
						Mid	1745	349000	1634.84	326968	504		-	-	-	-	-	-
						High	1760	352000	1739.48	347896	6		-	-	-	-	-	-
Channel spacing CC1-CC2=24.3 MHz (Note 1)																		
	CC 2	10	15	52	Downlink	Low	2154.3	430860	2149.62	429924	0	15	5379	430350	10	1	0 (0)	1
						Mid	2169.3	433860	2146.26	429252	102		5418	433470	2	1	2 (4)	107
						High	2184.3	436860	2088.9	417780	504		5454	436350	10	1	0 (0)	505
<p>Note 1: Corresponds to nominal channel spacing in accordance with TS 38.101-1 [7], clause 5.4A.1 for the CC1 and CC2 channel bandwidth combination.</p> <p>Note 2: CCs are specified in increasing frequency order. CC1 is used as PCell if nothing else is specified in the test case.</p> <p>Note 3: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter <math>\Delta F_{\text{OffsetCORESET-0-Carrier}}</math> in Annex C expressed in number of common RBs.</p> <p>Note 4: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-1 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.</p>																		

Table 4.3.1.1.3.66.1-2: NR Intra-Band contiguous CA configuration CA\_n66B (PCC=CC1 and SCC=CC2), SCS 30 kHz

CBW combination	C C Note 2	CB W [MHz]	SC S [kHz]	carrierBandwidth [PRBs]	Range		Carrier centre [MHz] Note 2	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequencyPointA [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS [kHz]	GS CN	absoluteFrequencySSB [ARFCN]	k <sub>SSE</sub>	Offset carrier CORES ET#0 [RBs] Note 3	CORES ET#0 Index (Offset [RBs]) Note 4	offsetToPointA (SIB1) [PRBs] Note 4	
					Down link	Uplink													
10+15	C C1	10	30	24	Down link	Low	2115	423000	2110.68	422136	0	15	5286	422910	18	0	0 (5)	10	
						Mid	2145	429000	2103.96	420792	102	5361	428910	18	0	0 (5)	214		
						High	2175	435000	1989.24	397848	504	5436	434910	18	0	0 (5)	1018		
					Uplink	Low	1715	343000	1710.68	342136	0	-	-	-	-	-	-	-	
						Mid	1745	349000	1559.24	311848	504	-	-	-	-	-	-	-	
						High	1775	355000	1768.52	353704	6	-	-	-	-	-	-	-	
	Channel spacing CC1-CC2=12.3 MHz (Note 1)																		
	C C2	15	30	38	Down link	Low	2127.3	425460	2120.46	424092	0	15	5310	424830	6	0	0 (5)	10	
						Mid	2157.3	431460	2113.74	422748	102	5385	430830	6	0	0 (5)	214		
						High	2187.3	437460	1999.02	399804	504	5460	436830	6	0	0 (5)	1018		
	10+20	C C1	10	30	24	Down link	Low	2115	423000	2110.68	422136	0	15	5286	422910	18	0	0 (5)	10
							Mid	2145	429000	2103.96	420792	102	5361	428910	18	0	0 (5)	214	
High							2175	435000	1989.24	397848	504	5436	434910	18	0	0 (5)	1018		
Uplink						Low	1715	343000	1710.68	342136	0	-	-	-	-	-	-		
						Mid	1745	349000	1559.24	311848	504	-	-	-	-	-	-		
						High	1775	355000	1768.52	353704	6	-	-	-	-	-	-		
Channel spacing CC1-CC2=14.4 MHz (Note 1)																			

10+40	C C2	20	30	51	Down link	Lo w	212 9.4	4258 80	2120 .22	424044	0	15	531 0	424830	22	0	0 (5)	10
						Mi d	215 9.4	4318 80	2113 .5	422700	102		538 5	430830	22	0	0 (5)	214
						Hi gh	218 9.4	4378 80	1998 .78	399756	504		546 0	436830	22	0	0 (5)	1018
	C C1	10	30	24	Down link	Lo w	211 5	4230 00	2110 .68	422136	0	15	528 6	422910	18	0	0 (5)	10
						Mi d	213 5.4	4270 80	2094 .36	418872	102		533 7	426990	18	0	0 (5)	214
						Hi gh	215 5.7	4311 40	1969 .94	393988	504		538 7	431050	18	0	0 (5)	1018
	Uplink	Lo w	171 5	3430 00	1710 .68	342136	0	-	-	-	-	-	-	-				
		Mi d	173 5.4	3470 80	1549 .64	309928	504	-	-	-	-	-	-	-				
		Hi gh	175 5.7	3511 40	1749 .22	349844	6	-	-	-	-	-	-	-				
Channel spacing CC1-CC2=24.3 MHz (Note 1)																		
15+10	C C2	40	30	106	Down link	Lo w	213 9.3	4278 60	2120 .22	424044	0	15	531 0	424830	22	0	0 (5)	10
						Mi d	215 9.7	4319 40	2103 .9	420780	102		536 1	428910	22	0	0 (5)	214
						Hi gh	218 0	4360 00	1979 .48	395896	504		541 1	432970	22	0	0 (5)	1018
	C C1	15	30	38	Down link	Lo w	211 7.5	4235 00	2110 .66	422132	0	15	528 7	422930	2	0	1 (6)	12
						Mi d	214 5	4290 00	2101 .44	420288	102		535 5	428430	2	0	1 (6)	216
						Hi gh	217 2.5	4345 00	1984 .22	396844	504		542 3	433930	2	0	1 (6)	1020
	Uplink	Lo w	171 7.5	3435 00	1710 .66	342132	0	-	-	-	-	-	-	-				
		Mi d	174 5	3490 00	1556 .72	311344	504	-	-	-	-	-	-	-				
		Hi gh	177 2.5	3545 00	1763 .5	352700	6	-	-	-	-	-	-	-				
Channel spacing CC1-CC2=12.3 MHz (Note 1)																		
CC 2	10	30	24	Down link	Lo w	212 9.8	4259 60	2125 .48	425096	0	15	532 6	426050	6	0	3 (8)	16	
					Mi d	215 7.3	4314 60	2116 .26	423252	102		539 4	431550	6	0	3 (8)	220	

15+15	C C1	15	30	38	Down link	Hi gh	218 4.8	4369 60	1999 .04	399808	504	15	546 2	437050	6	0	3 (8)	1024	
						Lo w	211 7.5	4235 00	2110 .66	422132	0		528 7	422930	2	0	1 (6)	12	
						Mi d	214 5	4290 00	2101 .44	420288	102		535 5	428430	2	0	1 (6)	216	
						Hi gh	217 2.5	4345 00	1984 .22	396844	504		542 3	433930	2	0	1 (6)	1020	
					Uplin k	Lo w	171 7.5	3435 00	1710 .66	342132	0		-	-	-	-	-	-	
						Mi d	174 5	3490 00	1556 .72	311344	504		-	-	-	-	-	-	
	Hi gh	177 2.5	3545 00	1763 .5		352700	6	-	-	-	-	-	-						
	Channel spacing CC1-CC2=15 MHz (Note 1)																		
	C C2	15	30	38	Down link	Lo w	213 2.5	4265 00	2125 .66	425132	0	15	532 6	426050	18	0	2 (7)	14	
						Mi d	216 0	4320 00	2116 .44	423288	102		539 4	431550	18	0	2 (7)	218	
Hi gh						218 7.5	4375 00	1999 .22	399844	504	546 2		437050	18	0	2 (7)	1022		
15+20	C C1	15	30	38	Down link	Lo w	211 7.5	4235 00	2110 .66	422132	0	15	528 7	422930	2	0	1 (6)	12	
						Mi d	214 5	4290 00	2101 .44	420288	102		535 5	428430	2	0	1 (6)	216	
						Hi gh	217 2.5	4345 00	1984 .22	396844	504		542 3	433930	2	0	1 (6)	1020	
						Uplin k	Lo w	171 7.5	3435 00	1710 .66	342132		0	-	-	-	-	-	-
					Mi d		174 5	3490 00	1556 .72	311344	504		-	-	-	-	-	-	
					Hi gh		177 2.5	3545 00	1763 .5	352700	6		-	-	-	-	-	-	
	Channel spacing CC1-CC2=17.1 MHz (Note 1)																		
	C C2	20	30	51	Down link	Lo w	213 4.6	4269 20	2125 .42	425084	0	15	532 3	425810	2	0	0 (5)	10	
						Mi d	216 2.1	4324 20	2116 .2	423240	102		539 1	431310	2	0	0 (5)	214	
						Hi gh	218 9.6	4379 20	1998 .98	399796	504		545 9	436810	2	0	0 (5)	1018	
20+10	C C1	20	30	51	Down link	Lo w	212 0	4240 00	2110 .82	422164	0	15	528 5	422890	2	0	0 (5)	10	

						Mid	2145	429000	2099.1	419820	102		5349	427950	22	0	0 (5)	214
						High	2170	434000	1979.38	395876	504		5413	433010	18	0	1 (6)	1020
					Uplink	Low	1720	344000	1710.82	342164	0	-	-	-	-	-	-	-
						Mid	1745	349000	1554.38	310876	504		-	-	-	-	-	-
						High	1770	354000	1758.66	351732	6		-	-	-	-	-	-
Channel spacing CC1-CC2=14.4 MHz (Note 1)																		
	C C2	10	30	24	Down link	Low	2134.4	426880	2130.08	426016	0	15	5336	426970	6	0	3 (8)	16
						Mid	2159.4	431880	2118.36	423672	102		5397	431790	18	0	0 (5)	214
						High	2184.4	436880	1998.64	399728	504		5461	436850	14	0	1 (6)	1020
20+15	C C1	20	30	51	Down link	Low	2120	424000	2110.82	422164	0	15	5285	422890	2	0	0 (5)	10
						Mid	2145	429000	2099.1	419820	102		5349	427950	22	0	0 (5)	214
						High	2170	434000	1979.38	395876	504		5413	433010	18	0	1 (6)	1020
					Uplink	Low	1720	344000	1710.82	342164	0	-	-	-	-	-	-	-
						Mid	1745	349000	1554.38	310876	504		-	-	-	-	-	-
						High	1770	354000	1758.66	351732	6		-	-	-	-	-	-
Channel spacing CC1-CC2=17.1 MHz (Note 1)																		
	C C2	15	30	38	Down link	Low	2137.1	427420	2130.26	426052	0	15	5336	426970	18	0	2 (7)	14
						Mid	2162.1	432420	2118.54	423708	102		5397	431790	6	0	0 (5)	214
						High	2187.1	437420	1998.82	399764	504		5461	436850	2	0	1 (6)	1020
40+10	C C1	40	30	106	Down link	Low	2130	426000	2110.92	422184	0	15	5286	422910	2	0	0 (5)	10
						Mid	2145	429000	2089.2	417840	102		5325	426030	18	0	1 (6)	216
						High	2160	432000	1959.48	391896	504		5361	428910	2	0	0 (5)	1018

					Uplink	Low	17300	346000	1710.92	342184	0	-	-	-	-	-	-	
						Mid	1745	349000	1544.48	308896	504		-	-	-	-	-	
						High	1760	352000	1738.76	347752	6		-	-	-	-	-	
Channel spacing CC1-CC2=24.3 MHz (Note 1)																		
C	10	30	24		Downlink	Low	2154.3	430860	2149.98	429996	0	15	5385	430830	14	0	1 (6)	12
						Mid	2169.3	433860	2128.26	425652	102		5424	433950	6	0	3 (8)	220
						High	2184.3	436860	1998.54	399708	504		5460	436830	14	0	1 (6)	1020
<p>Note 1: Corresponds to nominal channel spacing in accordance with TS 38.101-1 [7], clause 5.4A.1 for the CC1 and CC2 channel bandwidth combination.</p> <p>Note 2: CCs are specified in increasing frequency order. CC1 is used as PCell if nothing else is specified in the test case.</p> <p>Note 3: The parameter OffsetCarrierCORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter <math>\Delta F_{\text{OffsetCORESET-0-Carrier}}</math> in Annex C expressed in number of common RBs.</p> <p>Note 4: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-2 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.</p>																		

4.3.1.1.3.67 – 4.3.1.1.3.76 FFS

4.3.1.1.3.77 NR Intra-band contiguous configurations CA\_n77

4.3.1.1.3.77.1 CA\_n77C

Editor's note: Test frequencies for CA\_n78C with mixed numerology with SCS CC1=15kHz and SCS CC2=30 kHz or 60kHz; and SCS CC1=30kHz and SCS CC2=15 kHz or 60 kHz is FFS.

**Table 4.3.1.1.3.77.1-1: NR Intra-Band contiguous CA configuration CA\_n77C (PCC=CC1 and SCC=CC2), SCS 30 kHz**

CBW combination (BCS)	C C Note 2	CB W [M Hz]	SC S [k Hz]	carrierBandwidth [PRBs]	Range	Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequencyPointA [ARFCN]	offsetToCarrier [Carrier PRBs]	S S block SCS	GSC N	absoluteFrequencySSB [ARFCN]	$k_{SS}$	Offset carrier CORESET#0 [RBs] Note 3	CORESET#0 Index (Offset [RBs]) Note 4	offsetToPointA (SIB1) [PRBs] Note 4
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											[k Hz]							
10+100 (1)	C C1	10	30	24	Down link &	Lo w	3305,01	620334	3300,69	620046	0	30	7711	620352	18	0	2 (2)	4
						Mid	3699,99	646666	3658,95	643930	102		7985	646656	14	0	1 (1)	206
					Uplink	Hi gh	4095,39	673026	3909,63	660642	504		8260	673056	6	0	3 (3)	1014
	Channel spacing CC1-CC2=54,6 MHz (Note 1)																	
C C2	100	30	273	Down link &	Lo w	3359,61	623974	3310,47	620698	0	30	7718	621024	14	0	3 (3)	6	
					Mid	3754,59	650306	3668,73	644582	102		7992	647328	10	0	2 (2)	208	
				Uplink	Hi gh	4149,99	676666	3919,41	661294	504		8266	673632	2	0	0 (0)	1008	
15+90 (1)	C C1	15	30	38	Down link &	Lo w	3307,5	620500	3300,66	620044	0	30	7711	620352	20	0	2 (2)	4
						Mid	3705,00	647000	3661,44	644096	102		7987	646848	16	0	2 (2)	208
					Uplink	Hi gh	4102,92	673528	3914,64	660976	504		8263	673344	8	0	1 (1)	1010
	Channel spacing CC1-CC2=52,08 MHz (Note 1)																	
C C2	90	30	245	Down link &	Lo w	3359,58	623972	3315,48	621032	0	30	7721	621312	16	0	1 (1)	2	
					Mid	3757,08	650472	3676,26	645084	102		7997	647808	12	0	1 (1)	206	
				Uplink	Hi gh	4155,00	677000	3929,46	661964	504		8273	674304	4	0	0 (0)	1008	
15+100 (1)	C C1	15	30	38	Down link &	Lo w	3307,5	620500	3300,66	620044	0	30	7711	620352	20	0	2 (2)	4
						Mid	3699,99	646666	3656,43	643762	102		7983	646464	14	0	0 (0)	204
					Uplink	Hi gh	4092,87	672858	3904,59	660306	504		8256	672672	6	0	1 (1)	1010
	Channel spacing CC1-CC2=57,12 MHz (Note 1)																	
C C2	100	30	273	Down link &	Lo w	3364,62	624308	3315,48	621032	0	30	7721	621312	16	0	1 (1)	2	
					Mid	3757,11	650474	3671,25	644750	102		7994	647520	10	0	3 (3)	210	
				Uplink	Hi gh	4149,99	676666	3919,41	661294	504		8266	673632	2	0	0 (0)	1008	



20+90 (1)	C C1	20	30	51	Down link &	Lo w	3310 ,02	6206 68	3300 ,84	620056	0	30	771 1	620352	8	0	2 (2)	4
						Mi d	3705 ,00	6470 00	3659 ,1	643940	102		798 5	646656	4	0	1 (1)	206
					Uplin k	Hi gh	4100 ,1	6733 40	3909 ,48	660632	504		826 0	673056	16	0	3 (3)	1014
	Channel spacing CC1-CC2=54,9 MHz (Note 1)																	
C C2	90	30	245	Down link &	Lo w	3364 ,92	6243 28	3320 ,82	621388	0	30	772 5	621696	20	0	2 (2)	4	
					Mi d	3759 ,9	6506 60	3679 ,08	645272	102		799 9	648000	16	0	1 (1)	206	
				Uplin k	Hi gh	4155 ,00	6770 00	3929 ,46	661964	504		827 3	674304	4	0	0 (0)	1008	
20+100 (1)	C C1	20	30	51	Down link &	Lo w	3310 ,02	6206 68	3300 ,84	620056	0	30	771 1	620352	8	0	2 (2)	4
						Mi d	3699 ,99	6466 66	3654 ,09	643606	102		798 2	646368	2	0	3 (3)	210
					Uplin k	Hi gh	4090 ,05	6726 70	3899 ,43	659962	504		825 3	672384	14	0	3 (3)	1014
	Channel spacing CC1-CC2=59,94 MHz (Note 1)																	
C C2	100	30	273	Down link &	Lo w	3369 ,96	6246 64	3320 ,82	621388	0	30	772 5	621696	20	0	2 (2)	4	
					Mi d	3759 ,93	6506 62	3674 ,07	644938	102		799 6	647712	14	0	3 (3)	210	
				Uplin k	Hi gh	4149 ,99	6766 66	3919 ,41	661294	504		826 6	673632	2	0	0 (0)	1008	
25+80 (1)	C C1	25	30	65	Down link &	Lo w	3312 ,51	6208 34	3300 ,81	620054	0	30	771 1	620352	10	0	2 (2)	4
						Mi d	3710 ,01	6473 34	3661 ,59	644106	102		798 7	646848	6	0	2 (2)	208
					Uplin k	Hi gh	4107 ,66	6738 44	3914 ,52	660968	504		826 3	673344	16	0	1 (1)	1010
	Channel spacing CC1-CC2=52,32 MHz (Note 1)																	
C C2	80	30	217	Down link &	Lo w	3364 ,83	6243 22	3325 ,77	621718	0	30	772 8	621984	2	0	1 (1)	2	
					Mi d	3762 ,33	6508 22	3686 ,55	645770	102		800 4	648480	22	0	0 (0)	204	
				Uplin k	Hi gh	4159 ,98	6773 32	3939 ,48	662632	504		828 0	674976	8	0	0 (0)	1008	
25+90	C C1	25	30	65	Down link	Lo w	3312 ,51	6208 34	3300 ,81	620054	0	30	771 1	620352	10	0	2 (2)	4

(1)					&	Mid	3705	6470	3656	643772	102		798	646464	4	0	0 (0)	204
					Uplink	High	4097,64	673176	3904,5	660300	504		8256	672672	12	0	1 (1)	1010
Channel spacing CC1-CC2=57,36 MHz (Note 1)																		
C C2	90	30	245	Downlink &	Low	3369,87	624658	3325,77	621718	0	30	7728	621984	2	0	1 (1)	2	
					Mid	3762,36	650824	3681,54	645436	102		8001	648192	20	0	2 (2)	208	
					Uplink	High	415500	677000	3929,46	661964	504		8273	674304	4	0	0 (0)	1008
25+100 (1)	C C1	25	30	65	Downlink &	Low	3312,51	620834	3300,81	620054	0	30	7711	620352	10	0	2 (2)	4
						Mid	3699,99	646666	3651,57	643438	102		7980	646176	2	0	2 (2)	208
						Uplink	High	4087,59	672506	3894,45	659630	504		8249	672000	10	0	1 (1)
Channel spacing CC1-CC2=62,4 MHz (Note 1)																		
C C2	100	30	273	Downlink &	Low	3374,91	624994	3325,77	621718	0	30	7728	621984	2	0	1 (1)	2	
					Mid	3762,39	650826	3676,53	645102	102		7997	647808	18	0	0 (0)	204	
					Uplink	High	4149,99	676666	3919,41	661294	504		8266	673632	2	0	0 (0)	1008
30+80 (1)	C C1	30	30	78	Downlink &	Low	331500	621000	3300,96	620064	0	30	7711	620352	0	0	2 (2)	4
						Mid	3710,01	647334	3659,25	643950	102		7985	646656	18	0	0 (0)	204
						Uplink	High	4105,14	673676	3909,66	660644	504		8260	673056	4	0	3 (3)
Channel spacing CC1-CC2=54,84 MHz (Note 1)																		
C C2	80	30	217	Downlink &	Low	3369,84	624656	3330,78	622052	0	30	7732	622368	4	0	3 (3)	6	
					Mid	3764,85	650990	3689,07	645938	102		8006	648672	22	0	1 (1)	206	
					Uplink	High	4159,98	677332	3939,48	662632	504		8280	674976	8	0	0 (0)	1008
30+90 (1)	C C1	30	30	78	Downlink &	Low	331500	621000	3300,96	620064	0	30	7711	620352	0	0	2 (2)	4
						Mid	370500	647000	3654,24	643616	102		7982	646368	16	0	2 (2)	208

					Uplink	High	4095,12	673008	3899,64	659976	504		8253	672384	0	0	3 (3)	1014
Channel spacing CC1-CC2=59,88 MHz (Note 1)																		
C C2	90	30	245	Downlink &	Low	3374,88	624992	3330,78	622052	0	30	7732	622368	4	0	3 (3)	6	
					Mid	3764,88	650992	3684,06	645604	102		8003	648384	20	0	3 (3)	210	
					Uplink	High	4155,00	677000	3929,46	661964		504	8273	674304	4	0	0 (0)	1008
30+100 (1)	C C1	30	30	78	Downlink &	Low	3315,00	621000	3300,96	620064	0	30	7711	620352	0	0	2 (2)	4
						Mid	3699,99	646666	3649,23	643282	102		7978	645984	14	0	0 (0)	204
						Uplink	High	4085,07	672338	3889,59	659306		504	8246	671712	22	0	2 (2)
Channel spacing CC1-CC2=64,92 MHz (Note 1)																		
C C2	100	30	273	Downlink &	Low	3379,92	625328	3330,78	622052	0	30	7732	622368	4	0	3 (3)	6	
					Mid	3764,91	650994	3679,05	645270	102		7999	648000	18	0	1 (1)	206	
					Uplink	High	4149,99	676666	3919,41	661294		504	8266	673632	2	0	0 (0)	1008
40+70 (1)	C C1	40	30	106	Downlink &	Low	3320,01	621334	3300,93	620062	0	30	7711	620352	2	0	2 (2)	4
						Mid	3714,99	647666	3659,19	643946	102		7985	646656	22	0	0 (0)	204
						Uplink	High	4110,15	674010	3909,63	660642		504	8260	673056	6	0	3 (3)
Channel spacing CC1-CC2=54,84 MHz (Note 1)																		
C C2	70	30	189	Downlink &	Low	3374,85	624990	3340,83	622722	0	30	7739	623040	6	0	3 (3)	6	
					Mid	3769,83	651322	3699,09	646606	102		8013	649344	2	0	2 (2)	208	
					Uplink	High	4164,99	677666	3949,53	663302		504	8287	675648	10	0	0 (0)	1008
40+80 (1)	C C1	40	30	106	Downlink &	Low	3320,01	621334	3300,93	620062	0	30	7711	620352	2	0	2 (2)	4
						Mid	3710,01	647334	3654,21	643614	102		7982	646368	18	0	2 (2)	208
						Uplink	High	4100,16	673344	3899,64	659976		504	8253	672384	0	0	3 (3)
Channel spacing CC1-CC2=59,82 MHz (Note 1)																		

	C C2	80	30	217	Down link & Uplink	Low	3379,83	625322	3340,77	622718	0	30	7739	623040	10	0	3 (3)	6
						Mid	3769,83	651322	3694,05	646270	102		8009	648960	2	0	0 (0)	204
						High	4159,98	677332	3939,48	662632	504		8280	674976	8	0	0 (0)	1008
40+90 (1)	C C1	40	30	106	Down link & Uplink	Low	3320,01	621334	3300,93	620062	0	30	7711	620352	2	0	2 (2)	4
						Mid	3705,00	647000	3649,2	643280	102		7978	645984	16	0	0 (0)	204
						High	4090,2	672680	3889,68	659312	504		8246	671712	16	0	2 (2)	1012
Channel spacing CC1-CC2=64,8 MHz (Note 1)																		
	C C2	90	30	245	Down link & Uplink	Low	3384,81	625654	3340,71	622714	0	30	7739	623040	14	0	3 (3)	6
						Mid	3769,8	651320	3688,98	645932	102		8006	648672	4	0	2 (2)	208
						High	4155,00	677000	3929,46	661964	504		8273	674304	4	0	0 (0)	1008
40+100 (1)	C C1	40	30	106	Down link & Uplink	Low	3320,01	621334	3300,93	620062	0	30	7711	620352	2	0	2 (2)	4
						Mid	3699,99	646666	3644,19	642946	102		7975	645696	14	0	2 (2)	208
						High	4080,27	672018	3879,75	658650	504		8239	671040	6	0	2 (2)	1012
Channel spacing CC1-CC2=69,72 MHz (Note 1)																		
	C C2	100	30	273	Down link & Uplink	Low	3389,73	625982	3340,59	622706	0	30	7739	623040	22	0	3 (3)	6
						Mid	3769,71	651314	3683,85	645590	102		8002	648288	10	0	0 (0)	204
						High	4149,99	676666	3919,41	661294	504		8266	673632	2	0	0 (0)	1008
50+60 (0,1)	C C1	50	30	133	Down link & Uplink	Low	3325,02	621668	3301,08	620072	0	30	7711	620352	16	0	1 (1)	2
						Mid	3720,00	648000	3659,34	643956	102		7985	646656	12	0	0 (0)	204
						High	4115,04	674336	3909,66	660644	504		8260	673056	4	0	3 (3)	1014
Channel spacing CC1-CC2=54,96 MHz (Note 1)																		
	C C2	60	30	162	Down link	Low	3379,98	625332	3350,82	623388	0	30	7746	623712	12	0	3 (3)	6

50+70 (1)	C C1	50	30	133	& Uplink	Mid	3774 ,96	6516 64	3709 ,08	647272	102	30	802 0	650016	8	0	2 (2)	208
						High	4170	6780 00	3959 ,4	663960	504		829 4	676320	0	0	1 (1)	1010
					& Downlink	Low	3325 ,02	6216 68	3301 ,08	620072	0	771 1	620352	16	0	1 (1)	2	
						Mid	3714 ,99	6476 66	3654 ,33	643622	102	798 2	646368	10	0	2 (2)	208	
& Uplink	High	4105 ,11	6736 74	3899 ,73	659982	504	825 3	672384	18	0	2 (2)	1012						
	Channel spacing CC1-CC2=59,88 MHz (Note 1)																	
50+80 (0,1)	C C2	70	30	189	& Downlink	Low	3384 ,9	6256 60	3350 ,88	623392	0	30	774 6	623712	8	0	3 (3)	6
						Mid	3774 ,87	6516 58	3704 ,13	646942	102		801 6	649632	2	0	0 (0)	204
					& Uplink	High	4164 ,99	6776 66	3949 ,53	663302	504	828 7	675648	10	0	0 (0)	1008	
						& Downlink	Low	3325 ,02	6216 68	3301 ,08	620072	0	771 1	620352	16	0	1 (1)	2
& Uplink	Mid	3710 ,01	6473 34	3649 ,35	643290		102	797 8	645984	6	0	0 (0)	204					
	& Uplink	High	4095 ,12	6730 08	3889 ,74	659316	504	824 6	671712	12	0	2 (2)	1012					
Channel spacing CC1-CC2=64,86 MHz (Note 1)																		
50+90 (1)	C C2	80	30	217	& Downlink	Low	3389 ,88	6259 92	3350 ,82	623388	0	30	774 6	623712	12	0	3 (3)	6
						Mid	3774 ,87	6516 58	3699 ,09	646606	102		801 3	649344	2	0	2 (2)	208
					& Uplink	High	4159 ,98	6773 32	3939 ,48	662632	504	828 0	674976	8	0	0 (0)	1008	
						& Downlink	Low	3325 ,02	6216 68	3301 ,08	620072	0	771 1	620352	16	0	1 (1)	2
& Uplink	Mid	3705 00	6470 00	3644 ,34	642956		102	797 5	645696	4	0	2 (2)	208					
	& Uplink	High	4085 ,16	6723 44	3879 ,78	658652	504	823 9	671040	4	0	2 (2)	1012					
Channel spacing CC1-CC2=69,84 MHz (Note 1)																		
C C2	90	30	245	& Downlink	Low	3394 ,86	6263 24	3350 ,76	623384	0	30	774 6	623712	16	0	3 (3)	6	
					Mid	3774 ,84	6516 56	3694 ,02	646268	102		800 9	648960	4	0	0 (0)	204	

50+100 (0,1)	C C1	50	30	133	Uplink	High	4155	6770	3929	661964	504	30	827	674304	4	0	0 (0)	1008	
					Downlink &	Low	3325	6216	3301	620072	0		771	620352	16	0	1 (1)	2	
						Mid	3699	6466	3639	642622	102		797	645312	2	0	0 (0)	204	
					Uplink	High	4075	6716	3869	657990	504		823	670368	18	0	1 (1)	1010	
	Channel spacing CC1-CC2=74,76 MHz (Note 1)																		
	C C2	100	30	273	Downlink &	Low	3399	6266	3350	623376	0	30	774	623616	0	0	0 (0)	0	
						Mid	3774	6516	3688	645926	102		800	648672	10	0	2 (2)	208	
						Uplink	High	4149	6766	3919	661294		504	826	673632	2	0	0 (0)	1008
	60+60 (0,1)	C C1	60	30	162	Downlink &	Low	3330	6220	3300	620056	0	30	771	620352	8	0	2 (2)	4
							Mid	3720	6480	3654	643608	102		798	646368	0	0	3 (3)	210
Uplink						High	4110	6740	3899	659960	504	825		672384	16	0	3 (3)	1014	
						Channel spacing CC1-CC2=60 MHz (Note 1)													
C C2	60	30	162	Downlink &	Low	3390	6260	3360	624056	0	30	775	624384	16	0	3 (3)	6		
					Mid	3780	6520	3714	647608	102		802	650304	8	0	0 (0)	204		
					Uplink	High	4170	6780	3959	663960		504	829	676320	0	0	1 (1)	1010	
60+70 (1)	C C1	60	30	162	Downlink &	Low	3330	6220	3300	620056	0	30	771	620352	8	0	2 (2)	4	
						Mid	3714	6476	3649	643274	102		797	645984	22	0	0 (0)	204	
					Uplink	High	4100	6733	3889	659298	504		824	671712	6	0	3 (3)	1014	
						Channel spacing CC1-CC2=64,92 MHz (Note 1)													
C C2	70	30	189	Downlink &	Low	3394	6263	3360	624060	0	30	775	624384	12	0	3 (3)	6		
					Mid	3779	6519	3709	647278	102		802	650016	2	0	2 (2)	208		
					Uplink	High	4164	6776	3949	663302		504	828	675648	10	0	0 (0)	1008	

60+80 (0,1)	C C1	60	30	162	Down link &	Lo w	3330	6220 00	3300 ,84	620056	0	30	771 1	620352	8	0	2 (2)	4
						Mi d	3710 ,01	6473 34	3644 ,13	642942	102		797 5	645696	18	0	2 (2)	208
					Uplin k	Hi gh	4090 ,08	6726 72	3879 ,48	658632	504		823 9	671040	0	0	3 (3)	1014
	Channel spacing CC1-CC2=69,9 MHz (Note 1)																	
C C2	80	30	217	Down link &	Lo w	3399 ,9	6266 60	3360 ,84	624056	0	30	775 3	624384	16	0	3 (3)	6	
					Mi d	3779 ,91	6519 94	3704 ,13	646942	102		801 6	649632	2	0	0 (0)	204	
				Uplin k	Hi gh	4159 ,98	6773 32	3939 ,48	662632	504		828 0	674976	8	0	0 (0)	1008	
60+90 (1)	C C1	60	30	162	Down link &	Lo w	3330	6220 00	3300 ,84	620056	0	30	771 1	620352	8	0	2 (2)	4
						Mi d	3705	6470 00	3639 ,12	642608	102		797 1	645312	16	0	0 (0)	204
					Uplin k	Hi gh	4080 ,12	6720 08	3869 ,52	657968	504		823 2	670368	16	0	2 (2)	1012
	Channel spacing CC1-CC2=74,88 MHz (Note 1)																	
C C2	90	30	245	Down link &	Lo w	3404 ,88	6269 92	3360 ,78	624052	0	30	775 3	624384	20	0	3 (3)	6	
					Mi d	3779 ,88	6519 92	3699 ,06	646604	102		801 3	649344	4	0	2 (2)	208	
				Uplin k	Hi gh	4155	6770 00	3929 ,46	661964	504		827 3	674304	4	0	0 (0)	1008	
60+100 (0,1)	C C1	60	30	162	Down link &	Lo w	3330	6220 00	3300 ,84	620056	0	30	771 1	620352	8	0	2 (2)	4
						Mi d	3699 ,99	6466 66	3634 ,11	642274	102		796 8	645024	14	0	2 (2)	208
					Uplin k	Hi gh	4070 ,19	6713 46	3859 ,59	657306	504		822 5	669696	6	0	2 (2)	1012
	Channel spacing CC1-CC2=79,8 MHz (Note 1)																	
C C2	100	30	273	Down link &	Lo w	3409 ,8	6273 20	3360 ,66	624044	0	30	775 2	624288	4	0	0 (0)	0	
					Mi d	3779 ,79	6519 86	3693 ,93	646262	102		800 9	648960	10	0	0 (0)	204	
				Uplin k	Hi gh	4149 ,99	6766 66	3919 ,41	661294	504		826 6	673632	2	0	0 (0)	1008	
70+60	C C1	70	30	189	Down link	Lo w	3335 ,01	6223 34	3300 ,99	620066	0	30	771 1	620352	22	0	1 (1)	2

(1)					&	Mid	3720	648000	3649,26	643284	102		7978	645984	12	0	0 (0)	204
					Uplink	High	4105,08	673672	3889,62	659308	504		8246	671712	20	0	2 (2)	1012
Channel spacing CC1-CC2=64,92 MHz (Note 1)																		
C C2	60	30	162	Downlink &	Low	3399,93	626662	3370,77	624718	0	30	7759	624960	2	0	0 (0)	0	
					Mid	3784,92	652328	3719,04	647936	102		8027	650688	16	0	2 (2)	208	
					Uplink	High	417000	678000	3959,4	663960		504	8294	676320	0	0	1 (1)	1010
70+70 (1)	C C1	70	30	189	Downlink &	Low	3335,01	622334	3300,99	620066	0	30	7711	620352	22	0	1 (1)	2
						Mid	3714,99	647666	3644,25	642950	102		7975	645696	10	0	2 (2)	208
						Uplink	High	4095,03	673002	3879,57	658638		504	8239	671040	18	0	2 (2)
Channel spacing CC1-CC2=69,96 MHz (Note 1)																		
C C2	70	30	189	Downlink &	Low	3404,97	626998	3370,95	624730	0	30	7760	625056	14	0	3 (3)	6	
					Mid	3784,95	652330	3714,21	647614	102		8023	650304	2	0	0 (0)	204	
					Uplink	High	4164,99	677666	3949,53	663302		504	8287	675648	10	0	0 (0)	1008
70+80 (1)	C C1	70	30	189	Downlink &	Low	3335,01	622334	3300,99	620066	0	30	7711	620352	22	0	1 (1)	2
						Mid	3710,01	647334	3639,27	642618	102		7971	645312	6	0	0 (0)	204
						Uplink	High	4085,04	672336	3869,58	657972		504	8232	670368	12	0	2 (2)
Channel spacing CC1-CC2=74,94 MHz (Note 1)																		
C C2	80	30	217	Downlink &	Low	3409,95	627330	3370,89	624726	0	30	7760	625056	18	0	3 (3)	6	
					Mid	3784,95	652330	3709,17	647278	102		8020	650016	2	0	2 (2)	208	
					Uplink	High	4159,98	677332	3939,48	662632		504	8280	674976	8	0	0 (0)	1008
70+90 (1)	C C1	70	30	189	Downlink &	Low	3335,01	622334	3300,99	620066	0	30	7711	620352	22	0	1 (1)	2
						Mid	3705,00	647000	3634,26	642284	102		7968	645024	4	0	2 (2)	208



					Uplink	High	4075,08	671672	3859,62	657308	504		8225	669696	4	0	2 (2)	1012
Channel spacing CC1-CC2=79,92 MHz (Note 1)																		
C C2	90	30	245	Downlink & Uplink	Low & Mid	3414,93	627662	3370,83	624722	0	30	7760	625056	22	0	3 (3)	6	
						3784,92	652328	3704,1	646940	102		8016	649632	4	0	0 (0)	204	
						4155,00	677000	3929,46	661964	504		8273	674304	4	0	0 (0)	1008	
70+100 (1)	C C1	70	30	189	Downlink & Uplink	Low & Mid	3335,01	622334	3300,99	620066	0	30	7711	620352	22	0	1 (1)	2
							3699,99	646666	3629,25	641950	102		7964	644640	2	0	0 (0)	204
							4065,15	671010	3849,69	656646	504		8218	669024	18	0	1 (1)	1010
Channel spacing CC1-CC2=84,84 MHz (Note 1)																		
C C2	100	30	273	Downlink & Uplink	Low & Mid	3419,85	627990	3370,71	624714	0	30	7759	624960	6	0	0 (0)	0	
						3784,83	652322	3698,97	646598	102		8013	649344	10	0	2 (2)	208	
						4149,99	676666	3919,41	661294	504		8266	673632	2	0	0 (0)	1008	
80+60 (1)	C C1	80	30	217	Downlink & Uplink	Low & Mid	3340,02	622668	3300,96	620064	0	30	7711	620352	0	0	2 (2)	4
							3720,00	648000	3644,22	642948	102		7975	645696	12	0	2 (2)	208
							4100,1	673340	3879,6	658640	504		8239	671040	16	0	2 (2)	1012
Channel spacing CC1-CC2=69,9 MHz (Note 1)																		
C C2	60	30	162	Downlink & Uplink	Low & Mid	3409,92	627328	3380,76	625384	0	30	7766	625632	8	0	0 (0)	0	
						3789,9	652660	3724,02	648268	102		8030	650976	20	0	0 (0)	204	
						4170,00	678000	3959,4	663960	504		8294	676320	0	0	1 (1)	1010	
80+70 (1)	C C1	80	30	217	Downlink & Uplink	Low & Mid	3340,02	622668	3300,96	620064	0	30	7711	620352	0	0	2 (2)	4
							3714,99	647666	3639,21	642614	102		7971	645312	10	0	0 (0)	204
							4090,05	672670	3869,55	657970	504		8232	670368	14	0	2 (2)	1012
Channel spacing CC1-CC2=74,94 MHz (Note 1)																		

	C C2	70	30	189	Down link & Uplink	Low	3414,96	627664	3380,94	625396	0	30	7767	625728	20	0	3 (3)	6
						Mid	3789,93	652662	3719,19	647946	102		8027	650688	6	0	2 (2)	208
						High	4164,99	677666	3949,53	663302	504		8287	675648	10	0	0 (0)	1008
80+80 (0,1)	C C1	80	30	217	Down link & Uplink	Low	3340,02	622668	3300,96	620064	0	30	7711	620352	0	0	2 (2)	4
						Mid	3710,01	647334	3634,23	642282	102		7968	645024	6	0	2 (2)	208
						High	4080,00	672000	3859,5	657300	504		8225	669696	12	0	2 (2)	1012
Channel spacing CC1-CC2=79,98 MHz (Note 1)																		
	C C2	80	30	217	Down link & Uplink	Low	3420,00	628000	3380,94	625396	0	30	7767	625728	20	0	3 (3)	6
						Mid	3789,99	652666	3714,21	647614	102		8023	650304	2	0	0 (0)	204
						High	4159,98	677332	3939,48	662632	504		8280	674976	8	0	0 (0)	1008
80+90 (1)	C C1	80	30	217	Down link & Uplink	Low	3340,02	622668	3300,96	620064	0	30	7711	620352	0	0	2 (2)	4
						Mid	3705,00	647000	3629,22	641948	102		7964	644640	4	0	0 (0)	204
						High	4070,04	671336	3849,54	656636	504		8218	669024	4	0	2 (2)	1012
Channel spacing CC1-CC2=84,96 MHz (Note 1)																		
	C C2	90	30	245	Down link & Uplink	Low	3424,98	628332	3380,88	625392	0	30	7766	625632	0	0	0 (0)	0
						Mid	3789,96	652664	3709,14	647276	102		8020	650016	4	0	2 (2)	208
						High	4155,00	677000	3929,46	661964	504		8273	674304	4	0	0 (0)	1008
80+100 (0,1)	C C1	80	30	217	Down link & Uplink	Low	3340,02	622668	3300,96	620064	0	30	7711	620352	0	0	2 (2)	4
						Mid	3699,99	646666	3624,21	641614	102		7961	644352	2	0	2 (2)	208
						High	4060,11	670674	3839,61	655974	504		8211	668352	18	0	1 (1)	1010
Channel spacing CC1-CC2=89,88 MHz (Note 1)																		
	C C2	100	30	273	Down link	Low	3429,9	628660	3380,76	625384	0	30	7766	625632	8	0	0 (0)	0

90+60 (1)	C C1	90	30	245	& Uplink	Mid	3789,87	652658	3704,01	646934	102	30	8016	649632	10	0	0 (0)	204	
						High	4149,99	676666	3919,41	661294	504		8266	673632	2	0	0 (0)	1008	
					& Downlink	Low	334500	623000	3300,9	620060	0		7711	620352	4	0	2 (2)	4	
						Mid	372000	648000	3639,18	642612	102		7971	645312	12	0	0 (0)	204	
	Uplink	High	4095,12	673008	3869,58	657972	504	8232	670368	12	0	2 (2)	1012						
		Channel spacing CC1-CC2=74,88 MHz (Note 1)																	
	C C2	60	30	162	Downlink &	Low	3419,88	627992	3390,72	626048	0	30	7773	626304	16	0	0 (0)	0	
						Mid	3794,88	652992	3729,17	648600	102		8034	651360	0	0	3 (3)	210	
					Uplink	High	417000	678000	3959,4	663960	504		8294	676320	0	0	1 (1)	1010	
						Channel spacing CC1-CC2=79,92 MHz (Note 1)													
90+70 (1)	C C1	90	30	245	Downlink &	Low	334500	623000	3300,9	620060	0	30	7711	620352	4	0	2 (2)	4	
						Mid	3714,99	647666	3634,17	642278	102		7968	645024	10	0	2 (2)	208	
					Uplink	High	4085,07	672338	3859,53	657302	504		8225	669696	10	0	2 (2)	1012	
						Channel spacing CC1-CC2=79,92 MHz (Note 1)													
	C C2	70	30	189	Downlink &	Low	3424,92	628328	3390,9	626060	0	30	7773	626304	4	0	0 (0)	0	
						Mid	3794,91	652994	3724,17	648278	102		8030	650976	10	0	0 (0)	204	
					Uplink	High	4164,99	677666	3949,53	663302	504		8287	675648	10	0	0 (0)	1008	
						Channel spacing CC1-CC2=84,96 MHz (Note 1)													
	90+80 (1)	C C1	90	30	245	Downlink &	Low	334500	623000	3300,9	620060	0	30	7711	620352	4	0	2 (2)	4
							Mid	3710,01	647334	3629,19	641946	102		7964	644640	6	0	0 (0)	204
Uplink						High	4075,02	671668	3849,48	656632	504	8218		669024	8	0	2 (2)	1012	
						Channel spacing CC1-CC2=84,96 MHz (Note 1)													
C C2		80	30	217	Downlink &	Low	3429,96	628664	3390,9	626060	0	30	7773	626304	4	0	0 (0)	0	
						Mid	3794,97	652998	3719,19	647946	102		8027	650688	6	0	2 (2)	208	

90+90 (1)	C C1	90	30	245	Uplink	High	4159,98	677332	3939,48	662632	504	30	8280	674976	8	0	0 (0)	1008	
					Downlink &	Low	334500	623000	3300,9	620060	0		7711	620352	4	0	2 (2)	4	
						Mid	370500	647000	3624,18	641612	102		7961	644352	4	0	2 (2)	208	
					Uplink	High	406500	671000	3839,46	655964	504		8211	668352	4	0	2 (2)	1012	
	Channel spacing CC1-CC2=90 MHz (Note 1)																		
	C C2	90	30	245	Downlink &	Low	343500	629000	3390,9	626060	0	30	7773	626304	4	0	0 (0)	0	
						Mid	379500	653000	3714,18	647612	102		8023	650304	4	0	0 (0)	204	
						Uplink	High	415500	677000	3929,46	661964		504	8273	674304	4	0	0 (0)	1008
	90+100 (1)	C C1	90	30	245	Downlink &	Low	334500	623000	3300,9	620060	0	30	7711	620352	4	0	2 (2)	4
							Mid	3699,99	646666	3619,17	641278	102		7957	643968	2	0	0 (0)	204
Uplink						High	4055,07	670338	3829,53	655302	504	8204		667680	18	0	1 (1)	1010	
						Channel spacing CC1-CC2=94,92 MHz (Note 1)													
C C2	100	30	273	Downlink &	Low	3439,92	629328	3390,78	626052	0	30	7773	626304	12	0	0 (0)	0		
					Mid	3794,91	652994	3709,05	647270	102		8020	650016	10	0	2 (2)	208		
					Uplink	High	4149,99	676666	3919,41	661294		504	8266	673632	2	0	0 (0)	1008	
100+60 (1)	C C1	100	30	273	Downlink &	Low	3350,01	623334	3300,87	620058	0	30	7711	620352	6	0	2 (2)	4	
						Mid	372000	648000	3634,14	642276	102		7968	645024	12	0	2 (2)	208	
					Uplink	High	4090,2	672680	3859,62	657308	504		8225	669696	4	0	2 (2)	1012	
	Channel spacing CC1-CC2=79,8 MHz (Note 1)																		
	C C2	60	30	162	Downlink &	Low	3429,81	628654	3400,65	626710	0	30	7780	626976	2	0	1 (1)	2	
						Mid	3799,8	653320	3733,92	648928	102		8037	651648	8	0	1 (1)	206	
Uplink					High	417000	678000	3959,4	663960	504	8294		676320	0	0	1 (1)	1010		

100+70 (1)	C C1	100	30	273	Down link & Uplink	Low	3350 ,01	6233 34	3300 ,87	620058	0	30	771 1	620352	6	0	2 (2)	4	
						Mid	3714 ,99	6476 66	3629 ,13	641942	102		796 4	644640	10	0	0 (0)	204	
						High	4080 ,15	6720 10	3849 ,57	656638	504		821 8	669024	2	0	2 (2)	1012	
	Channel spacing CC1-CC2=84,84 MHz (Note 1)																		
	C C2	70	30	189	Down link & Uplink	Low	3434 ,85	6289 90	3400 ,83	626722	0	30	778 0	626976	14	0	0 (0)	0	
						Mid	3799 ,83	6533 22	3729 ,09	648606	102		803 4	651360	18	0	2 (2)	208	
High						4164 ,99	6776 66	3949 ,53	663302	504	828 7		675648	10	0	0 (0)	1008		
100+80 (1)	C C1	100	30	273	Down link & Uplink	Low	3350 ,01	6233 34	3300 ,87	620058	0	30	771 1	620352	6	0	2 (2)	4	
						Mid	3710 ,01	6473 34	3624 ,15	641610	102		796 1	644352	6	0	2 (2)	208	
						High	4070 ,1	6713 40	3839 ,52	655968	504		821 1	668352	0	0	2 (2)	1012	
	Channel spacing CC1-CC2=89,88 MHz (Note 1)																		
	C C2	80	30	217	Down link & Uplink	Low	3439 ,89	6293 26	3400 ,83	626722	0	30	778 0	626976	14	0	0 (0)	0	
						Mid	3799 ,89	6533 26	3724 ,11	648274	102		803 0	650976	14	0	0 (0)	204	
High						4159 ,98	6773 32	3939 ,48	662632	504	828 0		674976	8	0	0 (0)	1008		
100+90 (1)	C C1	100	30	273	Down link & Uplink	Low	3350 ,01	6233 34	3300 ,87	620058	0	30	771 1	620352	6	0	2 (2)	4	
						Mid	3705 00	6470 00	3619 ,14	641276	102		795 7	643968	4	0	0 (0)	204	
						High	4060 ,08	6706 72	3829 ,5	655300	504		820 4	667680	20	0	1 (1)	1010	
	Channel spacing CC1-CC2=94,92 MHz (Note 1)																		
	C C2	90	30	245	Down link & Uplink	Low	3444 ,93	6296 62	3400 ,83	626722	0	30	778 0	626976	14	0	0 (0)	0	
						Mid	3799 ,92	6533 28	3719 ,1	647940	102		802 7	650688	12	0	2 (2)	208	
High						4155 00	6770 00	3929 ,46	661964	504	827 3		674304	4	0	0 (0)	1008		
100 +100	C C1	100	30	273	Down link	Low	3350 ,01	6233 34	3300 ,87	620058	0	30	771 1	620352	6	0	2 (2)	4	

(0,1)					&	Mid	3699,99	646666	3614,13	640942	102		7954	643680	2	0	2 (2)	208	
					Uplink	High	4050,03	670002	3819,45	654630	504		8197	667008	18	0	1 (1)	1010	
	Channel spacing CC1-CC2=99,96 MHz (Note 1)																		
	C2	100	30	273	Downlink &	Low	3449,97	629998	3400,83	626722	0	30	7780	626976	14	0	0 (0)	0	
					Mid	3799,95	653330	3714,09	647606	102		8023	650304	10	0	0 (0)	204		
				Uplink	High	4149,99	676666	3919,41	661294	504		8266	673632	2	0	0 (0)	1008		
<p>Note 1: Corresponds to nominal channel spacing in accordance with TS 38.101-1 [7], clause 5.4A.1 for the CC1 and CC2 channel bandwidth combination.</p> <p>Note 2: CCs are specified in increasing frequency order. CC1 is used as PCell if nothing else is specified in the test case.</p> <p>Note 3: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter <math>\Delta F_{\text{OffsetCORESET-0-Carrier}}</math> in Annex C expressed in number of common RBs.</p> <p>Note 4: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-4 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.</p>																			

4.3.1.1.3.78 NR Intra-band contiguous configurations CA\_n78

4.3.1.1.3.78.1 CA\_n78C

Editor's note: Test frequencies for CA\_n78C with mixed numerology with SCS CC1=15kHz and SCS CC2=30 kHz or 60kHz; and SCS CC1=30kHz and SCS CC2=15 kHz or 60 kHz is FFS.

Table 4.3.1.1.3.78.1-1: NR Intra-Band contiguous CA configuration CA\_n78C (PCC=CC1 and SCC=CC2), SCS 30 kHz

CBW combination	C C Note 2	CB W [MHz]	SC S [kHz]	carrierBandwidth [PRBs]	Range	Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequencyPointA [ARFCN]	offsetToCarrier [Carrier PRBs]	S S block SCS [kHz]	GSC N	absoluteFrequencySSB [ARFCN]	$k_{SS}$	Offset carrier CORESET#0 [RBs] Note 3	CORESET#0 Index (Offset [RBs]) Note 4	offsetToPointA (SIB1) [PRBs] Note 4
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50+60	C C1	50	30	133	Down link &	Lo w	3325 .02	6216 68	3301 .08	620072	0	30	771 1	620352	16	0	1 (1)	2
						Mi d	3519 .99	6346 66	3459 .33	630622	102		784 6	633312	2	0	0 (0)	204
					Uplin k	Hi gh	3715 .02	6476 68	3509 .64	633976	504		798 2	646368	8	0	2 (2)	1012
	Channel spacing CC1-CC2=54.96 MHz (Note 1)																	
C C2	60	30	162	Down link &	Lo w	3379 .98	6253 32	3350 .82	623388	0	30	774 6	623712	12	0	3 (3)	6	
					Mi d	3574 .95	6383 30	3509 .07	633938	102		788 1	636672	22	0	1 (1)	206	
				Uplin k	Hi gh	3769 .98	6513 32	3559 .38	637292	504		801 6	649632	4	0	0 (0)	1008	
50+80	C C1	50	30	133	Down link &	Lo w	3325 .02	6216 68	3301 .08	620072	0	30	771 1	620352	16	0	1 (1)	2
						Mi d	3510 00	6340 00	3449 .34	629956	102		784 0	632736	20	0	3 (3)	210
					Uplin k	Hi gh	3695 .13	6463 42	3489 .75	632650	504		796 8	645024	14	0	1 (1)	1010
	Channel spacing CC1-CC2=64.86 MHz (Note 1)																	
C C2	80	30	217	Down link &	Lo w	3389 .88	6259 92	3350 .82	623388	0	30	774 6	623712	12	0	3 (3)	6	
					Mi d	3574 .86	6383 24	3499 .08	633272	102		787 4	636000	16	0	1 (1)	206	
				Uplin k	Hi gh	3759 .99	6506 66	3539 .49	635966	504		800 3	648384	10	0	3 (3)	1014	
50+100	C C1	50	30	133	Down link &	Lo w	3325 .02	6216 68	3301 .08	620072	0	30	771 1	620352	16	0	1 (1)	2
						Mi d	3500 .01	6333 34	3439 .35	629290	102		783 3	632064	14	0	3 (3)	210
					Uplin k	Hi gh	3675 .24	6450 16	3469 .86	631324	504		795 4	643680	20	0	0 (0)	1008
	Channel spacing CC1-CC2=74.76 MHz (Note 1)																	
C C2	100	30	273	Down link &	Lo w	3399 .78	6266 52	3350 .64	623376	0	30	774 5	623616	0	0	0 (0)	0	
					Mi d	3574 .77	6383 18	3488 .91	632594	102		786 7	635328	22	0	1 (1)	206	
				Uplin k	Hi gh	3750 00	6500 00	3519 .42	634628	504		798 9	647040	4	0	3 (3)	1014	
60+50	C C1	60	30	162	Down link	Lo w	3330 00	6220 00	3300 .84	620056	0	30	771 1	620352	8	0	2 (2)	4

					&	Mid	3525	635000	3459.12	630608	102		7846	633312	16	0	0 (0)	204	
					Uplink	High	3720.03	648002	3509.43	633962	504		7982	646368	22	0	2 (2)	1012	
Channel spacing CC1-CC2=54.96 MHz (Note 1)																			
	C C2	50	30	133	Downlink &	Low	3384.96	625664	3361.02	624068	0	30	7753	624384	4	0	3 (3)	6	
						Mid	3579.96	638664	3519.3	634620	102		7888	637344	12	0	1 (1)	206	
					Uplink	High	3774.99	651666	3569.61	637974	504		8024	650400	18	0	3 (3)	1014	
60+60	C C1	60	30	162	Downlink &	Low	3330	622000	3300.84	620056	0	30	7711	620352	8	0	2 (2)	4	
						Mid	3519.99	634666	3454.11	630274	102		7843	633024	14	0	2 (2)	208	
					Uplink	High	3709.98	647332	3499.38	633292	504		7975	645696	20	0	2 (2)	1012	
Channel spacing CC1-CC2=60 MHz (Note 1)																			
	C C2	60	30	162	Downlink &	Low	3390	626000	3360.84	624056	0	30	7753	624384	16	0	3 (3)	6	
						Mid	3579.99	638666	3514.11	634274	102		7885	637056	22	0	3 (3)	210	
					Uplink	High	3769.98	651332	3559.38	637292	504		8016	649632	4	0	0 (0)	1008	
60+80	C C1	60	30	162	Downlink &	Low	3330	622000	3300.84	620056	0	30	7711	620352	8	0	2 (2)	4	
						Mid	3510	634000	3444.12	629608	102		7836	632352	8	0	2 (2)	208	
					Uplink	High	3690.09	646006	3479.49	631966	504		7961	644352	2	0	2 (2)	1012	
Channel spacing CC1-CC2=69.9 MHz (Note 1)																			
	C C2	80	30	217	Downlink &	Low	3399.9	626660	3360.84	624056	0	30	7753	624384	16	0	3 (3)	6	
						Mid	3579.9	638660	3504.12	633608	102		7878	636384	16	0	3 (3)	210	
					Uplink	High	3759.99	650666	3539.49	635966	504		8003	648384	10	0	3 (3)	1014	
60+100	C C1	60	30	162	Downlink &	Low	3330	622000	3300.84	620056	0	30	7711	620352	8	0	2 (2)	4	
						Mid	3500.01	633334	3434.13	628942	102		7829	631680	2	0	2 (2)	208	



					Uplink	High	3670.2	644680	3459.6	630640	504		7947	643008	8	0	1 (1)	1010	
Channel spacing CC1-CC2=79.8 MHz (Note 1)																			
C C2	100	30	273	Downlink & Uplink	Low & Mid	Low	3409.8	627320	3360.66	624044	0	30	7752	624288	4	0	0 (0)	0	
						Mid	3579.81	638654	3493.95	632930	102		7871	635712	22	0	3 (3)	210	
						High	3750.00	650000	3519.42	634628	504		7989	647040	4	0	3 (3)	1014	
80+50	C C1	80	30	217	Downlink & Uplink	Low & Mid	Low	3340.02	622668	3300.96	620064	0	30	7711	620352	0	0	2 (2)	4
							Mid	3525.00	635000	3449.22	629948	102		7839	632640	4	0	0 (0)	204
							High	3710.13	647342	3489.63	632642	504		7968	645024	22	0	1 (1)	1010
Channel spacing CC1-CC2=64.86 MHz (Note 1)																			
C C2	50	30	133	Downlink & Uplink	Low & Mid	Low	3404.88	626992	3380.94	625396	0	30	7767	625728	20	0	3 (3)	6	
						Mid	3589.86	639324	3529.2	635280	102		7895	638016	0	0	2 (2)	208	
						High	3774.99	651666	3569.61	637974	504		8024	650400	18	0	3 (3)	1014	
80+60	C C1	80	30	217	Downlink & Uplink	Low & Mid	Low	3340.02	622668	3300.96	620064	0	30	7711	620352	0	0	2 (2)	4
							Mid	3519.99	634666	3444.21	629614	102		7836	632352	2	0	2 (2)	208
							High	3700.08	646672	3479.58	631972	504		7961	644352	20	0	1 (1)	1010
Channel spacing CC1-CC2=69.9 MHz (Note 1)																			
C C2	60	30	162	Downlink & Uplink	Low & Mid	Low	3409.92	627328	3380.76	625384	0	30	7766	625632	8	0	0 (0)	0	
						Mid	3589.89	639326	3524.01	634934	102		7891	637632	10	0	0 (0)	204	
						High	3769.98	651332	3559.38	637292	504		8016	649632	4	0	0 (0)	1008	
80+80	C C1	80	30	217	Downlink & Uplink	Low & Mid	Low	3340.02	622668	3300.96	620064	0	30	7711	620352	0	0	2 (2)	4
							Mid	3510.00	634000	3434.22	628948	102		7829	631680	20	0	1 (1)	206
							High	3680.01	645334	3459.51	630634	504		7947	643008	14	0	1 (1)	1010
Channel spacing CC1-CC2=79.98 MHz (Note 1)																			

	C C2	80	30	217	Down link & Uplink	Low	3420	628000	3380.94	625396	0	30	7767	625728	20	0	3 (3)	6
						Mid	3589.98	639332	3514.2	634280	102		7885	637056	16	0	3 (3)	210
						High	3759.99	650666	3539.49	635966	504		8003	648384	10	0	3 (3)	1014
80+100	C C1	80	30	217	Down link & Uplink	Low	3340.02	622668	3300.96	620064	0	30	7711	620352	0	0	2 (2)	4
						Mid	3500.01	633334	3424.23	628282	102		7822	631008	14	0	1 (1)	206
						High	3660.12	644008	3439.62	629308	504		7933	641664	20	0	0 (0)	1008
Channel spacing CC1-CC2=89.88 MHz (Note 1)																		
	C C2	100	30	273	Down link & Uplink	Low	3429.9	628660	3380.76	625384	0	30	7766	625632	8	0	0 (0)	0
						Mid	3589.89	639326	3504.03	633602	102		7878	636384	22	0	3 (3)	210
						High	3750.00	650000	3519.42	634628	504		7989	647040	4	0	3 (3)	1014
100+50	C C1	100	30	273	Down link & Uplink	Low	3350.01	623334	3300.87	620058	0	30	7711	620352	6	0	2 (2)	4
						Mid	3525.00	635000	3439.14	629276	102		7832	631968	4	0	0 (0)	204
						High	3700.23	646682	3469.65	631310	504		7954	643680	10	0	1 (1)	1010
Channel spacing CC1-CC2=74.76 MHz (Note 1)																		
	C C2	50	30	133	Down link & Uplink	Low	3424.77	628318	3400.83	626722	0	30	7780	626976	14	0	0 (0)	0
						Mid	3599.76	639984	3539.1	635940	102		7902	638688	12	0	2 (2)	208
						High	3774.99	651666	3569.61	637974	504		8024	650400	18	0	3 (3)	1014
100+60	C C1	100	30	273	Down link & Uplink	Low	3350.01	623334	3300.87	620058	0	30	7711	620352	6	0	2 (2)	4
						Mid	3519.99	634666	3434.13	628942	102		7829	631680	2	0	2 (2)	208
						High	3690.18	646012	3459.6	630640	504		7947	643008	8	0	1 (1)	1010
Channel spacing CC1-CC2=79.8 MHz (Note 1)																		
	C C2	60	30	162	Down link	Low	3429.81	628654	3400.65	626710	0	30	7780	626976	2	0	1 (1)	2

100+80	C C1	100	30	273	&	Mid	3599	6399	3533	635594	102	30	789	638304	22	0	0 (0)	204	
					Uplink	High	3769	6513	3559	637292	504		801	649632	4	0	0 (0)	1008	
					Downlink	Low	3350	6233	3300	620058	0		771	620352	6	0	2 (2)	4	
					&	Mid	3510	6340	3424	628276	102		782	631008	20	0	1 (1)	206	
	Uplink	High	3670	6446	3439	629302	504	793	641664	2	0	1 (1)	1010						
	Channel spacing CC1-CC2=89.88 MHz (Note 1)																		
	C C2	80	30	217	Downlink	Low	3439	6293	3400	626722	0	30	778	626976	14	0	0 (0)	0	
					&	Mid	3599	6399	3524	634940	102		789	637632	4	0	0 (0)	204	
					Uplink	High	3759	6506	3539	635966	504		800	648384	10	0	3 (3)	1014	
	100 +100	C C1	100	30	273	Downlink	Low	3350	6233	3300	620058	0	30	771	620352	6	0	2 (2)	4
&						Mid	3500	6333	3414	627610	102	781		630336	14	0	1 (1)	206	
Uplink						High	3650	6433	3419	627964	504	791		640320	20	0	0 (0)	1008	
Channel spacing CC1-CC2=99.96 MHz (Note 1)																			
C C2		100	30	273	Downlink	Low	3449	6299	3400	626722	0	30	778	626976	14	0	0 (0)	0	
					&	Mid	3599	6399	3514	634274	102		788	637056	22	0	3 (3)	210	
	Uplink				High	3750	6500	3519	634628	504	798		647040	4	0	3 (3)	1014		
<p>Note 1: Corresponds to nominal channel spacing in accordance with TS 38.101-1 [7], clause 5.4A.1 for the CC1 and CC2 channel bandwidth combination.</p> <p>Note 2: CCs are specified in increasing frequency order. CC1 is used as PCell if nothing else is specified in the test case.</p> <p>Note 3: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter <math>\Delta F_{\text{OffsetCORESET-0-Carrier}}</math> in Annex C expressed in number of common RBs.</p> <p>Note 4: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-4 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.</p>																			

4.3.1.1.3.78.2 CA\_n78B

Editor's note: Test frequencies for CA\_n78B with mixed numerology with SCS CC1=15kHz and SCS CC2=30 kHz or 60kHz; and SCS CC1=30kHz and SCS CC2=15 kHz or 60 kHz is FFS.

Table 4.3.1.1.3.78.2-1: NR Intra-Band contiguous CA configuration CA\_n78B (PCC=CC1 and SCC=CC2), SCS 15 kHz and ΔF<sub>Raster</sub> 15 kHz

CBW combination	C C Note 2	CB W [MHz]	SC S [kHz]	carrierBandwidth [PRBs]	Range		Carrier centre [MHz] Note 2	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequencyPointA [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS [kHz]	GSC N	absoluteFrequencySSB [ARFCN]	k <sub>SS</sub>	Offset carrier CORES ET#0 [RBs] Note 3	CORES ET#0 Index (Offset [RBs]) Note 4	offsetToPointA (SIB1) [PRBs] Note 4	
					Down link	Uplink													
20+50	C C1	20	15	106	Down link & Uplink	Low	3310.005	620667	3300.465	620031	0	30	7711	620352	9	0	1 (6)	6	
						Mid	352500	635000	3497.1	633140	102		7860	634656	4	2	0 (2)	106	
						High	3740.25	649350	3639.99	642666	504		8010	649056	6	2	1 (6)	512	
	Channel spacing CC1-CC2=34.74 MHz (Note 1)																		
	C C2	50	15	270	Down link & Uplink	Low	3344.745	622983	3320.445	621363	0	30	7725	621696	9	1	1 (6)	7	
						Mid	3559.74	637316	3517.08	634472	102		7874	636000	4	3	0 (2)	107	
						High	3774.99	651666	3659.97	643998	504		8024	650400	6	3	1 (6)	513	
	Channel spacing CC1-CC2=34.74 MHz (Note 1)																		
	50+20	C C1	50	15	270	Down link & Uplink	Low	3325.005	621667	3300.705	620047	0	30	7711	620352	5	3	0 (2)	5
							Mid	354000	636000	3497.34	633156	102		7860	634656	0	1	0 (2)	105
High							3755.25	650350	3640.23	642682	504	8010		649056	2	1	1 (6)	511	
Channel spacing CC1-CC2=34.74 MHz (Note 1)																			
C C2		20	15	106	Down link & Uplink	Low	3359.745	623983	3350.205	623347	0	30	7745	623616	5	0	0 (2)	2	
	Mid					3574.74	638316	3546.84	636456	102	7895		638016	0	2	1 (6)	110		

					Uplink	High	3789.99	652666	3689.73	645982	504	8044	652320	2	2	0 (2)	508	
Note 1:	Corresponds to nominal channel spacing in accordance with TS 38.101-1 [7], clause 5.4A.1 for the CC1 and CC2 channel bandwidth combination.																	
Note 2:	CCs are specified in increasing frequency order. CC1 is used as PCell if nothing else is specified in the test case.																	
Note 3:	The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs.																	
Note 4:	The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-4 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.																	

**Table 4.3.1.1.3.78.2-2: NR Intra-Band contiguous CA configuration CA\_n78B (PCC=CC1 and SCC=CC2), SCS 30 kHz and  $\Delta F_{\text{Raster}}$  30 kHz**

CBW combination	CC Note 2	CBW [MHz]	SCS [kHz]	carrierBandwidth [PRBs]	Range	Carrier centre [MHz] Note 2	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequencyPointA [ARFCN]	offsetToCarrier [Carrier PRBs]	SSB block SCS [kHz]	GSCN	absoluteFrequencySSB [ARFCN]	$k_{\text{SS}}$	Offset carrier CORESET#0 [RBs] Note 3	CORESET#0 Index (Offset [RBs]) Note 4	offsetToPointA (SIB1) [PRBs] Note 4	
20+50	C C1	20	30	51	Downlink &	Low	3310.02	620668	3300.84	620056	0	30	7711	620352	8	0	2 (2)	4
						Mid	3525.00	635000	3479.1	631940	102		7860	634656	4	0	1 (1)	206
					Uplink	High	3740.25	649350	3549.63	636642	504		8010	649056	6	0	3 (3)	1014
Channel spacing CC1-CC2=34.74 MHz (Note 1)																		
50+20	C C2	50	30	133	Downlink &	Low	3344.76	622984	3320.82	621388	0	30	7725	621696	20	0	2 (2)	4
						Mid	3559.74	637316	3499.08	633272	102		7874	636000	16	0	1 (1)	206
					Uplink	High	3774.99	651666	3569.61	637974	504		8024	650400	18	0	3 (3)	1014
50+20	C C1	50	30	133	Downlink &	Low	3325.02	621668	3301.08	620072	0	30	7711	620352	16	0	1 (1)	2
						Mid	3540.00	636000	3479.34	631956	102		7860	634656	12	0	0 (0)	204

				Uplink	High	3755 .25	6503 50	3549 .87	636658	504		801 0	649056	14	0	2 (2)	1012
Channel spacing CC1-CC2=34.74 MHz (Note 1)																	
C C2	20	30	51	Down link &	Low	3359 .76	6239 84	3350 .58	623372	0	30	774 5	623616	4	0	0 (0)	0
					Mid	3574 .74	6383 16	3528 .84	635256	102		789 5	638016	0	0	3 (3)	210
				Uplink	High	3789 .99	6526 66	3599 .37	639958	504		804 4	652320	2	0	1 (1)	1010

Note 1: Corresponds to nominal channel spacing in accordance with TS 38.101-1 [7], clause 5.4A.1 for the CC1 and CC2 channel bandwidth combination.

Note 2: CCs are specified in increasing frequency order. CC1 is used as PCell if nothing else is specified in the test case.

Note 3: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter  $\Delta F_{\text{OffsetCORESET-0-Carrier}}$  in Annex C expressed in number of common RBs.

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

4.3.1.1.4 Void

4.3.1.1.5 NR intra-band non-contiguous CA configurations in FR1

4.3.1.1.5.1 – 4.3.1.1.5.47 FFS

4.3.1.1.5.48 CA\_n48(2A)

Editor’s note: Test frequencies for CA\_n48(2A) with mixed numerology with SCS CC1=15kHz and SCS CC2=30 kHz or 60kHz; and SCS CC1=30kHz and SCS CC2=15 kHz or 60 kHz is FFS.

**Table 4.3.1.1.5.48-1: NR Intra-Band non-contiguous CA configuration CA\_n48(2A) without UL CA, SCS=15 kHz, Max Wgap**

SB CBW combination	SB	Band width [MHz]	carrier bandwidth h [PRBs]	Range (Note 1)	Gap	Test frequencies and signalling parameters
<b>CA_n48(2A); n48A (10MHz) + n48A (10-50MHz)</b>						
10+10	SB1	10	52	Downlink & Uplink	Max	Table 4.3.1.1.1.48-1: Low range for CBW=10 MHz
	SB2	10	52	Downlink & Uplink	Wgap	Table 4.3.1.1.1.48-1: High range for CBW=10 MHz
10+15	SB1	10	52	Downlink & Uplink	Max	Table 4.3.1.1.1.48-1: Low range for CBW=10 MHz
	SB2	15	79	Downlink & Uplink	Wgap	Table 4.3.1.1.1.48-1: High range for CBW=15 MHz
10+20	SB1	10	52	Downlink & Uplink	Max	Table 4.3.1.1.1.48-1: Low range for CBW=10 MHz
	SB2	20	106	Downlink & Uplink	Wgap	Table 4.3.1.1.1.48-1: High range for CBW=20 MHz
10+40	SB1	10	52	Downlink & Uplink	Max	Table 4.3.1.1.1.48-1: Low range for CBW=10 MHz
	SB2	40	216	Downlink & Uplink	Wgap	Table 4.3.1.1.1.48-1: High range for CBW=40 MHz
10+50	SB1	10	52	Downlink & Uplink	Max	Table 4.3.1.1.1.48-1: Low range for CBW=10 MHz
	SB2	50	270	Downlink & Uplink	Wgap	Table 4.3.1.1.1.48-1: High range for CBW=50 MHz
<b>CA_n48(2A); n48A (15MHz) + n48A (10-50MHz)</b>						
15+10	SB1	15	79	Downlink & Uplink	Max	Table 4.3.1.1.1.48-1: Low range for CBW=15 MHz
	SB2	10	52	Downlink & Uplink	Wgap	Table 4.3.1.1.1.48-1: High range for CBW=10 MHz
15+15	SB1	15	79	Downlink & Uplink	Max	Table 4.3.1.1.1.48-1: Low range for CBW=15 MHz
	SB2	15	79	Downlink & Uplink	Wgap	Table 4.3.1.1.1.48-1: High range for CBW=15 MHz
15+20	SB1	15	79	Downlink & Uplink	Max	Table 4.3.1.1.1.48-1: Low range for CBW=15 MHz
	SB2	20	106	Downlink & Uplink	Wgap	Table 4.3.1.1.1.48-1: High range for CBW=20 MHz
15+40	SB1	15	79	Downlink & Uplink	Max	Table 4.3.1.1.1.48-1: Low range for CBW=15 MHz
	SB2	40	216	Downlink & Uplink	Wgap	Table 4.3.1.1.1.48-1: High range for CBW=40 MHz
15+50	SB1	15	79	Downlink & Uplink	Max	Table 4.3.1.1.1.48-1: Low range for CBW=15 MHz
	SB2	50	270	Downlink & Uplink	Wgap	Table 4.3.1.1.1.48-1: High range for CBW=50 MHz
<b>CA_n48(2A); n48A (20MHz) + n48A (10-50MHz)</b>						
20+10	SB1	20	106	Downlink & Uplink	Max	Table 4.3.1.1.1.48-1: Low range for CBW=20 MHz
	SB2	10	52	Downlink & Uplink	Wgap	Table 4.3.1.1.1.48-1: High range for CBW=10 MHz
20+15	SB1	20	106	Downlink & Uplink	Max	Table 4.3.1.1.1.48-1: Low range for CBW=20 MHz
	SB2	15	79	Downlink & Uplink	Wgap	Table 4.3.1.1.1.48-1: High range for CBW=15 MHz
20+20	SB1	20	106	Downlink & Uplink	Max	Table 4.3.1.1.1.48-1: Low range for CBW=20 MHz
	SB2	20	106	Downlink & Uplink	Wgap	Table 4.3.1.1.1.48-1: High range for CBW=20 MHz
20+40	SB1	20	106	Downlink & Uplink	Max	Table 4.3.1.1.1.48-1: Low range for CBW=20 MHz
	SB2	40	216	Downlink & Uplink	Wgap	Table 4.3.1.1.1.48-1: High range for CBW=40 MHz
20+50	SB1	20	106	Downlink & Uplink	Max	Table 4.3.1.1.1.48-1: Low range for CBW=20 MHz
	SB2	50	270	Downlink & Uplink	Wgap	Table 4.3.1.1.1.48-1: High range for CBW=50 MHz
<b>CA_n48(2A); n48A (40MHz) + n48A (10-50MHz)</b>						
40+10	SB1	40	216	Downlink & Uplink	Max	Table 4.3.1.1.1.48-1: Low range for CBW=40 MHz
	SB2	10	52	Downlink & Uplink	Wgap	Table 4.3.1.1.1.48-1: High range for CBW=10 MHz
40+15	SB1	40	216	Downlink & Uplink	Max	Table 4.3.1.1.1.48-1: Low range for CBW=40 MHz
	SB2	15	79	Downlink & Uplink	Wgap	Table 4.3.1.1.1.48-1: High range for CBW=15 MHz
40+20	SB1	40	216	Downlink & Uplink	Max	Table 4.3.1.1.1.48-1: Low range for CBW=40 MHz
	SB2	20	106	Downlink & Uplink	Wgap	Table 4.3.1.1.1.48-1: High range for CBW=20 MHz
40+40	SB1	40	216	Downlink & Uplink	Max	Table 4.3.1.1.1.48-1: Low range for CBW=40 MHz
	SB2	40	216	Downlink & Uplink	Wgap	Table 4.3.1.1.1.48-1: High range for CBW=40 MHz
40+50	SB1	40	216	Downlink & Uplink	Max	Table 4.3.1.1.1.48-1: Low range for CBW=40 MHz
	SB2	50	270	Downlink & Uplink	Wgap	Table 4.3.1.1.1.48-1: High range for CBW=50 MHz

CA_n48(2A); n48A (50MHz) + n48A (10-50MHz)						
50+10	SB1	50	270	Downlink & Uplink	Max	Table 4.3.1.1.1.48-1: Low range for CBW=50 MHz
	SB2	10	52	Downlink & Uplink	Wgap	Table 4.3.1.1.1.48-1: High range for CBW=10 MHz
50+15	SB1	50	270	Downlink & Uplink	Max	Table 4.3.1.1.1.48-1: Low range for CBW=50 MHz
	SB2	15	79	Downlink & Uplink	Wgap	Table 4.3.1.1.1.48-1: High range for CBW=15 MHz
50+20	SB1	50	270	Downlink & Uplink	Max	Table 4.3.1.1.1.48-1: Low range for CBW=50 MHz
	SB2	20	106	Downlink & Uplink	Wgap	Table 4.3.1.1.1.48-1: High range for CBW=20 MHz
50+40	SB1	50	270	Downlink & Uplink	Max	Table 4.3.1.1.1.48-1: Low range for CBW=50 MHz
	SB2	40	216	Downlink & Uplink	Wgap	Table 4.3.1.1.1.48-1: High range for CBW=40 MHz
50+50	SB1	50	270	Downlink & Uplink	Max	Table 4.3.1.1.1.48-1: Low range for CBW=50 MHz
	SB2	50	270	Downlink & Uplink	Wgap	Table 4.3.1.1.1.48-1: High range for CBW=50 MHz

Note 1: CA\_n48(2A) is specified in [7] 38.101-1 without uplink CA. PCC is configured on SB1 unless otherwise stated. The test frequencies for both SB1 and SB2 have been specified for both downlink and uplink to enable that the CC of either SB1 or SB2 can be used as PCC.

**Table 4.3.1.1.5.48-2: NR Intra-Band non-contiguous CA configuration CA\_n48(2A) without UL CA, SCS=30 kHz, Max Wgap**

CBW combination	SB	Band width [MHz]	carrier bandwidth [PRBs]	Range (Note 1)	Gap	Test frequencies and signalling parameters
CA_n48(2A); n48A (10MHz) + n48A (10-100MHz)						
10+10	SB1	10	24	Downlink & Uplink	Max	Table 4.3.1.1.1.48-2: Low range for CBW=10 MHz
	SB2	10	24	Downlink & Uplink	Wgap	Table 4.3.1.1.1.48-2: High range for CBW=10 MHz
10+15	SB1	10	24	Downlink & Uplink	Max	Table 4.3.1.1.1.48-2: Low range for CBW=10 MHz
	SB2	15	38	Downlink & Uplink	Wgap	Table 4.3.1.1.1.48-2: High range for CBW=15 MHz
10+20	SB1	10	24	Downlink & Uplink	Max	Table 4.3.1.1.1.48-2: Low range for CBW=10 MHz
	SB2	20	51	Downlink & Uplink	Wgap	Table 4.3.1.1.1.48-2: High range for CBW=20 MHz
10+40	SB1	10	24	Downlink & Uplink	Max	Table 4.3.1.1.1.48-2: Low range for CBW=10 MHz
	SB2	40	106	Downlink & Uplink	Wgap	Table 4.3.1.1.1.48-2: High range for CBW=40 MHz
10+50	SB1	10	24	Downlink & Uplink	Max	Table 4.3.1.1.1.48-2: Low range for CBW=10 MHz
	SB2	50	133	Downlink & Uplink	Wgap	Table 4.3.1.1.1.48-2: High range for CBW=50 MHz
10+60	SB1	10	24	Downlink & Uplink	Max	Table 4.3.1.1.1.48-2: Low range for CBW=10 MHz
	SB2	60	162	Downlink & Uplink	Wgap	Table 4.3.1.1.1.48-2: High range for CBW=60 MHz
10+80	SB1	10	24	Downlink & Uplink	Max	Table 4.3.1.1.1.48-2: Low range for CBW=10 MHz
	SB2	80	217	Downlink & Uplink	Wgap	Table 4.3.1.1.1.48-2: High range for CBW=80 MHz
10+90	SB1	10	24	Downlink & Uplink	Max	Table 4.3.1.1.1.48-2: Low range for CBW=10 MHz
	SB2	90	245	Downlink & Uplink	Wgap	Table 4.3.1.1.1.48-2: High range for CBW=90 MHz
10+100	SB1	10	24	Downlink & Uplink	Max	Table 4.3.1.1.1.48-2: Low range for CBW=10 MHz
	SB2	100	273	Downlink & Uplink	Wgap	Table 4.3.1.1.1.48-2: High range for CBW=100 MHz
CA_n48(2A); n48A (15MHz) + n48A (10-100MHz)						
15+10	SB1	15	38	Downlink & Uplink	Max	Table 4.3.1.1.1.48-2: Low range for CBW=15 MHz
	SB2	10	24	Downlink & Uplink	Wgap	Table 4.3.1.1.1.48-2: High range for CBW=10 MHz
15+15	SB1	15	38	Downlink & Uplink	Max	Table 4.3.1.1.1.48-2: Low range for CBW=15 MHz
	SB2	15	38	Downlink & Uplink	Wgap	Table 4.3.1.1.1.48-2: High range for CBW=15 MHz
15+20	SB1	15	38	Downlink & Uplink	Max	Table 4.3.1.1.1.48-2: Low range for CBW=15 MHz
	SB2	20	51	Downlink & Uplink	Wgap	Table 4.3.1.1.1.48-2: High range for CBW=20 MHz
15+40	SB1	15	38	Downlink & Uplink	Max	Table 4.3.1.1.1.48-2: Low range for CBW=15 MHz
	SB2	40	106	Downlink & Uplink	Wgap	Table 4.3.1.1.1.48-2: High range for CBW=40 MHz
15+50	SB1	15	38	Downlink & Uplink	Max	Table 4.3.1.1.1.48-2: Low range for CBW=15 MHz
	SB2	50	133	Downlink & Uplink	Wgap	Table 4.3.1.1.1.48-2: High range for CBW=50 MHz
15+60	SB1	15	38	Downlink & Uplink	Max	Table 4.3.1.1.1.48-2: Low range for CBW=15 MHz
	SB2	60	162	Downlink & Uplink	Wgap	Table 4.3.1.1.1.48-2: High range for CBW=60 MHz
15+80	SB1	15	38	Downlink & Uplink	Max	Table 4.3.1.1.1.48-2: Low range for CBW=15 MHz
	SB2	80	217	Downlink & Uplink	Wgap	Table 4.3.1.1.1.48-2: High range for CBW=80 MHz
15+90	SB1	15	38	Downlink & Uplink	Max	Table 4.3.1.1.1.48-2: Low range for CBW=15 MHz
	SB2	90	245	Downlink & Uplink	Wgap	Table 4.3.1.1.1.48-2: High range for CBW=90 MHz
15+100	SB1	15	38	Downlink & Uplink	Max	Table 4.3.1.1.1.48-2: Low range for CBW=15 MHz
	SB2	100	273	Downlink & Uplink	Wgap	Table 4.3.1.1.1.48-2: High range for CBW=100 MHz
CA_n48(2A); n48A (20MHz) + n48A (10-100MHz)						
20+10	SB1	20	51	Downlink & Uplink	Max	Table 4.3.1.1.1.48-2: Low range for CBW=20 MHz
	SB2	10	24	Downlink & Uplink	Wgap	Table 4.3.1.1.1.48-2: High range for CBW=10 MHz





60+80	SB1	60	162	Downlink & Uplink	Max	Table 4.3.1.1.1.48-2: Low range for CBW=60 MHz
	SB2	80	217	Downlink & Uplink	Wgap	Table 4.3.1.1.1.48-2: High range for CBW=80 MHz
<b>CA_n48(2A); n48A (80MHz) + n48A (10-60MHz)</b>						
80+10	SB1	80	217	Downlink & Uplink	Max	Table 4.3.1.1.1.48-2: Low range for CBW=80 MHz
	SB2	10	24	Downlink & Uplink	Wgap	Table 4.3.1.1.1.48-2: High range for CBW=10 MHz
80+15	SB1	80	217	Downlink & Uplink	Max	Table 4.3.1.1.1.48-2: Low range for CBW=80 MHz
	SB2	15	38	Downlink & Uplink	Wgap	Table 4.3.1.1.1.48-2: High range for CBW=15 MHz
80+20	SB1	80	217	Downlink & Uplink	Max	Table 4.3.1.1.1.48-2: Low range for CBW=80 MHz
	SB2	20	51	Downlink & Uplink	Wgap	Table 4.3.1.1.1.48-2: High range for CBW=20 MHz
80+40	SB1	80	217	Downlink & Uplink	Max	Table 4.3.1.1.1.48-2: Low range for CBW=80 MHz
	SB2	40	106	Downlink & Uplink	Wgap	Table 4.3.1.1.1.48-2: High range for CBW=40 MHz
80+50	SB1	80	217	Downlink & Uplink	Max	Table 4.3.1.1.1.48-2: Low range for CBW=80 MHz
	SB2	50	133	Downlink & Uplink	Wgap	Table 4.3.1.1.1.48-2: High range for CBW=50 MHz
80+60	SB1	80	217	Downlink & Uplink	Max	Table 4.3.1.1.1.48-2: Low range for CBW=80 MHz
	SB2	60	162	Downlink & Uplink	Wgap	Table 4.3.1.1.1.48-2: High range for CBW=60 MHz
<b>CA_n48(2A); n48A (90MHz) + n48A (10-50MHz)</b>						
90+10	SB1	90	245	Downlink & Uplink	Max	Table 4.3.1.1.1.48-2: Low range for CBW=90 MHz
	SB2	10	24	Downlink & Uplink	Wgap	Table 4.3.1.1.1.48-2: High range for CBW=10 MHz
90+15	SB1	90	245	Downlink & Uplink	Max	Table 4.3.1.1.1.48-2: Low range for CBW=90 MHz
	SB2	15	38	Downlink & Uplink	Wgap	Table 4.3.1.1.1.48-2: High range for CBW=15 MHz
90+20	SB1	90	245	Downlink & Uplink	Max	Table 4.3.1.1.1.48-2: Low range for CBW=90 MHz
	SB2	20	51	Downlink & Uplink	Wgap	Table 4.3.1.1.1.48-2: High range for CBW=20 MHz
90+40	SB1	90	245	Downlink & Uplink	Max	Table 4.3.1.1.1.48-2: Low range for CBW=90 MHz
	SB2	40	106	Downlink & Uplink	Wgap	Table 4.3.1.1.1.48-2: High range for CBW=40 MHz
90+50	SB1	90	245	Downlink & Uplink	Max	Table 4.3.1.1.1.48-2: Low range for CBW=90 MHz
	SB2	50	133	Downlink & Uplink	Wgap	Table 4.3.1.1.1.48-2: High range for CBW=50 MHz
<b>CA_n48(2A); n48A (100MHz) + n48A (10-40MHz)</b>						
100+10	SB1	100	273	Downlink & Uplink	Max	Table 4.3.1.1.1.48-2: Low range for CBW=100 MHz
	SB2	10	24	Downlink & Uplink	Wgap	Table 4.3.1.1.1.48-2: High range for CBW=10 MHz
100+15	SB1	100	273	Downlink & Uplink	Max	Table 4.3.1.1.1.48-2: Low range for CBW=100 MHz
	SB2	15	38	Downlink & Uplink	Wgap	Table 4.3.1.1.1.48-2: High range for CBW=15 MHz
100+20	SB1	100	273	Downlink & Uplink	Max	Table 4.3.1.1.1.48-2: Low range for CBW=100 MHz
	SB2	20	51	Downlink & Uplink	Wgap	Table 4.3.1.1.1.48-2: High range for CBW=20 MHz
100+40	SB1	100	273	Downlink & Uplink	Max	Table 4.3.1.1.1.48-2: Low range for CBW=100 MHz
	SB2	40	106	Downlink & Uplink	Wgap	Table 4.3.1.1.1.48-2: High range for CBW=40 MHz

Note 1: CA\_n48(2A) is specified in [7] 38.101-1 without uplink CA. PCC is configured on SB1 unless otherwise stated. The test frequencies for both SB1 and SB2 have been specified for both downlink and uplink to enable that the CC of either SB1 or SB2 can be used as PCC.

4.3.1.1.5.49 – 4.3.1.1.5.65 FFS

4.3.1.1.5.66 CA\_n66(2A)

Editor's note: Test frequencies for CA\_n66(2A) with mixed numerology with SCS CC1=15kHz and SCS CC2=30 kHz or 60kHz; and SCS CC1=30kHz and SCS CC2=15 kHz or 60 kHz is FFS.

**Table 4.3.1.1.5.66-1: NR Intra-Band non-contiguous CA configuration CA\_n66(2A) without UL CA, SCS=15 kHz, Max Wgap**

CBW combination (BCS)	SB	Bandwidth [MHz]	carrier Bandwidth [PRBs]	Range (Note 1)	Gap	Test frequencies and signalling parameters
<b>CA_n66(2A); n66A (5MHz) + n66A(5-40MHz)</b>						
5+5 (0,1,2)	SB1	5	25	Downlink & Uplink	Max Wgap	Table 4.3.1.1.1.66-1: Low range for UL/DL Bandwidth combination = 5/5
	SB2	5	25	Downlink & Uplink		Table 4.3.1.1.1.66-1: High range for UL/DL Bandwidth combination = 5/5
5+10 (0,1,2)	SB1	5	25	Downlink & Uplink	Max Wgap	Table 4.3.1.1.1.66-1: Low range for UL/DL Bandwidth combination = 5/5
	SB2	10	52	Downlink & Uplink		Table 4.3.1.1.1.66-1: High range for UL/DL Bandwidth combination = 10/10
5+15 (0,1,2)	SB1	5	25	Downlink & Uplink	Max Wgap	Table 4.3.1.1.1.66-1: Low range for UL/DL Bandwidth combination = 5/5
	SB2	15	79	Downlink & Uplink		Table 4.3.1.1.1.66-1: High range for UL/DL Bandwidth combination = 15/15
5+20 (0,1,2)	SB1	5	25	Downlink & Uplink	Max Wgap	Table 4.3.1.1.1.66-1: Low range for UL/DL Bandwidth combination = 5/5
	SB2	20	106	Downlink & Uplink		Table 4.3.1.1.1.66-1: High range for UL/DL Bandwidth combination = 5/20, 10/20 or 20/20 depending on required UL bandwidth
5+25 (1)	SB1	5	25	Downlink & Uplink	Max Wgap	Table 4.3.1.1.1.66-1: Low range for UL/DL Bandwidth combination = 5/5
	SB2	25	133	Downlink & Uplink		Table 4.3.1.1.1.66-1: High range for UL/DL Bandwidth combination = 5/25, 10/25 or 25/25 depending on required UL bandwidth
5+30 (1)	SB1	5	25	Downlink & Uplink	Max Wgap	Table 4.3.1.1.1.66-1: Low range for UL/DL Bandwidth combination = 5/5
	SB2	30	160	Downlink & Uplink		Table 4.3.1.1.1.66-1: High range for UL/DL Bandwidth combination = 5/30, 10/30 or 30/30 depending on required UL bandwidth
5+40 (0,1,2)	SB1	5	25	Downlink & Uplink	Max Wgap	Table 4.3.1.1.1.66-1: Low range for UL/DL Bandwidth combination = 5/5
	SB2	40	216	Downlink & Uplink		Table 4.3.1.1.1.66-1: High range for UL/DL Bandwidth combination = 5/40, 10/40, 20/40 or 40/40 depending on required UL bandwidth
<b>CA_n66(2A); n66A (10MHz) + n66A(5-40MHz)</b>						
10+5 (0,1,2)	SB1	10	52	Downlink & Uplink	Max Wgap	Table 4.3.1.1.1.66-1: Low range for UL/DL Bandwidth combination = 10/10
	SB2	5	25	Downlink & Uplink		Table 4.3.1.1.1.66-1: High range for UL/DL Bandwidth combination = 5/5
10+10 (0,1,2)	SB1	10	52	Downlink & Uplink	Max Wgap	Table 4.3.1.1.1.66-1: Low range for UL/DL Bandwidth combination = 10/10
	SB2	10	52	Downlink & Uplink		Table 4.3.1.1.1.66-1: High range for UL/DL Bandwidth combination = 10/10
10+15 (0,1,2)	SB1	10	52	Downlink & Uplink	Max Wgap	Table 4.3.1.1.1.66-1: Low range for UL/DL Bandwidth combination = 10/10
	SB2	15	79	Downlink & Uplink		Table 4.3.1.1.1.66-1: High range for UL/DL Bandwidth combination = 15/15
10+20 (0,1,2)	SB1	10	52	Downlink & Uplink	Max Wgap	Table 4.3.1.1.1.66-1: Low range for UL/DL Bandwidth combination = 10/10
	SB2	20	106	Downlink & Uplink		Table 4.3.1.1.1.66-1: High range for UL/DL Bandwidth combination = 5/20, 10/20 or 20/20 depending on required UL bandwidth

10+25 (1)	SB1	10	52	Downlink & Uplink	Max Wgap	Table 4.3.1.1.1.66-1: Low range for UL/DL Bandwidth combination = 10/10
	SB2	25	133	Downlink & Uplink		Table 4.3.1.1.1.66-1: High range for UL/DL Bandwidth combination = 5/25, 10/25 or 25/25 depending on required UL bandwidth
10+30 (1)	SB1	10	52	Downlink & Uplink	Max Wgap	Table 4.3.1.1.1.66-1: Low range for UL/DL Bandwidth combination = 10/10
	SB2	30	160	Downlink & Uplink		Table 4.3.1.1.1.66-1: High range for UL/DL Bandwidth combination = 5/30, 10/30 or 30/30 depending on required UL bandwidth
10+40 (0,1,2)	SB1	10	52	Downlink & Uplink	Max Wgap	Table 4.3.1.1.1.66-1: Low range for UL/DL Bandwidth combination = 10/10
	SB2	40	216	Downlink & Uplink		Table 4.3.1.1.1.66-1: High range for UL/DL Bandwidth combination = 5/40, 10/40, 20/40 or 40/40 depending on required UL bandwidth
<b>CA_n66(2A); n66A (15MHz) + n66A(5-40MHz)</b>						
15+5 (0,1,2)	SB1	15	79	Downlink & Uplink	Max Wgap	Table 4.3.1.1.1.66-1: Low range for UL/DL Bandwidth combination = 15/15
	SB2	5	25	Downlink & Uplink		Table 4.3.1.1.1.66-1: High range for UL/DL Bandwidth combination = 5/5
15+10 (0,1,2)	SB1	15	79	Downlink & Uplink	Max Wgap	Table 4.3.1.1.1.66-1: Low range for UL/DL Bandwidth combination = 15/15
	SB2	10	52	Downlink & Uplink		Table 4.3.1.1.1.66-1: High range for UL/DL Bandwidth combination = 10/10
15+15 (0,1,2)	SB1	15	79	Downlink & Uplink	Max Wgap	Table 4.3.1.1.1.66-1: Low range for UL/DL Bandwidth combination = 15/15
	SB2	15	79	Downlink & Uplink		Table 4.3.1.1.1.66-1: High range for UL/DL Bandwidth combination = 15/15
15+20 (0,1,2)	SB1	15	79	Downlink & Uplink	Max Wgap	Table 4.3.1.1.1.66-1: Low range for UL/DL Bandwidth combination = 15/15
	SB2	20	106	Downlink & Uplink		Table 4.3.1.1.1.66-1: High range for UL/DL Bandwidth combination = 5/20, 10/20 or 20/20 depending on required UL bandwidth
15+25 (1)	SB1	15	79	Downlink & Uplink	Max Wgap	Table 4.3.1.1.1.66-1: Low range for UL/DL Bandwidth combination = 15/15
	SB2	25	133	Downlink & Uplink		Table 4.3.1.1.1.66-1: High range for UL/DL Bandwidth combination = 5/25, 10/25 or 25/25 depending on required UL bandwidth
15+30 (1)	SB1	15	79	Downlink & Uplink	Max Wgap	Table 4.3.1.1.1.66-1: Low range for UL/DL Bandwidth combination = 15/15
	SB2	30	160	Downlink & Uplink		Table 4.3.1.1.1.66-1: High range for UL/DL Bandwidth combination = 5/30, 10/30 or 30/30 depending on required UL bandwidth
15+40 (0,1,2)	SB1	15	79	Downlink & Uplink	Max Wgap	Table 4.3.1.1.1.66-1: Low range for UL/DL Bandwidth combination = 15/15
	SB2	40	216	Downlink & Uplink		Table 4.3.1.1.1.66-1: High range for UL/DL Bandwidth combination = 5/40, 10/40, 20/40 or 40/40 depending on required UL bandwidth
<b>CA_n66(2A); n66A (20MHz) + n66A(5-40MHz)</b>						
20+5 (0,1,2)	SB1	20	106	Downlink & Uplink	Max Wgap	Table 4.3.1.1.1.66-1: Low range for UL/DL Bandwidth combination = 5/20, 10/20 or 20/20 depending on required UL bandwidth
	SB2	5	25	Downlink & Uplink		Table 4.3.1.1.1.66-1: High range for UL/DL Bandwidth combination 5/5
20+10 (0,1,2)	SB1	20	106	Downlink & Uplink	Max Wgap	Table 4.3.1.1.1.66-1: Low range for UL/DL Bandwidth combination = 5/20, 10/20 or 20/20 depending on required UL bandwidth
	SB2	10	52	Downlink & Uplink		Table 4.3.1.1.1.66-1: High range for UL/DL Bandwidth combination 10/10
20+15 (0,1,2)	SB1	20	106	Downlink & Uplink	Max Wgap	Table 4.3.1.1.1.66-1: Low range for UL/DL Bandwidth combination = 5/20, 10/20 or 20/20 depending on required UL bandwidth
	SB2	15	79	Downlink & Uplink		Table 4.3.1.1.1.66-1: High range for UL/DL Bandwidth combination 15/15

20+20 (0,1,2)	SB1	20	106	Downlink & Uplink	Max Wgap	Table 4.3.1.1.1.66-1: Low range for UL/DL Bandwidth combination = 5/20, 10/20 or 20/20 depending on required UL bandwidth
	SB2	20	106	Downlink & Uplink		Table 4.3.1.1.1.66-1: High range for for UL/DL Bandwidth combination = 5/20, 10/20 or 20/20 depending on required UL bandwidth
20+25 (1)	SB1	20	106	Downlink & Uplink	Max Wgap	Table 4.3.1.1.1.66-1: Low range for UL/DL Bandwidth combination = 5/20, 10/20 or 20/20 depending on required UL bandwidth
	SB2	25	133	Downlink & Uplink		Table 4.3.1.1.1.66-1: High range for UL/DL Bandwidth combination = 5/25, 10/25 or 25/25 depending on required UL bandwidth
20+30 (1)	SB1	20	106	Downlink & Uplink	Max Wgap	Table 4.3.1.1.1.66-1: Low range for UL/DL Bandwidth combination = 5/20, 10/20 or 20/20 depending on required UL bandwidth
	SB2	30	160	Downlink & Uplink		Table 4.3.1.1.1.66-1: High range for UL/DL Bandwidth combination = 5/30, 10/30 or 30/30 depending on required UL bandwidth
20+40 (0,1,2)	SB1	20	106	Downlink & Uplink	Max Wgap	Table 4.3.1.1.1.66-1: Low range for UL/DL Bandwidth combination = 5/20, 10/20 or 20/20 depending on required UL bandwidth
	SB2	40	216	Downlink & Uplink		Table 4.3.1.1.1.66-1: High range for UL/DL Bandwidth combination = 5/40, 10/40, 20/40 or 40/40 depending on required UL bandwidth
<b>CA_n66(2A); n66A (25MHz) + n66A(5-40MHz)</b>						
25+5 (1)	SB1	25	133	Downlink & Uplink	Max Wgap	Table 4.3.1.1.1.66-1: Low range for UL/DL Bandwidth combination = 5/25, 10/25 or 25/25 depending on required UL bandwidth
	SB2	5	25	Downlink & Uplink		Table 4.3.1.1.1.66-1: High range for UL/DL Bandwidth combination 5/5
25+10 (1)	SB1	25	133	Downlink & Uplink	Max Wgap	Table 4.3.1.1.1.66-1: Low range for UL/DL Bandwidth combination = 5/25, 10/25 or 25/25 depending on required UL bandwidth
	SB2	10	52	Downlink & Uplink		Table 4.3.1.1.1.66-1: High range for UL/DL Bandwidth combination 10/10
25+15 (1)	SB1	25	133	Downlink & Uplink	Max Wgap	Table 4.3.1.1.1.66-1: Low range for UL/DL Bandwidth combination = 5/25, 10/25 or 25/25 depending on required UL bandwidth
	SB2	15	79	Downlink & Uplink		Table 4.3.1.1.1.66-1: High range for UL/DL Bandwidth combination 15/15
25+20 (1)	SB1	25	133	Downlink & Uplink	Max Wgap	Table 4.3.1.1.1.66-1: Low range for UL/DL Bandwidth combination = 5/25, 10/25 or 25/25 depending on required UL bandwidth
	SB2	20	106	Downlink & Uplink		Table 4.3.1.1.1.66-1: High range for for UL/DL Bandwidth combination = 5/20, 10/20 or 20/20 depending on required UL bandwidth
25+25 (1)	SB1	25	133	Downlink & Uplink	Max Wgap	Table 4.3.1.1.1.66-1: Low range for UL/DL Bandwidth combination = 5/25, 10/25 or 25/25 depending on required UL bandwidth
	SB2	25	133	Downlink & Uplink		Table 4.3.1.1.1.66-1: High range for UL/DL Bandwidth combination = 5/25, 10/25 or 25/25 depending on required UL bandwidth
25+30 (1)	SB1	25	133	Downlink & Uplink	Max Wgap	Table 4.3.1.1.1.66-1: Low range for UL/DL Bandwidth combination = 5/25, 10/25 or 25/25 depending on required UL bandwidth
	SB2	30	160	Downlink & Uplink		Table 4.3.1.1.1.66-1: High range for UL/DL Bandwidth combination = 5/30, 10/30 or 30/30 depending on required UL bandwidth
25+40 (1)	SB1	25	133	Downlink & Uplink	Max Wgap	Table 4.3.1.1.1.66-1: Low range for UL/DL Bandwidth combination = 5/25, 10/25 or 25/25 depending on required UL bandwidth
	SB2	40	216	Downlink & Uplink		Table 4.3.1.1.1.66-1: High range for UL/DL Bandwidth combination = 5/40, 10/40, 20/40 or 40/40 depending on required UL bandwidth

<b>CA_n66(2A); n66A (30MHz) + n66A(5-40MHz)</b>						
30+5 (1)	SB1	30	160	Downlink & Uplink	Max Wgap	Table 4.3.1.1.1.66-1: Low range for UL/DL Bandwidth combination = 5/30, 10/30 or 30/30 depending on required UL bandwidth
	SB2	5	25	Downlink & Uplink		Table 4.3.1.1.1.66-1: High range for UL/DL Bandwidth combination 5/5
30+10 (1)	SB1	30	160	Downlink & Uplink	Max Wgap	Table 4.3.1.1.1.66-1: Low range for UL/DL Bandwidth combination = 5/30, 10/30 or 30/30 depending on required UL bandwidth
	SB2	10	52	Downlink & Uplink		Table 4.3.1.1.1.66-1: High range for UL/DL Bandwidth combination 10/10
30+15 (1)	SB1	30	160	Downlink & Uplink	Max Wgap	Table 4.3.1.1.1.66-1: Low range for UL/DL Bandwidth combination = 5/30, 10/30 or 30/30 depending on required UL bandwidth
	SB2	15	79	Downlink & Uplink		Table 4.3.1.1.1.66-1: High range for UL/DL Bandwidth combination 15/15
30+20 (1)	SB1	30	160	Downlink & Uplink	Max Wgap	Table 4.3.1.1.1.66-1: Low range for UL/DL Bandwidth combination = 5/30, 10/30 or 30/30 depending on required UL bandwidth
	SB2	20	106	Downlink & Uplink		Table 4.3.1.1.1.66-1: High range for for UL/DL Bandwidth combination = 5/20, 10/20 or 20/20 depending on required UL bandwidth
30+25 (1)	SB1	30	160	Downlink & Uplink	Max Wgap	Table 4.3.1.1.1.66-1: Low range for UL/DL Bandwidth combination = 5/30, 10/30 or 30/30 depending on required UL bandwidth
	SB2	25	133	Downlink & Uplink		Table 4.3.1.1.1.66-1: High range for UL/DL Bandwidth combination = 5/25, 10/25 or 25/25 depending on required UL bandwidth
30+30 (1)	SB1	30	160	Downlink & Uplink	Max Wgap	Table 4.3.1.1.1.66-1: Low range for UL/DL Bandwidth combination = 5/30, 10/30 or 30/30 depending on required UL bandwidth
	SB2	30	160	Downlink & Uplink		Table 4.3.1.1.1.66-1: High range for UL/DL Bandwidth combination = 5/30, 10/30 or 30/30 depending on required UL bandwidth
30+40 (1)	SB1	30	160	Downlink & Uplink	Max Wgap	Table 4.3.1.1.1.66-1: Low range for UL/DL Bandwidth combination = 5/30, 10/30 or 30/30 depending on required UL bandwidth
	SB2	40	216	Downlink & Uplink		Table 4.3.1.1.1.66-1: High range for UL/DL Bandwidth combination = 5/40, 10/40, 20/40 or 40/40 depending on required UL bandwidth
<b>CA_n66(2A); n66A (40MHz) + n66A(5-40MHz)</b>						
40+5 (1,2)	SB1	40	216	Downlink & Uplink	Max Wgap	Table 4.3.1.1.1.66-1: Low range for UL/DL Bandwidth combination = 5/40, 10/40, 20/40 or 40/40 depending on required UL bandwidth
	SB2	5	25	Downlink & Uplink		Table 4.3.1.1.1.66-1: High range for UL/DL Bandwidth combination 5/5
40+10 (1,2)	SB1	40	216	Downlink & Uplink	Max Wgap	Table 4.3.1.1.1.66-1: Low range for UL/DL Bandwidth combination = 5/40, 10/40, 20/40 or 40/40 depending on required UL bandwidth
	SB2	10	52	Downlink & Uplink		Table 4.3.1.1.1.66-1: High range for UL/DL Bandwidth combination 10/10
40+15 (1,2)	SB1	40	216	Downlink & Uplink	Max Wgap	Table 4.3.1.1.1.66-1: Low range for UL/DL Bandwidth combination = 5/40, 10/40, 20/40 or 40/40 depending on required UL bandwidth
	SB2	15	79	Downlink & Uplink		Table 4.3.1.1.1.66-1: High range for UL/DL Bandwidth combination 15/15

40+20 (1,2)	SB1	40	216	Downlink & Uplink	Max Wgap	Table 4.3.1.1.1.66-1: Low range for UL/DL Bandwidth combination = 5/40, 10/40, 20/40 or 40/40 depending on required UL bandwidth
	SB2	20	106	Downlink & Uplink		Table 4.3.1.1.1.66-1: High range for UL/DL Bandwidth combination = 5/20, 10/20 or 20/20 depending on required UL bandwidth
40+25 (1)	SB1	40	216	Downlink & Uplink	Max Wgap	Table 4.3.1.1.1.66-1: Low range for UL/DL Bandwidth combination = 5/40, 10/40, 20/40 or 40/40 depending on required UL bandwidth
	SB2	25	133	Downlink & Uplink		Table 4.3.1.1.1.66-1: High range for UL/DL Bandwidth combination = 5/25, 10/25 or 25/25 depending on required UL bandwidth
40+30 (1)	SB1	40	216	Downlink & Uplink	Max Wgap	Table 4.3.1.1.1.66-1: Low range for UL/DL Bandwidth combination = 5/40, 10/40, 20/40 or 40/40 depending on required UL bandwidth
	SB2	30	160	Downlink & Uplink		Table 4.3.1.1.1.66-1: High range for UL/DL Bandwidth combination = 5/30, 10/30 or 30/30 depending on required UL bandwidth
40+40 (1,2)	SB1	40	216	Downlink & Uplink	Max Wgap	Table 4.3.1.1.1.66-1: High range for UL/DL Bandwidth combination = 5/40, 10/40, 20/40 or 40/40 depending on required UL bandwidth
	SB2	40	216	Downlink & Uplink		Table 4.3.1.1.1.66-1: Low range for UL/DL Bandwidth combination = 5/40, 10/40, 20/40 or 40/40 depending on required UL bandwidth
Note 1: CA_n66(2A) is specified in [7] 38.101-1 without uplink CA. PCC is configured on SB1 unless otherwise stated. The test frequencies for both SB1 and SB2 have been specified for both downlink and uplink to enable that the CC of either SB1 or SB2 can be used as PCC.						

**Table 4.3.1.1.5.66-2: NR Intra-Band non-contiguous CA configuration CA\_n66(2A) without UL CA, SCS=30 kHz, Max Wgap**

CBW combination (BCS)	SB	Band width [MHz]	carrier bandwidth [PRBs]	Range	Gap	Test frequencies and signalling parameters
<b>CA_n66(2A); n66A (10MHz) + n66A(10-40MHz)</b>						
10+10 (0,1,2)	SB1	10	52	Downlink & Uplink	Max Wgap	Table 4.3.1.1.1.66-2: Low range for UL/DL Bandwidth combination = 10/10
	SB2	10	52	Downlink & Uplink		Table 4.3.1.1.1.66-2: High range for UL/DL Bandwidth combination = 10/10
10+15 (0,1,2)	SB1	10	52	Downlink & Uplink	Max Wgap	Table 4.3.1.1.1.66-2: Low range for UL/DL Bandwidth combination = 10/10
	SB2	15	79	Downlink & Uplink		Table 4.3.1.1.1.66-2: High range for UL/DL Bandwidth combination = 15/15
10+20 (0,1,2)	SB1	10	52	Downlink & Uplink	Max Wgap	Table 4.3.1.1.1.66-2: Low range for UL/DL Bandwidth combination = 10/10
	SB2	20	106	Downlink & Uplink		Table 4.3.1.1.1.66-2: High range for UL/DL Bandwidth combination = 10/20 or 20/20 depending on required UL bandwidth
10+25 (1)	SB1	10	52	Downlink & Uplink	Max Wgap	Table 4.3.1.1.1.66-2: Low range for UL/DL Bandwidth combination = 10/10
	SB2	25	133	Downlink & Uplink		Table 4.3.1.1.1.66-2: High range for UL/DL Bandwidth combination = 5/25, 10/25 or 25/25 depending on required UL bandwidth
10+30 (1)	SB1	10	52	Downlink & Uplink	Max Wgap	Table 4.3.1.1.1.66-2: Low range for UL/DL Bandwidth combination = 10/10
	SB2	30	160	Downlink & Uplink		Table 4.3.1.1.1.66-2: High range for UL/DL Bandwidth combination = 5/30, 10/30 or 30/30 depending on required UL bandwidth
10+40 (0,1,2)	SB1	10	52	Downlink & Uplink	Max Wgap	Table 4.3.1.1.1.66-2: Low range for UL/DL Bandwidth combination = 10/10
	SB2	40	216	Downlink & Uplink		Table 4.3.1.1.1.66-2: High range for UL/DL Bandwidth combination = 20/40 or 40/40 depending on required UL bandwidth

<b>CA_n66(2A); n66A (15MHz) +n66A(10-40MHz)</b>						
15+10 (0,1,2)	SB1	15	79	Downlink & Uplink	Max Wgap	Table 4.3.1.1.1.66-2: Low range for UL/DL Bandwidth combination = 15/15
	SB2	10	52	Downlink & Uplink		Table 4.3.1.1.1.66-2: High range for UL/DL Bandwidth combination = 10/10
15+15 (0,1,2)	SB1	15	79	Downlink & Uplink	Max Wgap	Table 4.3.1.1.1.66-2: Low range for UL/DL Bandwidth combination = 15/15
	SB2	15	79	Downlink & Uplink		Table 4.3.1.1.1.66-2: High range for UL/DL Bandwidth combination = 15/15
15+20 (0,1,2)	SB1	15	79	Downlink & Uplink	Max Wgap	Table 4.3.1.1.1.66-2: Low range for UL/DL Bandwidth combination = 15/15
	SB2	20	106	Downlink & Uplink		Table 4.3.1.1.1.66-2: High range for UL/DL Bandwidth combination = 20/20
15+25 (1)	SB1	15	79	Downlink & Uplink	Max Wgap	Table 4.3.1.1.1.66-2: Low range for UL/DL Bandwidth combination = 15/15
	SB2	25	133	Downlink & Uplink		Table 4.3.1.1.1.66-2: High range for UL/DL Bandwidth combination = 5/25, 10/25 or 25/25 depending on required UL bandwidth
15+30 (1)	SB1	15	79	Downlink & Uplink	Max Wgap	Table 4.3.1.1.1.66-2: Low range for UL/DL Bandwidth combination = 15/15
	SB2	30	160	Downlink & Uplink		Table 4.3.1.1.1.66-2: High range for UL/DL Bandwidth combination = 5/30, 10/30 or 30/30 depending on required UL bandwidth
15+40 (0,1,2)	SB1	15	79	Downlink & Uplink	Max Wgap	Table 4.3.1.1.1.66-2: Low range for UL/DL Bandwidth combination = 15/15
	SB2	40	216	Downlink & Uplink		Table 4.3.1.1.1.66-2: High range for UL/DL Bandwidth combination = 20/40 or 40/40 depending on required UL bandwidth
<b>CA_n66(2A); n66A (20MHz) + n66A(10-40MHz)</b>						
20+10 (0,1,2)	SB1	20	106	Downlink & Uplink	Max Wgap	Table 4.3.1.1.1.66-2: Low range for UL/DL Bandwidth combination = 10/20 or 20/20 depending on required UL bandwidth
	SB2	10	52	Downlink & Uplink		Table 4.3.1.1.1.66-2: High range for UL/DL Bandwidth combination 10/10
20+15 (0,1,2)	SB1	20	106	Downlink & Uplink	Max Wgap	Table 4.3.1.1.1.66-2: Low range for UL/DL Bandwidth combination = 10/20 or 20/20 depending on required UL bandwidth
	SB2	15	79	Downlink & Uplink		Table 4.3.1.1.1.66-2: High range for UL/DL Bandwidth combination 15/15
20+20 (0,1,2)	SB1	20	106	Downlink & Uplink	Max Wgap	Table 4.3.1.1.1.66-2: Low range for UL/DL Bandwidth combination = 10/20 or 20/20 depending on required UL bandwidth
	SB2	20	106	Downlink & Uplink		Table 4.3.1.1.1.66-2: High range for UL/DL Bandwidth combination = 10/20 or 20/20 depending on required UL bandwidth
20+25 (1)	SB1	20	106	Downlink & Uplink	Max Wgap	Table 4.3.1.1.1.66-2: Low range for UL/DL Bandwidth combination = 5/20, 10/20 or 20/20 depending on required UL bandwidth
	SB2	25	133	Downlink & Uplink		Table 4.3.1.1.1.66-2: High range for UL/DL Bandwidth combination = 5/25, 10/25 or 25/25 depending on required UL bandwidth
20+30 (1)	SB1	20	106	Downlink & Uplink	Max Wgap	Table 4.3.1.1.1.66-2: Low range for UL/DL Bandwidth combination = 5/20, 10/20 or 20/20 depending on required UL bandwidth
	SB2	30	160	Downlink & Uplink		Table 4.3.1.1.1.66-2: High range for UL/DL Bandwidth combination = 5/30, 10/30 or 30/30 depending on required UL bandwidth
20+40 (0,1,2)	SB1	20	106	Downlink & Uplink	Max Wgap	Table 4.3.1.1.1.66-2: Low range for UL/DL Bandwidth combination = 10/20 or 20/20 depending on required UL bandwidth
	SB2	40	216	Downlink & Uplink		Table 4.3.1.1.1.66-2: High range for UL/DL Bandwidth combination = 20/40 or 40/40 depending on required UL bandwidth



<b>CA_n66(2A); n66A (25MHz) + n66A(10-40MHz)</b>						
25+10 (1)	SB1	25	133	Downlink & Uplink	Max Wgap	Table 4.3.1.1.1.66-2: Low range for UL/DL Bandwidth combination = 5/25, 10/25 or 25/25 depending on required UL bandwidth
	SB2	10	52	Downlink & Uplink		Table 4.3.1.1.1.66-2: High range for UL/DL Bandwidth combination 10/10
25+15 (1)	SB1	25	133	Downlink & Uplink	Max Wgap	Table 4.3.1.1.1.66-2: Low range for UL/DL Bandwidth combination = 5/25, 10/25 or 25/25 depending on required UL bandwidth
	SB2	15	79	Downlink & Uplink		Table 4.3.1.1.1.66-2: High range for UL/DL Bandwidth combination 15/15
25+20 (1)	SB1	25	133	Downlink & Uplink	Max Wgap	Table 4.3.1.1.1.66-2: Low range for UL/DL Bandwidth combination = 5/25, 10/25 or 25/25 depending on required UL bandwidth
	SB2	20	106	Downlink & Uplink		Table 4.3.1.1.1.66-2: High range for for UL/DL Bandwidth combination = 5/20, 10/20 or 20/20 depending on required UL bandwidth
25+25 (1)	SB1	25	133	Downlink & Uplink	Max Wgap	Table 4.3.1.1.1.66-2: Low range for UL/DL Bandwidth combination = 5/25, 10/25 or 25/25 depending on required UL bandwidth
	SB2	25	133	Downlink & Uplink		Table 4.3.1.1.1.66-2: High range for UL/DL Bandwidth combination = 5/25, 10/25 or 25/25 depending on required UL bandwidth
25+30 (1)	SB1	25	133	Downlink & Uplink	Max Wgap	Table 4.3.1.1.1.66-2: Low range for UL/DL Bandwidth combination = 5/25, 10/25 or 25/25 depending on required UL bandwidth
	SB2	30	160	Downlink & Uplink		Table 4.3.1.1.1.66-2: High range for UL/DL Bandwidth combination = 5/30, 10/30 or 30/30 depending on required UL bandwidth
25+40 (1)	SB1	25	133	Downlink & Uplink	Max Wgap	Table 4.3.1.1.1.66-2: Low range for UL/DL Bandwidth combination = 5/25, 10/25 or 25/25 depending on required UL bandwidth
	SB2	40	216	Downlink & Uplink		Table 4.3.1.1.1.66-2: High range for UL/DL Bandwidth combination = 5/40, 10/40, 20/40 or 40/40 depending on required UL bandwidth
<b>CA_n66(2A); n66A (30MHz) + n66A(10-40MHz)</b>						
30+10 (1)	SB1	30	160	Downlink & Uplink	Max Wgap	Table 4.3.1.1.1.66-2: Low range for UL/DL Bandwidth combination = 5/30, 10/30 or 30/30 depending on required UL bandwidth
	SB2	10	52	Downlink & Uplink		Table 4.3.1.1.1.66-2: High range for UL/DL Bandwidth combination 10/10
30+15 (1)	SB1	30	160	Downlink & Uplink	Max Wgap	Table 4.3.1.1.1.66-2: Low range for UL/DL Bandwidth combination = 5/30, 10/30 or 30/30 depending on required UL bandwidth
	SB2	15	79	Downlink & Uplink		Table 4.3.1.1.1.66-2: High range for UL/DL Bandwidth combination 15/15
30+20 (1)	SB1	30	160	Downlink & Uplink	Max Wgap	Table 4.3.1.1.1.66-2: Low range for UL/DL Bandwidth combination = 5/30, 10/30 or 30/30 depending on required UL bandwidth
	SB2	20	106	Downlink & Uplink		Table 4.3.1.1.1.66-2: High range for for UL/DL Bandwidth combination = 5/20, 10/20 or 20/20 depending on required UL bandwidth
30+25 (1)	SB1	30	160	Downlink & Uplink	Max Wgap	Table 4.3.1.1.1.66-2: Low range for UL/DL Bandwidth combination = 5/30, 10/30 or 30/30 depending on required UL bandwidth
	SB2	25	133	Downlink & Uplink		Table 4.3.1.1.1.66-2: High range for UL/DL Bandwidth combination = 5/25, 10/25 or 25/25 depending on required UL bandwidth
30+30 (1)	SB1	30	160	Downlink & Uplink	Max Wgap	Table 4.3.1.1.1.66-2: Low range for UL/DL Bandwidth combination = 5/30, 10/30 or 30/30 depending on required UL bandwidth
	SB2	30	160	Downlink & Uplink		Table 4.3.1.1.1.66-2: High range for UL/DL Bandwidth combination = 5/30, 10/30 or 30/30 depending on required UL bandwidth

30+40 (1)	SB1	30	160	Downlink & Uplink	Max Wgap	Table 4.3.1.1.1.66-2: Low range for UL/DL Bandwidth combination = 5/30, 10/30 or 30/30 depending on required UL bandwidth
	SB2	40	216	Downlink & Uplink		Table 4.3.1.1.1.66-2: High range for UL/DL Bandwidth combination = 5/40, 10/40, 20/40 or 40/40 depending on required UL bandwidth
<b>CA_n66(2A); n66A (40MHz) + n66A(10-40MHz)</b>						
40+10 (1,2)	SB1	40	216	Downlink & Uplink	Max Wgap	Table 4.3.1.1.1.66-2: Low range for UL/DL Bandwidth combination = 20/40 or 40/40 depending on required UL bandwidth
	SB2	10	52	Downlink & Uplink		Table 4.3.1.1.1.66-2: High range for UL/DL Bandwidth combination 10/10
40+15 (1,2)	SB1	40	216	Downlink & Uplink	Max Wgap	Table 4.3.1.1.1.66-2: Low range for UL/DL Bandwidth combination = 10/40 or 20/40 depending on required UL bandwidth
	SB2	15	79	Downlink & Uplink		Table 4.3.1.1.1.66-2: High range for UL/DL Bandwidth combination 15/15
40+20 (1,2)	SB1	40	216	Downlink & Uplink	Max Wgap	Table 4.3.1.1.1.66-2: Low range for UL/DL Bandwidth combination = 20/40 or 40/40 depending on required UL bandwidth
	SB2	20	106	Downlink & Uplink		Table 4.3.1.1.1.66-2: High range for UL/DL Bandwidth combination = 10/20 or 20/20 depending on required UL bandwidth
40+25 (1)	SB1	40	216	Downlink & Uplink	Max Wgap	Table 4.3.1.1.1.66-2: Low range for UL/DL Bandwidth combination = 5/40, 10/40, 20/40 or 40/40 depending on required UL bandwidth
	SB2	25	133	Downlink & Uplink		Table 4.3.1.1.1.66-2: High range for UL/DL Bandwidth combination = 5/25, 10/25 or 25/25 depending on required UL bandwidth
40+30 (1)	SB1	40	216	Downlink & Uplink	Max Wgap	Table 4.3.1.1.1.66-2: Low range for UL/DL Bandwidth combination = 5/40, 10/40, 20/40 or 40/40 depending on required UL bandwidth
	SB2	30	160	Downlink & Uplink		Table 4.3.1.1.1.66-2: High range for UL/DL Bandwidth combination = 5/30, 10/30 or 30/30 depending on required UL bandwidth
40+40 (1,2)	SB1	40	216	Downlink & Uplink	Max Wgap	Table 4.3.1.1.1.66-2: Low range for UL/DL Bandwidth combination = 5/40, 10/40, 20/40 or 40/40 depending on required UL bandwidth
	SB2	40	216	Downlink & Uplink		Table 4.3.1.1.1.66-2: High range for UL/DL Bandwidth combination = 5/40, 10/40, 20/40 or 40/40 depending on required UL bandwidth
Note 1: CA_n66(2A) is specified in [7] 38.101-1 without uplink CA. PCC is configured on SB1 unless otherwise stated. The test frequencies for both SB1 and SB2 have been specified for both downlink and uplink to enable that the CC of either SB1 or SB2 can be used as PCC.						

4.3.1.1.5.67 – 4.3.1.1.5.70 FFS

4.3.1.1.5.71 CA\_n71(2A)

Editor's note: Test frequencies for CA\_n71(2A) with mixed numerology with SCS CC1=15kHz and SCS CC2=30 kHz; and SCS CC1=30kHz and SCS CC2=15 kHz is FFS.

**Table 4.3.1.1.5.71-1: NR Intra-Band non-contiguous CA configuration CA\_n71(2A) without UL CA, SCS=15 kHz, Max Wgap**

CBW combination	SB	Band width [MHz]	carrier Bandwidth [PRBs]	Range	Gap	Test frequencies and signalling parameters
<b>CA_n71(2A); n71A (5MHz) + n71A (5-20MHz)</b>						
5+5	SB1	5	25	Downlink & Uplink	Max Wgap	Table 4.3.1.1.1.71-1: Low range for CBW=5 MHz
	SB2	5	25	Downlink & Uplink		Table 4.3.1.1.1.71-1: High range for CBW=5 MHz
5+10	SB1	5	25	Downlink & Uplink	Max Wgap	Table 4.3.1.1.1.71-1: Low range for CBW=5 MHz
	SB2	10	52	Downlink & Uplink		Table 4.3.1.1.1.71-1: High range for CBW=10 MHz

5+15	SB1	5	25	Downlink & Uplink	Max	Table 4.3.1.1.1.71-1: Low range for CBW=5 MHz
	SB2	15	79	Downlink & Uplink	Wgap	Table 4.3.1.1.1.71-1: High range for CBW=15 MHz
5+20	SB1	5	25	Downlink & Uplink	Max	Table 4.3.1.1.1.71-1: Low range for CBW=5 MHz
	SB2	20	106	Downlink & Uplink	Wgap	Table 4.3.1.1.1.71-1: High range for CBW=20 MHz
<b>CA_n71(2A); n71A (10MHz) + n71A (5-20MHz)</b>						
10+5	SB1	10	52	Downlink & Uplink	Max	Table 4.3.1.1.1.71-1: Low range for CBW=10 MHz
	SB2	5	25	Downlink & Uplink	Wgap	Table 4.3.1.1.1.71-1: High range for CBW=5 MHz
10+10	SB1	10	52	Downlink & Uplink	Max	Table 4.3.1.1.1.71-1: Low range for CBW=10 MHz
	SB2	10	52	Downlink & Uplink	Wgap	Table 4.3.1.1.1.71-1: High range for CBW=10 MHz
10+15	SB1	10	52	Downlink & Uplink	Max	Table 4.3.1.1.1.71-1: Low range for CBW=10 MHz
	SB2	15	79	Downlink & Uplink	Wgap	Table 4.3.1.1.1.71-1: High range for CBW=15 MHz
10+20	SB1	10	52	Downlink & Uplink	Max	Table 4.3.1.1.1.71-1: Low range for CBW=10 MHz
	SB2	20	106	Downlink & Uplink	Wgap	Table 4.3.1.1.1.71-1: High range for CBW=20 MHz
<b>CA_n71(2A); n71A (15MHz) + n71A (5-15MHz)</b>						
15+5	SB1	15	79	Downlink & Uplink	Max	Table 4.3.1.1.1.71-1: Low range for CBW=15 MHz
	SB2	5	25	Downlink & Uplink	Wgap	Table 4.3.1.1.1.71-1: High range for CBW=5 MHz
15+10	SB1	15	79	Downlink & Uplink	Max	Table 4.3.1.1.1.71-1: Low range for CBW=15 MHz
	SB2	10	52	Downlink & Uplink	Wgap	Table 4.3.1.1.1.71-1: High range for CBW=10 MHz
15+15	SB1	15	79	Downlink & Uplink	Max	Table 4.3.1.1.1.71-1: Low range for CBW=15 MHz
	SB2	15	79	Downlink & Uplink	Wgap	Table 4.3.1.1.1.71-1: High range for CBW=15 MHz
<b>CA_n71(2A); n71A (20MHz) + n71A (5-10MHz)</b>						
20+5	SB1	20	106	Downlink & Uplink	Max	Table 4.3.1.1.1.71-1: Low range for CBW=20 MHz
	SB2	5	25	Downlink & Uplink	Wgap	Table 4.3.1.1.1.71-1: High range for CBW=5 MHz
20+10	SB1	20	106	Downlink & Uplink	Max	Table 4.3.1.1.1.71-1: Low range for CBW=20 MHz
	SB2	10	52	Downlink & Uplink	Wgap	Table 4.3.1.1.1.71-1: High range for CBW=10 MHz
Note 1: CA_n71(2A) is specified in [7] 38.101-1 without uplink CA. PCC is configured on SB1 unless otherwise stated. The test frequencies for both SB1 and SB2 have been specified for both downlink and uplink to enable that the CC of either SB1 or SB2 can be used as PCC.						

**Table 4.3.1.1.5.71-2: NR Intra-Band non-contiguous CA configuration CA\_n71(2A) without UL CA, SCS=30 kHz, Max Wgap**

SB CBW combination	SB	Band width [MHz]	carrier bandwidth [PRBs]	Range	Gap	Test frequencies and signalling parameters
<b>CA_n71(2A); n71A (10MHz) + n71A (10-20MHz)</b>						
10+10	SB1	10	24	Downlink & Uplink	Max	Table 4.3.1.1.1.71-2: Low range for CBW=10 MHz
	SB2	10	24	Downlink & Uplink	Wgap	Table 4.3.1.1.1.71-2: High range for CBW=10 MHz
10+15	SB1	10	24	Downlink & Uplink	Max	Table 4.3.1.1.1.71-2: Low range for CBW=10 MHz
	SB2	15	38	Downlink & Uplink	Wgap	Table 4.3.1.1.1.71-2: High range for CBW=15 MHz
10+20	SB1	10	24	Downlink & Uplink	Max	Table 4.3.1.1.1.71-2: Low range for CBW=10 MHz
	SB2	20	51	Downlink & Uplink	Wgap	Table 4.3.1.1.1.71-2: High range for CBW=20 MHz
<b>CA_n71(2A); n71A (15MHz) + n71A (10-15MHz)</b>						
15+10	SB1	15	38	Downlink & Uplink	Max	Table 4.3.1.1.1.71-2: Low range for CBW=15 MHz
	SB2	10	24	Downlink & Uplink	Wgap	Table 4.3.1.1.1.71-2: High range for CBW=10 MHz
15+15	SB1	15	38	Downlink & Uplink	Max	Table 4.3.1.1.1.71-2: Low range for CBW=15 MHz
	SB2	15	38	Downlink & Uplink	Wgap	Table 4.3.1.1.1.71-2: High range for CBW=15 MHz
<b>CA_n71(2A); n71A (20MHz) + n71A (10MHz)</b>						
20+10	SB1	20	51	Downlink & Uplink	Max	Table 4.3.1.1.1.71-2: Low range for CBW=20 MHz
	SB2	10	24	Downlink & Uplink	Wgap	Table 4.3.1.1.1.71-2: High range for CBW=10 MHz
Note 1: CA_n71(2A) is specified in [7] 38.101-1 without uplink CA. PCC is configured on SB1 unless otherwise stated. The test frequencies for both SB1 and SB2 have been specified for both downlink and uplink to enable that the CC of either SB1 or SB2 can be used as PCC.						

4.3.1.1.5.72 – 4.3.1.1.5.76 FFS

4.3.1.1.5.77 CA\_n77(2A)

Editor’s note: Test frequencies for CA\_n77(2A) with mixed numerology with SCS CC1=15kHz and SCS CC2=30 kHz or 60kHz; and SCS CC1=30kHz and SCS CC2=15 kHz or 60 kHz is FFS.

**Table 4.3.1.1.5.77-1: NR Intra-Band non-contiguous CA configuration CA\_n77(2A) without UL CA, SCS=15 kHz, Max Wgap**

CBW combination	SB	Bandwidth [MHz]	Range (Note 1)	Gap	Test frequencies and signalling parameters
<b>CA_n77(2A); n77A(20-40MHz) + n77A(20-40MHz)</b>					
CBW1+CBW2	SB1	CBW1	Downlink & Uplink	Max Wgap	For CBW1, use Table 4.3.1.1.1.77-1: Low range for CBW = 20 OR 40 MHz
	SB2	CBW2	Downlink & Uplink		For CBW2, use Table 4.3.1.1.1.77-1: High range for CBW = 20 OR 40 MHz
Note 1: CA_n77(2A) BCS0 is specified in [7] 38.101-1 without uplink CA. PCC is configured on SB1 unless otherwise stated. The test frequencies for both SB1 and SB2 have been specified for both downlink and uplink to enable that the CC of either SB1 or SB2 can be used as PCC.					

**Table 4.3.1.1.5.77-2: NR Intra-Band non-contiguous CA configuration CA\_n77(2A) without UL CA, SCS=30 kHz, Max Wgap**

CBW combination	SB	Bandwidth [MHz]	Range (Note 1)	Gap	Test frequencies and signalling parameters
<b>CA_n77(2A); n77A(20-100MHz) + n77A(20-100MHz)</b>					
CBW1+CBW2	SB1	CBW1	Downlink & Uplink	Max Wgap	For CBW1, use Table 4.3.1.1.1.77-2: Low range for CBW = 20, 40, 80 OR 100 MHz
	SB2	CBW2	Downlink & Uplink		For CBW2, use Table 4.3.1.1.1.77-2: High range for CBW = 20, 40, 80 OR 100 MHz
Note 1: CA_n77(2A) BCS0 is specified in [7] 38.101-1 without uplink CA. PCC is configured on SB1 unless otherwise stated. The test frequencies for both SB1 and SB2 have been specified for both downlink and uplink to enable that the CC of either SB1 or SB2 can be used as PCC.					

## 4.3.1.1.5.78 CA\_n78(2A)

Editor's note: Test frequencies for CA\_n78(2A) with mixed numerology with SCS CC1=15kHz and SCS CC2=30 kHz or 60kHz; and SCS CC1=30kHz and SCS CC2=15 kHz or 60 kHz is FFS.

**Table 4.3.1.1.5.78-1: NR Intra-Band non-contiguous CA configuration CA\_n78(2A) without UL CA, SCS=15 kHz, Max Wgap**

CBW combination	SB	Bandwidth [MHz]	Range	Gap	Test frequencies and signalling parameters
<b>CA_n78(2A); n78A(10-50MHz) + n78A(10-50MHz)</b>					
CBW1+CBW2	SB1	CBW1	Downlink & Uplink	Max Wgap	For CBW1, use Table 4.3.1.1.1.78-1: Low range for CBW = 10, 20, 25, 30, 40 OR 50 MHz
	SB2	CBW2	Downlink & Uplink		For CBW2, use Table 4.3.1.1.1.78-1: High range for CBW = 10, 20, 25, 30, 40 OR 50 MHz
Note 1: CA_n78(2A) is specified in [7] 38.101-1 with and without uplink CA. PCC is configured on SB1 unless otherwise stated. This table is applicable for the case of without UL CA but test frequencies for both SB1 and SB2 have been specified for both downlink and uplink to enable that the CC of either SB1 or SB2 can be used as PCC.					

**Table 4.3.1.1.5.78-1A: NR Intra-Band non-contiguous CA configuration CA\_n78(2A) with UL CA, SCS=15 kHz, Max Wgap**

FFS

**Table 4.3.1.1.5.78-2: NR Intra-Band non-contiguous CA configuration CA\_n78(2A) without UL CA, SCS=30 kHz, Max Wgap**

CBW combination	SB	Bandwidth [MHz]	Range	Gap	Test frequencies and signalling parameters
<b>CA_n78(2A); n78A(10-100MHz) + n78A(10-100MHz)</b>					
CBW1+CBW2	SB1	CBW1	Downlink & Uplink	Max Wgap	For CBW1, use Table 4.3.1.1.1.78-2: Low range for CBW = 10, 20, 25, 30, 40, 50, 60, 70, 80, 90 OR 100 MHz
	SB2	CBW2	Downlink & Uplink		For CBW2, use Table 4.3.1.1.1.78-2: High range for CBW = 10, 20, 25, 30, 40, 50, 60, 70, 80, 90 OR 100 MHz
Note 1: CA_n78(2A) is specified in [7] 38.101-1 with and without uplink CA. PCC is configured on SB1 unless otherwise stated. This table is applicable for the case of without UL CA but test frequencies for both SB1 and SB2 have been specified for both downlink and uplink to enable that the CC of either SB1 or SB2 can be used as PCC.					

**Table 4.3.1.1.5.78-2A: NR Intra-Band non-contiguous CA configuration CA\_n78(2A) with UL CA, SCS=30 kHz, Max Wgap****FFS****4.3.1.1.6 NR Operating SUL band combinations in FR1**

For SUL band combinations specified in TS 38.101-1 [7] Table 5.5C-1, the test frequencies and signalling parameters in clause 4.3.1.1.1 apply for each operating bands.

For SUL band combinations with intra-band non-contiguous CA specified in TS 38.101-1 [7] Table 5.5C-2, the test frequencies and signalling parameters in clause 4.3.1.1.1 apply for SUL band. The test frequencies and signalling parameters in clause 4.3.1.1.5 apply for each DL CA component carrier.

For SUL band combinations with intra-band contiguous CA specified in TS 38.101-1 [7] Table 5.5C-3, the test frequencies and signalling parameters in clause 4.3.1.1.1 apply for SUL band. The test frequencies and signalling parameters in clause 4.3.1.1.3 apply for each DL CA component carrier.

For SUL band combinations with inter-band CA specified in TS 38.101-1 [7] Table 5.5C-4, the test frequencies and signalling parameters in clause 4.3.1.1.1 apply for each operating bands.

**4.3.1.1.7 NR inter-band NR-DC configurations in FR1****4.3.1.1.7.1 NR inter-band NR-DC configurations in FR1 (two bands)****Table 4.3.1.1.7.1-1: Inter-band NR-DC configurations (FR1, two bands)**

NR-DC configuration	Uplink NR-DC configuration	NR-DC downlink configuration band 1	NR-DC downlink configuration band 2	NR-DC uplink configuration band 1	NR-DC uplink configuration band 2	Applicable for protocol testing (Note 1)
DC_n48A-n70A	DC_n48A-n70A	n48A	n70A	n48A	n70A	Yes
Note 1: Protocol testing is limited to NR-DC configurations with 2CC.						

## 4.3.1.2 Test frequencies for NR operating bands in FR2

## 4.3.1.2.1 NR operating bands in FR2

## 4.3.1.2.1.1 Reference test frequencies for NR operating band n257

Table 4.3.1.2.1.1-1: Test frequencies for NR operating band n257, SCS 60 kHz and  $\Delta F_{\text{Raster}}$  60 kHz

CBW [MHz]	carrier Bandwidth [PRBs]	Range	Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absolute Frequency PointA [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS [kHz]	GSCN	absolute Frequency SSB [ARFCN]	$k_{\text{SSE}}$	Offset Carrier CORESET#0 [RBs] Note 2	CORESET#0 Index (Offset [RBs]) Note 1	offsetToPointA (SIB1) [PRBs] Note 1	
50	66	Downlink & Uplink	Low	26525.04	2054583	26501.28	2054187	0	120	22388	2054683	4	13	1 (8)	21
			Mid	27999.96	2079165	27902.76	2077545	102		22473	2079163	10	4	1 (8)	114
			High	29475	2103749	29088.36	2097305	504		22558	2103643	2	4	0 (0)	508
100	132	Downlink & Uplink	Low	26550	2054999	26502.48	2054207	0	120	22388	2054683	8	11	1 (8)	19
			Mid	27999.96	2079165	27879	2077149	102		22472	2078875	10	13	1 (8)	123
			High	29449.92	2103331	29039.52	2096491	504		22555	2102779	0	0	0 (0)	504
200	264	Downlink & Uplink	Low	26600.04	2055833	26505	2054249	0	120	22388	2054683	2	8	1 (8)	16
			Mid	27999.96	2079165	27831.48	2076357	102		22469	2078011	10	7	1 (8)	117
			High	29400	2102499	28942.08	2094867	504		22550	2101339	4	7	1 (8)	519

Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-7 in TS 38.213 [22]. The value of CORESET#0 Index is signalled controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.

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

Table 4.3.1.2.1.1-2: Test frequencies for NR operating band n257, SCS 120kHz and  $\Delta F_{\text{Raster}}$  120 kHz

CBW [MHz]	carrierBandwidth [PRBs]	Range	Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequencyPointA [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS [kHz]	GSCN	absoluteFrequencySSB [ARFCN]	$k_{\text{SSE}}$	Offset Carrier CORESET#0 [RBs] Note 2	CORESET#0 Index (Offset [RBs]) Note 1	offsetToPointA (SIB1) [PRBs] Note 1	
50	32	Downlink & Uplink	Low	26525.04	2054583	26502	2054199	0	120	22388	2054683	2	6	1 (4)	20
			Mid	27999.96	2079165	27830.04	2076333	102		22473	2079163	11	1	1 (4)	214
			High	29475	2103749	28726.2	2091269	504		22558	2103643	7	1	0 (0)	1010
100	66	Downlink & Uplink	Low	26550	2054999	26502.48	2054207	0	120	22388	2054683	10	5	1 (4)	18
			Mid	27999.96	2079165	27805.56	2075925	102		22472	2078875	11	6	1 (4)	224
			High	29449.92	2103331	28676.64	2090443	504		22555	2102779	0	0	0 (0)	1008
200	132	Downlink & Uplink	Low	26600.04	2055833	26505	2054249	0	120	22388	2054683	1	4	1 (4)	16
			Mid	27999.96	2079165	27758.04	2075133	102		22469	2078011	11	3	1 (4)	218
			High	29400	2102499	28579.2	2088819	504		22550	2101339	8	3	1 (4)	1022
400	264	Downlink & Uplink	Low	26700	2057499	26509.92	2054331	0	120	22388	2054683	8	0	1 (4)	8
			Mid	27999.96	2079165	27663	2073549	102		22463	2076283	11	1	0 (0)	206
			High	29299.92	2100831	28384.08	2085567	504		22539	2098171	2	7	1 (4)	1030

Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-8 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.

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

Table 4.3.1.2.1.2-1: Test frequencies for NR operating band n258, SCS 60 kHz and  $\Delta F_{\text{Raster}}$  60 kHz

CBW [MHz]	carrierBandwidth [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequency PointA [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS [kHz]	GSCN	absoluteFrequency SSB [ARFCN]	$k_{\text{SSE}}$	Offset Carrier CORESET#0 [RBs] Note 2	CORESET#0 Index (Offset [RBs]) Note 1	offsetToPointA (SIB1) [PRBs] Note 1
50	66	Downlink & Uplink	Low	24275.04	2017083	24251.28	2016687	0	120	22257	2016955	4	2	0 (0)	2
			Mid	25875	2043749	25777.8	2042129	102		22350	2043739	2	4	1 (8)	114
			High	27474.96	2070415	27088.32	2063971	504		22443	2070523	0	14	1 (8)	526
100	132	Downlink & Uplink	Low	24300	2017499	24252.48	2016707	0	120	22257	2016955	8	0	0 (0)	0
			Mid	25875	2043749	25754.04	2041733	102		22349	2043451	2	13	1 (8)	123
			High	27450	2069999	27039.6	2063159	504		22440	2069659	8	9	1 (8)	521
200	264	Downlink & Uplink	Low	24350.04	2018333	24255	2016749	0	120	22258	2017243	2	13	1 (8)	21
			Mid	25875	2043749	25706.52	2040941	102		22346	2042587	2	7	1 (8)	117
			High	27399.96	2069165	26942.04	2061533	504		22434	2067931	2	1	1 (8)	513
Note 1:	The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-7 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcc-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.														
Note 2:	The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs.														



Table 4.3.1.2.1.2: Test frequencies for NR operating band n258, SCS 120kHz and  $\Delta F_{\text{Raster}}$  120 kHz

CBW [MHz]	carrierBandwidth [PRBs]	Range	Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequencyPointA [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS [kHz]	GSCN	absoluteFrequencySSB [ARFCN]	$k_{\text{SSE}}$	Offset Carrier CORESET#0 [RBs] Note 2	CORESET#0 Index (Offset [RBs]) Note 1	offsetToPointA (SIB1) [PRBs] Note 1	
50	32	Downlink & Uplink	Low	24275.04	2017083	24252	2016699	0	120	22257	2016955	8	0	0 (0)	0
			Mid	25875	2043749	25705.08	2040917	102		22350	2043739	7	1	1 (4)	214
			High	27474.96	2070415	26726.16	2057935	504		22443	2070523	6	6	1 (4)	1028
100	66	Downlink & Uplink	Low	24300	2017499	24252.48	2016707	0	120	22257	2016955	4	0	0 (0)	0
			Mid	25875	2043749	25680.6	2040509	102		22349	2043451	7	6	1 (4)	224
			High	27450	2069999	26676.72	2057111	504		22440	2069659	10	4	1 (4)	1024
200	132	Downlink & Uplink	Low	24350.04	2018333	24255	2016749	0	120	22258	2017243	7	6	1 (4)	20
			Mid	25875	2043749	25633.08	2039717	102		22346	2042587	7	3	1 (4)	218
			High	27399.96	2069165	26579.16	2055485	504		22434	2067931	7	0	1 (4)	1016
400	264	Downlink & Uplink	Low	24450	2019999	24259.92	2016831	0	120	22258	2017243	2	3	1 (4)	14
			Mid	25875	2043749	25538.04	2038133	102		22340	2040859	7	1	0 (0)	206
			High	27300	2067499	26384.16	2052235	504		22423	2064763	0	4	1 (4)	1024

Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-8 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.

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

Table 4.3.1.2.1.3-1: Test frequencies for NR operating band n259, SCS 60 kHz and  $\Delta F_{\text{Raster}}$  60 kHz

CBW [MHz]	carrierBandwidth [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequency PointA [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS [kHz]	GSCN	absoluteFrequency SSB [ARFCN]	$k_{\text{SSE}}$	Offset Carrier CORESET#0 [RBs] Note 2	CORESET#0 Index (Offset [RBs]) Note 1	offsetToPointA (SIB1) [PRBs] Note 1
50	66	Downlink & Uplink	Low	39525	2271249	39501.24	2270853	0	120	23140	2271259	10	5	1 (8)	13
			Mid	41499.96	2304165	41402.76	2302545	102		23254	2304091	10	6	0 (0)	108
			High	43474.92	2337081	43088.28	2330637	504		23369	2337211	10	15	1 (8)	527
100	132	Downlink & Uplink	Low	39550.08	2271667	39502.56	2270875	0	120	23140	2271259	0	4	1 (8)	12
			Mid	41499.96	2304165	41379	2302149	102		23253	2303803	10	7	1 (8)	117
			High	43449.96	2336665	43039.56	2329825	504		23366	2336347	6	11	1 (8)	523
200	264	Downlink & Uplink	Low	39600	2272499	39504.96	2270915	0	120	23140	2271259	8	0	1 (8)	8
			Mid	41499.96	2304165	41331.48	2301357	102		23250	2302939	10	1	1 (8)	111
			High	43399.92	2335831	42942	2328199	504		23360	2334619	0	3	1 (8)	515
<p>Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-7 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcc-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.</p> <p>Note 2: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter <math>\Delta F_{\text{OffsetCORESET-0-Carrier}}</math> in Annex C expressed in number of common RBs.</p>															

Table 4.3.1.2.1.3-2: Test frequencies for NR operating band n259, SCS 120kHz and  $\Delta F_{\text{Raster}}$  120 kHz

CBW [MHz]	carrierBandwidth [PRBs]	Range	Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequencyPointA [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS [kHz]	GSCN	absoluteFrequencySSB [ARFCN]	$k_{\text{SSE}}$	Offset Carrier CORESET#0 [RBs] Note 2	CORESET#0 Index (Offset [RBs]) Note 1	offsetToPointA (SIB1) [PRBs] Note 1	
50	32	Downlink & Uplink	Low	39525	2271249	39501.96	2270865	0	120	23140	2271259	5	2	1 (4)	12
			Mid	41499.96	2304165	41330.04	2301333	102		23254	2304091	11	2	0 (0)	208
			High	43474.92	2337081	42726.12	2324601	504		23369	2337211	5	7	1 (4)	1030
100	66	Downlink & Uplink	Low	39550.08	2271667	39502.56	2270875	0	120	23140	2271259	0	2	1 (4)	12
			Mid	41499.96	2304165	41305.56	2300925	102		23253	2303803	11	3	1 (4)	218
			High	43449.96	2336665	42676.68	2323777	504		23366	2336347	9	5	1 (4)	1026
200	132	Downlink & Uplink	Low	39600	2272499	39504.96	2270915	0	120	23140	2271259	4	0	1 (4)	8
			Mid	41499.96	2304165	41258.04	2300133	102		23250	2302939	11	0	1 (4)	212
			High	43399.92	2335831	42579.12	2322151	504		23360	2334619	6	1	1 (4)	1018
400	264	Downlink & Uplink	Low	39700.08	2274167	39510	2270999	0	120	23140	2271259	10	0	0 (0)	0
			Mid	41499.96	2304165	41163	2298549	102		23245	2301499	11	6	1 (4)	224
			High	43299.96	2334165	42384.12	2318901	504		23349	2331451	11	4	1 (4)	1024

Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-8 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.

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

Table 4.3.1.2.1.4-1: Test frequencies for NR operating band n260, SCS 60 kHz and  $\Delta F_{\text{Raster}}$  60 kHz

CBW [MHz]	carrierBandwidth [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequencyPointA [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS [kHz]	GSCN	absoluteFrequencySSB [ARFCN]	$k_{\text{SSE}}$	Offset Carrier CORESET#0 [RBs] Note 2	CORESET#0 Index (Offset [RBs]) Note 1	offsetToPointA (SIB1) [PRBs] Note 1
50	66	Downlink & Uplink	Low	37025.04	2229583	37001.28	2229187	0	120	22995	2229499	0	6	0 (0)	6
			Mid	38499.96	2254165	38402.76	2252545	102		23081	2254267	6	13	1 (8)	123
			High	39975	2278749	39588.36	2272305	504		23166	2278747	10	4	1 (8)	516
100	132	Downlink & Uplink	Low	37050	2229999	37002.48	2229207	0	120	22995	2229499	4	4	0 (0)	4
			Mid	38499.96	2254165	38379	2252149	102		23079	2253691	6	6	0 (0)	108
			High	39949.92	2278331	39539.52	2271491	504		23163	2277883	8	0	1 (8)	512
200	264	Downlink & Uplink	Low	37100.04	2230833	37005	2229249	0	120	22995	2229499	10	0	0 (0)	0
			Mid	38499.96	2254165	38331.48	2251357	102		23076	2252827	6	0	0 (0)	102
			High	39900	2277499	39442.08	2269867	504		23157	2276155	0	0	0 (0)	504
Note 1:	The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-7 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcc-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.														
Note 2:	The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs.														

Table 4.3.1.2.1.4-2: Test frequencies for NR operating band n260, SCS 120kHz and  $\Delta F_{\text{Raster}}$  120 kHz

CBW [MHz]	carrier Bandwidth [PRBs]	Range	Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absolute Frequency PointA [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS [kHz]	GSCN	absolute Frequency SSB [ARFCN]	$k_{\text{SSE}}$	Offset Carrier CORESET#0 [RBs] Note 2	CORESET#0 Index (Offset [RBs]) Note 1	offsetToPointA (SIB1) [PRBs] Note 1	
50	32	Downlink & Uplink	Low	37025.04	2229583	37002	2229199	120	22995	2229499	6	2	0 (0)	4	
			Mid	38499.96	2254165	38330.04	2251333		102	23081	2254267	3	6	1 (4)	224
			High	39975	2278749	39226.2	2266269		504	23166	2278747	11	1	1 (4)	1018
100	66	Downlink & Uplink	Low	37050	2229999	37002.48	2229207	120	22995	2229499	2	2	0 (0)	4	
			Mid	38499.96	2254165	38305.56	2250925		102	23079	2253691	3	3	0 (0)	210
			High	39949.92	2278331	39176.64	2265443		504	23163	2277883	4	0	1 (4)	1016
200	132	Downlink & Uplink	Low	37100.04	2230833	37005	2229249	120	22995	2229499	5	0	0 (0)	0	
			Mid	38499.96	2254165	38258.04	2250133		102	23076	2252827	3	0	0 (0)	204
			High	39900	2277499	39079.2	2263819		504	23157	2276155	0	0	0 (0)	1008
400	264	Downlink & Uplink	Low	37200	2232499	37009.92	2229331	120	22996	2229787	0	5	1 (4)	18	
			Mid	38499.96	2254165	38163	2248549		102	23071	2251387	3	2	1 (4)	216
			High	39799.92	2275831	38884.08	2260567		504	23146	2272987	6	3	0 (0)	1014

Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-8 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.

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

Table 4.3.1.2.1.5-1: Test frequencies for NR operating band n261, SCS 60 kHz and  $\Delta F_{\text{Raster}}$  60 kHz

CBW [MHz]	carrierBandwidth [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequency PointA [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS [kHz]	GSCN	absoluteFrequency SSB [ARFCN]	$k_{\text{SSE}}$	Offset Carrier CORESET#0 [RBs] Note 2	CORESET#0 Index (Offset [RBs]) Note 1	offsetToPointA (SIB1) [PRBs] Note 1
50	66	Downlink & Uplink	Low	27525	2071249	27501.24	2070853	0	120	22446	2071387	6	16	1 (8)	24
			Mid	27924.96	2077915	27827.76	2076295	102		22469	2078011	0	13	1 (8)	123
			High	28324.92	2084581	27938.28	2078137	504		22492	2084635	6	9	1 (8)	521
100	132	Downlink & Uplink	Low	27550.08	2071667	27502.56	2070875	0	120	22446	2071387	8	14	1 (8)	22
			Mid	27924.96	2077915	27804	2075899	102		22467	2077435	0	6	0 (0)	108
			High	28299.96	2084165	27889.56	2077325	504		22489	2083771	2	5	1 (8)	517
200	264	Downlink & Uplink	Low	27600	2072499	27504.96	2070915	0	120	22446	2071387	4	11	1 (8)	19
			Mid	27924.96	2077915	27756.48	2075107	102		22464	2076571	0	0	0 (0)	102
			High	28249.92	2083331	27792	2075699	504		22483	2082043	8	4	0 (0)	508
<p>Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-7 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcc-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.</p> <p>Note 2: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter <math>\Delta F_{\text{OffsetCORESET-0-Carrier}}</math> in Annex C expressed in number of common RBs.</p>															

Table 4.3.1.2.1.5-2: Test frequencies for NR operating band n261, SCS 120kHz and  $\Delta F_{\text{Raster}}$  120 kHz

CBW [MHz]	carrierBandwidth [PRBs]	Range	Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequencyPointA [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS [kHz]	GSCN	absoluteFrequencySSB [ARFCN]	$k_{\text{SSE}}$	Offset Carrier CORESET#0 [RBs] Note 2	CORESET#0 Index (Offset [RBs]) Note 1	offsetToPointA (SIB1) [PRBs] Note 1	
50	32	Downlink & Uplink	Low	27525	2071249	27501.96	2070865	0	120	22446	2071387	9	7	1 (4)	22
			Mid	27924.96	2077915	27755.04	2075083	102		22469	2078011	0	6	1 (4)	224
			High	28324.92	2084581	27576.12	2072101	504		22492	2084635	3	4	1 (4)	1024
100	66	Downlink & Uplink	Low	27550.08	2071667	27502.56	2070875	0	120	22446	2071387	4	7	1 (4)	22
			Mid	27924.96	2077915	27730.56	2074675	102		22467	2077435	0	3	0 (0)	210
			High	28299.96	2084165	27526.68	2071277	504		22489	2083771	7	2	1 (4)	1020
200	132	Downlink & Uplink	Low	27600	2072499	27504.96	2070915	0	120	22446	2071387	8	5	1 (4)	18
			Mid	27924.96	2077915	27683.04	2073883	102		22464	2076571	0	0	0 (0)	204
			High	28249.92	2083331	27429.12	2069651	504		22483	2082043	4	2	0 (0)	1012
400	264	Downlink & Uplink	Low	27700.08	2074167	27510	2070999	0	120	22446	2071387	2	2	1 (4)	12
			Mid	27924.96	2077915	27588	2072299	102		22459	2075131	0	2	1 (4)	216
			High	28149.96	2081665	27234.12	2066401	504		22472	2078875	9	1	1 (4)	1018

Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-8 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.

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

## 4.3.1.2.2 NR inter-band CA configurations in FR2

Table 4.3.1.2.2-1: NR inter-band CA configurations in FR2

NR CA configuration	Uplink NR CA configuration	NR CA downlink configuration band 1	NR CA downlink configuration band 2	NR CA uplink configuration band 1	NR CA uplink configuration band 2	Applicable for protocol testing (Note 1)
CA_n260A-n261A	-	n260A	n261A	-	-	Yes
CA_n260A-n261M	-	n260A	CA_n261M	-	-	No
	CA_n261M	n260A	CA_n261M	-	CA_n261M	No
CA_n260G-n261M	-	CA_n260G	CA_n261M	-	-	No
	CA_n260G	CA_n260G	CA_n261M	CA_n260G	-	No
	CA_n261M	CA_n260G	CA_n261M	-	CA_n261M	No
CA_n260H-n261M	-	CA_n260H	CA_n261M	-	-	No
	CA_n260H	CA_n260H	CA_n261M	CA_n260H	-	No
	CA_n261M	CA_n260H	CA_n261M	-	CA_n261M	No
CA_n260I-n261M	-	CA_n260I	CA_n261M	-	-	No
	CA_n260I	CA_n260I	CA_n261M	CA_n260I	-	No
	CA_n261M	CA_n260I	CA_n261M	-	CA_n261M	No
CA_n260J-n261M	-	CA_n260J	CA_n261M	-	-	No
	CA_n260J	CA_n260J	CA_n261M	CA_n260J	-	No
	CA_n261M	CA_n260J	CA_n261M	-	CA_n261M	No
CA_n260K-n261M	-	CA_n260K	CA_n261M	-	-	No
	CA_n260K	CA_n260K	CA_n261M	CA_n260K	-	No
	CA_n261M	CA_n260K	CA_n261M	-	CA_n261M	No
CA_n260L-n261M	-	CA_n260L	CA_n261M	-	-	No
	CA_n260L	CA_n260L	CA_n261M	CA_n260L	-	No
	CA_n261M	CA_n260L	CA_n261M	-	CA_n261M	No
CA_n260M-n261M	-	CA_n260M	CA_n261M	-	-	No
	CA_n260M	CA_n260M	CA_n261M	CA_n260M	-	No
	CA_n261M	CA_n260M	CA_n261M	-	CA_n261M	No

Note 1: Protocol testing is limited to NR CA configurations with 2CC.



#### 4.3.1.2.3 NR intra-band contiguous CA configurations in FR2

##### 4.3.1.2.3.1 NR Intra-band contiguous CA configurations for CA\_n257

###### 4.3.1.2.3.1.1 CA\_n257B

Editor's note: CBW=400 MHz for NR band n257 is only supported by for SCS 120kHz. Test frequencies for CA\_n257B are currently limited to SCS 120kHz for all CCs.  
Test frequencies for mixed numerologies between CCs is FFS.

Table 4.3.1.2.3.1.1-1: NR Intra-Band contiguous CA configuration CA\_n257B, SCS=120 kHz,  $\Delta F_{\text{Raster}}$  120 kHz

CBW combination	CC Note 2	CBW [MHz]	SCS [kHz]	carrier Bandwidth [PRBs]	Range	Carrier centre [MHz] Note 2	Carrier centre [ARFCN]	point A [MHz]	absolute Frequency PointA [ARFCN]	offset to Carrier [Carrier PRBs]	SS block SCS [kHz]	GSCN	absolute Frequency SSB [ARFCN]	$k_{\text{SSB}}$	Offset Carrier CORESET#0 [RBs] Note 3	CORESET#0 Index (Offset [RBs]) Note 4	offsetTo PointA (SIB1) [PRBs] Note 4		
50+400	CC1	50	120	32	Downlink & Uplink	Low	26525.04	2054583	26502	2054199	0	120	22388	2054683	2	6	1 (4)	20	
						Mid	27800.04	2075833	27630.12	2073001	102		22461	2075707	9	0	0 (0)	204	
						High	29082.96	2097215	28334.16	2084735	504		22536	2097307	10	5	1 (4)	1026	
	Channel spacing CC1-CC2=216.96 MHz (Note 1)																		
	CC2	400	120	264	Downlink & Uplink	Low	26742	2058199	26551.92	2055031	0	120	22391	2055547	6	7	1 (4)	22	
						Mid	28017	2079449	27680.04	2073833	102		22464	2076571	1	2	0 (0)	208	
						High	29299.92	2100831	28384.08	2085567	504		22539	2098171	2	7	1 (4)	1030	
	100+400	CC1	100	120	66	Downlink & Uplink	Low	26550	2054999	26502.48	2054207	0	120	22388	2054683	10	5	1 (4)	18
							Mid	27800.04	2075833	27605.64	2072593	102		22460	2075419	9	1	1 (4)	214
							High	29057.4	2096789	28284.12	2083901	504		22533	2096443	7	4	1 (4)	1024
Channel spacing CC1-CC2=242.52 MHz (Note 1)																			
CC2		400	120	264	Downlink & Uplink	Low	26792.52	2059041	26602.44	2055873	0	120	22393	2056123	5	0	0 (0)	0	
						Mid	28042.56	2079875	27705.6	2074259	102		22466	2077147	4	4	1 (4)	220	
						High	29299.92	2100831	28384.08	2085567	504		22539	2098171	2	7	1 (4)	1030	
200+400		CC1	200	120	132	Downlink & Uplink	Low	26600.04	2055833	26505	2054249	0	120	22388	2054683	1	4	1 (4)	16
							Mid	27800.04	2075833	27558.12	2071801	102		22457	2074555	9	2	0 (0)	208
							High	29004.96	2095915	28184.16	2082235	504		22527	2094715	0	2	1 (4)	1020
	Channel spacing CC1-CC2=294.96 MHz (Note 1)																		
	CC2	400	120	264	Downlink & Uplink	Low	26895	2060749	26704.92	2057581	0	120	22399	2057851	3	1	0 (0)	2	
						Mid	28095	2080749	27758.04	2075133	102		22469	2078011	11	3	1 (4)	218	
						High	29299.92	2100831	28384.08	2085567	504		22539	2098171	2	7	1 (4)	1030	
	400+400	CC1	400	120	264	Downlink & Uplink	Low	26700	2057499	26509.92	2054331	0	120	22388	2054683	8	0	1 (4)	8
							Mid	27800.04	2075833	27463.08	2070217	102		22452	2073115	9	4	1 (4)	220
							High	28899.96	2094165	27984.12	2078901	504		22515	2091259	11	0	0 (0)	1008
Channel spacing CC1-CC2=399.96 MHz (Note 1)																			
CC2		400	120	264	Downlink & Uplink	Low	27099.96	2064165	26909.88	2060997	0	120	22411	2061307	11	2	0 (0)	4	
						Mid	28200	2082499	27863.04	2076883	102		22475	2079739	0	3	1 (4)	218	
						High	29299.92	2100831	28384.08	2085567	504		22539	2098171	2	7	1 (4)	1030	

Note 1: Corresponds to nominal channel spacing in accordance with TS 38.101-2 [8], clause 5.4A.1 for the CC1 and CC2 channel bandwidth combination.

Note 2: CCs are specified in increasing frequency order. CC1 is used as PCell if nothing else is specified in the test case.

Note 3: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter  $\Delta F_{\text{OffsetCORESET}0\text{-Carrier}}$  in Annex C expressed in number of common RBs.

Note 4: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-8 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.

4.3.1.2.3.1.2 CA\_n257C

Editor's note: CBW=400 MHz for NR band n257 is only supported by for SCS 120kHz. Test frequencies for CA\_n257C are currently limited to SCS 120kHz for all CCs.  
Test frequencies for mixed numerologies between CCs is FFS.

Table 4.3.1.2.3.1.2-1: NR Intra-Band contiguous CA configuration CA\_n257C, SCS=120 kHz, ΔF<sub>Raster</sub> 120 kHz

CBW combination	CC Note 2	CBW [MHz]	SCS [kHz]	carrier bandwidth [PRBs]	Range		Carrier centre [MHz] Note 2	Carrier centre [ARFCN]	point A [MHz]	absolute frequency PointA [ARFCN]	offset to Carrier [Carrier PRBs]	SS block SCS [kHz]	GSCN	absolute frequency SSB [ARFCN]	k <sub>SSB</sub>	Offset Carrier CORES ET#0 [RBs] Note 3	CORE SET#0 Index (Offset [RBs]) Note 4	offset to PointA (SIB1) [PRBs] Note 4	
50+400+400	CC1	50	120	32	Downlink & Uplink	Low	26525.04	2054583	26502	2054199	0	120	22388	2054683	2	6	1 (4)	20	
						Mid	27600	2072499	27430.08	2069667	102		22450	2072539	8	3	1 (4)	218	
						High	28683	2090549	27934.2	2078069	504		22513	2090683	7	7	1 (4)	1030	
	Channel spacing CC1-CC2=216.96 MHz (Note 1)																		
	CC2	400	120	264	Downlink & Uplink	Low	26742	2058199	26551.92	2055031	0	120	22391	2055547	6	7	1 (4)	22	
						Mid	27816.96	2076115	27480	2070499	102		22453	2073403	0	5	1 (4)	222	
						High	28899.96	2094165	27984.12	2078901	504		22515	2091259	11	0	0 (0)	1008	
	Channel spacing CC2-CC3=399.96 MHz (Note 1)																		
	CC3	400	120	264	Downlink & Uplink	Low	27141.96	2064865	26951.88	2061697	0	120	22414	2062171	9	5	1 (4)	18	
						Mid	28216.92	2082781	27879.96	2077165	102		22476	2080027	3	3	1 (4)	218	
						High	29299.92	2100831	28384.08	2085567	504		22539	2098171	2	7	1 (4)	1030	
	100+400+400	CC1	100	120	66	Downlink & Uplink	Low	26550	2054999	26502.48	2054207	0	120	22388	2054683	10	5	1 (4)	18
Mid							27600	2072499	27405.6	2069259	102	22448		2071963	8	0	0 (0)	204	
High							28657.44	2090123	27884.16	2077235	504	22510		2089819	4	6	1 (4)	1028	
Channel spacing CC1-CC2=242.52 MHz (Note 1)																			
CC2		400	120	264	Downlink & Uplink	Low	26792.52	2059041	26602.44	2055873	0	120	22393	2056123	5	0	0 (0)	0	
						Mid	27842.52	2076541	27505.56	2070925	102		22454	2073691	3	3	0 (0)	210	
						High	28899.96	2094165	27984.12	2078901	504		22515	2091259	11	0	0 (0)	1008	
Channel spacing CC2-CC3=399.96 MHz (Note 1)																			
CC3		400	120	264	Downlink & Uplink	Low	27192.48	2065707	27002.4	2062539	0	120	22417	2063035	8	6	1 (4)	20	
						Mid	28242.48	2083207	27905.52	2077591	102		22477	2080315	6	1	0 (0)	206	
						High	29299.92	2100831	28384.08	2085567	504		22539	2098171	2	7	1 (4)	1030	
200+400+400		CC1	200	120	132	Downlink & Uplink	Low	26600.04	2055833	26505	2054249	0	120	22388	2054683	1	4	1 (4)	16
	Mid						27600	2072499	27358.08	2068467	102	22446		2071387	8	5	1 (4)	222	
	High						28605	2089249	27784.2	2075569	504	22504		2088091	9	3	1 (4)	1022	
	Channel spacing CC1-CC2=294.96 MHz (Note 1)																		
	CC2	400	120	264	Downlink & Uplink	Low	26895	2060749	26704.92	2057581	0	120	22399	2057851	3	1	0 (0)	2	
						Mid	27894.96	2077415	27558	2071799	102		22457	2074555	10	2	0 (0)	208	
						High	28899.96	2094165	27984.12	2078901	504		22515	2091259	11	0	0 (0)	1008	
	Channel spacing CC2-CC3=399.96 MHz (Note 1)																		
	CC3	400	120	264	Downlink & Uplink	Low	27294.96	2067415	27104.88	2064247	0	120	22423	2064763	6	7	1 (4)	22	
						Mid	28294.92	2084081	27957.96	2078465	102		22480	2081179	1	1	0 (0)	206	
						High	29299.92	2100831	28384.08	2085567	504		22539	2098171	2	7	1 (4)	1030	
	400+400+400	CC1	400	120	264	Downlink & Uplink	Low	26700	2057499	26509.92	2054331	0	120	22388	2054683	8	0	1 (4)	8
Mid							27600	2072499	27263.04	2066883	102	22440		2069659	8	3	0 (0)	210	

				Uplink	High	28500	2087499	27584.16	2072235	504		22492	2084635	8	2	0 (0)	1012
Channel spacing CC1-CC2=399.96 MHz (Note 1)																	
CC2	400	120	264	Downlink & Uplink	Low	27099.96	2064165	26909.88	2060997	0	120	22411	2061307	11	2	0 (0)	4
					Mid	27999.96	2079165	27663	2073549	102		22463	2076283	11	1	0 (0)	206
					High	28899.96	2094165	27984.12	2078901	504		22515	2091259	11	0	0 (0)	1008
Channel spacing CC2-CC3=399.96 MHz (Note 1)																	
CC3	400	120	264	Downlink & Uplink	Low	27499.92	2070831	27309.84	2067663	0	120	22434	2067931	2	1	0 (0)	2
					Mid	28399.92	2085831	28062.96	2080215	102		22486	2082907	2	0	0 (0)	204
					High	29299.92	2100831	28384.08	2085567	504		22539	2098171	2	7	1 (4)	1030

Note 1: Corresponds to nominal channel spacing in accordance with TS 38.101-2 [8], clause 5.4A.1 for the CC1-CC2 and CC2-CC3 channel bandwidth combinations.

Note 2: CCs are specified in increasing frequency order. CC1 is used as PCell if nothing else is specified in the test case.

Note 3: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter  $\Delta F_{\text{OffsetCORESET-0-Carrier}}$  in Annex C expressed in number of common RBs.

Note 4: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-8 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.

Table 4.3.1.2.3.1.3-1: NR Intra-Band contiguous CA configuration CA\_n257D, SCS=60 kHz,  $\Delta F_{\text{Raster}}$  60 kHz

CBW combination	CC Note 2	CBW [MHz]	SCS [kHz]	carrier Bandwidth [PRBs]	Range	Carrier centre [MHz] Note 2	Carrier centre [ARFCN]	point A [MHz]	absolute Frequency PointA [ARFCN]	offset ToCarrier [Carrier PRBs]	SS block SCS [kHz]	GSCN	absolute Frequency SSB [ARFCN]	$k_{\text{SSB}}$	Offset Carrier CORESET#0 [RBs] Note 3	CORESET#0 Index (Offset [RBs]) Note 4	offsetTo PointA (SIB1) [PRBs] Note 4		
50+200	CC1	50	60	66	Downlink & Uplink	Low	26525.04	2054583	26501.28	2054187	0	120	22388	2054683	4	13	1 (8)	21	
						Mid	27900	2077499	27802.8	2075879	102		22467	2077435	8	7	0 (0)	109	
					High	29278.08	2100467	28891.44	2094023	504	22547		2100475	8	5	1 (8)	517		
					Channel spacing CC1-CC2=121.92 MHz (Note 1)														
	CC2	200	60	264	Downlink & Uplink	Low	26646.96	2056615	26551.92	2055031	0	120	22391	2055547	0	15	1 (8)	23	
						Mid	28021.92	2079531	27853.44	2076723	102		22470	2078299	4	1	1 (8)	111	
						High	29400	2102499	28942.08	2094867	504		22550	2101339	4	7	1 (8)	519	
	100+200	CC1	100	60	132	Downlink & Uplink	Low	26550	2054999	26502.48	2054207	0	120	22388	2054683	8	11	1 (8)	19
							Mid	27900	2077499	27779.04	2075483	102		22466	2077147	8	8	1 (8)	118
						High	29252.52	2100041	28842.12	2093201	504	22544		2099611	2	2	1 (8)	514	
Channel spacing CC1-CC2=147.48 MHz (Note 1)																			
CC2		200	60	264	Downlink & Uplink	Low	26697.48	2057457	26602.44	2055873	0	120	22393	2056123	10	0	0 (0)	0	
						Mid	28047.48	2079957	27879	2077149	102		22472	2078875	10	13	1 (8)	123	
						High	29400	2102499	28942.08	2094867	504		22550	2101339	4	7	1 (8)	519	
200+200		CC1	200	60	264	Downlink & Uplink	Low	26600.04	2055833	26505	2054249	0	120	22388	2054683	2	8	1 (8)	16
							Mid	27900	2077499	27731.52	2074691	102		22463	2076283	8	2	1 (8)	112
						High	29200.08	2099167	28742.16	2091535	504	22538		2097883	0	5	0 (0)	509	
	Channel spacing CC1-CC2=199.92 MHz (Note 1)																		
	CC2	200	60	264	Downlink & Uplink	Low	26799.96	2059165	26704.92	2057581	0	120	22399	2057851	6	2	0 (0)	2	
						Mid	28099.92	2080831	27931.44	2078023	102		22475	2079739	0	13	1 (8)	123	
						High	29400	2102499	28942.08	2094867	504		22550	2101339	4	7	1 (8)	519	
	Note 1:	Corresponds to nominal channel spacing in accordance with TS 38.101-2 [8], clause 5.4A.1 for the CC1 and CC2 channel bandwidth combination.																	
	Note 2:	CCs are specified in increasing frequency order. CC1 is used as PCell if nothing else is specified in the test case.																	
	Note 3:	The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs.																	
Note 4:	The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-7 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.																		

Table 4.3.1.2.3.1.3-2: NR Intra-Band contiguous CA configuration CA\_n257D, SCS=120 kHz, ΔF<sub>Raster</sub> 120 kHz

CBW combination	CC Note 2	CBW [MHz]	SCS [kHz]	carrierBandwidth [PRBs]	Range	Carrier centre [MHz] Note 2	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequencyPointA [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS [kHz]	GSCN	absoluteFrequencySSB [ARFCN]	k <sub>SSB</sub>	Offset Carrier CORESET#0 [RBs] Note 3	CORESET#0 Index (Offset [RBs]) Note 4	offsetToPointA (SIB1) [PRBs] Note 4		
50+200	CC1	50	120	32	Downlink & Uplink	Low	26525.04	2054583	26502	2054199	0	120	22388	2054683	2	6	1 (4)	20	
						Mid	27900	2077499	27730.08	2074667	102		22467	2077435	4	3	0 (0)	210	
						High	29278.08	2100467	28529.28	2087987	504		22547	2100475	4	2	1 (4)	1020	
	Channel spacing CC1-CC2=121.92 MHz (Note 1)																		
	CC2	200	120	132	Downlink & Uplink	Low	26646.96	2056615	26551.92	2055031	0	120	22391	2055547	6	7	1 (4)	22	
						Mid	28021.92	2079531	27780	2075499	102		22470	2078299	8	0	1 (4)	212	
						High	29400	2102499	28579.2	2088819	504		22550	2101339	8	3	1 (4)	1022	
	100+200	CC1	100	120	66	Downlink & Uplink	Low	26550	2054999	26502.48	2054207	0	120	22388	2054683	10	5	1 (4)	18
							Mid	27900	2077499	27705.6	2074259	102		22466	2077147	4	4	1 (4)	220
							High	29252.52	2100041	28479.24	2087153	504		22544	2099611	1	1	1 (4)	1018
Channel spacing CC1-CC2=147.48 MHz (Note 1)																			
CC2		200	120	132	Downlink & Uplink	Low	26697.48	2057457	26602.44	2055873	0	120	22393	2056123	5	0	0 (0)	0	
						Mid	28047.48	2079957	27805.56	2075925	102		22472	2078875	11	6	1 (4)	224	
						High	29400	2102499	28579.2	2088819	504		22550	2101339	8	3	1 (4)	1022	
200+200		CC1	200	120	132	Downlink & Uplink	Low	26600.04	2055833	26505	2054249	0	120	22388	2054683	1	4	1 (4)	16
							Mid	27900	2077499	27658.08	2073467	102		22463	2076283	4	1	1 (4)	214
							High	29200.08	2099167	28379.28	2085487	504		22538	2097883	6	2	0 (0)	1012
	Channel spacing CC1-CC2=199.92 MHz (Note 1)																		
	CC2	200	120	132	Downlink & Uplink	Low	26799.96	2059165	26704.92	2057581	0	120	22399	2057851	3	1	0 (0)	2	
						Mid	28099.92	2080831	27858	2076799	102		22475	2079739	6	6	1 (4)	224	
						High	29400	2102499	28579.2	2088819	504		22550	2101339	8	3	1 (4)	1022	

Note 1: Corresponds to nominal channel spacing in accordance with TS 38.101-2 [8], clause 5.4A.1 for the CC1 and CC2 channel bandwidth combination.  
 Note 2: CCs are specified in increasing frequency order. CC1 is used as PCell if nothing else is specified in the test case.  
 Note 3: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter ΔF<sub>OffsetCORESET-0-Carrier</sub> in Annex C expressed in number of common RBs.  
 Note 4: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-8 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.

4.3.1.2.3.1.4 CA\_n257E

**Table 4.3.1.2.3.1.4-1: NR Intra-Band contiguous CA configuration CA\_n257E, SCS=60 kHz,  $\Delta F_{\text{Raster}}$  60 kHz.**

FFS

**Table 4.3.1.2.3.1.4-2: NR Intra-Band contiguous CA configuration CA\_n257E, SCS=120 kHz,  $\Delta F_{\text{Raster}}$  120 kHz.**

FFS

4.3.1.2.3.1.5 CA\_n257F

**Table 4.3.1.2.3.1.5-1: NR Intra-Band contiguous CA configuration CA\_n257F, SCS=60 kHz,  $\Delta F_{\text{Raster}}$  60 kHz.**

FFS

**Table 4.3.1.2.3.1.5-2: NR Intra-Band contiguous CA configuration CA\_n257F, SCS=120 kHz,  $\Delta F_{\text{Raster}}$  120 kHz.**

FFS

4.3.1.2.3.1.6 CA\_n257G

**Table 4.3.1.2.3.1.6-1: Void**



Table 4.3.1.2.3.1.6-2: NR Intra-Band contiguous CA configuration CA\_n257G, SCS=60 kHz, ΔF<sub>Raster</sub> 60 kHz, nominal channel spacing

CBW combination	CC Note 2	CBW [MHz]	SCS [kHz]	carrier bandwidth [PRBs]	Range	Carrier centre [MHz] Note 2	Carrier centre [ARFCN]	point A [MHz]	absolute FrequencyPointA [ARFCN]	offset ToCarrier [Carrier PRBs]	SS block SCS [kHz]	GSCN	absolute Frequency SSB [ARFCN]	k <sub>SSB</sub>	Offset Carrier CORESET#0 [RBs] Note 3	CORE SET#0 Index (Offset [RBs]) Note 4	offsetToPointA (SIB1) [PRBs] Note 4		
50+100	CC1	50	60	66	Downlink & Uplink	Low	26525.04	2054583	26501.28	2054187	0	120	22388	2054683	4	13	1 (8)	21	
						Mid	27949.92	2078331	27852.72	2076711	102		22470	2078299	4	2	1 (8)	112	
						High	29375.52	2102091	28988.88	2095647	504		22553	2102203	4	14	1 (8)	526	
	Channel spacing CC1-CC2=74.40 MHz (Note 1)																		
	CC2	100	60	132	Downlink & Uplink	Low	26599.44	2055823	26551.92	2055031	0	120	22391	2055547	0	15	1 (8)	23	
						Mid	28024.32	2079571	27903.36	2077555	102		22473	2079163	0	4	1 (8)	114	
						High	29449.92	2103331	29039.52	2096491	504		22555	2102779	0	0	0 (0)	504	
	100+100	CC1	100	60	132	Downlink & Uplink	Low	26550	2054999	26502.48	2054207	0	120	22388	2054683	8	11	1 (8)	19
							Mid	27949.92	2078331	27828.96	2076315	102		22469	2078011	4	11	1 (8)	121
							High	29349.96	2101665	28939.56	2094825	504		22550	2101339	10	10	1 (8)	522
Channel spacing CC1-CC2=99.96 MHz (Note 1)																			
CC2		100	60	132	Downlink & Uplink	Low	26649.96	2056665	26602.44	2055873	0	120	22393	2056123	10	0	0 (0)	0	
						Mid	28049.88	2079997	27928.92	2077981	102		22474	2079451	6	0	0 (0)	102	
						High	29449.92	2103331	29039.52	2096491	504		22555	2102779	0	0	0 (0)	504	

Note 1: Corresponds to nominal channel spacing in accordance with TS 38.101-2 [8], clause 5.4A.1 for the channel bandwidths of the two respective NR component carriers.

Note 2: CCs are specified in increasing frequency order. CC1 is used as PCell if nothing else is specified in the test case.

Note 3: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter ΔF<sub>OffsetCORESET-0-Carrier</sub> in Annex C expressed in number of common RBs.

Note 4: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-7 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcc-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.

Table 4.3.1.2.3.1.6-3: Void

Table 4.3.1.2.3.1.6-4: NR Intra-Band contiguous CA configuration CA\_n257G, SCS=120 kHz,  $\Delta F_{\text{Raster}}$  120 kHz, nominal channel spacing

CBW combination	CC Note 2	CBW [MHz]	SCS [kHz]	carrier Bandwidth [PRBs]	Range	Carrier centre [MHz] Note 2	Carrier centre [ARFCN]	point A [MHz]	absolute Frequency PointA [ARFCN]	offset ToCarrier [Carrier PRBs]	SS block SCS [kHz]	GSCN	absolute Frequency SSB [ARFCN]	$k_{\text{SSB}}$	Offset Carrier CORESET#0 [RBs] Note 3	CORESET#0 Index (Offset [RBs]) Note 4	offsetTo PointA (SIB1) [PRBs] Note 4		
50+100	CC1	50	120	32	Downlink & Uplink	Low	26525.04	2054583	26502	2054199	0	120	22388	2054683	2	6	1 (4)	20	
						Mid	27950.04	2078333	27780.12	2075501	102		22470	2078299	7	0	1 (4)	212	
						High	29375.52	2102091	28626.72	2089611	504		22553	2102203	8	6	1 (4)	1028	
	Channel spacing CC1-CC2=74.40 MHz (Note 1)																		
	CC2	100	120	66	Downlink & Uplink	Low	26599.44	2055823	26551.92	2055031	0	120	22391	2055547	6	7	1 (4)	22	
						Mid	28024.44	2079573	27830.04	2076333	102		22473	2079163	11	1	1 (4)	214	
						High	29449.92	2103331	28676.64	2090443	504		22555	2102779	0	0	0 (0)	1008	
	100+100	CC1	100	120	66	Downlink & Uplink	Low	26550	2054999	26502.48	2054207	0	120	22388	2054683	10	5	1 (4)	18
							Mid	27950.04	2078333	27755.64	2075093	102		22469	2078011	7	5	1 (4)	222
							High	29349.96	2101665	28576.68	2088777	504		22550	2101339	5	5	1 (4)	1026
Channel spacing CC1-CC2=99.96 MHz (Note 1)																			
CC2		100	120	66	Downlink & Uplink	Low	26649.96	2056665	26602.44	2055873	0	120	22393	2056123	5	0	0 (0)	0	
						Mid	28050	2079999	27855.6	2076759	102		22474	2079451	2	0	0 (0)	204	
						High	29449.92	2103331	28676.64	2090443	504		22555	2102779	0	0	0 (0)	1008	
Note 1: Corresponds to nominal channel spacing in accordance with TS 38.101-2 [8], clause 5.4A.1 for the channel bandwidths of the two respective NR component carriers.																			
Note 2: CCs are specified in increasing frequency order. CC1 is used as PCell if nothing else is specified in the test case.																			
Note 3: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs.																			
Note 4: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-8 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcc-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.																			

4.3.1.2.3.1.7

CA\_n257H

Table 4.3.1.2.3.1.7-1: Void

Table 4.3.1.2.3.1.7-2: NR Intra-Band contiguous CA configuration CA\_n257H, SCS=60 kHz, ΔF<sub>Raster</sub> 60 kHz, nominal channel spacing

CBW combination	CC Note 2	CBW [MHz]	SCS [kHz]	carrier bandwidth [PRBs]	Range	Carrier centre [MHz] Note 2	Carrier centre [ARFCN]	point A [MHz]	absolute frequency PointA [ARFCN]	offset ToCarrier [Carrier PRBs]	SS block SCS [kHz]	GSCN	absolute frequency SSB [ARFCN]	k <sub>SSB</sub>	Offset Carrier CORESET#0 [RBs] Note 3	CORE SET#0 Index (Offset [RBs]) Note 4	offsetTo PointA (SIB1) [PRBs] Note 4		
50+100+100	CC1	50	60	66	Downlink & Uplink	Low	26525.04	2054583	26501.28	2054187	0	120	22388	2054683	4	13	1 (8)	21	
						Mid	27900	2077499	27802.8	2075879	102		22467	2077435	8	7	0 (0)	109	
						High	29275.56	2100425	28888.92	2093981	504		22547	2100475	2	9	1 (8)	521	
	Channel spacing CC1-CC2=74.40 MHz (Note 1)																		
	CC2	100	60	132	Downlink & Uplink	Low	26599.44	2055823	26551.92	2055031	0	120	22391	2055547	0	15	1 (8)	23	
						Mid	27974.4	2078739	27853.44	2076723	102		22470	2078299	4	1	1 (8)	111	
						High	29349.96	2101665	28939.56	2094825	504		22550	2101339	10	10	1 (8)	522	
	Channel spacing CC2-CC3=99.96 MHz (Note 1)																		
	CC3	100	60	132	Downlink & Uplink	Low	26699.4	2057489	26651.88	2056697	0	120	22396	2056987	2	4	0 (0)	4	
						Mid	28074.36	2080405	27953.4	2078389	102		22476	2080027	6	6	1 (8)	116	
						High	29449.92	2103331	29039.52	2096491	504		22555	2102779	0	0	0 (0)	504	
	100+100+100	CC1	100	60	132	Downlink & Uplink	Low	26550	2054999	26502.48	2054207	0	120	22388	2054683	8	11	1 (8)	19
Mid							27900	2077499	27779.04	2075483	102	22466		2077147	8	8	1 (8)	118	
High							29250	2099999	28839.6	2093159	504	22544		2099611	8	5	1 (8)	517	
Channel spacing CC1-CC2=99.96 MHz (Note 1)																			
CC2		100	60	132	Downlink & Uplink	Low	26649.96	2056665	26602.44	2055873	0	120	22393	2056123	10	0	0 (0)	0	
						Mid	27999.96	2079165	27879	2077149	102		22472	2078875	10	13	1 (8)	123	
						High	29349.96	2101665	28939.56	2094825	504		22550	2101339	10	10	1 (8)	522	
Channel spacing CC2-CC3=99.96 MHz (Note 1)																			
CC3		100	60	132	Downlink & Uplink	Low	26749.92	2058331	26702.4	2057539	0	120	22399	2057851	0	6	0 (0)	6	
						Mid	28099.92	2080831	27978.96	2078815	102		22477	2080315	0	3	0 (0)	105	
						High	29449.92	2103331	29039.52	2096491	504		22555	2102779	0	0	0 (0)	504	
Note 1: Corresponds to nominal channel spacing in accordance with TS 38.101-2 [8], clause 5.4A.1 for the channel bandwidths of the two respective NR component carriers.																			
Note 2: CCs are specified in increasing frequency order. CC1 is used as PCell if nothing else is specified in the test case.																			
Note 3: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter ΔF <sub>OffsetCORESET-0-Carrier</sub> in Annex C expressed in number of common RBs.																			
Note 4: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-7 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.																			

Table 4.3.1.2.3.1.7-3: Void

Table 4.3.1.2.3.1.7-4: NR Intra-Band contiguous CA configuration CA\_n257H, SCS=120 kHz, ΔF<sub>Raster</sub> 120 kHz, nominal channel spacing

CBW combination	CC Note 2	CBW [MHz]	SCS [kHz]	carrier bandwidth [PRBs]	Range	Carrier centre [MHz] Note 2	Carrier centre [ARFCN]	point A [MHz]	absolute frequency PointA [ARFCN]	offset ToCarrier [Carrier PRBs]	SS block SCS [kHz]	GSCN	absolute frequency SSB [ARFCN]	k <sub>SSB</sub>	Offset Carrier CORESET#0 [RBs] Note 3	CORESET#0 Index (Offset [RBs]) Note 4	offsetTo PointA (SIB1) [PRBs] Note 4		
50+100+100	CC1	50	120	32	Downlink & Uplink	Low	26525.04	2054583	26502	2054199	0	120	22388	2054683	2	6	1 (4)	20	
						Mid	27900	2077499	27730.08	2074667	102		22467	2077435	4	3	0 (0)	210	
						High	29275.56	2100425	28526.76	2087945	504		22547	2100475	1	4	1 (4)	1024	
	Channel spacing CC1-CC2=74.40 MHz (Note 1)																		
	CC2	100	120	66	Downlink & Uplink	Low	26599.44	2055823	26551.92	2055031	0	120	22391	2055547	6	7	1 (4)	22	
						Mid	27974.4	2078739	27780	2075499	102		22470	2078299	8	0	1 (4)	212	
						High	29349.96	2101665	28576.68	2088777	504		22550	2101339	5	5	1 (4)	1026	
	Channel spacing CC2-CC3=99.96 MHz (Note 1)																		
	CC3	100	120	66	Downlink & Uplink	Low	26699.4	2057489	26651.88	2056697	0	120	22396	2056987	1	2	0 (0)	4	
						Mid	28074.36	2080405	27879.96	2077165	102		22476	2080027	3	3	1 (4)	218	
						High	29449.92	2103331	28676.64	2090443	504		22555	2102779	0	0	0 (0)	1008	
	100+100+100	CC1	100	120	66	Downlink & Uplink	Low	26550	2054999	26502.48	2054207	0	120	22388	2054683	10	5	1 (4)	18
Mid							27900	2077499	27705.6	2074259	102	22466		2077147	4	4	1 (4)	220	
High							29250	2099999	28476.72	2087111	504	22544		2099611	10	2	1 (4)	1020	
Channel spacing CC1-CC2=99.96 MHz (Note 1)																			
CC2		100	120	66	Downlink & Uplink	Low	26649.96	2056665	26602.44	2055873	0	120	22393	2056123	5	0	0 (0)	0	
						Mid	27999.96	2079165	27805.56	2075925	102		22472	2078875	11	6	1 (4)	224	
						High	29349.96	2101665	28576.68	2088777	504		22550	2101339	5	5	1 (4)	1026	
Channel spacing CC2-CC3=99.96 MHz (Note 1)																			
CC3		100	120	66	Downlink & Uplink	Low	26749.92	2058331	26702.4	2057539	0	120	22399	2057851	0	3	0 (0)	6	
						Mid	28099.92	2080831	27905.52	2077591	102		22477	2080315	6	1	0 (0)	206	
						High	29449.92	2103331	28676.64	2090443	504		22555	2102779	0	0	0 (0)	1008	
Note 1: Corresponds to nominal channel spacing in accordance with TS 38.101-2 [8], clause 5.4A.1 for the channel bandwidths of the two respective NR component carriers.																			
Note 2: CCs are specified in increasing frequency order. CC1 is used as PCell if nothing else is specified in the test case.																			
Note 3: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter ΔF <sub>OffsetCORESET-0-Carrier</sub> in Annex C expressed in number of common RBs.																			
Note 4: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-8 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.																			

4.3.1.2.3.1.8

CA\_n257I

Table 4.3.1.2.3.1.8-1: Void

Table 4.3.1.2.3.1.8-2: NR Intra-Band contiguous CA configuration CA\_n257I, SCS=60 kHz, ΔF<sub>Raster</sub> 60 kHz, nominal channel spacing

CBW combination	CC Note 2	CBW [MHz]	SCS [kHz]	carrier bandwidth [PRBs]	Range	Carrier centre [MHz] Note 2	Carrier centre [ARFCN]	point A [MHz]	absolute frequency PointA [ARFCN]	offset ToCarrier [Carrier PRBs]	SS block SCS [kHz]	GSCN	absolute frequency SSB [ARFCN]	k <sub>SSB</sub>	Offset Carrier CORESET#0 [RBs] Note 3	CORESET#0 Index (Offset [RBs]) Note 4	offsetTo PointA (SIB1) [PRBs] Note 4	
50+100 +100+100	CC1	50	60	66	Downlink & Uplink	Low	26525.04	2054583	26501.28	2054187	0	120	22388	2054683	4	13	1 (8)	21
						Mid	27849.96	2076665	27752.76	2075045	102		22464	2076571	2	5	0 (0)	107
						High	29175.6	2098759	28788.96	2092315	504		22541	2098747	0	4	1 (8)	516
	Channel spacing CC1-CC2=74.40 MHz (Note 1)																	
	CC2	100	60	132	Downlink & Uplink	Low	26599.44	2055823	26551.92	2055031	0	120	22391	2055547	0	15	1 (8)	23
						Mid	27924.36	2077905	27803.4	2075889	102		22467	2077435	10	6	0 (0)	108
						High	29250	2099999	28839.6	2093159	504		22544	2099611	8	5	1 (8)	517
	Channel spacing CC2-CC3=99.96 MHz (Note 1)																	
	CC3	100	60	132	Downlink & Uplink	Low	26699.4	2057489	26651.88	2056697	0	120	22396	2056987	2	4	0 (0)	4
						Mid	28024.32	2079571	27903.36	2077555	102		22473	2079163	0	4	1 (8)	114
						High	29349.96	2101665	28939.56	2094825	504		22550	2101339	10	10	1 (8)	522
	Channel spacing CC3-CC4=99.96 MHz (Note 1)																	
	CC4	100	60	132	Downlink & Uplink	Low	26799.36	2059155	26751.84	2058363	0	120	22402	2058715	4	1	1 (8)	9
						Mid	28124.28	2081237	28003.32	2079221	102		22479	2080891	2	9	1 (8)	119
						High	29449.92	2103331	29039.52	2096491	504		22555	2102779	0	0	0 (0)	504
	100+100 +100+100	CC1	100	60	132	Downlink & Uplink	Low	26550	2054999	26502.48	2054207	0	120	22388	2054683	8	11	1 (8)
Mid							27849.96	2076665	27729	2074649	102	22463		2076283	2	6	1 (8)	116
High							29150.04	2098333	28739.64	2091493	504	22538		2097883	6	0	1 (8)	512
Channel spacing CC1-CC2=99.96 MHz (Note 1)																		
CC2		100	60	132	Downlink & Uplink	Low	26649.96	2056665	26602.44	2055873	0	120	22393	2056123	10	0	0 (0)	0
						Mid	27949.92	2078331	27828.96	2076315	102		22469	2078011	4	11	1 (8)	121
						High	29250	2099999	28839.6	2093159	504		22544	2099611	8	5	1 (8)	517
Channel spacing CC2-CC3=99.96 MHz (Note 1)																		
CC3		100	60	132	Downlink & Uplink	Low	26749.92	2058331	26702.4	2057539	0	120	22399	2057851	0	6	0 (0)	6
						Mid	28049.88	2079997	27928.92	2077981	102		22474	2079451	6	0	0 (0)	102
						High	29349.96	2101665	28939.56	2094825	504		22550	2101339	10	10	1 (8)	522
Channel spacing CC3-CC4=99.96 MHz (Note 1)																		
CC4		100	60	132	Downlink & Uplink	Low	26849.88	2059997	26802.36	2059205	0	120	22405	2059579	2	3	1 (8)	11
						Mid	28149.84	2081663	28028.88	2079647	102		22480	2081179	8	5	0 (0)	107
						High	29449.92	2103331	29039.52	2096491	504		22555	2102779	0	0	0 (0)	504

Note 1: Corresponds to nominal channel spacing in accordance with TS 38.101-2 [8], clause 5.4.A.1 for the channel bandwidths of the two respective NR component carriers.  
 Note 2: CCs are specified in increasing frequency order. CC1 is used as PCell if nothing else is specified in the test case.  
 Note 3: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter ΔF<sub>OffsetCORESET-0-Carrier</sub> in Annex C expressed in number of common RBs.  
 Note 4: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-7 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcc-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.

**Table 4.3.1.2.3.1.8-3: Void**

Table 4.3.1.2.3.1.8-4: NR Intra-Band contiguous CA configuration CA\_n257I, SCS=120 kHz,  $\Delta F_{\text{Raster}}$  120 kHz nominal channel spacing

CBW combination	CC Note 2	CBW [MHz]	SCS [kHz]	carrier Bandwidth [PRBs]	Range	Carrier centre [MHz] Note 2	Carrier centre [ARFCN]	point A [MHz]	absolute Frequency Point A [ARFCN]	offset To Carrier [Carrier PRBs]	SS block SCS [kHz]	GSCN	absolute Frequency SSB [ARFCN]	$k_{\text{SSB}}$	Offset Carrier CORESET#0 [RBs] Note 3	CORE SET#0 Index (Offset [RBs]) Note 4	offsetToPointA (SIB1) [PRBs] Note 4		
50+100 +100+100	CC1	50	120	32	Downlink & Uplink	Low	26525.04	2054583	26502	2054199	0	120	22388	2054683	2	6	1 (4)	20	
						Mid	27849.96	2076665	27680.04	2073833	102		22464	2076571	1	2	0 (0)	208	
						High	29175.6	2098759	28426.8	2086279	504		22541	2098747	6	1	1 (4)	1018	
	Channel spacing CC1-CC2=74.40 MHz (Note 1)																		
	CC2	100	120	66	Downlink & Uplink	Low	26599.44	2055823	26551.92	2055031	0	120	22391	2055547	6	7	1 (4)	22	
						Mid	27924.36	2077905	27729.96	2074665	102		22467	2077435	5	3	0 (0)	210	
						High	29250	2099999	28476.72	2087111	504		22544	2099611	10	2	1 (4)	1020	
	Channel spacing CC2-CC3=99.96 MHz (Note 1)																		
	CC3	100	120	66	Downlink & Uplink	Low	26699.4	2057489	26651.88	2056697	0	120	22396	2056987	1	2	0 (0)	4	
						Mid	28024.32	2079571	27829.92	2076331	102		22473	2079163	0	2	1 (4)	216	
						High	29349.96	2101665	28576.68	2088777	504		22550	2101339	5	5	1 (4)	1026	
	Channel spacing CC3-CC4=99.96 MHz (Note 1)																		
	CC4	100	120	66	Downlink & Uplink	Low	26799.36	2059155	26751.84	2058363	0	120	22402	2058715	8	0	1 (4)	8	
						Mid	28124.28	2081237	27929.88	2077997	102		22479	2080891	7	4	1 (4)	220	
						High	29449.92	2103331	28676.64	2090443	504		22555	2102779	0	0	0 (0)	1008	
100+100 +100+100	CC1	100	120	66	Downlink & Uplink	Low	26550	2054999	26502.48	2054207	0	120	22388	2054683	10	5	1 (4)	18	
						Mid	27849.96	2076665	27655.56	2073425	102		22463	2076283	1	3	1 (4)	218	
						High	29150.04	2098333	28376.76	2085445	504		22538	2097883	3	0	1 (4)	1016	
	Channel spacing CC1-CC2=99.96 MHz (Note 1)																		
	CC2	100	120	66	Downlink & Uplink	Low	26649.96	2056665	26602.44	2055873	0	120	22393	2056123	5	0	0 (0)	0	
						Mid	27949.92	2078331	27755.52	2075091	102		22469	2078011	8	5	1 (4)	222	
						High	29250	2099999	28476.72	2087111	504		22544	2099611	10	2	1 (4)	1020	
	Channel spacing CC2-CC3=99.96 MHz (Note 1)																		
	CC3	100	120	66	Downlink & Uplink	Low	26749.92	2058331	26702.4	2057539	0	120	22399	2057851	0	3	0 (0)	6	
						Mid	28049.88	2079997	27855.48	2076757	102		22474	2079451	3	0	0 (0)	204	
						High	29349.96	2101665	28576.68	2088777	504		22550	2101339	5	5	1 (4)	1026	
	Channel spacing CC3-CC4=99.96 MHz (Note 1)																		
	CC4	100	120	66	Downlink & Uplink	Low	26849.88	2059997	26802.36	2059205	0	120	22405	2059579	7	1	1 (4)	10	
						Mid	28149.84	2081663	27955.44	2078423	102		22480	2081179	10	2	0 (0)	208	
						High	29449.92	2103331	28676.64	2090443	504		22555	2102779	0	0	0 (0)	1008	

Note 1: Corresponds to nominal channel spacing in accordance with TS 38.101-2 [8], clause 5.4A.1 for the channel bandwidths of the two respective NR component carriers.

Note 2: CCs are specified in increasing frequency order. CC1 is used as PCell if nothing else is specified in the test case.

Note 3: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter  $\Delta F_{\text{OffsetCORESET-0-Carrier}}$  in Annex C expressed in number of common RBs.

Note 4: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-8 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcc-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.

4.3.1.2.3.1.9

CA\_n257J

Table 4.3.1.2.3.1.9-1:Void

Table 4.3.1.2.3.1.9-2: NR Intra-Band contiguous CA configuration CA\_n257J, SCS=60 kHz,  $\Delta F_{\text{Raster}}$  60 kHz, nominal channel spacing

CBW combination	CC Note 2	CBW [MHz]	SCS [kHz]	carrier Bandwidth [PRBs]	Range		Carrier centre [MHz] Note 2	Carrier centre [ARFCN]	point A [MHz]	absolute Frequency Point A [ARFCN]	offset To Carrier [Carrier PRBs]	SS block SCS [kHz]	GSCN	absolute Frequency SSB [ARFCN]	$k_{\text{SSB}}$	Offset Carrier CORESET#0 [RBs] Note 3	CORE SET#0 Index (Offset [RBs]) Note 4	offsetTo PointA (SIB1) [PRBs] Note 4	
					Downlink & Uplink	Low Mid High													
100+100 +100+100 +100	CC1	100	60	132	Downlink & Uplink	Low	26550	2054999	26502.48	2054207	0	120	22388	2054683	8	11	1 (8)	19	
						Mid	27799.92	2075831	27678.96	2073815	102		22460	2075419	8	3	1 (8)	113	
						High	29050.08	2096667	28639.68	2089827	504		22532	2096155	4	3	0 (0)	507	
	Channel spacing CC1-CC2=99.96 MHz (Note 1)																		
	CC2	100	60	132	Downlink & Uplink	Low	26649.96	2056665	26602.44	2055873	0	120	22393	2056123	10	0	0 (0)	0	
						Mid	27899.88	2077497	27778.92	2075481	102		22466	2077147	10	8	1 (8)	118	
						High	29150.04	2098333	28739.64	2091493	504		22538	2097883	6	0	1 (8)	512	
	Channel spacing CC2-CC3=99.96 MHz (Note 1)																		
	CC3	100	60	132	Downlink & Uplink	Low	26749.92	2058331	26702.4	2057539	0	120	22399	2057851	0	6	0 (0)	6	
						Mid	27999.84	2079163	27878.88	2077147	102		22472	2078875	0	14	1 (8)	124	
						High	29250	2099999	28839.6	2093159	504		22544	2099611	8	5	1 (8)	517	
	Channel spacing CC3-CC4=99.96 MHz (Note 1)																		
	CC4	100	60	132	Downlink & Uplink	Low	26849.88	2059997	26802.36	2059205	0	120	22405	2059579	2	3	1 (8)	11	
						Mid	28099.8	2080829	27978.84	2078813	102		22477	2080315	2	3	0 (0)	105	
						High	29349.96	2101665	28939.56	2094825	504		22550	2101339	10	10	1 (8)	522	
	Channel spacing CC4-CC5=99.96 MHz (Note 1)																		
	CC5	100	60	132	Downlink & Uplink	Low	26949.84	2061663	26902.32	2060871	0	120	22411	2061307	4	8	1 (8)	16	
						Mid	28199.76	2082495	28078.8	2080479	102		22483	2082043	4	0	1 (8)	110	
						High	29449.92	2103331	29039.52	2096491	504		22555	2102779	0	0	0 (0)	504	

Note 1: Corresponds to nominal channel spacing in accordance with TS 38.101-2 [8], clause 5.4A.1 for the channel bandwidths of the two respective NR component carriers.

Note 2: CCs are specified in increasing frequency order. CC1 is used as PCell if nothing else is specified in the test case.

Note 3: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter  $\Delta F_{\text{OffsetCORESET-0-Carrier}}$  in Annex C expressed in number of common RBs.

Note 4: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-7 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.



Table 4.3.1.2.3.1.9-3: Void

Table 4.3.1.2.3.1.9-4: NR Intra-Band contiguous CA configuration CA\_n257J, SCS=120 kHz,  $\Delta F_{\text{Raster}}$  120 kHz, nominal channel spacing

CBW combination	CC Note 2	CBW [MHz]	SCS [kHz]	carrierBandwidth [PRBs]	Range		Carrier centre [MHz] Note 2	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequencyPointA [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS [kHz]	GSCN	absoluteFrequencySSB [ARFCN]	$k_{\text{SSB}}$	Offset Carrier CORESET#0 [RBs] Note 3	CORE SET#0 Index (Offset [RBs]) Note 4	offsetToPointA (SIB1) [PRBs] Note 4	
					Downlink & Uplink	Low Mid High													
100+100 +100+100 +100	CC1	100	120	66	Downlink & Uplink	Low	26550	2054999	26502.48	2054207	0	120	22388	2054683	10	5	1 (4)	18	
						Mid	27800.04	2075833	27605.64	2072593	102		22460	2075419	9	1	1 (4)	214	
						High	29050.08	2096667	28276.8	2083779	504		22532	2096155	8	1	0 (0)	1010	
	Channel spacing CC1-CC2=99.96 MHz (Note 1)																		
	CC2	100	120	66	Downlink & Uplink	Low	26649.96	2056665	26602.44	2055873	0	120	22393	2056123	5	0	0 (0)	0	
						Mid	27900	2077499	27705.6	2074259	102		22466	2077147	4	4	1 (4)	220	
						High	29150.04	2098333	28376.76	2085445	504		22538	2097883	3	0	1 (4)	1016	
	Channel spacing CC2-CC3=99.96 MHz (Note 1)																		
	CC3	100	120	66	Downlink & Uplink	Low	26749.92	2058331	26702.4	2057539	0	120	22399	2057851	0	3	0 (0)	6	
						Mid	27999.96	2079165	27805.56	2075925	102		22472	2078875	11	6	1 (4)	224	
						High	29250	2099999	28476.72	2087111	504		22544	2099611	10	2	1 (4)	1020	
	Channel spacing CC3-CC4=99.96 MHz (Note 1)																		
	CC4	100	120	66	Downlink & Uplink	Low	26849.88	2059997	26802.36	2059205	0	120	22405	2059579	7	1	1 (4)	10	
						Mid	28099.92	2080831	27905.52	2077591	102		22477	2080315	6	1	0 (0)	206	
						High	29349.96	2101665	28576.68	2088777	504		22550	2101339	5	5	1 (4)	1026	
	Channel spacing CC4-CC5=99.96 MHz (Note 1)																		
	CC5	100	120	66	Downlink & Uplink	Low	26949.84	2061663	26902.32	2060871	0	120	22411	2061307	2	4	1 (4)	16	
						Mid	28199.88	2082497	28005.48	2079257	102		22483	2082043	1	0	1 (4)	212	
High						29449.92	2103331	28676.64	2090443	504	22555		2102779	0	0	0 (0)	1008		

Note 1: Corresponds to nominal channel spacing in accordance with TS 38.101-2 [8], clause 5.4A.1 for the channel bandwidths of the two respective NR component carriers.

Note 2: CCs are specified in increasing frequency order. CC1 is used as PCell if nothing else is specified in the test case.

Note 3: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter  $\Delta F_{\text{OffsetCORESET-0-Carrier}}$  in Annex C expressed in number of common RBs.

Note 4: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-8 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcc-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.

**Table 4.3.1.2.3.1.10-1: Void**

Table 4.3.1.2.3.1.10-2: NR Intra-Band contiguous CA configuration CA\_n257K, SCS=60 kHz,  $\Delta F_{\text{Raster}}$  60 kHz, nominal channel spacing

CBW combination	CC Note 2	CBW [MHz]	SCS [kHz]	carrierBandwidth [PRBs]	Range	Carrier centre [MHz] Note 2	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequencyPointA [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS [kHz]	GSCN	absoluteFrequencySSB [ARFCN]	$k_{\text{SSB}}$	Offset Carrier CORESET#0 [RBs] Note 3	CORESET#0 Index (Offset [RBs]) Note 4	offsetToPointA (SIB1) [PRBs] Note 4		
100+100 +100+100 +100+100	CC1	100	60	132	Downlink & Uplink	Low	26550	2054999	26502.48	2054207	0	120	22388	2054683	8	11	1 (8)	19	
						Mid	27750	2074999	27629.04	2072983	102		22457	2074555	0	1	1 (8)	111	
						High	28950.12	2095001	28539.72	2088161	504		22527	2094715	2	14	1 (8)	526	
	Channel spacing CC1-CC2=99.96 MHz (Note 1)																		
	CC2	100	60	132	Downlink & Uplink	Low	26649.96	2056665	26602.44	2055873	0	120	22393	2056123	10	0	0 (0)	0	
						Mid	27849.96	2076665	27729	2074649	102		22463	2076283	2	6	1 (8)	116	
						High	29050.08	2096667	28639.68	2089827	504		22532	2096155	4	3	0 (0)	507	
	Channel spacing CC2-CC3=99.96 MHz (Note 1)																		
	CC3	100	60	132	Downlink & Uplink	Low	26749.92	2058331	26702.4	2057539	0	120	22399	2057851	0	6	0 (0)	6	
						Mid	27949.92	2078331	27828.96	2076315	102		22469	2078011	4	11	1 (8)	121	
						High	29150.04	2098333	28739.64	2091493	504		22538	2097883	6	0	1 (8)	512	
	Channel spacing CC3-CC4=99.96 MHz (Note 1)																		
	CC4	100	60	132	Downlink & Uplink	Low	26849.88	2059997	26802.36	2059205	0	120	22405	2059579	2	3	1 (8)	11	
						Mid	28049.88	2079997	27928.92	2077981	102		22474	2079451	6	0	0 (0)	102	
						High	29250	2099999	28839.6	2093159	504		22544	2099611	8	5	1 (8)	517	
	Channel spacing CC4-CC5=99.96 MHz (Note 1)																		
	CC5	100	60	132	Downlink & Uplink	Low	26949.84	2061663	26902.32	2060871	0	120	22411	2061307	4	8	1 (8)	16	
						Mid	28149.84	2081663	28028.88	2079647	102		22480	2081179	8	5	0 (0)	107	
						High	29349.96	2101665	28939.56	2094825	504		22550	2101339	10	10	1 (8)	522	
	Channel spacing CC5-CC6=99.96 MHz (Note 1)																		
	CC6	100	60	132	Downlink & Uplink	Low	27049.8	2063329	27002.28	2062537	0	120	22417	2063035	6	13	1 (8)	21	
						Mid	28249.8	2083329	28128.84	2081313	102		22486	2082907	10	2	1 (8)	112	
						High	29449.92	2103331	29039.52	2096491	504		22555	2102779	0	0	0 (0)	504	

Note 1: Corresponds to nominal channel spacing in accordance with TS 38.101-2 [8], clause 5.4A.1 for the channel bandwidths of the two respective NR component carriers.

Note 2: CCs are specified in increasing frequency order. CC1 is used as PCell if nothing else is specified in the test case.

Note 3: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter  $\Delta F_{\text{OffsetCORESET-0-Carrier}}$  in Annex C expressed in number of common RBs.

Note 4: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-7 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdccch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.

Table 4.3.1.2.3.1.10-3: Void

Table 4.3.1.2.3.1.10-4: NR Intra-Band contiguous CA configuration CA\_n257K, SCS=120 kHz,  $\Delta F_{\text{Raster}}$  120 kHz, nominal channel spacing

CBW combination	CC Note 2	CBW [MHz]	SCS [kHz]	carrierBandwidth [PRBs]	Range	Carrier centre [MHz] Note 2	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequencyPointA [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS [kHz]	GSCN	absoluteFrequencySSB [ARFCN]	$k_{\text{SSB}}$	Offset Carrier CORESET#0 [RBs] Note 3	CORESET#0 Index (Offset [RBs]) Note 4	offsetToPointA (SIB1) [PRBs] Note 4		
100+100 +100+100 +100+100	CC1	100	120	66	Downlink & Uplink	Low	26550	2054999	26502.48	2054207	0	120	22388	2054683	10	5	1 (4)	18	
						Mid	27750	2074999	27555.6	2071759	102		22457	2074555	6	0	1 (4)	212	
						High	28950.12	2095001	28176.84	2082113	504		22527	2094715	1	7	1 (4)	1030	
	Channel spacing CC1-CC2=99.96 MHz (Note 1)																		
	CC2	100	120	66	Downlink & Uplink	Low	26649.96	2056665	26602.44	2055873	0	120	22393	2056123	5	0	0 (0)	0	
						Mid	27849.96	2076665	27655.56	2073425	102		22463	2076283	1	3	1 (4)	218	
						High	29050.08	2096667	28276.8	2083779	504		22532	2096155	8	1	0 (0)	1010	
	Channel spacing CC2-CC3=99.96 MHz (Note 1)																		
	CC3	100	120	66	Downlink & Uplink	Low	26749.92	2058331	26702.4	2057539	0	120	22399	2057851	0	3	0 (0)	6	
						Mid	27949.92	2078331	27755.52	2075091	102		22469	2078011	8	5	1 (4)	222	
						High	29150.04	2098333	28376.76	2085445	504		22538	2097883	3	0	1 (4)	1016	
	Channel spacing CC3-CC4=99.96 MHz (Note 1)																		
	CC4	100	120	66	Downlink & Uplink	Low	26849.88	2059997	26802.36	2059205	0	120	22405	2059579	7	1	1 (4)	10	
						Mid	28049.88	2079997	27855.48	2076757	102		22474	2079451	3	0	0 (0)	204	
						High	29250	2099999	28476.72	2087111	504		22544	2099611	10	2	1 (4)	1020	
	Channel spacing CC4-CC5=99.96 MHz (Note 1)																		
	CC5	100	120	66	Downlink & Uplink	Low	26949.84	2061663	26902.32	2060871	0	120	22411	2061307	2	4	1 (4)	16	
						Mid	28149.84	2081663	27955.44	2078423	102		22480	2081179	10	2	0 (0)	208	
						High	29349.96	2101665	28576.68	2088777	504		22550	2101339	5	5	1 (4)	1026	
	Channel spacing CC5-CC6=99.96 MHz (Note 1)																		
	CC6	100	120	66	Downlink & Uplink	Low	27049.8	2063329	27002.28	2062537	0	120	22417	2063035	9	6	1 (4)	20	
						Mid	28249.8	2083329	28055.4	2080089	102		22486	2082907	5	1	1 (4)	214	
						High	29449.92	2103331	28676.64	2090443	504		22555	2102779	0	0	0 (0)	1008	

Note 1: Corresponds to nominal channel spacing in accordance with TS 38.101-2 [8], clause 5.4A.1 for the channel bandwidths of the two respective NR component carriers.

Note 2: CCs are specified in increasing frequency order. CC1 is used as PCell if nothing else is specified in the test case.

Note 3: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter  $\Delta F_{\text{OffsetCORESET-0-Carrier}}$  in Annex C expressed in number of common RBs.

Note 4: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-8 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdccch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.

**Table 4.3.1.2.3.1.11-1: Void**

Table 4.3.1.2.3.1.11-2: NR Intra-Band contiguous CA configuration CA\_n257L, SCS=60 kHz,  $\Delta F_{\text{Raster}}$  60 kHz, nominal channel

CBW combination	CC Note 2	CBW [MHz]	SCS [kHz]	carrier Bandwidth [PRBs]	Range	Carrier centre [MHz] Note 2	Carrier centre [ARFCN]	point A [MHz]	absolute Frequency Point A [ARFCN]	offset To Carrier [Carrier PRBs]	SS block SCS [kHz]	GSCN	absolute Frequency SSB [ARFCN]	$k_{\text{SSB}}$	Offset Carrier CORESET#0 [RBs] Note 3	CORESET#0 Index (Offset [RBs]) Note 4	offsetTo PointA (SIB1) [PRBs] Note 4		
100+100 +100+100 +100+100 +100	CC1	100	60	132	Downlink & Uplink	Low	26550	2054999	26502.48	2054207	0	120	22388	2054683	8	11	1 (8)	19	
						Mid	27699.96	2074165	27579	2072149	102		22454	2073691	6	6	0 (0)	108	
						High	28850.16	2093335	28439.76	2086495	504		22521	2092987	0	9	1 (8)	521	
	Channel spacing CC1-CC2=99.96 MHz (Note 1)																		
	CC2	100	60	132	Downlink & Uplink	Low	26649.96	2056665	26602.44	2055873	0	120	22393	2056123	10	0	0 (0)	0	
						Mid	27799.92	2075831	27678.96	2073815	102		22460	2075419	8	3	1 (8)	113	
						High	28950.12	2095001	28539.72	2088161	504		22527	2094715	2	14	1 (8)	526	
	Channel spacing CC2-CC3=99.96 MHz (Note 1)																		
	CC3	100	60	132	Downlink & Uplink	Low	26749.92	2058331	26702.4	2057539	0	120	22399	2057851	0	6	0 (0)	6	
						Mid	27899.88	2077497	27778.92	2075481	102		22466	2077147	10	8	1 (8)	118	
						High	29050.08	2096667	28639.68	2089827	504		22532	2096155	4	3	0 (0)	507	
	Channel spacing CC3-CC4=99.96 MHz (Note 1)																		
	CC4	100	60	132	Downlink & Uplink	Low	26849.88	2059997	26802.36	2059205	0	120	22405	2059579	2	3	1 (8)	11	
						Mid	27999.84	2079163	27878.88	2077147	102		22472	2078875	0	14	1 (8)	124	
						High	29150.04	2098333	28739.64	2091493	504		22538	2097883	6	0	1 (8)	512	
	Channel spacing CC4-CC5=99.96 MHz (Note 1)																		
	CC5	100	60	132	Downlink & Uplink	Low	26949.84	2061663	26902.32	2060871	0	120	22411	2061307	4	8	1 (8)	16	
						Mid	28099.8	2080829	27978.84	2078813	102		22477	2080315	2	3	0 (0)	105	
						High	29250	2099999	28839.6	2093159	504		22544	2099611	8	5	1 (8)	517	
	Channel spacing CC5-CC6=99.96 MHz (Note 1)																		
	CC6	100	60	132	Downlink & Uplink	Low	27049.8	2063329	27002.28	2062537	0	120	22417	2063035	6	13	1 (8)	21	
						Mid	28199.76	2082495	28078.8	2080479	102		22483	2082043	4	0	1 (8)	110	
						High	29349.96	2101665	28939.56	2094825	504		22550	2101339	10	10	1 (8)	522	
	Channel spacing CC6-CC7=99.96 MHz (Note 1)																		
	CC7	100	60	132	Downlink & Uplink	Low	27149.76	2064995	27102.24	2064203	0	120	22422	2064475	8	2	0 (0)	2	
						Mid	28299.72	2084161	28178.76	2082145	102		22489	2083771	6	5	1 (8)	115	
						High	29449.92	2103331	29039.52	2096491	504		22555	2102779	0	0	0 (0)	504	

Note 1: Corresponds to nominal channel spacing in accordance with TS 38.101-2 [8], clause 5.4A.1 for the channel bandwidths of the two respective NR component carriers.

Note 2: CCs are specified in increasing frequency order. CC1 is used as PCell if nothing else is specified in the test case.

Note 3: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter  $\Delta F_{\text{OffsetCORESET-0-Carrier}}$  in Annex C expressed in number of common RBs.

Note 4: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-7 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.

**Table 4.3.1.2.3.1.11-3: Void**

Table 4.3.1.2.3.1.11-4: NR Intra-Band contiguous CA configuration CA\_n257L, SCS=120 kHz,  $\Delta F_{\text{Raster}}$  120 kHz, nominal channel spacing

CBW combination	CC Note 2	CBW [MHz]	SCS [kHz]	carrierBandwidth [PRBs]	Range	Carrier centre [MHz] Note 2	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequencyPointA [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS [kHz]	GSCN	absoluteFrequencySSB [ARFCN]	$k_{\text{SSB}}$	Offset Carrier CORESET#0 [RBs] Note 3	CORESET#0 Index (Offset [RBs]) Note 4	offsetToPointA (SIB1) [PRBs] Note 4		
100+100 +100+100 +100+100 +100	CC1	100	120	66	Downlink & Uplink	Low	26550	2054999	26502.48	2054207	0	120	22388	2054683	10	5	1 (4)	18	
						Mid	27699.96	2074165	27505.56	2070925	102		22454	2073691	3	3	0 (0)	210	
						High	28850.16	2093335	28076.88	2080447	504		22521	2092987	6	4	1 (4)	1024	
	Channel spacing CC1-CC2=99.96 MHz (Note 1)																		
	CC2	100	120	66	Downlink & Uplink	Low	26649.96	2056665	26602.44	2055873	0	120	22393	2056123	5	0	0 (0)	0	
						Mid	27799.92	2075831	27605.52	2072591	102		22460	2075419	10	1	1 (4)	214	
						High	28950.12	2095001	28176.84	2082113	504		22527	2094715	1	7	1 (4)	1030	
	Channel spacing CC2-CC3=99.96 MHz (Note 1)																		
	CC3	100	120	66	Downlink & Uplink	Low	26749.92	2058331	26702.4	2057539	0	120	22399	2057851	0	3	0 (0)	6	
						Mid	27899.88	2077497	27705.48	2074257	102		22466	2077147	5	4	1 (4)	220	
						High	29050.08	2096667	28276.8	2083779	504		22532	2096155	8	1	0 (0)	1010	
	Channel spacing CC3-CC4=99.96 MHz (Note 1)																		
	CC4	100	120	66	Downlink & Uplink	Low	26849.88	2059997	26802.36	2059205	0	120	22405	2059579	7	1	1 (4)	10	
						Mid	27999.84	2079163	27805.44	2075923	102		22472	2078875	0	7	1 (4)	226	
						High	29150.04	2098333	28376.76	2085445	504		22538	2097883	3	0	1 (4)	1016	
	Channel spacing CC4-CC5=99.96 MHz (Note 1)																		
	CC5	100	120	66	Downlink & Uplink	Low	26949.84	2061663	26902.32	2060871	0	120	22411	2061307	2	4	1 (4)	16	
						Mid	28099.8	2080829	27905.4	2077589	102		22477	2080315	7	1	0 (0)	206	
						High	29250	2099999	28476.72	2087111	504		22544	2099611	10	2	1 (4)	1020	
	Channel spacing CC5-CC6=99.96 MHz (Note 1)																		
	CC6	100	120	66	Downlink & Uplink	Low	27049.8	2063329	27002.28	2062537	0	120	22417	2063035	9	6	1 (4)	20	
						Mid	28199.76	2082495	28005.36	2079255	102		22483	2082043	2	0	1 (4)	212	
						High	29349.96	2101665	28576.68	2088777	504		22550	2101339	5	5	1 (4)	1026	
	Channel spacing CC6-CC7=99.96 MHz (Note 1)																		
	CC7	100	120	66	Downlink & Uplink	Low	27149.76	2064995	27102.24	2064203	0	120	22422	2064475	4	1	0 (0)	2	
						Mid	28299.72	2084161	28105.32	2080921	102		22489	2083771	9	2	1 (4)	216	
						High	29449.92	2103331	28676.64	2090443	504		22555	2102779	0	0	0 (0)	1008	

Note 1: Corresponds to nominal channel spacing in accordance with TS 38.101-2 [8], clause 5.4A.1 for the channel bandwidths of the two respective NR component carriers.

Note 2: CCs are specified in increasing frequency order. CC1 is used as PCell if nothing else is specified in the test case.

Note 3: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter  $\Delta F_{\text{OffsetCORESET-0-Carrier}}$  in Annex C expressed in number of common RBs.

Note 4: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-8 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.



**Table 4.3.1.2.3.1.12-1: Void**

Table 4.3.1.2.3.1.12-2: NR Intra-Band contiguous CA configuration CA\_n257M, SCS=60 kHz,  $\Delta F_{\text{Raster}}$  60 kHz, nominal channel

CBW combination	CC Note 2	CBW [MHz]	SCS [kHz]	carrier bandwidth [PRBs]	Range	Carrier centre [MHz] Note 2	Carrier centre [ARFCN]	point A [MHz]	absolute frequency Point A [ARFCN]	offset To Carrier [Carrier PRBs]	SS block SCS [kHz]	GSCN	absolute frequency SSB [ARFCN]	$k_{\text{SSB}}$	Offset Carrier CORESET#0 [RBs] Note 3	CORE SET#0 Index (Offset [RBs]) Note 4	offsetTo PointA (SIB1) [PRBs] Note 4		
100+100 +100+100 +100+100 +100+100	CC1	100	60	132	Downlink & Uplink	Low	26550	2054999	26502.48	2054207	0	120	22388	2054683	8	11	1 (8)	19	
						Mid	27649.92	2073331	27528.96	2071315	102		22451	2072827	0	4	0 (0)	106	
						High	28750.2	2091669	28339.8	2084829	504		22515	2091259	10	3	1 (8)	515	
	Channel spacing CC1-CC2=99.96 MHz (Note 1)																		
	CC2	100	60	132	Downlink & Uplink	Low	26649.96	2056665	26602.44	2055873	0	120	22393	2056123	10	0	0 (0)	0	
						Mid	27749.88	2074997	27628.92	2072981	102		22457	2074555	2	1	1 (8)	111	
						High	28850.16	2093335	28439.76	2086495	504		22521	2092987	0	9	1 (8)	521	
	Channel spacing CC2-CC3=99.96 MHz (Note 1)																		
	CC3	100	60	132	Downlink & Uplink	Low	26749.92	2058331	26702.4	2057539	0	120	22399	2057851	0	6	0 (0)	6	
						Mid	27849.84	2076663	27728.88	2074647	102		22463	2076283	4	6	1 (8)	116	
						High	28950.12	2095001	28539.72	2088161	504		22527	2094715	2	14	1 (8)	526	
	Channel spacing CC3-CC4=99.96 MHz (Note 1)																		
	CC4	100	60	132	Downlink & Uplink	Low	26849.88	2059997	26802.36	2059205	0	120	22405	2059579	2	3	1 (8)	11	
						Mid	27949.8	2078329	27828.84	2076313	102		22469	2078011	6	11	1 (8)	121	
						High	29050.08	2096667	28639.68	2089827	504		22532	2096155	4	3	0 (0)	507	
	Channel spacing CC4-CC5=99.96 MHz (Note 1)																		
	CC5	100	60	132	Downlink & Uplink	Low	26949.84	2061663	26902.32	2060871	0	120	22411	2061307	4	8	1 (8)	16	
						Mid	28049.76	2079995	27928.8	2077979	102		22474	2079451	8	0	0 (0)	102	
						High	29150.04	2098333	28739.64	2091493	504		22538	2097883	6	0	1 (8)	512	
	Channel spacing CC5-CC6=99.96 MHz (Note 1)																		
	CC6	100	60	132	Downlink & Uplink	Low	27049.8	2063329	27002.28	2062537	0	120	22417	2063035	6	13	1 (8)	21	
						Mid	28149.72	2081661	28028.76	2079645	102		22480	2081179	10	5	0 (0)	107	
						High	29250	2099999	28839.6	2093159	504		22544	2099611	8	5	1 (8)	517	
	Channel spacing CC6-CC7=99.96 MHz (Note 1)																		
CC7	100	60	132	Downlink & Uplink	Low	27149.76	2064995	27102.24	2064203	0	120	22422	2064475	8	2	0 (0)	2		
					Mid	28249.68	2083327	28128.72	2081311	102		22486	2082907	0	3	1 (8)	113		
					High	29349.96	2101665	28939.56	2094825	504		22550	2101339	10	10	1 (8)	522		
Channel spacing CC7-CC8=99.96 MHz (Note 1)																			
CC8	100	60	132	Downlink & Uplink	Low	27249.72	2066661	27202.2	2065869	0	120	22428	2066203	10	7	0 (0)	7		
					Mid	28349.64	2084993	28228.68	2082977	102		22492	2084635	2	8	1 (8)	118		
					High	29449.92	2103331	29039.52	2096491	504		22555	2102779	0	0	0 (0)	504		

Note 1: Corresponds to nominal channel spacing in accordance with TS 38.101-2 [8], clause 5.4.A.1 for the channel bandwidths of the two respective NR component carriers.

Note 2: CCs are specified in increasing frequency order. CC1 is used as PCell if nothing else is specified in the test case.

Note 3: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter  $\Delta F_{\text{OffsetCORESET-0-Carrier}}$  in Annex C expressed in number of common RBs.

Note 4: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-7 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.

**Table 4.3.1.2.3.1.12-3: Void**

Table 4.3.1.2.3.1.12-4: NR Intra-Band contiguous CA configuration CA\_n257M, SCS=120 kHz, ΔF<sub>Raster</sub> 120 kHz, nominal channel spacing

CBW combination	CC Note 2	CBW [MHz]	SCS [kHz]	carrier bandwidth [PRBs]	Range	Carrier centre [MHz] Note 2	Carrier centre [ARFCN]	point A [MHz]	absolute frequency Point A [ARFCN]	offset To Carrier [Carrier PRBs]	SS block SCS [kHz]	GSCN	absolute frequency SSB [ARFCN]	k <sub>SSB</sub>	CORE SET#1 Offset from N <sub>BW1</sub> <sup>start</sup> [RBs]	CORE SET#0 Index (Offset [RBs]) Note 1	offsetTo PointA (SIB1) [PRBs] Note 1		
100+100 +100+100 +100+100 +100+100	CC1	100	120	66	Downlink & Uplink	Low	26550	2054999	26502.48	2054207	0	120	22388	2054683	10	6	1 (4)	18	
						Mid	27999.6	2079159	27805.2	2075919	102		22472	2078875	2	12	1 (4)	226	
						High	28750.2	2091669	27976.92	2078781	504		22515	2091259	11	6	1 (4)	1018	
	Channel spacing CC1-CC2=99.96 MHz (Note 1)																		
	CC2	100	120	66	Downlink & Uplink	Low	26649.96	2056665	26602.44	2055873	0	120	22393	2056123	5	0	0 (0)	0	
						Mid	28099.56	2080825	27905.16	2077585	102		22477	2080315	9	6	0 (0)	206	
						High	28850.16	2093335	28076.88	2080447	504		22521	2092987	6	6	1 (4)	1024	
	Channel spacing CC2-CC3=99.96 MHz (Note 1)																		
	CC3	100	120	66	Downlink & Uplink	Low	26749.92	2058331	26702.4	2057539	0	120	22399	2057851	0	6	0 (0)	6	
						Mid	28199.52	2082491	28005.12	2079251	102		22483	2082043	4	0	1 (4)	212	
						High	28950.12	2095001	28176.84	2082113	504		22527	2094715	1	12	1 (4)	1030	
	Channel spacing CC3-CC4=99.96 MHz (Note 1)																		
	CC4	100	120	66	Downlink & Uplink	Low	26849.88	2059997	26802.36	2059205	0	120	22405	2059579	7	6	1 (4)	10	
						Mid	28299.48	2084157	28105.08	2080917	102		22489	2083771	11	6	1 (4)	216	
						High	29050.08	2096667	28276.8	2083779	504		22532	2096155	8	6	0 (0)	1010	
	Channel spacing CC4-CC5=99.96 MHz (Note 1)																		
	CC5	100	120	66	Downlink & Uplink	Low	26949.84	2061663	26902.32	2060871	0	120	22411	2061307	2	6	1 (4)	16	
						Mid	28399.44	2085823	28205.04	2082583	102		22495	2085499	6	6	1 (4)	222	
						High	29150.04	2098333	28376.76	2085445	504		22538	2097883	3	0	1 (4)	1016	
	Channel spacing CC5-CC6=99.96 MHz (Note 1)																		
	CC6	100	120	66	Downlink & Uplink	Low	27049.8	2063329	27002.28	2062537	0	120	22417	2063035	9	6	1 (4)	20	
						Mid	28499.4	2087489	28305	2084249	102		22500	2086939	1	0	0 (0)	204	
						High	29250	2099999	28476.72	2087111	504		22544	2099611	10	6	1 (4)	1020	
	Channel spacing CC6-CC7=99.96 MHz (Note 1)																		
CC7	100	120	66	Downlink & Uplink	Low	27149.76	2064995	27102.24	2064203	0	120	22422	2064475	4	6	0 (0)	2		
					Mid	28599.36	2089155	28404.96	2085915	102		22506	2088667	8	6	0 (0)	208		
					High	29349.96	2101665	28576.68	2088777	504		22550	2101339	5	6	1 (4)	1026		
Channel spacing CC7-CC8=99.96 MHz (Note 1)																			
CC8	100	120	66	Downlink & Uplink	Low	27249.72	2066661	27202.2	2065869	0	120	22428	2066203	11	6	0 (0)	6		
					Mid	28699.32	2090821	28504.92	2087581	102		22512	2090395	3	6	1 (4)	214		
					High	29449.92	2103331	28676.64	2090443	504		22555	2102779	0	0	0 (0)	1008		

Note 1: Corresponds to nominal channel spacing in accordance with TS 38.101-2 [8], clause 5.4A.1 for the channel bandwidths of the two respective NR component carriers.

Note 2: CCs are specified in increasing frequency order. CC1 is used as PCell if nothing else is specified in the test case.

4.3.1.2.3.2 NR Intra-band contiguous CA configurations for CA\_n258

4.3.1.2.3.2.1 CA\_n258B

Table 4.3.1.2.3.2.1-1: Void

Table 4.3.1.2.3.2.1-2: NR Intra-Band contiguous CA configuration CA\_n258B (PCC=CC1 and SCC=CC2), SCS=120 kHz, nominal channel spacing

CBW combination	CC	CBW [MHz]	SCS [kHz]	carrier Bandwidth [PRBs]	Range		Carrier centre [MHz] Note 2	Carrier centre [ARFCN]	point A [MHz]	absolute Frequency PointA [ARFCN]	offsetT oCarrier [Carrier PRBs]	SS block SCS [kHz]	GSCN	absoluteF requency SSB [ARFCN]	k <sub>SSB</sub>	Offset Carrier CORES ET#0 [RBs] Note 3	CORE SET#0 Index (Offset [RBs]) Note 4	offset ToPoi ntA (SIB1) [PRBs] Note 4	
					Downlink & Uplink	Low Mid High													
50+400	CC1	50	120	32	Downlink & Uplink	Low	24275.04	2017083	24252	2016699	0	120	22257	2016955	8	0	0 (0)	0	
						Mid	25674.96	2040415	25505.04	2037583	102		22338	2040283	6	0	0 (0)	204	
						High	27083.04	2063883	26334.24	2051403	504		22420	2063899	8	2	1 (4)	1020	
	Channel spacing CC1-CC2=216.96 MHz (Note 1)																		
	CC2	400	120	264	Downlink & Uplink	Low	24492	2020699	24301.92	2017531	0	120	22260	2017819	0	2	0 (0)	4	
						Mid	25891.92	2044031	25554.96	2038415	102		22341	2041147	10	1	0 (0)	206	
						High	27300	2067499	26384.16	2052235	504		22423	2064763	0	4	1 (4)	1024	
	100+400	CC1	100	120	66	Downlink & Uplink	Low	24300	2017499	24252.48	2016707	0	120	22257	2016955	4	0	0 (0)	0
							Mid	25674.96	2040415	25480.56	2037175	102		22337	2039995	6	1	1 (4)	214
							High	27057.48	2063457	26284.2	2050569	504		22417	2063035	5	1	1 (4)	1018
Channel spacing CC1-CC2=242.52 MHz (Note 1)																			
CC2		400	120	264	Downlink & Uplink	Low	24542.52	2021541	24352.44	2018373	0	120	22263	2018683	11	2	0 (0)	4	
						Mid	25917.48	2044457	25580.52	2038841	102		22343	2041723	1	4	1 (4)	220	
						High	27300	2067499	26384.16	2052235	504		22423	2064763	0	4	1 (4)	1024	
200+400		CC1	200	120	132	Downlink & Uplink	Low	24350.04	2018333	24255	2016749	0	120	22258	2017243	7	6	1 (4)	20
							Mid	25674.96	2040415	25433.04	2036383	102		22334	2039131	6	2	0 (0)	208
							High	27005.04	2062583	26184.24	2048903	504		22411	2061307	10	2	0 (0)	1012
	Channel spacing CC1-CC2=294.96 MHz (Note 1)																		
	CC2	400	120	264	Downlink & Uplink	Low	24645	2023249	24454.92	2020081	0	120	22269	2020411	9	3	0 (0)	6	
						Mid	25969.92	2045331	25632.96	2039715	102		22346	2042587	8	3	1 (4)	218	
						High	27300	2067499	26384.16	2052235	504		22423	2064763	0	4	1 (4)	1024	
	400+400	CC1	400	120	264	Downlink & Uplink	Low	24450	2019999	24259.92	2016831	0	120	22258	2017243	2	3	1 (4)	14
							Mid	25674.96	2040415	25338	2034799	102		22329	2037691	6	4	1 (4)	220
							High	26900.04	2060833	25984.2	2045569	504		22400	2058139	9	5	1 (4)	1026
Channel spacing CC1-CC2=399.96 MHz (Note 1)																			
CC2		400	120	264	Downlink & Uplink	Low	24849.96	2026665	24659.88	2023497	0	120	22281	2023867	5	1	1 (4)	10	
						Mid	26074.92	2047081	25737.96	2041465	102		22352	2044315	9	2	1 (4)	216	
						High	27300	2067499	26384.16	2052235	504		22423	2064763	0	4	1 (4)	1024	

- Note 1: Corresponds to nominal channel spacing in accordance with TS 38.101-2 [8], clause 5.4A.1 for the channel bandwidths of the two respective NR component carriers.
- Note 2: CCs are specified in increasing frequency order. CC1 is used as PCell if nothing else is specified in the test case.
- Note 3: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter  $\Delta F_{\text{OffsetCORESET-0-Carrier}}$  in Annex C expressed in number of common RBs.
- Note 4: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-8 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.

4.3.1.2.3.2.2 CA\_n258C

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Table 4.3.1.2.3.2.3-1: NR Intra-Band contiguous CA configuration CA\_n258D (PCC=CC1 and SCC=CC2), SCS=60 kHz, nominal channel spacing

CBW combination	CC	CBW [MHz]	SCS [kHz]	carrierBandwidth [PRBs]	Range	Carrier centre [MHz] Note 2	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequencyPointA [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS [kHz]	GSCN	absoluteFrequencySSB [ARFCN]	$k_{SSB}$	Offset Carrier CORESET#0 [RBs] Note 3	CORESET#0 Index (Offset [RBs]) Note 4	offsetToPointA (SIB1) [PRBs] Note 4		
50+200	CC1	50	60	66	Downlink & Uplink	Low	24275.04	2017083	24251.28	2016687	0	120	22257	2016955	4	2	0 (0)	2	
						Mid	25774.92	2042081	25677.72	2040461	102		22344	2042011	2	7	0 (0)	109	
						High	27278.04	2067133	26891.4	2060689	504		22431	2067067	6	7	0 (0)	511	
	Channel spacing CC1-CC2=121.92 MHz (Note 1)																		
	CC2	200	60	264	Downlink & Uplink	Low	24396.96	2019115	24301.92	2017531	0	120	22260	2017819	0	4	0 (0)	4	
						Mid	25896.84	2044113	25728.36	2041305	102		22347	2042875	10	0	1 (8)	110	
						High	27399.96	2069165	26942.04	2061533	504		22434	2067931	2	1	1 (8)	513	
	100+200	CC1	100	60	132	Downlink & Uplink	Low	24300	2017499	24252.48	2016707	0	120	22257	2016955	8	0	0 (0)	0
							Mid	25774.92	2042081	25653.96	2040065	102		22343	2041723	2	8	1 (8)	118
							High	27252.48	2066707	26842.08	2059867	504		22428	2066203	0	4	0 (0)	508
Channel spacing CC1-CC2=147.48 MHz (Note 1)																			
CC2		200	60	264	Downlink & Uplink	Low	24447.48	2019957	24352.44	2018373	0	120	22263	2018683	10	5	0 (0)	5	
						Mid	25922.4	2044539	25753.92	2041731	102		22349	2043451	4	13	1 (8)	123	
						High	27399.96	2069165	26942.04	2061533	504		22434	2067931	2	1	1 (8)	513	
200+200		CC1	200	60	264	Downlink & Uplink	Low	24350.04	2018333	24255	2016749	0	120	22258	2017243	2	13	1 (8)	21
							Mid	25774.92	2042081	25606.44	2039273	102		22340	2040859	2	2	1 (8)	112
							High	27200.04	2065833	26742.12	2058201	504		22423	2064763	10	14	1 (8)	526
	Channel spacing CC1-CC2=199.92 MHz (Note 1)																		
	CC2	200	60	264	Downlink & Uplink	Low	24549.96	2021665	24454.92	2020081	0	120	22269	2020411	6	7	0 (0)	7	
						Mid	25974.84	2045413	25806.36	2042605	102		22352	2044315	6	12	1 (8)	122	
						High	27399.96	2069165	26942.04	2061533	504		22434	2067931	2	1	1 (8)	513	

Note 1: Corresponds to nominal channel spacing in accordance with TS 38.101-2 [8], clause 5.4A.1 for the channel bandwidths of the two respective NR component carriers.

Note 2: CCs are specified in increasing frequency order. CC1 is used as PCell if nothing else is specified in the test case.

Note 3: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter  $\Delta F_{\text{OffsetCORESET}0\text{-Carrier}}$  in Annex C expressed in number of common RBs.

Note 4: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-7 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcc-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.

Table 4.3.1.2.3.2.3-2: NR Intra-Band contiguous CA configuration CA\_n258D (PCC=CC1 and SCC=CC2), SCS=120 kHz, nominal channel spacing

CBW combination	CC	CBW [MHz]	SCS [kHz]	carrierBandwidth [PRBs]	Range	Carrier centre [MHz] Note 2	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequencyPointA [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS [kHz]	GSCN	absoluteFrequencySSB [ARFCN]	$k_{SSB}$	Offset Carrier CORESET#0 [RBs] Note 3	CORESET#0 Index (Offset [RBs]) Note 4	offsetToPointA (SIB1) [PRBs] Note 4		
50+200	CC1	50	120	32	Downlink & Uplink	Low	24275.04	2017083	24252	2016699	0	120	22257	2016955	8	0	0 (0)	0	
						Mid	25775.04	2042083	25605.12	2039251	102		22344	2042011	0	3	0 (0)	210	
						High	27278.04	2067133	26529.24	2054653	504		22431	2067067	3	3	0 (0)	1014	
	Channel spacing CC1-CC2=121.92 MHz (Note 1)																		
	CC2	200	120	132	Downlink & Uplink	Low	24396.96	2019115	24301.92	2017531	0	120	22260	2017819	0	2	0 (0)	4	
						Mid	25896.96	2044115	25655.04	2040083	102		22347	2042875	4	0	1 (4)	212	
						High	27399.96	2069165	26579.16	2055485	504		22434	2067931	7	0	1 (4)	1016	
	100+200	CC1	100	120	66	Downlink & Uplink	Low	24300	2017499	24252.48	2016707	0	120	22257	2016955	4	0	0 (0)	0
							Mid	25775.04	2042083	25580.64	2038843	102		22343	2041723	0	4	1 (4)	220
							High	27252.48	2066707	26479.2	2053819	504		22428	2066203	0	2	0 (0)	1012
Channel spacing CC1-CC2=147.48 MHz (Note 1)																			
CC2		200	120	132	Downlink & Uplink	Low	24447.48	2019957	24352.44	2018373	0	120	22263	2018683	11	2	0 (0)	4	
						Mid	25922.52	2044541	25680.6	2040509	102		22349	2043451	7	6	1 (4)	224	
						High	27399.96	2069165	26579.16	2055485	504		22434	2067931	7	0	1 (4)	1016	
200+200		CC1	200	120	132	Downlink & Uplink	Low	24350.04	2018333	24255	2016749	0	120	22258	2017243	7	6	1 (4)	20
							Mid	25775.04	2042083	25533.12	2038051	102		22340	2040859	0	1	1 (4)	214
							High	27200.04	2065833	26379.24	2052153	504		22423	2064763	5	7	1 (4)	1030
	Channel spacing CC1-CC2=199.92 MHz (Note 1)																		
	CC2	200	120	132	Downlink & Uplink	Low	24549.96	2021665	24454.92	2020081	0	120	22269	2020411	9	3	0 (0)	6	
						Mid	25974.96	2045415	25733.04	2041383	102		22352	2044315	2	6	1 (4)	224	
						High	27399.96	2069165	26579.16	2055485	504		22434	2067931	7	0	1 (4)	1016	

Note 1: Corresponds to nominal channel spacing in accordance with TS 38.101-2 [8], clause 5.4A.1 for the channel bandwidths of the two respective NR component carriers.  
 Note 2: CCs are specified in increasing frequency order. CC1 is used as PCell if nothing else is specified in the test case.  
 Note 3: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter  $\Delta F_{\text{OffsetCORESET-0-Carrier}}$  in Annex C expressed in number of common RBs.  
 Note 4: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-8 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.

4.3.1.2.3.2.4 CA\_n258E

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4.3.1.2.3.2.5 CA\_n258F

FFS

4.3.1.2.3.2.6 CA\_n258G

**Table 4.3.1.2.3.2.6-1: NR Intra-Band contiguous CA configuration CA\_n258G (PCC=CC1 and SCC=CC2), SCS=60 kHz, nominal channel spacing**

CBW combination	CC	CBW [MHz]	SCS [kHz]	carrier Bandwidth [PRBs]	Range		Carrier centre [MHz] Note 2	Carrier centre [ARFCN]	point A [MHz]	absolute Frequency PointA [ARFCN]	offset ToCarrier [Carrier PRBs]	SS block SCS [kHz]	GSCN	absolute Frequency SSB [ARFCN]	$k_{SSB}$	Offset Carrier CORESET#0 [RBs] Note 3	CORE SET#0 Index (Offset [RBs]) Note 4	offset ToPointA (SIB1) [PRBs] Note 4	
					Downlink & Uplink	Low Mid High													
50+100	CC1	50	60	66	Downlink & Uplink	Low	24275.04	2017083	24251.28	2016687	0	120	22257	2016955	4	2	0 (0)	2	
						Mid	25824.96	2042915	25727.76	2041295	102		22347	2042875	8	1	1 (8)	111	
						High	27375.6	2068759	26988.96	2062315	504		22437	2068795	0	8	1 (8)	520	
	Channel spacing CC1-CC2=74.4 MHz (Note 1)																		
	CC2	100	60	132	Downlink & Uplink	Low	24349.44	2018323	24301.92	2017531	0	120	22260	2017819	0	4	0 (0)	4	
						Mid	25899.36	2044155	25778.4	2042139	102		22350	2043739	4	3	1 (8)	113	
						High	27450	2069999	27039.6	2063159	504		22440	2069659	8	9	1 (8)	521	
	100+100	CC1	100	60	132	Downlink & Uplink	Low	24300	2017499	24252.48	2016707	0	120	22257	2016955	8	0	0 (0)	0
							Mid	25824.96	2042915	25704	2040899	102		22346	2042587	8	10	1 (8)	120
							High	27350.04	2068333	26939.64	2061493	504		22434	2067931	6	4	1 (8)	516
Channel spacing CC1-CC2=99.96 MHz (Note 1)																			
CC2		100	60	132	Downlink & Uplink	Low	24399.96	2019165	24352.44	2018373	0	120	22263	2018683	10	5	0 (0)	5	
						Mid	25924.92	2044581	25803.96	2042565	102		22352	2044315	10	15	1 (8)	125	
	High					27450	2069999	27039.6	2063159	504	22440		2069659	8	9	1 (8)	521		

Note 1: Corresponds to nominal channel spacing in accordance with TS 38.101-2 [8], clause 5.4A.1 for the channel bandwidths of the two respective NR component carriers.

Note 2: CCs are specified in increasing frequency order. CC1 is used as PCell if nothing else is specified in the test case.

Note 3: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter  $\Delta F_{\text{OffsetCORESET-0-Carrier}}$  in Annex C expressed in number of common RBs.

Note 4: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-7 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.

Table 4.3.1.2.3.2.6-2: NR Intra-Band contiguous CA configuration CA\_n258G (PCC=CC1 and SCC=CC2), SCS=120 kHz, nominal channel spacing

CBW combination	CC	CBW [MHz]	SCS [kHz]	carrier bandwidth [PRBs]	Range	Carrier centre [MHz] Note 2	Carrier centre [ARFCN]	point A [MHz]	absolute frequency PointA [ARFCN]	offset ToCarrier [Carrier PRBs]	SS block SCS [kHz]	GSCN	absolute frequency SSB [ARFCN]	$k_{SSB}$	Offset Carrier CORESET#0 [RBs] Note 3	CORE SET#0 Index (Offset [RBs]) Note 1	offset ToPointA (SIB1) [PRBs] Note 1		
50+100	CC1	50	120	32	Downlink & Uplink	Low	24275.04	2017083	24252	2016699	0	120	22257	2016955	8	0	0 (0)	0	
						Mid	25824.96	2042915	25655.04	2040083	102		22347	2042875	4	0	1 (4)	212	
						High	27375.6	2068759	26626.8	2056279	504		22437	2068795	6	3	1 (4)	1022	
					Channel spacing CC1-CC2=74.4 MHz (Note 1)														
					Downlink & Uplink	Low	24349.44	2018323	24301.92	2017531	0		120	22260	2017819	0	2	0 (0)	4
						Mid	25899.36	2044155	25704.96	2040915	102			22350	2043739	8	1	1 (4)	214
	High	27450	2069999	26676.72		2057111	504	22440	2069659	10	4	1 (4)		1024					
	CC2	100	120	66	Downlink & Uplink	Low	24300	2017499	24252.48	2016707	0	120		22257	2016955	4	0	0 (0)	0
						Mid	25824.96	2042915	25630.56	2039675	102			22346	2042587	4	5	1 (4)	222
						High	27350.04	2068333	26576.76	2055445	504			22434	2067931	3	2	1 (4)	1020
Channel spacing CC1-CC2=99.96 MHz (Note 1)																			
100+100	CC1	100	120	66	Downlink & Uplink	Low	24399.96	2019165	24352.44	2018373	0	120	22263	2018683	11	2	0 (0)	4	
						Mid	25924.92	2044581	25730.52	2041341	102		22352	2044315	11	7	1 (4)	226	
						High	27450	2069999	26676.72	2057111	504		22440	2069659	10	4	1 (4)	1024	
					Downlink & Uplink	Low	24399.96	2019165	24352.44	2018373	0		120	22263	2018683	11	2	0 (0)	4
						Mid	25924.92	2044581	25730.52	2041341	102			22352	2044315	11	7	1 (4)	226
						High	27450	2069999	26676.72	2057111	504			22440	2069659	10	4	1 (4)	1024

Note 1: Corresponds to nominal channel spacing in accordance with TS 38.101-2 [8], clause 5.4A.1 for the channel bandwidths of the two respective NR component carriers.

Note 2: CCs are specified in increasing frequency order. CC1 is used as PCell if nothing else is specified in the test case.

Note 3: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter  $\Delta F_{\text{OffsetCORESET-0-Carrier}}$  in Annex C expressed in number of common RBs.

Note 4: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-8 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.

Table 4.3.1.2.3.2.7-1: NR Intra-Band contiguous CA configuration CA\_n258H (PCC=CC1 and SCC=CC2), SCS=60 kHz, nominal channel spacing

CBW combination	CC	CBW [MHz]	SCS [kHz]	carrierBandwidth [PRBs]	Range	Carrier centre [MHz] Note 2	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequencyPointA [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS [kHz]	GSCN	absoluteFrequencySSB [ARFCN]	$k_{SSB}$	Offset Carrier CORESET#0 [RBs] Note 3	CORESET#0 Index (Offset [RBs]) Note 4	offsetToPointA (SIB1) [PRBs] Note 4	
50+100+100	CC1	50	60	66	Downlink & Uplink	Low	24275.04	2017083	24251.28	2016687	0	120	22257	2016955	4	2	0 (0)	2
						Mid	25774.92	2042081	25677.72	2040461	102		22344	2042011	2	7	0 (0)	109
						High	27275.64	2067093	26889	2060649	504		22431	2067067	10	2	1 (8)	514
	Channel spacing CC1-CC2=74.4 MHz (Note 1)																	
	CC2	100	60	132	Downlink & Uplink	Low	24349.44	2018323	24301.92	2017531	0	120	22260	2017819	0	4	0 (0)	4
						Mid	25849.32	2043321	25728.36	2041305	102		22347	2042875	10	0	1 (8)	110
						High	27350.04	2068333	26939.64	2061493	504		22434	2067931	6	4	1 (8)	516
	Channel spacing CC2-CC3=99.96 MHz (Note 1)																	
	CC3	100	60	132	Downlink & Uplink	Low	24449.4	2019989	24401.88	2019197	0	120	22266	2019547	2	1	1 (8)	9
						Mid	25949.28	2044987	25828.32	2042971	102		22353	2044603	0	6	1 (8)	116
						High	27450	2069999	27039.6	2063159	504		22440	2069659	8	9	1 (8)	521
	100+100+100	CC1	100	60	132	Downlink & Uplink	Low	24300	2017499	24252.48	2016707	0	120	22257	2016955	8	0	0 (0)
Mid							25774.92	2042081	25653.96	2040065	102	22343		2041723	2	8	1 (8)	118
High							27250.08	2066667	26839.68	2059827	504	22428		2066203	4	7	0 (0)	511
Channel spacing CC1-CC2=99.96 MHz (Note 1)																		
CC2		100	60	132	Downlink & Uplink	Low	24399.96	2019165	24352.44	2018373	0	120	22263	2018683	10	5	0 (0)	5
						Mid	25874.88	2043747	25753.92	2041731	102		22349	2043451	4	13	1 (8)	123
						High	27350.04	2068333	26939.64	2061493	504		22434	2067931	6	4	1 (8)	516
Channel spacing CC2-CC3=99.96 MHz (Note 1)																		
CC3		100	60	132	Downlink & Uplink	Low	24499.92	2020831	24452.4	2020039	0	120	22269	2020411	0	3	1 (8)	11
						Mid	25974.84	2045413	25853.88	2043397	102		22354	2044891	6	2	0 (0)	104
						High	27450	2069999	27039.6	2063159	504		22440	2069659	8	9	1 (8)	521

Note 1: Corresponds to nominal channel spacing in accordance with TS 38.101-2 [8], clause 5.4A.1 for the channel bandwidths of the two respective NR component carriers.

Note 2: CCs are specified in increasing frequency order. CC1 is used as PCell if nothing else is specified in the test case.

Note 3: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter  $\Delta F_{\text{OffsetCORESET-0-Carrier}}$  in Annex C expressed in number of common RBs.

Note 4: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-7 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcc-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.

Table 4.3.1.2.3.2.7-2: NR Intra-Band contiguous CA configuration CA\_n258H (PCC=CC1 and SCC=CC2), SCS=120 kHz, nominal channel spacing

CBW combination	CC	CBW [MHz]	SCS [kHz]	carrierBandwidth [PRBs]	Range	Carrier centre [MHz] Note 2	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequencyPointA [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS [kHz]	GSCN	absoluteFrequencySSB [ARFCN]	$k_{SSB}$	Offset Carrier CORESET#0 [RBs] Note 3	CORESET#0 Index (Offset [RBs]) Note 4	offsetToPointA (SIB1) [PRBs] Note 4						
50+100+100	CC1	50	120	32	Downlink & Uplink	Low	24275.04	2017083	24252	2016699	0	120	22257	2016955	8	0	0 (0)	0					
						Mid	25775.04	2042083	25605.12	2039251	102		22344	2042011	0	3	0 (0)	210					
						High	27275.64	2067093	26526.84	2054613	504		22431	2067067	11	0	1 (4)	1016					
					Channel spacing CC1-CC2=74.4 MHz (Note 1)																		
					CC2	100	120	66	Downlink & Uplink	Low	24349.44		2018323	24301.92	2017531	0	120	22260	2017819	0	2	0 (0)	4
										Mid	25849.44		2043323	25655.04	2040083	102		22347	2042875	4	0	1 (4)	212
	High	27350.04	2068333	26576.76						2055445	504	22434	2067931	3	2	1 (4)		1020					
	Channel spacing CC2-CC3=99.96 MHz (Note 1)																						
	CC3	100	120	66	Downlink & Uplink	Low	24449.4	2019989	24401.88	2019197	0	120	22266	2019547	7	0	1 (4)	8					
						Mid	25949.4	2044989	25755	2041749	102		22353	2044603	11	2	1 (4)	216					
						High	27450	2069999	26676.72	2057111	504		22440	2069659	10	4	1 (4)	1024					
	100+100+100	CC1	100	120	66	Downlink & Uplink	Low	24300	2017499	24252.48	2016707	0	120	22257	2016955	4	0	0 (0)	0				
Mid							25775.04	2042083	25580.64	2038843	102	22343		2041723	0	4	1 (4)	220					
High							27250.08	2066667	26476.8	2053779	504	22428		2066203	8	3	0 (0)	1014					
Channel spacing CC1-CC2=99.96 MHz (Note 1)																							
CC2						100	120	66	Downlink & Uplink	Low	24399.96	2019165		24352.44	2018373	0	120	22263	2018683	11	2	0 (0)	4
										Mid	25875	2043749		25680.6	2040509	102		22349	2043451	7	6	1 (4)	224
		High	27350.04	2068333	26576.76					2055445	504	22434	2067931	3	2	1 (4)		1020					
Channel spacing CC2-CC3=99.96 MHz (Note 1)																							
CC3		100	120	66	Downlink & Uplink	Low	24499.92	2020831	24452.4	2020039	0	120	22269	2020411	6	1	1 (4)	10					
						Mid	25974.96	2045415	25780.56	2042175	102		22354	2044891	2	1	0 (0)	206					
						High	27450	2069999	26676.72	2057111	504		22440	2069659	10	4	1 (4)	1024					

Note 1: Corresponds to nominal channel spacing in accordance with TS 38.101-2 [8], clause 5.4A.1 for the channel bandwidths of the two respective NR component carriers.

Note 2: CCs are specified in increasing frequency order. CC1 is used as PCell if nothing else is specified in the test case.

Note 3: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter  $\Delta F_{\text{OffsetCORESET-0-Carrier}}$  in Annex C expressed in number of common RBs.

Note 4: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-8 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcc-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.

4.3.1.2.3.2.8

CA\_n258H

FFS

4.3.1.2.3.2.9 CA\_n258J

FFS

4.3.1.2.3.2.10 CA\_n258K

FFS

4.3.1.2.3.2.11 CA\_n258L

FFS

4.3.1.2.3.2.12 CA\_n258M

FFS

4.3.1.2.3.3 FFS

4.3.1.2.3.4 NR Intra-band contiguous CA configurations for CA\_n260

4.3.1.2.3.4.1 CA\_n260B

Editor's note: CBW=400 MHz for NR band n260 is only supported by for SCS 120kHz. Test frequencies for CA\_n260B are currently limited to SCS 120kHz for all CCs.  
Test frequencies for mixed numerologies between CCs is FFS.

Table 4.3.1.2.3.4.1-1: NR Intra-Band contiguous CA configuration CA\_n260B (PCC=CC1 and SCC=CC2), SCS=120 kHz, nominal channel spacing

CBW combination	CC	CBW [MHz]	SCS [kHz]	carrier Bandwidth [PRBs]	Range	Carrier centre [MHz] Note 2	Carrier centre [ARFCN]	point A [MHz]	absolute Frequency Point A [ARFCN]	offset to Carrier [Carrier PRBs]	SS block SCS [kHz]	GSCN	absolute Frequency SSB [ARFCN]	$k_{SSB}$	Offset Carrier CORESET#0 [RBs] Note 3	CORESET#0 Index (Offset [RBs]) Note 4	offset to Point A (SIB1) [PRBs] Note 4		
50+400	CC1	50	120	32	Downlink & Uplink	Low	37025.04	2229583	37002	2229199	0	120	22995	2229499	6	2	0 (0)	4	
						Mid	38300.04	2250833	38130.12	2248001	102		23069	2250811	1	1	1 (4)	214	
						High	39582.96	2272215	38834.16	2259735	504		23143	2272123	2	2	0 (0)	1012	
	Channel spacing CC1-CC2=216.96 MHz (Note 1)																		
	CC2	400	120	264	Downlink & Uplink	Low	37242	2233199	37051.92	2230031	0	120	22998	2230363	10	3	0 (0)	6	
						Mid	38517	2254449	38180.04	2248833	102		23072	2251675	5	2	1 (4)	216	
						High	39799.92	2275831	38884.08	2260567	504		23146	2272987	6	3	0 (0)	1014	
	100+400	CC1	100	120	66	Downlink & Uplink	Low	37050	2229999	37002.48	2229207	0	120	22995	2229499	2	2	0 (0)	4
							Mid	38300.04	2250833	38105.64	2247593	102		23068	2250523	1	6	1 (4)	224
							High	39557.4	2271789	38784.12	2258901	504		23140	2271259	11	0	0 (0)	1008
Channel spacing CC1-CC2=242.52 MHz (Note 1)																			
CC2		400	120	264	Downlink & Uplink	Low	37292.52	2234041	37102.44	2230873	0	120	23001	2231227	9	0	1 (4)	8	
						Mid	38542.56	2254875	38205.6	2249259	102		23073	2251963	8	0	0 (0)	204	
						High	39799.92	2275831	38884.08	2260567	504		23146	2272987	6	3	0 (0)	1014	
200+400		CC1	200	120	132	Downlink & Uplink	Low	37100.04	2230833	37005	2229249	0	120	22995	2229499	5	0	0 (0)	0
							Mid	38300.04	2250833	38058.12	2246801	102		23065	2249659	1	3	1 (4)	218
							High	39504.96	2270915	38684.16	2257235	504		23135	2269819	4	6	1 (4)	1028
	Channel spacing CC1-CC2=294.96 MHz (Note 1)																		
	CC2	400	120	264	Downlink & Uplink	Low	37395	2235749	37204.92	2232581	0	120	23007	2232955	7	1	1 (4)	10	
						Mid	38595	2255749	38258.04	2250133	102		23076	2252827	3	0	0 (0)	204	
						High	39799.92	2275831	38884.08	2260567	504		23146	2272987	6	3	0 (0)	1014	
	400+400	CC1	400	120	264	Downlink & Uplink	Low	37200	2232499	37009.92	2229331	0	120	22996	2229787	0	5	1 (4)	18
							Mid	38300.04	2250833	37963.08	2245217	102		23059	2247931	1	1	0 (0)	206
							High	39399.96	2269165	38484.12	2253901	504		23123	2266363	3	1	1 (4)	1018
Channel spacing CC1-CC2=399.96 MHz (Note 1)																			
CC2		400	120	264	Downlink & Uplink	Low	37599.96	2239165	37409.88	2235997	0	120	23019	2236411	3	3	1 (4)	14	
						Mid	38700	2257499	38363.04	2251883	102		23083	2254843	4	7	1 (4)	226	
						High	39799.92	2275831	38884.08	2260567	504		23146	2272987	6	3	0 (0)	1014	

Note 1: Corresponds to nominal channel spacing in accordance with TS 38.101-2 [8], clause 5.4A.1 for the channel bandwidths of the two respective NR component carriers.  
 Note 2: CCs are specified in increasing frequency order. CC1 is used as PCell if nothing else is specified in the test case.  
 Note 3: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter  $\Delta F_{\text{OffsetCORESET-0-Carrier}}$  in Annex C expressed in number of common RBs.  
 Note 4: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-8 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcc-

ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.

#### 4.3.1.2.3.4.2 CA\_n260C

Editor's note: CBW=400 MHz for NR band n260 is only supported by for SCS 120kHz. Test frequencies for CA\_n260C are currently limited to SCS 120kHz for all CCs.  
Test frequencies for mixed numerologies between CCs is FFS.

Table 4.3.1.2.3.4.2-1: NR Intra-Band contiguous CA configuration CA\_n260C (PCC=CC1 and SCC=CC2, CC3), SCS=120 kHz, nominal channel spacing

CBW combination	CC	CBW [MHz]	SCS [kHz]	carrier Band width [PRBs]	Range		Carrier centre [MHz] Note 2	Carrier centre [ARFCN]	point A [MHz]	absoluteF requency PointA [ARFCN]	offset ToCarrier [Carrier PRBs]	SS block SCS [kHz]	GSCN	absoluteF requency SSB [ARFCN]	k <sub>SSB</sub>	Offset Carrier CORE SET#0 [RBs] Note 3	CORE SET#0 Index (Offset [RBs]) Note 4	offset ToPointA (SIB1) [PRBs] Note 4	
					Downlink & Uplink	Low Mid High													
50+400+400	CC1	50	120	32	Downlink & Uplink	Low	37025.04	2229583	37002	2229199	0	120	22995	2229499	6	2	0 (0)	4	
						Mid	38100	2247499	37930.08	2244667	102		23057	2247355	0	0	0 (0)	204	
						High	39183	2265549	38434.2	2253069	504		23120	2265499	11	3	0 (0)	1014	
	Channel spacing CC1-CC2=216.96 MHz (Note 1)																		
	CC2	400	120	264	Downlink & Uplink	Low	37242	2233199	37051.92	2230031	0	120	22998	2230363	10	3	0 (0)	6	
						Mid	38316.96	2251115	37980	2245499	102		23060	2248219	4	1	0 (0)	206	
						High	39399.96	2269165	38484.12	2253901	504		23123	2266363	3	1	1 (4)	1018	
	Channel spacing CC2-CC3=399.96 MHz (Note 1)																		
	CC3	400	120	264	Downlink & Uplink	Low	37641.96	2239865	37451.88	2236697	0	120	23021	2236987	1	2	0 (0)	4	
						Mid	38716.92	2257781	38379.96	2252165	102		23084	2255131	7	7	1 (4)	226	
						High	39799.92	2275831	38884.08	2260567	504		23146	2272987	6	3	0 (0)	1014	
	100+400+400	CC1	100	120	66	Downlink & Uplink	Low	37050	2229999	37002.48	2229207	0	120	22995	2229499	2	2	0 (0)	4
Mid							38100	2247499	37905.6	2244259	102	23056		2247067	0	1	1 (4)	214	
High							39157.44	2265123	38384.16	2252235	504	23117		2264635	8	2	0 (0)	1012	
Channel spacing CC1-CC2=242.52 MHz (Note 1)																			
CC2		400	120	264	Downlink & Uplink	Low	37292.52	2234041	37102.44	2230873	0	120	23001	2231227	9	0	1 (4)	8	
						Mid	38342.52	2251541	38005.56	2245925	102		23062	2248795	7	3	1 (4)	218	
						High	39399.96	2269165	38484.12	2253901	504		23123	2266363	3	1	1 (4)	1018	
Channel spacing CC2-CC3=399.96 MHz (Note 1)																			
CC3		400	120	264	Downlink & Uplink	Low	37692.48	2240707	37502.4	2237539	0	120	23024	2237851	0	3	0 (0)	6	
						Mid	38742.48	2258207	38405.52	2252591	102		23085	2255419	10	1	1 (4)	214	
						High	39799.92	2275831	38884.08	2260567	504		23146	2272987	6	3	0 (0)	1014	
200+400+400		CC1	200	120	132	Downlink & Uplink	Low	37100.04	2230833	37005	2229249	0	120	22995	2229499	5	0	0 (0)	0
	Mid						38100	2247499	37858.08	2243467	102	23053		2246203	0	2	0 (0)	208	
	High						39105	2264249	38284.2	2250569	504	23111		2262907	1	0	0 (0)	1008	
	Channel spacing CC1-CC2=294.96 MHz (Note 1)																		
	CC2	400	120	264	Downlink & Uplink	Low	37395	2235749	37204.92	2232581	0	120	23007	2232955	7	1	1 (4)	10	
						Mid	38394.96	2252415	38058	2246799	102		23065	2249659	2	3	1 (4)	218	
						High	39399.96	2269165	38484.12	2253901	504		23123	2266363	3	1	1 (4)	1018	
	Channel spacing CC2-CC3=399.96 MHz (Note 1)																		
	CC3	400	120	264	Downlink & Uplink	Low	37794.96	2242415	37604.88	2239247	0	120	23030	2239579	10	3	0 (0)	6	
						Mid	38794.92	2259081	38457.96	2253465	102		23088	2256283	5	1	1 (4)	214	
						High	39799.92	2275831	38884.08	2260567	504		23146	2272987	6	3	0 (0)	1014	
	400+400+400	CC1	400	120	264	Downlink & Uplink	Low	37200	2232499	37009.92	2229331	0	120	22996	2229787	0	5	1 (4)	18
Mid							38100	2247499	37763.04	2241883	102	23048		2244763	0	4	1 (4)	220	



				Uplink	High	39000	2262499	38084.16	2247235	504		23100	2259739	0	3	1 (4)	1022
Channel spacing CC1-CC2=399.96 MHz (Note 1)																	
CC2	400	120	264	Downlink & Uplink	Low	37599.96	2239165	37409.88	2235997	0	120	23019	2236411	3	3	1 (4)	14
					Mid	38499.96	2254165	38163	2248549	102		23071	2251387	3	2	1 (4)	216
					High	39399.96	2269165	38484.12	2253901	504		23123	2266363	3	1	1 (4)	1018
Channel spacing CC2-CC3=399.96 MHz (Note 1)																	
CC3	400	120	264	Downlink & Uplink	Low	37999.92	2245831	37809.84	2242663	0	120	23042	2243035	6	1	1 (4)	10
					Mid	38899.92	2260831	38562.96	2255215	102		23094	2258011	6	0	1 (4)	212
					High	39799.92	2275831	38884.08	2260567	504		23146	2272987	6	3	0 (0)	1014

Note 1: Corresponds to nominal channel spacing in accordance with TS 38.101-2 [8], clause 5.4A.1 for the channel bandwidths of the two respective NR component carriers.

Note 2: CCs are specified in increasing frequency order. CC1 is used as PCell if nothing else is specified in the test case.

Note 3: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter  $\Delta F_{\text{OffsetCORESET-0-Carrier}}$  in Annex C expressed in number of common RBs.

Note 4: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-8 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.

Table 4.3.1.2.3.4.3-1: NR Intra-Band contiguous CA configuration CA\_n260D (PCC=CC1 and SCC=CC2), SCS=60 kHz, nominal channel spacing

CBW combination	CC	CBW [MHz]	SCS [kHz]	carrier bandwidth [PRBs]	Range		Carrier centre [MHz] Note 2	Carrier centre [ARFCN]	point A [MHz]	absolute frequency PointA [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS [kHz]	GSCN	absolute frequency SSB [ARFCN]	$k_{SSB}$	Offset Carrier CORESET#0 [RBs] Note 3	CORESET#0 Index (Offset [RBs]) Note 4	offsetToPointA (SIB1) [PRBs] Note 4	
					Downlink & Uplink	Low Mid High													
50+200	CC1	50	60	66	Downlink & Uplink	Low	37025.04	2229583	37001.28	2229187	0	120	22995	2229499	0	6	0 (0)	6	
						Mid	38400	2252499	38302.8	2250879	102		23075	2252539	4	8	1 (8)	118	
						High	39778.08	2275467	39391.44	2269023	504		23155	2275579	4	14	1 (8)	526	
	Channel spacing CC1-CC2=121.92 MHz (Note 1)																		
	CC2	200	60	264	Downlink & Uplink	Low	37146.96	2231615	37051.92	2230031	0	120	22998	2230363	8	7	0 (0)	7	
						Mid	38521.92	2254531	38353.44	2251723	102		23078	2253403	0	10	1 (8)	120	
						High	39900	2277499	39442.08	2269867	504		23157	2276155	0	0	0 (0)	504	
	100+200	CC1	100	60	132	Downlink & Uplink	Low	37050	2229999	37002.48	2229207	0	120	22995	2229499	4	4	0 (0)	4
							Mid	38400	2252499	38279.04	2250483	102		23073	2251963	4	1	0 (0)	103
							High	39752.52	2275041	39342.12	2268201	504		23152	2274715	10	10	1 (8)	522
Channel spacing CC1-CC2=147.48 MHz (Note 1)																			
CC2		200	60	264	Downlink & Uplink	Low	37197.48	2232457	37102.44	2230873	0	120	23001	2231227	6	1	1 (8)	9	
						Mid	38547.48	2254957	38379	2252149	102		23079	2253691	6	6	0 (0)	108	
						High	39900	2277499	39442.08	2269867	504		23157	2276155	0	0	0 (0)	504	
200+200		CC1	200	60	264	Downlink & Uplink	Low	37100.04	2230833	37005	2229249	0	120	22995	2229499	10	0	0 (0)	0
							Mid	38400	2252499	38231.52	2249691	102		23071	2251387	4	11	1 (8)	121
							High	39700.08	2274167	39242.16	2266535	504		23146	2272987	8	5	1 (8)	517
	Channel spacing CC1-CC2=199.92 MHz (Note 1)																		
	CC2	200	60	264	Downlink & Uplink	Low	37299.96	2234165	37204.92	2232581	0	120	23007	2232955	2	3	1 (8)	11	
						Mid	38599.92	2255831	38431.44	2253023	102		23082	2254555	8	5	0 (0)	107	
						High	39900	2277499	39442.08	2269867	504		23157	2276155	0	0	0 (0)	504	

Note 1: Corresponds to nominal channel spacing in accordance with TS 38.101-2 [8], clause 5.4A.1 for the channel bandwidths of the two respective NR component carriers.

Note 2: CCs are specified in increasing frequency order. CC1 is used as PCell if nothing else is specified in the test case.

Note 3: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter  $\Delta F_{\text{OffsetCORESET-0-Carrier}}$  in Annex C expressed in number of common RBs.

Note 4: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-7 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcc-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.

Table 4.3.1.2.3.4.3-2: NR Intra-Band contiguous CA configuration CA\_n260D (PCC=CC1 and SCC=CC2), SCS=120 kHz, nominal channel spacing

CBW combination	CC	CBW [MHz]	SCS [kHz]	carrier bandwidth [PRBs]	Range		Carrier centre [MHz] Note 2	Carrier centre [ARFCN]	point A [MHz]	absolute frequency PointA [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS [kHz]	GSCN	absolute frequency SSB [ARFCN]	k <sub>SSB</sub>	Offset Carrier CORESET#0 [RBs] Note 3	CORE SET#0 Index (Offset [RBs]) Note 4	offsetToPointA (SIB1) [PRBs] Note 4							
					Downlink & Uplink	Low Mid High																			
50+200	CC1	50	120	32	Downlink & Uplink	Low	37025.04	2229583	37002	2229199	0	120	22995	2229499	6	2	0 (0)	4							
						Mid	38400	2252499	38230.08	2249667	102								23075	2252539	8	3	1 (4)	218	
						High	39778.08	2275467	39029.28	2262987	504								23155	2275579	8	6	1 (4)	1028	
	Channel spacing CC1-CC2=121.92 MHz (Note 1)																								
	CC2	200	120	132	Downlink & Uplink	Low	37146.96	2231615	37051.92	2230031	0	120	22998	2230363	10	3	0 (0)	6							
						Mid	38521.92	2254531	38280	2250499	102								23078	2253403	0	5	1 (4)	222	
						High	39900	2277499	39079.2	2263819	504								23157	2276155	0	0	0 (0)	1008	
	100+200	CC1	100	120	66	Downlink & Uplink	Low	37050	2229999	37002.48	2229207	0	120	22995	2229499	2	2	0 (0)	4						
							Mid	38400	2252499	38205.6	2249259	102								23073	2251963	8	0	0 (0)	204
							High	39752.52	2275041	38979.24	2262153	504								23152	2274715	5	5	1 (4)	1026
Channel spacing CC1-CC2=147.48 MHz (Note 1)																									
CC2		200	120	132	Downlink & Uplink	Low	37197.48	2232457	37102.44	2230873	0	120	23001	2231227	9	0	1 (4)	8							
						Mid	38547.48	2254957	38305.56	2250925	102								23079	2253691	3	3	0 (0)	210	
						High	39900	2277499	39079.2	2263819	504								23157	2276155	0	0	0 (0)	1008	
200+200		CC1	200	120	132	Downlink & Uplink	Low	37100.04	2230833	37005	2229249	0	120	22995	2229499	5	0	0 (0)	0						
							Mid	38400	2252499	38158.08	2248467	102								23071	2251387	8	5	1 (4)	222
							High	39700.08	2274167	38879.28	2260487	504								23146	2272987	10	2	1 (4)	1020
	Channel spacing CC1-CC2=199.92 MHz (Note 1)																								
	CC2	200	120	132	Downlink & Uplink	Low	37299.96	2234165	37204.92	2232581	0	120	23007	2232955	7	1	1 (4)	10							
						Mid	38599.92	2255831	38358	2251799	102								23082	2254555	10	2	0 (0)	208	
						High	39900	2277499	39079.2	2263819	504								23157	2276155	0	0	0 (0)	1008	

Note 1: Corresponds to nominal channel spacing in accordance with TS 38.101-2 [8], clause 5.4A.1 for the channel bandwidths of the two respective NR component carriers.  
 Note 2: CCs are specified in increasing frequency order. CC1 is used as PCell if nothing else is specified in the test case.  
 Note 3: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter ΔF<sub>OffsetCORESET-0-Carrier</sub> in Annex C expressed in number of common RBs.  
 Note 4: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-8 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcc-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.

4.3.1.2.3.4.4 CA\_n260E

Table 4.3.1.2.3.4.4-1: NR Intra-Band contiguous CA configuration CA\_n260E (PCC=CC1 and SCC=CC2), SCS=60 kHz, nominal channel spacing

FFS

**Table 4.3.1.2.3.4.4-2: NR Intra-Band contiguous CA configuration CA\_n260E (PCC=CC1 and SCC=CC2), SCS=120 kHz, nominal channel spacing**

FFS

4.3.1.2.3.4.5 CA\_n260F

**Table 4.3.1.2.3.4.5-1: NR Intra-Band contiguous CA configuration CA\_n260F (PCC=CC1 and SCC=CC2), SCS=60 kHz, nominal channel spacing**

FFS

**Table 4.3.1.2.3.4.5-2: NR Intra-Band contiguous CA configuration CA\_n260F (PCC=CC1 and SCC=CC2), SCS=120 kHz, nominal channel spacing**

FFS

Table 4.3.1.2.3.4.6-1: NR Intra-Band contiguous CA configuration CA\_n260G (PCC=CC1 and SCC=CC2), SCS=60 kHz, nominal channel spacing

CBW combination	CC	CBW [MHz]	SCS [kHz]	carrier Bandwidth [PRBs]	Range	Carrier centre [MHz] Note 2	Carrier centre [ARFCN]	point A [MHz]	absolute Frequency PointA [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS [kHz]	GSCN	absolute Frequency SSB [ARFCN]	$k_{SSB}$	Offset Carrier CORESET#0 [RBs] Note 3	CORESET#0 Index (Offset [RBs]) Note 4	offsetToPointA (SIB1) [PRBs] Note 4		
50+100	CC1	50	60	66	Downlink & Uplink	Low	37025.04	2229583	37001.28	2229187	0	120	22995	2229499	0	6	0 (0)	6	
						Mid	38449.92	2253331	38352.72	2251711	102		23078	2253403	0	11	1 (8)	121	
						High	39875.52	2277091	39488.88	2270647	504		23160	2277019	0	7	0 (0)	511	
	Channel spacing CC1-CC2=74.4 MHz (Note 1)																		
	CC2	100	60	132	Downlink & Uplink	Low	37099.44	2230823	37051.92	2230031	0	120	22998	2230363	8	7	0 (0)	7	
						Mid	38524.32	2254571	38403.36	2252555	102		23081	2254267	8	12	1 (8)	122	
						High	39949.92	2278331	39539.52	2271491	504		23163	2277883	8	0	1 (8)	512	
	100+100	CC1	100	60	132	Downlink & Uplink	Low	37050	2229999	37002.48	2229207	0	120	22995	2229499	4	4	0 (0)	4
							Mid	38449.92	2253331	38328.96	2251315	102		23076	2252827	0	4	0 (0)	106
							High	39849.96	2276665	39439.56	2269825	504		23157	2276155	6	3	0 (0)	507
Channel spacing CC1-CC2=99.96 MHz (Note 1)																			
CC2		100	60	132	Downlink & Uplink	Low	37149.96	2231665	37102.44	2230873	0	120	23001	2231227	6	1	1 (8)	9	
						Mid	38549.88	2254997	38428.92	2252981	102		23082	2254555	2	1	1 (8)	111	
						High	39949.92	2278331	39539.52	2271491	504		23163	2277883	8	0	1 (8)	512	

Note 1: Corresponds to nominal channel spacing in accordance with TS 38.101-2 [8], clause 5.4A.1 for the channel bandwidths of the two respective NR component carriers.

Note 2: CCs are specified in increasing frequency order. CC1 is used as PCell if nothing else is specified in the test case.

Note 3: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter  $\Delta F_{\text{OffsetCORESET-0-Carrier}}$  in Annex C expressed in number of common RBs.

Note 4: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-7 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.

Table 4.3.1.2.3.4.6-2: NR Intra-Band contiguous CA configuration CA\_n260G (PCC=CC1 and SCC=CC2), SCS=120 kHz, nominal channel spacing

CBW combination	CC	CBW [MHz]	SCS [kHz]	carrier bandwidth [PRBs]	Range		Carrier centre [MHz] Note 2	Carrier centre [ARFCN]	point A [MHz]	absolute frequency PointA [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS [kHz]	GSCN	absolute frequency SSB [ARFCN]	$k_{SSB}$	Offset Carrier CORESET#0 [RBs] Note 3	CORESET#0 Index (Offset [RBs]) Note 1	offsetToPointA (SIB1) [PRBs] Note 1	
					Downlink & Uplink	Low Mid High													
50+100	CC1	50	120	32	Downlink & Uplink	Low	37025.04	2229583	37002	2229199	0	120	22995	2229499	6	2	0 (0)	4	
						Mid	38450.04	2253333	38280.12	2250501	102		23078	2253403	11	4	1 (4)	220	
						High	39875.52	2277091	39126.72	2264611	504		23160	2277019	0	3	0 (0)	1014	
	Channel spacing CC1-CC2=74.4 MHz (Note 1)																		
	CC2	100	120	66	Downlink & Uplink	Low	37099.44	2230823	37051.92	2230031	0	120	22998	2230363	10	3	0 (0)	6	
						Mid	38524.44	2254573	38330.04	2251333	102		23081	2254267	3	6	1 (4)	224	
						High	39949.92	2278331	39176.64	2265443	504		23163	2277883	4	0	1 (4)	1016	
	100+100	CC1	100	120	66	Downlink & Uplink	Low	37050	2229999	37002.48	2229207	0	120	22995	2229499	2	2	0 (0)	4
							Mid	38450.04	2253333	38255.64	2250093	102		23076	2252827	11	1	0 (0)	206
							High	39849.96	2276665	39076.68	2263777	504		23157	2276155	9	1	0 (0)	1010
Channel spacing CC1-CC2=99.96 MHz (Note 1)																			
CC2		100	120	66	Downlink & Uplink	Low	37149.96	2231665	37102.44	2230873	0	120	23001	2231227	9	0	1 (4)	8	
						Mid	38550	2254999	38355.6	2251759	102		23082	2254555	6	0	1 (4)	212	
						High	39949.92	2278331	39176.64	2265443	504		23163	2277883	4	0	1 (4)	1016	
Note 1: Corresponds to nominal channel spacing in accordance with TS 38.101-2 [8], clause 5.4A.1 for the channel bandwidths of the two respective NR component carriers.																			
Note 2: CCs are specified in increasing frequency order. CC1 is used as PCell if nothing else is specified in the test case.																			
Note 3: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs.																			
Note 4: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-8 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.																			

Table 4.3.1.2.3.4.7-1: NR Intra-Band contiguous CA configuration CA\_n260H (PCC=CC1 and SCC=CC2, CC3), SCS=60 kHz, nominal channel spacing

CBW combination	CC	CBW [MHz]	SCS [kHz]	carrier Bandwidth [PRBs]	Range	Carrier centre [MHz] Note 2	Carrier centre [ARFCN]	point A [MHz]	absolute Frequency Point A [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS [kHz]	GSCN	absolute Frequency SSB [ARFCN]	$k_{SSB}$	Offset Carrier CORESET#0 [RBs] Note 3	CORESET#0 Index (Offset [RBs]) Note 4	offsetToPoint A (SIB1) [PRBs] Note 4		
50+100+100	CC1	50	60	66	Downlink & Uplink	Low	37025.04	2229583	37001.28	2229187	0	120	22995	2229499	0	6	0 (0)	6	
						Mid	38400	2252499	38302.8	2250879	102		23075	2252539	4	8	1 (8)	118	
						High	39775.56	2275425	39388.92	2268981	504		23154	2275291	10	1	0 (0)	505	
	Channel spacing CC1-CC2=74.4 MHz (Note 1)																		
	CC2	100	60	132	Downlink & Uplink	Low	37099.44	2230823	37051.92	2230031	0	120	22998	2230363	8	7	0 (0)	7	
						Mid	38474.4	2253739	38353.44	2251723	102		23078	2253403	0	10	1 (8)	120	
						High	39849.96	2276665	39439.56	2269825	504		23157	2276155	6	3	0 (0)	507	
	Channel spacing CC2-CC3=99.96 MHz (Note 1)																		
	CC3	100	60	132	Downlink & Uplink	Low	37199.4	2232489	37151.88	2231697	0	120	23004	2232091	10	4	1 (8)	12	
						Mid	38574.36	2255405	38453.4	2253389	102		23084	2255131	2	15	1 (8)	125	
						High	39949.92	2278331	39539.52	2271491	504		23163	2277883	8	0	1 (8)	512	
	100+100+100	CC1	100	60	132	Downlink & Uplink	Low	37050	2229999	37002.48	2229207	0	120	22995	2229499	4	4	0 (0)	4
Mid							38400	2252499	38279.04	2250483	102	23073		2251963	4	1	0 (0)	103	
High							39750	2274999	39339.6	2268159	504	23152		2274715	4	14	1 (8)	526	
Channel spacing CC1-CC2=99.96 MHz (Note 1)																			
CC2		100	60	132	Downlink & Uplink	Low	37149.96	2231665	37102.44	2230873	0	120	23001	2231227	6	1	1 (8)	9	
						Mid	38499.96	2254165	38379	2252149	102		23079	2253691	6	6	0 (0)	108	
						High	39849.96	2276665	39439.56	2269825	504		23157	2276155	6	3	0 (0)	507	
Channel spacing CC2-CC3=99.96 MHz (Note 1)																			
CC3		100	60	132	Downlink & Uplink	Low	37249.92	2233331	37202.4	2232539	0	120	23007	2232955	8	6	1 (8)	14	
						Mid	38599.92	2255831	38478.96	2253815	102		23085	2255419	8	3	1 (8)	113	
						High	39949.92	2278331	39539.52	2271491	504		23163	2277883	8	0	1 (8)	512	

Note 1: Corresponds to nominal channel spacing in accordance with TS 38.101-2 [8], clause 5.4A.1 for the channel bandwidths of the two respective NR component carriers.

Note 2: CCs are specified in increasing frequency order. CC1 is used as PCell if nothing else is specified in the test case.

Note 3: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter  $\Delta F_{\text{OffsetCORESET-0-Carrier}}$  in Annex C expressed in number of common RBs.

Note 4: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-7 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcc-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.

Table 4.3.1.2.3.4.7-2: NR Intra-Band contiguous CA configuration CA\_n260H (PCC=CC1 and SCC=CC2, CC3), SCS=120 kHz, nominal channel spacing

CBW combination	CC	CBW [MHz]	SCS [kHz]	carrier bandwidth [PRBs]	Range	Carrier centre [MHz] Note 2	Carrier centre [ARFCN]	point A [MHz]	absolute frequency PointA [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS [kHz]	GSCN	absolute frequency SSB [ARFCN]	$k_{SSB}$	Offset Carrier CORESET#0 [RBs] Note 3	CORESET#0 Index (Offset [RBs]) Note 4	offsetToPointA (SIB1) [PRBs] Note 4		
50+100+100	CC1	50	120	32	Downlink & Uplink	Low	37025.04	2229583	37002	2229199	0	120	22995	2229499	6	2	0 (0)	4	
						Mid	38400	2252499	38230.08	2249667	102		23075	2252539	8	3	1 (4)	218	
						High	39775.56	2275425	39026.76	2262945	504		23154	2275291	5	0	0 (0)	1008	
	Channel spacing CC1-CC2=74.4 MHz (Note 1)																		
	CC2	100	120	66	Downlink & Uplink	Low	37099.44	2230823	37051.92	2230031	0	120	22998	2230363	10	3	0 (0)	6	
						Mid	38474.4	2253739	38280	2250499	102		23078	2253403	0	5	1 (4)	222	
						High	39849.96	2276665	39076.68	2263777	504		23157	2276155	9	1	0 (0)	1010	
	Channel spacing CC2-CC3=99.96 MHz (Note 1)																		
	CC3	100	120	66	Downlink & Uplink	Low	37199.4	2232489	37151.88	2231697	0	120	23004	2232091	5	2	1 (4)	12	
						Mid	38574.36	2255405	38379.96	2252165	102		23084	2255131	7	7	1 (4)	226	
						High	39949.92	2278331	39176.64	2265443	504		23163	2277883	4	0	1 (4)	1016	
	100+100+100	CC1	100	120	66	Downlink & Uplink	Low	37050	2229999	37002.48	2229207	0	120	22995	2229499	2	2	0 (0)	4
Mid							38400	2252499	38205.6	2249259	102	23073		2251963	8	0	0 (0)	204	
High							39750	2274999	38976.72	2262111	504	23152		2274715	2	7	1 (4)	1030	
Channel spacing CC1-CC2=99.96 MHz (Note 1)																			
CC2		100	120	66	Downlink & Uplink	Low	37149.96	2231665	37102.44	2230873	0	120	23001	2231227	9	0	1 (4)	8	
						Mid	38499.96	2254165	38305.56	2250925	102		23079	2253691	3	3	0 (0)	210	
						High	39849.96	2276665	39076.68	2263777	504		23157	2276155	9	1	0 (0)	1010	
Channel spacing CC2-CC3=99.96 MHz (Note 1)																			
CC3		100	120	66	Downlink & Uplink	Low	37249.92	2233331	37202.4	2232539	0	120	23007	2232955	4	3	1 (4)	14	
						Mid	38599.92	2255831	38405.52	2252591	102		23085	2255419	10	1	1 (4)	214	
						High	39949.92	2278331	39176.64	2265443	504		23163	2277883	4	0	1 (4)	1016	

Note 1: Corresponds to nominal channel spacing in accordance with TS 38.101-2 [8], clause 5.4A.1 for the channel bandwidths of the two respective NR component carriers.

Note 2: CCs are specified in increasing frequency order. CC1 is used as PCell if nothing else is specified in the test case.

Note 3: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter  $\Delta F_{\text{OffsetCORESET-0-Carrier}}$  in Annex C expressed in number of common RBs.

Note 4: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-8 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcc-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.



Table 4.3.1.2.3.4.8-1: NR Intra-Band contiguous CA configuration CA\_n260I (PCC=CC1, SCC=CC2, CC3, CC4), SCS=60 kHz, nominal channel spacing

CBW combination	CC	CBW [MHz]	SCS [kHz]	carrier Bandwidth [PRBs]	Range		Carrier centre [MHz] Note 2	Carrier centre [ARFCN]	point A [MHz]	absolute Frequency Point A [ARFCN]	offset Carrier [Carrier PRBs]	SS block SCS [kHz]	GSCN	absolute Frequency SSB [ARFCN]	k <sub>SSB</sub>	Offset Carrier CORESET#0 [RBs] Note 3	CORESET#0 Index (Offset [RBs]) Note 4	offset Point A (SIB1) [PRBs] Note 4	
					Downlink & Uplink	Low Mid High													
50+100 +100+100	CC1	50	60	66	Downlink & Uplink	Low	37025.04	2229583	37001.28	2229187	0	120	22995	2229499	0	6	0 (0)	6	
						Mid	38349.96	2251665	38252.76	2250045	102		23072	2251675	10	5	1 (8)	115	
						High	39675.6	2273759	39288.96	2267315	504		23149	2273851	8	12	1 (8)	524	
	Channel spacing CC1-CC2=74.4 MHz (Note 1)																		
	CC2	100	60	132	Downlink & Uplink	Low	37099.44	2230823	37051.92	2230031	0	120	22998	2230363	8	7	0 (0)	7	
						Mid	38424.36	2252905	38303.4	2250889	102		23075	2252539	6	7	1 (8)	117	
						High	39750	2274999	39339.6	2268159	504		23152	2274715	4	14	1 (8)	526	
	Channel spacing CC2-CC3=99.96 MHz (Note 1)																		
	CC3	100	60	132	Downlink & Uplink	Low	37199.4	2232489	37151.88	2231697	0	120	23004	2232091	10	4	1 (8)	12	
						Mid	38524.32	2254571	38403.36	2252555	102		23081	2254267	8	12	1 (8)	122	
						High	39849.96	2276665	39439.56	2269825	504		23157	2276155	6	3	0 (0)	507	
	Channel spacing CC3-CC4=99.96 MHz (Note 1)																		
CC4	100	60	132	Downlink & Uplink	Low	37299.36	2234155	37251.84	2233363	0	120	23010	2233819	0	10	1 (8)	18		
					Mid	38624.28	2256237	38503.32	2254221	102		23086	2255707	10	1	0 (0)	103		
					High	39949.92	2278331	39539.52	2271491	504		23163	2277883	8	0	1 (8)	512		
100+100 +100+100	CC1	100	60	132	Downlink & Uplink	Low	37050	2229999	37002.48	2229207	0	120	22995	2229499	4	4	0 (0)	4	
						Mid	38349.96	2251665	38229	2249649	102		23071	2251387	10	14	1 (8)	124	
						High	39650.04	2273333	39239.64	2266493	504		23146	2272987	2	9	1 (8)	521	
	Channel spacing CC1-CC2=99.96 MHz (Note 1)																		
	CC2	100	60	132	Downlink & Uplink	Low	37149.96	2231665	37102.44	2230873	0	120	23001	2231227	6	1	1 (8)	9	
						Mid	38449.92	2253331	38328.96	2251315	102		23076	2252827	0	4	0 (0)	106	
						High	39750	2274999	39339.6	2268159	504		23152	2274715	4	14	1 (8)	526	
	Channel spacing CC2-CC3=99.96 MHz (Note 1)																		
	CC3	100	60	132	Downlink & Uplink	Low	37249.92	2233331	37202.4	2232539	0	120	23007	2232955	8	6	1 (8)	14	
						Mid	38549.88	2254997	38428.92	2252981	102		23082	2254555	2	1	1 (8)	111	
						High	39849.96	2276665	39439.56	2269825	504		23157	2276155	6	3	0 (0)	507	
	Channel spacing CC3-CC4=99.96 MHz (Note 1)																		
CC4	100	60	132	Downlink & Uplink	Low	37349.88	2234997	37302.36	2234205	0	120	23013	2234683	10	11	1 (8)	19		
					Mid	38649.84	2256663	38528.88	2254647	102		23088	2256283	4	6	1 (8)	116		
					High	39949.92	2278331	39539.52	2271491	504		23163	2277883	8	0	1 (8)	512		

Note 1: Corresponds to nominal channel spacing in accordance with TS 38.101-2 [8], clause 5.4A.1 for the channel bandwidths of the two respective NR component carriers.  
 Note 2: CCs are specified in increasing frequency order. CC1 is used as PCell if nothing else is specified in the test case.  
 Note 3: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter

Note 4:  $\Delta F_{\text{OffsetCORESET-0-Carrier}}$  in Annex C expressed in number of common RBs.  
The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-7 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.

Table 4.3.1.2.3.4.8-2: NR Intra-Band contiguous CA configuration CA\_n260I (PCC=CC1, SCC=CC2, CC3,CC4), SCS=120 kHz, nominal channel spacing

CBW combination	CC	CBW [MHz]	SCS [kHz]	carrierBandwidth [PRBs]	Range		Carrier centre [MHz] Note 2	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequencyPointA [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS [kHz]	GSCN	absoluteFrequencySSB [ARFCN]	k <sub>SSB</sub>	Offset Carrier CORESET#0 [RBs] Note 3	CORESET#0 Index (Offset [RBs]) Note 4	offsetToPointA (SIB1) [PRBs] Note 4	
					Downlink & Uplink	Low Mid High													
50+100 +100+100	CC1	50	120	32	Downlink & Uplink	Low	37025.04	2229583	37002	2229199	0	120	22995	2229499	6	2	0 (0)	4	
						Mid	38349.96	2251665	38180.04	2248833	102		23072	2251675	5	2	1 (4)	216	
						High	39675.6	2273759	38926.8	2261279	504		23149	2273851	10	5	1 (4)	1026	
	Channel spacing CC1-CC2=74.4 MHz (Note 1)																		
	CC2	100	120	66	Downlink & Uplink	Low	37099.44	2230823	37051.92	2230031	0	120	22998	2230363	10	3	0 (0)	6	
						Mid	38424.36	2252905	38229.96	2249665	102		23075	2252539	9	3	1 (4)	218	
						High	39750	2274999	38976.72	2262111	504		23152	2274715	2	7	1 (4)	1030	
	Channel spacing CC2-CC3=99.96 MHz (Note 1)																		
	CC3	100	120	66	Downlink & Uplink	Low	37199.4	2232489	37151.88	2231697	0	120	23004	2232091	5	2	1 (4)	12	
						Mid	38524.32	2254571	38329.92	2251331	102		23081	2254267	4	6	1 (4)	224	
						High	39849.96	2276665	39076.68	2263777	504		23157	2276155	9	1	0 (0)	1010	
	Channel spacing CC3-CC4=99.96 MHz (Note 1)																		
	CC4	100	120	66	Downlink & Uplink	Low	37299.36	2234155	37251.84	2233363	0	120	23010	2233819	0	5	1 (4)	18	
						Mid	38624.28	2256237	38429.88	2252997	102		23086	2255707	11	0	0 (0)	204	
						High	39949.92	2278331	39176.64	2265443	504		23163	2277883	4	0	1 (4)	1016	
	100+100 +100+100	CC1	100	120	66	Downlink & Uplink	Low	37050	2229999	37002.48	2229207	0	120	22995	2229499	2	2	0 (0)	4
Mid							38349.96	2251665	38155.56	2248425	102	23071		2251387	5	7	1 (4)	226	
High							39650.04	2273333	38876.76	2260445	504	23146		2272987	7	4	1 (4)	1024	
Channel spacing CC1-CC2=99.96 MHz (Note 1)																			
CC2		100	120	66	Downlink & Uplink	Low	37149.96	2231665	37102.44	2230873	0	120	23001	2231227	9	0	1 (4)	8	
						Mid	38449.92	2253331	38255.52	2250091	102		23076	2252827	0	2	0 (0)	208	
						High	39750	2274999	38976.72	2262111	504		23152	2274715	2	7	1 (4)	1030	
Channel spacing CC2-CC3=99.96 MHz (Note 1)																			
CC3		100	120	66	Downlink & Uplink	Low	37249.92	2233331	37202.4	2232539	0	120	23007	2232955	4	3	1 (4)	14	
						Mid	38549.88	2254997	38355.48	2251757	102		23082	2254555	7	0	1 (4)	212	
						High	39849.96	2276665	39076.68	2263777	504		23157	2276155	9	1	0 (0)	1010	
Channel spacing CC3-CC4=99.96 MHz (Note 1)																			
CC4		100	120	66	Downlink & Uplink	Low	37349.88	2234997	37302.36	2234205	0	120	23013	2234683	11	5	1 (4)	18	
						Mid	38649.84	2256663	38455.44	2253423	102		23088	2256283	2	3	1 (4)	218	
						High	39949.92	2278331	39176.64	2265443	504		23163	2277883	4	0	1 (4)	1016	

Note 1: Corresponds to nominal channel spacing in accordance with TS 38.101-2 [8], clause 5.4A.1 for the channel bandwidths of the two respective NR component carriers.  
 Note 2: CCs are specified in increasing frequency order. CC1 is used as PCell if nothing else is specified in the test case.  
 Note 3: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter  $\Delta F_{\text{OffsetCORESET-0-Carrier}}$  in Annex C expressed in number of common RBs.  
 Note 4: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-8 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.



Table 4.3.1.2.3.4.9-1: NR Intra-Band contiguous CA configuration CA\_n260J (PCC=CC1, SCC=CC2, CC3, CC4, CC5), SCS=60 kHz, nominal channel spacing

CBW combination	CC	CBW [MHz]	SCS [kHz]	carrier Bandwidth [PRBs]	Range	Carrier centre [MHz] Note 2	Carrier centre [ARFCN]	point A [MHz]	absolute Frequency Point A [ARFCN]	offset of Carrier [Carrier PRBs]	SS block SCS [kHz]	GSCN	absolute Frequency SSB [ARFCN]	$k_{SSB}$	Offset Carrier CORESET#0 [RBs] Note 3	CORE SET#0 Index Note 4	offset of Point A (SIB1) [PRBs] Note 4		
50+100 +100+100 +100	CC1	50	60	66	Downlink & Uplink	Low	37025.04	2229583	37001.28	2229187	0	120	22995	2229499	0	6	0 (0)	6	
						Mid	38299.92	2250831	38202.72	2249211	102		23069	2250811	4	3	1 (8)	113	
						High	39575.64	2272093	39189	2265649	504		23143	2272123	6	7	1 (8)	519	
	Channel spacing CC1-CC2=74.4 MHz (Note 1)																		
	CC2	100	60	132	Downlink & Uplink	Low	37099.44	2230823	37051.92	2230031	0	120	22998	2230363	8	7	0 (0)	7	
						Mid	38374.32	2252071	38253.36	2250055	102		23072	2251675	0	5	1 (8)	115	
						High	39650.04	2273333	39239.64	2266493	504		23146	2272987	2	9	1 (8)	521	
	Channel spacing CC2-CC3=99.96 MHz (Note 1)																		
	CC3	100	60	132	Downlink & Uplink	Low	37199.4	2232489	37151.88	2231697	0	120	23004	2232091	10	4	1 (8)	12	
						Mid	38474.28	2253737	38353.32	2251721	102		23078	2253403	2	10	1 (8)	120	
						High	39750	2274999	39339.6	2268159	504		23152	2274715	4	14	1 (8)	526	
	Channel spacing CC3-CC4=99.96 MHz (Note 1)																		
	CC4	100	60	132	Downlink & Uplink	Low	37299.36	2234155	37251.84	2233363	0	120	23010	2233819	0	10	1 (8)	18	
						Mid	38574.24	2255403	38453.28	2253387	102		23084	2255131	4	15	1 (8)	125	
						High	39849.96	2276665	39439.56	2269825	504		23157	2276155	6	3	0 (0)	507	
	Channel spacing CC4-CC5=99.96 MHz (Note 1)																		
	CC5	100	60	132	Downlink & Uplink	Low	37399.32	2235821	37351.8	2235029	0	120	23016	2235547	2	15	1 (8)	23	
						Mid	38674.2	2257069	38553.24	2255053	102		23089	2256571	6	4	0 (0)	106	
						High	39949.92	2278331	39539.52	2271491	504		23163	2277883	8	0	1 (8)	512	
	100+100 +100+100 +100	CC1	100	60	132	Downlink & Uplink	Low	37050	2229999	37002.48	2229207	0	120	22995	2229499	4	4	0 (0)	4
							Mid	38299.92	2250831	38178.96	2248815	102		23068	2250523	4	12	1 (8)	122
High							39550.08	2271667	39139.68	2264827	504	23140		2271259	0	4	1 (8)	516	
Channel spacing CC1-CC2=99.96 MHz (Note 1)																			
CC2		100	60	132	Downlink & Uplink	Low	37149.96	2231665	37102.44	2230873	0	120	23001	2231227	6	1	1 (8)	9	
						Mid	38399.88	2252497	38278.92	2250481	102		23073	2251963	6	1	0 (0)	103	
						High	39650.04	2273333	39239.64	2266493	504		23146	2272987	2	9	1 (8)	521	
Channel spacing CC2-CC3=99.96 MHz (Note 1)																			
CC3		100	60	132	Downlink & Uplink	Low	37249.92	2233331	37202.4	2232539	0	120	23007	2232955	8	6	1 (8)	14	
	Mid					38499.84	2254163	38378.88	2252147	102	23079		2253691	8	6	0 (0)	108		
	High					39750	2274999	39339.6	2268159	504	23152		2274715	4	14	1 (8)	526		
Channel spacing CC3-CC4=99.96 MHz (Note 1)																			
CC4	100	60	132	Downlink & Uplink	Low	37349.88	2234997	37302.36	2234205	0	120	23013	2234683	10	11	1 (8)	19		
					Mid	38599.8	2255829	38478.84	2253813	102		23085	2255419	10	3	1 (8)	113		

				Uplink	High	39849.96	2276665	39439.56	2269825	504		23157	2276155	6	3	0 (0)	507	
Channel spacing CC4-CC5=99.96 MHz (Note 1)																		
CC5	100	60	132	Downlink & Uplink	Low	37449.84	2236663	37402.32	2235871	0	120	23018	2236123	0	1	0 (0)	1	
					Mid	38699.76	2257495	38578.8	2255479	102			23091	2257147	0	9	1 (8)	119
					High	39949.92	2278331	39539.52	2271491	504			23163	2277883	8	0	1 (8)	512

Note 1: Corresponds to nominal channel spacing in accordance with TS 38.101-2 [8], clause 5.4A.1 for the channel bandwidths of the two respective NR component carriers.

Note 2: CCs are specified in increasing frequency order. CC1 is used as PCell if nothing else is specified in the test case.

Note 3: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter  $\Delta F_{\text{OffsetCORESET-0-Carrier}}$  in Annex C expressed in number of common RBs.

Note 4: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-7 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.

Table 4.3.1.2.3.4.9-2: NR Intra-Band contiguous CA configuration CA\_n260J (PCC=CC1, SCC=CC2, CC3, CC4, CC5), SCS=120 kHz, nominal channel spacing

CBW combination	CC	CBW [MHz]	SCS [kHz]	carrierBandwidth [PRBs]	Range	Carrier centre [MHz] Note 2	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequencyPointA [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS [kHz]	GSCN	absoluteFrequencySSB [ARFCN]	$k_{SSB}$	Offset Carrier CORESET#0 [RBs] Note 3	CORE SET#0 Index (Offset [RBs]) Note 4	offsetToPointA (SIB1) [PRBs] Note 4		
50+100 +100+100 +100	CC1	50	120	32	Downlink & Uplink	Low	37025.04	2229583	37002	2229199	0	120	22995	2229499	6	2	0 (0)	4	
						Mid	38300.04	2250833	38130.12	2248001	102		23069	2250811	1	1	1 (4)	214	
						High	39575.64	2272093	38826.84	2259613	504		23143	2272123	3	3	1 (4)	1022	
	Channel spacing CC1-CC2=74.4 MHz (Note 1)																		
	CC2	100	120	66	Downlink & Uplink	Low	37099.44	2230823	37051.92	2230031	0	120	22998	2230363	10	3	0 (0)	6	
						Mid	38374.44	2252073	38180.04	2248833	102		23072	2251675	5	2	1 (4)	216	
						High	39650.04	2273333	38876.76	2260445	504		23146	2272987	7	4	1 (4)	1024	
	Channel spacing CC2-CC3=99.96 MHz (Note 1)																		
	CC3	100	120	66	Downlink & Uplink	Low	37199.4	2232489	37151.88	2231697	0	120	23004	2232091	5	2	1 (4)	12	
						Mid	38474.4	2253739	38280	2250499	102		23078	2253403	0	5	1 (4)	222	
						High	39750	2274999	38976.72	2262111	504		23152	2274715	2	7	1 (4)	1030	
	Channel spacing CC3-CC4=99.96 MHz (Note 1)																		
	CC4	100	120	66	Downlink & Uplink	Low	37299.36	2234155	37251.84	2233363	0	120	23010	2233819	0	5	1 (4)	18	
						Mid	38574.36	2255405	38379.96	2252165	102		23084	2255131	7	7	1 (4)	226	
						High	39849.96	2276665	39076.68	2263777	504		23157	2276155	9	1	0 (0)	1010	
	Channel spacing CC4-CC5=99.96 MHz (Note 1)																		
	CC5	100	120	66	Downlink & Uplink	Low	37399.32	2235821	37351.8	2235029	0	120	23016	2235547	7	7	1 (4)	22	
						Mid	38674.32	2257071	38479.92	2253831	102		23089	2256571	2	2	0 (0)	208	
						High	39949.92	2278331	39176.64	2265443	504		23163	2277883	4	0	1 (4)	1016	
	100+100 +100+100 +100	CC1	100	120	66	Downlink & Uplink	Low	37050	2229999	37002.48	2229207	0	120	22995	2229499	2	2	0 (0)	4
Mid							38300.04	2250833	38105.64	2247593	102	23068		2250523	1	6	1 (4)	224	
High							39550.08	2271667	38776.8	2258779	504	23140		2271259	0	2	1 (4)	1020	
Channel spacing CC1-CC2=99.96 MHz (Note 1)																			
CC2		100	120	66	Downlink & Uplink	Low	37149.96	2231665	37102.44	2230873	0	120	23001	2231227	9	0	1 (4)	8	
						Mid	38400	2252499	38205.6	2249259	102		23073	2251963	8	0	0 (0)	204	
						High	39650.04	2273333	38876.76	2260445	504		23146	2272987	7	4	1 (4)	1024	
Channel spacing CC2-CC3=99.96 MHz (Note 1)																			
CC3		100	120	66	Downlink & Uplink	Low	37249.92	2233331	37202.4	2232539	0	120	23007	2232955	4	3	1 (4)	14	
						Mid	38499.96	2254165	38305.56	2250925	102		23079	2253691	3	3	0 (0)	210	
						High	39750	2274999	38976.72	2262111	504		23152	2274715	2	7	1 (4)	1030	
Channel spacing CC3-CC4=99.96 MHz (Note 1)																			
CC4		100	120	66	Downlink & Uplink	Low	37349.88	2234997	37302.36	2234205	0	120	23013	2234683	11	5	1 (4)	18	
	Mid					38599.92	2255831	38405.52	2252591	102	23085		2255419	10	1	1 (4)	214		
	High					39849.96	2276665	39076.68	2263777	504	23157		2276155	9	1	0 (0)	1010		

Channel spacing CC4-CC5=99.96 MHz (Note 1)																		
CC5	100	120	66	Downlink & Uplink	Low	37449.84	2236663	37402.32	2235871	0	120	23018	2236123	6	0	0 (0)	0	
					Mid	38699.88	2257497	38505.48	2254257	102			23091	2257147	5	4	1 (4)	220
					High	39949.92	2278331	39176.64	2265443	504			23163	2277883	4	0	1 (4)	1016
Note 1: Corresponds to nominal channel spacing in accordance with TS 38.101-2 [8], clause 5.4A.1 for the channel bandwidths of the two respective NR component carriers.																		
Note 2: CCs are specified in increasing frequency order. CC1 is used as PCell if nothing else is specified in the test case.																		
Note 3: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs.																		
Note 4: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-8 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.																		

## 4.3.1.2.3.4.10 CA\_n260K

**Table 4.3.1.2.3.4.10-1: NR Intra-Band contiguous CA configuration CA\_n260K (PCC=CC1, SCC=CC2, CC3, CC4, CC5, CC6), SCS=60 kHz, nominal channel spacing**



CBW combination	CC	CBW [MHz]	SCS [kHz]	carrier Bandwidth [PRBs]	Range		Carrier centre [MHz] Note 2	Carrier centre [ARFCN]	point A [MHz]	absolute Frequency PointA [ARFCN]	offset Carrier [Carrier PRBs]	SS block SCS [kHz]	GSCN	absolute Frequency SSB [ARFCN]	$k_{SSB}$	Offset Carrier CORE ET#0 [RBs] Note 3	CORE SET#0 Index Note 4	offset Point A (SIB1) [PRBs] Note 4	
					Downlink & Uplink	Low Mid High													
50+100 +100+100 +100+100	CC1	50	60	66	Downlink & Uplink	Low	37025.04	2229583	37001.28	2229187	0	120	22995	2229499	0	6	0 (0)	6	
						Mid	38250	2249999	38152.8	2248379	102		23066	2249947	8	0	1 (8)	110	
						High	39475.68	2270427	39089.04	2263983	504		23137	2270395	4	2	1 (8)	514	
	Channel spacing CC1-CC2=74.4 MHz (Note 1)																		
	CC2	100	60	132	Downlink & Uplink	Low	37099.44	2230823	37051.92	2230031	0	120	22998	2230363	8	7	0 (0)	7	
						Mid	38324.4	2251239	38203.44	2249223	102		23069	2250811	4	2	1 (8)	112	
						High	39550.08	2271667	39139.68	2264827	504		23140	2271259	0	4	1 (8)	516	
	Channel spacing CC2-CC3=99.96 MHz (Note 1)																		
	CC3	100	60	132	Downlink & Uplink	Low	37199.4	2232489	37151.88	2231697	0	120	23004	2232091	10	4	1 (8)	12	
						Mid	38424.36	2252905	38303.4	2250889	102		23075	2252539	6	7	1 (8)	117	
						High	39650.04	2273333	39239.64	2266493	504		23146	2272987	2	9	1 (8)	521	
	Channel spacing CC3-CC4=99.96 MHz (Note 1)																		
	CC4	100	60	132	Downlink & Uplink	Low	37299.36	2234155	37251.84	2233363	0	120	23010	2233819	0	10	1 (8)	18	
						Mid	38524.32	2254571	38403.36	2252555	102		23081	2254267	8	12	1 (8)	122	
						High	39750	2274999	39339.6	2268159	504		23152	2274715	4	14	1 (8)	526	
	Channel spacing CC4-CC5=99.96 MHz (Note 1)																		
	CC5	100	60	132	Downlink & Uplink	Low	37399.32	2235821	37351.8	2235029	0	120	23016	2235547	2	15	1 (8)	23	
						Mid	38624.28	2256237	38503.32	2254221	102		23086	2255707	10	1	0 (0)	103	
						High	39849.96	2276665	39439.56	2269825	504		23157	2276155	6	3	0 (0)	507	
	Channel spacing CC5-CC6=99.96 MHz (Note 1)																		
	CC6	100	60	132	Downlink & Uplink	Low	37499.28	2237487	37451.76	2236695	0	120	23021	2236987	4	4	0 (0)	4	
						Mid	38724.24	2257903	38603.28	2255887	102		23092	2257435	0	7	0 (0)	109	
						High	39949.92	2278331	39539.52	2271491	504		23163	2277883	8	0	1 (8)	512	
	100+100 +100+100 +100+100	CC1	100	60	132	Downlink & Uplink	Low	37050	2229999	37002.48	2229207	0	120	22995	2229499	4	4	0 (0)	4
Mid							38250	2249999	38129.04	2247983	102	23065		2249659	8	9	1 (8)	119	
High							39450.12	2270001	39039.72	2263161	504	23134		2269531	10	6	0 (0)	510	
Channel spacing CC1-CC2=99.96 MHz (Note 1)																			
CC2	100	60	132	Downlink & Uplink	Low	37149.96	2231665	37102.44	2230873	0	120	23001	2231227	6	1	1 (8)	9		
					Mid	38349.96	2251665	38229	2249649	102		23071	2251387	10	14	1 (8)	124		
					High	39550.08	2271667	39139.68	2264827	504		23140	2271259	0	4	1 (8)	516		
Channel spacing CC2-CC3=99.96 MHz (Note 1)																			
CC3	100	60	132	Downlink & Uplink	Low	37249.92	2233331	37202.4	2232539	0	120	23007	2232955	8	6	1 (8)	14		
					Mid	38449.92	2253331	38328.96	2251315	102		23076	2252827	0	4	0 (0)	106		
					High	39650.04	2273333	39239.64	2266493	504		23146	2272987	2	9	1 (8)	521		
Channel spacing CC3-CC4=99.96 MHz (Note 1)																			
CC4	100	60	132	Downlink & Uplink	Low	37349.88	2234997	37302.36	2234205	0	120	23013	2234683	10	11	1 (8)	19		
					Mid	38549.88	2254997	38428.92	2252981	102		23082	2254555	2	1	1 (8)	111		
					High	39750	2274999	39339.6	2268159	504		23152	2274715	4	14	1 (8)	526		

Channel spacing CC4-CC5=99.96 MHz (Note 1)																	
CC5	100	60	132	Downlink & Uplink	Low	37449.84	2236663	37402.32	2235871	0	120	23018	2236123	0	1	0 (0)	1
					Mid	38649.84	2256663	38528.88	2254647	102		23088	2256283	4	6	1 (8)	116
					High	39849.96	2276665	39439.56	2269825	504		23157	2276155	6	3	0 (0)	507
Channel spacing CC5-CC6=99.96 MHz (Note 1)																	
CC6	100	60	132	Downlink & Uplink	Low	37549.8	2238329	37502.28	2237537	0	120	23024	2237851	2	6	0 (0)	6
					Mid	38749.8	2258329	38628.84	2256313	102		23094	2258011	6	11	1 (8)	121
					High	39949.92	2278331	39539.52	2271491	504		23163	2277883	8	0	1 (8)	512

Note 1: Corresponds to nominal channel spacing in accordance with TS 38.101-2 [8], clause 5.4A.1 for the channel bandwidths of the two respective NR component carriers.

Note 2: CCs are specified in increasing frequency order. CC1 is used as PCell if nothing else is specified in the test case.

Note 3: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter  $\Delta F_{\text{OffsetCORESET-0-Carrier}}$  in Annex C expressed in number of common RBs.

Note 4: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-7 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcc-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.

Table 4.3.1.2.3.4.10-2: NR Intra-Band contiguous CA configuration CA\_n260K (PCC=CC1, SCC=CC2, CC3, CC4, CC5, CC6), SCS=120 kHz, nominal channel spacing

CBW combination	CC	CBW [MHz]	SCS [kHz]	carrier Bandwidth [PRBs]	Range		Carrier centre [MHz] Note 2	Carrier centre [ARFCN]	point A [MHz]	absolute Frequency Point A [ARFCN]	offset of Carrier [Carrier PRBs]	SS block SCS [kHz]	GSCN	absolute Frequency SSB [ARFCN]	$k_{SSB}$	Offset Carrier CORESET#0 [RBs] Note 3	CORE SET#0 Index (Offset [RBs]) Note 4	offset of Point A (SIB1) [PRBs] Note 4	
					Downlink & Uplink	Low Mid High													
50+100 +100+100 +100+100	CC1	50	120	32	Downlink & Uplink	Low	37025.04	2229583	37002	2229199	0	120	22995	2229499	6	2	0 (0)	4	
						Mid	38250	2249999	38080.08	2247167	102		23066	2249947	10	3	0 (0)	210	
						High	39475.68	2270427	38726.88	2257947	504		23137	2270395	8	0	1 (4)	1016	
	Channel spacing CC1-CC2=74.4 MHz (Note 1)																		
	CC2	100	120	66	Downlink & Uplink	Low	37099.44	2230823	37051.92	2230031	0	120	22998	2230363	10	3	0 (0)	6	
						Mid	38324.4	2251239	38130	2247999	102		23069	2250811	2	1	1 (4)	214	
						High	39550.08	2271667	38776.8	2258779	504		23140	2271259	0	2	1 (4)	1020	
	Channel spacing CC2-CC3=99.96 MHz (Note 1)																		
	CC3	100	120	66	Downlink & Uplink	Low	37199.4	2232489	37151.88	2231697	0	120	23004	2232091	5	2	1 (4)	12	
						Mid	38424.36	2252905	38229.96	2249665	102		23075	2252539	9	3	1 (4)	218	
						High	39650.04	2273333	38876.76	2260445	504		23146	2272987	7	4	1 (4)	1024	
	Channel spacing CC3-CC4=99.96 MHz (Note 1)																		
	CC4	100	120	66	Downlink & Uplink	Low	37299.36	2234155	37251.84	2233363	0	120	23010	2233819	0	5	1 (4)	18	
						Mid	38524.32	2254571	38329.92	2251331	102		23081	2254267	4	6	1 (4)	224	
						High	39750	2274999	38976.72	2262111	504		23152	2274715	2	7	1 (4)	1030	
	Channel spacing CC4-CC5=99.96 MHz (Note 1)																		
	CC5	100	120	66	Downlink & Uplink	Low	37399.32	2235821	37351.8	2235029	0	120	23016	2235547	7	7	1 (4)	22	
						Mid	38624.28	2256237	38429.88	2252997	102		23086	2255707	11	0	0 (0)	204	
						High	39849.96	2276665	39076.68	2263777	504		23157	2276155	9	1	0 (0)	1010	
	Channel spacing CC5-CC6=99.96 MHz (Note 1)																		
	CC6	100	120	66	Downlink & Uplink	Low	37499.28	2237487	37451.76	2236695	0	120	23021	2236987	2	2	0 (0)	4	
						Mid	38724.24	2257903	38529.84	2254663	102		23092	2257435	6	3	0 (0)	210	
						High	39949.92	2278331	39176.64	2265443	504		23163	2277883	4	0	1 (4)	1016	
	100+100 +100+100 +100+100	CC1	100	120	66	Downlink & Uplink	Low	37050	2229999	37002.48	2229207	0	120	22995	2229499	2	2	0 (0)	4
Mid							38250	2249999	38055.6	2246759	102	23065		2249659	10	4	1 (4)	220	
High							39450.12	2270001	38676.84	2257113	504	23134		2269531	5	3	0 (0)	1014	
Channel spacing CC1-CC2=99.96 MHz (Note 1)																			
CC2		100	120	66	Downlink & Uplink	Low	37149.96	2231665	37102.44	2230873	0	120	23001	2231227	9	0	1 (4)	8	
						Mid	38349.96	2251665	38155.56	2248425	102		23071	2251387	5	7	1 (4)	226	
						High	39550.08	2271667	38776.8	2258779	504		23140	2271259	0	2	1 (4)	1020	
Channel spacing CC2-CC3=99.96 MHz (Note 1)																			
CC3		100	120	66	Downlink & Uplink	Low	37249.92	2233331	37202.4	2232539	0	120	23007	2232955	4	3	1 (4)	14	
						Mid	38449.92	2253331	38255.52	2250091	102		23076	2252827	0	2	0 (0)	208	
						High	39650.04	2273333	38876.76	2260445	504		23146	2272987	7	4	1 (4)	1024	

Channel spacing CC3-CC4=99.96 MHz (Note 1)																	
CC4	100	120	66	Downlink & Uplink	Low	37349.88	2234997	37302.36	2234205	0	120	23013	2234683	11	5	1 (4)	18
					Mid	38549.88	2254997	38355.48	2251757	102		23082	2254555	7	0	1 (4)	212
					High	39750	2274999	38976.72	2262111	504		23152	2274715	2	7	1 (4)	1030
Channel spacing CC4-CC5=99.96 MHz (Note 1)																	
CC5	100	120	66	Downlink & Uplink	Low	37449.84	2236663	37402.32	2235871	0	120	23018	2236123	6	0	0 (0)	0
					Mid	38649.84	2256663	38455.44	2253423	102		23088	2256283	2	3	1 (4)	218
					High	39849.96	2276665	39076.68	2263777	504		23157	2276155	9	1	0 (0)	1010
Channel spacing CC5-CC6=99.96 MHz (Note 1)																	
CC6	100	120	66	Downlink & Uplink	Low	37549.8	2238329	37502.28	2237537	0	120	23024	2237851	1	3	0 (0)	6
					Mid	38749.8	2258329	38555.4	2255089	102		23094	2258011	9	5	1 (4)	222
					High	39949.92	2278331	39176.64	2265443	504		23163	2277883	4	0	1 (4)	1016

Note 1: Corresponds to nominal channel spacing in accordance with TS 38.101-2 [8], clause 5.4A.1 for the channel bandwidths of the two respective NR component carriers.

Note 2: CCs are specified in increasing frequency order. CC1 is used as PCell if nothing else is specified in the test case.

Note 3: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter  $\Delta F_{\text{OffsetCORESET-0-Carrier}}$  in Annex C expressed in number of common RBs.

Note 4: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-8 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.

**Table 4.3.1.2.3.4.11-1: NR Intra-Band contiguous CA configuration CA\_n260L (PCC=CC1, SCC=CC2, CC3, CC4, CC5, CC6, CC7), SCS=60 kHz, nominal channel spacing**

CBW combination	CC	CBW [MHz]	SCS [kHz]	carrier bandwidth [PRBs]	Range		Carrier centre [MHz] Note 2	Carrier centre [ARFCN]	point A [MHz]	absolute Frequency Point A [ARFCN]	offset of Carrier [Carrier PRBs]	SS block SCS [kHz]	GSCN	absolute Frequency SSB [ARFCN]	k <sub>SSB</sub>	Offset Carrier CORES ET#0 [RBs] Note 3	CORE SET#0 Index Note 4	offset of Point A (SIB1) [PRBs] Note 4	
					Downlink	Uplink													
50+100 +100+100 +100+100 +100	CC1	50	60	66	Downlink & Uplink	Low	37025.04	2229583	37001.28	2229187	0	120	22995	2229499	0	6	0 (0)	6	
						Mid	38199.96	2249165	38102.76	2247545	102	23063	2249083	2	6	0 (0)	108		
						High	39375.72	2268761	38989.08	2262317	504	23131	2268667	2	5	0 (0)	509		
	Channel spacing CC1-CC2=74.4 MHz (Note 1)																		
	CC2	100	60	132	Downlink & Uplink	Low	37099.44	2230823	37051.92	2230031	0	120	22998	2230363	8	7	0 (0)	7	
						Mid	38274.36	2250405	38153.4	2248389	102	23066	2249947	10	7	0 (0)	109		
						High	39450.12	2270001	39039.72	2263161	504	23134	2269531	10	6	0 (0)	510		
	Channel spacing CC2-CC3=99.96 MHz (Note 1)																		
	CC3	100	60	132	Downlink & Uplink	Low	37199.4	2232489	37151.88	2231697	0	120	23004	2232091	10	4	1 (8)	12	
						Mid	38374.32	2252071	38253.36	2250055	102	23072	2251675	0	5	1 (8)	115		
						High	39550.08	2271667	39139.68	2264827	504	23140	2271259	0	4	1 (8)	516		
	Channel spacing CC3-CC4=99.96 MHz (Note 1)																		
	CC4	100	60	132	Downlink & Uplink	Low	37299.36	2234155	37251.84	2233363	0	120	23010	2233819	0	10	1 (8)	18	
						Mid	38474.28	2253737	38353.32	2251721	102	23078	2253403	2	10	1 (8)	120		
						High	39650.04	2273333	39239.64	2266493	504	23146	2272987	2	9	1 (8)	521		
	Channel spacing CC4-CC5=99.96 MHz (Note 1)																		
	CC5	100	60	132	Downlink & Uplink	Low	37399.32	2235821	37351.8	2235029	0	120	23016	2235547	2	15	1 (8)	23	
						Mid	38574.24	2255403	38453.28	2253387	102	23084	2255131	4	15	1 (8)	125		
						High	39750	2274999	39339.6	2268159	504	23152	2274715	4	14	1 (8)	526		
	Channel spacing CC5-CC6=99.96 MHz (Note 1)																		
	CC6	100	60	132	Downlink & Uplink	Low	37499.28	2237487	37451.76	2236695	0	120	23021	2236987	4	4	0 (0)	4	
						Mid	38674.2	2257069	38553.24	2255053	102	23089	2256571	6	4	0 (0)	106		
						High	39849.96	2276665	39439.56	2269825	504	23157	2276155	6	3	0 (0)	507		
	Channel spacing CC6-CC7=99.96 MHz (Note 1)																		
CC7	100	60	132	Downlink & Uplink	Low	37599.24	2239153	37551.72	2238361	0	120	23027	2238715	6	1	1 (8)	9		
					Mid	38774.16	2258735	38653.2	2256719	102	23095	2258299	8	1	1 (8)	111			
					High	39949.92	2278331	39539.52	2271491	504	23163	2277883	8	0	1 (8)	512			
100+100 +100+100 +100+100 +100	CC1	100	60	132	Downlink & Uplink	Low	37050	2229999	37002.48	2229207	0	120	22995	2229499	4	4	0 (0)	4	
						Mid	38199.96	2249165	38079	2247149	102	23062	2248795	2	7	1 (8)	117		
						High	39350.16	2268335	38939.76	2261495	504	23128	2267803	8	1	0 (0)	505		
	Channel spacing CC1-CC2=99.96 MHz (Note 1)																		
	CC2	100	60	132	Downlink & Uplink	Low	37149.96	2231665	37102.44	2230873	0	120	23001	2231227	6	1	1 (8)	9	
						Mid	38299.92	2250831	38178.96	2248815	102	23068	2250523	4	12	1 (8)	122		

				Uplink	High	39450.12	2270001	39039.72	2263161	504		23134	2269531	10	6	0 (0)	510
Channel spacing CC2-CC3=99.96 MHz (Note 1)																	
CC3	100	60	132	Downlink & Uplink	Low	37249.92	2233331	37202.4	2232539	0	120	23007	2232955	8	6	1 (8)	14
					Mid	38399.88	2252497	38278.92	2250481	102		23073	2251963	6	1	0 (0)	103
					High	39550.08	2271667	39139.68	2264827	504		23140	2271259	0	4	1 (8)	516
Channel spacing CC3-CC4=99.96 MHz (Note 1)																	
CC4	100	60	132	Downlink & Uplink	Low	37349.88	2234997	37302.36	2234205	0	120	23013	2234683	10	11	1 (8)	19
					Mid	38499.84	2254163	38378.88	2252147	102		23079	2253691	8	6	0 (0)	108
					High	39650.04	2273333	39239.64	2266493	504		23146	2272987	2	9	1 (8)	521
Channel spacing CC4-CC5=99.96 MHz (Note 1)																	
CC5	100	60	132	Downlink & Uplink	Low	37449.84	2236663	37402.32	2235871	0	120	23018	2236123	0	1	0 (0)	1
					Mid	38599.8	2255829	38478.84	2253813	102		23085	2255419	10	3	1 (8)	113
					High	39750	2274999	39339.6	2268159	504		23152	2274715	4	14	1 (8)	526
Channel spacing CC5-CC6=99.96 MHz (Note 1)																	
CC6	100	60	132	Downlink & Uplink	Low	37549.8	2238329	37502.28	2237537	0	120	23024	2237851	2	6	0 (0)	6
					Mid	38699.76	2257495	38578.8	2255479	102		23091	2257147	0	9	1 (8)	119
					High	39849.96	2276665	39439.56	2269825	504		23157	2276155	6	3	0 (0)	507
Channel spacing CC6-CC7=99.96 MHz (Note 1)																	
CC7	100	60	132	Downlink & Uplink	Low	37649.76	2239995	37602.24	2239203	0	120	23030	2239579	4	3	1 (8)	11
					Mid	38799.72	2259161	38678.76	2257145	102		23097	2258875	2	14	1 (8)	124
					High	39949.92	2278331	39539.52	2271491	504		23163	2277883	8	0	1 (8)	512

Note 1: Corresponds to nominal channel spacing in accordance with TS 38.101-2 [8], clause 5.4A.1 for the channel bandwidths of the two respective NR component carriers.

Note 2: CCs are specified in increasing frequency order. CC1 is used as PCell if nothing else is specified in the test case.

Note 3: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter  $\Delta F_{\text{OffsetCORESET-0-Carrier}}$  in Annex C expressed in number of common RBs.

Note 4: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-7 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.

Table 4.3.1.2.3.4.11-2: NR Intra-Band contiguous CA configuration CA\_n260L (PCC=CC1, SCC=CC2, CC3, CC4, CC5, CC6, CC7), SCS=120 kHz, nominal channel spacing

CBW combination	CC	CBW [MHz]	SCS [kHz]	carrier Bandwidth [PRBs]	Range		Carrier centre [MHz] Note 2	Carrier centre [ARFCN]	point A [MHz]	absolute Frequency Point A [ARFCN]	offset to Carrier [Carrier PRBs]	SS block SCS [kHz]	GSCN	absolute Frequency SSB [ARFCN]	k <sub>SSB</sub>	Offset Carrier CORESET#0 [RBs] Note 3	CORE SET#0 Index (Offset [RBs]) Note 4	offset to Point A (SIB1) [PRBs] Note 4	
					Downlink & Uplink	Low Mid High													
50+100 +100+100 +100+100 +100	CC1	50	120	32	Downlink & Uplink	Low	37025.04	2229583	37002	2229199	0	120	22995	2229499	6	2	0 (0)	4	
						Mid	38199.96	2249165	38030.04	2246333	102		23063	2249083	7	2	0 (0)	208	
						High	39375.72	2268761	38626.92	2256281	504		23131	2268667	1	2	0 (0)	1012	
	Channel spacing CC1-CC2=74.4 MHz (Note 1)																		
	CC2	100	120	66	Downlink & Uplink	Low	37099.44	2230823	37051.92	2230031	0	120	22998	2230363	10	3	0 (0)	6	
						Mid	38274.36	2250405	38079.96	2247165	102		23066	2249947	11	3	0 (0)	210	
						High	39450.12	2270001	38676.84	2257113	504		23134	2269531	5	3	0 (0)	1014	
	Channel spacing CC2-CC3=99.96 MHz (Note 1)																		
	CC3	100	120	66	Downlink & Uplink	Low	37199.4	2232489	37151.88	2231697	0	120	23004	2232091	5	2	1 (4)	12	
						Mid	38374.32	2252071	38179.92	2248831	102		23072	2251675	6	2	1 (4)	216	
						High	39550.08	2271667	38776.8	2258779	504		23140	2271259	0	2	1 (4)	1020	
	Channel spacing CC3-CC4=99.96 MHz (Note 1)																		
	CC4	100	120	66	Downlink & Uplink	Low	37299.36	2234155	37251.84	2233363	0	120	23010	2233819	0	5	1 (4)	18	
						Mid	38474.28	2253737	38279.88	2250497	102		23078	2253403	1	5	1 (4)	222	
						High	39650.04	2273333	38876.76	2260445	504		23146	2272987	7	4	1 (4)	1024	
	Channel spacing CC4-CC5=99.96 MHz (Note 1)																		
	CC5	100	120	66	Downlink & Uplink	Low	37399.32	2235821	37351.8	2235029	0	120	23016	2235547	7	7	1 (4)	22	
						Mid	38574.24	2255403	38379.84	2252163	102		23084	2255131	8	7	1 (4)	226	
						High	39750	2274999	38976.72	2262111	504		23152	2274715	2	7	1 (4)	1030	
	Channel spacing CC5-CC6=99.96 MHz (Note 1)																		
	CC6	100	120	66	Downlink & Uplink	Low	37499.28	2237487	37451.76	2236695	0	120	23021	2236987	2	2	0 (0)	4	
						Mid	38674.2	2257069	38479.8	2253829	102		23089	2256571	3	2	0 (0)	208	
						High	39849.96	2276665	39076.68	2263777	504		23157	2276155	9	1	0 (0)	1010	
	Channel spacing CC6-CC7=99.96 MHz (Note 1)																		
CC7	100	120	66	Downlink & Uplink	Low	37599.24	2239153	37551.72	2238361	0	120	23027	2238715	9	0	1 (4)	8		
					Mid	38774.16	2258735	38579.76	2255495	102		23095	2258299	10	0	1 (4)	212		
					High	39949.92	2278331	39176.64	2265443	504		23163	2277883	4	0	1 (4)	1016		
100+100 +100+100 +100+100 +100	CC1	100	120	66	Downlink & Uplink	Low	37050	2229999	37002.48	2229207	0	120	22995	2229499	2	2	0 (0)	4	
						Mid	38199.96	2249165	38005.56	2245925	102		23062	2248795	7	3	1 (4)	218	
						High	39350.16	2268335	38576.88	2255447	504		23128	2267803	10	0	0 (0)	1008	
	Channel spacing CC1-CC2=99.96 MHz (Note 1)																		
	CC2	100	120	66	Downlink & Uplink	Low	37149.96	2231665	37102.44	2230873	0	120	23001	2231227	9	0	1 (4)	8	
Mid						38299.92	2250831	38105.52	2247591	102	23068		2250523	2	6	1 (4)	224		
High						39450.12	2270001	38676.84	2257113	504	23134		2269531	5	3	0 (0)	1014		

Channel spacing CC2-CC3=99.96 MHz (Note 1)																	
CC3	100	120	66	Downlink & Uplink	Low	37249.92	2233331	37202.4	2232539	0	120	23007	2232955	4	3	1 (4)	14
					Mid	38399.88	2252497	38205.48	2249257	102		23073	2251963	9	0	0 (0)	204
					High	39550.08	2271667	38776.8	2258779	504		23140	2271259	0	2	1 (4)	1020
Channel spacing CC3-CC4=99.96 MHz (Note 1)																	
CC4	100	120	66	Downlink & Uplink	Low	37349.88	2234997	37302.36	2234205	0	120	23013	2234683	11	5	1 (4)	18
					Mid	38499.84	2254163	38305.44	2250923	102		23079	2253691	4	3	0 (0)	210
					High	39650.04	2273333	38876.76	2260445	504		23146	2272987	7	4	1 (4)	1024
Channel spacing CC4-CC5=99.96 MHz (Note 1)																	
CC5	100	120	66	Downlink & Uplink	Low	37449.84	2236663	37402.32	2235871	0	120	23018	2236123	6	0	0 (0)	0
					Mid	38599.8	2255829	38405.4	2252589	102		23085	2255419	11	1	1 (4)	214
					High	39750	2274999	38976.72	2262111	504		23152	2274715	2	7	1 (4)	1030
Channel spacing CC5-CC6=99.96 MHz (Note 1)																	
CC6	100	120	66	Downlink & Uplink	Low	37549.8	2238329	37502.28	2237537	0	120	23024	2237851	1	3	0 (0)	6
					Mid	38699.76	2257495	38505.36	2254255	102		23091	2257147	6	4	1 (4)	220
					High	39849.96	2276665	39076.68	2263777	504		23157	2276155	9	1	0 (0)	1010
Channel spacing CC6-CC7=99.96 MHz (Note 1)																	
CC7	100	120	66	Downlink & Uplink	Low	37649.76	2239995	37602.24	2239203	0	120	23030	2239579	8	1	1 (4)	10
					Mid	38799.72	2259161	38605.32	2255921	102		23097	2258875	1	7	1 (4)	226
					High	39949.92	2278331	39176.64	2265443	504		23163	2277883	4	0	1 (4)	1016

Note 1: Corresponds to nominal channel spacing in accordance with TS 38.101-2 [8], clause 5.4A.1 for the channel bandwidths of the two respective NR component carriers.

Note 2: CCs are specified in increasing frequency order. CC1 is used as PCell if nothing else is specified in the test case.

Note 3: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter  $\Delta F_{\text{OffsetCORESET-0-Carrier}}$  in Annex C expressed in number of common RBs.

Note 4: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-8 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcc-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.



**Table 4.3.1.2.3.4.12-1: NR Intra-Band contiguous CA configuration CA\_n260M (PCC=CC1, SCC=CC2, CC3, CC4, CC5, CC6, CC7, CC8), SCS=60 kHz, nominal channel spacing**

CBW combination	CC	CBW [MHz]	SCS [kHz]	carrier Bandwidth [PRBs]	Range		Carrier centre [MHz] Note 2	Carrier centre [ARFCN]	point A [MHz]	absolute Frequency Point A [ARFCN]	offset of Carrier [Carrier PRBs]	SS block SCS [kHz]	GSCN	absolute Frequency SSB [ARFCN]	$k_{SSB}$	Offset Carrier CORES ET#0 [RBs] Note 3	CORE SET#0 Index Note 4	offset of Point A (SIB1) [PRBs] Note 4	
					Downlink & Uplink	Low Mid High													
50+100 +100+100 +100+100 +100+100	CC1	50	60	66	Downlink & Uplink	Low	37025.04	2229583	37001.28	2229187	0	120	22995	2229499	0	6	0 (0)	6	
						Mid	38149.92	2248331	38052.72	2246711	102		23060	2248219	8	3	0 (0)	105	
						High	39275.76	2267095	38889.12	2260651	504		23125	2266939	0	0	0 (0)	504	
	Channel spacing CC1-CC2=74.4 MHz (Note 1)																		
	CC2	100	60	132	Downlink & Uplink	Low	37099.44	2230823	37051.92	2230031	0	120	22998	2230363	8	7	0 (0)	7	
						Mid	38224.32	2249571	38103.36	2247555	102		23063	2249083	4	5	0 (0)	107	
						High	39350.16	2268335	38939.76	2261495	504		23128	2267803	8	1	0 (0)	505	
	Channel spacing CC2-CC3=99.96 MHz (Note 1)																		
	CC3	100	60	132	Downlink & Uplink	Low	37199.4	2232489	37151.88	2231697	0	120	23004	2232091	10	4	1 (8)	12	
						Mid	38324.28	2251237	38203.32	2249221	102		23069	2250811	6	2	1 (8)	112	
						High	39450.12	2270001	39039.72	2263161	504		23134	2269531	10	6	0 (0)	510	
	Channel spacing CC3-CC4=99.96 MHz (Note 1)																		
	CC4	100	60	132	Downlink & Uplink	Low	37299.36	2234155	37251.84	2233363	0	120	23010	2233819	0	10	1 (8)	18	
						Mid	38424.24	2252903	38303.28	2250887	102		23075	2252539	8	7	1 (8)	117	
						High	39550.08	2271667	39139.68	2264827	504		23140	2271259	0	4	1 (8)	516	
	Channel spacing CC4-CC5=99.96 MHz (Note 1)																		
	CC5	100	60	132	Downlink & Uplink	Low	37399.32	2235821	37351.8	2235029	0	120	23016	2235547	2	15	1 (8)	23	
						Mid	38524.2	2254569	38403.24	2252553	102		23081	2254267	10	12	1 (8)	122	
						High	39650.04	2273333	39239.64	2266493	504		23146	2272987	2	9	1 (8)	521	
	Channel spacing CC5-CC6=99.96 MHz (Note 1)																		
	CC6	100	60	132	Downlink & Uplink	Low	37499.28	2237487	37451.76	2236695	0	120	23021	2236987	4	4	0 (0)	4	
						Mid	38624.16	2256235	38503.2	2254219	102		23086	2255707	0	2	0 (0)	104	
						High	39750	2274999	39339.6	2268159	504		23152	2274715	4	14	1 (8)	526	
	Channel spacing CC6-CC7=99.96 MHz (Note 1)																		
CC7	100	60	132	Downlink & Uplink	Low	37599.24	2239153	37551.72	2238361	0	120	23027	2238715	6	1	1 (8)	9		
					Mid	38724.12	2257901	38603.16	2255885	102		23092	2257435	2	7	0 (0)	109		
					High	39849.96	2276665	39439.56	2269825	504		23157	2276155	6	3	0 (0)	507		
Channel spacing CC7-CC8=99.96 MHz (Note 1)																			
CC8	100	60	132	Downlink & Uplink	Low	37699.2	2240819	37651.68	2240027	0	120	23033	2240443	8	6	1 (8)	N/A		
					Mid	38824.08	2259567	38703.12	2257551	102		23098	2259163	4	4	1 (8)	114		
					High	39949.92	2278331	39539.52	2271491	504		23163	2277883	8	0	1 (8)	512		
100+100 +100+100	CC1	100	60	132	Downlink & Uplink	Low	37050	2229999	37002.48	2229207	0	120	22995	2229499	4	4	0 (0)	4	
						Mid	38149.92	2248331	38028.96	2246315	102		23059	2247931	8	4	1 (8)	114	

+100+100				Uplink	High	39250.2	2266669	38839.8	2259829	504		23123	2266363	6	12	1 (8)	524
+100+100	Channel spacing CC1-CC2=99.96 MHz (Note 1)																
CC2	100	60	132	Downlink & Uplink	Low	37149.96	2231665	37102.44	2230873	0	120	23001	2231227	6	1	1 (8)	9
					Mid	38249.88	2249997	38128.92	2247981	102		23065	2249659	10	9	1 (8)	119
					High	39350.16	2268335	38939.76	2261495	504		23128	2267803	8	1	0 (0)	505
Channel spacing CC2-CC3=99.96 MHz (Note 1)																	
CC3	100	60	132	Downlink & Uplink	Low	37249.92	2233331	37202.4	2232539	0	120	23007	2232955	8	6	1 (8)	14
					Mid	38349.84	2251663	38228.88	2249647	102		23071	2251387	0	15	1 (8)	125
					High	39450.12	2270001	39039.72	2263161	504		23134	2269531	10	6	0 (0)	510
Channel spacing CC3-CC4=99.96 MHz (Note 1)																	
CC4	100	60	132	Downlink & Uplink	Low	37349.88	2234997	37302.36	2234205	0	120	23013	2234683	10	11	1 (8)	19
					Mid	38449.8	2253329	38328.84	2251313	102		23076	2252827	2	4	0 (0)	106
					High	39550.08	2271667	39139.68	2264827	504		23140	2271259	0	4	1 (8)	516
Channel spacing CC4-CC5=99.96 MHz (Note 1)																	
CC5	100	60	132	Downlink & Uplink	Low	37449.84	2236663	37402.32	2235871	0	120	23018	2236123	0	1	0 (0)	1
					Mid	38549.76	2254995	38428.8	2252979	102		23082	2254555	4	1	1 (8)	111
					High	39650.04	2273333	39239.64	2266493	504		23146	2272987	2	9	1 (8)	521
Channel spacing CC5-CC6=99.96 MHz (Note 1)																	
CC6	100	60	132	Downlink & Uplink	Low	37549.8	2238329	37502.28	2237537	0	120	23024	2237851	2	6	0 (0)	6
					Mid	38649.72	2256661	38528.76	2254645	102		23088	2256283	6	6	1 (8)	116
					High	39750	2274999	39339.6	2268159	504		23152	2274715	4	14	1 (8)	526
Channel spacing CC6-CC7=99.96 MHz (Note 1)																	
CC7	100	60	132	Downlink & Uplink	Low	37649.76	2239995	37602.24	2239203	0	120	23030	2239579	4	3	1 (8)	11
					Mid	38749.68	2258327	38628.72	2256311	102		23094	2258011	8	11	1 (8)	121
					High	39849.96	2276665	39439.56	2269825	504		23157	2276155	6	3	0 (0)	507
Channel spacing CC7-CC8=99.96 MHz (Note 1)																	
CC8	100	60	132	Downlink & Uplink	Low	37749.72	2241661	37702.2	2240869	0	120	23036	2241307	6	8	1 (8)	N/A
					Mid	38849.64	2259993	38728.68	2257977	102		23099	2259451	10	0	0 (0)	102
					High	39949.92	2278331	39539.52	2271491	504		23163	2277883	8	0	1 (8)	512

Note 1: Corresponds to nominal channel spacing in accordance with TS 38.101-2 [8], clause 5.4A.1 for the channel bandwidths of the two respective NR component carriers.

Note 2: CCs are specified in increasing frequency order. CC1 is used as PCell if nothing else is specified in the test case.

Note 3: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter  $\Delta F_{\text{OffsetCORESET-0-Carrier}}$  in Annex C expressed in number of common RBs.

Note 4: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-7 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.

Table 4.3.1.2.3.4.12-2: NR Intra-Band contiguous CA configuration CA\_n260M (PCC=CC1, SCC=CC2, CC3, CC4, CC5, CC6, CC7, CC8), SCS=120 kHz, nominal channel spacing

CBW combination	CC	CBW [MHz]	SCS [kHz]	carrier Bandwidth [PRBs]	Range		Carrier centre [MHz] Note 2	Carrier centre [ARFCN]	point A [MHz]	absolute Frequency Point A [ARFCN]	offset of Carrier [Carrier PRBs]	SS block SCS [kHz]	GSCN	absolute Frequency SSB [ARFCN]	k <sub>SSB</sub>	Offset Carrier CORESET#0 [RBs] Note 3	CORE SET#0 Index (Offset [RBs]) Note 4	offset of Point A (SIB1) [PRBs] Note 4	
					Downlink	Uplink													
50+100 +100+100 +100+100 +100+100	CC1	50	120	32	Downlink & Uplink	Low	37025.04	2229583	37002	2229199	0	120	22995	2229499	6	2	0 (0)	4	
						Mid	38150.04	2248333	37980.12	2245501	102		23060	2248219	3	1	0 (0)	206	
						High	39275.76	2267095	38526.96	2254615	504		23126	2267227	6	7	1 (4)	1030	
	Channel spacing CC1-CC2=74.4 MHz (Note 1)																		
	CC2	100	120	66	Downlink & Uplink	Low	37099.44	2230823	37051.92	2230031	0	120	22998	2230363	10	3	0 (0)	6	
						Mid	38224.44	2249573	38030.04	2246333	102		23063	2249083	7	2	0 (0)	208	
						High	39350.16	2268335	38576.88	2255447	504		23128	2267803	10	0	0 (0)	1008	
	Channel spacing CC2-CC3=99.96 MHz (Note 1)																		
	CC3	100	120	66	Downlink & Uplink	Low	37199.4	2232489	37151.88	2231697	0	120	23004	2232091	5	2	1 (4)	12	
						Mid	38324.4	2251239	38130	2247999	102		23069	2250811	2	1	1 (4)	214	
						High	39450.12	2270001	38676.84	2257113	504		23134	2269531	5	3	0 (0)	1014	
	Channel spacing CC3-CC4=99.96 MHz (Note 1)																		
	CC4	100	120	66	Downlink & Uplink	Low	37299.36	2234155	37251.84	2233363	0	120	23010	2233819	0	5	1 (4)	18	
						Mid	38424.36	2252905	38229.96	2249665	102		23075	2252539	9	3	1 (4)	218	
						High	39550.08	2271667	38776.8	2258779	504		23140	2271259	0	2	1 (4)	1020	
	Channel spacing CC4-CC5=99.96 MHz (Note 1)																		
	CC5	100	120	66	Downlink & Uplink	Low	37399.32	2235821	37351.8	2235029	0	120	23016	2235547	7	7	1 (4)	22	
						Mid	38524.32	2254571	38329.92	2251331	102		23081	2254267	4	6	1 (4)	224	
						High	39650.04	2273333	38876.76	2260445	504		23146	2272987	7	4	1 (4)	1024	
	Channel spacing CC5-CC6=99.96 MHz (Note 1)																		
	CC6	100	120	66	Downlink & Uplink	Low	37499.28	2237487	37451.76	2236695	0	120	23021	2236987	2	2	0 (0)	4	
						Mid	38624.28	2256237	38429.88	2252997	102		23086	2255707	11	0	0 (0)	204	
						High	39750	2274999	38976.72	2262111	504		23152	2274715	2	7	1 (4)	1030	
	Channel spacing CC6-CC7=99.96 MHz (Note 1)																		
CC7	100	120	66	Downlink & Uplink	Low	37599.24	2239153	37551.72	2238361	0	120	23027	2238715	9	0	1 (4)	8		
					Mid	38724.24	2257903	38529.84	2254663	102		23092	2257435	6	3	0 (0)	210		
					High	39849.96	2276665	39076.68	2263777	504		23157	2276155	9	1	0 (0)	1010		
Channel spacing CC7-CC8=99.96 MHz (Note 1)																			
CC8	100	120	66	Downlink & Uplink	Low	37699.2	2240819	37651.68	2240027	0	120	23033	2240443	4	3	1 (4)	N/A		
					Mid	38824.2	2259569	38629.8	2256329	102		23098	2259163	1	2	1 (4)	216		
					High	39949.92	2278331	39176.64	2265443	504		23163	2277883	4	0	1 (4)	1016		
100+100 +100+100 +100+100	CC1	100	120	66	Downlink & Uplink	Low	37050	2229999	37002.48	2229207	0	120	22995	2229499	2	2	0 (0)	4	
						Mid	38150.04	2248333	37955.64	2245093	102		23059	2247931	3	2	1 (4)	216	
						High	39250.2	2266669	38476.92	2253781	504		23123	2266363	3	6	1 (4)	1028	

+100+100

Channel spacing CC1-CC2=99.96 MHz (Note 1)																	
CC2	100	120	66	Downlink & Uplink	Low	37149.96	2231665	37102.44	2230873	0	120	23001	2231227	9	0	1 (4)	8
					Mid	38250	2249999	38055.6	2246759	102		23065	2249659	10	4	1 (4)	220
					High	39350.16	2268335	38576.88	2255447	504		23128	2267803	10	0	0 (0)	1008
Channel spacing CC2-CC3=99.96 MHz (Note 1)																	
CC3	100	120	66	Downlink & Uplink	Low	37249.92	2233331	37202.4	2232539	0	120	23007	2232955	4	3	1 (4)	14
					Mid	38349.96	2251665	38155.56	2248425	102		23071	2251387	5	7	1 (4)	226
					High	39450.12	2270001	38676.84	2257113	504		23134	2269531	5	3	0 (0)	1014
Channel spacing CC3-CC4=99.96 MHz (Note 1)																	
CC4	100	120	66	Downlink & Uplink	Low	37349.88	2234997	37302.36	2234205	0	120	23013	2234683	11	5	1 (4)	18
					Mid	38449.92	2253331	38255.52	2250091	102		23076	2252827	0	2	0 (0)	208
					High	39550.08	2271667	38776.8	2258779	504		23140	2271259	0	2	1 (4)	1020
Channel spacing CC4-CC5=99.96 MHz (Note 1)																	
CC5	100	120	66	Downlink & Uplink	Low	37449.84	2236663	37402.32	2235871	0	120	23018	2236123	6	0	0 (0)	0
					Mid	38549.88	2254997	38355.48	2251757	102		23082	2254555	7	0	1 (4)	212
					High	39650.04	2273333	38876.76	2260445	504		23146	2272987	7	4	1 (4)	1024
Channel spacing CC5-CC6=99.96 MHz (Note 1)																	
CC6	100	120	66	Downlink & Uplink	Low	37549.8	2238329	37502.28	2237537	0	120	23024	2237851	1	3	0 (0)	6
					Mid	38649.84	2256663	38455.44	2253423	102		23088	2256283	2	3	1 (4)	218
					High	39750	2274999	38976.72	2262111	504		23152	2274715	2	7	1 (4)	1030
Channel spacing CC6-CC7=99.96 MHz (Note 1)																	
CC7	100	120	66	Downlink & Uplink	Low	37649.76	2239995	37602.24	2239203	0	120	23030	2239579	8	1	1 (4)	10
					Mid	38749.8	2258329	38555.4	2255089	102		23094	2258011	9	5	1 (4)	222
					High	39849.96	2276665	39076.68	2263777	504		23157	2276155	9	1	0 (0)	1010
Channel spacing CC7-CC8=99.96 MHz (Note 1)																	
CC8	100	120	66	Downlink & Uplink	Low	37749.72	2241661	37702.2	2240869	0	120	23036	2241307	3	4	1 (4)	N/A
					Mid	38849.76	2259995	38655.36	2256755	102		23099	2259451	4	0	0 (0)	204
					High	39949.92	2278331	39176.64	2265443	504		23163	2277883	4	0	1 (4)	1016

Note 1: Corresponds to nominal channel spacing in accordance with TS 38.101-2 [8], clause 5.4A.1 for the channel bandwidths of the two respective NR component carriers.

Note 2: CCs are specified in increasing frequency order. CC1 is used as PCell if nothing else is specified in the test case.

Note 3: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter  $\Delta F_{\text{OffsetCORESET-0-Carrier}}$  in Annex C expressed in number of common RBs.

Note 4: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-8 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.

Table 4.3.1.2.3.4.13-1: NR Intra-Band contiguous CA configuration CA\_n2600 (PCC=CC1 and SCC=CC2), SCS=60 kHz, nominal channel spacing

CBW combination	CC	CBW [MHz]	SCS [kHz]	carrier Bandwidth [PRBs]	Range	Carrier centre [MHz] Note 2	Carrier centre [ARFCN]	point A [MHz]	absolute Frequency PointA [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS [kHz]	GSCN	absolute Frequency SSB [ARFCN]	$k_{SSB}$	Offset Carrier CORESET#0 [RBs] Note 3	CORESET#0 Index (Offset [RBs]) Note 4	offsetToPointA (SIB1) [PRBs] Note 4	
50+100	CC1 CC2	50 100	60	66 132	Downlink & Uplink	Low, Mid, High	Same values as for Low, Mid, High range in Table 4.3.1.2.3.4.6-1 for CBW combination 50+100, CC1, CC2 and SCS=60 kHz.											
100+50	CC1	100	60	132	Downlink & Uplink	Low	37050	2229999	37002.48	2229207	0	120	22995	2229499	4	4	0 (0)	4
						Mid	38475	2253749	38354.04	2251733	102		23078	2253403	2	9	1 (8)	119
						High	39900.6	2277509	39490.2	2270669	504		23160	2277019	2	5	0 (0)	509
	Channel spacing CC1-CC2=74.4 MHz (Note 1)																	
100+100	CC1 CC2	100 100	60	132 132	Downlink & Uplink	Low	37124.4	2231239	37100.64	2230843	0	120	23001	2231227	0	4	1 (8)	12
						Mid	38549.4	2254989	38452.2	2253369	102		23083	2254843	10	0	0 (0)	102
						High	39975	2278749	39588.36	2272305	504		23166	2278747	10	4	1 (8)	516
100+100	CC1 CC2	100 100	60	132 132	Downlink & Uplink	Low, Mid, High	Same values as for Low, Mid, High range in Table 4.3.1.2.3.4.6-1 for CBW combination 100+100, CC1, CC2 and SCS=60 kHz.											
<p>Note 1: Corresponds to nominal channel spacing in accordance with TS 38.101-2 [8], clause 5.4A.1 for the channel bandwidths of the two respective NR component carriers.</p> <p>Note 2: CCs are specified in increasing frequency order. CC1 is used as PCell if nothing else is specified in the test case.</p> <p>Note 3: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter <math>\Delta F_{\text{OffsetCORESET-0-Carrier}}</math> in Annex C expressed in number of common RBs.</p> <p>Note 4: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-7 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcc-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.</p>																		

Table 4.3.1.2.3.4.13-2: NR Intra-Band contiguous CA configuration CA\_n2600 (PCC=CC1 and SCC=CC2), SCS=120 kHz, nominal channel spacing

CBW combination	CC	CBW [MHz]	SCS [kHz]	carrier Bandwidth [PRBs]	Range	Carrier centre [MHz] Note 2	Carrier centre [ARFCN]	point A [MHz]	absolute Frequency PointA [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS [kHz]	GSCN	absolute Frequency SSB [ARFCN]	$k_{SSB}$	Offset Carrier CORESET#0 [RBs] Note 3	CORESET#0 Index (Offset [RBs]) Note 4	offsetToPoint A (SIB1) [PRBs] Note 4	
50+100	CC1 CC2	50 100	120	32 66	Downlink & Uplink	Same values as for Low, Mid, High range in Table 4.3.1.2.3.4.6-2 for CBW combination 50+100, CC1, CC2 and SCS=120 kHz.												
100+50	CC1	100	120	66	Downlink & Uplink	Low	37050	2229999	37002.48	2229207	0	120	22995	2229499	2	2	0 (0)	4
						Mid	38475	2253749	38280.6	2250509	102		23078	2253403	7	4	1 (4)	220
						High	39900.6	2277509	39127.32	2264621	504		23160	2277019	7	2	0 (0)	1012
	Channel spacing CC1-CC2=74.4 MHz (Note 1)																	
CC2	50	120	32	Downlink & Uplink	Low	37124.4	2231239	37101.36	2230855	0	120	23001	2231227	6	1	1 (4)	10	
					Mid	38549.4	2254989	38379.48	2252157	102		23084	2255131	11	7	1 (4)	226	
					High	39975	2278749	39226.2	2266269	504		23166	2278747	11	1	1 (4)	1018	
100+100	CC1 CC2	100 100	120	66 66	Downlink & Uplink	Same values as for Low, Mid, High range in Table 4.3.1.2.3.4.6-2 for CBW combination 100+100, CC1, CC2 and SCS=120 kHz.												

Note 1: Corresponds to nominal channel spacing in accordance with TS 38.101-2 [8], clause 5.4A.1 for the channel bandwidths of the two respective NR component carriers.

Note 2: CCs are specified in increasing frequency order. CC1 is used as PCell if nothing else is specified in the test case.

Note 3: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter  $\Delta F_{\text{OffsetCORESET-0-Carrier}}$  in Annex C expressed in number of common RBs.

Note 4: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-8 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcc-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.

Table 4.3.1.2.3.4.14-1: NR Intra-Band contiguous CA configuration CA\_n260P (PCC=CC1 and SCC=CC2, CC3), SCS=60 kHz, nominal channel spacing

CBW combination	CC	CBW [MHz]	SCS [kHz]	carrier Bandwidth [PRBs]	Range		Carrier centre [MHz] Note 2	Carrier centre [ARFCN]	point A [MHz]	absolute Frequency Point A [ARFCN]	offset to Carrier [Carrier PRBs]	SS block SCS [kHz]	GSCN	absolute Frequency SSB [ARFCN]	k <sub>SSB</sub>	Offset Carrier CORESET#0 [RBs] Note 3	CORE SET#0 Index (Offset [RBs]) Note 4	offset to Point A (SIB1) [PRBs] Note 4	
					Downlink & Uplink	Low Mid High													
50+50+50	CC1	50	60	66	Downlink & Uplink	Low	37025.04	2229583	37001.28	2229187	0	120	22995	2229499	0	6	0 (0)	6	
						Mid	38449.92	2253331	38352.72	2251711	102		23078	2253403	0	11	1 (8)	121	
						High	39875.16	2277085	39488.52	2270641	504		23160	2277019	6	7	0 (0)	511	
	Channel spacing CC1-CC2=49.92 MHz (Note 1)																		
	CC2	50	60	66	Downlink & Uplink	Low	37074.96	2230415	37051.2	2230019	0	120	22998	2230363	8	0	1 (8)	8	
						Mid	38499.84	2254163	38402.64	2252543	102		23081	2254267	8	13	1 (8)	123	
						High	39925.08	2277917	39538.44	2271473	504		23163	2277883	2	2	1 (8)	514	
	Channel spacing CC2-CC3=49.92 MHz (Note 1)																		
	CC3	50	60	66	Downlink & Uplink	Low	37124.88	2231247	37101.12	2230851	0	120	23001	2231227	4	3	1 (8)	11	
						Mid	38549.76	2254995	38452.56	2253375	102		23083	2254843	4	0	0 (0)	102	
						High	39975	2278749	39588.36	2272305	504		23166	2278747	10	4	1 (8)	516	
	50+50+100	CC1	50	60	66	Downlink & Uplink	Low	37025.04	2229583	37001.28	2229187	0	120	22995	2229499	0	6	0 (0)	6
Mid							38424.96	2252915	38327.76	2251295	102	23076		2252827	8	5	0 (0)	107	
High							39825.6	2276259	39438.96	2269815	504	23157		2276155	4	4	0 (0)	508	
Channel spacing CC1-CC2=49.92 MHz (Note 1)																			
CC2		50	60	66	Downlink & Uplink	Low	37074.96	2230415	37051.2	2230019	0	120	22998	2230363	8	0	1 (8)	8	
						Mid	38474.88	2253747	38377.68	2252127	102		23079	2253691	4	0	1 (8)	110	
						High	39875.52	2277091	39488.88	2270647	504		23160	2277019	0	7	0 (0)	511	
Channel spacing CC2-CC3=74.4 MHz (Note 1)																			
CC3		100	60	132	Downlink & Uplink	Low	37149.36	2231655	37101.84	2230863	0	120	23001	2231227	4	2	1 (8)	10	
						Mid	38549.28	2254987	38428.32	2252971	102		23082	2254555	0	2	1 (8)	112	
						High	39949.92	2278331	39539.52	2271491	504		23163	2277883	8	0	1 (8)	512	
50+100+50		CC1	50	60	66	Downlink & Uplink	Low	37025.04	2229583	37001.28	2229187	0	120	22995	2229499	0	6	0 (0)	6
	Mid						38424.96	2252915	38327.76	2251295	102	23076		2252827	8	5	0 (0)	107	
	High						39826.2	2276269	39439.56	2269825	504	23157		2276155	6	3	0 (0)	507	
	Channel spacing CC1-CC2=74.4 MHz (Note 1)																		
	CC2	100	60	132	Downlink & Uplink	Low	37099.44	2230823	37051.92	2230031	0	120	22998	2230363	8	7	0 (0)	7	
						Mid	38499.36	2254155	38378.4	2252139	102		23079	2253691	4	7	0 (0)	109	
						High	39900.6	2277509	39490.2	2270669	50		23160	2277019	2	5	0 (0)	509	
	Channel spacing CC2-CC3=74.4 MHz (Note 1)																		
	CC3	50	60	66	Downlink & Uplink	Low	37173.84	2232063	37150.08	2231667	0	120	23004	2232091	4	7	1 (8)	15	
						Mid	38573.76	2255395	38476.56	2253775	102		23085	2255419	0	7	1 (8)	117	
						High	39975	2278749	39588.36	2272305	504		23166	2278747	10	4	1 (8)	516	

50+100 +100	CC1	50	60	66	Downlink & Uplink	Low	37025.04	2229583	37001.28	2229187	0	120	22995	2229499	0	6	0 (0)	6	
						Mid	38400	2252499	38302.8	2250879	102		23075	2252539	4	8	1 (8)	118	
						High	39775.56	2275425	39388.92	2268981	504		23154	2275291	10	1	0 (0)	505	
	Channel spacing CC1-CC2=74.4 MHz (Note 1)																		
	CC2	100	60	132	Downlink & Uplink	Low	37099.44	2230823	37051.92	2230031	0	120	22998	2230363	8	7	0 (0)	7	
						Mid	38474.4	2253739	38353.44	2251723	102		23078	2253403	0	10	1 (8)	120	
						High	39849.96	2276665	39439.56	2269825	504		23157	2276155	6	3	0 (0)	507	
	Channel spacing CC2-CC3=99.96 MHz (Note 1)																		
	CC3	100	60	132	Downlink & Uplink	Low	37199.4	2232489	37151.88	2231697	0	120	23004	2232091	10	4	1 (8)	12	
						Mid	38574.36	2255405	38453.4	2253389	102		23084	2255131	2	15	1 (8)	125	
						High	39949.92	2278331	39539.52	2271491	504		23163	2277883	8	0	1 (8)	512	
	100+50 +50	CC1	100	60	132	Downlink & Uplink	Low	37050	2229999	37002.48	2229207	0	120	22995	2229499	4	4	0 (0)	4
Mid							38449.92	2253331	38328.96	2251315	102	23076		2252827	0	4	0 (0)	106	
High							39850.68	2276677	39440.28	2269837	504	23157		2276155	6	2	0 (0)	506	
Channel spacing CC1-CC2=74.4 MHz (Note 1)																			
CC2		50	60	66	Downlink & Uplink	Low	37124.4	2231239	37100.64	2230843	0	120	23001	2231227	0	4	1 (8)	12	
						Mid	38524.32	2254571	38427.12	2252951	102		23082	2254555	8	3	1 (8)	113	
						High	39925.08	2277917	39538.44	2271473	504		23163	2277883	2	2	1 (8)	514	
Channel spacing CC2-CC3=49.92 MHz (Note 1)																			
CC3		50	60	66	Downlink & Uplink	Low	37174.32	2232071	37150.56	2231675	0	120	23004	2232091	8	6	1 (8)	14	
						Mid	38574.24	2255403	38477.04	2253783	102		23085	2255419	4	6	1 (8)	116	
						High	39975	2278749	39588.36	2272305	504		23166	2278747	10	4	1 (8)	516	
100+50 +100		CC1	100	60	132	Downlink & Uplink	Low	37050	2229999	37002.48	2229207	0	120	22995	2229499	4	4	0 (0)	4
	Mid						38424.96	2252915	38304	2250899	102	23075		2252539	8	6	1 (8)	116	
	High						39801.12	2275851	39390.72	2269011	504	23155		2275579	4	15	1 (8)	527	
	Channel spacing CC1-CC2=74.4 MHz (Note 1)																		
	CC2	50	60	66	Downlink & Uplink	Low	37124.4	2231239	37100.64	2230843	0	120	23001	2231227	0	4	1 (8)	12	
						Mid	38499.36	2254155	38402.16	2252535	102		23081	2254267	4	14	1 (8)	124	
						High	39875.52	2277091	39488.88	2270647	504		23160	2277019	0	7	0 (0)	511	
	Channel spacing CC2-CC3=74.4 MHz (Note 1)																		
	CC3	100	60	132	Downlink & Uplink	Low	37198.8	2232479	37151.28	2231687	0	120	23004	2232091	8	5	1 (8)	13	
						Mid	38573.76	2255395	38452.8	2253379	102		23083	2254843	0	0	0 (0)	102	
						High	39949.92	2278331	39539.52	2271491	504		23163	2277883	8	0	1 (8)	512	
	100+100 +50	CC1	100	60	132	Downlink & Uplink	Low	37050	2229999	37002.48	2229207	0	120	22995	2229499	4	4	0 (0)	4
Mid							38424.96	2252915	38304	2250899	102	23075		2252539	8	6	1 (8)	116	
High							39800.64	2275843	39390.24	2269003	504	23154		2275291	0	0	0 (0)	504	
Channel spacing CC1-CC2=99.96 MHz (Note 1)																			
CC2		100	60	132	Downlink & Uplink	Low	37149.96	2231665	37102.44	2230873	0	120	23001	2231227	6	1	1 (8)	9	
						Mid	38524.92	2254581	38403.96	2252565	102		23081	2254267	10	11	1 (8)	121	
						High	39900.6	2277509	39490.2	2270669	504		23160	2277019	2	5	0 (0)	509	
Channel spacing CC2-CC3=74.4 MHz (Note 1)																			
CC3		50	60	66	Downlink & Uplink	Low	37224.36	2232905	37200.6	2232509	0	120	23007	2232955	2	9	1 (8)	17	
						Mid	38599.32	2255821	38502.12	2254201	102		23086	2255707	6	3	0 (0)	105	
						High	39975	2278749	39588.36	2272305	504		23166	2278747	10	4	1 (8)	516	



100+100 +100	CC1 CC2 CC3	100 100 100	60	132 132 132	Downlink & Uplink	Low, Mid, High	Same values as for Low, Mid, High range in Table 4.3.1.2.3.4.7-1 for CBW combination 100+100+100, CC1, CC2, CC3 and SCS=60 kHz.
<p>Note 1: Corresponds to nominal channel spacing in accordance with TS 38.101-2 [8], clause 5.4A.1 for the channel bandwidths of the two respective NR component carriers.</p> <p>Note 2: CCs are specified in increasing frequency order. CC1 is used as PCell if nothing else is specified in the test case.</p> <p>Note 3: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter <math>\Delta F_{\text{OffsetCORESET-0-Carrier}}</math> in Annex C expressed in number of common RBs.</p> <p>Note 4: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-7 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.</p>							

Table 4.3.1.2.3.4.14-2: NR Intra-Band contiguous CA configuration CA\_n260P (PCC=CC1 and SCC=CC2, CC3), SCS=120 kHz, nominal channel spacing

CBW combination	CC	CBW [MHz]	SCS [kHz]	carrier Bandwidth [PRBs]	Range		Carrier centre [MHz] Note 2	Carrier centre [ARFCN]	point A [MHz]	absolute Frequency Point A [ARFCN]	offset to Carrier [Carrier PRBs]	SS block SCS [kHz]	GSCN	absolute Frequency SSB [ARFCN]	k <sub>SSB</sub>	Offset Carrier CORESET#0 [RBs] Note 3	CORE SET#0 Index (Offset [RBs]) Note 4	offset to Point A (SIB1) [PRBs] Note 4	
					Downlink & Uplink	Low Mid High													
50+50+50	CC1	50	120	32	Downlink & Uplink	Low	37025.04	2229583	37002	2229199	0	120	22995	2229499	6	2	0 (0)	4	
						Mid	38450.04	2253333	38280.12	2250501	102		23078	2253403	11	4	1 (4)	220	
						High	39875.16	2277085	39126.36	2264605	504		23160	2277019	3	3	0 (0)	1014	
	Channel spacing CC1-CC2=49.92 MHz (Note 1)																		
	CC2	50	120	32	Downlink & Uplink	Low	37074.96	2230415	37051.92	2230031	0	120	22998	2230363	10	3	0 (0)	6	
						Mid	38499.96	2254165	38330.04	2251333	102		23081	2254267	3	6	1 (4)	224	
						High	39925.08	2277917	39176.28	2265437	504		23163	2277883	7	0	1 (4)	1016	
	Channel spacing CC2-CC3=49.92 MHz (Note 1)																		
	CC3	50	120	32	Downlink & Uplink	Low	37124.88	2231247	37101.84	2230863	0	120	23001	2231227	2	1	1 (4)	10	
						Mid	38549.88	2254997	38379.96	2252165	102		23084	2255131	7	7	1 (4)	226	
						High	39975	2278749	39226.2	2266269	504		23166	2278747	11	1	1 (4)	1018	
	50+50+100	CC1	50	120	32	Downlink & Uplink	Low	37025.04	2229583	37002	2229199	0	120	22995	2229499	6	2	0 (0)	4
Mid							38424.96	2252915	38255.04	2250083	102	23076		2252827	4	2	0 (0)	208	
High							39825.6	2276259	39076.8	2263779	504	23157		2276155	8	1	0 (0)	1010	
Channel spacing CC1-CC2=49.92 MHz (Note 1)																			
CC2		50	120	32	Downlink & Uplink	Low	37074.96	2230415	37051.92	2230031	0	120	22998	2230363	10	3	0 (0)	6	
						Mid	38474.88	2253747	38304.96	2250915	102		23079	2253691	8	3	0 (0)	210	
						High	39875.52	2277091	39126.72	2264611	504		23160	2277019	0	3	0 (0)	1014	
Channel spacing CC2-CC3=74.4 MHz (Note 1)																			
CC3		100	120	66	Downlink & Uplink	Low	37149.36	2231655	37101.84	2230863	0	120	23001	2231227	2	1	1 (4)	10	
						Mid	38549.28	2254987	38354.88	2251747	102		23082	2254555	0	1	1 (4)	214	
						High	39949.92	2278331	39176.64	2265443	504		23163	2277883	4	0	1 (4)	1016	
50+100+50		CC1	50	120	32	Downlink & Uplink	Low	37025.04	2229583	37002	2229199	0	120	22995	2229499	6	2	0 (0)	4
	Mid						38424.96	2252915	38255.04	2250083	102	23076		2252827	4	2	0 (0)	208	
	High						39826.2	2276269	39077.4	2263789	504	23157		2276155	3	1	0 (0)	1010	
	Channel spacing CC1-CC2=74.4 MHz (Note 1)																		
	CC2	100	120	66	Downlink & Uplink	Low	37099.44	2230823	37051.92	2230031	0	120	22998	2230363	10	3	0 (0)	6	
						Mid	38499.36	2254155	38304.96	2250915	102		23079	2253691	8	3	0 (0)	210	
						High	39900.6	2277509	39127.32	2264621	504		23160	2277019	7	2	0 (0)	1012	
	Channel spacing CC2-CC3=74.4 MHz (Note 1)																		
	CC3	50	120	32	Downlink & Uplink	Low	37173.84	2232063	37150.8	2231679	0	120	23004	2232091	2	3	1 (4)	14	
						Mid	38573.76	2255395	38403.84	2252563	102		23085	2255419	0	3	1 (4)	218	
						High	39975	2278749	39226.2	2266269	504		23166	2278747	11	1	1 (4)	1018	
	50+100+100	CC1	50	120	32	Downlink & Uplink	Low	37025.04	2229583	37002	2229199	0	120	22995	2229499	6	2	0 (0)	4
Mid							38400	2252499	38230.08	2249667	102	23075		2252539	8	3	1 (4)	218	

				Uplink	High	39775.56	2275425	39026.76	2262945	504		23154	2275291	5	0	0 (0)	1008	
Channel spacing CC1-CC2=74.4 MHz (Note 1)																		
CC2	100	120	66	Downlink & Uplink	Low	37099.44	2230823	37051.92	2230031	0	120	22998	2230363	10	3	0 (0)	6	
					Mid	38474.4	2253739	38280	2250499	102		23078	2253403	0	5	1 (4)	222	
					High	39849.96	2276665	39076.68	2263777	504		23157	2276155	9	1	0 (0)	1010	
Channel spacing CC2-CC3=99.96 MHz (Note 1)																		
CC3	100	120	66	Downlink & Uplink	Low	37199.4	2232489	37151.88	2231697	0	120	23004	2232091	5	2	1 (4)	12	
					Mid	38574.36	2255405	38379.96	2252165	102		23084	2255131	7	7	1 (4)	226	
					High	39949.92	2278331	39176.64	2265443	504		23163	2277883	4	0	1 (4)	1016	
100+50+50	CC1	100	120	66	Downlink & Uplink	Low	37050	2229999	37002.48	2229207	0	120	22995	2229499	2	2	0 (0)	4
						Mid	38450.04	2253333	38255.64	2250093	102		23076	2252827	11	1	0 (0)	206
						High	39850.68	2276677	39077.4	2263789	504		23157	2276155	3	1	0 (0)	1010
Channel spacing CC1-CC2=74.4 MHz (Note 1)																		
CC2	50	120	32	Downlink & Uplink	Low	37124.4	2231239	37101.36	2230855	0	120	23001	2231227	6	1	1 (4)	10	
					Mid	38524.44	2254573	38354.52	2251741	102		23082	2254555	3	1	1 (4)	214	
					High	39925.08	2277917	39176.28	2265437	504		23163	2277883	7	0	1 (4)	1016	
Channel spacing CC2-CC3=49.92 MHz (Note 1)																		
CC3	50	120	32	Downlink & Uplink	Low	37174.32	2232071	37151.28	2231687	0	120	23004	2232091	10	2	1 (4)	12	
					Mid	38574.36	2255405	38404.44	2252573	102		23085	2255419	7	2	1 (4)	216	
					High	39975	2278749	39226.2	2266269	504		23166	2278747	11	1	1 (4)	1018	
100+50+100	CC1	100	120	66	Downlink & Uplink	Low	37050	2229999	37002.48	2229207	0	120	22995	2229499	2	2	0 (0)	4
						Mid	38424.96	2252915	38230.56	2249675	102		23075	2252539	4	3	1 (4)	218
						High	39801.12	2275851	39027.84	2262963	504		23155	2275579	8	7	1 (4)	1030
Channel spacing CC1-CC2=74.4 MHz (Note 1)																		
CC2	50	120	32	Downlink & Uplink	Low	37124.4	2231239	37101.36	2230855	0	120	23001	2231227	6	1	1 (4)	10	
					Mid	38499.36	2254155	38329.44	2251323	102		23081	2254267	8	6	1 (4)	224	
					High	39875.52	2277091	39126.72	2264611	504		23160	2277019	0	3	0 (0)	1014	
Channel spacing CC2-CC3=74.4 MHz (Note 1)																		
CC3	100	120	66	Downlink & Uplink	Low	37198.8	2232479	37151.28	2231687	0	120	23004	2232091	10	2	1 (4)	12	
					Mid	38573.76	2255395	38379.36	2252155	102		23083	2254843	0	0	0 (0)	204	
					High	39949.92	2278331	39176.64	2265443	504		23163	2277883	4	0	1 (4)	1016	
100+100+50	CC1	100	120	66	Downlink & Uplink	Low	37050	2229999	37002.48	2229207	0	120	22995	2229499	2	2	0 (0)	4
						Mid	38424.96	2252915	38230.56	2249675	102		23075	2252539	4	3	1 (4)	218
						High	39800.64	2275843	39027.36	2262955	504		23154	2275291	0	0	0 (0)	1008
Channel spacing CC1-CC2=99.96 MHz (Note 1)																		
CC2	100	120	66	Downlink & Uplink	Low	37149.96	2231665	37102.44	2230873	0	120	23001	2231227	9	0	1 (4)	8	
					Mid	38524.92	2254581	38330.52	2251341	102		23081	2254267	11	5	1 (4)	222	
					High	39900.6	2277509	39127.32	2264621	504		23160	2277019	7	2	0 (0)	1012	
Channel spacing CC2-CC3=74.4 MHz (Note 1)																		
CC3	50	120	32	Downlink & Uplink	Low	37224.36	2232905	37201.32	2232521	0	120	23007	2232955	1	4	1 (4)	16	
					Mid	38599.32	2255821	38429.4	2252989	102		23086	2255707	3	1	0 (0)	206	
					High	39975	2278749	39226.2	2266269	504		23166	2278747	11	1	1 (4)	1018	
100+100+100	CC1 CC2	100 100	120 66	66 66	Downlink & Uplink	Low, Mid,	Same values as for Low, Mid, High range in Table 4.3.1.2.3.4.7-2 for CBW combination 100+100+100, CC1, CC2, CC3 and SCS=120 kHz.											

	CC3	100		66	Uplink	High	
Note 1:	Corresponds to nominal channel spacing in accordance with TS 38.101-2 [8], clause 5.4A.1 for the channel bandwidths of the two respective NR component carriers.						
Note 2:	CCs are specified in increasing frequency order. CC1 is used as PCell if nothing else is specified in the test case.						
Note 3:	The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs.						
Note 4:	The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-8 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.						

4.3.1.2.3.4.15 CA\_n260Q

FFS

4.3.1.2.3.5 NR Intra-band contiguous CA configurations for CA\_n261

4.3.1.2.3.5.1 CA\_n261B

**Editor's note:** CBW=400 MHz for NR band n261 is only supported by for SCS 120kHz. Test frequencies for CA\_n261B are currently limited to SCS 120kHz for all CCs.  
Test frequencies for mixed numerologies between CCs is FFS.

Table 4.3.1.2.3.5.1-1: NR Intra-Band contiguous CA configuration CA\_n261B (PCC=CC1 and SCC=CC2), SCS=120 kHz, nominal channel spacing

CBW combination	CC	CBW [MHz]	SCS [kHz]	carrierBandwidth [PRBs]	Range	Carrier centre [MHz] Note 2	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequencyPointA [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS [kHz]	GSCN	absoluteFrequencySSB [ARFCN]	$k_{SSB}$	Offset Carrier CORESET#0 [RBs] Note 3	CORE SET#0 Index Note 4	offsetToPointA (SIB1) [PRBs] Note 4	
50+400	CC1	50	120	32	Downlink & Uplink	Low	27525	2071249	27501.96	2070865	0	120	22446	2071387	9	7	1 (4)	22
						Mid	27725.04	2074583	27555.12	2071751	102		22457	2074555	10	0	1 (4)	212
						High	27933	2078049	27184.2	2065569	504		22469	2078011	5	0	1 (4)	1016
Channel spacing CC1-CC2=216.96 MHz (Note 1)																		
100+400	CC2	400	120	264	Downlink & Uplink	Low	27741.96	2074865	27551.88	2071697	0	120	22448	2071963	1	1	0 (0)	2
						Mid	27942	2078199	27605.04	2072583	102		22460	2075419	2	2	1 (4)	216
						High	28149.96	2081665	27234.12	2066401	504		22472	2078875	9	1	1 (4)	1018
100+400	CC1	100	120	66	Downlink & Uplink	Low	27550.08	2071667	27502.56	2070875	0	120	22446	2071387	4	7	1 (4)	22
						Mid	27725.04	2074583	27530.64	2071343	102		22456	2074267	10	5	1 (4)	222
						High	27907.44	2077623	27134.16	2064735	504		22466	2077147	2	3	0 (0)	1014
Channel spacing CC1-CC2=242.52 MHz (Note 1)																		
200+400	CC2	400	120	264	Downlink & Uplink	Low	27792.6	2075709	27602.52	2072541	0	120	22451	2072827	11	1	0 (0)	2
						Mid	27967.56	2078625	27630.6	2073009	102		22461	2075707	5	0	0 (0)	204
						High	28149.96	2081665	27234.12	2066401	504		22472	2078875	9	1	1 (4)	1018
200+400	CC1	200	120	132	Downlink & Uplink	Low	27600	2072499	27504.96	2070915	0	120	22446	2071387	8	5	1 (4)	18
						Mid	27725.04	2074583	27483.12	2070551	102		22453	2073403	10	2	1 (4)	216
						High	27855	2076749	27034.2	2063069	504		22460	2075419	7	0	0 (0)	1008
Channel spacing CC1-CC2=294.96 MHz (Note 1)																		
400+400	CC2	400	120	264	Downlink & Uplink	Low	27894.96	2077415	27704.88	2074247	0	120	22457	2074555	10	2	0 (0)	4
						Mid	28020	2079499	27683.04	2073883	102		22464	2076571	0	0	0 (0)	204
						High	28149.96	2081665	27234.12	2066401	504		22472	2078875	9	1	1 (4)	1018
400+400	CC1	400	120	264	Downlink & Uplink	Low	27700.08	2074167	27510	2070999	0	120	22446	2071387	2	2	1 (4)	12
						Mid	27725.04	2074583	27388.08	2068967	102		22447	2071675	10	0	0 (0)	204
						High	27750	2074999	26834.16	2059735	504		22449	2072251	6	3	1 (4)	1022
Channel spacing CC1-CC2=399.96 MHz (Note 1)																		
400+400	CC2	400	120	264	Downlink & Uplink	Low	28100.04	2080833	27909.96	2077665	0	120	22469	2078011	5	0	1 (4)	8
						Mid	28125	2081249	27788.04	2075633	102		22471	2078587	1	7	1 (4)	226
						High	28149.96	2081665	27234.12	2066401	504		22472	2078875	9	1	1 (4)	1018

Note 1: Corresponds to nominal channel spacing in accordance with TS 38.101-2 [8], clause 5.4A.1 for the channel bandwidths of the two respective NR component carriers.  
 Note 2: CCs are specified in increasing frequency order. CC1 is used as PCell if nothing else is specified in the test case.  
 Note 3: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter  $\Delta F_{\text{OffsetCORESET-0-Carrier}}$  in Annex C expressed in number of common RBs.  
 Note 4: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-8 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcc-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.

## 4.3.1.2.3.5.2 CA\_n261C

Editor's note: CBW=400 MHz for NR band n261 is only supported by for SCS 120kHz. Test frequencies for CA\_n261C are currently limited to SCS 120kHz for all CCs. Test frequencies for mixed numerologies between CCs is FFS.

Table 4.3.1.2.3.5.2-1: NR Intra-Band contiguous CA configuration CA\_n261C (PCC=CC1 and SCC=CC2, CC3), SCS=120 kHz, nominal channel spacing

CBW combination	CC	CBW [MHz]	SCS [kHz]	carrier Band width [PRBs]	Range	Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absoluteF reque ncy PointA [ARFCN]	offset ToCar rier [Carrier PRBs]	SS block SCS [kHz]	GSCN	absoluteF reque ncy SSB [ARFCN]	$k_{SSB}$	Offset Carrier CORE SET#0 [RBs]	CORE SET#0 Index (Offset [RBs])	offset ToPoi ntA (SIB1) [PRBs]		
50+400 +400	CC1	50	120	32	Downlink & Uplink	Low	27525	2071249	27501.96	2070865	0	120	22446	2071387	9	7	1 (4)	22	
						Mid	27525	2071249	27355.08	2068417	102		22446	2071387	9	7	1 (4)	226	
						High	27533.04	2071383	26784.24	2058903	504		22446	2071387	2	2	1 (4)	1020	
	Channel spacing CC1-CC2=216.96 MHz (Note 1)																		
	CC2	400	120	264	Downlink & Uplink	Low	27741.96	2074865	27551.88	2071697	0	120	22448	2071963	1	1	0 (0)	2	
						Mid	27741.96	2074865	27405	2069249	102		22448	2071963	1	1	0 (0)	206	
						High	27750	2074999	26834.16	2059735	504		22449	2072251	6	3	1 (4)	1022	
	Channel spacing CC2-CC3=399.96 MHz (Note 1)																		
	CC3	400	120	264	Downlink & Uplink	Low	28141.92	2081531	27951.84	2078363	0	120	22472	2078875	4	7	1 (4)	22	
						Mid	28141.92	2081531	27804.96	2075915	102		22472	2078875	4	7	1 (4)	226	
						High	28149.96	2081665	27234.12	2066401	504		22472	2078875	9	1	1 (4)	1018	
	Note 1:	Corresponds to nominal channel spacing in accordance with TS 38.101-2 [8], clause 5.4A.1 for the channel bandwidths of the two respective NR component carriers.																	
Note 2:	CCs are specified in increasing frequency order. CC1 is used as PCell if nothing else is specified in the test case.																		
Note 3:	The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs.																		
Note 4:	The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-8 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.																		

Table 4.3.1.2.3.5.3-1: NR Intra-Band contiguous CA configuration CA\_n261D (PCC=CC1 and SCC=CC2), SCS=60 kHz, nominal channel spacing

CBW combination	CC	CBW [MHz]	SCS [kHz]	carrier bandwidth [PRBs]	Range	Carrier centre [MHz] Note 2	Carrier centre [ARFCN]	point A [MHz]	absolute frequency PointA [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS [kHz]	GSCN	absolute frequency SSB [ARFCN]	$k_{SSB}$	Offset Carrier CORESET#0 [RBs] Note 3	CORE SET#0 Index (Offset [RBs]) Note 4	offsetToPointA (SIB1) [PRBs] Note 4		
50+200	CC1	50	60	66	Downlink & Uplink	Low	27525	2071249	27501.24	2070853	0	120	22446	2071387	6	16	1 (8)	24	
						Mid	27825	2076249	27727.8	2074629	102		22463	2076283	10	7	1 (8)	117	
						High	28128	2081299	27741.36	2074855	504		22480	2081179	0	3	0 (0)	507	
	Channel spacing CC1-CC2=121.92 MHz (Note 1)																		
	CC2	200	60	264	Downlink & Uplink	Low	27646.92	2073281	27551.88	2071697	0	120	22448	2071963	2	2	0 (0)	2	
						Mid	27946.92	2078281	27778.44	2075473	102		22466	2077147	6	9	1 (8)	119	
						High	28249.92	2083331	27792	2075699	504		22483	2082043	8	4	0 (0)	508	
	100+200	CC1	100	60	132	Downlink & Uplink	Low	27550.08	2071667	27502.56	2070875	0	120	22446	2071387	8	14	1 (8)	22
							Mid	27825	2076249	27704.04	2074233	102		22461	2075707	10	0	0 (0)	102
							High	28102.44	2080873	27692.04	2074033	504		22478	2080603	6	15	1 (8)	527
Channel spacing CC1-CC2=147.48 MHz (Note 1)																			
CC2		200	60	264	Downlink & Uplink	Low	27697.56	2074125	27602.52	2072541	0	120	22451	2072827	10	3	0 (0)	3	
						Mid	27972.48	2078707	27804	2075899	102		22467	2077435	0	6	0 (0)	108	
						High	28249.92	2083331	27792	2075699	504		22483	2082043	8	4	0 (0)	508	
200+200		CC1	200	60	264	Downlink & Uplink	Low	27600	2072499	27504.96	2070915	0	120	22446	2071387	4	11	1 (8)	19
							Mid	27825	2076249	27656.52	2073441	102		22459	2075131	10	10	1 (8)	120
							High	28050	2079999	27592.08	2072367	504		22472	2078875	4	10	1 (8)	522
	Channel spacing CC1-CC2=199.92 MHz (Note 1)																		
	CC2	200	60	264	Downlink & Uplink	Low	27799.92	2075831	27704.88	2074247	0	120	22457	2074555	8	5	0 (0)	5	
						Mid	28024.92	2079581	27856.44	2076773	102		22470	2078299	2	5	0 (0)	107	
						High	28249.92	2083331	27792	2075699	504		22483	2082043	8	4	0 (0)	508	

Note 1: Corresponds to nominal channel spacing in accordance with TS 38.101-2 [8], clause 5.4A.1 for the channel bandwidths of the two respective NR component carriers.

Note 2: CCs are specified in increasing frequency order. CC1 is used as PCell if nothing else is specified in the test case.

Note 3: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter  $\Delta F_{\text{OffsetCORESET-0-Carrier}}$  in Annex C expressed in number of common RBs.

Note 4: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-7 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcc-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.

Table 4.3.1.2.3.5.3-2: NR Intra-Band contiguous CA configuration CA\_n261D (PCC=CC1 and SCC=CC2), SCS=120 kHz, nominal channel spacing

CBW combination	CC	CBW [MHz]	SCS [kHz]	carrier bandwidth [PRBs]	Range		Carrier centre [MHz] Note 2	Carrier centre [ARFCN]	point A [MHz]	absolute frequency PointA [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS [kHz]	GSCN	absolute frequency SSB [ARFCN]	k <sub>SSB</sub>	Offset Carrier CORESET#0 [RBs] Note 3	CORESET#0 Index (Offset [RBs]) Note 4	offsetToPointA (SIB1) [PRBs] Note 4	
					Downlink & Uplink	Low Mid High													
50+200	CC1	50	120	32	Downlink & Uplink	Low	27525	2071249	27501.96	2070865	0	120	22446	2071387	9	7	1 (4)	22	
						Mid	27825	2076249	27655.08	2073417	102		22463	2076283	5	3	1 (4)	218	
						High	28128	2081299	27379.2	2068819	504		22480	2081179	0	1	0 (0)	1010	
	Channel spacing CC1-CC2=121.92 MHz (Note 1)																		
	CC2	200	120	132	Downlink & Uplink	Low	27646.92	2073281	27551.88	2071697	0	120	22448	2071963	1	1	0 (0)	2	
						Mid	27946.92	2078281	27705	2074249	102		22466	2077147	9	4	1 (4)	220	
						High	28249.92	2083331	27429.12	2069651	504		22483	2082043	4	2	0 (0)	1012	
	100+200	CC1	100	120	66	Downlink & Uplink	Low	27550.08	2071667	27502.56	2070875	0	120	22446	2071387	4	7	1 (4)	22
							Mid	27825	2076249	27630.6	2073009	102		22461	2075707	5	0	0 (0)	204
							High	28102.44	2080873	27329.16	2067985	504		22478	2080603	9	7	1 (4)	1030
Channel spacing CC1-CC2=147.48 MHz (Note 1)																			
CC2		200	120	132	Downlink & Uplink	Low	27697.56	2074125	27602.52	2072541	0	120	22451	2072827	11	1	0 (0)	2	
						Mid	27972.48	2078707	27730.56	2074675	102		22467	2077435	0	3	0 (0)	210	
						High	28249.92	2083331	27429.12	2069651	504		22483	2082043	4	2	0 (0)	1012	
200+200		CC1	200	120	132	Downlink & Uplink	Low	27600	2072499	27504.96	2070915	0	120	22446	2071387	8	5	1 (4)	18
							Mid	27825	2076249	27583.08	2072217	102		22459	2075131	5	5	1 (4)	222
							High	28050	2079999	27229.2	2066319	504		22472	2078875	2	5	1 (4)	1026
	Channel spacing CC1-CC2=199.92 MHz (Note 1)																		
	CC2	200	120	132	Downlink & Uplink	Low	27799.92	2075831	27704.88	2074247	0	120	22457	2074555	10	2	0 (0)	4	
						Mid	28024.92	2079581	27783	2075549	102		22470	2078299	7	2	0 (0)	208	
						High	28249.92	2083331	27429.12	2069651	504		22483	2082043	4	2	0 (0)	1012	

Note 1: Corresponds to nominal channel spacing in accordance with TS 38.101-2 [8], clause 5.4A.1 for the channel bandwidths of the two respective NR component carriers.  
 Note 2: CCs are specified in increasing frequency order. CC1 is used as PCell if nothing else is specified in the test case.  
 Note 3: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter ΔF<sub>OffsetCORESET-0-Carrier</sub> in Annex C expressed in number of common RBs.  
 Note 4: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-8 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcc-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.

4.3.1.2.3.5.4 CA\_n261E

Table 4.3.1.2.3.5.4-1: NR Intra-Band contiguous CA configuration CA\_n261E (PCC=CC1 and SCC=CC2), SCS=60 kHz, nominal channel spacing.

FFS



**Table 4.3.1.2.3.5.4-2: NR Intra-Band contiguous CA configuration CA\_n261E (PCC=CC1 and SCC=CC2), SCS=120 kHz, nominal channel spacing.**

FFS

4.3.1.2.3.5.5 CA\_n261F

**Table 4.3.1.2.3.5.5-1: NR Intra-Band contiguous CA configuration CA\_n261F (PCC=CC1 and SCC=CC2), SCS=60 kHz, nominal channel spacing.**

FFS

**Table 4.3.1.2.3.5.5-2: NR Intra-Band contiguous CA configuration CA\_n261F (PCC=CC1 and SCC=CC2), SCS=120 kHz, nominal channel spacing.**

FFS

Table 4.3.1.2.3.5.6-1: NR Intra-Band contiguous CA configuration CA\_n261G (PCC=CC1 and SCC=CC2), SCS=60 kHz, nominal channel spacing

CBW combination	CC	CBW [MHz]	SCS [kHz]	carrier Bandwidth [PRBs]	Range	Carrier centre [MHz] Note 2	Carrier centre [ARFCN]	point A [MHz]	absolute Frequency PointA [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS [kHz]	GSCN	absolute Frequency SSB [ARFCN]	$k_{SSB}$	Offset Carrier CORESET#0 [RBs] Note 3	CORESET#0 Index (Offset [RBs]) Note 4	offsetToPointA (SIB1) [PRBs] Note 4		
50+100	CC1	50	60	66	Downlink & Uplink	Low	27525	2071249	27501.24	2070853	0	120	22446	2071387	6	16	1 (8)	24	
						Mid	27874.92	2077081	27777.72	2075461	102		22466	2077147	6	10	1 (8)	120	
						High	28225.56	2082925	27838.92	2076481	504		22486	2082907	6	3	1 (8)	515	
					Channel spacing CC1-CC2=74.4 MHz (Note 1)														
	CC2	100	60	132	Downlink & Uplink	Low	27599.4	2072489	27551.88	2071697	0	120	22448	2071963	2	2	0 (0)	2	
						Mid	27949.32	2078321	27828.36	2076305	102		22469	2078011	2	12	1 (8)	122	
						High	28299.96	2084165	27889.56	2077325	504		22489	2083771	2	5	1 (8)	517	
	100+100	CC1	100	60	132	Downlink & Uplink	Low	27550.08	2071667	27502.56	2070875	0	120	22446	2071387	8	14	1 (8)	22
							Mid	27874.92	2077081	27753.96	2075065	102		22464	2076571	6	3	0 (0)	105
							High	28200	2082499	27789.6	2075659	504		22483	2082043	0	0	1 (8)	512
Channel spacing CC1-CC2=99.96 MHz (Note 1)																			
CC2		100	60	132	Downlink & Uplink	Low	27650.04	2073333	27602.52	2072541	0	120	22451	2072827	10	3	0 (0)	3	
						Mid	27974.88	2078747	27853.92	2076731	102		22470	2078299	8	0	1 (8)	110	
						High	28299.96	2084165	27889.56	2077325	504		22489	2083771	2	5	1 (8)	517	
Note 1: Corresponds to nominal channel spacing in accordance with TS 38.101-2 [8], clause 5.4A.1 for the channel bandwidths of the two respective NR component carriers.																			
Note 2: CCs are specified in increasing frequency order. CC1 is used as PCell if nothing else is specified in the test case.																			
Note 3: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs.																			
Note 4: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-7 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.																			

Table 4.3.1.2.3.5.6-2: NR Intra-Band contiguous CA configuration CA\_n261G (PCC=CC1 and SCC=CC2), SCS=120 kHz, nominal channel spacing

CBW combination	CC	CBW [MHz]	SCS [kHz]	carrier Bandwidth [PRBs]	Range	Carrier centre [MHz] Note 2	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequency PointA [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS [kHz]	GSCN	absoluteFrequency SSB [ARFCN]	$k_{SSB}$	Offset Carrier CORESET#0 [RBs] Note 3	CORE SET#0 Index (Offset [RBs]) Note 4	offsetToPoint A (SIB1) [PRBs] Note 4		
50+100	CC1	50	120	32	Downlink & Uplink	Low	27525	2071249	27501.96	2070865	0	120	22446	2071387	9	7	1 (4)	22	
						Mid	27875.04	2077083	27705.12	2074251	102		22466	2077147	8	4	1 (4)	220	
						High	28225.56	2082925	27476.76	2070445	504		22486	2082907	3	1	1 (4)	1018	
	Channel spacing CC1-CC2=74.4 MHz (Note 1)																		
	CC2	100	120	66	Downlink & Uplink	Low	27599.4	2072489	27551.88	2071697	0	120	22448	2071963	1	1	0 (0)	2	
						Mid	27949.44	2078323	27755.04	2075083	102		22469	2078011	0	6	1 (4)	224	
						High	28299.96	2084165	27526.68	2071277	504		22489	2083771	7	2	1 (4)	1020	
	100+100	CC1	100	120	66	Downlink & Uplink	Low	27550.08	2071667	27502.56	2070875	0	120	22446	2071387	4	7	1 (4)	22
							Mid	27875.04	2077083	27680.64	2073843	102		22464	2076571	8	1	0 (0)	206
							High	28200	2082499	27426.72	2069611	504		22483	2082043	0	0	1 (4)	1016
Channel spacing CC1-CC2=99.96 MHz (Note 1)																			
CC2		100	120	66	Downlink & Uplink	Low	27650.04	2073333	27602.52	2072541	0	120	22451	2072827	11	1	0 (0)	2	
						Mid	27975	2078749	27780.6	2075509	102		22470	2078299	3	0	1 (4)	212	
						High	28299.96	2084165	27526.68	2071277	504		22489	2083771	7	2	1 (4)	1020	

Note 1: Corresponds to nominal channel spacing in accordance with TS 38.101-2 [8], clause 5.4A.1 for the channel bandwidths of the two respective NR component carriers.

Note 2: CCs are specified in increasing frequency order. CC1 is used as PCell if nothing else is specified in the test case.

Note 3: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter  $\Delta F_{\text{OffsetCORESET-0-Carrier}}$  in Annex C expressed in number of common RBs.

Note 4: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-8 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.

Table 4.3.1.2.3.5.7-1: NR Intra-Band contiguous CA configuration CA\_n261H (PCC=CC1 and SCC=CC2, CC3), SCS=60 kHz, nominal channel spacing

CBW combination	CC	CBW [MHz]	SCS [kHz]	carrier bandwidth [PRBs]	Range	Carrier centre [MHz] Note 2	Carrier centre [ARFCN]	point A [MHz]	absolute Frequency Point A [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS [kHz]	GSCN	absolute Frequency SSB [ARFCN]	$k_{SSB}$	Offset Carrier CORESET#0 [RBs] Note 3	CORESET#0 Index (Offset [RBs]) Note 4	offsetToPoint A (SIB1) [PRBs] Note 4		
50+100+100	CC1	50	60	66	Downlink & Uplink	Low	27525	2071249	27501.24	2070853	0	120	22446	2071387	6	16	1 (8)	24	
						Mid	27825	2076249	27727.8	2074629	102		22463	2076283	10	7	1 (8)	117	
						High	28125.6	2081259	27738.96	2074815	504		22480	2081179	4	6	0 (0)	510	
	Channel spacing CC1-CC2=74.4 MHz (Note 1)																		
	CC2	100	60	132	Downlink & Uplink	Low	27599.4	2072489	27551.88	2071697	0	120	22448	2071963	2	2	0 (0)	2	
						Mid	27899.4	2077489	27778.44	2075473	102		22466	2077147	6	9	1 (8)	119	
						High	28200	2082499	27789.6	2075659	504		22483	2082043	0	0	1 (8)	512	
	Channel spacing CC2-CC3=99.96 MHz (Note 1)																		
	CC3	100	60	132	Downlink & Uplink	Low	27699.36	2074155	27651.84	2073363	0	120	22454	2073691	4	7	0 (0)	7	
						Mid	27999.36	2079155	27878.4	2077139	102		22472	2078875	8	14	1 (8)	124	
						High	28299.96	2084165	27889.56	2077325	504		22489	2083771	2	5	1 (8)	517	
	100+100+100	CC1	100	60	132	Downlink & Uplink	Low	27550.08	2071667	27502.56	2070875	0	120	22446	2071387	8	14	1 (8)	22
Mid							27825	2076249	27704.04	2074233	102	22461		2075707	10	0	0 (0)	102	
High							28100.04	2080833	27689.64	2073993	504	22477		2080315	10	2	0 (0)	506	
Channel spacing CC1-CC2=99.96 MHz (Note 1)																			
CC2		100	60	132	Downlink & Uplink	Low	27650.04	2073333	27602.52	2072541	0	120	22451	2072827	10	3	0 (0)	3	
						Mid	27924.96	2077915	27804	2075899	102		22467	2077435	0	6	0 (0)	108	
						High	28200	2082499	27789.6	2075659	504		22483	2082043	0	0	1 (8)	512	
Channel spacing CC2-CC3=99.96 MHz (Note 1)																			
CC3		100	60	132	Downlink & Uplink	Low	27750	2074999	27702.48	2074207	0	120	22457	2074555	0	1	1 (8)	9	
						Mid	28024.92	2079581	27903.96	2077565	102		22473	2079163	2	3	1 (8)	113	
						High	28299.96	2084165	27889.56	2077325	504		22489	2083771	2	5	1 (8)	517	

Note 1: Corresponds to nominal channel spacing in accordance with TS 38.101-2 [8], clause 5.4A.1 for the channel bandwidths of the two respective NR component carriers.

Note 2: CCs are specified in increasing frequency order. CC1 is used as PCell if nothing else is specified in the test case.

Note 3: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter  $\Delta F_{\text{OffsetCORESET-0-Carrier}}$  in Annex C expressed in number of common RBs.

Note 4: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-7 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcc-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.

Table 4.3.1.2.3.5.7-2: NR Intra-Band contiguous CA configuration CA\_n261H (PCC=CC1 and SCC=CC2, CC3), SCS=120 kHz, nominal channel spacing

CBW combination	CC	CBW [MHz]	SCS [kHz]	carrier bandwidth [PRBs]	Range	Carrier centre [MHz] Note 2	Carrier centre [ARFCN]	point A [MHz]	absolute frequency PointA [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS [kHz]	GSCN	absolute frequency SSB [ARFCN]	$k_{SS}$	Offset Carrier CORESET#0 [RBs] Note 3	CORESET#0 Index (Offset [RBs]) Note 4	offsetToPointA (SIB1) [PRBs] Note 4		
50+100+100	CC1	50	120	32	Downlink & Uplink	Low	27525	2071249	27501.96	2070865	0	120	22446	2071387	9	7	1 (4)	22	
						Mid	27825	2076249	27655.08	2073417	102		22463	2076283	5	3	1 (4)	218	
						High	28125.6	2081259	27376.8	2068779	504		22480	2081179	8	2	0 (0)	1012	
	Channel spacing CC1-CC2=74.4 MHz (Note 1)																		
	CC2	100	120	66	Downlink & Uplink	Low	27599.4	2072489	27551.88	2071697	0	120	22448	2071963	1	1	0 (0)	2	
						Mid	27899.4	2077489	27705	2074249	102		22466	2077147	9	4	1 (4)	220	
						High	28200	2082499	27426.72	2069611	504		22483	2082043	0	0	1 (4)	1016	
	Channel spacing CC2-CC3=99.96 MHz (Note 1)																		
	CC3	100	120	66	Downlink & Uplink	Low	27699.36	2074155	27651.84	2073363	0	120	22454	2073691	8	3	0 (0)	6	
						Mid	27999.36	2079155	27804.96	2075915	102		22472	2078875	4	7	1 (4)	226	
						High	28299.96	2084165	27526.68	2071277	504		22489	2083771	7	2	1 (4)	1020	
	100+100+100	CC1	100	120	66	Downlink & Uplink	Low	27550.08	2071667	27502.56	2070875	0	120	22446	2071387	4	7	1 (4)	22
Mid							27825	2076249	27630.6	2073009	102	22461		2075707	5	0	0 (0)	204	
High							28100.04	2080833	27326.76	2067945	504	22477		2080315	5	1	0 (0)	1010	
Channel spacing CC1-CC2=99.96 MHz (Note 1)																			
CC2		100	120	66	Downlink & Uplink	Low	27650.04	2073333	27602.52	2072541	0	120	22451	2072827	11	1	0 (0)	2	
						Mid	27924.96	2077915	27730.56	2074675	102		22467	2077435	0	3	0 (0)	210	
						High	28200	2082499	27426.72	2069611	504		22483	2082043	0	0	1 (4)	1016	
Channel spacing CC2-CC3=99.96 MHz (Note 1)																			
CC3		100	120	66	Downlink & Uplink	Low	27750	2074999	27702.48	2074207	0	120	22457	2074555	6	0	1 (4)	8	
						Mid	28024.92	2079581	27830.52	2076341	102		22473	2079163	7	1	1 (4)	214	
						High	28299.96	2084165	27526.68	2071277	504		22489	2083771	7	2	1 (4)	1020	

Note 1: Corresponds to nominal channel spacing in accordance with TS 38.101-2 [8], clause 5.4A.1 for the channel bandwidths of the two respective NR component carriers.

Note 2: CCs are specified in increasing frequency order. CC1 is used as PCell if nothing else is specified in the test case.

Note 3: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter  $\Delta F_{\text{OffsetCORESET-0-Carrier}}$  in Annex C expressed in number of common RBs.

Note 4: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-8 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcc-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.

Table 4.3.1.2.3.5.8-1: NR Intra-Band contiguous CA configuration CA\_n2611 (PCC=CC1, SCC=CC2, CC3, CC4), SCS=60 kHz, nominal channel spacing

CBW combination	CC	CBW [MHz]	SCS [kHz]	carrier Bandwidth [PRBs]	Range		Carrier centre [MHz] Note 2	Carrier centre [ARFCN]	point A [MHz]	absolute Frequency Point A [ARFCN]	offset to Carrier [Carrier PRBs]	SS block SCS [kHz]	GSCN	absolute Frequency SSB [ARFCN]	$k_{SS}$	Offset Carrier CORESET#0 [RBs] Note 3	CORESET#0 Index (Offset [RBs]) Note 4	offset to Point A (SIB1) [PRBs] Note 4	
					Downlink & Uplink	Low Mid High													
50+100 +100+100	CC1	50	60	66	Downlink & Uplink	Low	27525	2071249	27501.24	2070853	0	120	22446	2071387	6	16	1 (8)	24	
						Mid	27774.96	2075415	27677.76	2073795	102		22460	2075419	4	5	1 (8)	115	
						High	28025.64	2079593	27639	2073149	504		22474	2079451	2	1	0 (0)	505	
	Channel spacing CC1-CC2=74.4 MHz (Note 1)																		
	CC2	100	60	132	Downlink & Uplink	Low	27599.4	2072489	27551.88	2071697	0	120	22448	2071963	2	2	0 (0)	2	
						Mid	27849.36	2076655	27728.4	2074639	102		22463	2076283	0	7	1 (8)	117	
						High	28100.04	2080833	27689.64	2073993	504		22477	2080315	10	2	0 (0)	506	
	Channel spacing CC2-CC3=99.96 MHz (Note 1)																		
	CC3	100	60	132	Downlink & Uplink	Low	27699.36	2074155	27651.84	2073363	0	120	22454	2073691	4	7	0 (0)	7	
						Mid	27949.32	2078321	27828.36	2076305	102		22469	2078011	2	12	1 (8)	122	
						High	28200	2082499	27789.6	2075659	504		22483	2082043	0	0	1 (8)	512	
	Channel spacing CC3-CC4=99.96 MHz (Note 1)																		
	CC4	100	60	132	Downlink & Uplink	Low	27799.32	2075821	27751.8	2075029	0	120	22460	2075419	6	4	1 (8)	12	
						Mid	28049.28	2079987	27928.32	2077971	102		22474	2079451	4	1	0 (0)	103	
						High	28299.96	2084165	27889.56	2077325	504		22489	2083771	2	5	1 (8)	517	
	100+100 +100+100	CC1	100	60	132	Downlink & Uplink	Low	27550.08	2071667	27502.56	2070875	0	120	22446	2071387	8	14	1 (8)	22
Mid							27774.96	2075415	27654	2073399	102	22459		2075131	4	14	1 (8)	124	
High							28000.08	2079167	27589.68	2072327	504	22472		2078875	8	13	1 (8)	525	
Channel spacing CC1-CC2=99.96 MHz (Note 1)																			
CC2		100	60	132	Downlink & Uplink	Low	27650.04	2073333	27602.52	2072541	0	120	22451	2072827	10	3	0 (0)	3	
						Mid	27874.92	2077081	27753.96	2075065	102		22464	2076571	6	3	0 (0)	105	
						High	28100.04	2080833	27689.64	2073993	504		22477	2080315	10	2	0 (0)	506	
Channel spacing CC2-CC3=99.96 MHz (Note 1)																			
CC3		100	60	132	Downlink & Uplink	Low	27750	2074999	27702.48	2074207	0	120	22457	2074555	0	1	1 (8)	9	
						Mid	27974.88	2078747	27853.92	2076731	102		22470	2078299	8	0	1 (8)	110	
						High	28200	2082499	27789.6	2075659	504		22483	2082043	0	0	1 (8)	512	
Channel spacing CC3-CC4=99.96 MHz (Note 1)																			
CC4		100	60	132	Downlink & Uplink	Low	27849.96	2076665	27802.44	2075873	0	120	22463	2076283	2	6	1 (8)	14	
						Mid	28074.84	2080413	27953.88	2078397	102		22476	2080027	10	5	1 (8)	115	
						High	28299.96	2084165	27889.56	2077325	504		22489	2083771	2	5	1 (8)	517	

Note 1: Corresponds to nominal channel spacing in accordance with TS 38.101-2 [8], clause 5.4A.1 for the channel bandwidths of the two respective NR component carriers.

Note 2: CCs are specified in increasing frequency order. CC1 is used as PCell if nothing else is specified in the test case.

Note 3: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter

Note 4:  $\Delta F_{\text{OffsetCORESET-0-Carrier}}$  in Annex C expressed in number of common RBs.  
The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-7 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.

Table 4.3.1.2.3.5.8-2: NR Intra-Band contiguous CA configuration CA\_n2611 (PCC=CC1, SCC=CC2, CC3,CC4), SCS=120 kHz, nominal channel spacing

CBW combination	CC	CBW [MHz]	SCS [kHz]	carrierBandwidth [PRBs]	Range	Carrier centre [MHz] Note 2	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequencyPointA [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS [kHz]	GSCN	absoluteFrequencySSB [ARFCN]	$k_{SS}$	Offset Carrier CORESET#0 [RBs] Note 3	CORESET#0 Index (Offset [RBs]) Note 4	offsetToPointA (SIB1) [PRBs] Note 4		
50+100 +100+100	CC1	50	120	32	Downlink & Uplink	Low	27525	2071249	27501.96	2070865	0	120	22446	2071387	9	7	1 (4)	22	
						Mid	27774.96	2075415	27605.04	2072583	102		22460	2075419	2	2	1 (4)	216	
						High	28025.64	2079593	27276.84	2067113	504		22474	2079451	1	0	0 (0)	1008	
	Channel spacing CC1-CC2=74.4 MHz (Note 1)																		
	CC2	100	120	66	Downlink & Uplink	Low	27599.4	2072489	27551.88	2071697	0	120	22448	2071963	1	1	0 (0)	2	
						Mid	27849.36	2076655	27654.96	2073415	102		22463	2076283	6	3	1 (4)	218	
						High	28100.04	2080833	27326.76	2067945	504		22477	2080315	5	1	0 (0)	1010	
	Channel spacing CC2-CC3=99.96 MHz (Note 1)																		
	CC3	100	120	66	Downlink & Uplink	Low	27699.36	2074155	27651.84	2073363	0	120	22454	2073691	8	3	0 (0)	6	
						Mid	27949.32	2078321	27754.92	2075081	102		22469	2078011	1	6	1 (4)	224	
						High	28200	2082499	27426.72	2069611	504		22483	2082043	0	0	1 (4)	1016	
	Channel spacing CC3-CC4=99.96 MHz (Note 1)																		
	CC4	100	120	66	Downlink & Uplink	Low	27799.32	2075821	27751.8	2075029	0	120	22460	2075419	3	2	1 (4)	12	
						Mid	28049.28	2079987	27854.88	2076747	102		22474	2079451	8	0	0 (0)	204	
						High	28299.96	2084165	27526.68	2071277	504		22489	2083771	7	2	1 (4)	1020	
	100+100 +100+100	CC1	100	120	66	Downlink & Uplink	Low	27550.08	2071667	27502.56	2070875	0	120	22446	2071387	4	7	1 (4)	22
Mid							27774.96	2075415	27580.56	2072175	102	22459		2075131	2	7	1 (4)	226	
High							28000.08	2079167	27226.8	2066279	504	22472		2078875	10	6	1 (4)	1028	
Channel spacing CC1-CC2=99.96 MHz (Note 1)																			
CC2		100	120	66	Downlink & Uplink	Low	27650.04	2073333	27602.52	2072541	0	120	22451	2072827	11	1	0 (0)	2	
						Mid	27874.92	2077081	27680.52	2073841	102		22464	2076571	9	1	0 (0)	206	
						High	28100.04	2080833	27326.76	2067945	504		22477	2080315	5	1	0 (0)	1010	
Channel spacing CC2-CC3=99.96 MHz (Note 1)																			
CC3		100	120	66	Downlink & Uplink	Low	27750	2074999	27702.48	2074207	0	120	22457	2074555	6	0	1 (4)	8	
						Mid	27974.88	2078747	27780.48	2075507	102		22470	2078299	4	0	1 (4)	212	
						High	28200	2082499	27426.72	2069611	504		22483	2082043	0	0	1 (4)	1016	
Channel spacing CC3-CC4=99.96 MHz (Note 1)																			
CC4		100	120	66	Downlink & Uplink	Low	27849.96	2076665	27802.44	2075873	0	120	22463	2076283	1	3	1 (4)	14	
						Mid	28074.84	2080413	27880.44	2077173	102		22476	2080027	11	2	1 (4)	216	
						High	28299.96	2084165	27526.68	2071277	504		22489	2083771	7	2	1 (4)	1020	

Note 1: Corresponds to nominal channel spacing in accordance with TS 38.101-2 [8], clause 5.4A.1 for the channel bandwidths of the two respective NR component carriers.

Note 2: CCs are specified in increasing frequency order. CC1 is used as PCell if nothing else is specified in the test case.

Note 3: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter  $\Delta F_{\text{OffsetCORESET-0-Carrier}}$  in Annex C expressed in number of common RBs.

Note 4: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-8 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.





Table 4.3.1.2.3.5.9-1: NR Intra-Band contiguous CA configuration CA\_n261J (PCC=CC1, SCC=CC2, CC3, CC4), SCS=60 kHz, nominal channel spacing

CBW combination	CC	CBW [MHz]	SCS [kHz]	carrierBandwidth [PRBs]	Range	Carrier centre [MHz] Note 2	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequencyPointA [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS [kHz]	GSCN	absoluteFrequencySSB [ARFCN]	$k_{SS}$	Offset Carrier CORESET#0 [RBs] Note 3	CORE SET#0 Index (Offset [RBs]) Note 4	offsetToPoint A (SIB1) [PRBs] Note 4		
50+100 +100+100 +100	CC1	50	60	66	Downlink & Uplink	Low	27525	2071249	27501.24	2070853	0	120	22446	2071387	6	16	1 (8)	24	
						Mid	27724.92	2074581	27627.72	2072961	102		22457	2074555	10	2	1 (8)	112	
						High	27925.68	2077927	27539.04	2071483	504		22469	2078011	0	12	1 (8)	524	
	Channel spacing CC1-CC2=74.4 MHz (Note 1)																		
	CC2	100	60	132	Downlink & Uplink	Low	27599.4	2072489	27551.88	2071697	0	120	22448	2071963	2	2	0 (0)	2	
						Mid	27799.32	2075821	27678.36	2073805	102		22460	2075419	6	4	1 (8)	114	
						High	28000.08	2079167	27589.68	2072327	504		22472	2078875	8	13	1 (8)	525	
	Channel spacing CC2-CC3=99.96 MHz (Note 1)																		
	CC3	100	60	132	Downlink & Uplink	Low	27699.36	2074155	27651.84	2073363	0	120	22454	2073691	4	7	0 (0)	7	
						Mid	27899.28	2077487	27778.32	2075471	102		22466	2077147	8	9	1 (8)	119	
						High	28100.04	2080833	27689.64	2073993	504		22477	2080315	10	2	0 (0)	506	
	Channel spacing CC3-CC4=99.96 MHz (Note 1)																		
	CC4	100	60	132	Downlink & Uplink	Low	27799.32	2075821	27751.8	2075029	0	120	22460	2075419	6	4	1 (8)	12	
						Mid	27999.24	2079153	27878.28	2077137	102		22472	2078875	10	14	1 (8)	124	
						High	28200	2082499	27789.6	2075659	504		22483	2082043	0	0	1 (8)	512	
	Channel spacing CC4-CC5=99.96 MHz (Note 1)																		
	CC5	100	60	132	Downlink & Uplink	Low	27899.28	2077487	27851.76	2076695	0	120	22466	2077147	8	9	1 (8)	17	
						Mid	28099.2	2080819	27978.24	2078803	102		22477	2080315	0	4	0 (0)	106	
						High	28299.96	2084165	27889.56	2077325	504		22489	2083771	2	5	1 (8)	517	
	100+100 +100+100 +100	CC1	100	60	132	Downlink & Uplink	Low	27550.08	2071667	27502.56	2070875	0	120	22446	2071387	8	14	1 (8)	22
							Mid	27724.92	2074581	27603.96	2072565	102		22456	2074267	10	11	1 (8)	121
High							27900.12	2077501	27489.72	2070661	504	22466		2077147	6	8	1 (8)	520	
Channel spacing CC1-CC2=99.96 MHz (Note 1)																			
CC2		100	60	132	Downlink & Uplink	Low	27650.04	2073333	27602.52	2072541	0	120	22451	2072827	10	3	0 (0)	3	
						Mid	27824.88	2076247	27703.92	2074231	102		22461	2075707	0	1	0 (0)	103	
						High	28000.08	2079167	27589.68	2072327	504		22472	2078875	8	13	1 (8)	525	
Channel spacing CC2-CC3=99.96 MHz (Note 1)																			
CC3		100	60	132	Downlink & Uplink	Low	27750	2074999	27702.48	2074207	0	120	22457	2074555	0	1	1 (8)	9	
						Mid	27924.84	2077913	27803.88	2075897	102		22467	2077435	2	6	0 (0)	108	
						High	28100.04	2080833	27689.64	2073993	504		22477	2080315	10	2	0 (0)	506	
Channel spacing CC3-CC4=99.96 MHz (Note 1)																			
CC4	100	60	132	Downlink & Uplink	Low	27849.96	2076665	27802.44	2075873	0	120	22463	2076283	2	6	1 (8)	14		
					Mid	28024.8	2079579	27903.84	2077563	102		22473	2079163	4	3	1 (8)	113		

				Uplink	High	28200	2082499	27789.6	2075659	504		22483	2082043	0	0	1 (8)	512	
Channel spacing CC4-CC5=99.96 MHz (Note 1)																		
CC5	100	60	132	Downlink & Uplink	Low	27949.92	2078331	27902.4	2077539	0	120	22469	2078011	4	11	1 (8)	19	
					Mid	28124.76	2081245	28003.8	2079229	102			22479	2080891	6	8	1 (8)	118
					High	28299.96	2084165	27889.56	2077325	504			22489	2083771	2	5	1 (8)	517

Note 1: Corresponds to nominal channel spacing in accordance with TS 38.101-2 [8], clause 5.4A.1 for the channel bandwidths of the two respective NR component carriers.

Note 2: CCs are specified in increasing frequency order. CC1 is used as PCell if nothing else is specified in the test case.

Note 3: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter  $\Delta F_{\text{OffsetCORESET-0-Carrier}}$  in Annex C expressed in number of common RBs.

Note 4: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-7 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.

Table 4.3.1.2.3.5.9-2: NR Intra-Band contiguous CA configuration CA\_n261J (PCC=CC1, SCC=CC2, CC3, CC4), SCS=120 kHz, nominal channel spacing

CBW combination	CC	CBW [MHz]	SCS [kHz]	carrierBandwidth [PRBs]	Range	Carrier centre [MHz] Note 2	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequencyPointA [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS [kHz]	GSCN	absoluteFrequencySSB [ARFCN]	$k_{SS}$	Offset Carrier CORES ET#0 [RBs] Note 3	CORE SET#0 Index (Offset [RBs]) Note 4	offsetToPoint A (SIB1) [PRBs] Note 4		
50+100 +100+100 +100	CC1	50	120	32	Downlink & Uplink	Low	27525	2071249	27501.96	2070865	0	120	22446	2071387	9	7	1 (4)	22	
						Mid	27725.04	2074583	27555.12	2071751	102		22457	2074555	10	0	1 (4)	212	
						High	27925.68	2077927	27176.88	2065447	504		22469	2078011	6	5	1 (4)	1026	
	Channel spacing CC1-CC2=74.4 MHz (Note 1)																		
	CC2	100	120	66	Downlink & Uplink	Low	27599.4	2072489	27551.88	2071697	0	120	22448	2071963	1	1	0 (0)	2	
						Mid	27799.44	2075823	27605.04	2072583	102		22460	2075419	2	2	1 (4)	216	
						High	28000.08	2079167	27226.8	2066279	504		22472	2078875	10	6	1 (4)	1028	
	Channel spacing CC2-CC3=99.96 MHz (Note 1)																		
	CC3	100	120	66	Downlink & Uplink	Low	27699.36	2074155	27651.84	2073363	0	120	22454	2073691	8	3	0 (0)	6	
						Mid	27899.4	2077489	27705	2074249	102		22466	2077147	9	4	1 (4)	220	
						High	28100.04	2080833	27326.76	2067945	504		22477	2080315	5	1	0 (0)	1010	
	Channel spacing CC3-CC4=99.96 MHz (Note 1)																		
	CC4	100	120	66	Downlink & Uplink	Low	27799.32	2075821	27751.8	2075029	0	120	22460	2075419	3	2	1 (4)	12	
						Mid	27999.36	2079155	27804.96	2075915	102		22472	2078875	4	7	1 (4)	226	
						High	28200	2082499	27426.72	2069611	504		22483	2082043	0	0	1 (4)	1016	
Channel spacing CC4-CC5=99.96 MHz (Note 1)																			
CC5	100	120	66	Downlink & Uplink	Low	27899.28	2077487	27851.76	2076695	0	120	22466	2077147	10	4	1 (4)	16		
					Mid	28099.32	2080821	27904.92	2077581	102		22477	2080315	11	1	0 (0)	206		
					High	28299.96	2084165	27526.68	2071277	504		22489	2083771	7	2	1 (4)	1020		
100+100 +100+100 +100	CC1	100	120	66	Downlink & Uplink	Low	27550.08	2071667	27502.56	2070875	0	120	22446	2071387	4	7	1 (4)	22	
						Mid	27725.04	2074583	27530.64	2071343	102		22456	2074267	10	5	1 (4)	222	
						High	27900.12	2077501	27126.84	2064613	504		22466	2077147	3	4	1 (4)	1024	
	Channel spacing CC1-CC2=99.96 MHz (Note 1)																		
	CC2	100	120	66	Downlink & Uplink	Low	27650.04	2073333	27602.52	2072541	0	120	22451	2072827	11	1	0 (0)	2	
						Mid	27825	2076249	27630.6	2073009	102		22461	2075707	5	0	0 (0)	204	
						High	28000.08	2079167	27226.8	2066279	504		22472	2078875	10	6	1 (4)	1028	
	Channel spacing CC2-CC3=99.96 MHz (Note 1)																		
	CC3	100	120	66	Downlink & Uplink	Low	27750	2074999	27702.48	2074207	0	120	22457	2074555	6	0	1 (4)	8	
Mid						27924.96	2077915	27730.56	2074675	102	22467		2077435	0	3	0 (0)	210		
High						28100.04	2080833	27326.76	2067945	504	22477		2080315	5	1	0 (0)	1010		
Channel spacing CC3-CC4=99.96 MHz (Note 1)																			
CC4	100	120	66	Downlink & Uplink	Low	27849.96	2076665	27802.44	2075873	0	120	22463	2076283	1	3	1 (4)	14		
					Mid	28024.92	2079581	27830.52	2076341	102		22473	2079163	7	1	1 (4)	214		
					High	28200	2082499	27426.72	2069611	504		22483	2082043	0	0	1 (4)	1016		
Channel spacing CC4-CC5=99.96 MHz (Note 1)																			

	CC5	100	120	66	Downlink & Uplink	Low	27949.92	2078331	27902.4	2077539	0	120	22469	2078011	8	5	1 (4)	18
						Mid	28124.88	2081247	27930.48	2078007	102		22479	2080891	2	4	1 (4)	220
						High	28299.96	2084165	27526.68	2071277	504		22489	2083771	7	2	1 (4)	1020

Note 1: Corresponds to nominal channel spacing in accordance with TS 38.101-2 [8], clause 5.4A.1 for the channel bandwidths of the two respective NR component carriers.

Note 2: CCs are specified in increasing frequency order. CC1 is used as PCell if nothing else is specified in the test case.

Note 3: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter  $\Delta F_{\text{OffsetCORESET-0-Carrier}}$  in Annex C expressed in number of common RBs.

Note 4: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-8 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.

4.3.1.2.3.5.10 CA\_n261K

FFS

4.3.1.2.3.5.11 CA\_n261L

FFS

4.3.1.2.3.5.12 CA\_n261M

Table 4.3.1.2.3.5.12-1: NR Intra-Band contiguous CA configuration CA\_n261M (PCC=CC1, SCC=CC2, CC3, CC4, CC5, CC6, CC7, CC8), SCS=60 kHz, nominal channel spacing

CBW combination	CC	CBW [MHz]	SCS [kHz]	carrier Bandwidth [PRBs]	Range	Carrier centre [MHz] Note 2	Carrier centre [ARFCN]	point A [MHz]	absolute Frequency Point A [ARFCN]	offsetT oCarrier [Carrier PRBs]	SS block SCS [kHz]	GSCN	absolute Frequency SSB [ARFCN]	$k_{SSB}$	Offset Carrier CORES ET#0 [RBs] Note 3	CORE SET#0 Index Note 4	offsetT oPoint A (SIB1) [PRBs] Note 4		
50+100 +100+100 +100+100 +100+100	CC1	50	60	66	Downlink & Uplink	Low	27525	2071249	27501.24	2070853	0	120	22446	2071387	6	16	1 (8)	24	
						Mid	27574.92	2072081	27477.72	2070461	102		22448	2071963	2	3	0 (0)	105	
						High	27625.8	2072929	27239.16	2066485	504		22451	2072827	6	4	0 (0)	508	
	Channel spacing CC1-CC2=74.4 MHz (Note 1)																		
	CC2	100	60	132	Downlink & Uplink	Low	27599.4	2072489	27551.88	2071697	0	120	22448	2071963	2	2	0 (0)	2	
						Mid	27649.32	2073321	27528.36	2071305	102		22451	2072827	10	4	0 (0)	106	
						High	27700.2	2074169	27289.8	2067329	504		22454	2073691	2	6	0 (0)	510	
	Channel spacing CC2-CC3=99.96 MHz (Note 1)																		
	CC3	100	60	132	Downlink & Uplink	Low	27699.36	2074155	27651.84	2073363	0	120	22454	2073691	4	7	0 (0)	7	
						Mid	27749.28	2074987	27628.32	2072971	102		22457	2074555	0	2	1 (8)	112	
						High	27800.16	2075835	27389.76	2068995	504		22460	2075419	4	3	1 (8)	515	
	Channel spacing CC3-CC4=99.96 MHz (Note 1)																		
	CC4	100	60	132	Downlink & Uplink	Low	27799.32	2075821	27751.8	2075029	0	120	22460	2075419	6	4	1 (8)	12	
						Mid	27849.24	2076653	27728.28	2074637	102		22463	2076283	2	7	1 (8)	117	
						High	27900.12	2077501	27489.72	2070661	504		22466	2077147	6	8	1 (8)	520	
	Channel spacing CC4-CC5=99.96 MHz (Note 1)																		
	CC5	100	60	132	Downlink & Uplink	Low	27899.28	2077487	27851.76	2076695	0	120	22466	2077147	8	9	1 (8)	17	
						Mid	27949.2	2078319	27828.24	2076303	102		22469	2078011	4	12	1 (8)	122	
						High	28000.08	2079167	27589.68	2072327	504		22472	2078875	8	13	1 (8)	525	
	Channel spacing CC5-CC6=99.96 MHz (Note 1)																		
	CC6	100	60	132	Downlink & Uplink	Low	27999.24	2079153	27951.72	2078361	0	120	22472	2078875	10	14	1 (8)	22	
						Mid	28049.16	2079985	27928.2	2077969	102		22474	2079451	6	1	0 (0)	103	
						High	28100.04	2080833	27689.64	2073993	504		22477	2080315	10	2	0 (0)	506	
	Channel spacing CC6-CC7=99.96 MHz (Note 1)																		
CC7	100	60	132	Downlink & Uplink	Low	28099.2	2080819	28051.68	2080027	0	120	22477	2080315	0	4	0 (0)	4		
					Mid	28149.12	2081651	28028.16	2079635	102		22480	2081179	8	6	0 (0)	108		
					High	28200	2082499	27789.6	2075659	504		22483	2082043	0	0	1 (8)	512		
Channel spacing CC7-CC8=99.96 MHz (Note 1)																			
CC8	100	60	132	Downlink & Uplink	Low	28199.16	2082485	28151.64	2081693	0	120	22483	2082043	2	1	1 (8)	9		
					Mid	28249.08	2083317	28128.12	2081301	102		22486	2082907	10	3	1 (8)	113		
					High	28299.96	2084165	27889.56	2077325	504		22489	2083771	2	5	1 (8)	517		
100+100 +100+100 +100+100 +100+100	CC1	100	60	132	Downlink & Uplink	Low	27550.08	2071667	27502.56	2070875	0	120	22446	2071387	8	14	1 (8)	22	
						Mid	27574.92	2072081	27453.96	2070065	102		22447	2071675	2	4	1 (8)	114	
						High	27600.24	2072503	27189.84	2065663	504		22448	2071963	0	1	0 (0)	505	
Channel spacing CC1-CC2=99.96 MHz (Note 1)																			

CC2	100	60	132	Downlink & Uplink	Low	27650.04	2073333	27602.52	2072541	0	120	22451	2072827	10	3	0 (0)	3
					Mid	27674.88	2073747	27553.92	2071731	102		22453	2073403	4	9	1 (8)	119
					High	27700.2	2074169	27289.8	2067329	504		22454	2073691	2	6	0 (0)	510
Channel spacing CC2-CC3=99.96 MHz (Note 1)																	
CC3	100	60	132	Downlink & Uplink	Low	27750	2074999	27702.48	2074207	0	120	22457	2074555	0	1	1 (8)	9
					Mid	27774.84	2075413	27653.88	2073397	102		22459	2075131	6	14	1 (8)	124
					High	27800.16	2075835	27389.76	2068995	504		22460	2075419	4	3	1 (8)	515
Channel spacing CC3-CC4=99.96 MHz (Note 1)																	
CC4	100	60	132	Downlink & Uplink	Low	27849.96	2076665	27802.44	2075873	0	120	22463	2076283	2	6	1 (8)	14
					Mid	27874.8	2077079	27753.84	2075063	102		22464	2076571	8	3	0 (0)	105
					High	27900.12	2077501	27489.72	2070661	504		22466	2077147	6	8	1 (8)	520
Channel spacing CC4-CC5=99.96 MHz (Note 1)																	
CC5	100	60	132	Downlink & Uplink	Low	27949.92	2078331	27902.4	2077539	0	120	22469	2078011	4	11	1 (8)	19
					Mid	27974.76	2078745	27853.8	2076729	102		22470	2078299	10	0	1 (8)	110
					High	28000.08	2079167	27589.68	2072327	504		22472	2078875	8	13	1 (8)	525
Channel spacing CC5-CC6=99.96 MHz (Note 1)																	
CC6	100	60	132	Downlink & Uplink	Low	28049.88	2079997	28002.36	2079205	0	120	22474	2079451	6	0	0 (0)	0
					Mid	28074.72	2080411	27953.76	2078395	102		22476	2080027	0	6	1 (8)	116
					High	28100.04	2080833	27689.64	2073993	504		22477	2080315	10	2	0 (0)	506
Channel spacing CC6-CC7=99.96 MHz (Note 1)																	
CC7	100	60	132	Downlink & Uplink	Low	28149.84	2081663	28102.32	2080871	0	120	22480	2081179	8	5	0 (0)	5
					Mid	28174.68	2082077	28053.72	2080061	102		22482	2081755	2	11	1 (8)	121
					High	28200	2082499	27789.6	2075659	504		22483	2082043	0	0	1 (8)	512
Channel spacing CC7-CC8=99.96 MHz (Note 1)																	
CC8	100	60	132	Downlink & Uplink	Low	28249.8	2083329	28202.28	2082537	0	120	22486	2082907	10	2	1 (8)	10
					Mid	28274.64	2083743	28153.68	2081727	102		22487	2083195	4	0	0 (0)	102
					High	28299.96	2084165	27889.56	2077325	504		22489	2083771	2	5	1 (8)	517

Note 1: Corresponds to nominal channel spacing in accordance with TS 38.101-2 [8], clause 5.4A.1 for the channel bandwidths of the two respective NR component carriers.

Note 2: CCs are specified in increasing frequency order. CC1 is used as PCell if nothing else is specified in the test case.

Note 3: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter  $\Delta$ OffsetCORESET-0-Carrier in Annex C expressed in number of common RBs.

Note 4: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-7 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.

Table 4.3.1.2.3.5.12-2: NR Intra-Band contiguous CA configuration CA\_n261M (PCC=CC1, SCC=CC2, CC3, CC4, CC5, CC6, CC7, CC8), SCS=120 kHz, nominal channel spacing

CBW combination	CC	CBW [MHz]	SCS [kHz]	carrier bandwidth [PRBs]	Range	Carrier centre [MHz] Note 2	Carrier centre [ARFCN]	point A [MHz]	absolute frequency PointA [ARFCN]	offset of Carrier [Carrier PRBs]	SS block SCS [kHz]	GSCN	absolute frequency SSB [ARFCN]	$k_{SSB}$	Offset Carrier CORESET#0 [RBs] Note 3	CORE SET#0 Index (Offset [RBs]) Note 4	offset of Point A (SIB1) [PRBs] Note 4		
50+100 +100+100 +100+100 +100+100	CC1	50	120	32	Downlink & Uplink	Low	27525	2071249	27501.96	2070865	0	120	22446	2071387	9	7	1 (4)	22	
						Mid	27575.04	2072083	27405.12	2069251	102		22448	2071963	0	1	0 (0)	206	
						High	27625.8	2072929	26877	2060449	504		22451	2072827	9	1	0 (0)	1010	
	Channel spacing CC1-CC2=74.4 MHz (Note 1)																		
	CC2	100	120	66	Downlink & Uplink	Low	27599.4	2072489	27551.88	2071697	0	120	22448	2071963	1	1	0 (0)	2	
						Mid	27649.44	2073323	27455.04	2070083	102		22451	2072827	4	2	0 (0)	208	
						High	27700.2	2074169	26926.92	2061281	504		22454	2073691	1	3	0 (0)	1014	
	Channel spacing CC2-CC3=99.96 MHz (Note 1)																		
	CC3	100	120	66	Downlink & Uplink	Low	27699.36	2074155	27651.84	2073363	0	120	22454	2073691	8	3	0 (0)	6	
						Mid	27749.4	2074989	27555	2071749	102		22457	2074555	11	0	1 (4)	212	
						High	27800.16	2075835	27026.88	2062947	504		22460	2075419	8	1	1 (4)	1018	
	Channel spacing CC3-CC4=99.96 MHz (Note 1)																		
	CC4	100	120	66	Downlink & Uplink	Low	27799.32	2075821	27751.8	2075029	0	120	22460	2075419	3	2	1 (4)	12	
						Mid	27849.36	2076655	27654.96	2073415	102		22463	2076283	6	3	1 (4)	218	
						High	27900.12	2077501	27126.84	2064613	504		22466	2077147	3	4	1 (4)	1024	
	Channel spacing CC4-CC5=99.96 MHz (Note 1)																		
	CC5	100	120	66	Downlink & Uplink	Low	27899.28	2077487	27851.76	2076695	0	120	22466	2077147	10	4	1 (4)	16	
						Mid	27949.32	2078321	27754.92	2075081	102		22469	2078011	1	6	1 (4)	224	
						High	28000.08	2079167	27226.8	2066279	504		22472	2078875	10	6	1 (4)	1028	
	Channel spacing CC5-CC6=99.96 MHz (Note 1)																		
	CC6	100	120	66	Downlink & Uplink	Low	27999.24	2079153	27951.72	2078361	0	120	22472	2078875	5	7	1 (4)	22	
						Mid	28049.28	2079987	27854.88	2076747	102		22474	2079451	8	0	0 (0)	204	
						High	28100.04	2080833	27326.76	2067945	504		22477	2080315	5	1	0 (0)	1010	
	Channel spacing CC6-CC7=99.96 MHz (Note 1)																		
CC7	100	120	66	Downlink & Uplink	Low	28099.2	2080819	28051.68	2080027	0	120	22477	2080315	0	2	0 (0)	4		
					Mid	28149.24	2081653	27954.84	2078413	102		22480	2081179	3	3	0 (0)	210		
					High	28200	2082499	27426.72	2069611	504		22483	2082043	0	0	1 (4)	1016		
Channel spacing CC7-CC8=99.96 MHz (Note 1)																			
CC8	100	120	66	Downlink & Uplink	Low	28199.16	2082485	28151.64	2081693	0	120	22483	2082043	7	0	1 (4)	8		
					Mid	28249.2	2083319	28054.8	2080079	102		22486	2082907	10	1	1 (4)	214		
					High	28299.96	2084165	27526.68	2071277	504		22489	2083771	7	2	1 (4)	1020		
100+100 +100+100 +100+100	CC1	100	120	66	Downlink & Uplink	Low	27550.08	2071667	27502.56	2070875	0	120	22446	2071387	4	7	1 (4)	22	
						Mid	27575.04	2072083	27380.64	2068843	102		22447	2071675	0	2	1 (4)	216	
						High	27600.24	2072503	26826.96	2059615	504		22448	2071963	6	0	0 (0)	1008	



+100+100

Channel spacing CC1-CC2=99.96 MHz (Note 1)																	
CC2	100	120	66	Downlink & Uplink	Low	27650.04	2073333	27602.52	2072541	0	120	22451	2072827	11	1	0 (0)	2
					Mid	27675	2073749	27480.6	2070509	102		22453	2073403	7	4	1 (4)	220
					High	27700.2	2074169	26926.92	2061281	504		22454	2073691	1	3	0 (0)	1014
Channel spacing CC2-CC3=99.96 MHz (Note 1)																	
CC3	100	120	66	Downlink & Uplink	Low	27750	2074999	27702.48	2074207	0	120	22457	2074555	6	0	1 (4)	8
					Mid	27774.96	2075415	27580.56	2072175	102		22459	2075131	2	7	1 (4)	226
					High	27800.16	2075835	27026.88	2062947	504		22460	2075419	8	1	1 (4)	1018
Channel spacing CC3-CC4=99.96 MHz (Note 1)																	
CC4	100	120	66	Downlink & Uplink	Low	27849.96	2076665	27802.44	2075873	0	120	22463	2076283	1	3	1 (4)	14
					Mid	27874.92	2077081	27680.52	2073841	102		22464	2076571	9	1	0 (0)	206
					High	27900.12	2077501	27126.84	2064613	504		22466	2077147	3	4	1 (4)	1024
Channel spacing CC4-CC5=99.96 MHz (Note 1)																	
CC5	100	120	66	Downlink & Uplink	Low	27949.92	2078331	27902.4	2077539	0	120	22469	2078011	8	5	1 (4)	18
					Mid	27974.88	2078747	27780.48	2075507	102		22470	2078299	4	0	1 (4)	212
					High	28000.08	2079167	27226.8	2066279	504		22472	2078875	10	6	1 (4)	1028
Channel spacing CC5-CC6=99.96 MHz (Note 1)																	
CC6	100	120	66	Downlink & Uplink	Low	28049.88	2079997	28002.36	2079205	0	120	22474	2079451	3	0	0 (0)	0
					Mid	28074.84	2080413	27880.44	2077173	102		22476	2080027	11	2	1 (4)	216
					High	28100.04	2080833	27326.76	2067945	504		22477	2080315	5	1	0 (0)	1010
Channel spacing CC6-CC7=99.96 MHz (Note 1)																	
CC7	100	120	66	Downlink & Uplink	Low	28149.84	2081663	28102.32	2080871	0	120	22480	2081179	10	2	0 (0)	4
					Mid	28174.8	2082079	27980.4	2078839	102		22482	2081755	6	5	1 (4)	222
					High	28200	2082499	27426.72	2069611	504		22483	2082043	0	0	1 (4)	1016
Channel spacing CC7-CC8=99.96 MHz (Note 1)																	
CC8	100	120	66	Downlink & Uplink	Low	28249.8	2083329	28202.28	2082537	0	120	22486	2082907	5	1	1 (4)	10
					Mid	28274.76	2083745	28080.36	2080505	102		22487	2083195	1	0	0 (0)	204
					High	28299.96	2084165	27526.68	2071277	504		22489	2083771	7	2	1 (4)	1020

Note 1: Corresponds to nominal channel spacing in accordance with TS 38.101-2 [8], clause 5.4A.1 for the channel bandwidths of the two respective NR component carriers.

Note 2: CCs are specified in increasing frequency order. CC1 is used as PCell if nothing else is specified in the test case.

Note 3: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter  $\Delta$ OffsetCORESET-0-Carrier in Annex C expressed in number of common RBs.

Note 4: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-8 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.

**Table 4.3.1.2.3.5.13-1: NR Intra-Band contiguous CA configuration CA\_n261O (PCC=CC1 and SCC=CC2), SCS=60 kHz, nominal channel spacing**

CBW combination	CC	CBW [MHz]	SCS [kHz]	carrierBandwidth [PRBs]	Range	Carrier centre [MHz] Note 2	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequency PointA [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS [kHz]	GSCN	absoluteFrequency SSB [ARFCN]	$k_{SS}$	Offset Carrier CORESET#0 [RBs] Note 3	CORESET#0 Index (Offset [RBs]) Note 4	offsetToPoint A (SIB1) [PRBs] Note 4	
50+100	CC1 CC2	50 100	60	66 132	Downlink & Uplink	Same values as for Low, Mid, High range in Table 4.3.1.2.3.5.6-1 for CBW combination 50+100, CC1, CC2 and SCS=60 kHz.												
100+50	CC1	100	60	132	Downlink & Uplink	Low	27550.08	2071667	27502.56	2070875	0	120	22446	2071387	8	14	1 (8)	22
						Mid	27900	2077499	27779.04	2075483	102		22466	2077147	8	8	1 (8)	118
						High	28250.52	2083341	27840.12	2076501	504		22486	2082907	10	1	1 (8)	513
	Channel spacing CC1-CC2=74.4 MHz (Note 1)																	
100+100	CC1 CC2	100 100	60	132 132	Downlink & Uplink	Low	27624.48	2072907	27600.72	2072511	0	120	22451	2072827	4	6	0 (0)	6
						Mid	27974.4	2078739	27877.2	2077119	102		22471	2078587	4	0	0 (0)	102
						High	28324.92	2084581	27938.28	2078137	504		22492	2084635	6	9	1 (8)	521

Note 1: Corresponds to nominal channel spacing in accordance with TS 38.101-2 [8], clause 5.4A.1 for the channel bandwidths of the two respective NR component carriers.

Note 2: CCs are specified in increasing frequency order. CC1 is used as PCell if nothing else is specified in the test case.

Note 3: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter  $\Delta F_{\text{OffsetCORESET-0-Carrier}}$  in Annex C expressed in number of common RBs.

Note 4: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-8 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcc-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.

Table 4.3.1.2.3.5.13-2: NR Intra-Band contiguous CA configuration CA\_n2610 (PCC=CC1 and SCC=CC2), SCS=120 kHz, nominal channel spacing

CBW combination	CC	CBW [MHz]	SCS [kHz]	carrier Bandwidth [PRBs]	Range	Carrier centre [MHz] Note 2	Carrier centre [ARFCN]	point A [MHz]	absolute Frequency PointA [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS [kHz]	GSCN	absolute Frequency SSB [ARFCN]	$k_{SS}$	Offset Carrier CORESET#0 [RBs] Note 3	CORESET#0 Index (Offset [RBs]) Note 4	offsetToPointA (SIB1) [PRBs] Note 4	
50+100	CC1 CC2	50 100	120	32 66	Downlink & Uplink	Same values as for Low, Mid, High range in Table 4.3.1.2.3.5.6-2 for CBW combination 50+100, CC1, CC2 and SCS=120 kHz.												
100+50	CC1	100	120	66	Downlink & Uplink	Low	27550.08	2071667	27502.56	2070875	0	120	22446	2071387	4	7	1 (4)	22
						Mid	27900	2077499	27705.6	2074259	102		22466	2077147	4	4	1 (4)	220
						High	28250.52	2083341	27477.24	2070453	504		22486	2082907	11	0	1 (4)	1016
	Channel spacing CC1-CC2=74.4 MHz (Note 1)																	
100+100	CC1 CC2	100 100	120	66 66	Downlink & Uplink	Low	27624.48	2072907	27601.44	2072523	0	120	22451	2072827	8	2	0 (0)	4
						Mid	27974.4	2078739	27804.48	2075907	102		22472	2078875	8	7	1 (4)	226
						High	28324.92	2084581	27576.12	2072101	504		22492	2084635	3	4	1 (4)	1024

Note 1: Corresponds to nominal channel spacing in accordance with TS 38.101-2 [8], clause 5.4A.1 for the channel bandwidths of the two respective NR component carriers.

Note 2: CCs are specified in increasing frequency order. CC1 is used as PCell if nothing else is specified in the test case.

Note 3: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter  $\Delta F_{\text{OffsetCORESET-0-Carrier}}$  in Annex C expressed in number of common RBs.

Note 4: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-7 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcc-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.

Table 4.3.1.2.3.5.14-1: NR Intra-Band contiguous CA configuration CA\_n261P (PCC=CC1 and SCC=CC2, CC3), SCS=60 kHz, nominal channel spacing

CBW combination	CC	CBW [MHz]	SCS [kHz]	carrier Bandwidth [PRBs]	Range		Carrier centre [MHz] Note 2	Carrier centre [ARFCN]	point A [MHz]	absolute Frequency Point A [ARFCN]	offset to Carrier [Carrier PRBs]	SS block SCS [kHz]	GSCN	absolute Frequency SSB [ARFCN]	$k_{SS}$	Offset Carrier CORESET#0 [RBs] Note 3	CORE SET#0 Index (Offset [RBs]) Note 4	offset to Point A (SIB1) [PRBs] Note 4						
					Downlink & Uplink	Low Mid High																		
50+50+50	CC1	50	60	66	Downlink & Uplink	Low	27525	2071249	27501.24	2070853	0	120	22446	2071387	6	16	1 (8)	24						
						Mid	27874.92	2077081	27777.72	2075461	102								22466	2077147	6	10	1 (8)	120
						High	28225.08	2082917	27838.44	2076473	504								22486	2082907	2	4	1 (8)	516
	Channel spacing CC1-CC2=49.92 MHz (Note 1)																							
	CC2	50	60	66	Downlink & Uplink	Low	27574.92	2072081	27551.16	2071685	0	120	22448	2071963	2	3	0 (0)	3						
						Mid	27924.84	2077913	27827.64	2076293	102								22469	2078011	2	13	1 (8)	123
						High	28275	2083749	27888.36	2077305	504								22489	2083771	10	6	1 (8)	518
	Channel spacing CC2-CC3=49.92 MHz (Note 1)																							
	CC3	50	60	66	Downlink & Uplink	Low	27624.84	2072913	27601.08	2072517	0	120	22451	2072827	10	5	0 (0)	5						
						Mid	27974.76	2078745	27877.56	2077125	102								22472	2078875	10	15	1 (8)	125
						High	28324.92	2084581	27938.28	2078137	504								22492	2084635	6	9	1 (8)	521
	50+50+100	CC1	50	60	66	Downlink & Uplink	Low	27525	2071249	27501.24	2070853	0	120	22446	2071387	6	16	1 (8)	24					
Mid							27849.96	2076665	27752.76	2075045	102	22464								2076571	2	5	0 (0)	107
High							28175.64	2082093	27789	2075649	504	22483								2082043	10	0	1 (8)	512
Channel spacing CC1-CC2=49.92 MHz (Note 1)																								
CC2		50	60	66	Downlink & Uplink	Low	27574.92	2072081	27551.16	2071685	0	120	22448	2071963	2	3	0 (0)	3						
						Mid	27899.88	2077497	27802.68	2075877	102								22467	2077435	10	7	0 (0)	109
						High	28225.56	2082925	27838.92	2076481	504								22486	2082907	6	3	1 (8)	515
Channel spacing CC2-CC3=74.4 MHz (Note 1)																								
CC3		100	60	132	Downlink & Uplink	Low	27649.32	2073321	27601.8	2072529	0	120	22451	2072827	10	4	0 (0)	4						
						Mid	27974.28	2078737	27853.32	2076721	102								22470	2078299	6	1	1 (8)	111
						High	28299.96	2084165	27889.56	2077325	504								22489	2083771	2	5	1 (8)	517
50+100+50		CC1	50	60	66	Downlink & Uplink	Low	27525	2071249	27501.24	2070853	0	120	22446	2071387	6	16	1 (8)	24					
	Mid						27849.96	2076665	27752.76	2075045	102	22464								2076571	2	5	0 (0)	107
	High						28176.12	2082101	27789.48	2075657	504	22483								2082043	2	0	1 (8)	512
	Channel spacing CC1-CC2=74.4 MHz (Note 1)																							
	CC2	100	60	132	Downlink & Uplink	Low	27599.4	2072489	27551.88	2071697	0	120	22448	2071963	2	2	0 (0)	2						
						Mid	27924.36	2077905	27803.4	2075889	102								22467	2077435	10	6	0 (0)	108
						High	28250.52	2083341	27840.12	2076501	504								22486	2082907	10	1	1 (8)	513
	Channel spacing CC2-CC3=74.4 MHz (Note 1)																							
	CC3	50	60	66	Downlink & Uplink	Low	27673.8	2073729	27650.04	2073333	0	120	22454	2073691	10	1	1 (8)	9						
						Mid	27998.76	2079145	27901.56	2077525	102								22473	2079163	6	6	1 (8)	116
						High	28324.92	2084581	27938.28	2078137	504								22492	2084635	6	9	1 (8)	521

50+100 +100	CC1	50	60	66	Downlink & Uplink	Low	27525	2071249	27501.24	2070853	0	120	22446	2071387	6	16	1 (8)	24	
						Mid	27825	2076249	27727.8	2074629	102		22463	2076283	10	7	1 (8)	117	
						High	28125.6	2081259	27738.96	2074815	504		22480	2081179	4	6	0 (0)	510	
	Channel spacing CC1-CC2=74.4 MHz (Note 1)																		
	CC2	100	60	132	Downlink & Uplink	Low	27599.4	2072489	27551.88	2071697	0	120	22448	2071963	2	2	0 (0)	2	
						Mid	27899.4	2077489	27778.44	2075473	102		22466	2077147	6	9	1 (8)	119	
						High	28200	2082499	27789.6	2075659	504		22483	2082043	0	0	1 (8)	512	
	Channel spacing CC2-CC3=99.96 MHz (Note 1)																		
	CC3	100	60	132	Downlink & Uplink	Low	27699.36	2074155	27651.84	2073363	0	120	22454	2073691	4	7	0 (0)	7	
Mid						27999.36	2079155	27878.4	2077139	102	22472		2078875	8	14	1 (8)	124		
High						28299.96	2084165	27889.56	2077325	504	22489		2083771	2	5	1 (8)	517		
100+50 +50	CC1	100	60	132	Downlink & Uplink	Low	27550.08	2071667	27502.56	2070875	0	120	22446	2071387	8	14	1 (8)	22	
						Mid	27874.92	2077081	27753.96	2075065	102		22464	2076571	6	3	0 (0)	105	
						High	28200.6	2082509	27790.2	2075669	504		22483	2082043	2	7	0 (0)	511	
	Channel spacing CC1-CC2=74.4 MHz (Note 1)																		
	CC2	50	60	66	Downlink & Uplink	Low	27624.48	2072907	27600.72	2072511	0	120	22451	2072827	4	6	0 (0)	6	
						Mid	27949.32	2078321	27852.12	2076701	102		22470	2078299	2	3	1 (8)	113	
						High	28275	2083749	27888.36	2077305	504		22489	2083771	10	6	1 (8)	518	
	Channel spacing CC2-CC3=49.92 MHz (Note 1)																		
	CC3	50	60	66	Downlink & Uplink	Low	27674.4	2073739	27650.64	2073343	0	120	22454	2073691	0	1	1 (8)	9	
Mid						27999.24	2079153	27902.04	2077533	102	22473		2079163	10	5	1 (8)	115		
High						28324.92	2084581	27938.28	2078137	504	22492		2084635	6	9	1 (8)	521		
100+50 +100	CC1	100	60	132	Downlink & Uplink	Low	27550.08	2071667	27502.56	2070875	0	120	22446	2071387	8	14	1 (8)	22	
						Mid	27849.96	2076665	27729	2074649	102		22463	2076283	2	6	1 (8)	116	
						High	28151.16	2081685	27740.76	2074845	504		22480	2081179	10	3	0 (0)	507	
	Channel spacing CC1-CC2=74.4 MHz (Note 1)																		
	CC2	50	60	66	Downlink & Uplink	Low	27624.48	2072907	27600.72	2072511	0	120	22451	2072827	4	6	0 (0)	6	
						Mid	27924.36	2077905	27827.16	2076285	102		22469	2078011	10	13	1 (8)	123	
						High	28225.56	2082925	27838.92	2076481	504		22486	2082907	6	3	1 (8)	515	
	Channel spacing CC2-CC3=74.4 MHz (Note 1)																		
	CC3	100	60	132	Downlink & Uplink	Low	27698.88	2074147	27651.36	2073355	0	120	22454	2073691	0	0	1 (8)	8	
Mid						27998.76	2079145	27877.8	2077129	102	22472		2078875	6	15	1 (8)	125		
High						28299.96	2084165	27889.56	2077325	504	22489		2083771	2	5	1 (8)	517		
100+100 +50	CC1	100	60	132	Downlink & Uplink	Low	27550.08	2071667	27502.56	2070875	0	120	22446	2071387	8	14	1 (8)	22	
						Mid	27849.96	2076665	27729	2074649	102		22463	2076283	2	6	1 (8)	116	
						High	28150.56	2081675	27740.16	2074835	504		22480	2081179	8	4	0 (0)	508	
	Channel spacing CC1-CC2=99.96 MHz (Note 1)																		
	CC2	100	60	132	Downlink & Uplink	Low	27650.04	2073333	27602.52	2072541	0	120	22451	2072827	10	3	0 (0)	3	
						Mid	27949.92	2078331	27828.96	2076315	102		22469	2078011	4	11	1 (8)	121	
						High	28250.52	2083341	27840.12	2076501	504		22486	2082907	10	1	1 (8)	513	
	Channel spacing CC2-CC3=74.4 MHz (Note 1)																		
	CC3	50	60	66	Downlink & Uplink	Low	27724.44	2074573	27700.68	2074177	0	120	22457	2074555	6	3	1 (8)	11	
Mid						28024.32	2079571	27927.12	2077951	102	22474		2079451	0	3	0 (0)	105		
High						28324.92	2084581	27938.28	2078137	504	22492		2084635	6	9	1 (8)	521		

100+100 +100	CC1 CC2 CC3	100 100 100	60	132 132 132	Downlink & Uplink	Low, Mid, High	Same values as for Low, Mid, High range in Table 4.3.1.2.3.5.7-1 for CBW combination 100+100+100, CC1, CC2, CC3 and SCS=60 kHz.
<p>Note 1: Corresponds to nominal channel spacing in accordance with TS 38.101-2 [8], clause 5.4A.1 for the channel bandwidths of the two respective NR component carriers.</p> <p>Note 2: CCs are specified in increasing frequency order. CC1 is used as PCell if nothing else is specified in the test case.</p> <p>Note 3: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter <math>\Delta F_{\text{OffsetCORESET-0-Carrier}}</math> in Annex C expressed in number of common RBs.</p> <p>Note 4: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-7 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.</p>							

Table 4.3.1.2.3.5.14-2: NR Intra-Band contiguous CA configuration CA\_n261P (PCC=CC1 and SCC=CC2, CC3), SCS=120 kHz, nominal channel spacing

CBW combination	CC	CBW [MHz]	SCS [kHz]	carrier Bandwidth [PRBs]	Range		Carrier centre [MHz] Note 2	Carrier centre [ARFCN]	point A [MHz]	absolute Frequency Point A [ARFCN]	offset to Carrier [Carrier PRBs]	SS block SCS [kHz]	GSCN	absolute Frequency SSB [ARFCN]	k <sub>SS</sub>	Offset Carrier CORESET#0 [RBs] Note 3	CORE SET#0 Index (Offset [RBs]) Note 4	offset to Point A (SIB1) [PRBs] Note 4	
					Downlink & Uplink	Low Mid High													
50+50+50	CC1	50	120	32	Downlink & Uplink	Low	27525	2071249	27501.96	2070865	0	120	22446	2071387	9	7	1 (4)	22	
						Mid	27875.04	2077083	27705.12	2074251	102		22466	2077147	8	4	1 (4)	220	
						High	28225.08	2082917	27476.28	2070437	504		22486	2082907	7	1	1 (4)	1018	
	Channel spacing CC1-CC2=49.92 MHz (Note 1)																		
	CC2	50	120	32	Downlink & Uplink	Low	27574.92	2072081	27551.88	2071697	0	120	22448	2071963	1	1	0 (0)	2	
						Mid	27924.96	2077915	27755.04	2075083	102		22469	2078011	0	6	1 (4)	224	
						High	28275	2083749	27526.2	2071269	504		22489	2083771	11	2	1 (4)	1020	
	Channel spacing CC2-CC3=49.92 MHz (Note 1)																		
	CC3	50	120	32	Downlink & Uplink	Low	27624.84	2072913	27601.8	2072529	0	120	22451	2072827	5	2	0 (0)	4	
						Mid	27974.88	2078747	27804.96	2075915	102		22472	2078875	4	7	1 (4)	226	
						High	28324.92	2084581	27576.12	2072101	504		22492	2084635	3	4	1 (4)	1024	
	50+50+100	CC1	50	120	32	Downlink & Uplink	Low	27525	2071249	27501.96	2070865	0	120	22446	2071387	9	7	1 (4)	22
Mid							27849.96	2076665	27680.04	2073833	102	22464		2076571	1	2	0 (0)	208	
High							28175.64	2082093	27426.84	2069613	504	22483		2082043	11	3	0 (0)	1014	
Channel spacing CC1-CC2=49.92 MHz (Note 1)																			
CC2		50	120	32	Downlink & Uplink	Low	27574.92	2072081	27551.88	2071697	0	120	22448	2071963	1	1	0 (0)	2	
						Mid	27899.88	2077497	27729.96	2074665	102		22467	2077435	5	3	0 (0)	210	
						High	28225.56	2082925	27476.76	2070445	504		22486	2082907	3	1	1 (4)	1018	
Channel spacing CC2-CC3=74.4 MHz (Note 1)																			
CC3		100	120	66	Downlink & Uplink	Low	27649.32	2073321	27601.8	2072529	0	120	22451	2072827	5	2	0 (0)	4	
						Mid	27974.28	2078737	27779.88	2075497	102		22470	2078299	9	0	1 (4)	212	
						High	28299.96	2084165	27526.68	2071277	504		22489	2083771	7	2	1 (4)	1020	
50+100+50		CC1	50	120	32	Downlink & Uplink	Low	27525	2071249	27501.96	2070865	0	120	22446	2071387	9	7	1 (4)	22
	Mid						27849.96	2076665	27680.04	2073833	102	22464		2076571	1	2	0 (0)	208	
	High						28176.12	2082101	27427.32	2069621	504	22483		2082043	7	3	0 (0)	1014	
	Channel spacing CC1-CC2=74.4 MHz (Note 1)																		
	CC2	100	120	66	Downlink & Uplink	Low	27599.4	2072489	27551.88	2071697	0	120	22448	2071963	1	1	0 (0)	2	
						Mid	27924.36	2077905	27729.96	2074665	102		22467	2077435	5	3	0 (0)	210	
						High	28250.52	2083341	27477.24	2070453	504		22486	2082907	11	0	1 (4)	1016	
	Channel spacing CC2-CC3=74.4 MHz (Note 1)																		
	CC3	50	120	32	Downlink & Uplink	Low	27673.8	2073729	27650.76	2073345	0	120	22454	2073691	5	0	1 (4)	8	
						Mid	27998.76	2079145	27828.84	2076313	102		22473	2079163	9	2	1 (4)	216	
						High	28324.92	2084581	27576.12	2072101	504		22492	2084635	3	4	1 (4)	1024	
	50+100+100	CC1	50	120	32	Downlink & Uplink	Low	27525	2071249	27501.96	2070865	0	120	22446	2071387	9	7	1 (4)	22
Mid							27825	2076249	27655.08	2073417	102	22463		2076283	5	3	1 (4)	218	

					Uplink	High	28125.6	2081259	27376.8	2068779	504		22480	2081179	8	2	0 (0)	1012
Channel spacing CC1-CC2=74.4 MHz (Note 1)																		
CC2	100	120	66	Downlink & Uplink	Low	27599.4	2072489	27551.88	2071697	0	120	22448	2071963	1	1	0 (0)	2	
					Mid	27899.4	2077489	27705	2074249	102		22466	2077147	9	4	1 (4)	220	
					High	28200	2082499	27426.72	2069611	504		22483	2082043	0	0	1 (4)	1016	
Channel spacing CC2-CC3=99.96 MHz (Note 1)																		
CC3	100	120	66	Downlink & Uplink	Low	27699.36	2074155	27651.84	2073363	0	120	22454	2073691	8	3	0 (0)	6	
					Mid	27999.36	2079155	27804.96	2075915	102		22472	2078875	4	7	1 (4)	226	
					High	28299.96	2084165	27526.68	2071277	504		22489	2083771	7	2	1 (4)	1020	
100+50+50	CC1	100	120	66	Downlink & Uplink	Low	27550.08	2071667	27502.56	2070875	0	120	22446	2071387	4	7	1 (4)	22
						Mid	27875.04	2077083	27680.64	2073843	102		22464	2076571	8	1	0 (0)	206
						High	28200.6	2082509	27427.32	2069621	504		22483	2082043	7	3	0 (0)	1014
Channel spacing CC1-CC2=74.4 MHz (Note 1)																		
CC2	50	120	32	Downlink & Uplink	Low	27624.48	2072907	27601.44	2072523	0	120	22451	2072827	8	2	0 (0)	4	
					Mid	27949.44	2078323	27779.52	2075491	102		22470	2078299	0	1	1 (4)	214	
					High	28275	2083749	27526.2	2071269	504		22489	2083771	11	2	1 (4)	1020	
Channel spacing CC2-CC3=49.92 MHz (Note 1)																		
CC3	50	120	32	Downlink & Uplink	Low	27674.4	2073739	27651.36	2073355	0	120	22454	2073691	0	0	1 (4)	8	
					Mid	27999.36	2079155	27829.44	2076323	102		22473	2079163	4	2	1 (4)	216	
					High	28324.92	2084581	27576.12	2072101	504		22492	2084635	3	4	1 (4)	1024	
100+50+100	CC1	100	120	66	Downlink & Uplink	Low	27550.08	2071667	27502.56	2070875	0	120	22446	2071387	4	7	1 (4)	22
						Mid	27849.96	2076665	27655.56	2073425	102		22463	2076283	1	3	1 (4)	218
						High	28151.16	2081685	27377.88	2068797	504		22480	2081179	11	1	0 (0)	1010
Channel spacing CC1-CC2=74.4 MHz (Note 1)																		
CC2	50	120	32	Downlink & Uplink	Low	27624.48	2072907	27601.44	2072523	0	120	22451	2072827	8	2	0 (0)	4	
					Mid	27924.36	2077905	27754.44	2075073	102		22469	2078011	5	6	1 (4)	224	
					High	28225.56	2082925	27476.76	2070445	504		22486	2082907	3	1	1 (4)	1018	
Channel spacing CC2-CC3=74.4 MHz (Note 1)																		
CC3	100	120	66	Downlink & Uplink	Low	27698.88	2074147	27651.36	2073355	0	120	22454	2073691	0	0	1 (4)	8	
					Mid	27998.76	2079145	27804.36	2075905	102		22472	2078875	9	7	1 (4)	226	
					High	28299.96	2084165	27526.68	2071277	504		22489	2083771	7	2	1 (4)	1020	
100+100+50	CC1	100	120	66	Downlink & Uplink	Low	27550.08	2071667	27502.56	2070875	0	120	22446	2071387	4	7	1 (4)	22
						Mid	27849.96	2076665	27655.56	2073425	102		22463	2076283	1	3	1 (4)	218
						High	28150.56	2081675	27377.28	2068787	504		22480	2081179	4	2	0 (0)	1012
Channel spacing CC1-CC2=99.96 MHz (Note 1)																		
CC2	100	120	66	Downlink & Uplink	Low	27650.04	2073333	27602.52	2072541	0	120	22451	2072827	11	1	0 (0)	2	
					Mid	27949.92	2078331	27755.52	2075091	102		22469	2078011	8	5	1 (4)	222	
					High	28250.52	2083341	27477.24	2070453	504		22486	2082907	11	0	1 (4)	1016	
Channel spacing CC2-CC3=74.4 MHz (Note 1)																		
CC3	50	120	32	Downlink & Uplink	Low	27724.44	2074573	27701.4	2074189	0	120	22457	2074555	3	1	1 (4)	10	
					Mid	28024.32	2079571	27854.4	2076739	102		22474	2079451	0	1	0 (0)	206	
					High	28324.92	2084581	27576.12	2072101	504		22492	2084635	3	4	1 (4)	1024	
100+100+100	CC1 CC2	100 100	120 66	66 66	Downlink & Uplink	Low, Mid,	Same values as for Low, Mid, High range in Table 4.3.1.2.3.5.7-2 for CBW combination 100+100+100, CC1, CC2, CC3 and SCS=120 kHz.											



	CC3	100		66	Uplink	High	
Note 1:	Corresponds to nominal channel spacing in accordance with TS 38.101-2 [8], clause 5.4A.1 for the channel bandwidths of the two respective NR component carriers.						
Note 2:	CCs are specified in increasing frequency order. CC1 is used as PCell if nothing else is specified in the test case.						
Note 3:	The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs.						
Note 4:	The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-8 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.						

4.3.1.2.3.5.15 CA\_n261Q

FFS

4.3.1.2.4 NR intra-band non-contiguous CA configurations in FR2

4.3.1.2.4.1 NR Intra-band non-contiguous CA configurations for CA\_n257

4.3.1.2.4.2 NR Intra-band non-contiguous CA configurations for CA\_n258

4.3.1.2.4.3 FFS

4.3.1.2.4.4 NR Intra-band non-contiguous CA configurations for CA\_n260

4.3.1.2.4.4.1 CA\_n260(XA)

Editor's note: This clause is reserved for test frequencies for CA\_n260(XA) configurations where x is  $\geq 2$ , e.g. CA\_n260(2A), CA\_n260(3A) and CA\_n260(4A)

4.3.1.2.4.4.2 CA\_n260(A-I)

Editor's note: CBW=400 MHz for NR band n260 is only supported by for SCS 120kHz. Test frequencies for CA\_n260(A-I) are currently limited to SCS 120kHz for all CCs. Test frequencies for mixed numerologies between CCs is FFS.

Editor's note: The number of test points for intra-band non-contiguous CA configurations is under investigation, e.g. "Low" and "High", or "Mid".

Table 4.3.1.2.4.4.2-1: NR Intra-Band non-contiguous CA configuration CA\_n260(A-I) without UL CA, SCS=120 kHz, Max Wgap

CBW combination	Sub-block Note 2	CC within Sub-Block Note 2	Bandwidth [MHz]	carrier Bandwidth [PRBs]	Range	Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absoluteF reQUENCY PointA [ARFCN]	offsetToC arrier [Carrier PRBs]	SS block SCS [kHz]	GSCN	absoluteF reQUENCY SSB [ARFCN]	k <sub>SS</sub>	carrier CORE SET#0 [RBs] Note 3	CORE SET#0 Index (Offset [RBs]) Note 4	offset ToPoi ntA (SIB1) [PRBs] Note 4				
50, 50+100+100+100	CA_n260(A-I): Maximum frequency separation = 600 MHz (Note 5), Wgap SB1-SB2=200 MHz																				
	SB1	CC1	50	32	Low	Downlink & Uplink	Same test frequencies as n260 for Low range and channel bandwidth=50 MHz and SCS=120kHz in Table 4.3.1.2.1.4-2.														
	SB2	CC1	50	32			Downlink & Uplink	37275.6	2233759	37252.56	2233375	0	120	23010	2233819	N/A	4	1 (4)	16		
		Channel spacing CC1-CC2=74.4 MHz (Note 1)																			
		CC2	100	66	37350	2234999		37302.48	2234207	0	120	23013	2234683	10	5	1 (4)	18				
		Channel spacing CC2-CC3=99.96 MHz (Note 1)																			
	CC3	100	66	37449.96	2236665	37402.44	2235873	0	120	23018	2236123	5	0	0 (0)	0						
	Channel spacing CC3-CC4=99.96 MHz (Note 1)																				
	CC4	100	66	37549.92	2238331	37502.4	2237539	0	120	23024	2237851	0	3	0 (0)	6						
	SB1	CC1	50	32	High	Downlink & Uplink	Same test frequencies as n260 for High range and channel bandwidth=50 MHz and SCS=120kHz in Table 4.3.1.2.1.4-2.														
	SB2	CC1	50	32			39425.04	2269583	38676.24	2257103	504	120	23134	2269531	N/A	3	0 (0)	1014			
		Channel spacing CC1-CC2=74.4 MHz (Note 1)																			
		CC2	100	66			39499.44	2270823	38726.16	2257935	504	120	23137	2270395	N/A	1	1 (4)	1018			
		Channel spacing CC2-CC3=99.96 MHz (Note 1)																			
CC3		100	66	39599.4			2272489	38826.12	2259601	504	120	23143	2272123	9	3	1 (4)	1022				
Channel spacing CC3-CC4=99.96 MHz (Note 1)																					
CC4	100	66	39699.36	2274155	38926.08	2261267	504	120	23149	2273851	4	6	1 (4)	1028							
50, 100+100+100+100	CA_n260(A-I): Maximum frequency separation = 600 MHz (Note 5), Wgap SB1-SB2=150 MHz																				
	SB1	CC1	50	32	Low	Downlink & Uplink	Same test frequencies as n260 for Low range and channel bandwidth=50 MHz and SCS=120kHz in Table 4.3.1.2.1.4-2.														
	SB2	CC1	100	66			Downlink & Uplink	37250.04	2233333	37202.52	2232541	0	120	23007	2232955	N/A	3	1 (4)	14		
		Channel spacing CC2-CC3=99.96 MHz (Note 1)																			
		CC2	100	66	37350	2234999		37302.48	2234207	0	120	23013	2234683	10	5	1 (4)	18				
		Channel spacing CC2-CC3=99.96 MHz (Note 1)																			
		CC3	100	66	37449.96	2236665		37402.44	2235873	0	120	23018	2236123	5	0	0 (0)	0				
	Channel spacing CC3-CC4=99.96 MHz (Note 1)																				
	CC4	100	66	37549.92	2238331	37502.4	2237539	0	120	23024	2237851	0	3	0 (0)	6						
	SB1	CC1	50	32	High	Downlink & Uplink	Same test frequencies as n260 for High range and channel bandwidth=50 MHz and SCS=120kHz in Table 4.3.1.2.1.4-2.														
SB2	CC1	100	66	Downlink			39450	2269999	38676.72	2257111	504	120	23134	2269531	N/A	3	0 (0)	1014			

					Channel spacing CC2-CC3=99.96 MHz (Note 1)												
					& Uplink	39549.96	2271665	38776.68	2258777	504	120	23140	2271259	N/A	2	1 (4)	1020
						Channel spacing CC2-CC3=99.96 MHz (Note 1)											
						39649.92	2273331	38876.64	2260443	504	120	23146	2272987	8	4	1 (4)	1024
						Channel spacing CC3-CC4=99.96 MHz (Note 1)											
					39749.88	2274997	38976.6	2262109	504	120	23152	2274715	3	7	1 (4)	1030	
CA_n260(A-l): Maximum frequency separation = 600 MHz (Note 5), W <sub>gap</sub> SB1-SB2=150 MHz																	
100, 50+100+100+100	SB1	CC1	100	66	Low	Downlink & Uplink	Same test frequencies as n260 for Low range and channel bandwidth=100 MHz and SCS=120kHz in Table 4.3.1.2.1.4-2.										
		CC2	100	66			Downlink & Uplink	Same test frequencies as for CBW combination 50, 50+100+100+100 for Low range.									
	CC3	100	66														
	CC4	100	66														
	SB1	CC1	100	66	High	Downlink & Uplink		Same test frequencies as n260 for High range and channel bandwidth=100 MHz and SCS=120kHz in Table 4.3.1.2.1.4-2.									
		SB2	CC1	50			32	Downlink & Uplink	Same test frequencies as for CBW combination 50, 50+100+100+100 for High range.								
	CC2		100	66													
	CC3		100	66													
	CC4		100	66													
	CA_n260(A-l): Maximum frequency separation = 600 MHz (Note 5), W <sub>gap</sub> SB1-SB2=100 MHz																
100, 100+100+100+100	SB1	CC1	100	66	Low	Downlink & Uplink	Same test frequencies as n260 for Low range and channel bandwidth=100 MHz and SCS=120kHz in Table 4.3.1.2.1.4-2.										
		CC2	100	66			Downlink & Uplink	Same test frequencies as for CBW combination 50, 100+100+100+100 for Low range.									
	CC3	100	66														
	CC4	100	66														
	SB1	CC1	100	66	High	Downlink & Uplink		Same test frequencies as n260 for High range and channel bandwidth=100 MHz and SCS=120kHz in Table 4.3.1.2.1.4-2.									
		SB2	CC1	100			66	Downlink & Uplink	Same test frequencies as for CBW combination 50, 100+100+100+100 for High range.								
	CC2		100	66													
	CC3		100	66													
	CC4		100	66													
	CA_n260(A-l): Maximum frequency separation = 600 MHz (Note 5), W <sub>gap</sub> SB1-SB2=50 MHz																
200, 50+100+100+100	SB1	CC1	200	132	Low	Downlink & Uplink	Same test frequencies as n260 for Low range and channel bandwidth=200 MHz and SCS=120kHz in Table 4.3.1.2.1.4-2.										
		SB2	CC1	50			32	Downlink & Uplink	Same test frequencies as for CBW combination 50, 50+100+100+100 for Low range.								
	CC2		100	66													
	CC3		100	66													
	CC4		100	66													

	SB1	CC1	200	132	High	Downlink & Uplink	Same test frequencies as n260 for High range and channel bandwidth=200 MHz and SCS=120kHz in Table 4.3.1.2.1.4-2.													
	SB2	CC1	50	32		Downlink & Uplink	Same test frequencies as for CBW combination 50, 50+100+100+100 for High range.													
		CC2	100	66																
		CC3	100	66																
		CC4	100	66																
200, 100+100+100+100	CA_n260(A-I): Maximum frequency separation = 800 MHz (Note 5), Wgap SB1-SB2=200 MHz																			
	SB1	CC1	200	132	Low	Downlink & Uplink	Same test frequencies as n260 for Low range and channel bandwidth=200 MHz and SCS=120kHz in Table 4.3.1.2.1.4-2.													
	SB2	CC1	100	66		Downlink & Uplink	37450.08	2236667	37402.56	2235875	0	120	23018	2236123	4	0	0 (0)	0		
		Channel spacing CC2-CC3=99.96 MHz (Note 1)																		
		CC2	100	66			37550.04	2238333	37502.52	2237541	0	120	23024	2237851	11	2	0 (0)	4		
	Channel spacing CC2-CC3=99.96 MHz (Note 1)																			
			CC3	100	66	Downlink & Uplink	37650	2239999	37602.48	2239207	0	120	23030	2239579	6	1	1 (4)	10		
	Channel spacing CC3-CC4=99.96 MHz (Note 1)																			
			CC4	100	66	Downlink & Uplink	37749.96	2241665	37702.44	2240873	0	120	23036	2241307	1	4	1 (4)	16		
	Channel spacing CC3-CC4=99.96 MHz (Note 1)																			
		SB1	CC1	200	132	High	Downlink & Uplink	Same test frequencies as n260 for High range and channel bandwidth=200 MHz and SCS=120kHz in Table 4.3.1.2.1.4-2.												
	SB2	CC1	100	66	Downlink & Uplink		39250.08	2266667	38476.8	2253779	504	120	23123	2266363	4	6	1 (4)	1028		
Channel spacing CC2-CC3=99.96 MHz (Note 1)																				
CC2		100	66	39350.04			2268333	38576.76	2255445	504	120	23128	2267803	11	0	0 (0)	1008			
Channel spacing CC2-CC3=99.96 MHz (Note 1)																				
		CC3	100	66	Downlink & Uplink	39450	2269999	38676.72	2257111	504	120	23134	2269531	6	3	0 (0)	1014			
Channel spacing CC3-CC4=99.96 MHz (Note 1)																				
		CC4	100	66	Downlink & Uplink	39549.96	2271665	38776.68	2258777	504	120	23140	2271259	1	2	1 (4)	1020			
Channel spacing CC3-CC4=99.96 MHz (Note 1)																				
400, 50+100+100+100	CA_n260(A-I): Maximum frequency separation = 800 MHz (Note 5), Wgap SB1-SB2=50 MHz																			
	SB1	CC1	400	264	Low	Downlink & Uplink	Same test frequencies as n260 for Low range and channel bandwidth=400 MHz and SCS=120kHz in Table 4.3.1.2.1.4-2.													
	SB2	CC1	50	32		Downlink & Uplink	37475.64	2237093	37452.6	2236709	0	120	23021	2236987	7	1	0 (0)	2		
		Channel spacing CC1-CC2=74.4 MHz (Note 1)																		
		CC2	100	66			37550.04	2238333	37502.52	2237541	0	120	23024	2237851	11	2	0 (0)	4		
	Channel spacing CC2-CC3=99.96 MHz (Note 1)																			
			CC3	100	66	Downlink & Uplink	37650	2239999	37602.48	2239207	0	120	23030	2239579	6	1	1 (4)	10		
	Channel spacing CC3-CC4=99.96 MHz (Note 1)																			
			CC4	100	66	Downlink & Uplink	37749.96	2241665	37702.44	2240873	0	120	23036	2241307	1	4	1 (4)	16		
	Channel spacing CC3-CC4=99.96 MHz (Note 1)																			
		SB1	CC1	400	264	High	Downlink & Uplink	Same test frequencies as n260 for High range and channel bandwidth=400 MHz and SCS=120kHz in Table 4.3.1.2.1.4-2.												
	SB2	CC1	50	32	Downlink & Uplink		39225	2266249	38476.2	2253769	504	120	23123	2266363	9	6	1 (4)	1028		
Channel spacing CC1-CC2=74.4 MHz (Note 1)																				

					Uplink		39299.4	2267489	38526.12	2254601	504	120	23125	2266939	1	0	0 (0)	1008	
							Channel spacing CC2-CC3=99.96 MHz (Note 1)												
					Uplink		39399.36	2269155	38626.08	2256267	504	120	23131	2268667	8	2	0 (0)	1012	
							Channel spacing CC3-CC4=99.96 MHz (Note 1)												
					Uplink		39499.32	2270821	38726.04	2257933	504	120	23137	2270395	3	1	1 (4)	1018	
CA_n260(A-I): Maximum frequency separation = 1000 MHz (Note 5), Wgap SB1-SB2=200 MHz																			
400, 100+100+1 00+100	SB1	CC1	400	264	Low	Downlink & Uplink	Same test frequencies as n260 for Low range and channel bandwidth= 400 MHz and SCS=120kHz in Table 4.3.1.2.1.4-2.												
	SB2	CC1	100	66			Downlink & Uplink	37650.12	2240001	37602.6	2239209	0	120	23030	2239579	5	1	1 (4)	10
		Channel spacing CC2-CC3=99.96 MHz (Note 1)																	
		CC2	100	66				37750.08	2241667	37702.56	2240875	0	23036	2241307	0	4	1 (4)	16	
		Channel spacing CC2-CC3=99.96 MHz (Note 1)																	
	CC3	100	66	37850.04	2243333	37802.52	2242541	0	23042	2243035	7	6	1 (4)	20					
	Channel spacing CC3-CC4=99.96 MHz (Note 1)																		
	CC4	100	66	37950	2244999	37902.48	2244207	0	23047	2244475	2	1	0 (0)	2					
	SB1	CC1	400	264	High	Downlink & Uplink	Same test frequencies as n260 for High range and channel bandwidth=400 MHz and SCS=120kHz in Table 4.3.1.2.1.4-2.												
	SB2	CC1	100	66			Downlink & Uplink	39050.04	2263333	38276.76	2250445	504	120	23111	2262907	3	1	1 (4)	1018
		Channel spacing CC2-CC3=99.96 MHz (Note 1)																	
		CC2	100	66				39150	2264999	38376.72	2252111	504	120	23117	2264635	10	3	1 (4)	1022
		Channel spacing CC2-CC3=99.96 MHz (Note 1)																	
	CC3	100	66	39249.96	2266665	38476.68	2253777	504	120	23123	2266363	5	6	1 (4)	1028				
Channel spacing CC3-CC4=99.96 MHz (Note 1)																			
CC4	100	66	39349.92	2268331	38576.64	2255443	504	120	23128	2267803	0	1	0 (0)	1010					
Note 1: Corresponds to nominal channel spacing in accordance with TS 38.101-1 [7], clause 5.4A.1 for the CC channel bandwidth combination.																			
Note 2: CCs within the sub-block are specified in increasing frequency order. CC1 in SB1 is used as PCell if nothing else is specified in the test case.																			
Note 3: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs.																			
Note 4: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-8 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.																			
Note 5: The maximum frequency separation has been selected as the lowest DL maximum frequency separation in TS 38.101-2 [8], Table 5.3A.4-2 that fits the aggregated channel bandwidth.																			

Table 4.3.1.2.4.4.2-2: NR Intra-Band non-contiguous CA configuration CA\_n260(A-I) with UL CA, SCS=120 kHz, Max Wgap

CBW combination	Sub-block Note 2	CC within Sub-Block Note 2	Bandwidth [MHz]	carrier Bandwidth [PRBs]	Range	Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequency PointA [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS [kHz]	GSCN	absoluteFrequency SSB [ARFCN]	$k_{SS}$	carrier CORE SET#0 [RBs] Note 3	CORE SET#0 Index (Offset [RBs]) Note 4	offset ToPointA (SIB1) [PRBs] Note 4	
CA_n260(A-I): Maximum frequency separation = 600 MHz (Note 5), Wgap SB1-SB2=200 MHz																		
50+100+100+100, 50	SB1	CC1	50	32	Low	Downlink & Uplink	Same test frequencies as for CA_n260I for Low range, CBW combination 50+100+100+100 and SCS=120kHz in Table 4.3.1.2.3.4.8-2.											
		CC2	100	66														
		CC3	100	66														
		CC4	100	66														
	SB2	CC1	50	32	Downlink & Uplink	37575	2238749	37551.96	2238365	0	120	23027	2238715	7	0	1 (4)	8	
	SB1	CC1	50	32	High	Downlink & Uplink	Same test frequencies as for CA_n260I for High range, CBW combination 50+100+100+100 and SCS=120kHz in Table 4.3.1.2.3.4.8-2.											
		CC2	100	66														
		CC3	100	66														
CC4		100	66															
SB2	CC1	50	32	Downlink & Uplink	39425.04	2269583	38676.24	2257103	504	120	23134	2269531	10	3	0 (0)	1014		
CA_n260(A-I): Maximum frequency separation = 600 MHz (Note 5), Wgap SB1-SB2=150 MHz																		
100+100+100+100, 50	SB1	CC1	100	66	Low	Downlink & Uplink	Same test frequencies as for CA_n260I for Low range, CBW combination 100+100+100+100 and SCS=120kHz in Table 4.3.1.2.3.4.8-2.											
		CC2	100	66														
		CC3	100	66														
		CC4	100	66														
	SB2	CC1	50	32	Downlink & Uplink	37575	2238749	37551.96	2238365	0	120	23027	2238715	7	0	1 (4)	8	
	SB1	CC1	100	66	High	Downlink & Uplink	Same test frequencies as for CA_n260I for High range, CBW combination 100+100+100+100 and SCS=120kHz in Table 4.3.1.2.3.4.8-2.											
		CC2	100	66														
		CC3	100	66														
CC4		100	66															
SB2	CC1	50	32	Downlink & Uplink	39425.04	2269583	38676.24	2257103	504	120	23134	2269531	10	3	0 (0)	1014		
CA_n260(A-I): Maximum frequency separation = 600 MHz (Note 5), Wgap SB1-SB2=150 MHz																		
50+100+100+100, 100	SB1	CC1	50	32	Low	Downlink & Uplink	Same test frequencies as for CA_n260I for Low range, CBW combination 50+100+100+100 and SCS=120kHz in Table 4.3.1.2.3.4.8-2.											
		CC2	100	66														
		CC3	100	66														
		CC4	100	66														
	SB2	CC1	100	66	Downlink	37549.92	2238331	37502.4	2237539	0	120	23024	2237851	0	3	0 (0)	6	

					& Uplink												
SB1	CC1	50	32	High	Downlink & Uplink	Same test frequencies as for CA_n260l for High range, CBW combination 50+100+100+100 and SCS=120kHz in Table 4.3.1.2.3.4.8-2.											
	CC2	100	66														
	CC3	100	66														
	CC4	100	66														
SB2	CC1	100	66		Downlink & Uplink	39450	2269999	38676.72	2257111	504	120	23134	2269531	6	3	0 (0)	1014
CA_n260(A-I): Maximum frequency separation = 600 MHz (Note 5), Wgap SB1-SB2=100 MHz																	
SB1	CC1	100	66	Low	Downlink & Uplink	Same test frequencies as for CA_n260l for Low range, CBW combination 100+100+100+100 and SCS=120kHz in Table 4.3.1.2.3.4.8-2.											
	CC2	100	66														
	CC3	100	66														
	CC4	100	66														
SB2	CC1	100	66		Downlink & Uplink	37549.92	2238331	37502.4	2237539	0	120	23024	2237851	0	3	0 (0)	6
SB1	CC1	100	66	High	Downlink & Uplink	Same test frequencies as for CA_n260l for High range, CBW combination 100+100+100+100 and SCS=120kHz in Table 4.3.1.2.3.4.8-2.											
	CC2	100	66														
	CC3	100	66														
	CC4	100	66														
SB2	CC1	100	66		Downlink & Uplink	39450	2269999	38676.72	2257111	504	120	23134	2269531	6	3	0 (0)	1014
CA_n260(A-I): Maximum frequency separation = 600 MHz (Note 5), Wgap SB1-SB2=50 MHz																	
SB1	CC1	50	32	Low	Downlink & Uplink	Same test frequencies as for CA_n260l for Low range, CBW combination 50+100+100+100 and SCS=120kHz in Table 4.3.1.2.3.4.8-2.											
	CC2	100	66														
	CC3	100	66														
	CC4	100	66														
SB2	CC1	100	66		Downlink & Uplink	37500	2237499	37404.96	2235915	0	120	23019	2236411	8	6	1 (4)	20
SB1	CC1	50	32	High	Downlink & Uplink	Same test frequencies as for CA_n260l for High range, CBW combination 50+100+100+100 and SCS=120kHz in Table 4.3.1.2.3.4.8-2.											
	CC2	100	66														
	CC3	100	66														
	CC4	100	66														
SB2	CC1	200	132		Downlink & Uplink	39500.04	2270833	38679.24	2257153	504	120	23134	2269531	9	1	0 (0)	1010
CA_n260(A-I): Maximum frequency separation = 800 MHz (Note 5), Wgap SB1-SB2=200 MHz																	
SB1	CC1	100	66	Low	Downlink & Uplink	Same test frequencies as for CA_n260l for Low range, CBW combination 100+100+100+100 and SCS=120kHz in Table 4.3.1.2.3.4.8-2.											
	CC2	100	66														
	CC3	100	66														
	CC4	100	66														

	SB2	CC1	100	66		Downlink & Uplink	37699.92	2240831	37604.88	2239247	0	120	23030	2239579	10	3	0 (0)	6
	SB1	CC1	100	66	High	Downlink & Uplink	Same test frequencies as for CA_n260l for High range, CBW combination 100+100+100+100 and SCS=120kHz in Table 4.3.1.2.3.4.8-2.											
		CC2	100	66														
		CC3	100	66														
		CC4	100	66														
	SB2	CC1	200	132		Downlink & Uplink	39300	2267499	38479.2	2253819	504	120	23123	2266363	8	4	1 (4)	1024
50+100 +100+100 , 400	CA_n260(A-I): Maximum frequency separation = 800 MHz (Note 5), Wgap SB1-SB2=50 MHz																	
	SB1	CC1	50	32	Low	Downlink & Uplink	Same test frequencies as for CA_n260l for Low range, CBW combination 50+100+100+100 and SCS=120kHz in Table 4.3.1.2.3.4.8-2.											
		CC2	100	66														
		CC3	100	66														
		CC4	100	66														
	SB2	CC1	100	66		Downlink & Uplink	37599.96	2239165	37409.88	2235997	0	120	23019	2236411	3	3	1 (4)	14
	SB1	CC1	50	32	High	Downlink & Uplink	Same test frequencies as for CA_n260l for High range, CBW combination 50+100+100+100 and SCS=120kHz in Table 4.3.1.2.3.4.8-2.											
		CC2	100	66														
		CC3	100	66														
		CC4	100	66														
SB2	CC1	400	264		Downlink & Uplink	39400.08	2269167	38484.24	2253903	504	120	23123	2266363	2	1	1 (4)	1018	
100+100 +100+100 , 400	CA_n260(A-I): Maximum frequency separation = 1000 MHz (Note 5), Wgap SB1-SB2=200 MHz																	
	SB1	CC1	100	66	Low	Downlink & Uplink	Same test frequencies as for CA_n260l for Low range, CBW combination 100+100+100+100 and SCS=120kHz in Table 4.3.1.2.3.4.8-2.											
		CC2	100	66														
		CC3	100	66														
		CC4	100	66														
	SB2	CC1	100	66		Downlink & Uplink	37800	2242499	37609.92	2239331	0	120	23030	2239579	4	0	0 (0)	0
	SB1	CC1	100	66	High	Downlink & Uplink	Same test frequencies as for CA_n260l for High range, CBW combination 100+100+100+100 and SCS=120kHz in Table 4.3.1.2.3.4.8-2.											
		CC2	100	66														
		CC3	100	66														
		CC4	100	66														
SB2	CC1	400	264		Downlink & Uplink	39200.04	2265833	38284.2	2250569	504	120	23111	2262907	1	0	0 (0)	1008	

Note 1: Corresponds to nominal channel spacing in accordance with TS 38.101-1 [7], clause 5.4A.1 for the CC channel bandwidth combination.

Note 2: CCs within the sub-block are specified in increasing frequency order. CC1 in SB1 is used as PCell if nothing else is specified in the test case.

Note 3: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter  $\Delta F_{\text{OffsetCORESET-0-Carrier}}$  in Annex C expressed in number of common RBs.

Note 4: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-8 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-



Note 5: ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2. The maximum frequency separation has been selected as the lowest DL maximum frequency separation in TS 38.101-2 [8], Table 5.3A.4-2 that fits the aggregated channel bandwidth.

4.3.1.2.4.5 NR Intra-band non-contiguous CA configurations for CA\_n261

4.3.1.2.4.5.1 CA\_n261(XA)

**Table 4.3.1.2.4.5.1-1: NR Intra-Band non-contiguous CA configuration CA\_n261(2A), SCS=120 kHz, Max Wgap**

CBW combination	CC	Bandwidth [MHz]	Range		Test frequencies and signalling parameters
					CA_n261(2A); A (50-400MHz) - A (50-400MHz)
CBW1+ CBW2	CC1	CBW1	Downlink & Uplink	Max Wgap	Table 4.3.1.2.1.5-2: Low range for CBW=CBW1, where CBW1= 50 MHz, 100 MHz, 200 MHz or 400 MHz
	CC2	CBW2			Table 4.3.1.2.1.5-2: High range for CBW=CBW2, where CBW2= 50 MHz, 100 MHz, 200 MHz or 400 MHz

## 4.3.1.3 Test frequencies for NR band combinations between FR1 and FR2

## 4.3.1.3.1 NR inter-band CA configurations between FR1 and FR2

Table 4.3.1.3.1-1: NR-CA configurations between FR1 and FR2 (two bands)

NR-CA configuration	Uplink NR-CA configuration	NR FR1 downlink configuration	NR FR2 downlink configuration	NR FR1 uplink configuration	NR FR2 uplink configuration	Applicable for protocol testing (Note 1)
CA_n1A-n258A	CA_n1A-n258A	n1A	n258A	n1A	n258A	Yes
CA_n1A-n258D	CA_n1A-n258A	n1A	CA_n258D	n1A	n258A	No
CA_n1A-n258E	CA_n1A-n258A	n1A	CA_n258E	n1A	n258A	No
CA_n1A-n258F	CA_n1A-n258A	n1A	CA_n258F	n1A	n258A	No
CA_n1A-n258G	CA_n1A-n258A	n1A	CA_n258G	n1A	n258A	No
CA_n1A-n258H	CA_n1A-n258A	n1A	CA_n258H	n1A	n258A	No
CA_n1A-n258I	CA_n1A-n258A	n1A	CA_n258I	n1A	n258A	No
CA_n1A-n258J	CA_n1A-n258A	n1A	CA_n258J	n1A	n258A	No
CA_n1A-n258K	CA_n1A-n258A	n1A	CA_n258K	n1A	n258A	No
CA_n1A-n258L	CA_n1A-n258A	n1A	CA_n258L	n1A	n258A	No
CA_n1A-n258M	CA_n1A-n258A	n1A	CA_n258M	n1A	n258A	No
CA_n78A-n258D	CA_n78A-n258A	n78A	CA_n258D	n78A	n258A	No
CA_n78A-n258E	CA_n78A-n258A	n78A	CA_n258E	n78A	n258A	No
CA_n78A-n258F	CA_n78A-n258A	n78A	CA_n257F	n78A	n258A	No

Note 1: Protocol testing is limited to NR-CA configurations with 2CC.

## 4.3.1.3.2 Inter-band NR-DC configurations between FR1 and FR2

## 4.3.1.3.2.1 NR-DC configurations between FR1 and FR2 (two bands)

Table 4.3.1.3.2.1-1: NR-DC configurations between FR1 and FR2 (two bands)

NR-DC configuration	Uplink NR-DC configuration	NR FR1 downlink configuration	NR FR2 downlink configuration	NR FR1 uplink configuration	NR FR2 uplink configuration	Applicable for protocol testing (Note 1)
DC_n1A-n258A	DC_n1A-n258A	n1A	n258A	n1A	n258A	Yes
DC_n1A-n258G	DC_n1A-n258A	n1A	CA_n258G	n1A	n258A	Yes (NR CA 2CC)
DC_n1A-n258H	DC_n1A-n258A	n1A	CA_n258H	n1A	n258A	No
DC_n1A-n258I	DC_n1A-n258A	n1A	CA_n258I	n1A	n258A	No
DC_n1A-n258J	DC_n1A-n258A	n1A	CA_n258J	n1A	n258A	No
DC_n1A-n258K	DC_n1A-n258A	n1A	CA_n258K	n1A	n258A	No
DC_n1A-n258L	DC_n1A-n258A	n1A	CA_n258L	n1A	n258A	No
DC_n1A-n258M	DC_n1A-n258A	n1A	CA_n258M	n1A	n258A	No
DC_n78A-n257A	DC_n78A-n257A	n78A	n257A	n78A	n257A	Yes
DC_n78A-n257G	DC_n78A-n257A	n78A	CA_n257G	n78A	n257A	Yes (NR CA 2CC)
DC_n78A-n257H	DC_n78A-n257A	n78A	CA_n257H	n78A	n257A	No
DC_n78A-n257I	DC_n78A-n257A	n78A	CA_n257I	n78A	n257A	No
DC_n78A-n258A	DC_n78A-n258A	n78A	n258A	n78A	n258A	Yes
DC_n78A-n258G	DC_n78A-n258A	n78A	CA_n258G	n78A	n258A	Yes (NR CA 2CC)
DC_n78A-n258H	DC_n78A-n258A	n78A	CA_n258H	n78A	n258A	No
DC_n78A-n258I	DC_n78A-n258A	n78A	CA_n258I	n78A	n258A	No
DC_n78A-n258J	DC_n78A-n258A	n78A	CA_n258J	n78A	n258A	No
DC_n78A-n258K	DC_n78A-n258A	n78A	CA_n258K	n78A	n258A	No
DC_n78A-n258L	DC_n78A-n258A	n78A	CA_n258L	n78A	n258A	No
DC_n78A-n258M	DC_n78A-n258A	n78A	CA_n258M	n78A	n258A	No
DC_n79A-n257A	DC_n79A-n257A	n79A	n257A	n79A	n257A	Yes
DC_n79A-n257G	DC_n79A-n257A	n79A	CA_n257G	n79A	n257A	Yes (NR CA 2CC)
DC_n79A-n257H	DC_n79A-n257A	n79A	CA_n257H	n79A	n257A	No
DC_n79A-n257I	DC_n79A-n257A	n79A	CA_n257I	n79A	n257A	No

Note 1: Protocol testing is limited to NR-DC configurations with 2CC and NR-DC with NR CA 2CC.

#### 4.3.1.4 Test frequencies for EN-DC band combinations within FR1

##### 4.3.1.4.1 Inter-band EN-DC configurations within FR1

###### 4.3.1.4.1.1 General

For inter-band EN-DC configurations as listed in this clause, the following apply:

For the E-UTRA band and E-UTRA CA configurations, test frequencies as specified in TS 36.508 [2], clause 4.3.1 are used.

For the NR band and NR CA configurations, test frequencies as specified in clause 4.3.1.1 are used.

For the EN-DC inter-band configuration that includes an EN-DC contiguous configuration (e.g. DC\_2A-(n)71AA) the EN-DC contiguous configuration is listed in the NR configuration column and the test frequencies as specified in clause 4.3.1.4.2 are used.

For the secondary NR band in inter-band signalling test cases, the band selected is based on the subset of NR bands supported within the EN-DC configurations specified in Table 4.3.1.4.1.2-1 for NR FR1.

## 4.3.1.4.1.2

## Inter-band EN-DC configurations within FR1 (two bands)

Table 4.3.1.4.1.2-1: Inter-band EN-DC configurations within FR1 (two bands)

EN-DC configuration	Uplink EN-DC Configuration	E-UTRA downlink configuration	NR downlink configuration	E-UTRA uplink configuration	NR uplink configuration	Applicable for protocol testing (Note 1)
DC_1A_n3A	DC_1A_n3A	1A	n3A	1A	n3A	Yes
DC_1A_n5A	DC_1A_n5A	1A	n5A	1A	n5A	Yes
DC_1A_n7A	DC_1A_n7A	1A	n7A	1A	n7A	Yes
DC_1A_n28A	DC_1A_n28A	1A	n28A	1A	n28A	Yes
DC_1A_n40A	DC_1A_n40A	1A	n40A	1A	n40A	Yes
DC_1A_n51A	DC_1A_n51A	1A	n51A	1A	n51A	Yes
DC_1A_n77A	DC_1A_n77A	1A	n77A	1A	n77A	Yes
DC_1A_n77C	DC_1A_n77A	1A	CA_n77C	1A	n77A	FFS (NR 2CC)
DC_1A_n78A	DC_1A_n78A	1A	n78A	1A	n78A	Yes
DC_1A_n78C	DC_1A_n78A	1A	CA_n78C	1A	n78A	Yes (NR 2CC)
DC_1A-1A_n78A	DC_1A_n78A	CA_1A-1A	n78A	1A	n78A	No
DC_1A_n79A	DC_1A_n79A	1A	n79A	1A	n79A	Yes
DC_1A_n79C	DC_1A_n79A	1A	CA_n79C	1A	n79A	FFS (NR 2CC)
DC_2A_n5A	DC_2A_n5A	2A	n5A	2A	n5A	Yes
DC_2A_n41A	DC_2A_n41A	2A	n41A	2A	n41A	Yes
DC_2C_n41A	DC_2A_n41A	CA_2C	n41A	2A	n41A	No
	DC_2C_n41A	CA_2C	n41A	CA_2C	n41A	No
DC_2A_n66A	DC_2A_n66A	2A	n66A	2A	n66A	Yes
DC_2A_n71A	DC_2A_n71A	2A	n71A	2A	n71A	Yes
DC_2A_n77A	DC_2A_n77A	2A	n77A	2A	n77A	Yes
DC_2A_n78A	DC_2A_n78A	2A	n78A	2A	n78A	Yes
DC_3A_n1A	DC_3A_n1A	3A	n1A	3A	n1A	Yes
DC_3A_n5A	DC_3A_n5A	3A	n5A	3A	n5A	Yes
DC_3A_n7A	DC_3A_n7A	3A	n7A	3A	n7A	Yes
DC_3A_n28A	DC_3A_n28A	3A	n28A	3A	n28A	Yes
DC_3A_n40A	DC_3A_n40A	3A	n40A	3A	n40A	Yes
DC_3A_n41A	DC_3A_n41A	3A	n41A	3A	n41A	Yes
DC_3A_n51A	DC_3A_n51A	3A	n51A	3A	n51A	Yes
DC_3A_n77A	DC_3A_n77A	3A	n77A	3A	n77A	Yes
DC_3A_n77C	DC_3A_n77A	3A	CA_n77C	3A	n77A	FFS (NR 2CC)
DC_3A_n78A	DC_3A_n78A	3A	n78A	3A	n78A	Yes
DC_3A_n78C	DC_3A_n78A	3A	CA_n78C	3A	n78A	Yes (NR 2CC)
DC_3C_n78A	DC_3A_n78A	CA_3C	n78A	3A	n78A	No
DC_3A_n79A	DC_3A_n79A	3A	n79A	3A	n79A	Yes
DC_3A_n79C	DC_3A_n79A	3A	CA_n79C	3A	n79A	FFS (NR 2CC)
DC_5A_n2A	DC_5A_n2A	5A	n2A	5A	n2A	Yes

EN-DC configuration	Uplink EN-DC Configuration	E-UTRA downlink configuration	NR downlink configuration	E-UTRA uplink configuration	NR uplink configuration	Applicable for protocol testing (Note 1)
DC_5A_n40A	DC_5A_n40A	5A	n40A	5A	n40A	Yes
DC_5A_n66A	DC_5A_n66A	5A	n66A	5A	n66A	Yes
DC_5A_n77A	DC_5A_n77A	5A	n77A	5A	n77A	Yes
DC_5A_n78A	DC_5A_n78A	5A	n78A	5A	n78A	Yes
DC_5A_n78C	DC_5A_n78A	5A	CA_n78C	5A	n78A	Yes (NR 2CC)
DC_7A-7A_n78A	DC_7A_n78A	CA_7A-7A	n78A	7A	n78A	No
DC_7A_n1A	DC_7A_n1A	7A	n1A	7A	n1A	Yes
DC_7A_n3A	DC_7A_n3A	7A	n3A	7A	n3A	Yes
DC_7A_n5A	DC_7A_n5A	7A	n5A	7A	n5A	Yes
DC_7A_n28A	DC_7A_n28A	7A	n28A	7A	n28A	Yes
DC_7A_n51A	DC_7A_n51A	7A	n51A	7A	n51A	Yes
DC_7A_n66A	DC_7A_n66A	7A	n66A	7A	n66A	Yes
DC_7A_n78A	DC_7A_n78A	7A	n78A	7A	n78A	Yes
DC_7C_n66A	DC_7A_n66A	CA_7C	n66A	7A	n66A	No
DC_7C_n78A	DC_7A_n78A	CA_7C	n78A	7A	n78A	No
	DC_7C_n78A	CA_7C	n78A	7C	n78A	No
DC_8A_n1A	DC_8A_n1A	8A	n1A	8A	n1A	Yes
DC_8A_n3A	DC_8A_n3A	8A	n3A	8A	n3A	Yes
DC_8A_n20A	DC_8A_n20A	8A	n20A	8A	n20A	Yes
DC_8A_n40A	DC_8A_n40A	8A	n40A	8A	n40A	Yes
DC_8A_n41A	DC_8A_n41A	8A	n41A	8A	n41A	Yes
DC_8A_n77A	DC_8A_n77A	8A	n77A	8A	n77A	Yes
DC_8A_n78A	DC_8A_n78A	8A	n78A	8A	n78A	Yes
DC_8A_n79A	DC_8A_n79A	8A	n79A	8A	n79A	Yes
DC_11A_n77A	DC_11A_n77A	11A	n77A	11A	n77A	Yes
DC_11A_n78A	DC_11A_n78A	11A	n78A	11A	n78A	Yes
DC_11A_n79A	DC_11A_n79A	11A	n79A	11A	n79A	Yes
DC_12A_n5A	DC_12A_n5A	12A	n5A	12A	n5A	Yes
DC_12A_n66A	DC_12A_n66A	12A	n66A	12A	n66A	Yes
DC_12A_n78A	DC_12A_n78A	12A	n78A	12A	n78A	Yes
DC_13A_n2A	DC_13A_n2A	13A	n2A	13A	n2A	Yes
DC_13A_n66A	DC_13A_n66A	13A	n66A	13A	n66A	Yes
DC_13A_n77A	DC_13A_n77A	13A	n77A	13A	n77A	Yes
DC_14A_n2A	DC_14A_n2A	14A	n2A	14A	n2A	Yes
DC_14A_n66A	DC_14A_n66A	14A	n66A	14A	n66A	Yes
DC_18A_n77A	DC_18A_n77A	18A	n77A	18A	n77A	Yes
DC_18A_n78A	DC_18A_n78A	18A	n78A	18A	n78A	Yes
DC_18A_n79A	DC_18A_n79A	18A	n79A	18A	n79A	Yes
DC_19A_n1A	DC_19A_n1A	19A	n1A	19A	n1A	Yes
DC_19A_n77A	DC_19A_n77A	19A	n77A	19A	n77A	Yes

EN-DC configuration	Uplink EN-DC Configuration	E-UTRA downlink configuration	NR downlink configuration	E-UTRA uplink configuration	NR uplink configuration	Applicable for protocol testing (Note 1)
DC_19A_n77(2A)	DC_19A_n77A	19A	CA_n77(2A)	19A	n77A	FFS (NR 2CC)
DC_19A_n77C	DC_19A_n77A	19A	CA_n77C	19A	n77A	FFS (NR 2CC)
DC_19A_n78A	DC_19A_n78A	19A	n78A	19A	n78A	Yes
DC_19A_n78(2A)	DC_19A_n78A	19A	CA_n78(2A)	19A	n78A	FFS (NR 2CC)
DC_19A_n78C	DC_19A_n78A	19A	CA_n78C	19A	n78A	Yes (NR 2CC)
DC_19A_n79A	DC_19A_n79A	19A	n79A	19A	n79A	Yes
DC_19A_n79C	DC_19A_n79A	19A	CA_n79C	19A	n79A	FFS (NR 2CC)
DC_20A_n1A	DC_20A_n1A	20A	n1A	20A	n1A	Yes
DC_20A_n3A	DC_20A_n3A	20A	n3A	20A	n3A	Yes
DC_20A_n7A	DC_20A_n7A	20A	n7A	20A	n7A	Yes
DC_20A_n8A	DC_20A_n8A	20A	n8A	20A	n8A	Yes
DC_20A_n28A	DC_20A_n28A	20A	n28A	20A	n28A	Yes
DC_20A_n51A	DC_20A_n51A	20A	n51A	20A	n51A	Yes
DC_20A_n77A	DC_20A_n77A	20A	n77A	20A	n77A	Yes
DC_20A_n78A	DC_20A_n78A	20A	n78A	20A	n78A	Yes
DC_21A_n1A	DC_21A_n1A	21A	n1A	21A	n1A	Yes
DC_21A_n28A	DC_21A_n28A	21A	n28A	21A	n28A	Yes
DC_21A_n77A	DC_21A_n77A	21A	n77A	21A	n77A	Yes
DC_21A_n77(2A)	DC_21A_n77A	21A	CA_n77(2A)	21A	n77A	FFS (NR 2CC)
DC_21A_n77C	DC_21A_n77A	21A	CA_n77C	21A	n77A	FFS (NR 2CC)
DC_21A_n78A	DC_21A_n78A	21A	n78A	21A	n78A	Yes
DC_21A_n78(2A)	DC_21A_n78A	21A	CA_n78(2A)	21A	n78A	FFS (NR 2CC)
DC_21A_n78C	DC_21A_n78A	21A	CA_n78C	21A	n78A	Yes (NR 2CC)
DC_21A_n79A	DC_21A_n79A	21A	n79A	21A	n79A	Yes
DC_21A_n79C	DC_21A_n79A	21A	CA_n79C	21A	n79A	FFS (NR 2CC)
DC_25A_n41A	DC_25A_n41A	25A	n41A	25A	n41A	Yes
DC_26A_n41A	DC_26A_n41A	26A	n41A	26A	n41A	Yes
DC_26A_n77A	DC_26A_n77A	26A	n77A	26A	n77A	Yes
DC_26A_n78A	DC_26A_n78A	26A	n78A	26A	n78A	Yes
DC_26A_n79A	DC_26A_n79A	26A	n79A	26A	n79A	Yes
DC_28A_n3A	DC_28A_n3A	28A	n3A	28A	n3A	Yes
DC_28A_n5A	DC_28A_n5A	28A	n5A	28A	n5A	Yes
DC_28A_n7A	DC_28A_n7A	28A	n7A	28A	n7A	Yes
DC_28A_n51A	DC_28A_n51A	28A	n51A	28A	n51A	Yes
DC_28A_n77A	DC_28A_n77A	28A	n77A	28A	n77A	Yes
DC_28A_n77C	DC_28A_n77A	28A	CA_n77C	28A	n77A	FFS (NR 2CC)
DC_28A_n78A	DC_28A_n78A	28A	n78A	28A	n78A	Yes
DC_28A_n78C	DC_28A_n78A	28A	CA_n78C	28A	n78A	Yes (NR 2CC)
DC_28A_n79A	DC_28A_n79A	28A	n79A	28A	n79A	Yes
DC_28A_n79C	DC_28A_n79A	28A	CA_n79C	28A	n79A	FFS (NR 2CC)

EN-DC configuration	Uplink EN-DC Configuration	E-UTRA downlink configuration	NR downlink configuration	E-UTRA uplink configuration	NR uplink configuration	Applicable for protocol testing (Note 1)
DC_30A_n5A	DC_30A_n5A	30A	n5A	30A	n5A	Yes
DC_30A_n66A	DC_30A_n66A	30A	n66A	30A	n66A	Yes
DC_38A_n78A	-	38A	n78A	-	-	Yes
DC_39A_n78A	DC_39A_n78A	39A	n78A	39A	n78A	Yes
DC_39A_n41A	DC_39A_n41A	39A	n41A	39A	n41A	Yes
DC_39A_n79A	DC_39A_n79A	39A	n79A	39A	n79A	Yes
DC_40A_n1A	DC_40A_n1A	40A	n1A	40A	n1A	Yes
DC_40A_n41A	DC_40A_n41A	40A	n41A	40A	n41A	Yes
DC_40A_n77A	-	40A	n77A	-	-	Yes
DC_40A_n78A	DC_40A_n78A	40A	n78A	40A	n78A	Yes
DC_40C_n78A	DC_40A_n78A	CA_40C	n78A	40A	n78A	No
	DC_40C_n78A	CA_40C	n78A	CA_40C	n78A	No
DC_40A_n79A	DC_40A_n79A	40A	n79A	40A	n79A	Yes
DC_40C_n79A	DC_40A_n79A	CA_40C	n79A	40A	n79A	No
DC_41A_n77A	DC_41A_n77A	41A	n77A	41A	n77A	Yes
DC_41C_n77A	DC_41A_n77A	CA_41C	n77A	41A	n77A	No
DC_41A_n78A	DC_41A_n78A	41A	n78A	41A	n78A	Yes
DC_41C_n78A	DC_41A_n78A	CA_41C	n78A	41A	n78A	No
DC_41A_n79A	DC_41A_n79A	41A	n79A	41A	n79A	Yes
DC_41C_n79A	DC_41A_n79A	CA_41C	n79A	41A	n79A	No
DC_42A_n1A	DC_42A_n1A	42A	n1A	42A	n1A	Yes
DC_42C_n1A	DC_42C_n1A	CA_42C	n1A	CA_42C	n1A	No
DC_42A_n51A	DC_42A_n51A	42A	n51A	42A	n51A	Yes
DC_42A_n77A	-	42A	n77A	-	-	Yes
DC_42A_n77C	-	42A	CA_n77C	-	-	FFS (NR 2CC)
DC_42C_n77A	-	CA_42C	n77A	-	-	No
DC_42C_n77C	-	CA_42C	CA_n77C	-	-	No
DC_42D_n77A	-	CA_42D	n77A	-	-	No
DC_42E_n77A	-	CA_42E	n77A	-	-	No
DC_42A_n78A	-	42A	n78A	-	-	Yes
DC_42A_n78C	-	42A	CA_n78C	-	-	Yes (NR 2CC)
DC_42C_n78A	-	CA_42C	n78A	-	-	No
DC_42C_n78C	-	CA_42C	CA_n78C	-	-	No
DC_42D_n78A	-	CA_42D	n78A	-	-	No
DC_42E_n78A	-	CA_42E	n78A	-	-	No
DC_42A_n79A	-	42A	n79A	-	-	Yes
DC_42A_n79C	-	42A	CA_n79C	-	-	FFS (NR 2CC)
DC_42C_n79A	-	CA_42C	n79A	-	-	No
DC_42C_n79C	-	CA_42C	CA_n79C	-	-	No
DC_42D_n79A	-	CA_42D	n79A	-	-	No



EN-DC configuration	Uplink EN-DC Configuration	E-UTRA downlink configuration	NR downlink configuration	E-UTRA uplink configuration	NR uplink configuration	Applicable for protocol testing (Note 1)
DC_42E_n79A	-	CA_42E	n79A	-	-	No
DC_46A_n78A	-	46A	n78A	-	-	No
DC_46C_n78A	-	CA_46C	n78A	-	-	No
DC_46D_n78A	-	CA_46D	n78A	-	-	No
DC_46E_n78A	-	CA_46E	n78A	-	-	No
DC_48A_n5A	DC_48A_n5A	48A	n5A	48A	n5A	Yes
DC_48A_n66A	DC_48A_n66A	48A	n66A	48A	n66A	Yes
DC_66A_n2A	DC_66A_n2A	66A	n2A	66A	n2A	Yes
DC_66A_n5A	DC_66A_n5A	66A	n5A	66A	n5A	Yes
DC_66A_n41A	DC_66A_n41A	66A	n41A	66A	n41A	Yes
DC_66A_n71A	DC_66A_n71A	66A	n71A	66A	n71A	Yes
DC_66A_n77A	DC_66A_n77A	66A	n77A	66A	n77A	Yes
DC_66A_n78A	DC_66A_n78A	66A	n78A	66A	n78A	Yes

Note 1: Protocol testing is limited to EN-DC configurations with 1 CC E-UTRA and 1CC or 2CC NR configurations.

## 4.3.1.4.1.3

## Inter-band EN-DC configurations within FR1 (three bands)

Table 4.3.1.4.1.3-1: Inter-band EN-DC configurations within FR1 (three bands)

EN-DC configuration	Uplink EN-DC Configuration	E-UTRA downlink configuration	NR downlink configuration	E-UTRA uplink configuration	NR uplink configuration	Applicable for protocol testing (Note 1)
DC_1A-3A_n28A	DC_1A_n28A	CA_1A-3A	n28A	1A	n28A	No
	DC_3A_n28A	CA_1A-3A	n28A	3A	n28A	No
DC_1A-3A_n78A	DC_1A_n78A	CA_1A-3A	n78A	1A	n78A	No
	DC_3A_n78A	CA_1A-3A	n78A	3A	n78A	No
DC_1A-3A_n78C	DC_1A_n78A	CA_1A-3A	CA_n78C	1A	n78A	No
	DC_3A_n78A	CA_1A-3A	CA_n78C	3A	n78A	No
DC_1A-3C_n78A	DC_1A_n78A	CA_1A-3C	n78A	1A	n78A	No
	DC_3A_n78A	CA_1A-3C	n78A	3A	n78A	No
DC_1A-3C_n78(2A)	DC_1A_n78A	CA_1A-3C	CA_n78(2A)	1A	n78A	No
	DC_3A_n78A	CA_1A-3C	CA_n78(2A)	3A	n78A	No
	DC_3C_n78A	CA_1A-3C	CA_n78(2A)	CA_3C	n78A	No
DC_1A-1A-3A_n78A	DC_1A_n78A	CA_1A-1A-3A	n78A	1A	n78A	No
	DC_3A_n78A	CA_1A-1A-3A	n78A	3A	n78A	No
DC_1A-1A-5A_n78A	DC_1A_n78A	CA_1A-1A-5A	n78A	1A	n78A	No
	DC_5A_n78A	CA_1A-1A-5A	n78A	5A	n78A	No
DC_1A-1A-3C_n78A	DC_1A_n78A	CA_1A-1A-3C	n78A	1A	n78A	No
	DC_3A_n78A	CA_1A-1A-3C	n78A	3A	n78A	No
	DC_3C_n78A	CA_1A-1A-3C	n78A	CA_3C	n78A	No
DC_1A-3A_n79A	DC_1A_n79A	CA_1A-3A	n79A	1A	n79A	No
	DC_3A_n79A	CA_1A-3A	n79A	3A	n79A	No
DC_1A-5A_n78C	DC_1A_n78A	CA_1A-5A	CA_n78C	1A	n78A	No
	DC_5A_n78A	CA_1A-5A	CA_n78C	5A	n78A	No
DC_1A-7A_n3A	DC_1A_n3A	CA_1A-7A	n3A	1A	n3A	No
	DC_7A_n3A	CA_1A-7A	n3A	7A	n3A	No
DC_1A-7A_n28A	DC_1A_n28A	CA_1A-7A	n28A	1A	n28A	No
	DC_7A_n28A	CA_1A-7A	n28A	7A	n28A	No
DC_1A-7A_n78A	DC_1A_n78A	CA_1A-7A	n78A	1A	n78A	No
	DC_7A_n78A	CA_1A-7A	n78A	7A	n78A	No
DC_1A-8A_n3A	DC_1A_n3A	CA_1A-8A	n3A	1A	n3A	No
	DC_8A_n3A	CA_1A-8A	n3A	8A	n3A	No
DC_1A-8A_n78A	DC_1A_n78A	CA_1A-8A	n78A	1A	n78A	No
	DC_8A_n78A	CA_1A-8A	n78A	8A	n78A	No
DC_1A-8A_n78(2A)	DC_1A_n78A	CA_1A-8A	CA_n78(2A)	1A	n78A	No
	DC_8A_n78A	CA_1A-8A	CA_n78(2A)	8A	n78A	No
DC_1A-19A_n77(2A)	DC_1A_n77A	CA_1A-19A	CA_n77(2A)	1A	n77A	No
	DC_19A_n77A	CA_1A-19A	CA_n77(2A)	19A	n77A	No

EN-DC configuration	Uplink EN-DC Configuration	E-UTRA downlink configuration	NR downlink configuration	E-UTRA uplink configuration	NR uplink configuration	Applicable for protocol testing (Note 1)
DC_1A-19A_n78A	DC_1A_n78A	CA_1A-19A	n78A	1A	n78A	No
	DC_19A_n78A	CA_1A-19A	n78A	19A	n78A	No
DC_1A-19A_n78(2A)	DC_1A_n78A	CA_1A-19A	CA_n78(2A)	1A	n78A	No
	DC_19A_n78A	CA_1A-19A	CA_n78(2A)	19A	n78A	No
DC_1A-19A_n79A	DC_1A_n79A	CA_1A-19A	n79A	1A	n79A	No
	DC_19A_n79A	CA_1A-19A	n79A	19A	n79A	No
DC_1A-20A_n3A	DC_1A_n3A	CA_1A-20A	n3A	1A	n3A	No
	DC_20A_n3A	CA_1A-20A	n3A	20A	n3A	No
DC_1A-20A_n8A	DC_1A_n8A	CA_1A-20A	n8A	1A	n8A	No
	DC_20A_n8A	CA_1A-20A	n8A	20A	n8A	No
DC_1A-20A_n28A	DC_1A_n28A	CA_1A-20A	n28A	1A	n28A	No
	DC_20A_n28A	CA_1A-20A	n28A	20A	n28A	No
DC_1A-20A_n78A	DC_1A_n78A	CA_1A-20A	n78A	1A	n78A	No
	DC_20A_n78A	CA_1A-20A	n78A	20A	n78A	No
DC_1A-21A_n28A	DC_1A_n28A	CA_1A-21A	n28A	1A	n28A	No
	DC_21A_n28A	CA_1A-21A	n28A	21A	n28A	No
DC_1A-21A_n77(2A)	DC_1A_n77A	CA_1A-21A	CA_n77(2A)	1A	n77A	No
	DC_21A_n77A	CA_1A-21A	CA_n77(2A)	21A	n77A	No
DC_1A-21A_n78A	DC_1A_n78A	CA_1A-21A	n78A	1A	n78A	No
	DC_21A_n78A	CA_1A-21A	n78A	21A	n78A	No
DC_1A-21A_n78(2A)	DC_1A_n78A	CA_1A-21A	CA_n78(2A)	1A	n78A	No
	DC_21A_n78A	CA_1A-21A	CA_n78(2A)	21A	n78A	No
DC_1A-21A_n79A	DC_1A_n79A	CA_1A-21A	n79A	1A	n79A	No
	DC_21A_n79A	CA_1A-21A	n79A	21A	n79A	No
DC_1A-21A_n79A	DC_1A_n79A	CA_1A-21A	n79A	1A	n79A	No
	DC_21A_n79A	CA_1A-21A	n79A	21A	n79A	No
DC_1A-28A_n3A	DC_1A_n3A	CA_1A-28A	n3A	1A	n3A	No
	DC_28A_n3A	CA_1A-28A	n3A	28A	n3A	No
DC_1A-28A_n5A <sup>2</sup>	DC_1A_n5A	CA_1A-28A	n5A	1A	n5A	No
	DC_28A_n5A	CA_1A-28A	n5A	28A	n5A	No
DC_1A-28A_n78C	DC_1A_n78A	CA_1A-28A	CA_n78C	1A	n78A	No
	DC_28A_n78A	CA_1A-28A	CA_n78C	28A	n78A	No
DC_1A_n28A-n78A	DC_1A_n28A	1A	CA_n28A-n78A	1A	n28A	Yes (NR 2CC)
	DC_1A_n78A	1A	CA_n28A-n78A	1A	n78A	No
DC_1A_n28A-n79A	DC_1A_n28A	1A	CA_n28A-n79A	1A	n28A	Yes (NR 2CC)
	DC_1A_n79A	1A	CA_n28A-n79A	1A	n79A	No
DC_1A-41A_n28A	DC_1A_n28A	CA_1A-41A	n28A	1A	n28A	No
	DC_41A_n28A	CA_1A-41A	n28A	41A	n28A	No
DC_1A-41C_n28A	DC_1A_n28A	CA_1A-41C	n28A	1A	n28A	No
	DC_41A_n28A	CA_1A-41C	n28A	41A	n28A	No

EN-DC configuration	Uplink EN-DC Configuration	E-UTRA downlink configuration	NR downlink configuration	E-UTRA uplink configuration	NR uplink configuration	Applicable for protocol testing (Note 1)
	DC_41C_n28A	CA_1A-41C	n28A	CA_41C	n28A	No
DC_1A-42A_n78A	DC_1A_n78A	CA_1A-42A	n78A	1A	n78A	No
DC_1A-42C_n78A	DC_1A_n78A	CA_1A-42C	n78A	1A	n78A	No
DC_1A-42D_n78A	DC_1A_n78A	CA_1A-42D	n78A	1A	n78A	No
DC_1A-42E_n78A	DC_1A_n78A	CA_1A-42E	n78A	1A	n78A	No
DC_1A-42A_n79A	DC_1A_n79A	CA_1A-42A	n79A	1A	n79A	No
DC_1A-42C_n79A	DC_1A_n79A	CA_1A-42C	n79A	1A	n79A	No
DC_1A-42D_n79A	DC_1A_n79A	CA_1A-42D	n79A	1A	n79A	No
DC_1A-42E_n79A	DC_1A_n79A	CA_1A-42E	n79A	1A	n79A	No
DC_1A_n78A-n79A	DC_1A_n78A	1A	CA_n78A-n79A	1A	n78A	Yes (NR 2CC)
	DC_1A_n79A	1A	CA_n78A-n79A	1A	n79A	No
DC_2A-2A-14A_n66A	DC_2A_n66A	CA_2A-2A-14A	n66A	2A	n66A	No
	DC_14A_n66A	CA_2A-2A-14A	n66A	14A	n66A	No
DC_2A-14A_n2A	DC_2A_n2A	CA_2A-14A	n2A	2A	n2A	No
	DC_14A_n2A	CA_2A-14A	n2A	14A	n2A	No
DC_2A-14A_n66A	DC_2A_n66A	CA_2A-14A	n66A	2A	n66A	No
	DC_14A_n66A	CA_2A-14A	n66A	14A	n66A	No
DC_2A-66A_n5A	DC_2A_n5A	CA_2A-66A	n5A	2A	n5A	No
	DC_66A_n5A	CA_2A-66A	n5A	66A	n5A	No
DC_2A-66A_n41A	DC_2A_n41A	CA_2A-66A	n41A	2A	n41A	No
	DC_66A_n41A	CA_2A-66A	n41A	66A	n41A	No
DC_2A-66A_n71A	DC_2A_n71A	CA_2A-66A	n71A	2A	n71A	No
	DC_66A_n71A	CA_2A-66A	n71A	66A	n71A	No
DC_2A-(n)71AA	DC_2A_n71A	2A	DC_(n)71AA	2A	n71A	No
	DC_(n)71AA	2A	DC_(n)71AA	-	DC_(n)71AA	No
DC_3A-5A_n78C	DC_3A_n78A	CA_3A-5A	CA_n78C	3A	n78A	No
	DC_5A_n78A	CA_3A-5A	CA_n78C	5A	n78A	No
DC_3A_n1A-n78A	DC_3A_n1A	3A	CA_n1A-n78A	3A	n1A	Yes (NR 2CC)
	DC_3A_n78A	3A	CA_n1A-n78A	3A	n78A	No
DC_3A_n1A-n79A	DC_3A_n1A	3A	CA_n1A-n79A	3A	n1A	Yes (NR 2CC)
	DC_3A_n79A	3A	CA_n1A-n79A	3A	n79A	No
DC_3A-7A_n1A	DC_3A_n1A	CA_3A-7A	n1A	3A	n1A	No
	DC_7A_n1A	CA_3A-7A	n1A	7A	n1A	No
DC_3A-7A_n5A	DC_3A_n5A	CA_3A-7A	n5A	3A	n5A	No
	DC_7A_n5A	CA_3A-7A	n5A	7A	n5A	No
DC_3A-7A_n28A	DC_3A_n28A	CA_3A-7A	n28A	3A	n28A	No
	DC_7A_n28A	CA_3A-7A	n28A	7A	n28A	No
DC_3A-7A_n78A	DC_3A_n78A	CA_3A-7A	n78A	1A	n78A	No
	DC_7A_n78A	CA_3A-7A	n78A	7A	n78A	No
DC_3A-8A_n1A	DC_3A_n1A	CA_3A-8A	n1A	3A	n1A	No

EN-DC configuration	Uplink EN-DC Configuration	E-UTRA downlink configuration	NR downlink configuration	E-UTRA uplink configuration	NR uplink configuration	Applicable for protocol testing (Note 1)
	DC_8A_n1A	CA_3A-8A	n1A	8A	n1A	No
DC_3A-8A_n28A	DC_3A_n28A	CA_3A-8A	n28A	3A	n28A	No
	DC_8A_n28A	CA_3A-8A	n28A	8A	n28A	No
DC_3A-8A_n78A	DC_3A_n78A	CA_3A-8A	n78A	3A	n78A	No
	DC_8A_n78A	CA_3A-8A	n78A	8A	n78A	No
DC_3A-8A_n78(2A)	DC_3A_n78A	CA_3A-8A	CA_n78(2A)	3A	n78A	No
	DC_8A_n78A	CA_3A-8A	CA_n78(2A)	8A	n78A	No
DC_3A-18A_n77A	DC_3A_n77A	CA_3A-18A	n77A	3A	n77A	No
	DC_18A_n77A	CA_3A-18A	n77A	18A	n77A	No
DC_3A-18A_n78A	DC_3A_n78A	CA_3A-18A	n78A	3A	n78A	No
	DC_18A_n78A	CA_3A-18A	n78A	18A	n78A	No
DC_3A-19A_n1A	DC_3A_n1A	CA_3A-19A	n1A	3A	n1A	No
	DC_19A_n1A	CA_3A-19A	n1A	19A	n1A	No
DC_3A-19A_n77(2A)	DC_3A_n77A	CA_3A-19A	CA_n77(2A)	3A	n77A	No
	DC_19A_n77A	CA_3A-19A	CA_n77(2A)	19A	n77A	No
DC_3A-19A_n78A	DC_3A_n78A	CA_3A-19A	n78A	3A	n78A	No
	DC_19A_n78A	CA_3A-19A	n78A	19A	n78A	No
DC_3A-19A_n78(2A)	DC_3A_n78A	CA_3A-19A	CA_n78(2A)	3A	n78A	No
	DC_19A_n78A	CA_3A-19A	CA_n78(2A)	19A	n78A	No
DC_3A-19A_n79A	DC_3A_n79A	CA_3A-19A	n79A	3A	n79A	No
	DC_19A_n79A	CA_3A-19A	n79A	19A	n79A	No
DC_3A-20A_n1A	DC_3A_n1A	CA_3A-20A	n1A	3A	n1A	No
	DC_20A_n1A	CA_3A-20A	n1A	20A	n1A	No
DC_3A-20A_n28A	DC_3A_n28A	CA_3A-20A	n28A	3A	n28A	No
	DC_20A_n28A	CA_3A-20A	n28A	20A	n28A	No
DC_3A-21A_n1A	DC_3A_n1A	CA_3A-21A	n1A	3A	n1A	No
	DC_21A_n1A	CA_3A-21A	n1A	21A	n1A	No
DC_3A-21A_n28A	DC_3A_n28A	CA_3A-21A	n28A	3A	n28A	No
	DC_21A_n28A	CA_3A-21A	n28A	21A	n28A	No
DC_3A-21A_n77(2A)	DC_3A_n77A	CA_3A-21A	CA_n77(2A)	3A	n77A	No
	DC_21A_n77A	CA_3A-21A	CA_n77(2A)	21A	n77A	No
DC_3A-21A_n78A	DC_3A_n78A	CA_3A-21A	n78A	3A	n78A	No
	DC_21A_n78A	CA_3A-21A	n78A	21A	n78A	No
DC_3A-21A_n78(2A)	DC_3A_n78A	CA_3A-21A	CA_n78(2A)	3A	n78A	No
	DC_21A_n78A	CA_3A-21A	CA_n78(2A)	21A	n78A	No
DC_3A-21A_n79A	DC_3A_n79A	CA_3A-21A	n79A	3A	n79A	No
	DC_21A_n79A	CA_3A-21A	n79A	21A	n79A	No
DC_3A-28A_n78A	DC_3A_n78A	CA_3A-28A	n78A	3A	n78A	No
	DC_28A_n78A	CA_3A-28A	n78A	28A	n78A	No
DC_3A_n28A-n78A	DC_3A_n28A	3A	CA_n28A-n78A	3A	n28A	Yes (NR 2CC)

EN-DC configuration	Uplink EN-DC Configuration	E-UTRA downlink configuration	NR downlink configuration	E-UTRA uplink configuration	NR uplink configuration	Applicable for protocol testing (Note 1)
	DC_3A_n78A	3A	CA_n28A-n78A	3A	n78A	No
DC_3A_n28A-n79A	DC_3A_n28A	3A	CA_n28A-n79A	3A	n28A	Yes (NR 2CC)
	DC_3A_n79A	3A	CA_n28A-n79A	3A	n79A	No
DC_3A-40A_n1A	DC_3A_n1A	CA_3A-40A	n1A	3A	n1A	No
	DC_40A_n1A	CA_3A-40A	n1A	40A	n1A	No
DC_3A-41A_n28A	DC_3A_n28A	CA_3A-41A	n28A	3A	n28A	No
	DC_41A_n28A	CA_3A-41A	n28A	41A	n28A	No
DC_3A-41C_n28A	DC_3A_n28A	CA_3A-41C	n28A	3A	n28A	No
	DC_41A_n28A	CA_3A-41C	n28A	41A	n28A	No
	DC_41C_n28A	CA_3A-41C	n28A	CA_41C	n28A	No
DC_3A-41A_n41A	DC_3A_n41A	CA_3A-41A	n41A	3A	n41A	No
DC_3A-41A_n77A	DC_3A_n77A	CA_3A-41A	n77A	3A	n77A	No
	DC_41A_n77A	CA_3A-41A	n77A	41A	n77A	No
DC_3A-41A_n77(2A)	DC_3A_n77A	CA_3A-41A	CA_n77(2A)	3A	n77A	No
	DC_41A_n77A	CA_3A-41A	CA_n77(2A)	41A	n77A	No
DC_3A-41C_n77A	DC_3A_n77A	CA_3A-41C	n77A	3A	n77A	No
	DC_41A_n77A	CA_3A-41C	n77A	CA_41C	n77A	No
DC_3A-42A_n1A	DC_3A_n1A	CA_3A-42A	n1A	3A	n1A	No
DC_3A-42C_n1A	DC_3A_n1A	CA_3A-42C	n1A	3A	n1A	No
DC_3A-42A_n78A	DC_3A_n78A	CA_3A-42A	n78A	3A	n78A	No
DC_3A-42C_n78A	DC_3A_n78A	CA_3A-42C	n78A	3A	n78A	No
DC_3A-42D_n78A	DC_3A_n78A	CA_3A-42D	n78A	3A	n78A	No
DC_3A-42E_n78A	DC_3A_n78A	CA_3A-42E	n78A	3A	n78A	No
DC_3A-42A_n79A	DC_3A_n79A	CA_3A-42A	n79A	3A	n79A	No
DC_3A-42C_n79A	DC_3A_n79A	CA_3A-42C	n79A	3A	n79A	No
DC_3A-42D_n79A	DC_3A_n79A	CA_3A-42D	n79A	3A	n79A	No
DC_3A-42E_n79A	DC_3A_n79A	CA_3A-42E	n79A	3A	n79A	No
DC_3A_n78A-n79A	DC_3A_n78A	3A	CA_n78A-n79A	3A	n78A	Yes (NR 2CC)
	DC_3A_n79A	3A	CA_n78A-n79A	3A	n79A	No
DC_5A-7A_n78A	DC_5A_n78A	CA_5A-7A	n78A	5A	n78A	No
	DC_7A_n78A	CA_5A-7A	n78A	7A	n78A	No
DC_7A-8A_n1A	DC_7A_n1A	CA_7A-8A	n1A	7A	n1A	No
	DC_8A_n1A	CA_7A-8A	n1A	8A	n1A	No
DC_7A-8A_n3A	DC_7A_n3A	CA_7A-8A	n3A	7A	n3A	No
	DC_8A_n3A	CA_7A-8A	n3A	8A	n3A	No
DC_7A-20A_n1A	DC_7A_n1A	CA_7A-20A	n1A	7A	n1A	No
	DC_20A_n1A	CA_7A-20A	n1A	20A	n1A	No
DC_7A-20A_n3A	DC_7A_n3A	CA_7A-20A	n3A	7A	n3A	No
	DC_20A_n3A	CA_7A-20A	n3A	20A	n3A	No
DC_7A-20A_n8A	DC_7A_n8A	CA_7A-20A	n8A	7A	n8A	No

EN-DC configuration	Uplink EN-DC Configuration	E-UTRA downlink configuration	NR downlink configuration	E-UTRA uplink configuration	NR uplink configuration	Applicable for protocol testing (Note 1)
	DC_20A_n8A	CA_7A-20A	n8A	20A	n8A	No
DC_7A-20A_n28A	DC_7A_n28A	CA_7A-20A	n28A	7A	n28A	No
	DC_20A_n28A	CA_7A-20A	n28A	20A	n28A	No
DC_7A-20A_n78A	DC_7A_n78A	CA_7A-20A	n78A	7A	n78A	No
	DC_20A_n78A	CA_7A-20A	n78A	20A	n78A	No
DC_7A-28A_n3A	DC_7A_n3A	CA_7A-28A	n3A	7A	n3A	No
	DC_28A_n3A	CA_7A-28A	n3A	28A	n3A	No
DC_7A-28A_n5A <sup>2</sup>	DC_7A_n5A	CA_7A-28A	n5A	7A	n5A	No
	DC_28A_n5A	CA_7A-28A	n5A	28A	n5A	No
DC_7A_n5A-n78A	DC_7A_n5A	7A	CA_n5A-n78A	7A	n5A	Yes (NR 2CC)
	DC_7A_n78A	7A	CA_n5A-n78A	7A	n78A	No
DC_7A_n28A-n78A	DC_7A_n28A	7A	CA_n28A-n78A	7A	n28A	Yes (NR 2CC)
	DC_7A_n78A	7A	CA_n28A-n78A	7A	n78A	No
DC_7C_n5A-n78A	DC_7A_n5A	CA_7C	CA_n5A-n78A	7A	n5A	No
	DC_7A_n78A	CA_7C	CA_n5A-n78A	7A	n78A	No
	DC_7C_n5A	CA_7C	CA_n5A-n78A	CA_7C	n5A	No
	DC_7C_n78A	CA_7C	CA_n5A-n78A	CA_7C	n78A	No
DC_7C_n28A-n78A	DC_7A_n28A	CA_7C	CA_n28A-n78A	7A	n28A	No
	DC_7A_n78A	CA_7C	CA_n28A-n78A	7A	n78A	No
	DC_7C_n28A	CA_7C	CA_n28A-n78A	CA_7C	n28A	No
	DC_7C_n78A	CA_7C	CA_n28A-n78A	CA_7C	n78A	No
DC_14A-66A_n2A	DC_14A_n2A	CA_14A-66A	n2A	14A	n2A	No
	DC_66A_n2A	CA_14A-66A	n2A	66A	n2A	No
DC_14A-66A_n66A	DC_14A_n66A	CA_14A-66A	n66A	14A	n66A	No
	DC_66A_n66A	CA_14A-66A	n66A	66A	n66A	No
DC_14A-66A-66A_n2A	DC_14A_n2A	CA_14A-66A-66A	n2A	14A	n2A	No
	DC_66A_n2A	CA_14A-66A-66A	n2A	66A	n2A	No
DC_18A-41C_n3A	DC_18A_n3A	CA_18A-41C	n3A	18A	n3A	No
	DC_41A_n3A	CA_18A-41C	n3A	41A	n3A	No
	DC_41C_n3A	CA_18A-41C	n3A	CA_41C	n3A	No
DC_18A-41A_n77A	DC_18A_n77A	CA_18A-41A	n77A	18A	n77A	No
	DC_41A_n77A	CA_18A-41A	n77A	41A	n77A	No
DC_18A-41C_n77A	DC_18A_n77A	CA_18A-41C	n77A	18A	n77A	No
	DC_41A_n77A	CA_18A-41C	n77A	41A	n77A	No
	DC_41C_n77A	CA_18A-41C	n77A	CA_41C	n77A	No
DC_18A-41A_n78A	DC_18A_n78A	CA_18A-41A	n78A	18A	n78A	No
	DC_41A_n78A	CA_18A-41A	n78A	41A	n78A	No
DC_18A-41C_n78A	DC_18A_n78A	CA_18A-41C	n78A	18A	n78A	No

EN-DC configuration	Uplink EN-DC Configuration	E-UTRA downlink configuration	NR downlink configuration	E-UTRA uplink configuration	NR uplink configuration	Applicable for protocol testing (Note 1)
	DC_41A_n78A	CA_18A-41C	n78A	41A	n78A	No
	DC_41C_n78A	CA_18A-41C	n78A	CA_41C	n78A	No
DC_19A_n1A-n78A	DC_19A_n1A	19A	CA_n1A-n78A	19A	n1A	Yes (NR 2CC)
	DC_19A_n78A	19A	CA_n1A-n78A	19A	n78A	No
DC_19A_n1A-n79A	DC_19A_n1A	19A	CA_n1A-n79A	19A	n1A	Yes (NR 2CC)
	DC_19A_n79A	19A	CA_n1A-n79A	19A	n79A	No
DC_19A-21A_n1A	DC_19A_n1A	CA_19A-21A	n1A	19A	n1A	No
	DC_21A_n1A	CA_19A-21A	n1A	21A	n1A	No
DC_19A-21A_n77(2A)	DC_19A_n77A	CA_19A-21A	CA_n77(2A)	19A	n77A	No
	DC_21A_n77A	CA_19A-21A	CA_n77(2A)	21A	n77A	No
DC_19A-21A_n78A	DC_19A_n78A	CA_19A-21A	n78A	19A	n78A	No
	DC_21A_n78A	CA_19A-21A	n78A	21A	n78A	No
DC_19A-21A_n78(2A)	DC_19A_n78A	CA_19A-21A	CA_n78(2A)	19A	n78A	No
	DC_21A_n78A	CA_19A-21A	CA_n78(2A)	21A	n78A	No
DC_19A-21A_n79A	DC_19A_n79A	CA_19A-21A	n79A	19A	n79A	No
	DC_21A_n79A	CA_19A-21A	n79A	21A	n79A	No
DC_19A-42A_n1A	DC_19A_n1A	CA_19A-42A	n1A	19A	n1A	No
DC_19A-42A_n78A	DC_19A_n78A	CA_19A-42A	n78A	19A	n78A	No
DC_19A-42A_n79A	DC_19A_n79A	CA_19A-42A	n79A	19A	n79A	No
DC_19A-42C_n1A	DC_19A_n1A	CA_19A-42C	n1A	19A	n1A	No
DC_19A-42C_n78A	DC_19A_n78A	CA_19A-42C	n78A	19A	n78A	No
DC_19A-42C_n79A	DC_19A_n79A	CA_19A-42C	n79A	19A	n79A	No
DC_19A_n78A-n79A	DC_19A_n78A	19A	CA_n78A-n79A	19A	n78A	Yes (NR 2CC)
	DC_19A_n79A	19A	CA_n78A-n79A	19A	n79A	No
DC_20A_n28A-n78A	DC_20A_n28A	20A	CA_n28A-n78A	20A	n28A	Yes (NR 2CC)
	DC_20A_n78A	20A	CA_n28A-n78A	20A	n78A	No
DC_21A_n1A-n78A	DC_21A_n1A	21A	CA_n1A-n78A	21A	n1A	Yes (NR 2CC)
	DC_21A_n78A	21A	CA_n1A-n78A	21A	n78A	No
DC_21A_n1A-n79A	DC_21A_n1A	21A	CA_n1A-n79A	21A	n1A	Yes (NR 2CC)
	DC_21A_n79A	21A	CA_n1A-n79A	21A	n79A	No
DC_21A_n28A-n77A	DC_21A_n28A	21A	CA_n28A-n77A	21A	n28A	Yes (NR 2CC)
	DC_21A_n77A	21A	CA_n28A-n77A	21A	n77A	No
DC_21A_n28A-n78A	DC_21A_n28A	21A	CA_n28A-n78A	21A	n28A	Yes (NR 2CC)
	DC_21A_n78A	21A	CA_n28A-n78A	21A	n78A	No
DC_21A_n28A-n79A	DC_21A_n28A	21A	CA_n28A-n79A	21A	n28A	Yes (NR 2CC)
	DC_21A_n79A	21A	CA_n28A-n79A	21A	n79A	No
DC_21A-42A_n1A	DC_21A_n1A	CA_21A-42A	n1A	21A	n1A	No
DC_21A-42C_n1A	DC_21A_n1A	CA_21A-42C	n1A	21A	n1A	No
DC_21A-42A_n78A	DC_21A_n78A	CA_21A-42A	n78A	21A	n78A	No
DC_21A-42C_n78A	DC_21A_n78A	CA_21A-42C	n78A	21A	n78A	No



EN-DC configuration	Uplink EN-DC Configuration	E-UTRA downlink configuration	NR downlink configuration	E-UTRA uplink configuration	NR uplink configuration	Applicable for protocol testing (Note 1)
DC_21A-42A_n79A	DC_21A_n79A	CA_21A-42A	n79A	21A	n79A	No
DC_21A-42C_n79A	DC_21A_n79A	CA_21A-42C	n79A	21A	n79A	No
DC_21A_n78A-n79A	DC_21A_n78A	21A	CA_n78A-n79A	21A	n78A	Yes (NR 2CC)
	DC_21A_n79A	21A	CA_n78A-n79A	21A	n79A	No
DC_28A_n7A-n78A	DC_28A_n7A	28A	CA_n7A-n78A	28A	n7A	Yes (NR 2CC)
	DC_28A_n78A	28A	CA_n7A-n78A	28A	n78A	No
DC_66A_(n)71AA	DC_66A_n71A	66A	DC_(n)71AA	66A	n71A	No
	DC_(n)71AA	66A	DC_(n)71AA	-	DC_(n)71AA	No
Note 1: Protocol testing is limited to EN-DC configurations with 1 CC E-UTRA and 1CC or 2CC NR configurations.						
Note 2: The frequency range in band 28 is restricted for this band combination to 703-733 MHz for the UL and 758 – 788 MHz for the DL.						

## 4.3.1.4.1.4

## Inter-band EN-DC configurations within FR1 (four bands)

Table 4.3.1.4.1.4-1: Inter-band EN-DC configurations within FR1 (four bands)

EN-DC configuration	Uplink EN-DC Configuration	E-UTRA downlink configuration	NR downlink configuration	E-UTRA uplink configuration	NR uplink configuration	Applicable for protocol testing (Note 1)
DC_1A-3A-7A_n28A	DC_1A_n28A	CA_1A-3A-7A	n28A	1A	n28A	No
	DC_3A_n28A	CA_1A-3A-7A	n28A	3A	n28A	No
	DC_7A_n28A	CA_1A-3A-7A	n28A	7A	n28A	No
DC_1A-3A-7A_n78A	DC_1A_n78A	CA_1A-3A-7A	n78A	1A	n78A	No
	DC_3A_n78A	CA_1A-3A-7A	n78A	3A	n78A	No
	DC_7A_n78A	CA_1A-3A-7A	n78A	7A	n78A	No
DC_1A-3A-8A_n78A	DC_1A_n78A	CA_1A-3A-8A	n78A	1A	n78A	No
	DC_3A_n78A	CA_1A-3A-8A	n78A	3A	n78A	No
	DC_8A_n78A	CA_1A-3A-8A	n78A	8A	n78A	No
DC_1A-3A-19A_n77A(2A)	DC_1A_n77A	CA_1A-3A-19A	CA_n77A(2A)	1A	n77A	No
	DC_3A_n77A	CA_1A-3A-19A	CA_n77A(2A)	3A	n77A	No
	DC_19A_n77A	CA_1A-3A-19A	CA_n77A(2A)	19A	n77A	No
DC_1A-3A-19A_n78A	DC_1A_n78A	CA_1A-3A-19A	n78A	1A	n78A	No
	DC_3A_n78A	CA_1A-3A-19A	n78A	3A	n78A	No
	DC_19A_n78A	CA_1A-3A-19A	n78A	19A	n78A	No
DC_1A-3A-19A_n78A(2A)	DC_1A_n78A	CA_1A-3A-19A	CA_n78A(2A)	1A	n78A	No
	DC_3A_n78A	CA_1A-3A-19A	CA_n78A(2A)	3A	n78A	No
	DC_19A_n78A	CA_1A-3A-19A	CA_n78A(2A)	19A	n78A	No
DC_1A-3A-19A_n79A	DC_1A_n79A	CA_1A-3A-19A	n79A	1A	n79A	No
	DC_3A_n79A	CA_1A-3A-19A	n79A	3A	n79A	No
	DC_19A_n79A	CA_1A-3A-19A	n79A	19A	n79A	No
DC_1A-3A-20A_n28A	DC_1A_n28A	CA_1A-3A-20A	n28A	1A	n28A	No
	DC_3A_n28A	CA_1A-3A-20A	n28A	3A	n28A	No
	DC_20A_n28A	CA_1A-3A-20A	n28A	20A	n28A	No
DC_1A-3A-20A_n78A	DC_1A_n78A	CA_1A-3A-20A	n78A	1A	n78A	No
	DC_3A_n78A	CA_1A-3A-20A	n78A	3A	n78A	No
	DC_20A_n78A	CA_1A-3A-20A	n78A	20A	n78A	No
DC_1A-3A-21A_n77A(2A)	DC_1A_n77A	CA_1A-3A-21A	CA_n77A(2A)	1A	n77A	No
	DC_3A_n77A	CA_1A-3A-21A	CA_n77A(2A)	3A	n77A	No
	DC_21A_n77A	CA_1A-3A-21A	CA_n77A(2A)	21A	n77A	No
DC_1A-3A-21A_n78A	DC_1A_n78A	CA_1A-3A-21A	n78A	1A	n78A	No
	DC_3A_n78A	CA_1A-3A-21A	n78A	3A	n78A	No
	DC_21A_n78A	CA_1A-3A-21A	n78A	21A	n78A	No
DC_1A-3A-21A_n78A(2A)	DC_1A_n78A	CA_1A-3A-21A	CA_n78A(2A)	1A	n78A	No
	DC_3A_n78A	CA_1A-3A-21A	CA_n78A(2A)	3A	n78A	No
	DC_21A_n78A	CA_1A-3A-21A	CA_n78A(2A)	21A	n78A	No

EN-DC configuration	Uplink EN-DC Configuration	E-UTRA downlink configuration	NR downlink configuration	E-UTRA uplink configuration	NR uplink configuration	Applicable for protocol testing (Note 1)
DC_1A-3A-21A_n79A	DC_1A_n79A	CA_1A-3A-21A	n79A	1A	n79A	No
	DC_3A_n79A	CA_1A-3A-21A	n79A	3A	n79A	No
	DC_21A_n79A	CA_1A-3A-21A	n79A	21A	n79A	No
DC_1A-3A-28A_n78A	DC_1A_n78A	CA_1A-3A-28A	n78A	1A	n78A	No
	DC_3A_n78A	CA_1A-3A-28A	n78A	3A	n78A	No
	DC_28A_n78A	CA_1A-3A-28A	n78A	28A	n78A	No
DC_1A-3A_n28A-n78A	DC_1A_n28A	CA_1A-3A	CA_n28A-n78A	1A	n28A	No
	DC_1A_n78A	CA_1A-3A	CA_n28A-n78A	1A	n78A	No
	DC_3A_n28A	CA_1A-3A	CA_n28A-n78A	3A	n28A	No
	DC_3A_n78A	CA_1A-3A	CA_n28A-n78A	3A	n78A	No
DC_1A-3A-42A_n78A	DC_1A_n78A	CA_1A-3A-42A	n78A	1A	n78A	No
	DC_3A_n78A	CA_1A-3A-42A	n78A	3A	n78A	No
DC_1A-3A-42C_n78A	DC_1A_n78A	CA_1A-3A-42C	n78A	1A	n78A	No
	DC_3A_n78A	CA_1A-3A-42C	n78A	3A	n78A	No
DC_1A-3A-42D_n78A	DC_1A_n78A	CA_1A-3A-42D	n78A	1A	n78A	No
	DC_3A_n78A	CA_1A-3A-42D	n78A	3A	n78A	No
DC_1A-3A-42A_n79A	DC_1A_n79A	CA_1A-3A-42A	n79A	1A	n79A	No
	DC_3A_n79A	CA_1A-3A-42A	n79A	3A	n79A	No
DC_1A-3A-42C_n79A	DC_1A_n79A	CA_1A-3A-42C	n79A	1A	n79A	No
	DC_3A_n79A	CA_1A-3A-42C	n79A	3A	n79A	No
DC_1A-3A-42D_n79A	DC_1A_n79A	CA_1A-3A-42D	n79A	1A	n79A	No
	DC_3A_n79A	CA_1A-3A-42D	n79A	3A	n79A	No
DC_1A-7A-20A_n28A	DC_1A_n28A	CA_1A-7A-20A	n28A	1A	n28A	No
	DC_7A_n28A	CA_1A-7A-20A	n28A	7A	n28A	No
	DC_20A_n28A	CA_1A-7A-20A	n28A	20A	n28A	No
DC_1A-7A-20A_n78A	DC_1A_n78A	CA_1A-7A-20A	n78A	1A	n78A	No
	DC_7A_n78A	CA_1A-7A-20A	n78A	7A	n78A	No
	DC_20A_n78A	CA_1A-7A-20A	n78A	20A	n78A	No
DC_1A-7A-28A_n78A	DC_1A_n78A	CA_1A-7A-28A	n78A	1A	n78A	No
	DC_7A_n78A	CA_1A-7A-28A	n78A	7A	n78A	No
	DC_28A_n78A	CA_1A-7A-28A	n78A	28A	n78A	No
DC_1A-7A_n28A-n78A	DC_1A_n28A	CA_1A-7A	CA_n28A-n78A	1A	n28A	No
	DC_1A_n78A	CA_1A-7A	CA_n28A-n78A	1A	n78A	No
	DC_7A_n28A	CA_1A-7A	CA_n28A-n78A	7A	n28A	No
	DC_7A_n78A	CA_1A-7A	CA_n28A-n78A	7A	n78A	No
DC_1A-19A-21A_n77(2A)	DC_1A_n77A	CA_1A-19A-21A	CA_n77(2A)	1A	n77A	No
	DC_19A_n77A	CA_1A-19A-21A	CA_n77(2A)	19A	n77A	No
	DC_21A_n77(2A)	CA_1A-19A-21A	CA_n77(2A)	21A	n77A	No
DC_1A-19A-21A_n78A	DC_1A_n78A	CA_1A-19A-21A	n78A	1A	n78A	No
	DC_19A_n78A	CA_1A-19A-21A	n78A	19A	n78A	No

EN-DC configuration	Uplink EN-DC Configuration	E-UTRA downlink configuration	NR downlink configuration	E-UTRA uplink configuration	NR uplink configuration	Applicable for protocol testing (Note 1)
	DC_21A_n78A	CA_1A-19A-21A	n78A	21A	n78A	No
DC_1A-19A-21A_n78(2A)	DC_1A_n78A	CA_1A-19A-21A	CA_n78(2A)	1A	n78A	No
	DC_19A_n78A	CA_1A-19A-21A	CA_n78(2A)	19A	n78A	No
	DC_21A_n78(2A)	CA_1A-19A-21A	CA_n78(2A)	21A	n78A	No
DC_1A-19A-21A_n79A	DC_1A_n79A	CA_1A-19A-21A	n79A	1A	n79A	No
	DC_19A_n79A	CA_1A-19A-21A	n79A	19A	n79A	No
	DC_21A_n79A	CA_1A-19A-21A	n79A	21A	n79A	No
DC_1A-19A-42A_n78A	DC_1A_n78A	CA_1A-19A-42A	n78A	1A	n78A	No
	DC_19A_n78A	CA_1A-19A-42A	n78A	19A	n78A	No
DC_1A-19A-42C_n78A	DC_1A_n78A	CA_1A-19A-42C	n78A	1A	n78A	No
	DC_19A_n78A	CA_1A-19A-42C	n78A	19A	n78A	No
DC_1A-19A-42A_n79A	DC_1A_n79A	CA_1A-19A-42A	n79A	1A	n79A	No
	DC_19A_n79A	CA_1A-19A-42A	n79A	19A	n79A	No
DC_1A-19A-42C_n79A	DC_1A_n79A	CA_1A-19A-42C	n79A	1A	n79A	No
	DC_19A_n79A	CA_1A-19A-42C	n79A	19A	n79A	No
DC_1A-20A_n28A-n78A	DC_1A_n28A	CA_1A-20A	CA_n28A-n78A	1A	n28A	No
	DC_1A_n78A	CA_1A-20A	CA_n28A-n78A	1A	n78A	No
	DC_20A_n28A	CA_1A-20A	CA_n28A-n78A	20A	n28A	No
	DC_20A_n78A	CA_1A-20A	CA_n28A-n78A	20A	n78A	No
DC_1A-21A-42A_n78A	DC_1A_n78A	CA_1A-21A-42A	n78A	1A	n78A	No
	DC_21A_n78A	CA_1A-21A-42A	n78A	21A	n78A	No
DC_1A-21A-42C_n78A	DC_1A_n78A	CA_1A-21A-42C	n78A	1A	n78A	No
	DC_21A_n78A	CA_1A-21A-42C	n78A	21A	n78A	No
DC_1A-21A-42A_n79A	DC_1A_n79A	CA_1A-21A-42A	n79A	1A	n79A	No
	DC_21A_n79A	CA_1A-21A-42A	n79A	21A	n79A	No
DC_1A-21A-42C_n79A	DC_1A_n79A	CA_1A-21A-42C	n79A	1A	n79A	No
	DC_21A_n79A	CA_1A-21A-42C	n79A	21A	n79A	No
DC_2A-2A-14A-66A_n66A	DC_2A_n66A	CA_2A-2A-14A-66A	n66A	2A	n66A	No
	DC_14A_n66A	CA_2A-2A-14A-66A	n66A	14A	n66A	No
	DC_66A_n66A	CA_2A-2A-14A-66A	n66A	66A	n66A	No
DC_2A-7A-7A-13A_n66A	DC_2A_n66A	CA_2A-7A-7A-13A	n66A	2A	n66A	No
	DC_7A_n66A	CA_2A-7A-7A-13A	n66A	7A	n66A	No
	DC_13A_n66A	CA_2A-7A-7A-13A	n66A	13A	n66A	No
DC_2A-7A-7A-66A_n66A	DC_2A_n66A	CA_2A-7A-7A-66A	n66A	2A	n66A	No
	DC_7A_n66A	CA_2A-7A-7A-66A	n66A	7A	n66A	No
	DC_66A_n66A	CA_2A-7A-7A-66A	n66A	66A	n66A	No
DC_2A-7A-7A-66A_n78A	DC_2A_n78A	CA_2A-7A-7A-66A	n78A	2A	n78A	No

EN-DC configuration	Uplink EN-DC Configuration	E-UTRA downlink configuration	NR downlink configuration	E-UTRA uplink configuration	NR uplink configuration	Applicable for protocol testing (Note 1)
	DC_7A_n78A	CA_2A-7A-7A-66A	n78A	7A	n78A	No
	DC_66A_n78A	CA_2A-7A-7A-66A	n78A	66A	n78A	No
DC_2A-7A-13A_n66A	DC_2A_n66A	CA_2A-7A-13A	n66A	2A	n66A	No
	DC_7A_n66A	CA_2A-7A-13A	n66A	7A	n66A	No
	DC_13A_n66A	CA_2A-7A-13A	n66A	13A	n66A	No
DC_2A-7A-66A_n66A	DC_2A_n66A	CA_2A-7A-66A	n66A	2A	n66A	No
	DC_7A_n66A	CA_2A-7A-66A	n66A	7A	n66A	No
	DC_66A_n66A	CA_2A-7A-66A	n66A	66A	n66A	No
DC_2A-7C-13A_n66A	DC_2A_n66A	CA_2A-7C-13A	n66A	2A	n66A	No
	DC_7A_n66A	CA_2A-7C-13A	n66A	7A	n66A	No
	DC_13A_n66A	CA_2A-7C-13A	n66A	13A	n66A	No
DC_2A-7C-66A_n66A	DC_2A_n66A	CA_2A-7C-66A	n66A	2A	n66A	No
	DC_7A_n66A	CA_2A-7C-66A	n66A	7A	n66A	No
	DC_66A_n66A	CA_2A-7C-66A	n66A	66A	n66A	No
DC_2A-7C-66A_n78A	DC_2A_n78A	CA_2A-7C-66A	n78A	2A	n78A	No
	DC_7A_n78A	CA_2A-7C-66A	n78A	7A	n78A	No
	DC_66A_n78A	CA_2A-7C-66A	n78A	66A	n78A	No
DC_2A-14A-66A_n2A	DC_2A_n2A	CA_2A-14A-66A	n2A	2A	n2A	No
	DC_14A_n2A	CA_2A-14A-66A	n2A	14A	n2A	No
	DC_66A_n2A	CA_2A-14A-66A	n2A	66A	n2A	No
DC_2A-14A-66A-66A_n2A	DC_2A_n2A	CA_2A-14A-66A-66A	n2A	2A	n2A	No
	DC_14A_n2A	CA_2A-14A-66A-66A	n2A	14A	n2A	No
	DC_66A_n2A	CA_2A-14A-66A-66A	n2A	66A	n2A	No
DC_2A-14A-66A_n66A	DC_2A_n66A	CA_2A-14A-66A	n66A	2A	n66A	No
	DC_14A_n66A	CA_2A-14A-66A	n66A	14A	n66A	No
	DC_66A_n66A	CA_2A-14A-66A	n66A	66A	n66A	No
DC_2A-66A-(n)71AA	DC_2A_n71A	CA_2A-66A	DC-(n)71AA	2A	n71A	No
	DC_66A_n71A	CA_2A-66A	DC-(n)71AA	66A	n71A	No
	DC_(n)71AA	CA_2A-66A	DC-(n)71AA	-	(n)71AA	No
DC_3A-7A-20A_n1A	DC_3A_n1A	CA_3A-7A-20A	n1A	3A	n1A	No
	DC_7A_n1A	CA_3A-7A-20A	n1A	7A	n1A	No
	DC_20A_n1A	CA_3A-7A-20A	n1A	20A	n1A	No
DC_3A-7A-20A_n28A	DC_3A_n28A	CA_3A-7A-20A	n28A	3A	n28A	No
	DC_7A_n28A	CA_3A-7A-20A	n28A	7A	n28A	No
	DC_20A_n28A	CA_3A-7A-20A	n28A	20A	n28A	No
DC_3A-7A-20A_n78A	DC_3A_n78A	CA_3A-7A-20A	n78A	3A	n78A	No
	DC_7A_n78A	CA_3A-7A-20A	n78A	7A	n78A	No

EN-DC configuration	Uplink EN-DC Configuration	E-UTRA downlink configuration	NR downlink configuration	E-UTRA uplink configuration	NR uplink configuration	Applicable for protocol testing (Note 1)
	DC_20A_n78A	CA_3A-7A-20A	n78A	20A	n78A	No
DC_3A-7A-28A_n78A	DC_3A_n78A	CA_3A-7A-28A	n78A	3A	n78A	No
	DC_7A_n78A	CA_3A-7A-28A	n78A	7A	n78A	No
	DC_28A_n78A	CA_3A-7A-28A	n78A	28A	n78A	No
DC_3A-7A_n28A-n78A	DC_3A_n28A	CA_3A-7A	CA_n28A-n78A	3A	n28A	No
	DC_3A_n78A	CA_3A-7A	CA_n28A-n78A	3A	n78A	No
	DC_7A_n28A	CA_3A-7A	CA_n28A-n78A	7A	n28A	No
	DC_7A_n78A	CA_3A-7A	CA_n28A-n78A	7A	n78A	No
DC_3A-19A_n1A-n78A	DC_3A_n1A	CA_3A-19A	CA_n1A-n78A	3A	n1A	No
	DC_3A_n78A	CA_3A-19A	CA_n1A-n78A	3A	n78A	No
	DC_19A_n1A	CA_3A-19A	CA_n1A-n78A	19A	n1A	No
	DC_19A_n78A	CA_3A-19A	CA_n1A-n78A	19A	n78A	No
DC_3A-19A_n1A-n79A	DC_3A_n1A	CA_3A-19A	CA_n1A-n79A	3A	n1A	No
	DC_3A_n79A	CA_3A-19A	CA_n1A-n79A	3A	n79A	No
	DC_19A_n1A	CA_3A-19A	CA_n1A-n79A	19A	n1A	No
	DC_19A_n79A	CA_3A-19A	CA_n1A-n79A	19A	n79A	No
DC_3A-19A-21A_n78A	DC_3A_n78A	CA_3A-19A-21A	n78A	3A	n78A	No
	DC_19A_n78A	CA_3A-19A-21A	n78A	19A	n78A	No
	DC_21A_n78A	CA_3A-19A-21A	n78A	21A	n78A	No
DC_3A-19A-21A_n79A	DC_3A_n79A	CA_3A-19A-21A	n79A	3A	n79A	No
	DC_19A_n79A	CA_3A-19A-21A	n79A	19A	n79A	No
	DC_21A_n79A	CA_3A-19A-21A	n79A	21A	n79A	No
DC_3A-19A-42A_n1A	DC_3A_n1A	CA_3A-19A-42A	n1A	3A	n1A	No
	DC_19A_n1A	CA_3A-19A-42A	n1A	19A	n1A	No
DC_3A-19A-42C_n1A	DC_3A_n1A	CA_3A-19A-42C	n1A	3A	n1A	No
	DC_19A_n1A	CA_3A-19A-42C	n1A	19A	n1A	No
DC_3A-19A-42A_n78A	DC_3A_n78A	CA_3A-19A-42A	n78A	3A	n78A	No
	DC_19A_n78A	CA_3A-19A-42A	n78A	19A	n78A	No
DC_3A-19A-42C_n78A	DC_3A_n78A	CA_3A-19A-42C	n78A	3A	n78A	No
	DC_19A_n78A	CA_3A-19A-42C	n78A	19A	n78A	No
DC_3A-19A-42A_n79A	DC_3A_n79A	CA_3A-19A-42A	n79A	3A	n79A	No
	DC_19A_n79A	CA_3A-19A-42A	n79A	19A	n79A	No
DC_3A-19A-42C_n79A	DC_3A_n79A	CA_3A-19A-42C	n79A	3A	n79A	No
	DC_19A_n79A	CA_3A-19A-42C	n79A	19A	n79A	No
DC_3A-20A_n28A-n78A	DC_3A_n28A	CA_3A-20A	CA_n28A-n78A	3A	n28A	No
	DC_3A_n78A	CA_3A-20A	CA_n28A-n78A	3A	n78A	No
	DC_20A_n28A	CA_3A-20A	CA_n28A-n78A	20A	n28A	No
	DC_20A_n78A	CA_3A-20A	CA_n28A-n78A	20A	n78A	No
DC_3A-21A_n1A-n78A	DC_3A_n1A	CA_3A-21A	CA_n1A-n78A	3A	n1A	No
	DC_3A_n78A	CA_3A-21A	CA_n1A-n78A	3A	n78A	No

EN-DC configuration	Uplink EN-DC Configuration	E-UTRA downlink configuration	NR downlink configuration	E-UTRA uplink configuration	NR uplink configuration	Applicable for protocol testing (Note 1)
	DC_21A_n1A	CA_3A-21A	CA_n1A-n78A	21A	n1A	No
	DC_21A_n78A	CA_3A-21A	CA_n1A-n78A	21A	n78A	No
DC_3A-21A_n1A-n79A	DC_3A_n1A	CA_3A-21A	CA_n1A-n79A	3A	n1A	No
	DC_3A_n79A	CA_3A-21A	CA_n1A-n79A	3A	n79A	No
	DC_21A_n1A	CA_3A-21A	CA_n1A-n79A	21A	n1A	No
	DC_21A_n79A	CA_3A-21A	CA_n1A-n79A	21A	n79A	No
DC_3A-21A-42A_n78A	DC_3A_n78A	CA_3A-21A-42A	n78A	3A	n78A	No
	DC_21A_n78A	CA_3A-21A-42A	n78A	21A	n78A	No
DC_3A-21A-42C_n78A	DC_3A_n78A	CA_3A-21A-42C	n78A	3A	n78A	No
	DC_21A_n78A	CA_3A-21A-42C	n78A	21A	n78A	No
DC_3A-21A-42A_n79A	DC_3A_n79A	CA_3A-21A-42A	n79A	3A	n79A	No
	DC_21A_n79A	CA_3A-21A-42A	n79A	21A	n79A	No
DC_3A-21A-42C_n79A	DC_3A_n79A	CA_3A-21A-42C	n79A	3A	n79A	No
	DC_21A_n79A	CA_3A-21A-42C	n79A	21A	n79A	No
DC_3A-42A_n1A-n78A	DC_3A_n1A	CA_3A-42A	n1A	3A	n1A	No
	DC_3A_n78A	CA_3A-42A	n78A	3A	n78A	No
DC_3A-42C_n1A-n78A	DC_3A_n1A	CA_3A-42C	n1A	3A	n1A	No
	DC_3A_n78A	CA_3A-42C	n78A	3A	n78A	No
DC_3A-42A_n1A-n79A	DC_3A_n1A	CA_3A-42A	n1A	3A	n1A	No
	DC_3A_n79A	CA_3A-42A	n79A	3A	n79A	No
DC_3A-42C_n1A-n79A	DC_3A_n1A	CA_3A-42C	n1A	3A	n1A	No
	DC_3A_n79A	CA_3A-42C	n79A	3A	n79A	No
DC_7A-20A_n28A-n78A	DC_7A_n28A	CA_7A-20A	CA_n28A-n78A	7A	n28A	No
	DC_7A_n78A	CA_7A-20A	CA_n28A-n78A	7A	n78A	No
	DC_20A_n28A	CA_7A-20A	CA_n28A-n78A	20A	n28A	No
	DC_20A_n78A	CA_7A-20A	CA_n28A-n78A	20A	n78A	No
DC_19A-21A_n1A-n78A	DC_19A_n1A	CA_19A-21A	CA_n1A-n78A	19A	n1A	No
	DC_19A_n78A	CA_19A-21A	CA_n1A-n78A	19A	n78A	No
	DC_21A_n1A	CA_19A-21A	CA_n1A-n78A	21A	n1A	No
	DC_21A_n78A	CA_19A-21A	CA_n1A-n78A	21A	n78A	No
DC_19A-21A_n1A-n79A	DC_19A_n1A	CA_19A-21A	CA_n1A-n79A	19A	n1A	No
	DC_19A_n79A	CA_19A-21A	CA_n1A-n79A	19A	n79A	No
	DC_21A_n1A	CA_19A-21A	CA_n1A-n79A	21A	n1A	No
	DC_21A_n79A	CA_19A-21A	CA_n1A-n79A	21A	n79A	No
DC_19A-21A-42A_n1A	DC_19A_n1A	CA_19A-21A-42A	n1A	19A	n1A	No
	DC_21A_n1A	CA_19A-21A-42A	n1A	21A	n1A	No
DC_19A-21A-42C_n1A	DC_19A_n1A	CA_19A-21A-42C	n1A	19A	n1A	No
	DC_21A_n1A	CA_19A-21A-42C	n1A	21A	n1A	No
DC_19A-21A-42A_n78A	DC_19A_n78A	CA_19A-21A-42A	n78A	19A	n78A	No
	DC_21A_n78A	CA_19A-21A-42A	n78A	21A	n78A	No

EN-DC configuration	Uplink EN-DC Configuration	E-UTRA downlink configuration	NR downlink configuration	E-UTRA uplink configuration	NR uplink configuration	Applicable for protocol testing (Note 1)
DC_19A-21A-42C_n78A	DC_19A_n78A	CA_19A-21A-42C	n78A	19A	n78A	No
	DC_21A_n78A	CA_19A-21A-42C	n78A	21A	n78A	No
DC_19A-21A-42A_n79A	DC_19A_n79A	CA_19A-21A-42A	n79A	19A	n79A	No
	DC_21A_n79A	CA_19A-21A-42A	n79A	21A	n79A	No
DC_19A-21A-42C_n79A	DC_19A_n79A	CA_19A-21A-42C	n79A	19A	n79A	No
	DC_21A_n79A	CA_19A-21A-42C	n79A	21A	n79A	No
DC_19A-42A_n1A-n78A	DC_19A_n1A	CA_19A-42A	n1A	19A	n1A	No
	DC_19A_n78A	CA_19A-42A	n78A	19A	n78A	No
DC_19A-42C_n1A-n78A	DC_19A_n1A	CA_19A-42C	n1A	19A	n1A	No
	DC_19A_n78A	CA_19A-42C	n78A	19A	n78A	No
DC_19A-42A_n1A-n79A	DC_19A_n1A	CA_19A-42A	n1A	19A	n1A	No
	DC_19A_n79A	CA_19A-42A	n79A	19A	n79A	No
DC_19A-42C_n1A-n79A	DC_19A_n1A	CA_19A-42C	n1A	19A	n1A	No
	DC_19A_n79A	CA_19A-42C	n79A	19A	n79A	No
DC_21A-42A_n1A-n78A	DC_21A_n1A	CA_21A-42A	n1A	21A	n1A	No
	DC_21A_n78A	CA_21A-42A	n78A	21A	n78A	No
DC_21A-42C_n1A-n78A	DC_21A_n1A	CA_21A-42C	n1A	21A	n1A	No
	DC_21A_n78A	CA_21A-42C	n78A	21A	n78A	No
DC_21A-42A_n1A-n79A	DC_21A_n1A	CA_21A-42A	n1A	21A	n1A	No
	DC_21A_n79A	CA_21A-42A	n79A	21A	n79A	No
DC_21A-42C_n1A-n79A	DC_21A_n1A	CA_21A-42C	n1A	21A	n1A	No
	DC_21A_n79A	CA_21A-42C	n79A	21A	n79A	No

Note 1: Protocol testing is limited to EN-DC configurations with 1 CC E-UTRA and 1CC or 2CC NR configurations.



## 4.3.1.4.1.5

## Inter-band EN-DC configurations within FR1 (five bands)

Table 4.3.1.4.1.5-1: Inter-band EN-DC configurations within FR1 (five bands)

EN-DC configuration	Uplink EN-DC Configuration	E-UTRA downlink configuration	NR downlink configuration	E-UTRA uplink configuration	NR uplink configuration	Applicable for protocol testing (Note 1)
DC_1A-3A-5A-41A_n79A	DC_1A_n79A	CA_1A-3A-5A-41A	n79A	1A	n79A	No
	DC_3A_n79A	CA_1A-3A-5A-41A	n79A	3A	n79A	No
	DC_5A_n79A	CA_1A-3A-5A-41A	n79A	5A	n79A	No
	DC_41A_n79A	CA_1A-3A-5A-41A	n79A	41A	n79A	No
DC_1A-3A-7A-20A_n28A	DC_1A_n28A	CA_1A-3A-7A-20A	n28A	1A	n28A	No
	DC_3A_n28A	CA_1A-3A-7A-20A	n28A	3A	n28A	No
	DC_7A_n28A	CA_1A-3A-7A-20A	n28A	7A	n28A	No
	DC_20A_n28A	CA_1A-3A-7A-20A	n28A	20A	n28A	No
DC_1A-3A-7A-20A_n78A	DC_1A_n78A	CA_1A-3A-7A-20A	n78A	1A	n78A	No
	DC_3A_n78A	CA_1A-3A-7A-20A	n78A	3A	n78A	No
	DC_7A_n78A	CA_1A-3A-7A-20A	n78A	7A	n78A	No
	DC_20A_n78A	CA_1A-3A-7A-20A	n78A	20A	n78A	No
DC_1A-3A-7A-28A_n78A	DC_1A_n78A	CA_1A-3A-7A-28A	n78A	1A	n78A	No
	DC_3A_n78A	CA_1A-3A-7A-28A	n78A	3A	n78A	No
	DC_7A_n78A	CA_1A-3A-7A-28A	n78A	7A	n78A	No
	DC_28A_n78A	CA_1A-3A-7A-28A	n78A	28A	n78A	No
DC_1A-3A-7A_n28A-n78A	DC_1A_n28A	CA_1A-3A-7A	CA_n28A-n78A	1A	n28A	No
	DC_1A_n78A	CA_1A-3A-7A	CA_n28A-n78A	1A	n78A	No
	DC_3A_n28A	CA_1A-3A-7A	CA_n28A-n78A	3A	n28A	No
	DC_3A_n78A	CA_1A-3A-7A	CA_n28A-n78A	3A	n78A	No
	DC_7A_n28A	CA_1A-3A-7A	CA_n28A-n78A	7A	n28A	No
DC_1A-3A-19A-42A_n78A	DC_1A_n78A	CA_1A-3A-19A-42A	n78A	1A	n78A	No
	DC_3A_n78A	CA_1A-3A-19A-42A	n78A	3A	n78A	No
	DC_19A_n78A	CA_1A-3A-19A-42A	n78A	19A	n78A	No
DC_1A-3A-19A-42C_n78A	DC_1A_n78A	CA_1A-3A-19A-42C	n78A	1A	n78A	No
	DC_3A_n78A	CA_1A-3A-19A-42C	n78A	3A	n78A	No
	DC_19A_n78A	CA_1A-3A-19A-42C	n78A	19A	n78A	No
DC_1A-3A-19A-42A_n79A	DC_1A_n79A	CA_1A-3A-19A-42A	n79A	1A	n79A	No

EN-DC configuration	Uplink EN-DC Configuration	E-UTRA downlink configuration	NR downlink configuration	E-UTRA uplink configuration	NR uplink configuration	Applicable for protocol testing (Note 1)
	DC_3A_n79A	CA_1A-3A-19A-42A	n79A	3A	n79A	No
	DC_19A_n79A	CA_1A-3A-19A-42A	n79A	19A	n79A	No
DC_1A-3A-19A-42C_n79A	DC_1A_n79A	CA_1A-3A-19A-42C	n79A	1A	n79A	No
	DC_3A_n79A	CA_1A-3A-19A-42C	n79A	3A	n79A	No
	DC_19A_n79A	CA_1A-3A-19A-42C	n79A	19A	n79A	No
DC_1A-3A-20A_n28A-n78A	DC_1A_n28A	CA_1A-3A-20A	CA_n28A-n78A	1A	n28A	No
	DC_1A_n78A	CA_1A-3A-20A	CA_n28A-n78A	1A	n78A	No
	DC_3A_n28A	CA_1A-3A-20A	CA_n28A-n78A	3A	n28A	No
	DC_3A_n78A	CA_1A-3A-20A	CA_n28A-n78A	3A	n78A	No
	DC_20A_n28A	CA_1A-3A-20A	CA_n28A-n78A	20A	n28A	No
	DC_20A_n78A	CA_1A-3A-20A	CA_n28A-n78A	20A	n78A	No
DC_1A-3A-21A-42A_n78A	DC_1A_n78A	CA_1A-3A-21A-42A	n78A	1A	n78A	No
	DC_3A_n78A	CA_1A-3A-21A-42A	n78A	3A	n78A	No
	DC_21A_n78A	CA_1A-3A-21A-42A	n78A	21A	n78A	No
DC_1A-3A-21A-42C_n78A	DC_1A_n78A	CA_1A-3A-21A-42C	n78A	1A	n78A	No
	DC_3A_n78A	CA_1A-3A-21A-42C	n78A	3A	n78A	No
	DC_21A_n78A	CA_1A-3A-21A-42C	n78A	21A	n78A	No
DC_1A-3A-21A-42A_n79A	DC_1A_n79A	CA_1A-3A-21A-42A	n79A	1A	n79A	No
	DC_3A_n79A	CA_1A-3A-21A-42A	n79A	3A	n79A	No
	DC_21A_n79A	CA_1A-3A-21A-42A	n79A	21A	n79A	No
DC_1A-3A-21A-42C_n79A	DC_1A_n79A	CA_1A-3A-21A-42C	n79A	1A	n79A	No
	DC_3A_n79A	CA_1A-3A-21A-42C	n79A	3A	n79A	No
	DC_21A_n79A	CA_1A-3A-21A-42C	n79A	21A	n79A	No
DC_1A-7A-20A_n28A-n78A	DC_1A_n28A	CA_1A-7A-20A	CA_n28A-n78A	1A	n28A	No

EN-DC configuration	Uplink EN-DC Configuration	E-UTRA downlink configuration	NR downlink configuration	E-UTRA uplink configuration	NR uplink configuration	Applicable for protocol testing (Note 1)
	DC_1A_n78A	CA_1A-7A-20A	CA_n28A-n78A	1A	n78A	No
	DC_7A_n28A	CA_1A-7A-20A	CA_n28A-n78A	7A	n28A	No
	DC_7A_n78A	CA_1A-7A-20A	CA_n28A-n78A	7A	n78A	No
	DC_20A_n28A	CA_1A-7A-20A	CA_n28A-n78A	20A	n28A	No
	DC_20A_n78A	CA_1A-7A-20A	CA_n28A-n78A	20A	n78A	No
DC_1A-19A-21A-42A_n78A	DC_1A_n78A	CA_1A-19A-21A-42A	n78A	1A	n78A	No
	DC_19A_n78A	CA_1A-19A-21A-42A	n78A	19A	n78A	No
	DC_21A_n78A	CA_1A-19A-21A-42A	n78A	21A	n78A	No
DC_1A-19A-21A-42C_n78A	DC_1A_n78A	CA_1A-19A-21A-42C	n78A	1A	n78A	No
	DC_19A_n78A	CA_1A-19A-21A-42C	n78A	19A	n78A	No
	DC_21A_n78A	CA_1A-19A-21A-42C	n78A	21A	n78A	No
DC_1A-19A-21A-42A_n79A	DC_1A_n79A	CA_1A-19A-21A-42A	n79A	1A	n79A	No
	DC_19A_n79A	CA_1A-19A-21A-42A	n79A	19A	n79A	No
	DC_21A_n79A	CA_1A-19A-21A-42A	n79A	21A	n79A	No
DC_1A-19A-21A-42C_n79A	DC_1A_n79A	CA_1A-19A-21A-42C	n79A	1A	n79A	No
	DC_19A_n79A	CA_1A-19A-21A-42C	n79A	19A	n79A	No
	DC_21A_n79A	CA_1A-19A-21A-42C	n79A	21A	n79A	No
DC_3A-7A-20A_n28A-n78A	DC_3A_n28A	CA_3A-7A-20A	CA_n28A-n78A	3A	n28A	No
	DC_3A_n78A	CA_3A-7A-20A	CA_n28A-n78A	3A	n78A	No
	DC_7A_n28A	CA_3A-7A-20A	CA_n28A-n78A	7A	n28A	No
	DC_7A_n78A	CA_3A-7A-20A	CA_n28A-n78A	7A	n78A	No
	DC_20A_n28A	CA_3A-7A-20A	CA_n28A-n78A	20A	n28A	No
	DC_20A_n78A	CA_3A-7A-20A	CA_n28A-n78A	20A	n78A	No
DC_3A-19A-21A-42A_n78A	DC_3A_n78A	CA_3A-19A-21A-42A	n78A	3A	n78A	No
	DC_19A_n78A	CA_3A-19A-21A-42A	n78A	19A	n78A	No
	DC_21A_n78A	CA_3A-19A-21A-42A	n78A	21A	n78A	No

EN-DC configuration	Uplink EN-DC Configuration	E-UTRA downlink configuration	NR downlink configuration	E-UTRA uplink configuration	NR uplink configuration	Applicable for protocol testing (Note 1)
DC_3A-19A-21A-42C_n78A	DC_3A_n78A	CA_3A-19A-21A-42C	n78A	3A	n78A	No
	DC_19A_n78A	CA_3A-19A-21A-42C	n78A	19A	n78A	No
	DC_21A_n78A	CA_3A-19A-21A-42C	n78A	21A	n78A	No
DC_3A-19A-21A-42A_n79A	DC_3A_n79A	CA_3A-19A-21A-42A	n79A	3A	n79A	No
	DC_19A_n79A	CA_3A-19A-21A-42A	n79A	19A	n79A	No
	DC_21A_n79A	CA_3A-19A-21A-42A	n79A	21A	n79A	No
DC_3A-19A-21A-42C_n79A	DC_3A_n79A	CA_3A-19A-21A-42C	n79A	3A	n79A	No
	DC_19A_n79A	CA_3A-19A-21A-42C	n79A	19A	n79A	No
	DC_21A_n79A	CA_3A-19A-21A-42C	n79A	21A	n79A	No
DC_3A-19A-42A_n1A-n78A	DC_3A_n1A	CA_3A-19A-42A	CA_n1A-n78A	3A	n1A	No
	DC_3A_n78A	CA_3A-19A-42A	CA_n1A-n78A	3A	n78A	No
	DC_19A_n1A	CA_3A-19A-42A	CA_n1A-n78A	19A	n1A	No
	DC_19A_n78A	CA_3A-19A-42A	CA_n1A-n78A	19A	n78A	No
DC_3A-19A-42C_n1A-n78A	DC_3A_n1A	CA_3A-19A-42C	CA_n1A-n78A	3A	n1A	No
	DC_3A_n78A	CA_3A-19A-42C	CA_n1A-n78A	3A	n78A	No
	DC_19A_n1A	CA_3A-19A-42C	CA_n1A-n78A	19A	n1A	No
	DC_19A_n78A	CA_3A-19A-42C	CA_n1A-n78A	19A	n78A	No
DC_3A-19A-42A_n1A-n79A	DC_3A_n1A	CA_3A-19A-42A	CA_n1A-n79A	3A	n1A	No
	DC_3A_n79A	CA_3A-19A-42A	CA_n1A-n79A	3A	n79A	No
	DC_19A_n1A	CA_3A-19A-42A	CA_n1A-n79A	19A	n1A	No
	DC_19A_n79A	CA_3A-19A-42A	CA_n1A-n79A	19A	n79A	No
DC_3A-19A-42C_n1A-n79A	DC_3A_n1A	CA_3A-19A-42C	CA_n1A-n79A	3A	n1A	No
	DC_3A_n79A	CA_3A-19A-42C	CA_n1A-n79A	3A	n79A	No
	DC_19A_n1A	CA_3A-19A-42C	CA_n1A-n79A	19A	n1A	No
	DC_19A_n79A	CA_3A-19A-42C	CA_n1A-n79A	19A	n79A	No
DC_3A-21A-42A_n1A-n78A	DC_3A_n1A	CA_3A-21A-42A	CA_n1A-n78A	3A	n1A	No
	DC_3A_n78A	CA_3A-21A-42A	CA_n1A-n78A	3A	n78A	No
	DC_21A_n1A	CA_3A-21A-42A	CA_n1A-n78A	21A	n1A	No
	DC_21A_n78A	CA_3A-21A-42A	CA_n1A-n78A	21A	n78A	No
DC_3A-21A-42C_n1A-n78A	DC_3A_n1A	CA_3A-21A-42C	CA_n1A-n78A	3A	n1A	No
	DC_3A_n78A	CA_3A-21A-42C	CA_n1A-n78A	3A	n78A	No

EN-DC configuration	Uplink EN-DC Configuration	E-UTRA downlink configuration	NR downlink configuration	E-UTRA uplink configuration	NR uplink configuration	Applicable for protocol testing (Note 1)
	DC_21A_n1A	CA_3A-21A-42C	CA_n1A-n78A	21A	n1A	No
	DC_21A_n78A	CA_3A-21A-42C	CA_n1A-n78A	21A	n78A	No
DC_3A-21A-42A_n1A-n79A	DC_3A_n1A	CA_3A-21A-42A	CA_n1A-n79A	3A	n1A	No
	DC_3A_n79A	CA_3A-21A-42A	CA_n1A-n79A	3A	n79A	No
	DC_21A_n1A	CA_3A-21A-42A	CA_n1A-n79A	21A	n1A	No
	DC_21A_n79A	CA_3A-21A-42A	CA_n1A-n79A	21A	n79A	No
DC_3A-21A-42C_n1A-n79A	DC_3A_n1A	CA_3A-21A-42C	CA_n1A-n79A	3A	n1A	No
	DC_3A_n79A	CA_3A-21A-42C	CA_n1A-n79A	3A	n79A	No
	DC_21A_n1A	CA_3A-21A-42C	CA_n1A-n79A	21A	n1A	No
	DC_21A_n79A	CA_3A-21A-42C	CA_n1A-n79A	21A	n79A	No
DC_19A-21A-42A_n1A-n78A	DC_19A_n1A	CA_19A-21A-42A	CA_n1A-n78A	19A	n1A	No
	DC_19A_n78A	CA_19A-21A-42A	CA_n1A-n78A	19A	n78A	No
	DC_21A_n1A	CA_19A-21A-42A	CA_n1A-n78A	21A	n1A	No
	DC_21A_n78A	CA_19A-21A-42A	CA_n1A-n78A	21A	n78A	No
DC_19A-21A-42C_n1A-n78A	DC_19A_n1A	CA_19A-21A-42C	CA_n1A-n78A	19A	n1A	No
	DC_19A_n78A	CA_19A-21A-42C	CA_n1A-n78A	19A	n78A	No
	DC_21A_n1A	CA_19A-21A-42C	CA_n1A-n78A	21A	n1A	No
	DC_21A_n78A	CA_19A-21A-42C	CA_n1A-n78A	21A	n78A	No
DC_19A-21A-42A_n1A-n79A	DC_19A_n1A	CA_19A-21A-42A	CA_n1A-n79A	19A	n1A	No
	DC_19A_n79A	CA_19A-21A-42A	CA_n1A-n79A	19A	n79A	No
	DC_21A_n1A	CA_19A-21A-42A	CA_n1A-n79A	21A	n1A	No
	DC_21A_n79A	CA_19A-21A-42A	CA_n1A-n79A	21A	n79A	No

Note 1: Protocol testing is limited to EN-DC configurations with 1 CC E-UTRA and 1CC or 2CC NR configurations.

**Table 4.3.1.4.1.6-1: Inter-band EN-DC configurations within FR1 (six bands)**

EN-DC configuration	Uplink EN-DC Configuration	E-UTRA downlink configuration	NR downlink configuration	E-UTRA uplink configuration	NR uplink configuration	Applicable for protocol testing (Note 1)
DC_1A-3A-7A-20A_n28A-n78A	DC_1A_n28A	CA_1A-3A-7A-20A	CA_n28A-n78A	1A	n28A	No
	DC_1A_n78A	CA_1A-3A-7A-20A	CA_n28A-n78A	1A	n78A	No
	DC_3A_n28A	CA_1A-3A-7A-20A	CA_n28A-n78A	3A	n28A	No
	DC_3A_n78A	CA_1A-3A-7A-20A	CA_n28A-n78A	3A	n78A	No
	DC_7A_n28A	CA_1A-3A-7A-20A	CA_n28A-n78A	7A	n28A	No
	DC_7A_n78A	CA_1A-3A-7A-20A	CA_n28A-n78A	7A	n78A	No
	DC_20A_n28A	CA_1A-3A-7A-20A	CA_n28A-n78A	20A	n28A	No
DC_20A_n78A	CA_1A-3A-7A-20A	CA_n28A-n78A	20A	n78A	No	
Note 1: Protocol testing is limited to EN-DC configurations with 1 CC E-UTRA and 1CC or 2CC NR configurations.						

4.3.1.4.2 Intra-band contiguous EN-DC configurations within FR1

4.3.1.4.2.1 – 4.3.1.4.2.40 FFS

4.3.1.4.2.41 Intra-band contiguous EN-DC configurations DC\_(n)41

4.3.1.4.2.41.1 DC\_(n)41AA

**Table 4.3.1.4.2.41.1-1: EN-DC combination DC\_(n)41AA, intra-band contiguous, SCS 15 kHz, 15 kHz NR raster, NR CC at the band edges**

EN-DC channel bandwidth combination	CC	Bandwidth [MHz]	carrierBandwidth [PRBs]	Range	Carrier centre [MHz] Note 2	Carrier centre [ARFCN]	point A [MHz]	absolute FrequencyPointA [ARFCN]	offset ToCarrier [Carrier PRBs]	SS block SCS [kHz]	GSCN	absoluteFrequencySSB [ARFCN]	$k_{SSB}$	Offset Carrier CORES ET#0 [RBs] Note 3	CORES ET#0 Index (Offset [RBs]) Note 1	offsetToPointA (SIB1) [PRBs] Note 1	
E-UTRA: 10MHz + NR: 20MHz	E-UTRA CC1	10	50	Downlink & Uplink	Low	2521.200	39902	-	-	-	-	-	-	-	-	-	
					Mid	2603.100	40721	-	-	-	-	-	-	-	-	-	
					High	2664.900	41339	-	-	-	-	-	-	-	-	-	-
	Channel spacing E-UTRA CC1- NR CC1 = 15 MHz (Note 2)																
NR CC1	20	106	Downlink & Uplink	Low	2506.200	501240	2496.66	499332	0	15	6246	499710	6	0	0 (0)	0	
				Mid	2588.100	517620	2560.2	512040	102		6453	516270	6	1	2 (4)	107	
				High	2679.900	535980	2579.64	515928	504		6681	534510	2	0	1 (2)	506	
E-UTRA: 10MHz + NR: 40MHz	E-UTRA CC1	10	50	Downlink & Uplink	Low	2541.300	40103	-	-	-	-	-	-	-	-	-	
					Mid	2613.000	40820	-	-	-	-	-	-	-	-	-	-
					High	2644.800	41138	-	-	-	-	-	-	-	-	-	-
	Channel spacing E-UTRA CC1- NR CC1 = 25.005 MHz (Note 2)																
NR CC1	40	216	Downlink & Uplink	Low	2516.295	503259	2496.855	499371	0	15	6249	499950	1	2	2 (4)	6	
				Mid	2587.995	517599	2550.195	510039	102		6426	514110	1	1	0 (0)	103	
				High	2669.805	533961	2559.645	511929	504		6633	530670	7	2	2 (4)	510	
E-UTRA: 10MHz + NR: 50MHz	E-UTRA CC1	10	50	Downlink & Uplink	Low	2551.200	40202	-	-	-	-	-	-	-	-	-	
					Mid	2618.100	40871	-	-	-	-	-	-	-	-	-	-
					High	2634.900	41039	-	-	-	-	-	-	-	-	-	-
	NR CC1	50	270	Downlink & Uplink	Low	2521.200	504240	2496.9	499380	0	15	6249	499950	10	1	2 (4)	5
Mid					2588.100	517620	2545.44	509088	102	6414		513150	10	0	0 (0)	102	
High					2664.900	532980	2549.88	509976	504	6606		528510	10	0	0 (0)	504	
E-UTRA: 20MHz + NR: 10MHz	E-UTRA CC1	20	100	Downlink & Uplink	Low	2516.100	39851	-	-	-	-	-	-	-	-	-	
					Mid	2598.000	40670	-	-	-	-	-	-	-	-	-	-
					High	2670.000	41390	-	-	-	-	-	-	-	-	-	-
Channel spacing E-UTRA CC1- NR CC1 = 15 MHz (Note 2)																	

	NR CC1	10	52	Downlink & Uplink	Low	2501.100	500220	2496.42	499284	0	15	6246	499710	10	1	0 (0)	1
					Mid	2583.000	516600	2559.96	511992	102		6450	516030	2	0	0 (0)	102
					High	2685.000	537000	2589.6	517920	504		6705	536430	2	0	0 (0)	504
E-UTRA: 20MHz + NR: 20MHz	E-UTRA CC1	20	100	Downlink & Uplink	Low	2526.000	39950	-	-	-		-	-	-	-	-	-
					Mid	2603.100	40721	-	-	-		-	-	-	-	-	
					High	2659.800	41288	-	-	-		-	-	-	-	-	
Channel spacing E-UTRA CC1- NR CC1=19.995 MHz (Note 2)																	
	NR CC1	20	106	Downlink & Uplink	Low	2506.005	501201	2496.465	499293	0	15	6246	499710	7	1	0 (0)	1
					Mid	2583.105	516621	2555.205	511041	102		6441	515310	7	2	2 (4)	108
					High	2679.795	535959	2579.535	515907	504		6681	534510	9	0	1 (2)	506
E-UTRA: 20MHz + NR: 40MHz	E-UTRA CC1	20	100	Downlink & Uplink	Low	2546.100	40151	-	-	-		-	-	-	-	-	-
					Mid	2613.000	40820	-	-	-		-	-	-	-	-	
					High	2640.000	41090	-	-	-		-	-	-	-	-	
Channel spacing E-UTRA CC1- NR CC1=30 MHz (Note 2)																	
	NR CC1	40	216	Downlink & Uplink	Low	2516.100	503220	2496.66	499332	0	15	6246	499710	6	0	0 (0)	0
					Mid	2583.000	516600	2545.2	509040	102		6414	513150	2	0	1 (2)	104
					High	2670.000	534000	2559.84	511968	504		6633	530670	6	1	2 (4)	509
E-UTRA: 20MHz + NR: 50MHz	E-UTRA CC1	20	100	Downlink & Uplink	Low	2556.000	40250	-	-	-		-	-	-	-	-	-
					Mid	2618.100	40871	-	-	-		-	-	-	-	-	
					High	2629.800	40988	-	-	-		-	-	-	-	-	
Channel spacing E-UTRA CC1- NR CC1=34.995 MHz (Note 2)																	
	NR CC1	50	270	Downlink & Uplink	Low	2521.005	504201	2496.705	499341	0	15	6246	499710	3	0	0 (0)	0
					Mid	2583.105	516621	2540.445	508089	102		6402	512190	11	1	0 (0)	103
					High	2664.795	532959	2549.775	509955	504		6606	528510	5	1	0 (0)	505
Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-1 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdccch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.																	
Note 2: The nominal carrier spacing between the E-UTRA and the NR carriers is set in accordance to TS 38.101-3 [9], clause 5.4B.1.																	

Table 4.3.1.4.2.41.1-1A: EN-DC combination DC\_(n)41AA, intra-band contiguous, SCS 15 kHz, 15 kHz NR raster, E-UTRA CC at the band edges

EN-DC channel bandwidth combination	CC	Band width [MHz ]	carrierBandwidth [PRBs]	Range	Carrier centre [MHz] Note 2	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequency PointA [ARFCN]	offset ToCarrier [Carrier PRBs]	SS block SCS [kHz]	GSCN	absoluteFrequency SSB [ARFCN]	$k_{SSB}$	Offset Carrier CORESET#0 [RBs] Note 3	CORESET#0 Index (Offset [RBs]) Note 1	offsetToPointA (SIB1) [PRBs] Note 1	
E-UTRA: 20MHz + NR: 40MHz	E-UTRA CC1	20	100	Downlink & Uplink	Low	2506.200	39752	-	-	-	-	-	-	-	-	-	
					Mid	2613.000	40820	-	-	-	-	-	-	-	-		
					High	2679.900	41489	-	-	-	-	-	-	-	-		
Channel spacing E-UTRA CC1- NR CC1=30 MHz (Note 2)																	
	NR CC1	40	216	Downlink & Uplink	Low	2536.200	507240	2516.76	503352	0	15	6297	503790	2	0	1 (2)	2
					Mid	2583.000	516600	2545.2	509040	102		6414	513150	2	0	1 (2)	104
					High	2649.900	529980	2539.74	507948	504		6582	526590	10	1	1 (2)	512



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

Note 2: The nominal carrier spacing between the E-UTRA and the NR carriers is set in accordance to TS 38.101-3 [9], clause 5.4B.1.

Note 3: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter  $\Delta F_{\text{OffsetCORESET-0-Carrier}}$  in Annex C expressed in number of common RBs.

**Table 4.3.1.4.2.41.1-2: EN-DC combination DC\_(n)41AA, intra-band contiguous, SCS 30 kHz, 30 kHz NR raster, NR CC at the band edges**

EN-DC channel bandwidth combination	CC	Bandwidth [MHz]	carrierBandwidth [PRBs]	Range		Carrier centre [MHz] Note 2	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequencyPointA [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS [kHz]	GSCN	absoluteFrequencySSB [ARFCN]	$k_{\text{SSB}}$	Offset Carrier CORESET#0 [RBs] Note 3	CORESET#0 Index (Offset [RBs]) Note 1	offsetToPointA (SIB1) [PRBs] Note 1					
																		Low	Mid	High	Low	Mid
E-UTRA: 10MHz + NR: 20MHz	E-UTRA CC1	10	50	Downlink & Uplink	Low	2521.200	39902	-	-	-	-	-	-	-	-	-	-					
					Mid	2603.100	40721	-	-	-	-	-	-	-	-	-	-	-				
					High	2664.900	41339	-	-	-	-	-	-	-	-	-	-	-				
	Channel spacing E-UTRA CC1- NR CC1=15 MHz (Note 2)																					
NR CC1	20	51	Downlink & Uplink	Low	2506.200	501240	2497.02	499404	0	30	6252	500190	22	0	0 (0)	0						
				Mid	2588.100	517620	2542.2	508440	102								6456	516510	2	0	0 (0)	204
				High	2679.900	535980	2489.28	497856	504								6687	534990	18	0	1 (1)	1010
E-UTRA: 10MHz + NR: 40MHz	E-UTRA CC1	10	50	Downlink & Uplink	Low	2541.000	40100	-	-	-	-	-	-	-	-	-	-					
					Mid	2613.000	40820	-	-	-	-	-	-	-	-	-	-	-				
					High	2644.800	41138	-	-	-	-	-	-	-	-	-	-	-				
	Channel spacing E-UTRA CC1- NR CC1=24.99 MHz (Note 2)																					
NR CC1	40	106	Downlink & Uplink	Low	2516.010	503202	2496.93	499386	0	30	6252	500190	4	0	1 (1)	2						
				Mid	2588.010	517602	2532.21	506442	102								6432	514590	4	0	1 (1)	206
				High	2669.790	533958	2469.27	493854	504								6636	530910	16	0	0 (0)	1008
E-UTRA: 10MHz + NR: 50MHz	E-UTRA CC1	10	50	Downlink & Uplink	Low	2551.200	40202	-	-	-	-	-	-	-	-	-	-					
					Mid	2618.100	40871	-	-	-	-	-	-	-	-	-	-	-				
					High	2634.900	41039	-	-	-	-	-	-	-	-	-	-	-				
	Channel spacing E-UTRA CC1- NR CC1=30 MHz (Note 2)																					
NR CC1	50	133	Downlink & Uplink	Low	2521.200	504240	2497.26	499452	0	30	6252	500190	6	0	0 (0)	0						
				Mid	2588.100	517620	2527.44	505488	102								6420	513630	2	0	1 (1)	206
				High	2664.900	532980	2459.52	491904	504								6612	528990	2	0	1 (1)	1010
E-UTRA: 10MHz + NR: 60MHz	E-UTRA CC1	10	50	Downlink & Uplink	Low	2561.100	40301	-	-	-	-	-	-	-	-	-	-					
					Mid	2622.900	40919	-	-	-	-	-	-	-	-	-	-	-				
					High	2624.700	40937	-	-	-	-	-	-	-	-	-	-	-				
	Channel spacing E-UTRA CC1- NR CC1=35.01 MHz (Note 2)																					
NR CC1	60	162	Downlink & Uplink	Low	2526.090	505218	2496.93	499386	0	30	6252	500190	4	0	1 (1)	2						
				Mid	2587.890	517578	2522.01	504402	102								6408	512670	20	0	2 (2)	208
				High	2659.710	531942	2449.11	489822	504								6585	526830	0	0	0 (0)	1008

E-UTRA: 10MHz + NR: 80MHz	E-UTRA CC1	10	50	Downlink & Uplink	Low	2581.200	40502	-	-	-	-	-	-	-	-	-
					Mid	2633.100	41021	-	-	-	-	-	-	-	-	
					High	2604.900	40739	-	-	-	-	-	-	-	-	
	Channel spacing E-UTRA CC1- NR CC1=45 MHz (Note 2)															
NR CC1	80	217	Downlink & Uplink	Low	2536.200	507240	2497.14	499428	0	30	6252	500190	14	0	0 (0)	0
				Mid	2588.100	517620	2512.32	502464	102		6384	510750	2	0	3 (3)	210
				High	2649.900	529980	2429.4	485880	504		6537	522990	10	0	1 (1)	1010
E-UTRA: 10MHz + NR: 100MHz	E-UTRA CC1	10	50	Downlink & Uplink	Low	2601.000	40700	-	-	-	-	-	-	-	-	-
					Mid	2643.000	41120	-	-	-	-	-	-	-	-	
					High	2584.800	40538	-	-	-	-	-	-	-	-	
	Channel spacing E-UTRA CC1- NR CC1=54.99 MHz (Note 2)															
NR CC1	100	273	Downlink & Uplink	Low	2546.010	509202	2496.87	499374	0	30	6252	500190	8	0	1 (1)	2
				Mid	2588.010	517602	2502.15	500430	102		6357	508590	8	0	1 (1)	206
				High	2639.790	527958	2409.21	481842	504		6486	518910	20	0	0 (0)	1008
E-UTRA: 20MHz + NR: 10MHz	E-UTRA CC1	20	100	Downlink & Uplink	Low	2516.100	39851	-	-	-	-	-	-	-	-	-
					Mid	2598.000	40670	-	-	-	-	-	-	-	-	
					High	2670.000	41390	-	-	-	-	-	-	-	-	
	Channel spacing E-UTRA CC1- NR CC1=15 MHz (Note 2)															
NR CC1	10	24	Downlink & Uplink	Low	2501.100	500220	2496.78	499356	0	30	6252	500190	14	0	1 (1)	2
				Mid	2583.000	516600	2541.96	508392	102		6456	516510	18	0	0 (0)	204
				High	2685.000	537000	2499.24	499848	504		6711	536910	18	0	0 (0)	1008
E-UTRA: 20MHz + NR: 20MHz	E-UTRA CC1	20	100	Downlink & Uplink	Low	2526.300	39953	-	-	-	-	-	-	-	-	-
					Mid	2603.100	40721	-	-	-	-	-	-	-	-	
					High	2659.800	41288	-	-	-	-	-	-	-	-	
	Channel spacing E-UTRA CC1- NR CC1=20.01 MHz (Note 2)															
NR CC1	20	51	Downlink & Uplink	Low	2506.290	501258	2497.11	499422	0	30	6252	500190	16	0	0 (0)	0
				Mid	2583.090	516618	2537.19	507438	102		6444	515550	16	0	0 (0)	204
				High	2679.810	535962	2489.19	497838	504		6687	534990	0	0	2 (2)	1012
E-UTRA: 20MHz + NR: 40MHz	E-UTRA CC1	20	100	Downlink & Uplink	Low	2546.100	40151	-	-	-	-	-	-	-	-	-
					Mid	2613.000	40820	-	-	-	-	-	-	-	-	
					High	2640.000	41090	-	-	-	-	-	-	-	-	
	Channel spacing E-UTRA CC1- NR CC1=30 MHz (Note 2)															
NR CC1	40	106	Downlink & Uplink	Low	2516.100	503220	2497.02	499404	0	30	6252	500190	22	0	0 (0)	0
				Mid	2583.000	516600	2527.2	505440	102		6420	513630	18	0	1 (1)	206
				High	2670.000	534000	2469.48	493896	504		6636	530910	2	0	0 (0)	1008
E-UTRA: 20MHz + NR: 50MHz	E-UTRA CC1	20	100	Downlink & Uplink	Low	2556.300	40253	-	-	-	-	-	-	-	-	-
					Mid	2618.100	40871	-	-	-	-	-	-	-	-	
					High	2629.800	40988	-	-	-	-	-	-	-	-	
	Channel spacing E-UTRA CC1- NR CC1=35.01 MHz (Note 2)															
NR CC1	50	133	Downlink & Uplink	Low	2521.290	504258	2497.35	499470	0	30	6252	500190	0	0	0 (0)	0
				Mid	2583.090	516618	2522.43	504486	102		6408	512670	16	0	1 (1)	206
				High	2664.810	532962	2459.43	491886	504		6612	528990	8	0	1 (1)	1010
E-UTRA: 20MHz +	E-UTRA CC1	20	100	Downlink &	Low	2566.200	40352	-	-	-	-	-	-	-	-	
					Mid	2622.900	40919	-	-	-	-	-	-	-	-	

NR: 60MHz				Uplink	High	2619.900	40889	-	-	-	-	-	-	-	-	-	
	Channel spacing E-UTRA CC1- NR CC1=39.99 MHz (Note 2)																
	NR CC1	60	162	Downlink & Uplink	Low	2526.210	505242	2497.05	499410	0	30	6252	500190	20	0	0 (0)	0
					Mid	2582.910	516582	2517.03	503406	102		6393	511470	0	0	0 (0)	204
High					2659.890	531978	2449.29	489858	504	6588		527070	20	0	2 (2)	1012	
E-UTRA: 20MHz + NR: 80MHz	E-UTRA CC1	20	100	Downlink & Uplink	Low	2586.300	40553	-	-	-	-	-	-	-	-	-	-
					Mid	2633.100	41021	-	-	-	-	-	-	-	-	-	-
					High	2599.800	40688	-	-	-	-	-	-	-	-	-	-
				Channel spacing E-UTRA CC1- NR CC1=50.01 MHz (Note 2)													
NR CC1	80	217	Downlink & Uplink	Low	2536.290	507258	2497.23	499446	0	30	6252	500190	8	0	0 (0)	0	
				Mid	2583.090	516618	2507.31	501462	102		6369	509550	8	0	0 (0)	204	
				High	2649.810	529962	2429.31	485862	504		6537	522990	16	0	1 (1)	1010	
E-UTRA: 20MHz + NR: 100MHz	E-UTRA CC1	20	100	Downlink & Uplink	Low	2606.100	40751	-	-	-	-	-	-	-	-	-	-
					Mid	2643.000	41120	-	-	-	-	-	-	-	-	-	-
					High	2580.000	40490	-	-	-	-	-	-	-	-	-	-
				Channel spacing E-UTRA CC1- NR CC1=60 MHz (Note 2)													
NR CC1	100	273	Downlink & Uplink	Low	2546.100	509220	2496.96	499392	0	30	6252	500190	2	0	1 (1)	2	
				Mid	2583.000	516600	2497.14	499428	102		6345	507630	22	0	1 (1)	206	
				High	2640.000	528000	2409.42	481884	504		6486	518910	6	0	0 (0)	1008	
Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-4 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdccch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.																	
Note 2: The nominal carrier spacing between the E-UTRA and the NR carriers is set in accordance to TS 38.101-3 [9], clause 5.4B.1.																	
Note 3: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs.																	

Table 4.3.1.4.2.41.1-2A: EN-DC combination DC\_(n)41AA, intra-band contiguous, SCS 30 kHz, 30 kHz NR raster, E-UTRA CC at the band edges

EN-DC channel bandwidth combination	CC	Bandwidth [MHz]	carrierBandwidth [PRBs]	Range	Carrier centre [MHz] Note 2	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequencyPointA [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS [kHz]	GSCN	absoluteFrequencySSB [ARFCN]	$k_{SSB}$	Offset Carrier CORESET#0 [RBs] Note 3	CORESET#0 Index (Offset [RBs]) Note 1	offsetToPointA (SIB1) [PRBs] Note 1
E-UTRA: 20MHz + NR: 40MHz	E-UTRA CC1	20	100	Downlink & Uplink	Low	2506.200	39752	-	-	-	-	-	-	-	-	-
					Mid	2613.000	40820	-	-	-	-	-	-	-	-	-
					High	2679.900	41489	-	-	-	-	-	-	-	-	-
	Channel spacing E-UTRA CC1- NR CC1=30 MHz (Note 2)															
NR CC1	40	106	Downlink & Uplink	Low	2536.200	507240	2517.12	503424	0	30	6303	504270	18	0	1 (1)	2
				Mid	2583.000	516600	2527.2	505440	102		6420	513630	18	0	1 (1)	206
				High	2649.900	529980	2449.38	489876	504		6588	527070	14	0	2 (2)	1012
E-UTRA: 20MHz + NR: 60MHz	E-UTRA CC1	20	100	Downlink & Uplink	Low	2506.200	39752	-	-	-	-	-	-	-	-	-
					Mid	2622.900	40919	-	-	-	-	-	-	-	-	-
					High	2679.900	41489	-	-	-	-	-	-	-	-	-

Channel spacing E-UTRA CC1- NR CC1=39.99 MHz (Note 2)																
NR CC1	60	162	Downlink & Uplink	Low	2546.190	509238	2517.03	503406	0	30	6303	504270	0	0	2 (2)	4
				Mid	2582.910	516582	2517.03	503406	102		6393	511470	0	0	0 (0)	204
				High	2639.910	527982	2429.31	485862	504		6537	522990	16	0	1 (1)	1010
E-UTRA: 20MHz + NR: 80MHz	E-UTRA CC1	20	100	Downlink & Uplink	Low	2506.200	39752	-	-	-	-	-	-	-	-	-
					Mid	2633.100	41021	-	-	-	-	-	-	-	-	-
					High	2679.900	41489	-	-	-	-	-	-	-	-	-
Channel spacing E-UTRA CC1- NR CC1=50.01 MHz (Note 2)																
NR CC1	80	217	Downlink & Uplink	Low	2556.210	511242	2517.15	503430	0	30	6303	504270	16	0	1 (1)	2
				Mid	2583.090	516618	2507.31	501462	102		6369	509550	8	0	0 (0)	204
				High	2629.890	525978	2409.39	481878	504		6486	518910	8	0	0 (0)	1008
E-UTRA: 20MHz + NR: 100MHz	E-UTRA CC1	20	100	Downlink & Uplink	Low	2506.200	39752	-	-	-	-	-	-	-	-	-
					Mid	2643.000	41120	-	-	-	-	-	-	-	-	-
					High	2679.900	41489	-	-	-	-	-	-	-	-	-
Channel spacing E-UTRA CC1- NR CC1=60 MHz (Note 2)																
NR CC1	100	273	Downlink & Uplink	Low	2566.200	513240	2517.06	503412	0	30	6303	504270	22	0	1 (1)	2
				Mid	2583.000	516600	2497.14	499428	102		6345	507630	22	0	1 (1)	206
				High	2619.900	523980	2389.32	477864	504		6438	515070	18	0	2 (2)	1012

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

Note 2: The nominal carrier spacing between the E-UTRA and the NR carriers is set in accordance to TS 38.101-3 [9], clause 5.4B.1.

Note 3: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter  $\Delta F_{\text{OffsetCORESET-0-Carrier}}$  in Annex C expressed in number of common RBs.

**Table 4.3.1.4.2.41.1-3: EN-DC combination DC\_(n)41AA, intra-band contiguous, SCS 60 kHz, 15 kHz NR raster, NR CC at the band edges without CORESET#0**

EN-DC channel bandwidth combination	CC	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: 10MHz + NR: 20MHz	E-UTRA CC1	10	50	Downlink & Uplink	Low	2521.200	39902	-	-	-	-	-
					Mid	2603.100	40721	-	-	-	-	
					High	2664.900	41339	-	-	-	-	
Channel spacing E-UTRA CC1- NR CC1=15 MHz (Note 2)												
E-UTRA: 10MHz + NR: 40MHz	E-UTRA CC1	20	24	Downlink & Uplink	Low	2506.200	501240	2497.56	499512	0	15	499872
					Mid	2588.100	517620	2506.02	501204	102		516252
					High	2679.900	535980	2308.38	461676	504		534612

Channel spacing E-UTRA CC1- NR CC1=25.005 MHz (Note 2)													
	NR CC1	40	51	Downlink & Uplink	Low	2516.295	503259	2497.935	499587	0	15	-	499947
					Mid	2587.995	517599	2496.195	499239	102		-	514287
					High	2669.805	533961	2288.565	457713	504		-	530649
E-UTRA: 10MHz + NR: 50MHz	E-UTRA CC1	10	50	Downlink & Uplink	Low	2551.200	40202	-	-	-	-	-	-
					Mid	2618.100	40871	-	-	-		-	-
					High	2634.900	41039	-	-	-		-	-
Channel spacing E-UTRA CC1- NR CC1=30 MHz (Note 2)													
	NR CC1	50	65	Downlink & Uplink	Low	2521.200	504240	2497.8	499560	0	15	-	499920
					Mid	2588.100	517620	2491.26	498252	102		-	513300
					High	2664.900	532980	2278.62	455724	504		-	528660
E-UTRA: 10MHz + NR: 60MHz	E-UTRA CC1	10	50	Downlink & Uplink	Low	2561.100	40301	-	-	-	-	-	-
					Mid	2622.900	40919	-	-	-		-	-
					High	2625.000	40940	-	-	-		-	-
Channel spacing E-UTRA CC1- NR CC1=34.995 MHz (Note 2)													
	NR CC1	60	79	Downlink & Uplink	Low	2526.105	505221	2497.665	499533	0	15	-	499893
					Mid	2587.905	517581	2486.025	497205	102		-	512253
					High	2659.995	531999	2268.675	453735	504		-	526671
E-UTRA: 10MHz + NR: 80MHz	E-UTRA CC1	10	50	Downlink & Uplink	Low	2581.200	40502	-	-	-	-	-	-
					Mid	2633.100	41021	-	-	-		-	-
					High	2604.900	40739	-	-	-		-	-
Channel spacing E-UTRA CC1- NR CC1=45 MHz (Note 2)													
	NR CC1	80	107	Downlink & Uplink	Low	2536.200	507240	2497.68	499536	0	15	-	499896
					Mid	2588.100	517620	2476.14	495228	102		-	510276
					High	2649.900	529980	2248.5	449700	504		-	522636
E-UTRA: 10MHz + NR: 100MHz	E-UTRA CC1	10	50	Downlink & Uplink	Low	2601.300	40703	-	-	-	-	-	-
					Mid	2643.000	41120	-	-	-		-	-
					High	2584.800	40538	-	-	-		-	-
Channel spacing E-UTRA CC1- NR CC1=55.005 MHz (Note 2)													
	NR CC1	100	135	Downlink & Uplink	Low	2546.295	509259	2497.695	499539	0	15	-	499899
					Mid	2587.995	517599	2465.955	493191	102		-	508239
					High	2639.805	527961	2228.325	445665	504		-	518601
E-UTRA: 20MHz + NR: 10MHz	E-UTRA CC1	20	100	Downlink & Uplink	Low	2516.100	39851	-	-	-	-	-	-
					Mid	2598.000	40670	-	-	-		-	-
					High	2670.000	41390	-	-	-		-	-
Channel spacing E-UTRA CC1- NR CC1=15 MHz (Note 2)													
	NR CC1	10	11	Downlink & Uplink	Low	2501.100	500220	2497.14	499428	0	15	-	499788
					Mid	2583.000	516600	2505.6	501120	102		-	516168
					High	2685.000	537000	2318.16	463632	504		-	536568
E-UTRA: 20MHz + NR: 20MHz	E-UTRA CC1	20	100	Downlink & Uplink	Low	2526.000	39950	-	-	-	-	-	-
					Mid	2603.100	40721	-	-	-		-	-
					High	2659.800	41288	-	-	-		-	-
Channel spacing E-UTRA CC1- NR CC1=19.995 MHz (Note 2)													
	NR	20	24	Downlink	Low	2506.005	501201	2497.365	499473	0	15	-	499833

	CC1			& Uplink	Mid	2583.105	516621	2501.025	500205	102		-	515253
					High	2679.795	535959	2308.275	461655	504		-	534591
E-UTRA: 20MHz + NR: 40MHz	E-UTRA CC1	20	100	Downlink & Uplink	Low	2546.100	40151	-	-	-	-	-	-
					Mid	2613.000	40820	-	-	-	-	-	
					High	2640.000	41090	-	-	-	-	-	
					Channel spacing E-UTRA CC1- NR CC1=30 MHz (Note 2)								
	NR CC1	40	51	Downlink & Uplink	Low	2516.100	503220	2497.74	499548	0	15	-	499908
					Mid	2583.000	516600	2491.2	498240	102	-	513288	
					High	2670.000	534000	2288.76	457752	504	-	530688	
E-UTRA: 20MHz + NR: 50MHz	E-UTRA CC1	20	100	Downlink & Uplink	Low	2556.000	40250	-	-	-	-	-	-
					Mid	2618.100	40871	-	-	-	-	-	
					High	2629.800	40988	-	-	-	-	-	
					Channel spacing E-UTRA CC1- NR CC1=34.995 MHz (Note 2)								
	NR CC1	50	65	Downlink & Uplink	Low	2521.005	504201	2497.605	499521	0	15	-	499881
					Mid	2583.105	516621	2486.265	497253	102	-	512301	
					High	2664.795	532959	2278.515	455703	504	-	528639	
E-UTRA: 20MHz + NR: 60MHz	E-UTRA CC1	20	100	Downlink & Uplink	Low	2566.200	40352	-	-	-	-	-	-
					Mid	2622.900	40919	-	-	-	-	-	
					High	2619.900	40889	-	-	-	-	-	
					Channel spacing E-UTRA CC1- NR CC1=40.005 MHz (Note 2)								
	NR CC1	60	79	Downlink & Uplink	Low	2526.195	505239	2497.755	499551	0	15	-	499911
					Mid	2582.895	516579	2481.015	496203	102	-	511251	
					High	2659.905	531981	2268.585	453717	504	-	526653	
E-UTRA: 20MHz + NR: 80MHz	E-UTRA CC1	20	100	Downlink & Uplink	Low	2586.000	40550	-	-	-	-	-	-
					Mid	2633.100	41021	-	-	-	-	-	
					High	2599.800	40688	-	-	-	-	-	
					Channel spacing E-UTRA CC1- NR CC1=49.995 MHz (Note 2)								
	NR CC1	80	107	Downlink & Uplink	Low	2536.005	507201	2497.485	499497	0	15	-	499857
					Mid	2583.105	516621	2471.145	494229	102	-	509277	
					High	2649.795	529959	2248.395	449679	504	-	522615	
E-UTRA: 20MHz + NR: 100MHz	E-UTRA CC1	20	100	Downlink & Uplink	Low	2606.100	40751	-	-	-	-	-	-
					Mid	2643.000	41120	-	-	-	-	-	
					High	2580.000	40490	-	-	-	-	-	
					Channel spacing E-UTRA CC1- NR CC1=60 MHz (Note 2)								
	NR CC1	100	135	Downlink & Uplink	Low	2546.100	509220	2497.5	499500	0	15	-	499860
					Mid	2583.000	516600	2460.96	492192	102	-	507240	
					High	2640.000	528000	2228.52	445704	504	-	518640	
Note 1: The nominal carrier spacing between the E-UTRA and the NR carriers is set in accordance to TS 38.101-3 [9], clause 5.4B1.													
Note 2: FR1 carrier without CORESET#0 is indicated in the MIB by setting $k_{SSB} = 31$ , $controlResourceSetZero = 0$ and $searchSpaceZero = 0$ (TS 38.213 [22], clause 13).													

Table 4.3.1.4.2.41.1-3A: EN-DC combination DC\_(n)41AA, intra-band contiguous, SCS 60 kHz, 15 kHz NR raster, E-UTRA CC at the band edges without CORESET#0

EN-DC channel bandwidth combination	CC	Bandwidth [MHz]	carrierBandwidth [PRBs]	Range	Carrier centre [MHz] Note 1	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequencyPointA [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS [kHz]	GSCN	absoluteFrequencySSB [ARFCN]	
E-UTRA: 20MHz + NR: 40MHz	E-UTRA CC1	20	100	Downlink & Uplink	Low	2506.200	39752	-	-	-	-	-	
					Mid	2613.000	40820	-	-	-	-		
					High	2679.900	41489	-	-	-	-		
	Channel spacing E-UTRA CC1- NR CC1=30 MHz (Note 2)												
	NR CC1	40	51	Downlink & Uplink	Low	2536.200	507240	2517.84	503568	0	15	-	503928
					Mid	2583.000	516600	2491.2	498240	102	-	513288	
High					2649.900	529980	2268.66	453732	504	-	526668		
E-UTRA: 20MHz + NR: 60MHz	E-UTRA CC1	20	100	Downlink & Uplink	Low	2506.200	39752	-	-	-	-	-	
					Mid	2622.900	40919	-	-	-	-		
					High	2679.900	41489	-	-	-	-		
	Channel spacing E-UTRA CC1- NR CC1=40.005 MHz (Note 2)												
	NR CC1	60	79	Downlink & Uplink	Low	2546.205	509241	2517.765	503553	0	15	-	503913
					Mid	2582.895	516579	2481.015	496203	102	-	511251	
High					2639.895	527979	2248.575	449715	504	-	522651		
E-UTRA: 20MHz + NR: 80MHz	E-UTRA CC1	20	100	Downlink & Uplink	Low	2506.200	39752	-	-	-	-	-	
					Mid	2633.100	41021	-	-	-	-		
					High	2679.900	41489	-	-	-	-		
	Channel spacing E-UTRA CC1- NR CC1=49.995 MHz (Note 2)												
	NR CC1	80	107	Downlink & Uplink	Low	2556.195	511239	2517.675	503535	0	15	-	503895
					Mid	2583.105	516621	2471.145	494229	102	-	509277	
High					2629.905	525981	2228.505	445701	504	-	518637		
E-UTRA: 20MHz + NR: 100MHz	E-UTRA CC1	20	100	Downlink & Uplink	Low	2506.200	39752	-	-	-	-	-	
					Mid	2643.000	41120	-	-	-	-		
					High	2679.900	41489	-	-	-	-		
	Channel spacing E-UTRA CC1- NR CC1=60 MHz (Note 2)												
	NR CC1	100	135	Downlink & Uplink	Low	2566.200	513240	2517.6	503520	0	15	-	503880
					Mid	2583.000	516600	2460.96	492192	102	-	507240	
High					2619.900	523980	2208.42	441684	504	-	514620		

Note 1: The nominal carrier spacing between the E-UTRA and the NR carriers is set in accordance to TS 38.101-3 [9], clause 5.4B1.

Note 2: FR1 carrier without CORESET#0 is indicated in the MIB by setting  $k_{SSB} = 31$ ,  $controlResourceSetZero = 0$  and  $searchSpaceZero = 0$  (TS 38.213 [22], clause 13).

Table 4.3.1.4.2.41.2-1: EN-DC combination DC\_(n)41CA, intra-band contiguous, SCS 15 kHz, 15 kHz NR raster, NR CC at the band edges

EN-DC channel bandwidth combination	CC	Band width [MHz]	carrierBandwidth [PRBs]	Range		Carrier centre [MHz] Note 2	Carrier centre [ARFCN]	point A [MHz]	absolute FrequencyPointA [ARFCN]	offset ToCarrier [Carrier PRBs]	SS block SCS [kHz]	GSCN	absoluteFrequencySSB [ARFCN]	$k_{SSB}$	Offset Carrier CORESET#0 [RBs] Note 3	CORESET#0 Index (Offset [RBs]) Note 1	offsetToPointA (SIB1) [PRBs] Note 1	
E-UTRA: 20MHz + 20MHz + NR: 40MHz	E-UTRA CC1	20	100	Downlink & Uplink	Low	2546.100	40151	-	-	-	-	-	-	-	-	-	-	
					Mid	2603.100	40721	-	-	-	-	-	-	-	-	-	-	
					High	2620.2	40892	-	-	-	-	-	-	-	-	-	-	
	Channel spacing E-UTRA CC1- E-UTRA CC2=19.8 MHz (Note 4)																	
	E-UTRA CC2	20	100	Downlink & Uplink	Low	2565.900	40349	-	-	-	-	-	-	-	-	-	-	-
					Mid	2622.900	40919	-	-	-	-	-	-	-	-	-	-	
					High	2640.000	41090	-	-	-	-	-	-	-	-	-	-	
	Channel spacing E-UTRA CC2- NR CC1=30 MHz (Note 2)																	
	NR CC1	40	216	Downlink & Uplink	Low	2516.100	503220	2496.66	499332	0	15	6246	499710	6	0	0 (0)	0	
					Mid	2573.100	514620	2535.30	507060	102		6390	511230	10	1	1 (2)	105	
High					2670.000	534000	2559.84	511968	504	6633		530670	6	1	2 (4)	509		
E-UTRA: 20MHz + 20MHz + NR: 50MHz	E-UTRA CC1	20	100	Downlink & Uplink	Low	2556.000	40250	-	-	-	-	-	-	-	-	-	-	
					Mid	2608.100	40771	-	-	-	-	-	-	-	-	-	-	
					High	2610.00	40790	-	-	-	-	-	-	-	-	-	-	
	Channel spacing E-UTRA CC1- E-UTRA CC2=19.8 MHz (Note 4)																	
	E-UTRA CC2	20	100	Downlink & Uplink	Low	2575.800	40448	-	-	-	-	-	-	-	-	-	-	-
					Mid	2627.900	40969	-	-	-	-	-	-	-	-	-	-	
					High	2629.800	40988	-	-	-	-	-	-	-	-	-	-	
	Channel spacing E-UTRA CC2- NR CC1=34.995 MHz (Note 2)																	
	NR CC1	50	270	Downlink & Uplink	Low	2521.005	504201	2496.705	499341	0	15	6246	499710	3	0	0 (0)	0	
					Mid	2573.1	514620	2530.440	506088	102		6738	510270	2	0	2 (4)	106	
High					2664.795	532959	2549.775	509955	504	6606		528510	5	1	0 (0)	505		
Note 1:	The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-1 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdccch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.																	
Note 2:	The nominal carrier spacing between the E-UTRA and the NR carriers is set in accordance to TS 38.101-3 [9], clause 5.4B.1.																	
Note 3:	The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs.																	
Note 4:	The nominal carrier spacing between the E-UTRA carriers is set in accordance to TS 36.101 [48], clause 5.7.1A.																	



Table 4.3.1.4.2.41.2-1A: EN-DC combination DC\_(n)41CA, intra-band contiguous, SCS 15 kHz, 15 kHz NR raster, E-UTRA CC at the band edges

EN-DC channel 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 <sub>SSB</sub>	Offset Carrier CORESET#0 [RBs] Note 3	CORESET#0 Index (Offset [RBs]) Note 1	offsetToPointA (SIB1) [PRBs] Note 1	
				Downlink & Uplink														
E-UTRA: 20MHz + 20MHz + NR: 40MHz	E-UTRA CC1	20	100	Downlink & Uplink	Low	2506.200	39752	-	-	-	-	-	-	-	-	-	-	
					Mid	2603.100	40721	-	-	-	-	-	-	-	-	-	-	
					High	2659.800	41288	-	-	-	-	-	-	-	-	-	-	
	Channel spacing E-UTRA CC1- E-UTRA CC2=19.8 MHz (Note 4)																	
	E-UTRA CC2	20	100	Downlink & Uplink	Low	2526.000	39950	-	-	-	-	-	-	-	-	-	-	-
					Mid	2622.900	40919	-	-	-	-	-	-	-	-	-	-	
					High	2679.600	41486	-	-	-	-	-	-	-	-	-	-	
	Channel spacing E-UTRA CC2- NR CC1=30 MHz (Note 2)																	
	NR CC1	40	216	Downlink & Uplink	Low	2556.000	511200	2536.56	507312	0	15	6348	507870	6	1	2 (4)	5	
					Mid	2573.100	514620	2535.3	507060	102	6390	511230	10	1	1 (2)	105		
High					2629.800	525960	2519.64	503928	504	6531	522510	2	0	1 (2)	506			

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

Note 2: The nominal carrier spacing between the E-UTRA and the NR carriers is set in accordance to TS 38.101-3 [9], clause 5.4B.1.

Note 3: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter  $\Delta F_{\text{OffsetCORESET-0-Carrier}}$  in Annex C expressed in number of common RBs.

Note 4: The nominal carrier spacing between the E-UTRA carriers is set in accordance to TS 36.101 [48], clause 5.7.1A.

Table 4.3.1.4.2.41.2-2: EN-DC combination DC\_(n)41CA, intra-band contiguous, SCS 30 kHz, 30 kHz NR raster, NR CC at the band edges

EN-DC channel bandwidth combination	CC	Bandwidth [MHz]	carrierBandwidth [PRBs]	Range		Carrier centre [MHz] Note 2	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequencyPointA [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS [kHz]	GSCN	absoluteFrequencySSB [ARFCN]	k <sub>SSB</sub>	Offset Carrier CORESET#0 [RBs] Note 3	CORESET#0 Index (Offset [RBs]) Note 1	offsetToPointA (SIB1) [PRBs] Note 1	
				Downlink & Uplink														
E-UTRA: 20MHz + 20MHz + NR: 40MHz	E-UTRA CC1	20	100	Downlink & Uplink	Low	2546.100	40151	-	-	-	-	-	-	-	-	-	-	
					Mid	2603.100	40721	-	-	-	-	-	-	-	-	-		
					High	2620.200	40892	-	-	-	-	-	-	-	-	-		
	Channel spacing E-UTRA CC1- E-UTRA CC2=19.8 MHz (Note 4)																	
	E-UTRA CC2	20	100	Downlink & Uplink	Low	2565.900	40349	-	-	-	-	-	-	-	-	-	-	-
					Mid	2622.900	40919	-	-	-	-	-	-	-	-	-		
					High	2640.000	41090	-	-	-	-	-	-	-	-	-		
	Channel spacing E-UTRA CC2- NR CC1=30 MHz (Note 2)																	
	NR	40	106	Downlink	Low	2516.100	503220	2497.02	499404	0	30	6252	500190	22	0	0 (0)	0	

	CC1			& Uplink	Mid	2573.100	514620	2517.30	503460	102		6396	511710	14	0	2 (2)	208				
					High	2670.000	534000	2469.48	493896	504		6636	530910	2	0	0 (0)	1008				
E-UTRA: 20MHz + 20MHz + NR: 50MHz	E-UTRA CC1	20	100	Downlink & Uplink	Low	2556.300	40253	-	-	-	-	-	-	-	-	-	-	-			
					Mid	2608.100	40771	-	-	-	-	-	-	-	-	-	-	-	-	-	
								High	2610.000	40790	-	-	-	-	-	-	-	-	-	-	-
				Channel spacing E-UTRA CC1- E-UTRA CC2=19.8 MHz (Note 4)																	
	E-UTRA CC2	20	100	Downlink & Uplink	Low	2576.100	40451	-	-	-	-	-	-	-	-	-	-	-	-		
					Mid	2627.900	40969	-	-	-	-	-	-	-	-	-	-	-	-	-	
					High	2629.800	40988	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Channel spacing E-UTRA CC2- NR CC1=35.01 MHz (Note 2)																				
	NR CC1	50	133	Downlink & Uplink	Low	2521.290	504258	2497.35	499470	0	30	6252	500190	0	0	0 (0)	0				
					Mid	2573.100	514620	2512.44	502488	102		6384	510750	18	0	2 (2)	208				
High					2664.810	532962	2459.43	491886	504		6612	528990	8	0	1 (1)	1010					
E-UTRA: 20MHz + 20MHz + NR: 60MHz	E-UTRA CC1	20	100	Downlink & Uplink	Low	2566.200	40352	-	-	-	-	-	-	-	-	-	-	-			
					Mid	2573.100	514620	-	-	-	-	-	-	-	-	-	-	-	-		
					High	2600.100	40691	-	-	-	-	-	-	-	-	-	-	-	-	-	
	Channel spacing E-UTRA CC1- E-UTRA CC2=19.8 MHz (Note 4)																				
	E-UTRA CC2	20	100	Downlink & Uplink	Low	2586.000	40550	-	-	-	-	-	-	-	-	-	-	-	-		
					Mid	2632.900	41019	-	-	-	-	-	-	-	-	-	-	-	-	-	
					High	2619.900	40889	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Channel spacing E-UTRA CC2- NR CC1=39.99 MHz (Note 2)																				
	NR CC1	60	162	Downlink & Uplink	Low	2526.210	505242	2497.05	499410	0	30	6252	500190	20	0	0 (0)	0				
					Mid	2573.100	514620	2507.22	501444	102		6369	509550	14	0	0 (0)	204				
High					2659.890	531978	2449.29	489858	504		6588	527070	20	0	2 (2)	1012					
E-UTRA: 20MHz + 20MHz + NR: 80MHz	E-UTRA CC1	20	100	Downlink & Uplink	Low	2586.300	40553	-	-	-	-	-	-	-	-	-	-	-			
					Mid	2623.100	40921	-	-	-	-	-	-	-	-	-	-	-	-		
					High	2580.000	40490	-	-	-	-	-	-	-	-	-	-	-	-	-	
	Channel spacing E-UTRA CC1- E-UTRA CC2=19.8 MHz (Note 4)																				
	E-UTRA CC2	20	100	Downlink & Uplink	Low	2606.100	40751	-	-	-	-	-	-	-	-	-	-	-	-		
					Mid	2642.900	41119	-	-	-	-	-	-	-	-	-	-	-	-	-	
					High	2599.800	40688	-	-	-	-	-	-	-	-	-	-	-	-	-	
	Channel spacing E-UTRA CC2- NR CC1=50.01 MHz (Note 2)																				
	NR CC1	80	217	Downlink & Uplink	Low	2536.290	507258	2497.23	499446	0	30	6252	500190	8	0	0 (0)	0				
					Mid	2573.100	514620	2497.32	499464	102		6345	507630	10	0	1 (1)	206				
High					2649.810	529962	2429.31	485862	504		6537	522990	16	0	1 (1)	1010					
E-UTRA: 20MHz + 20MHz + NR: 100MHz	E-UTRA CC1	20	100	Downlink & Uplink	Low	2606.100	40751	-	-	-	-	-	-	-	-	-	-	-			
					Mid	2633.100	41021	-	-	-	-	-	-	-	-	-	-	-	-		
					High	2560.200	40292	-	-	-	-	-	-	-	-	-	-	-	-	-	
	Channel spacing E-UTRA CC1- E-UTRA CC2=19.8 MHz (Note 4)																				
	E-UTRA CC2	20	100	Downlink & Uplink	Low	2625.900	40949	-	-	-	-	-	-	-	-	-	-	-	-		
					Mid	2652.900	41219	-	-	-	-	-	-	-	-	-	-	-	-	-	
High					2580.000	40490	-	-	-	-	-	-	-	-	-	-	-	-	-		

Channel spacing E-UTRA CC2- NR CC1=60 MHz (Note 2)																
NR CC1	100	273	Downlink & Uplink	Low	2546.100	509220	2496.96	499392	0	30	6252	500190	2	0	1 (1)	2
				Mid	2573.100	514620	2487.24	497448	102		6321	505710	18	0	2 (2)	208
				High	2640.000	528000	2409.42	481884	504		6486	518910	6	0	0 (0)	1008
Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-4 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdccch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.																
Note 2: The nominal carrier spacing between the E-UTRA and the NR carriers is set in accordance to TS 38.101-3 [9], clause 5.4B.1.																
Note 3: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs.																
Note 4: The nominal carrier spacing between the E-UTRA carriers is set in accordance to TS 36.101 [48], clause 5.7.1A.																

**Table 4.3.1.4.2.41.2-2A: EN-DC combination DC\_(n)41CA, intra-band contiguous, SCS 30 kHz, 30 kHz NR raster, E-UTRA CC at the band edges**

EN-DC channel bandwidth combination	CC	Bandwidth [MHz]	carrierBandwidth [PRBs]	Range	Carrier centre [MHz] Note 2	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequencyPointA [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS [kHz]	GSCN	absoluteFrequencySSB [ARFCN]	$k_{SSB}$	Offset Carrier CORESET#0 [RBs] Note 3	CORESET#0 Index (Offset [RBs]) Note 1	offsetToPointA (SIB1) [PRBs] Note 1	
E-UTRA: 20MHz + 20MHz + NR: 40MHz	E-UTRA CC1	20	100	Downlink & Uplink	Low	2506.200	39752	-	-	-	-	-	-	-	-	-	
					Mid	2603.100	40721	-	-	-	-	-	-	-	-	-	-
					High	2659.800	41288	-	-	-	-	-	-	-	-	-	-
	Channel spacing E-UTRA CC1- E-UTRA CC2=19.8 MHz (Note 4)																
	E-UTRA CC2	20	100	Downlink & Uplink	Low	2526.000	39950	-	-	-	-	-	-	-	-	-	-
					Mid	2622.900	40919	-	-	-	-	-	-	-	-	-	-
					High	2679.600	41486	-	-	-	-	-	-	-	-	-	-
	Channel spacing E-UTRA CC2- NR CC1=30 MHz (Note 2)																
	NR CC1	40	106	Downlink & Uplink	Low	2556.000	511200	2536.92	507384	0	30	6351	508110	16	0	0 (0)	0
					Mid	2573.100	514620	2517.3	503460	102		6396	511710	14	0	2 (2)	208
High					2629.800	525960	2429.28	485856	504	6537		522990	16	0	0 (0)	1008	
E-UTRA: 20MHz + 20MHz + NR: 60MHz	E-UTRA CC1	20	100	Downlink & Uplink	Low	2506.500	39755	-	-	-	-	-	-	-	-	-	
					Mid	2613.100	40821	-	-	-	-	-	-	-	-	-	-
					High	2659.800	41288	-	-	-	-	-	-	-	-	-	-
	Channel spacing E-UTRA CC1- E-UTRA CC2=19.8 MHz (Note 4)																
	E-UTRA CC2	20	100	Downlink & Uplink	Low	2526.300	39953	-	-	-	-	-	-	-	-	-	-
					Mid	2632.900	41019	-	-	-	-	-	-	-	-	-	-
					High	2679.600	41486	-	-	-	-	-	-	-	-	-	-
	Channel spacing E-UTRA CC2- NR CC1=39.99 MHz (Note 2)																
	NR CC1	60	162	Downlink & Uplink	Low	2566.290	513258	2537.13	507426	0	30	6354	508350	20	0	2 (2)	4
					Mid	2573.1	514620	2507.22	501444	102		6369	509550	14	0	0 (0)	204
High					2619.810	523962	2409.21	481842	504	6486		518910	20	0	0 (0)	1008	

E-UTRA: 20MHz + 20MHz + NR: 80MHz	E-UTRA CC1	20	100	Downlink & Uplink	Low	2506.200	39752	-	-	-	-	-	-	-	-	-	
					Mid	2623.100	40921	-	-	-	-	-	-	-	-		
					High	2659.800	41288	-	-	-	-	-	-	-	-		
	Channel spacing E-UTRA CC1- E-UTRA CC2=19.8 MHz (Note 4)																
	E-UTRA CC2	20	100	Downlink & Uplink	Low	2526.000	39950	-	-	-	-	-	-	-	-	-	-
					Mid	2642.9	41119	-	-	-	-	-	-	-	-		
					High	2679.600	41486	-	-	-	-	-	-	-	-		
	Channel spacing E-UTRA CC2- NR CC1=50.01 MHz (Note 2)																
	NR CC1	80	217	Downlink & Uplink	Low	2576.010	515202	2536.95	507390	0	30	6351	508110	0	0	0 (0)	0
					Mid	2573.1	514620	2497.32	499464	102		6345	576300	10	0	1 (1)	206
High					2609.790	521958	2389.29	477858	504	6438		515070	20	0	2 (2)	1012	
E-UTRA: 20MHz + 20MHz + NR: 100MHz	E-UTRA CC1	20	100	Downlink & Uplink	Low	2506.200	39752	-	-	-	-	-	-	-	-	-	
					Mid	2633.100	41021	-	-	-	-	-	-	-	-		
					High	2659.800	41288	-	-	-	-	-	-	-	-		
	Channel spacing E-UTRA CC1- E-UTRA CC2=19.8 MHz (Note 4)																
	E-UTRA CC2	20	100	Downlink & Uplink	Low	2526.000	39950	-	-	-	-	-	-	-	-	-	-
					Mid	2652.900	41219	-	-	-	-	-	-	-	-		
					High	2679.600	41486	-	-	-	-	-	-	-	-		
	Channel spacing E-UTRA CC2- NR CC1=60 MHz (Note 2)																
	NR CC1	100	273	Downlink & Uplink	Low	2586.000	517200	2536.86	507372	0	30	6351	508110	6	0	0 (0)	0
					Mid	2573.100	514620	2487.24	497448	102		6321	505710	18	0	2 (2)	208
High					2599.800	519960	2369.22	473844	504	6387		510990	22	0	1 (1)	1010	
Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-4 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdccch. ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.																	
Note 2: The nominal carrier spacing between the E-UTRA and the NR carriers is set in accordance to TS 38.101-3 [9], clause 5.4B.1.																	
Note 3: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET}0\text{-Carrier}}$ in Annex C expressed in number of common RBs.																	
Note 4: The nominal carrier spacing between the E-UTRA carriers is set in accordance to TS 36.101 [48], clause 5.7.1A.																	

**Table 4.3.1.4.2.41.2-3: EN-DC combination DC\_(n)41CA, intra-band contiguous, SCS 60 kHz, 15 kHz NR raster, NR CC at the band edges without CORESET#0**

EN-DC channel bandwidth combination	CC	Band width [MHz]	carrierBandwidth [PRBs]	Range	Carrier centre [MHz] Note 1	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequencyPointA [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS [kHz]	GSCN	absoluteFrequencySSB [ARFCN]
E-UTRA: 20MHz + 20MHz + NR: 40MHz	E-UTRA CC1	20	100	Downlink & Uplink	Low	2546.100	40151	-	-	-	-	-
					Mid	2603.100	40721	-	-	-	-	-
					High	2620.200	40892	-	-	-	-	
Channel spacing E-UTRA CC1- E-UTRA CC2=19.8 MHz (Note 3)												

	E-UTRA CC2	20	100	Downlink & Uplink	Low	2565.900	40349							
					Mid	2622.900	40919							
					High	2640.000	41090							
	Channel spacing E-UTRA CC2- NR CC1=30 MHz (Note 2)													
NR CC1	40	51	Downlink & Uplink	Low	2516.100	503220	2497.74	499548	0	15	-	499908		
				Mid	2573.100	514620	2481.3	496260	102		-	511308		
				High	2670.000	534000	2288.76	457752	504		-	530688		
E-UTRA: 20MHz + 20MHz + NR: 50MHz	E-UTRA CC1	20	100	Downlink & Uplink	Low	2556.000	40250	-	-	-	-	-	-	
					Mid	2608.100	40771	-	-	-	-	-		
					High	2610.000	40790	-	-	-	-	-		
	Channel spacing E-UTRA CC1- E-UTRA CC2=19.8 MHz (Note 3)													
	E-UTRA CC2	20	100	Downlink & Uplink	Low	2575.800	40448							
					Mid	2627.900	40969							
					High	2629.800	40988							
	Channel spacing E-UTRA CC2- NR CC1=34.995 MHz (Note 2)													
	NR CC1	50	65	Downlink & Uplink	Low	2521.005	504201	2497.605	499521	0	15	-	499881	
					Mid	2573.100	514620	2476.26	495252	102		-	510300	
High					2664.795	532959	2278.515	455703	504	-		528639		
E-UTRA: 20MHz + 20MHz + NR: 60MHz	E-UTRA CC1	20	100	Downlink & Uplink	Low	2566.200	40352	-	-	-	-	-	-	
					Mid	2613.100	40821	-	-	-	-	-		
					High	2600.100	40691	-	-	-	-	-		
	Channel spacing E-UTRA CC1- E-UTRA CC2=19.8 MHz (Note 3)													
	E-UTRA CC2	20	100	Downlink & Uplink	Low	2586.000	40550	-	-	-	-	-	-	
					Mid	2632.9	41019	-	-	-	-	-		
					High	2619.900	40889	-	-	-	-	-		
	Channel spacing E-UTRA CC2- NR CC1=40.005 MHz (Note 2)													
	NR CC1	60	79	Downlink & Uplink	Low	2526.195	505239	2497.755	499551	0	15	-	499911	
					Mid	2573.1	514620	2471.22	494244	102		-	509292	
High					2659.905	531981	2268.585	453717	504	-		526653		
E-UTRA: 20MHz + 20MHz + NR: 80MHz	E-UTRA CC1	20	100	Downlink & Uplink	Low	2586.000	40550	-	-	-	-	-	-	
					Mid	2623.100	40921	-	-	-	-	-		
					High	2580.000	40490	-	-	-	-	-		
	Channel spacing E-UTRA CC1- E-UTRA CC2=19.8 MHz (Note 3)													
	E-UTRA CC2	20	100	Downlink & Uplink	Low	2605.800	40748	-	-	-	-	-	-	
					Mid	2642.900	41119	-	-	-	-	-		
					High	2599.800	40688	-	-	-	-	-		
	Channel spacing E-UTRA CC2- NR CC1=49.995 MHz (Note 2)													
	NR CC1	80	107	Downlink & Uplink	Low	2536.005	507201	2497.485	499497	0	15	-	499857	
					Mid	2573.1	514620	2461.14	492228	102		-	507276	
High					2649.795	529959	2248.395	449679	504	-		522615		
E-UTRA: 20MHz + 20MHz +	E-UTRA CC1	20	100	Downlink & Uplink	Low	2606.100	40751	-	-	-	-	-	-	
					Mid	2633.100	41021	-	-	-	-	-		
					High	2560.2	40292	-	-	-	-	-		

NR: 100MHz	Channel spacing E-UTRA CC1- E-UTRA CC2=19.8 MHz (Note 3)												
	E-UTRA CC2	20	100	Downlink & Uplink	Low	2625.900	40949	-	-	-	-	-	-
					Mid	2652.900	41219	-	-	-	-	-	
					High	2580.000	40490	-	-	-	-	-	
	Channel spacing E-UTRA CC2- NR CC1=60 MHz (Note 2)												
	NR CC1	100	135	Downlink & Uplink	Low	2546.100	509220	2497.5	499500	0	15	-	499860
					Mid	2573.100	514620	2451.06	490212	102		-	505260
					High	2640.000	528000	2228.52	445704	504		-	518640

Note 1: The nominal carrier spacing between the E-UTRA and the NR carriers is set in accordance to TS 38.101-3 [9], clause 5.4B1.  
 Note 2: FR1 carrier without CORESET#0 is indicated in the MIB by setting  $k_{SSB} = 31$ ,  $controlResourceSetZero = 0$  and  $searchSpaceZero = 0$  (TS 38.213 [22], clause 13).  
 Note 3: The nominal carrier spacing between the E-UTRA carriers is set in accordance to TS 36.101 [48], clause 5.7.1A.

Table 4.3.1.4.2.41.2-3A: EN-DC combination DC\_(n)41CA, intra-band contiguous, SCS 60 kHz, 15 kHz NR raster, E-UTRA CC at the band edges without CORESET#0

EN-DC channel bandwidth combination	CC	Band width [MHz]	carrierBandwidth [PRBs]	Range	Carrier centre [MHz] Note 1	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequencyPointA [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS [kHz]	GSCN	absoluteFrequencySSB [ARFCN]	
E-UTRA: 20MHz + 20MHz + NR: 40MHz	E-UTRA CC1	20	100	Downlink & Uplink	Low	2506.200	39752	-	-	-	-	-	
					Mid	2603.100	40721	-	-	-	-		
					High	2659.800	41288	-	-	-	-		
	Channel spacing E-UTRA CC1- E-UTRA CC2=19.8 MHz (Note 3)												
	E-UTRA CC2	20	100	Downlink & Uplink	Low	2526.000	39950	-	-	-	-	-	-
					Mid	2622.900	40919	-	-	-	-	-	
					High	2679.600	41486	-	-	-	-		
	Channel spacing E-UTRA CC2- NR CC1=30 MHz (Note 2)												
	NR CC1	40	51	Downlink & Uplink	Low	2556.000	511200	2537.64	507528	0	15	-	507888
					Mid	2573.100	514620	2481.3	496260	102		-	511308
High					2629.800	525960	2248.56	449712	504	-		522648	
E-UTRA: 20MHz + 20MHz + NR: 60MHz	E-UTRA CC1	20	100	Downlink & Uplink	Low	2506.200	39752	-	-	-	-	-	
					Mid	2613.100	40821	-	-	-	-	-	
					High	2659.800	41288	-	-	-	-		
	Channel spacing E-UTRA CC1- E-UTRA CC2=19.8 MHz (Note 3)												
	E-UTRA CC2	20	100	Downlink & Uplink	Low	2526.000	39950	-	-	-	-	-	-
					Mid	2632.9	41019	-	-	-	-	-	
High					2679.600	41486	-	-	-	-			

Channel spacing E-UTRA CC2- NR CC1=40.005 MHz (Note 2)													
NR CC1	60	79	Downlink & Uplink	Low	2566.005	513201	2537.565	507513	0	15	-	507873	
				Mid	2573.1	514620	2471.22	494244	102		-	510300	
				High	2619.795	523959	2228.475	445695	504		-	518631	
E-UTRA: 20MHz + 20MHz + NR: 80MHz	E-UTRA CC1	20	100	Downlink & Uplink	Low	2506.500	39755	-	-	-	-	-	
					Mid	2623.100	40921	-	-	-	-	-	
					High	2659.800	41288	-	-	-	-	-	
Channel spacing E-UTRA CC1- E-UTRA CC2=19.8 MHz (Note 3)													
E-UTRA CC2	20	100	Downlink & Uplink	Low	2526.300	39953	-	-	-	-	-	-	
				Mid	2642.9	41119	-	-	-	-	-		
				High	2679.600	41486	-	-	-	-	-		
Channel spacing E-UTRA CC2- NR CC1=49.995 MHz (Note 2)													
NR CC1	80	107	Downlink & Uplink	Low	2576.295	515259	2537.775	507555	0	15	-	507915	
				Mid	2573.1	514620	2461.14	492228	102		-	507276	
				High	2609.805	521961	2208.405	441681	504		-	514617	
E-UTRA: 20MHz + 20MHz + NR: 100MHz	E-UTRA CC1	20	100	Downlink & Uplink	Low	2506.200	39752	-	-	-	-	-	
					Mid	2633.100	41021	-	-	-	-	-	
					High	2659.800	41288	-	-	-	-	-	
Channel spacing E-UTRA CC1- E-UTRA CC2=19.8 MHz (Note 3)													
E-UTRA CC2	20	100	Downlink & Uplink	Low	2526.000	39950	-	-	-	-	-	-	
				Mid	2652.900	41219	-	-	-	-	-		
				High	2679.600	41486	-	-	-	-	-		
Channel spacing E-UTRA CC2- NR CC1=60 MHz (Note 2)													
NR CC1	100	135	Downlink & Uplink	Low	2586.000	517200	2537.4	507480	0	15	-	507840	
				Mid	2573.100	514620	2451.06	490212	102		-	505260	
				High	2599.800	519960	2188.32	437664	504		-	510600	
Note 1: The nominal carrier spacing between the E-UTRA and the NR carriers is set in accordance to TS 38.101-3 [9], clause 5.4B1.													
Note 2: FR1 carrier without CORESET#0 is indicated in the MIB by setting $k_{SSB} = 31$ , $controlResourceSetZero = 0$ and $searchSpaceZero = 0$ (TS 38.213 [22], clause 13).													
Note 3: The nominal carrier spacing between the E-UTRA carriers is set in accordance to TS 36.101 [48], clause 5.7.1A.													

4.3.1.4.2.42.to 4.3.1.4.2.70 FFS

4.3.1.4.2.71 Intra-band contiguous EN-DC configurations DC\_(n)71

4.3.1.4.2.71.1 DC\_(n)71AA

**Table 4.3.1.4.2.71.1-1: EN-DC combination DC\_(n)71AA, intra-band contiguous, SCS 15 kHz, 100 kHz NR raster, NR CC at the band edges**

EN-DC channel bandwidth combination	CC	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 <sub>SSB</sub>	Offset Carrier CORES ET#0 [RBs] Note 3	CORES ET#0 Index (Offset[RBs]) Note 1	offsetToPointA (SIB1) [PRBs] Note 1		
				Downlink	Uplink														
E-UTRA: 5MHz + NR: 5MHz	E-UTRA CC1	5	25	Downlink	Low	624.500	68661	-	-	-	-	-	-	-	-	-	-		
					Mid	637.000	68786	-	-	-	-	-	-	-	-	-	-	-	
					High	644.500	68861	-	-	-	-	-	-	-	-	-	-	-	
				Uplink	Low	670.500	133197	-	-	-	-	-	-	-	-	-	-	-	-
					Mid	683.000	133322	-	-	-	-	-	-	-	-	-	-	-	-
					High	690.500	133397	-	-	-	-	-	-	-	-	-	-	-	-
	NR CC1	5	25	Downlink	Low	619.500	123900	617.25	123450	0	15	1548	123870	8	1	0 (0)	1		
					Mid	632.000	126400	611.39	122278	102		1580	126490	0	1	2 (4)	107		
					High	649.500	129900	556.53	111306	504		1623	129870	8	1	0 (0)	505		
				Uplink	Low	665.500	133100	663.25	132650	0	-	-	-	-	-	-	-	-	
					Mid	678.000	135600	585.03	117006	504		-	-	-	-	-	-	-	
					High	695.500	139100	692.17	138434	6		-	-	-	-	-	-	-	
E-UTRA: 5MHz + NR: 10MHz	E-UTRA CC1	5	25	Downlink	Low	629.500	68711	-	-	-	-	-	-	-	-	-	-		
					Mid	639.500	68811	-	-	-	-	-	-	-	-	-	-		
					High	639.500	68811	-	-	-	-	-	-	-	-	-	-		
				Uplink	Low	675.500	133247	-	-	-	-	-	-	-	-	-	-	-	
					Mid	685.500	133347	-	-	-	-	-	-	-	-	-	-	-	
					High	685.500	133347	-	-	-	-	-	-	-	-	-	-	-	
	NR CC1	10	52	Downlink	Low	622.000	124400	617.32	123464	0	15	1549	123890	10	1	0 (0)	1		
					Mid	632.000	126400	608.96	121792	102		1574	126010	2	1	2 (4)	107		
					High	647.000	129400	551.6	110320	504		1610	128890	10	1	0 (0)	505 (0)		
				Uplink	Low	668.000	133600	663.32	132664	0	-	-	-	-	-	-	-	-	
					Mid	678.000	135600	582.6	116520	504		-	-	-	-	-	-	-	
					High	693.000	138600	687.24	137448	6		-	-	-	-	-	-	-	
E-UTRA: 5MHz + NR: 15MHz	E-UTRA CC1	5	25	Downlink	Low	634.500	68761	-	-	-	-	-	-	-	-	-	-		
					Mid	642.000	68836	-	-	-	-	-	-	-	-	-	-		
					High	634.500	68761	-	-	-	-	-	-	-	-	-	-		
				Uplink	Low	680.500	133297	-	-	-	-	-	-	-	-	-	-	-	



	NR CC1	15	79	Downlink	Mid	688.000	133372	-	-	-	-	-	-	-	-	-	
					High	680.500	133297	-	-	-	-	-	-	-	-	-	
					Low	624.500	124900	617.39	123478	0	15	1547	123850	4	0	0	0
				Uplink	Mid	632.000	126400	606.53	121306	102	-	1568	125530	4	1	2 (4)	107
					High	644.500	128900	546.67	109334	504		1600	127970	8	1	1 (2)	507 (0)
					Low	670.500	134100	663.39	132678	0		-	-	-	-	-	-
E-UTRA: 5MHz + NR: 20MHz	E-UTRA CC1	5	25	Downlink	Mid	678.000	135600	580.17	116034	504	-	-	-	-	-	-	-
					High	690.500	138100	682.31	136462	6		-	-	-	-	-	-
					Low	639.500	68811	-	-	-		-	-	-	-	-	-
				Uplink	Mid	644.500	68861	-	-	-	-	-	-	-	-	-	-
					High	629.500	68711	-	-	-		-	-	-	-	-	-
					Low	685.500	133347	-	-	-		-	-	-	-	-	-
E-UTRA: 10MHz + NR: 5MHz	NR CC1	20	106	Downlink	Mid	690.500	133397	-	-	-	-	-	-	-	-	-	-
					High	675.500	133247	-	-	-		-	-	-	-	-	-
					Low	627.000	125400	617.46	123492	0		15	1548	123870	6	0	0
				Uplink	Mid	632.000	126400	604.1	120820	102	-	1562	125050	6	1	2 (4)	107
					High	642.000	128400	541.74	108348	504		1587	126990	10	1	1 (2)	507
					Low	673.000	134600	663.46	132692	0		-	-	-	-	-	-
E-UTRA: 10MHz + NR: 10MHz	E-UTRA CC1	10	50	Downlink	Mid	678.000	135600	577.74	115548	504	-	-	-	-	-	-	-
					High	688.000	137600	677.38	135476	6		-	-	-	-	-	-
					Low	627.000	68686	-	-	-		-	-	-	-	-	-
				Uplink	Mid	637.000	68786	-	-	-	-	-	-	-	-	-	-
					High	642.000	68836	-	-	-		-	-	-	-	-	-
					Low	673.000	133222	-	-	-		-	-	-	-	-	-
E-UTRA: 10MHz + NR: 10MHz	NR CC1	5	25	Downlink	Mid	683.000	133322	-	-	-	-	-	-	-	-	-	-
					High	688.000	133372	-	-	-		-	-	-	-	-	-
					Low	619.500	123900	617.25	123450	0		15	1548	123870	8	1	0 (0)
				Uplink	Mid	629.500	125900	608.89	121778	102	-	1573	125810	0	0	0	102
					High	649.500	129900	556.53	111306	504		1623	129870	8	1	0 (0)	505
					Low	665.500	133100	663.25	132650	0		-	-	-	-	-	-
E-UTRA: 10MHz + NR: 10MHz	E-UTRA CC1	10	52	Downlink	Mid	675.500	135100	582.53	116506	504	-	-	-	-	-	-	-
					High	695.500	139100	692.17	138434	6		-	-	-	-	-	-
					Low	632.000	68736	-	-	-		-	-	-	-	-	-
				Uplink	Mid	639.500	68811	-	-	-	-	-	-	-	-	-	-
					High	637.000	68786	-	-	-		-	-	-	-	-	-
					Low	678.000	133272	-	-	-		-	-	-	-	-	-
E-UTRA: 10MHz + NR: 10MHz	NR CC1	10	52	Downlink	Mid	685.500	133347	-	-	-	-	-	-	-	-	-	-
					High	683.000	133322	-	-	-		-	-	-	-	-	-
					Low	622.000	124400	617.32	123464	0		15	1549	123890	10	1	0 (0)
				Uplink	Mid	629.500	125900	606.46	121292	102	-	1567	125330	2	0	0	102
					High	647.000	129400	551.6	110320	504		1610	128890	10	1	0 (0)	505
					Low	668.000	133600	663.32	132664	0		-	-	-	-	-	-
Uplink	Mid	675.500	135100	580.1	116020	504	-	-	-	-	-	-	-				
	High	693.000	138600	687.24	137448	6		-	-	-	-	-	-				
	Low	632.000	68736	-	-	-		-	-	-	-	-	-				

E-UTRA: 10MHz + NR: 15MHz	E-UTRA CC1	10	50	Downlink	Low	637.000	68786	-	-	-	-	-	-	-	-	-	
					Mid	642.000	68836	-	-	-	-	-	-	-	-		
					High	632.000	68736	-	-	-	-	-	-	-	-		
		Uplink	Low	683.000	133322	-	-	-	-	-	-	-	-				
			Mid	688.000	133372	-	-	-	-	-	-	-	-				
			High	678.000	133272	-	-	-	-	-	-	-	-				
	NR CC1	15	79	Downlink	Low	624.500	124900	617.39	123478	0	15	1547	123850	4	0	0 (0)	0
					Mid	629.500	125900	604.03	120806	102		1561	124850	4	0	0 (0)	102
					High	644.500	128900	546.67	109334	504		1600	127970	8	1	1 (1)	507
		Uplink	Low	670.500	134100	663.39	132678	0	-	-	-	-	-	-	-		
			Mid	675.500	135100	577.67	115534	504		-	-	-	-	-	-		
			High	690.500	138100	682.31	136462	6		-	-	-	-	-	-		
E-UTRA: 15MHz + NR: 5MHz	E-UTRA CC1	15	75	Downlink	Low	629.500	68711	-	-	-	-	-	-	-	-	-	
					Mid	637.000	68786	-	-	-	-	-	-	-	-		
					High	639.500	68811	-	-	-	-	-	-	-	-		
		Uplink	Low	675.500	133247	-	-	-	-	-	-	-	-				
			Mid	683.000	133322	-	-	-	-	-	-	-	-				
			High	685.500	133347	-	-	-	-	-	-	-	-				
	NR CC1	5	25	Downlink	Low	619.500	123900	617.25	123450	0	15	1548	123870	8	1	0 (0)	1
					Mid	627.000	125400	606.39	121278	102		1566	125310	0	0	0 (0)	102
					High	649.500	129900	556.53	111306	504		1623	129870	8	1	0 (0)	505
		Uplink	Low	665.500	133100	663.25	132650	0	-	-	-	-	-	-	-		
			Mid	673.000	134600	580.03	116006	504		-	-	-	-	-	-		
			High	695.500	139100	692.17	138434	6		-	-	-	-	-	-		
E-UTRA: 15MHz + NR: 10MHz	E-UTRA CC1	15	75	Downlink	Low	634.500	68761	-	-	-	-	-	-	-	-	-	
					Mid	639.500	68811	-	-	-	-	-	-	-	-		
					High	634.500	68761	-	-	-	-	-	-	-	-		
		Uplink	Low	680.500	133297	-	-	-	-	-	-	-	-				
			Mid	685.500	133347	-	-	-	-	-	-	-	-				
			High	680.500	133297	-	-	-	-	-	-	-	-				
	NR CC1	10	52	Downlink	Low	622.000	124400	617.32	123464	0	15	1549	123890	10	1	0 (0)	1
					Mid	627.000	125400	603.96	120792	102		1560	124830	2	0	0 (0)	102
					High	647.000	129400	551.6	110320	504		1610	128890	10	1	0 (0)	505
		Uplink	Low	668.000	133600	663.32	132664	0	-	-	-	-	-	-	-		
			Mid	673.000	134600	577.6	115520	504		-	-	-	-	-	-		
			High	693.000	138600	687.24	137448	6		-	-	-	-	-	-		

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

Note 2: The nominal carrier spacing between the E-UTRA and the NR carriers is set in accordance to TS 38.101-3 [9], clause 5.4B1.

Note 3: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter  $\Delta f_{\text{OffsetCORESET-0-Carrier}}$  in Annex C expressed in number of common RBs.

Table 4.3.1.4.2.71.1-1A: EN-DC combination DC\_(n)71AA, intra-band contiguous, SCS 15 kHz, 100 kHz NR raster, E-UTRA CC at the band edges

EN-DC channel bandwidth combination	CC	Bandwidth [MHz]	carrierBandwidth [PRBs]	Range		Carrier centre [MHz] Note 2	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequencyPointA [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS [kHz]	GSCN	absoluteFrequencySSB [ARFCN]	$k_{SSB}$	Offset Carrier CORES ET#0 [RBs] Note 3	CORES ET#0 Index (Offset [RBs]) Note 1	offsetToPointA (SIB1) [PRBs] Note 1		
E-UTRA: 5MHz + NR: 5MHz	E-UTRA CC1	5	25	Downlink	Low	619.500	68611	-	-	-	-	-	-	-	-	-	-		
					Mid	637.000	68786	-	-	-	-	-	-	-	-	-	-	-	
					High	649.500	68911	-	-	-	-	-	-	-	-	-	-	-	
				Uplink	Low	665.500	133147	-	-	-	-	-	-	-	-	-	-	-	-
					Mid	683.000	133322	-	-	-	-	-	-	-	-	-	-	-	-
					High	695.500	133447	-	-	-	-	-	-	-	-	-	-	-	-
	NR CC1	5	25	Downlink	Low	624.500	124900	622.25	124450	0	15	1559	124810	0	0	0 (0)	0		
					Mid	632.000	126400	611.39	122278	102		1580	126490	0	1	2 (4)	112		
					High	644.500	128900	551.53	110306	504		1612	128930	4	1	1 (2)	507		
				Uplink	Low	670.500	134100	668.25	133650	0	-	-	-	-	-	-	-	-	
					Mid	678.000	135600	585.03	117006	504	-	-	-	-	-	-	-	-	
					High	690.500	138100	687.17	137434	6	-	-	-	-	-	-	-	-	
E-UTRA: 5MHz + NR: 15MHz	E-UTRA CC1	5	25	Downlink	Low	619.500	68611	-	-	-	-	-	-	-	-	-	-		
					Mid	642.000	68836	-	-	-	-	-	-	-	-	-	-		
					High	649.500	68911	-	-	-	-	-	-	-	-	-	-		
				Uplink	Low	665.500	133147	-	-	-	-	-	-	-	-	-	-	-	
					Mid	688.000	133372	-	-	-	-	-	-	-	-	-	-	-	
					High	695.500	133447	-	-	-	-	-	-	-	-	-	-	-	
	NR CC1	15	79	Downlink	Low	629.500	125900	622.39	124478	0	15	1561	124850	4	0	0 (0)	0		
					Mid	632.000	126400	606.53	121306	102		1568	125530	4	1	2 (4)	107		
					High	639.500	127900	541.67	108334	504		1586	126970	8	1	1 (2)	507		
				Uplink	Low	675.500	135100	668.39	133678	0	-	-	-	-	-	-	-		
					Mid	678.000	135600	580.17	116034	504	-	-	-	-	-	-	-		
					High	685.500	137100	677.31	135462	6	-	-	-	-	-	-	-		
E-UTRA: 10MHz + NR: 10MHz	E-UTRA CC1	10	50	Downlink	Low	622.000	68636	-	-	-	-	-	-	-	-	-			
					Mid	639.500	68811	-	-	-	-	-	-	-	-	-			
					High	647.000	68886	-	-	-	-	-	-	-	-	-			
				Uplink	Low	668.000	133172	-	-	-	-	-	-	-	-	-	-		
					Mid	685.500	133347	-	-	-	-	-	-	-	-	-	-		
					High	693.000	133422	-	-	-	-	-	-	-	-	-	-		
	NR CC1	10	52	Downlink	Low	632.000	126400	627.32	125464	0	15	1574	126010	2	1	2 (4)	5		
					Mid	629.500	125900	606.46	121292	102		1567	125330	2	0	0 (0)	102		
					High	637.000	127400	541.6	108320	504		1588	127010	2	1	2 (4)	509		
				Uplink	Low	678.000	135600	673.32	134664	0	-	-	-	-	-	-	-		
					Mid	675.500	135100	580.1	116020	504	-	-	-	-	-	-	-		
					High	683.000	136600	677.24	135448	6	-	-	-	-	-	-	-		

E-UTRA: 15MHz + NR: 5MHz	E-UTRA CC1	15	75	Downlink	Low	624.500	68661	-	-	-	-	-	-	-	-	-	
					Mid	637.000	68786	-	-	-	-	-	-	-	-		
					High	644.500	68861	-	-	-	-	-	-	-	-		
		Uplink	Low	670.500	133197	-	-	-	-	-	-	-	-	-			
			Mid	683.000	133322	-	-	-	-	-	-	-	-	-			
			High	690.500	133397	-	-	-	-	-	-	-	-	-			
	NR CC1	5	25	Downlink	Low	634.500	126900	632.25	126450	0	15	1587	126990	0	1	2 (4)	5
					Mid	627.000	125400	606.39	121278	102		1566	125310	0	0	0 (0)	102
					High	634.500	126900	541.53	108306	504		1587	126990	0	1	2 (4)	509
		Uplink	Low	680.500	136100	678.25	135650	0	-	-	-	-	-	-	-		
			Mid	673.000	134600	580.03	116006	504		-	-	-	-	-	-		
			High	680.500	136100	677.17	135434	6		-	-	-	-	-	-		

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

Note 2: The nominal carrier spacing between the E-UTRA and the NR carriers is set in accordance to TS 38.101-3 [9], clause 5.4B1.

Note 3: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter  $\Delta F_{\text{OffsetCORESET-0-Carrier}}$  in Annex C expressed in number of common RBs.

Table 4.3.1.4.2.71.1-2: EN-DC combination DC\_(n)71AA, intra-band contiguous, SCS 30 kHz, 100 kHz NR raster, NR CC at the band edge

EN-DC channel bandwidth combination	CC	Bandwidth [MHz]	carrierBandwidth [PRBs]	Range		Carrier centre [MHz] Note 2	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequencyPointA [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS [kHz]	GSCN	absoluteFrequencySSB [ARFCN]	$k_{SSB}$	Offset Carrier CORES ET#0 [RBs] Note 3	CORES ET#0 Index (Offset [RBs]) Note 1	offsetToPointA (SIB1) [PRBs] Note 1			
E-UTRA: 5MHz + NR: 10MHz	E-UTRA CC1	5	25	Downlink	Low	629.500	68711	-	-	-	-	-	-	-	-	-	-			
					Mid	639.500	68811	-	-	-	-	-	-	-	-	-	-	-	-	
					High	639.500	68811	-	-	-	-	-	-	-	-	-	-	-	-	-
				Uplink	Low	675.500	133247	-	-	-	-	-	-	-	-	-	-	-	-	-
					Mid	685.500	133347	-	-	-	-	-	-	-	-	-	-	-	-	-
					High	685.500	133347	-	-	-	-	-	-	-	-	-	-	-	-	-
	NR CC1	10	24	Downlink	Low	622.000	124400	617.68	123536	0	15	1555	124370	14	0	1 (6)	12			
					Mid	632.000	126400	590.96	118192	102		1580	126490	6	0	3 (8)	220			
					High	647.000	129400	461.24	92248	504		1616	129370	14	0	1 (6)	1020			
				Uplink	Low	668.000	133600	663.68	132736	0	-	-	-	-	-	-	-	-	-	
					Mid	678.000	135600	492.24	98448	504		-	-	-	-	-	-	-	-	
					High	693.000	138600	686.52	137304	6		-	-	-	-	-	-	-	-	
E-UTRA: 5MHz + NR: 15MHz	E-UTRA CC1	5	25	Downlink	Low	634.500	68761	-	-	-	-	-	-	-	-	-	-			
					Mid	642.000	68836	-	-	-	-	-	-	-	-	-	-	-		
					High	634.500	68761	-	-	-	-	-	-	-	-	-	-	-		
				Uplink	Low	680.500	133297	-	-	-	-	-	-	-	-	-	-	-	-	
					Mid	688.000	133372	-	-	-	-	-	-	-	-	-	-	-	-	
					High	680.500	133297	-	-	-	-	-	-	-	-	-	-	-	-	
	NR CC1	15	38	Downlink	Low	624.500	124900	617.66	123532	0	15	1553	124330	2	0	1 (6)	12			
					Mid	632.000	126400	588.44	117688	102		1571	125770	6	0	0 (5)	214			
					High	644.500	128900	456.22	91244	504		1606	128450	18	0	2 (7)	1022			
				Uplink	Low	670.500	134100	663.66	132732	0	-	-	-	-	-	-	-	-		
					Mid	678.000	135600	489.72	97944	504		-	-	-	-	-	-	-		
					High	690.500	138100	681.5	136300	6		-	-	-	-	-	-	-		
E-UTRA: 5MHz + NR: 20MHz	E-UTRA CC1	5	25	Downlink	Low	639.500	68811	-	-	-	-	-	-	-	-	-				
					Mid	644.500	68861	-	-	-	-	-	-	-	-	-	-			
					High	629.500	68711	-	-	-	-	-	-	-	-	-	-			
				Uplink	Low	685.500	133347	-	-	-	-	-	-	-	-	-	-	-		
					Mid	690.500	133397	-	-	-	-	-	-	-	-	-	-	-		
					High	675.500	133247	-	-	-	-	-	-	-	-	-	-	-		
	NR CC1	20	51	Downlink	Low	627.000	125400	617.82	123564	0	15	1554	124350	22	0	0 (5)	10			
					Mid	632.000	126400	586.1	117220	102		1565	125290	2	0	0 (5)	214			
					High	642.000	128400	451.38	90276	504		1593	127470	14	0	2 (7)	1022			
				Uplink	Low	673.000	134600	663.82	132764	0	-	-	-	-	-	-	-	-		
					Mid	678.000	135600	487.38	97476	504		-	-	-	-	-	-	-		
					High	688.000	137600	676.66	135332	6		-	-	-	-	-	-	-		

E-UTRA: 10MHz + NR: 10MHz	E-UTRA CC1	10	50	Downlink	Low	632.000	68736	-	-	-	-	-	-	-	-	-	
					Mid	639.500	68811	-	-	-	-	-	-	-	-		
					High	637.000	68786	-	-	-	-	-	-	-	-		
		Uplink	Low	678.000	133272	-	-	-	-	-	-	-	-	-			
			Mid	685.500	133347	-	-	-	-	-	-	-	-	-			
			High	683.000	133322	-	-	-	-	-	-	-	-	-			
	NR CC1	10	24	Downlink	Low	622.000	124400	617.68	123536	0	15	1555	124370	14	0	1 (6)	12
					Mid	629.500	125900	588.46	117692	102		1573	125810	18	0	0 (5)	214
					High	647.000	129400	461.24	92248	504		1616	129370	14	0	1 (6)	1020
		Uplink	Low	668.000	133600	663.68	132736	0	-	-	-	-	-	-	-		
			Mid	675.500	135100	489.74	97948	504		-	-	-	-	-	-		
			High	693.000	138600	686.52	137304	6		-	-	-	-	-	-		
E-UTRA: 10MHz + NR: 15MHz	E-UTRA CC1	10	50	Downlink	Low	637.000	68786	-	-	-	-	-	-	-	-	-	
					Mid	642.000	68836	-	-	-	-	-	-	-	-	-	
					High	632.000	68736	-	-	-	-	-	-	-	-	-	
		Uplink	Low	683.000	133322	-	-	-	-	-	-	-	-	-	-		
			Mid	688.000	133372	-	-	-	-	-	-	-	-	-	-		
			High	678.000	133272	-	-	-	-	-	-	-	-	-	-		
	NR CC1	15	38	Downlink	Low	624.500	124900	617.66	123532	0	15	1553	124330	2	0	1 (6)	12
					Mid	629.500	125900	585.94	117188	102		1567	125330	2	0	1 (6)	216
					High	644.500	128900	456.22	91244	504		1606	128450	18	0	2 (7)	1022
		Uplink	Low	670.500	134100	663.66	132732	0	-	-	-	-	-	-	-		
			Mid	675.500	135100	487.22	97444	504		-	-	-	-	-	-		
			High	690.500	138100	681.5	136300	6		-	-	-	-	-	-		
E-UTRA: 15MHz + NR: 10MHz	E-UTRA CC1	15	75	Downlink	Low	634.500	68761	-	-	-	-	-	-	-	-	-	
					Mid	639.500	68811	-	-	-	-	-	-	-	-	-	
					High	634.500	68761	-	-	-	-	-	-	-	-	-	
		Uplink	Low	680.500	133297	-	-	-	-	-	-	-	-	-	-		
			Mid	685.500	133347	-	-	-	-	-	-	-	-	-	-		
			High	680.500	133297	-	-	-	-	-	-	-	-	-	-		
	NR CC1	10	24	Downlink	Low	622.000	124400	617.68	123536	0	15	1555	124370	14	0	1 (6)	12
					Mid	627.000	125400	585.96	117192	102		1566	125310	18	0	0 (5)	214
					High	647.000	129400	461.24	92248	504		1616	129370	14	0	1 (6)	1020
		Uplink	Low	668.000	133600	663.68	132736	0	-	-	-	-	-	-	-		
			Mid	673.000	134600	487.24	97448	504		-	-	-	-	-	-		
			High	693.000	138600	686.52	137304	6		-	-	-	-	-	-		

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

Note 2: The nominal carrier spacing between the E-UTRA and the NR carriers is set in accordance to TS 38.101-3 [9], clause 5.4B1.

Note 3: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter  $\Delta f_{\text{OffsetCORESET-0-Carrier}}$  in Annex C expressed in number of common RBs.

Table 4.3.1.4.2.71.1-2A: EN-DC combination DC\_(n)71AA, intra-band contiguous, SCS 30 kHz, 100 kHz NR raster, E-UTRA CC at the band edge

EN-DC channel bandwidth combination	CC	Bandwidth [MHz]	carrierBandwidth [PRBs]	Range		Carrier centre [MHz] Note 2	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequencyPointA [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS [kHz]	GSCN	absoluteFrequencySSB [ARFCN]	$k_{SSB}$	Offset Carrier CORESET#0 [RBs] Note 3	CORESET#0 (Offset [RBs]) Index Note 1	offsetToPointA (SIB1) [PRBs] Note 1				
E-UTRA: 5MHz + NR: 15MHz	E-UTRA CC1	5	25	Downlink	Low	619.500	68611	-	-	-	-	-	-	-	-	-	-				
					Mid	642.000	68836	-	-	-	-	-	-	-	-	-	-	-	-		
					High	649.500	68911	-	-	-	-	-	-	-	-	-	-	-	-	-	
				Uplink	Low	665.500	133147	-	-	-	-	-	-	-	-	-	-	-	-	-	-
					Mid	688.000	133372	-	-	-	-	-	-	-	-	-	-	-	-	-	-
					High	695.500	133447	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	NR CC1	15	38	Downlink	Low	629.500	125900	622.66	124532	0	15	1567	125330	2	0	1 (6)	12				
					Mid	632.000	126400	588.44	117688	102		1571	125770	6	0	0 (5)	214				
					High	639.500	127900	451.22	90244	504		1592	127450	18	0	2 (7)	1022				
				Uplink	Low	675.500	135100	668.66	133732	0	-	-	-	-	-	-	-	-	-		
					Mid	678.000	135600	489.72	97944	504	-	-	-	-	-	-	-	-	-		
					High	685.500	137100	676.5	135300	6	-	-	-	-	-	-	-	-	-		

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

Note 2: The nominal carrier spacing between the E-UTRA and the NR carriers is set in accordance to TS 38.101-3 [9], clause 5.4B1.

## 4.3.1.4.3 Intra-band non-contiguous EN-DC configurations within FR1

## 4.3.1.4.3.1 – 4.3.1.4.3.40 FFS

## 4.3.1.4.3.41 Intra-band non-contiguous EN-DC configurations DC\_41\_n41

## 4.3.1.4.3.41.1 DC\_41A\_n41A

**Table 4.3.1.4.41.1-1: Test frequencies for EN-DC combination DC\_41A\_n41A, Max Wgap**

Test Frequency ID	NR channel bandwidth [MHz]	NR SCS [kHz]	NR test frequency range (Note 1)	E-UTRA channel bandwidth [MHz]	E-UTRA frequency range (Note 2)	
Low with maxWgap (NR – E-UTRA)	40	30	Low	20	High	
	50					
	60					
	80					
	100					
High with maxWgap (E-UTRA - NR)	40		60	High	20	Low
	50					
	60					
	80					
	100					
Low with maxWgap (NR – E-UTRA)	40	60		Low	20	High
	50					
	60					
	80					
	100					
High with maxWgap (E-UTRA - NR)	40		60	High	20	Low
	50					
	60					
	80					
	100					

Note 1: The NR test frequencies are specified in clause 4.3.1.1.1.41 for the NR Channel Bandwidth, NR SCS and NR test frequency range as given in the table.

Note 2: The E-UTRA test frequencies are specified in TS 36.508 [2], clause 4.3.1.2.9 for the E-UTRA channel bandwidth and E-UTRA test frequency range as given in the table.



## 4.3.1.4.3.41.2 DC\_41C\_n41A

**Table 4.3.1.4.41.2-1: Test frequencies for EN-DC combination DC\_41C\_n41A, SCS=30kHz, Max Wgap**

Test Frequency ID	NR channel bandwidth [MHz]	NR SCS [kHz]	NR test frequency range (Note 1)	E-UTRA CC Combo / N <sub>RB_agg</sub> [MHz]	E-UTRA frequency range (Note 2)		
Low with maxWgap (NR – E-UTRA)	40	30	Low	20 + 20	High		
	50						
	60						
	80						
	100						
High with maxWgap (E-UTRA - NR)	40		30		High	20 + 20	Low
	50						
	60						
	80						
	100						
Low with maxWgap (NR – E-UTRA)	40	60		Low	20 + 20		High
	50						
	60						
	80						
	100						
High with maxWgap (E-UTRA - NR)	40		60	High		20 + 20	Low
	50						
	60						
	80						
	100						

Note 1: The NR test frequencies are specified in clause 4.3.1.1.1.41 for the NR Channel Bandwidth, NR SCS and NR test frequency range as given in the table.

Note 2: The E-UTRA test frequencies are specified in TS 36.508 [2], clause 4.3.1.2.9A for the E-UTRA CC Combo and E-UTRA test frequency range as given in the table.

4.3.1.4.3.41.3 DC\_41D\_n41A

**Table 4.3.1.4.41.3-1: Test frequencies for EN-DC combination DC\_41D\_n41A, SCS=30kHz, Max Wgap**

Test Frequency ID	NR channel bandwidth [MHz]	NR SCS [kHz]	NR test frequency range (Note 1)	E-UTRA CC Combo / N <sub>RB_agg</sub> [MHz]	E-UTRA frequency range (Note 2)	
Low with maxWgap (NR – E-UTRA)	40	30	Low	20 + 20 + 20	High	
	50					
	60					
	80					
	100					
High with maxWgap (E-UTRA - NR)	40		60	High	20 + 20 + 20	Low
	50					
	60					
	80					
	100					
Low with maxWgap (NR – E-UTRA)	40	60		Low	20 + 20 + 20	High
	50					
	60					
	80					
	100					
High with maxWgap (E-UTRA - NR)	40		60	High	20 + 20 + 20	Low
	50					
	60					
	80					
	100					

Note 1: The NR test frequencies are specified in clause 4.3.1.1.1.41 for the NR Channel Bandwidth, NR scs and NR test frequency range as given in the table.  
 Note 2: The E-UTRA test frequencies are specified in TS 36.508 [2], clause 4.3.1.2.9A for the E-UTRA CC Combo and E-UTRA test frequency range as given in the table.

4.3.1.4a Test frequencies for NE-DC band combinations within FR1

4.3.1.4a.1 Inter-band NE-DC configurations within FR1

4.3.1.4a.1.1 General

For inter-band NE-DC configurations as listed in this clause, the following apply:

For the NR band and NR CA configurations, test frequencies as specified in clause 4.3.1.1 are used.

For the E-UTRA band and E-UTRA CA configurations, test frequencies as specified in TS 36.508 [2], clause 4.3.1 are used.

For the primary NR band in inter-band signalling test cases, the band selected is based on the subset of NR bands supported within the NE-DC configurations specified in Table 4.3.1.4a.1.2-1 for NR FR1.

4.3.1.4a.1.2 Inter-band NE-DC configurations within FR1 (two bands)

**Table 4.3.1.4a.1.2-1: Inter-band NE-DC configurations within FR1 (two bands)**

NE-DC configuration	Uplink NE-DC Configuration	NR downlink configuration	E-UTRA downlink configuration	NR uplink configuration	E-UTRA uplink configuration	Applicable for protocol testing (Note 1)
DC_n28A_3A	DC_n28A_3A	n28A	3A	n28A	3A	Yes
DC_n28A_3C	DC_n28A_3A	n28A	CA_3C	n28A	3A	No
DC_n28A_39A	DC_n28A_39A	n28A	39A	n28A	39A	Yes
DC_n28A_39C	DC_n28A_39A	n28A	CA_39C	n28A	39A	No

#### 4.3.1.5 Test frequencies for EN-DC band combinations including FR2

##### 4.3.1.5.1 Inter-band EN-DC configurations including FR2

###### 4.3.1.5.1.1 General

For inter-band EN-DC configurations as listed in this clause, the following apply:

For the E-UTRA band and E-UTRA CA configurations, test frequencies as specified in TS 36.508 [2], clause 4.3.1 are used.

For the NR band and NR CA configurations, test frequencies as specified in clause 4.3.1.2 are used.

For the secondary NR band in inter-band signalling test cases, the band selected is based on the subset of NR bands supported within the EN-DC configurations specified in Table 4.3.1.4.1.2-1 for NR FR1 and 4.3.1.5.1.2-1 for NR FR2.

## 4.3.1.5.1.2 Inter-band EN-DC configurations including FR2 (two bands)

Table 4.3.1.5.1.2-1: Inter-band EN-DC configurations including FR2 (two bands)

EN-DC configuration	Uplink EN-DC Configuration	E-UTRA downlink configuration	NR downlink configuration	E-UTRA uplink configuration	NR uplink configuration	Applicable for protocol testing (Note 1)
DC_1A_n257A	DC_1A_n257A	1A	n257A	1A	n257A	Yes
DC_1A_n257D	DC_1A_n257A	1A	CA_n257D	1A	n257A	FFS (NR 2CC)
DC_1A_n257E	DC_1A_n257A	1A	CA_n257E	1A	n257A	No
DC_1A_n257F	DC_1A_n257A	1A	CA_n257F	1A	n257A	No
DC_1A_n257G	DC_1A_n257A	1A	CA_n257G	1A	n257A	Yes (NR 2CC)
	DC_1A_n257G	1A	CA_n257G	1A	CA_n257G	No
DC_1A_n257H	DC_1A_n257A	1A	CA_n257H	1A	n257A	No
	DC_1A_n257G	1A	CA_n257H	1A	CA_n257G	No
	DC_1A_n257H	1A	CA_n257H	1A	CA_n257H	No
DC_1A_n257I	DC_1A_n257A	1A	CA_n257I	1A	n257A	No
	DC_1A_n257G	1A	CA_n257I	1A	CA_n257G	No
	DC_1A_n257H	1A	CA_n257I	1A	CA_n257H	No
	DC_1A_n257I	1A	CA_n257I	1A	CA_n257I	No
DC_2A_n257A	DC_2A_n257A	2A	n257A	2A	n257A	Yes
DC_2C_n257A	DC_2A_n257A	CA_2C	n257A	2A	n257A	No
DC_2A_n257(2A)	DC_2A_n257A	2A	CA_n257(2A)	2A	n257A	FFS (NR 2CC)
DC_2A-2A_n257A	DC_2A_n257A	CA_2A-2A	n257A	2A	n257A	No
DC_2A_n260A	DC_2A_n260A	2A	n260A	2A	n260A	Yes
DC_2A_n260G	DC_2A_n260A	2A	CA_n260G	2A	n260A	Yes (NR 2CC)
DC_2A_n260H	DC_2A_n260A	2A	CA_n260H	2A	n260A	No
DC_2A_n260I	DC_2A_n260A	2A	CA_n260I	2A	n260A	No
DC_2A_n260J	DC_2A_n260A	2A	CA_n260J	2A	n260A	No
DC_2A_n260K	DC_2A_n260A	2A	CA_n260K	2A	n260A	No
DC_2A_n260L	DC_2A_n260A	2A	CA_n260L	2A	n260A	No
DC_2A_n260M	DC_2A_n260A	2A	CA_n260M	2A	n260A	No
DC_2C_n260A	DC_2A_n260A	CA_2C	n260A	2A	n260A	No
DC_2A_n260(2A)	DC_2A_n260A	2A	CA_n260(2A)	2A	n260A	FFS (NR 2CC)
DC_2A-2A_n260A	DC_2A_n260A	CA_2A-2A	n260A	2A	n260A	No
DC_2A-2A_n260G	DC_2A_n260A	CA_2A-2A	CA_n260G	2A	n260A	No
DC_2A-2A_n260H	DC_2A_n260A	CA_2A-2A	CA_n260H	2A	n260A	No
DC_2A-2A_n260I	DC_2A_n260A	CA_2A-2A	CA_n260I	2A	n260A	No
DC_2A-2A_n260J	DC_2A_n260A	CA_2A-2A	CA_n260J	2A	n260A	No
DC_2A-2A_n260K	DC_2A_n260A	CA_2A-2A	CA_n260K	2A	n260A	No
DC_2A-2A_n260L	DC_2A_n260A	CA_2A-2A	CA_n260L	2A	n260A	No
DC_2A-2A_n260M	DC_2A_n260A	CA_2A-2A	CA_n260M	2A	n260A	No

EN-DC configuration	Uplink EN-DC Configuration	E-UTRA downlink configuration	NR downlink configuration	E-UTRA uplink configuration	NR uplink configuration	Applicable for protocol testing (Note 1)
DC_3A_n257A	DC_3A_n257A	3A	n257A	3A	n257A	Yes
DC_3A_n257D	DC_3A_n257A	3A	CA_n257D	3A	n257A	FFS (NR 2CC)
DC_3A_n257E	DC_3A_n257A	3A	CA_n257E	3A	n257A	No
DC_3A_n257F	DC_3A_n257A	3A	CA_n257F	3A	n257A	No
DC_3A_n257G	DC_3A_n257A	3A	CA_n257G	3A	n257A	Yes (NR 2CC)
	DC_3A_n257B	3A	CA_n257G	3A	CA_n257B	No
	DC_3A_n257D	3A	CA_n257G	3A	CA_n257D	No
	DC_3A_n257G	3A	CA_n257G	3A	CA_n257G	No
DC_3A_n257H	DC_3A_n257A	3A	CA_n257H	3A	n257A	No
	DC_3A_n257B	3A	CA_n257H	3A	CA_n257B	No
	DC_3A_n257D	3A	CA_n257H	3A	CA_n257D	No
	DC_3A_n257G	3A	CA_n257H	3A	CA_n257G	No
	DC_3A_n257H	3A	CA_n257H	3A	CA_n257H	No
DC_3A_n257I	DC_3A_n257A	3A	CA_n257I	3A	n257A	No
	DC_3A_n257B	3A	CA_n257I	3A	CA_n257B	No
	DC_3A_n257D	3A	CA_n257I	3A	CA_n257D	No
	DC_3A_n257G	3A	CA_n257I	3A	CA_n257G	No
	DC_3A_n257H	3A	CA_n257I	3A	CA_n257H	No
	DC_3A_n257I	3A	CA_n257I	3A	CA_n257I	No
DC_3A_n258A	DC_3A_n258A	3A	n258A	3A	n258A	Yes
DC_5A_n257A	DC_5A_n257A	5A	n257A	5A	n257A	Yes
DC_5B_n257A	DC_5A_n257A	CA_5B	n257A	5A	n257A	No
	DC_5B_n257A	CA_5B	n257A	CA_5B	n257A	No
DC_5A-5A_n257A	DC_5A_n257A	CA_5A-5A	n257A	5A	n257A	No
DC_5A_n260A	DC_5A_n260A	5A	n260A	5A	n260A	Yes
DC_5A_n260B	DC_5A_n260A	5A	CA_n260B	5A	n260A	FFS (NR 2CC)
DC_5A_n260C	DC_5A_n260A	5A	CA_n260C	5A	n260A	No
DC_5A_n260D	DC_5A_n260A	5A	CA_n260D	5A	n260A	FFS (NR 2CC)
DC_5A_n260E	DC_5A_n260A	5A	CA_n260E	5A	n260A	No
DC_5A_n260F	DC_5A_n260A	5A	CA_n260F	5A	n260A	No
DC_5A_n260G	DC_5A_n260A	5A	CA_n260G	5A	n260A	Yes (NR 2CC)
DC_5A_n260H	DC_5A_n260A	5A	CA_n260H	5A	n260A	No
DC_5A_n260I	DC_5A_n260A	5A	CA_n260I	5A	n260A	No
DC_5A_n260J	DC_5A_n260A	5A	CA_n260J	5A	n260A	No
DC_5A_n260K	DC_5A_n260A	5A	CA_n260K	5A	n260A	No
DC_5A_n260L	DC_5A_n260A	5A	CA_n260L	5A	n260A	No
DC_5A_n260M	DC_5A_n260A	5A	CA_n260M	5A	n260A	No
DC_5A_n260O	DC_5A_n260A	5A	CA_n260O	5A	n260A	FFS (NR 2CC)
DC_5A_n260P	DC_5A_n260A	5A	CA_n260P	5A	n260A	No
DC_5A_n260Q	DC_5A_n260A	5A	CA_n260Q	5A	n260A	No

EN-DC configuration	Uplink EN-DC Configuration	E-UTRA downlink configuration	NR downlink configuration	E-UTRA uplink configuration	NR uplink configuration	Applicable for protocol testing (Note 1)
DC_5B_n260A	DC_5A_n260A	CA_5B	n260A	5A	n260A	No
	DC_5B_n260A	CA_5B	n260A	CA_5B	n260A	No
DC_5A_n260(2A)	DC_5A_n260A	5A	CA_n260(2A)	5A	n260A	FFS (NR 2CC)
DC_5A_n260(3A)	DC_5A_n260A	5A	CA_n260(3A)	5A	n260A	No
DC_5A_n260(4A)	DC_5A_n260A	5A	n260(4A)	5A	n260A	No
DC_5A_n260(A-I)	DC_5A_n260A	5A	CA_n260(A-I)	5A	n260A	No
DC_5A_n260(D-G)	DC_5A_n260A	5A	CA_n260(D-G)	5A	n260A	No
DC_5A_n260(D-H)	DC_5A_n260A	5A	CA_n260(D-H)	5A	n260A	No
DC_5A_n260(D-I)	DC_5A_n260A	5A	CA_n260(D-I)	5A	n260A	No
DC_5A_n260(D-O)	DC_5A_n260A	5A	CA_n260(D-O)	5A	n260A	No
DC_5A_n260(D-P)	DC_5A_n260A	5A	CA_n260(D-P)	5A	n260A	No
DC_5A_n260(D-Q)	DC_5A_n260A	5A	CA_n260(D-Q)	5A	n260A	No
DC_5A_n260(E-O)	DC_5A_n260A	5A	CA_n260(E-O)	5A	n260A	No
DC_5A_n260(E-P)	DC_5A_n260A	5A	CA_n260(E-P)	5A	n260A	No
DC_5A_n260(E-Q)	DC_5A_n260A	5A	CA_n260(E-Q)	5A	n260A	No
DC_5A_n260(G-I)	DC_5A_n260A	5A	CA_n260(G-I)	5A	n260A	No
DC_5A-5A_n260A	DC_5A_n260A	CA_5A-5A	n260A	5A	n260A	No
DC_5A_n261A	DC_5A_n261A	5A	n261A	5A	n261A	Yes
DC_5A_n261B	DC_5A_n261A	5A	CA_n261B	5A	n261A	FFS (NR 2CC)
DC_5A_n261C	DC_5A_n261A	5A	CA_n261C	5A	n261A	No
DC_5A_n261D	DC_5A_n261A	5A	CA_n261D	5A	n261A	FFS (NR 2CC)
DC_5A_n261E	DC_5A_n261A	5A	CA_n261E	5A	n261A	No
DC_5A_n261F	DC_5A_n261A	5A	CA_n261F	5A	n261A	No
DC_5A_n261G	DC_5A_n261A	5A	CA_n261G	5A	n261A	Yes (NR 2CC)
DC_5A_n261H	DC_5A_n261A	5A	CA_n261H	5A	n261A	No
DC_5A_n261I	DC_5A_n261A	5A	CA_n261I	5A	n261A	No
DC_5A_n261J	DC_5A_n261A	5A	CA_n261J	5A	n261A	No
DC_5A_n261K	DC_5A_n261A	5A	CA_n261K	5A	n261A	No
DC_5A_n261L	DC_5A_n261A	5A	CA_n261L	5A	n261A	No
DC_5A_n261M	DC_5A_n261A	5A	CA_n261M	5A	n261A	No
DC_5A_n261O	DC_5A_n261A	5A	CA_n261O	5A	n261A	FFS (NR 2CC)
DC_5A_n261P	DC_5A_n261A	5A	CA_n261P	5A	n261A	No
DC_5A_n261Q	DC_5A_n261A	5A	CA_n261Q	5A	n261A	No
DC_5A_n261(2A)	DC_5A_n261A	5A	CA_n261(2A)	5A	n261A	Yes (NR 2CC)
DC_5A_n261(3A)	DC_5A_n261A	5A	CA_n261(3A)	5A	n261A	No
DC_5A_n261(4A)	DC_5A_n261A	5A	CA_n261(4A)	5A	n261A	No
DC_5A_n261(D-G)	DC_5A_n261A	5A	CA_n261(D-G)	5A	n261A	No
DC_5A_n261(D-H)	DC_5A_n261A	5A	CA_n261(D-H)	5A	n261A	No
DC_5A_n261(D-I)	DC_5A_n261A	5A	CA_n261(D-I)	5A	n261A	No
DC_5A_n261(D-O)	DC_5A_n261A	5A	CA_n261(D-O)	5A	n261A	No

EN-DC configuration	Uplink EN-DC Configuration	E-UTRA downlink configuration	NR downlink configuration	E-UTRA uplink configuration	NR uplink configuration	Applicable for protocol testing (Note 1)
DC_5A_n261(D-P)	DC_5A_n261A	5A	CA_n261(D-P)	5A	n261A	No
DC_5A_n261(D-Q)	DC_5A_n261A	5A	CA_n261(D-Q)	5A	n261A	No
DC_5A_n261(E-O)	DC_5A_n261A	5A	CA_n261(E-O)	5A	n261A	No
DC_5A_n261(E-P)	DC_5A_n261A	5A	CA_n261(E-P)	5A	n261A	No
DC_5A_n261(E-Q)	DC_5A_n261A	5A	CA_n261(E-Q)	5A	n261A	No
DC_7A_n257A	DC_7A_n257A	7A	n257A	7A	n257A	Yes
DC_7A-7A_n257A	DC_7A_n257A	CA_7A-7A	n257A	7A	n257A	No
DC_7A_n258A	DC_7A_n258A	7A	n258A	7A	n258A	Yes
DC_8A_n257A	DC_8A_n257A	8A	n257A	8A	n257A	Yes
DC_8A_n257D	DC_8A_n257A	8A	CA_n257D	8A	n257A	FFS (NR 2CC)
DC_8A_n257E	DC_8A_n257A	8A	CA_n257E	8A	n257A	No
DC_8A_n257F	DC_8A_n257A	8A	CA_n257F	8A	n257A	No
DC_8A_n257G	DC_8A_n257A	8A	CA_n257G	8A	n257A	Yes (NR 2CC)
DC_8A_n257H	DC_8A_n257A	8A	CA_n257H	8A	n257A	No
DC_8A_n257I	DC_8A_n257A	8A	CA_n257I	8A	n257A	No
DC_8A_n257J	DC_8A_n257A	8A	CA_n257J	8A	n257A	No
DC_8A_n257K	DC_8A_n257A	8A	CA_n257K	8A	n257A	No
DC_8A_n257L	DC_8A_n257A	8A	CA_n257L	8A	n257A	No
DC_8A_n257M	DC_8A_n257A	8A	CA_n257M	8A	n257A	No
DC_8A_n258A	DC_8A_n258A	8A	n258A	8A	n258A	Yes
DC_11A_n257A	DC_11A_n257A	11A	n257A	11A	n257A	Yes
DC_12A_n260A	DC_12A_n260A	12A	n260A	12A	n260A	Yes
DC_14A_n260A	DC_14A_n260A	14A	n260A	14A	n260A	Yes
DC_14A_n260G	DC_14A_n260A	14A	CA_n260G	14A	n260A	Yes (NR 2CC)
	DC_14A_n260G	14A	CA_n260G	14A	CA_n260G	No
DC_14A_n260H	DC_14A_n260A	14A	CA_n260H	14A	n260A	No
	DC_14A_n260G	14A	CA_n260H	14A	CA_n260G	No
	DC_14A_n260H	14A	CA_n260H	14A	CA_n260H	No
DC_14A_n260I	DC_14A_n260A	14A	CA_n260I	14A	n260A	No
	DC_14A_n260G	14A	CA_n260I	14A	CA_n260G	No
	DC_14A_n260H	14A	CA_n260I	14A	CA_n260H	No
	DC_14A_n260I	14A	CA_n260I	14A	CA_n260I	No
DC_12A_n260G	DC_12A_n260A	12A	CA_n260G	12A	n260A	Yes (NR 2CC)
DC_12A_n260H	DC_12A_n260A	12A	CA_n260H	12A	n260A	No
DC_12A_n260I	DC_12A_n260A	12A	CA_n260I	12A	n260A	No
DC_12A_n260J	DC_12A_n260A	12A	CA_n260J	12A	n260A	No
DC_12A_n260K	DC_12A_n260A	12A	CA_n260K	12A	n260A	No
DC_12A_n260L	DC_12A_n260A	12A	CA_n260L	12A	n260A	No
DC_12A_n260M	DC_12A_n260A	12A	CA_n260M	12A	n260A	No
DC_12A_n260(A-I)	DC_12A_n260A	12A	CA_n260(A-I)	12A	n260A	No

EN-DC configuration	Uplink EN-DC Configuration	E-UTRA downlink configuration	NR downlink configuration	E-UTRA uplink configuration	NR uplink configuration	Applicable for protocol testing (Note 1)
DC_12A_n260(G-I)	DC_12A_n260A	12A	CA_n260(G-I)	12A	n260A	No
DC_13A_n257A	DC_13A_n257A	13A	n257A	13A	n257A	Yes
DC_13A_n260A	DC_13A_n260A	13A	n260A	13A	n260A	Yes
DC_18A_n257A	DC_18A_n257A	18A	n257A	18A	n257A	Yes
DC_19A_n257A	DC_19A_n257A	19A	n257A	19A	n257A	Yes
DC_19A_n257D	DC_19A_n257A	19A	CA_n257D	19A	n257A	FFS (NR 2CC)
DC_19A_n257E	DC_19A_n257A	19A	CA_n257E	19A	n257A	No
DC_19A_n257F	DC_19A_n257A	19A	CA_n257F	19A	n257A	No
DC_19A_n257G	DC_19A_n257A	19A	CA_n257G	19A	n257A	Yes (NR 2CC)
	DC_19A_n257G	19A	CA_n257G	19A	CA_n257G	No
DC_19A_n257H	DC_19A_n257A	19A	CA_n257H	19A	n257A	No
	DC_19A_n257G	19A	CA_n257H	19A	CA_n257G	No
	DC_19A_n257H	19A	CA_n257H	19A	CA_n257H	No
DC_19A_n257I	DC_19A_n257A	19A	CA_n257I	19A	n257A	No
	DC_19A_n257G	19A	CA_n257I	19A	CA_n257G	No
	DC_19A_n257H	19A	CA_n257I	19A	CA_n257H	No
	DC_19A_n257I	19A	CA_n257I	19A	CA_n257I	No
DC_20A_n257A	DC_20A_n257A	20A	n257A	20A	n257A	Yes
DC_20A_n258A	DC_20A_n258A	20A	n258A	20A	n258A	Yes
DC_21A_n257A	DC_21A_n257A	21A	n257A	21A	n257A	Yes
DC_21A_n257D	DC_21A_n257A	21A	CA_n257D	21A	n257A	FFS (NR 2CC)
DC_21A_n257E	DC_21A_n257A	21A	CA_n257E	21A	n257A	No
DC_21A_n257F	DC_21A_n257A	21A	CA_n257F	21A	n257A	No
DC_21A_n257G	DC_21A_n257A	21A	CA_n257G	21A	n257A	Yes (NR 2CC)
	DC_21A_n257G	21A	CA_n257G	21A	CA_n257G	No
DC_21A_n257H	DC_21A_n257A	21A	CA_n257H	21A	n257A	No
	DC_21A_n257G	21A	CA_n257H	21A	CA_n257G	No
	DC_21A_n257H	21A	CA_n257H	21A	CA_n257H	No
DC_21A_n257I	DC_21A_n257A	21A	CA_n257I	21A	n257A	No
	DC_21A_n257G	21A	CA_n257I	21A	CA_n257G	No
	DC_21A_n257H	21A	CA_n257I	21A	CA_n257H	No
	DC_21A_n257I	21A	CA_n257I	21A	CA_n257I	No
DC_26A_n257A	DC_26A_n257A	26A	n257A	26A	n257A	Yes
DC_28A_n257A	DC_28A_n257A	28A	n257A	28A	n257A	Yes
DC_28A_n257D	DC_28A_n257A	28A	CA_n257D	28A	n257A	FFS (NR 2CC)
DC_28A_n257E	DC_28A_n257A	28A	CA_n257E	28A	n257A	No
DC_28A_n257F	DC_28A_n257A	28A	CA_n257F	28A	n257A	No
DC_28A_n258A	DC_28A_n258A	28A	n258A	28A	n258A	Yes
DC_30A_n260A	DC_30A_n260A	30A	n260A	30A	n260A	Yes
DC_30A_n260G	DC_30A_n260A	30A	CA_n260G	30A	n260A	Yes (NR 2CC)



EN-DC configuration	Uplink EN-DC Configuration	E-UTRA downlink configuration	NR downlink configuration	E-UTRA uplink configuration	NR uplink configuration	Applicable for protocol testing (Note 1)
DC_30A_n260H	DC_30A_n260A	30A	CA_n260H	30A	n260A	No
DC_30A_n260I	DC_30A_n260A	30A	CA_n260I	30A	n260A	No
DC_30A_n260J	DC_30A_n260A	30A	CA_n260J	30A	n260A	No
DC_30A_n260K	DC_30A_n260A	30A	CA_n260K	30A	n260A	No
DC_30A_n260L	DC_30A_n260A	30A	CA_n260L	30A	n260A	No
DC_30A_n260M	DC_30A_n260A	30A	CA_n260M	30A	n260A	No
DC_30A_n260(A-I)	DC_30A_n260A	30A	CA_n260(A-I)	30A	n260A	No
DC_30A_n260(G-I)	DC_30A_n260A	30A	CA_n260(G-I)	30A	n260A	No
DC_39A_n258A	DC_39A_n258A	39A	n258A	39A	n258A	Yes
DC_41A_n257A	DC_41A_n257A	41A	n257A	41A	n257A	Yes
DC_41A_n258A	DC_41A_n258A	41A	n258A	41A	n258A	Yes
DC_41C_n257A	DC_41A_n257A	CA_41C	n257A	41A	n257A	No
	DC_41C_n257A	CA_41C	n257A	CA_41C	n257A	No
DC_42A_n257A	DC_42A_n257A	42A	n257A	42A	n257A	Yes
DC_42C_n257A	DC_42A_n257A	CA_42C	n257A	42A	n257A	No
	DC_42C_n257A	CA_42C	n257A	CA_42C	n257A	No
DC_42A_n257D	DC_42A_n257A	42A	CA_n257D	42A	n257A	FFS (NR 2CC)
DC_42A_n257E	DC_42A_n257A	42A	CA_n257E	42A	n257A	No
DC_42A_n257F	DC_42A_n257A	42A	CA_n257F	42A	n257A	No
DC_42C_n257D	DC_42A_n257A	CA_42C	CA_n257D	42A	n257A	No
	DC_42C_n257A	CA_42C	CA_n257D	CA_42C	n257A	No
DC_42C_n257E	DC_42A_n257A	CA_42C	CA_n257E	42A	n257A	No
	DC_42C_n257A	CA_42C	CA_n257E	CA_42C	n257A	No
DC_42C_n257F	DC_42A_n257A	CA_42C	CA_n257F	42A	n257A	No
	DC_42C_n257A	CA_42C	CA_n257F	CA_42C	n257A	No
DC_42D_n257A	DC_42A_n257A	CA_42D	n257A	42A	n257A	No
	DC_42C_n257A	CA_42D	n257A	CA_42C	n257A	No
DC_42E_n257A	DC_42A_n257A	CA_42E	n257A	42A	n257A	No
	DC_42C_n257A	CA_42E	n257A	CA_42C	n257A	No
DC_48A_n257A	DC_48A_n257A	48A	n257A	48A	n257A	Yes
DC_48C_n257A	DC_48A_n257A	CA_48C	n257A	48A	n257A	No
	DC_48C_n257A	CA_48C	n257A	CA_48C	n257A	No
DC_48A-48A_n257A	DC_48A_n257A	CA_48A-48A	n257A	48A	n257A	No
DC_48A_n260A	DC_48A_n260A	48A	n260A	48A	n260A	Yes
DC_48C_n260A	DC_48A_n260A	CA_48C	n260A	48A	n260A	No
	DC_48C_n260A	CA_48C	n260A	CA_48C	n260A	No
DC_48A-48A_n260A	DC_48A_n260A	CA_48A-48A	n260A	48A	n260A	No
DC_66A_n257A	DC_66A_n257A	66A	n257A	66A	n257A	Yes
DC_66A_n257(2A)	DC_66A_n257A	66A	CA_n257(2A)	66A	n257A	FFS (NR 2CC)
DC_66A_n257G	DC_66A_n257A	66A	CA_n257G	66A	n257A	Yes (NR 2CC)

EN-DC configuration	Uplink EN-DC Configuration	E-UTRA downlink configuration	NR downlink configuration	E-UTRA uplink configuration	NR uplink configuration	Applicable for protocol testing (Note 1)
DC_66A_n257H	DC_66A_n257A	66A	CA_n257H	66A	n257A	No
DC_66A_n257I	DC_66A_n257A	66A	CA_n257I	66A	n257A	No
DC_66A_n257J	DC_66A_n257A	66A	CA_n257J	66A	n257A	No
DC_66A_n257K	DC_66A_n257A	66A	CA_n257K	66A	n257A	No
DC_66A_n257L	DC_66A_n257A	66A	CA_n257L	66A	n257A	No
DC_66A_n257M	DC_66A_n257A	66A	CA_n257M	66A	n257A	No
DC_66C_n257A	DC_66A_n257A	CA_66C	n257A	66A	n257A	No
DC_66A-66A_n257A	DC_66A_n257A	CA_66A-66A	n257A	66A	n257A	No
DC_66A_n260A	DC_66A_n260A	66A	n260A	66A	n260A	Yes
DC_66A_n260D	DC_66A_n260A	66A	CA_n260D	66A	n260A	FFS (NR 2CC)
DC_66A_n260E	DC_66A_n260A	66A	CA_n260E	66A	n260A	No
DC_66A_n260F	DC_66A_n260A	66A	CA_n260F	66A	n260A	No
DC_66A_n260G	DC_66A_n260A	66A	CA_n260G	66A	n260A	Yes (NR 2CC)
DC_66A_n260H	DC_66A_n260A	66A	CA_n260H	66A	n260A	No
DC_66A_n260I	DC_66A_n260A	66A	CA_n260I	66A	n260A	No
DC_66A_n260J	DC_66A_n260A	66A	CA_n260J	66A	n260A	No
DC_66A_n260K	DC_66A_n260A	66A	CA_n260K	66A	n260A	No
DC_66A_n260L	DC_66A_n260A	66A	CA_n260L	66A	n260A	No
DC_66A_n260M	DC_66A_n260A	66A	CA_n260M	66A	n260A	No
DC_66A_n260O	DC_66A_n260A	66A	CA_n260O	66A	n260A	FFS (NR 2CC)
DC_66A_n260P	DC_66A_n260A	66A	CA_n260P	66A	n260A	No
DC_66A_n260Q	DC_66A_n260A	66A	CA_n260Q	66A	n260A	No
DC_66A_n260(2A)	DC_66A_n260A	66A	CA_n260(2A)	66A	n260A	FFS (NR 2CC)
DC_66A_n260(3A)	DC_66A_n260A	66A	CA_n260(3A)	66A	n260A	No
DC_66A_n260(4A)	DC_66A_n260A	66A	CA_n260(4A)	66A	n260A	No
DC_66A_n260(A-I)	DC_66A_n260A	66A	CA_n260(A-I)	66A	n260A	No
DC_66A_n260(D-G)	DC_66A_n260A	66A	CA_n260(D-G)	66A	n260A	No
DC_66A_n260(D-H)	DC_66A_n260A	66A	CA_n260(D-H)	66A	n260A	No
DC_66A_n260(D-I)	DC_66A_n260A	66A	CA_n260(D-I)	66A	n260A	No
DC_66A_n260(D-O)	DC_66A_n260A	66A	CA_n260(D-O)	66A	n260A	No
DC_66A_n260(D-P)	DC_66A_n260A	66A	CA_n260(D-P)	66A	n260A	No
DC_66A_n260(D-Q)	DC_66A_n260A	66A	CA_n260(D-Q)	66A	n260A	No
DC_66A_n260(E-O)	DC_66A_n260A	66A	CA_n260(E-O)	66A	n260A	No
DC_66A_n260(E-P)	DC_66A_n260A	66A	CA_n260(E-P)	66A	n260A	No
DC_66A_n260(E-Q)	DC_66A_n260A	66A	CA_n260(E-Q)	66A	n260A	No
DC_66A_n260(G-I)	DC_66A_n260A	66A	CA_n260(G-I)	66A	n260A	No
DC_66A-66A_n260A	DC_66A_n260A	CA_66A-66A	n260A	66A	n260A	No
DC_66A-66A_n260G	DC_66A_n260A	CA_66A-66A	CA_n260G	66A	n260A	No
DC_66A-66A_n260H	DC_66A_n260A	CA_66A-66A	CA_n260H	66A	n260A	No
DC_66A-66A_n260I	DC_66A_n260A	CA_66A-66A	CA_n260I	66A	n260A	No

EN-DC configuration	Uplink EN-DC Configuration	E-UTRA downlink configuration	NR downlink configuration	E-UTRA uplink configuration	NR uplink configuration	Applicable for protocol testing (Note 1)
DC_66A-66A_n260J	DC_66A_n260A	CA_66A-66A	CA_n260J	66A	n260A	No
DC_66A-66A_n260K	DC_66A_n260A	CA_66A-66A	CA_n260K	66A	n260A	No
DC_66A-66A_n260L	DC_66A_n260A	CA_66A-66A	CA_n260L	66A	n260A	No
DC_66A-66A_n260M	DC_66A_n260A	CA_66A-66A	CA_n260M	66A	n260A	No
DC_66A_n261A	DC_66A_n261A	66A	n261A	66A	n261A	Yes
DC_66A_n261D	DC_66A_n261A	66A	CA_n261D	66A	n261A	FFS (NR 2CC)
DC_66A_n261E	DC_66A_n261A	66A	CA_n261E	66A	n261A	No
DC_66A_n261F	DC_66A_n261A	66A	CA_n261F	66A	n261A	No
DC_66A_n261G	DC_66A_n261A	66A	CA_n261G	66A	n261A	Yes (NR 2CC)
DC_66A_n261H	DC_66A_n261A	66A	CA_n261H	66A	n261A	No
DC_66A_n261I	DC_66A_n261A	66A	CA_n261I	66A	n261A	No
DC_66A_n261J	DC_66A_n261A	66A	CA_n261J	66A	n261A	No
DC_66A_n261K	DC_66A_n261A	66A	CA_n261K	66A	n261A	No
DC_66A_n261L	DC_66A_n261A	66A	CA_n261L	66A	n261A	No
DC_66A_n261M	DC_66A_n261A	66A	CA_n261M	66A	n261A	No
DC_66A_n261O	DC_66A_n261A	66A	CA_n261O	66A	n261A	FFS (NR 2CC)
DC_66A_n261P	DC_66A_n261A	66A	CA_n261P	66A	n261A	No
DC_66A_n261Q	DC_66A_n261A	66A	CA_n261Q	66A	n261A	No
DC_66A_n261(2A)	DC_66A_n261A	66A	CA_n261(2A)	66A	n261A	Yes (NR 2CC)
DC_66A_n261(3A)	DC_66A_n261A	66A	CA_n261(3A)	66A	n261A	No
DC_66A_n261(4A)	DC_66A_n261A	66A	CA_n261(4A)	66A	n261A	No
DC_66A_n261(D-G)	DC_66A_n261A	66A	CA_n261(D-G)	66A	n261A	No
DC_66A_n261(D-H)	DC_66A_n261A	66A	CA_n261(D-H)	66A	n261A	No
DC_66A_n261(D-I)	DC_66A_n261A	66A	CA_n261(D-I)	66A	n261A	No
DC_66A_n261(D-O)	DC_66A_n261A	66A	CA_n261(D-O)	66A	n261A	No
DC_66A_n261(D-P)	DC_66A_n261A	66A	CA_n261(D-P)	66A	n261A	No
DC_66A_n261(D-Q)	DC_66A_n261A	66A	CA_n261(D-Q)	66A	n261A	No
DC_66A_n261(E-O)	DC_66A_n261A	66A	CA_n261(E-O)	66A	n261A	No
DC_66A_n261(E-P)	DC_66A_n261A	66A	CA_n261(E-P)	66A	n261A	No
DC_66A_n261(E-Q)	DC_66A_n261A	66A	CA_n261(E-Q)	66A	n261A	No

Note 1: Protocol testing is limited to EN-DC configurations with 1 CC E-UTRA and 1CC or 2CC NR configurations.

## 4.3.1.5.1.3 Inter-band EN-DC configurations including FR2 (three bands)

Table 4.3.1.5.1.3-1: Inter-band EN-DC configurations including FR2 (three bands)

EN-DC configuration	Uplink EN-DC Configuration	E-UTRA downlink configuration	NR downlink configuration	E-UTRA uplink configuration	NR uplink configuration	Applicable for protocol testing (Note 1)
DC_1A-3A_n257A	DC_1A_n257A	CA_1A-3A	n257A	1A	n257A	No
	DC_3A_n257A	CA_1A-3A	n257A	3A	n257A	No
DC_1A-3A_n257G	DC_1A_n257A	CA_1A-3A	CA_n257G	1A	n257A	No
	DC_1A_n257D	CA_1A-3A	CA_n257G	1A	CA_n257D	No
	DC_3A_n257A	CA_1A-3A	CA_n257G	3A	n257A	No
	DC_3A_n257D	CA_1A-3A	CA_n257G	3A	CA_n257D	No
	DC_3A_n257G	CA_1A-3A	CA_n257G	3A	CA_n257G	No
DC_1A-3A_n257H	DC_1A_n257A	CA_1A-3A	CA_n257H	1A	n257A	No
	DC_1A_n257D	CA_1A-3A	CA_n257H	1A	CA_n257D	No
	DC_3A_n257A	CA_1A-3A	CA_n257H	3A	n257A	No
	DC_3A_n257D	CA_1A-3A	CA_n257H	3A	CA_n257D	No
	DC_3A_n257G	CA_1A-3A	CA_n257H	3A	CA_n257G	No
	DC_3A_n257H	CA_1A-3A	CA_n257H	3A	CA_n257H	No
DC_1A-3A_n257I	DC_1A_n257A	CA_1A-3A	CA_n257I	1A	n257A	No
	DC_1A_n257D	CA_1A-3A	CA_n257I	1A	CA_n257D	No
	DC_3A_n257A	CA_1A-3A	CA_n257I	3A	n257A	No
	DC_3A_n257D	CA_1A-3A	CA_n257I	3A	CA_n257D	No
	DC_3A_n257G	CA_1A-3A	CA_n257I	3A	CA_n257G	No
	DC_3A_n257H	CA_1A-3A	CA_n257I	3A	CA_n257H	No
	DC_3A_n257I	CA_1A-3A	CA_n257I	3A	CA_n257I	No
DC_1A-19A_n257A	DC_1A_n257A	CA_1A-19A	n257A	1A	n257A	No
	DC_19A_n257A	CA_1A-19A	n257A	19A	n257A	No
DC_1A-19A_n257G	DC_1A_n257A	CA_1A-19A	CA_n257G	1A	n257A	No
	DC_1A_n257D	CA_1A-19A	CA_n257G	1A	CA_n257D	No
	DC_1A_n257G	CA_1A-19A	CA_n257G	1A	CA_n257G	No
	DC_19A_n257A	CA_1A-19A	CA_n257G	19A	n257A	No
	DC_19A_n257D	CA_1A-19A	CA_n257G	19A	CA_n257D	No
DC_1A-19A_n257H	DC_1A_n257A	CA_1A-19A	CA_n257H	1A	n257A	No
	DC_1A_n257D	CA_1A-19A	CA_n257H	1A	CA_n257D	No
	DC_1A_n257G	CA_1A-19A	CA_n257H	1A	CA_n257G	No
	DC_1A_n257H	CA_1A-19A	CA_n257H	1A	CA_n257H	No
	DC_19A_n257A	CA_1A-19A	CA_n257H	19A	n257A	No
	DC_19A_n257D	CA_1A-19A	CA_n257H	19A	CA_n257D	No
DC_1A-19A_n257I	DC_1A_n257A	CA_1A-19A	CA_n257I	1A	n257A	No
	DC_1A_n257D	CA_1A-19A	CA_n257I	1A	CA_n257D	No
	DC_1A_n257G	CA_1A-19A	CA_n257I	1A	CA_n257G	No

EN-DC configuration	Uplink EN-DC Configuration	E-UTRA downlink configuration	NR downlink configuration	E-UTRA uplink configuration	NR uplink configuration	Applicable for protocol testing (Note 1)
	DC_1A_n257H	CA_1A-19A	CA_n257I	1A	CA_n257H	No
	DC_1A_n257I	CA_1A-19A	CA_n257I	1A	CA_n257I	No
	DC_19A_n257A	CA_1A-19A	CA_n257I	19A	n257A	No
	DC_19A_n257D	CA_1A-19A	CA_n257I	19A	CA_n257D	No
DC_1A-21A_n257A	DC_1A_n257A	CA_1A-21A	n257A	1A	n257A	No
	DC_21A_n257A	CA_1A-21A	n257A	21A	n257A	No
DC_1A-21A_n257G	DC_1A_n257A	CA_1A-21A	CA_n257G	1A	n257A	No
	DC_1A_n257G	CA_1A-21A	CA_n257G	1A	CA_n257G	No
	DC_21A_n257A	CA_1A-21A	CA_n257G	21A	n257A	No
	DC_21A_n257G	CA_1A-21A	CA_n257G	21A	CA_n257G	No
DC_1A-21A_n257H	DC_1A_n257A	CA_1A-21A	CA_n257H	1A	n257A	No
	DC_1A_n257G	CA_1A-21A	CA_n257H	1A	CA_n257G	No
	DC_1A_n257H	CA_1A-21A	CA_n257H	1A	CA_n257H	No
	DC_21A_n257A	CA_1A-21A	CA_n257H	21A	n257A	No
	DC_21A_n257G	CA_1A-21A	CA_n257H	21A	CA_n257G	No
	DC_21A_n257H	CA_1A-21A	CA_n257H	21A	CA_n257H	No
DC_1A-21A_n257I	DC_1A_n257A	CA_1A-21A	CA_n257I	1A	n257A	No
	DC_1A_n257G	CA_1A-21A	CA_n257I	1A	CA_n257G	No
	DC_1A_n257H	CA_1A-21A	CA_n257I	1A	CA_n257H	No
	DC_1A_n257I	CA_1A-21A	CA_n257I	1A	CA_n257I	No
	DC_21A_n257A	CA_1A-21A	CA_n257I	21A	n257A	No
	DC_21A_n257G	CA_1A-21A	CA_n257I	21A	CA_n257G	No
	DC_21A_n257H	CA_1A-21A	CA_n257I	21A	CA_n257H	No
	DC_21A_n257I	CA_1A-21A	CA_n257I	21A	CA_n257I	No
DC_1A-42A_n257A	DC_1A_n257A	CA_1A-42A	n257A	1A	n257A	No
	DC_42A_n257A	CA_1A-42A	n257A	42A	n257A	No
DC_1A-42A_n257G	DC_1A_n257A	CA_1A-42A	CA_n257G	1A	n257A	No
	DC_1A_n257D	CA_1A-42A	CA_n257G	1A	CA_n257D	No
	DC_1A_n257A	CA_1A-42A	CA_n257G	1A	n257A	No
	DC_1A_n257G	CA_1A-42A	CA_n257G	1A	CA_n257G	No
	DC_42A_n257A	CA_1A-42A	CA_n257G	42A	n257A	No
	DC_42A_n257D	CA_1A-42A	CA_n257G	42A	CA_n257D	No
DC_1A-42A_n257H	DC_1A_n257A	CA_1A-42A	CA_n257H	1A	n257A	No
	DC_1A_n257D	CA_1A-42A	CA_n257H	1A	CA_n257D	No
	DC_1A_n257A	CA_1A-42A	CA_n257H	1A	n257A	No
	DC_1A_n257G	CA_1A-42A	CA_n257H	1A	CA_n257G	No
	DC_1A_n257H	CA_1A-42A	CA_n257H	1A	CA_n257H	No
	DC_42A_n257A	CA_1A-42A	CA_n257H	42A	n257A	No
	DC_42A_n257D	CA_1A-42A	CA_n257H	42A	CA_n257D	No
	DC_42A_n257H	CA_1A-42A	CA_n257H	42A	CA_n257H	No
DC_1A-42A_n257I	DC_1A_n257A	CA_1A-42A	CA_n257I	1A	n257A	No

EN-DC configuration	Uplink EN-DC Configuration	E-UTRA downlink configuration	NR downlink configuration	E-UTRA uplink configuration	NR uplink configuration	Applicable for protocol testing (Note 1)
	DC_1A_n257D	CA_1A-42A	CA_n257I	1A	CA_n257D	No
	DC_1A_n257A	CA_1A-42A	CA_n257I	1A	n257A	No
	DC_1A_n257G	CA_1A-42A	CA_n257I	1A	CA_n257G	No
	DC_1A_n257H	CA_1A-42A	CA_n257I	1A	CA_n257H	No
	DC_1A_n257I	CA_1A-42A	CA_n257I	1A	CA_n257I	No
	DC_42A_n257A	CA_1A-42A	CA_n257I	42A	n257A	No
	DC_42A_n257D	CA_1A-42A	CA_n257I	42A	CA_n257D	No
DC_1A-42C_n257A	DC_1A_n257A	CA_1A-42C	n257A	1A	n257A	No
	DC_42A_n257A	CA_1A-42C	n257A	42A	n257A	No
DC_1A-42D_n257A	DC_1A_n257A	CA_1A-42D	n257A	1A	n257A	No
	DC_42A_n257A	CA_1A-42D	n257A	42A	n257A	No
DC_1A-42E_n257A	DC_1A_n257A	CA_1A-42E	n257A	1A	n257A	No
	DC_42A_n257A	CA_1A-42E	n257A	42A	n257A	No
DC_1A-42E_n257G	DC_1A_n257A	CA_1A-42E	CA_n257G	1A	n257A	No
	DC_1A_n257D	CA_1A-42E	CA_n257G	1A	CA_n257D	No
	DC_1A_n257A	CA_1A-42E	CA_n257G	1A	n257A	No
	DC_1A_n257G	CA_1A-42E	CA_n257G	1A	CA_n257G	No
	DC_42A_n257A	CA_1A-42E	CA_n257G	42A	n257A	No
	DC_42A_n257D	CA_1A-42E	CA_n257G	42A	CA_n257D	No
DC_1A-42E_n257H	DC_1A_n257A	CA_1A-42E	CA_n257H	1A	n257A	No
	DC_1A_n257D	CA_1A-42E	CA_n257H	1A	CA_n257D	No
	DC_1A_n257A	CA_1A-42E	CA_n257H	1A	n257A	No
	DC_1A_n257G	CA_1A-42E	CA_n257H	1A	CA_n257G	No
	DC_1A_n257H	CA_1A-42E	CA_n257H	1A	CA_n257H	No
	DC_42A_n257A	CA_1A-42E	CA_n257H	42A	n257A	No
DC_1A-42E_n257I	DC_1A_n257A	CA_1A-42E	CA_n257I	1A	n257A	No
	DC_1A_n257D	CA_1A-42E	CA_n257I	1A	CA_n257D	No
	DC_1A_n257A	CA_1A-42E	CA_n257I	1A	n257A	No
	DC_1A_n257G	CA_1A-42E	CA_n257I	1A	CA_n257G	No
	DC_1A_n257H	CA_1A-42E	CA_n257I	1A	CA_n257H	No
	DC_1A_n257I	CA_1A-42E	CA_n257I	1A	CA_n257I	No
	DC_42A_n257A	CA_1A-42E	CA_n257I	42A	n257A	No
	DC_42A_n257D	CA_1A-42E	CA_n257I	42A	CA_n257D	No
DC_2A-5A_n257A	DC_2A_n257A	CA_2A-5A	n257A	2A	n257A	No
	DC_5A_n257A	CA_2A-5A	n257A	5A	n257A	No
DC_2A-5A_n260A	DC_2A_n260A	CA_2A-5A	n260A	2A	n260A	No
	DC_5A_n260A	CA_2A-5A	n260A	5A	n260A	No
DC_2A-12A_n260A	DC_2A_n260A	CA_2A-12A	n260A	2A	n260A	No
	DC_12A_n260A	CA_2A-12A	n260A	12A	n260A	No

EN-DC configuration	Uplink EN-DC Configuration	E-UTRA downlink configuration	NR downlink configuration	E-UTRA uplink configuration	NR uplink configuration	Applicable for protocol testing (Note 1)
DC_2A-14A_n260A	DC_2A_n260A	CA_2A-14A	n260A	2A	n260A	No
	DC_14A_n260A	CA_2A-14A	n260A	14A	n260A	No
DC_2A-14A_n260G	DC_2A_n260A	CA_2A-14A	CA_n260G	2A	n260A	No
	DC_2A_n260G	CA_2A-14A	CA_n260G	2A	CA_n260G	No
	DC_14A_n260A	CA_2A-14A	CA_n260G	14A	n260A	No
	DC_14A_n260G	CA_2A-14A	CA_n260G	14A	CA_n260G	No
DC_2A-14A_n260H	DC_2A_n260A	CA_2A-14A	CA_n260H	2A	n260A	No
	DC_2A_n260G	CA_2A-14A	CA_n260H	2A	CA_n260G	No
	DC_2A_n260H	CA_2A-14A	CA_n260H	2A	CA_n260H	No
	DC_14A_n260A	CA_2A-14A	CA_n260H	14A	n260A	No
	DC_14A_n260G	CA_2A-14A	CA_n260H	14A	CA_n260G	No
	DC_14A_n260H	CA_2A-14A	CA_n260H	14A	CA_n260H	No
DC_2A-14A_n260I	DC_2A_n260A	CA_2A-14A	CA_n260I	2A	n260A	No
	DC_2A_n260G	CA_2A-14A	CA_n260I	2A	CA_n260G	No
	DC_2A_n260H	CA_2A-14A	CA_n260I	2A	CA_n260H	No
	DC_2A_n260I	CA_2A-14A	CA_n260I	2A	CA_n260I	No
	DC_14A_n260A	CA_2A-14A	CA_n260I	14A	n260A	No
	DC_14A_n260G	CA_2A-14A	CA_n260I	14A	CA_n260G	No
	DC_14A_n260H	CA_2A-14A	CA_n260I	14A	CA_n260H	No
	DC_14A_n260I	CA_2A-14A	CA_n260I	14A	CA_n260I	No
DC_2A-2A-14A_n260A	DC_2A_n260A	CA_2A-2A-14A	n260A	2A	n260A	No
	DC_14A_n260A	CA_2A-2A-14A	n260A	14A	n260A	No
DC_2A-2A-14A_n260G	DC_2A_n260A	CA_2A-2A-14A	CA_n260G	2A	n260A	No
	DC_2A_n260G	CA_2A-2A-14A	CA_n260G	2A	CA_n260G	No
	DC_14A_n260A	CA_2A-2A-14A	CA_n260G	14A	n260A	No
	DC_14A_n260G	CA_2A-2A-14A	CA_n260G	14A	CA_n260G	No
DC_2A-2A-14A_n260H	DC_2A_n260A	CA_2A-2A-14A	CA_n260H	2A	n260A	No
	DC_2A_n260G	CA_2A-2A-14A	CA_n260H	2A	CA_n260G	No
	DC_2A_n260H	CA_2A-2A-14A	CA_n260H	2A	CA_n260H	No
	DC_14A_n260A	CA_2A-2A-14A	CA_n260H	14A	n260A	No
	DC_14A_n260G	CA_2A-2A-14A	CA_n260H	14A	CA_n260G	No
	DC_14A_n260H	CA_2A-2A-14A	CA_n260H	14A	CA_n260H	No
DC_2A-2A-14A_n260I	DC_2A_n260A	CA_2A-2A-14A	CA_n260I	2A	n260A	No
	DC_2A_n260G	CA_2A-2A-14A	CA_n260I	2A	CA_n260G	No
	DC_2A_n260H	CA_2A-2A-14A	CA_n260I	2A	CA_n260H	No
	DC_2A_n260I	CA_2A-2A-14A	CA_n260I	2A	CA_n260I	No
	DC_14A_n260A	CA_2A-2A-14A	CA_n260I	14A	n260A	No
	DC_14A_n260G	CA_2A-2A-14A	CA_n260I	14A	CA_n260G	No
	DC_14A_n260H	CA_2A-2A-14A	CA_n260I	14A	CA_n260H	No
	DC_14A_n260I	CA_2A-2A-14A	CA_n260I	14A	CA_n260I	No

EN-DC configuration	Uplink EN-DC Configuration	E-UTRA downlink configuration	NR downlink configuration	E-UTRA uplink configuration	NR uplink configuration	Applicable for protocol testing (Note 1)
DC_2A-30A_n260A	DC_2A_n260A	CA_2A-30A	n260A	2A	n260A	No
	DC_30A_n260A	CA_2A-30A	n260A	30A	n260A	No
DC_2A-66A_n257A	DC_2A_n257A	CA_2A-66A	n257A	2A	n257A	No
	DC_66A_n257A	CA_2A-66A	n257A	66A	n257A	No
DC_2A-66A_n260A	DC_2A_n260A	CA_2A-66A	n260A	2A	n260A	No
	DC_66A_n260A	CA_2A-66A	n260A	66A	n260A	No
DC_3A-19A_n257A	DC_3A_n257A	CA_3A-19A	n257A	3A	n257A	No
	DC_19A_n257A	CA_3A-19A	n257A	19A	n257A	No
DC_3A-19A_n257G	DC_3A_n257A	CA_3A-19A	CA_n257G	3A	n257A	No
	DC_3A_n257D	CA_3A-19A	CA_n257G	3A	CA_n257D	No
	DC_3A_n257G	CA_3A-19A	CA_n257G	3A	CA_n257G	No
	DC_19A_n257A	CA_3A-19A	CA_n257G	19A	n257A	No
	DC_19A_n257D	CA_3A-19A	CA_n257G	19A	CA_n257D	No
DC_3A-19A_n257H	DC_3A_n257A	CA_3A-19A	CA_n257H	3A	n257A	No
	DC_3A_n257D	CA_3A-19A	CA_n257H	3A	CA_n257D	No
	DC_3A_n257G	CA_3A-19A	CA_n257H	3A	CA_n257G	No
	DC_3A_n257H	CA_3A-19A	CA_n257H	3A	CA_n257H	No
	DC_19A_n257A	CA_3A-19A	CA_n257H	19A	n257A	No
	DC_19A_n257D	CA_3A-19A	CA_n257H	19A	CA_n257D	No
DC_3A-19A_n257I	DC_3A_n257A	CA_3A-19A	CA_n257I	3A	n257A	No
	DC_3A_n257D	CA_3A-19A	CA_n257I	3A	CA_n257D	No
	DC_3A_n257G	CA_3A-19A	CA_n257I	3A	CA_n257G	No
	DC_3A_n257H	CA_3A-19A	CA_n257I	3A	CA_n257H	No
	DC_3A_n257I	CA_3A-19A	CA_n257I	3A	CA_n257I	No
	DC_19A_n257A	CA_3A-19A	CA_n257I	19A	n257A	No
	DC_19A_n257D	CA_3A-19A	CA_n257I	19A	CA_n257D	No
DC_3A-21A_n257A	DC_3A_n257A	CA_3A-21A	n257A	3A	n257A	No
	DC_21A_n257A	CA_3A-21A	n257A	21A	n257A	No
DC_3A-21A_n257G	DC_3A_n257A	CA_3A-21A	CA_n257G	3A	n257A	No
	DC_3A_n257D	CA_3A-21A	CA_n257G	3A	CA_n257D	No
	DC_3A_n257G	CA_3A-21A	CA_n257G	3A	CA_n257G	No
	DC_21A_n257A	CA_3A-21A	CA_n257G	21A	n257A	No
	DC_21A_n257D	CA_3A-21A	CA_n257G	21A	CA_n257D	No
DC_3A-21A_n257H	DC_3A_n257A	CA_3A-21A	CA_n257H	3A	n257A	No
	DC_3A_n257D	CA_3A-21A	CA_n257H	3A	CA_n257D	No
	DC_3A_n257G	CA_3A-21A	CA_n257H	3A	CA_n257G	No
	DC_3A_n257H	CA_3A-21A	CA_n257H	3A	CA_n257H	No
	DC_21A_n257A	CA_3A-21A	CA_n257H	21A	n257A	No
	DC_21A_n257D	CA_3A-21A	CA_n257H	21A	CA_n257D	No
DC_3A-21A_n257I	DC_3A_n257A	CA_3A-21A	CA_n257I	3A	n257A	No



EN-DC configuration	Uplink EN-DC Configuration	E-UTRA downlink configuration	NR downlink configuration	E-UTRA uplink configuration	NR uplink configuration	Applicable for protocol testing (Note 1)
	DC_3A_n257D	CA_3A-21A	CA_n257I	3A	CA_n257D	No
	DC_3A_n257G	CA_3A-21A	CA_n257I	3A	CA_n257G	No
	DC_3A_n257H	CA_3A-21A	CA_n257I	3A	CA_n257H	No
	DC_3A_n257I	CA_3A-21A	CA_n257I	3A	CA_n257I	No
	DC_21A_n257A	CA_3A-21A	CA_n257I	21A	n257A	No
	DC_21A_n257D	CA_3A-21A	CA_n257I	21A	CA_n257D	No
DC_3A-42A_n257A	DC_3A_n257A	CA_3A-42A	n257A	3A	n257A	No
	DC_42A_n257A	CA_3A-42A	n257A	42A	n257A	No
DC_3A-42A_n257G	DC_3A_n257A	CA_3A-42A	CA_n257G	3A	n257A	No
	DC_3A_n257D	CA_3A-42A	CA_n257G	3A	CA_n257D	No
	DC_3A_n257G	CA_3A-42A	CA_n257G	3A	CA_n257G	No
	DC_42A_n257A	CA_3A-42A	CA_n257G	42A	n257A	No
	DC_42A_n257D	CA_3A-42A	CA_n257G	42A	CA_n257D	No
DC_3A-42A_n257H	DC_3A_n257A	CA_3A-42A	CA_n257H	3A	n257A	No
	DC_3A_n257D	CA_3A-42A	CA_n257H	3A	CA_n257D	No
	DC_3A_n257G	CA_3A-42A	CA_n257H	3A	CA_n257G	No
	DC_3A_n257H	CA_3A-42A	CA_n257H	3A	CA_n257H	No
	DC_42A_n257A	CA_3A-42A	CA_n257H	42A	n257A	No
	DC_42A_n257D	CA_3A-42A	CA_n257H	42A	CA_n257D	No
DC_3A-42A_n257I	DC_3A_n257A	CA_3A-42A	CA_n257I	3A	n257A	No
	DC_3A_n257D	CA_3A-42A	CA_n257I	3A	CA_n257D	No
	DC_3A_n257G	CA_3A-42A	CA_n257I	3A	CA_n257G	No
	DC_3A_n257H	CA_3A-42A	CA_n257I	3A	CA_n257H	No
	DC_3A_n257I	CA_3A-42A	CA_n257I	3A	CA_n257I	No
	DC_42A_n257A	CA_3A-42A	CA_n257I	42A	n257A	No
	DC_42A_n257D	CA_3A-42A	CA_n257I	42A	CA_n257D	No
DC_3A-42C_n257A	DC_3A_n257A	CA_3A-42C	n257A	3A	n257A	No
	DC_42A_n257A	CA_3A-42C	n257A	42A	n257A	No
DC_3A-42C_n257G	DC_3A_n257A	CA_3A-42C	CA_n257G	3A	n257A	No
	DC_3A_n257D	CA_3A-42C	CA_n257G	3A	CA_n257D	No
	DC_3A_n257G	CA_3A-42C	CA_n257G	3A	CA_n257G	No
	DC_42A_n257A	CA_3A-42C	CA_n257G	42A	n257A	No
	DC_42A_n257D	CA_3A-42C	CA_n257G	42A	CA_n257D	No
DC_3A-42C_n257H	DC_3A_n257A	CA_3A-42C	CA_n257H	3A	n257A	No
	DC_3A_n257D	CA_3A-42C	CA_n257H	3A	CA_n257D	No
	DC_3A_n257G	CA_3A-42C	CA_n257H	3A	CA_n257G	No
	DC_3A_n257H	CA_3A-42C	CA_n257H	3A	CA_n257H	No
	DC_42A_n257A	CA_3A-42C	CA_n257H	42A	n257A	No
	DC_42A_n257D	CA_3A-42C	CA_n257H	42A	CA_n257D	No
DC_3A-42C_n257I	DC_3A_n257A	CA_3A-42C	CA_n257I	3A	n257A	No

EN-DC configuration	Uplink EN-DC Configuration	E-UTRA downlink configuration	NR downlink configuration	E-UTRA uplink configuration	NR uplink configuration	Applicable for protocol testing (Note 1)
	DC_3A_n257D	CA_3A-42C	CA_n257I	3A	CA_n257D	No
	DC_3A_n257G	CA_3A-42C	CA_n257I	3A	CA_n257G	No
	DC_3A_n257H	CA_3A-42C	CA_n257I	3A	CA_n257H	No
	DC_3A_n257I	CA_3A-42C	CA_n257I	3A	CA_n257I	No
	DC_42A_n257A	CA_3A-42C	CA_n257I	42A	n257A	No
	DC_42A_n257D	CA_3A-42C	CA_n257I	42A	CA_n257D	No
DC_3A-42D_n257G	DC_3A_n257A	CA_3A-42D	CA_n257G	3A	n257A	No
	DC_3A_n257D	CA_3A-42D	CA_n257G	3A	CA_n257D	No
	DC_3A_n257G	CA_3A-42D	CA_n257G	3A	CA_n257G	No
	DC_42A_n257A	CA_3A-42D	CA_n257G	42A	n257A	No
	DC_42A_n257D	CA_3A-42D	CA_n257G	42A	CA_n257D	No
DC_3A-42D_n257H	DC_3A_n257A	CA_3A-42D	CA_n257H	3A	n257A	No
	DC_3A_n257D	CA_3A-42D	CA_n257H	3A	CA_n257D	No
	DC_3A_n257G	CA_3A-42D	CA_n257H	3A	CA_n257G	No
	DC_3A_n257H	CA_3A-42D	CA_n257H	3A	CA_n257H	No
	DC_42A_n257A	CA_3A-42D	CA_n257H	42A	n257A	No
	DC_42A_n257D	CA_3A-42D	CA_n257H	42A	CA_n257D	No
DC_3A-42D_n257I	DC_3A_n257A	CA_3A-42D	CA_n257I	3A	n257A	No
	DC_3A_n257D	CA_3A-42D	CA_n257I	3A	CA_n257D	No
	DC_3A_n257G	CA_3A-42D	CA_n257I	3A	CA_n257G	No
	DC_3A_n257H	CA_3A-42D	CA_n257I	3A	CA_n257H	No
	DC_3A_n257I	CA_3A-42D	CA_n257I	3A	CA_n257I	No
	DC_42A_n257A	CA_3A-42D	CA_n257I	42A	n257A	No
DC_3A-42E_n257G	DC_42A_n257D	CA_3A-42D	CA_n257I	42A	CA_n257D	No
	DC_3A_n257A	CA_3A-42E	CA_n257G	3A	n257A	No
	DC_3A_n257D	CA_3A-42E	CA_n257G	3A	CA_n257D	No
	DC_3A_n257G	CA_3A-42E	CA_n257G	3A	CA_n257G	No
	DC_42A_n257A	CA_3A-42E	CA_n257G	42A	n257A	No
DC_3A-42E_n257H	DC_42A_n257D	CA_3A-42E	CA_n257G	42A	CA_n257D	No
	DC_3A_n257A	CA_3A-42E	CA_n257H	3A	n257A	No
	DC_3A_n257D	CA_3A-42E	CA_n257H	3A	CA_n257D	No
	DC_3A_n257G	CA_3A-42E	CA_n257H	3A	CA_n257G	No
	DC_3A_n257H	CA_3A-42E	CA_n257H	3A	CA_n257H	No
	DC_42A_n257A	CA_3A-42E	CA_n257H	42A	n257A	No
DC_3A-42E_n257I	DC_42A_n257D	CA_3A-42E	CA_n257H	42A	CA_n257D	No
	DC_3A_n257A	CA_3A-42E	CA_n257I	3A	n257A	No
	DC_3A_n257D	CA_3A-42E	CA_n257I	3A	CA_n257D	No
	DC_3A_n257G	CA_3A-42E	CA_n257I	3A	CA_n257G	No
	DC_3A_n257H	CA_3A-42E	CA_n257I	3A	CA_n257H	No
	DC_3A_n257I	CA_3A-42E	CA_n257I	3A	CA_n257I	No

EN-DC configuration	Uplink EN-DC Configuration	E-UTRA downlink configuration	NR downlink configuration	E-UTRA uplink configuration	NR uplink configuration	Applicable for protocol testing (Note 1)
	DC_42A_n257A	CA_3A-42E	CA_n257I	42A	n257A	No
	DC_42A_n257D	CA_3A-42E	CA_n257I	42A	CA_n257D	No
DC_5A-7A_n257A	DC_5A_n257A	CA_5A-7A	n257A	5A	n257A	No
	DC_7A_n257A	CA_5A-7A	n257A	7A	n257A	No
DC_5A-30A_n260A	DC_5A_n260A	CA_5A-30A	n260A	5A	n260A	No
	DC_30A_n260A	CA_5A-30A	n260A	30A	n260A	No
DC_5A-66A_n257A	DC_5A_n257A	CA_5A-66A	n257A	5A	n257A	No
	DC_66A_n257A	CA_5A-66A	n257A	66A	n257A	No
DC_5A-66A_n260A	DC_5A_n260A	CA_5A-66A	n260A	5A	n260A	No
	DC_66A_n260A	CA_5A-66A	n260A	66A	n260A	No
DC_12A-30A_n260A	DC_12A_n260A	CA_12A-30A	n260A	12A	n260A	No
	DC_30A_n260A	CA_12A-30A	n260A	30A	n260A	No
DC_12A-66A_n260A	DC_12A_n260A	CA_12A-66A	n260A	12A	n260A	No
	DC_66A_n260A	CA_12A-66A	n260A	66A	n260A	No
DC_14A-30A_n260A	DC_14A_n260A	CA_14A-30A	n260A	14A	n260A	No
	DC_30A_n260A	CA_14A-30A	n260A	30A	n260A	No
DC_14A-30A_n260G	DC_14A_n260A	CA_14A-30A	CA_n260G	14A	n260A	No
	DC_14A_n260G	CA_14A-30A	CA_n260G	14A	CA_n260G	No
	DC_30A_n260A	CA_14A-30A	CA_n260G	30A	n260A	No
	DC_30A_n260G	CA_14A-30A	CA_n260G	30A	CA_n260G	No
DC_14A-30A_n260H	DC_14A_n260A	CA_14A-30A	CA_n260H	14A	n260A	No
	DC_14A_n260G	CA_14A-30A	CA_n260H	14A	CA_n260G	No
	DC_14A_n260H	CA_14A-30A	CA_n260H	14A	CA_n260H	No
	DC_30A_n260A	CA_14A-30A	CA_n260H	30A	n260A	No
	DC_30A_n260G	CA_14A-30A	CA_n260H	30A	CA_n260G	No
	DC_30A_n260H	CA_14A-30A	CA_n260H	30A	CA_n260H	No
DC_14A-30A_n260I	DC_14A_n260A	CA_14A-30A	CA_n260I	14A	n260A	No
	DC_14A_n260G	CA_14A-30A	CA_n260I	14A	CA_n260G	No
	DC_14A_n260H	CA_14A-30A	CA_n260I	14A	CA_n260H	No
	DC_14A_n260I	CA_14A-30A	CA_n260I	14A	CA_n260I	No
	DC_30A_n260A	CA_14A-30A	CA_n260I	30A	n260A	No
	DC_30A_n260G	CA_14A-30A	CA_n260I	30A	CA_n260G	No
	DC_30A_n260H	CA_14A-30A	CA_n260I	30A	CA_n260H	No
	DC_30A_n260I	CA_14A-30A	CA_n260I	30A	CA_n260I	No
DC_14A-66A_n260A	DC_14A_n260A	CA_14A-66A	n260A	14A	n260A	No
	DC_66A_n260A	CA_14A-66A	n260A	66A	n260A	No
DC_14A-66A_n260G	DC_14A_n260A	CA_14A-66A	CA_n260G	14A	n260A	No
	DC_14A_n260G	CA_14A-66A	CA_n260G	14A	CA_n260G	No
	DC_66A_n260A	CA_14A-66A	CA_n260G	66A	n260A	No
	DC_66A_n260G	CA_14A-66A	CA_n260G	66A	CA_n260G	No

EN-DC configuration	Uplink EN-DC Configuration	E-UTRA downlink configuration	NR downlink configuration	E-UTRA uplink configuration	NR uplink configuration	Applicable for protocol testing (Note 1)
DC_14A-66A_n260H	DC_14A_n260A	CA_14A-66A	CA_n260H	14A	n260A	No
	DC_14A_n260G	CA_14A-66A	CA_n260H	14A	CA_n260G	No
	DC_14A_n260H	CA_14A-66A	CA_n260H	14A	CA_n260H	No
	DC_66A_n260A	CA_14A-66A	CA_n260H	66A	n260A	No
	DC_66A_n260G	CA_14A-66A	CA_n260H	66A	CA_n260G	No
	DC_66A_n260H	CA_14A-66A	CA_n260H	66A	CA_n260H	No
DC_14A-66A_n260I	DC_14A_n260A	CA_14A-66A	CA_n260I	14A	n260A	No
	DC_14A_n260G	CA_14A-66A	CA_n260I	14A	CA_n260G	No
	DC_14A_n260H	CA_14A-66A	CA_n260I	14A	CA_n260H	No
	DC_14A_n260I	CA_14A-66A	CA_n260I	14A	CA_n260I	No
	DC_66A_n260A	CA_14A-66A	CA_n260I	66A	n260A	No
	DC_66A_n260G	CA_14A-66A	CA_n260I	66A	CA_n260G	No
	DC_66A_n260H	CA_14A-66A	CA_n260I	66A	CA_n260H	No
	DC_66A_n260I	CA_14A-66A	CA_n260I	66A	CA_n260I	No
DC_14A-66A-66A_n260A	DC_14A_n260A	CA_14A-66A-66A	n260A	14A	n260A	No
	DC_66A_n260A	CA_14A-66A-66A	n260A	66A	n260A	No
DC_14A-66A-66a_n260G	DC_14A_n260A	CA_14A-66A-66A	CA_n260G	14A	n260A	No
	DC_14A_n260G	CA_14A-66A-66A	CA_n260G	14A	CA_n260G	No
	DC_66A_n260A	CA_14A-66A-66A	CA_n260G	66A	n260A	No
	DC_66A_n260G	CA_14A-66A-66A	CA_n260G	66A	CA_n260G	No
DC_14A-66A-66a_n260H	DC_14A_n260A	CA_14A-66A-66A	CA_n260H	14A	n260A	No
	DC_14A_n260G	CA_14A-66A-66A	CA_n260H	14A	CA_n260G	No
	DC_14A_n260H	CA_14A-66A-66A	CA_n260H	14A	CA_n260H	No
	DC_66A_n260A	CA_14A-66A-66A	CA_n260H	66A	n260A	No
	DC_66A_n260G	CA_14A-66A-66A	CA_n260H	66A	CA_n260G	No
	DC_66A_n260H	CA_14A-66A-66A	CA_n260H	66A	CA_n260H	No
DC_14A-66A-66A_n260I	DC_14A_n260A	CA_14A-66A-66A	CA_n260I	14A	n260A	No
	DC_14A_n260G	CA_14A-66A-	CA_n260I	14A	CA_n260G	No

EN-DC configuration	Uplink EN-DC Configuration	E-UTRA downlink configuration	NR downlink configuration	E-UTRA uplink configuration	NR uplink configuration	Applicable for protocol testing (Note 1)
		66A				
	DC_14A_n260H	CA_14A-66A-66A	CA_n260I	14A	CA_n260H	No
	DC_14A_n260I	CA_14A-66A-66A	CA_n260I	14A	CA_n260I	No
	DC_66A_n260A	CA_14A-66A-66A	CA_n260I	66A	n260A	No
	DC_66A_n260G	CA_14A-66A-66A	CA_n260I	66A	CA_n260G	No
	DC_66A_n260H	CA_14A-66A-66A	CA_n260I	66A	CA_n260H	No
	DC_66A_n260I	CA_14A-66A-66A	CA_n260I	66A	CA_n260I	No
DC_19A-21A_n257A	DC_19A_n257A	CA_19A-21A	n257A	19A	n257A	No
	DC_21A_n257A	CA_19A-21A	n257A	21A	n257A	No
DC_19A-21A_n257G	DC_19A_n257A	CA_19A-21A	CA_n257G	19A	n257A	No
	DC_19A_n257D	CA_19A-21A	CA_n257G	19A	CA_n257D	No
	DC_21A_n257A	CA_19A-21A	CA_n257G	21A	n257A	No
	DC_21A_n257D	CA_19A-21A	CA_n257G	21A	CA_n257D	No
	DC_21A_n257G	CA_19A-21A	CA_n257G	21A	CA_n257G	No
DC_19A-21A_n257H	DC_19A_n257A	CA_19A-21A	CA_n257H	19A	n257A	No
	DC_19A_n257D	CA_19A-21A	CA_n257H	19A	CA_n257D	No
	DC_21A_n257A	CA_19A-21A	CA_n257H	21A	n257A	No
	DC_21A_n257D	CA_19A-21A	CA_n257H	21A	CA_n257D	No
	DC_21A_n257G	CA_19A-21A	CA_n257H	21A	CA_n257G	No
	DC_21A_n257H	CA_19A-21A	CA_n257H	21A	CA_n257H	No
DC_19A-21A_n257I	DC_19A_n257A	CA_19A-21A	CA_n257I	19A	n257A	No
	DC_19A_n257D	CA_19A-21A	CA_n257I	19A	CA_n257D	No
	DC_21A_n257A	CA_19A-21A	CA_n257I	21A	n257A	No
	DC_21A_n257D	CA_19A-21A	CA_n257I	21A	CA_n257D	No
	DC_21A_n257G	CA_19A-21A	CA_n257I	21A	CA_n257G	No
	DC_21A_n257H	CA_19A-21A	CA_n257I	21A	CA_n257H	No
	DC_21A_n257I	CA_19A-21A	CA_n257I	21A	CA_n257I	No
DC_19A-42A_n257A	DC_19A_n257A	CA_19A-42A	n257A	19A	n257A	No
	DC_42A_n257A	CA_19A-42A	n257A	42A	n257A	No
DC_19A-42A_n257G	DC_19A_n257A	CA_19A-42A	CA_n257G	19A	n257A	No
	DC_19A_n257D	CA_19A-42A	CA_n257G	19A	CA_n257D	No
	DC_19A_n257G	CA_19A-42A	CA_n257G	19A	CA_n257G	No
	DC_42A_n257A	CA_19A-42A	CA_n257G	42A	n257A	No
	DC_42A_n257D	CA_19A-42A	CA_n257G	42A	CA_n257D	No

EN-DC configuration	Uplink EN-DC Configuration	E-UTRA downlink configuration	NR downlink configuration	E-UTRA uplink configuration	NR uplink configuration	Applicable for protocol testing (Note 1)
DC_19A-42A_n257H	DC_42A_n257G	CA_19A-42A	CA_n257G	42A	CA_n257G	No
	DC_19A_n257A	CA_19A-42A	CA_n257H	19A	n257A	No
	DC_19A_n257D	CA_19A-42A	CA_n257H	19A	CA_n257D	No
	DC_19A_n257G	CA_19A-42A	CA_n257H	19A	CA_n257G	No
	DC_19A_n257H	CA_19A-42A	CA_n257H	19A	CA_n257H	No
	DC_42A_n257A	CA_19A-42A	CA_n257H	42A	n257A	No
	DC_42A_n257D	CA_19A-42A	CA_n257H	42A	CA_n257D	No
	DC_42A_n257G	CA_19A-42A	CA_n257H	42A	CA_n257G	No
DC_19A-42A_n257I	DC_42A_n257H	CA_19A-42A	CA_n257H	42A	CA_n257H	No
	DC_19A_n257A	CA_19A-42A	CA_n257I	19A	n257A	No
	DC_19A_n257D	CA_19A-42A	CA_n257I	19A	CA_n257D	No
	DC_19A_n257G	CA_19A-42A	CA_n257I	19A	CA_n257G	No
	DC_19A_n257H	CA_19A-42A	CA_n257I	19A	CA_n257H	No
	DC_19A_n257I	CA_19A-42A	CA_n257I	19A	CA_n257I	No
	DC_42A_n257A	CA_19A-42A	CA_n257I	42A	n257A	No
	DC_42A_n257D	CA_19A-42A	CA_n257I	42A	CA_n257D	No
	DC_42A_n257G	CA_19A-42A	CA_n257I	42A	CA_n257G	No
	DC_42A_n257H	CA_19A-42A	CA_n257I	42A	CA_n257H	No
	DC_42A_n257I	CA_19A-42A	CA_n257I	42A	CA_n257I	No
	DC_19A-42C_n257A	DC_19A_n257A	CA_19A-42C	n257A	19A	n257A
DC_42A_n257A		CA_19A-42C	n257A	42A	n257A	No
DC_19A-42C_n257G	DC_19A_n257A	CA_19A-42C	CA_n257G	19A	n257A	No
	DC_19A_n257D	CA_19A-42C	CA_n257G	19A	CA_n257D	No
	DC_19A_n257G	CA_19A-42C	CA_n257G	19A	CA_n257G	No
	DC_42A_n257A	CA_19A-42C	CA_n257G	42A	n257A	No
	DC_42A_n257D	CA_19A-42C	CA_n257G	42A	CA_n257D	No
	DC_42A_n257G	CA_19A-42C	CA_n257G	42A	CA_n257G	No
DC_19A-42C_n257H	DC_19A_n257A	CA_19A-42C	CA_n257H	19A	n257A	No
	DC_19A_n257D	CA_19A-42C	CA_n257H	19A	CA_n257D	No
	DC_19A_n257G	CA_19A-42C	CA_n257H	19A	CA_n257G	No
	DC_19A_n257H	CA_19A-42C	CA_n257H	19A	CA_n257H	No
	DC_42A_n257A	CA_19A-42C	CA_n257H	42A	n257A	No
	DC_42A_n257D	CA_19A-42C	CA_n257H	42A	CA_n257D	No
	DC_42A_n257G	CA_19A-42C	CA_n257H	42A	CA_n257G	No
	DC_42A_n257H	CA_19A-42C	CA_n257H	42A	CA_n257H	No
DC_19A-42C_n257I	DC_19A_n257A	CA_19A-42C	CA_n257I	19A	n257A	No
	DC_19A_n257D	CA_19A-42C	CA_n257I	19A	CA_n257D	No
	DC_19A_n257G	CA_19A-42C	CA_n257I	19A	CA_n257G	No
	DC_19A_n257H	CA_19A-42C	CA_n257I	19A	CA_n257H	No
	DC_19A_n257I	CA_19A-42C	CA_n257I	19A	CA_n257I	No

EN-DC configuration	Uplink EN-DC Configuration	E-UTRA downlink configuration	NR downlink configuration	E-UTRA uplink configuration	NR uplink configuration	Applicable for protocol testing (Note 1)
	DC_42A_n257A	CA_19A-42C	CA_n257I	42A	n257A	No
	DC_42A_n257D	CA_19A-42C	CA_n257I	42A	CA_n257D	No
	DC_42A_n257G	CA_19A-42C	CA_n257I	42A	CA_n257G	No
	DC_42A_n257H	CA_19A-42C	CA_n257I	42A	CA_n257H	No
	DC_42A_n257I	CA_19A-42C	CA_n257I	42A	CA_n257I	No
DC_21A-42A_n257A	DC_21A_n257A	CA_21A-42A	n257A	21A	n257A	No
	DC_42A_n257A	CA_21A-42A	n257A	42A	n257A	No
DC_21A-42A_n257G	DC_21A_n257A	CA_21A-42A	CA_n257G	21A	n257A	No
	DC_21A_n257D	CA_21A-42A	CA_n257G	21A	CA_n257D	No
	DC_42A_n257A	CA_21A-42A	CA_n257G	42A	n257A	No
	DC_42A_n257D	CA_21A-42A	CA_n257G	42A	CA_n257D	No
	DC_21A_n257G	CA_21A-42A	CA_n257G	21A	CA_n257G	No
DC_21A-42A_n257H	DC_21A_n257A	CA_21A-42A	CA_n257H	21A	n257A	No
	DC_21A_n257D	CA_21A-42A	CA_n257H	21A	CA_n257D	No
	DC_42A_n257A	CA_21A-42A	CA_n257H	42A	n257A	No
	DC_42A_n257D	CA_21A-42A	CA_n257H	42A	CA_n257D	No
	DC_21A_n257G	CA_21A-42A	CA_n257H	21A	CA_n257G	No
	DC_21A_n257H	CA_21A-42A	CA_n257H	21A	CA_n257H	No
DC_21A-42A_n257I	DC_21A_n257A	CA_21A-42A	CA_n257I	21A	n257A	No
	DC_21A_n257D	CA_21A-42A	CA_n257I	21A	CA_n257D	No
	DC_42A_n257A	CA_21A-42A	CA_n257I	42A	n257A	No
	DC_42A_n257D	CA_21A-42A	CA_n257I	42A	CA_n257D	No
	DC_21A_n257G	CA_21A-42A	CA_n257I	21A	CA_n257G	No
	DC_21A_n257H	CA_21A-42A	CA_n257I	21A	CA_n257H	No
	DC_21A_n257I	CA_21A-42A	CA_n257I	21A	CA_n257I	No
DC_21A-42C_n257A	DC_21A_n257A	CA_21A-42C	n257A	21A	n257A	No
	DC_42A_n257A	CA_21A-42C	n257A	42A	n257A	No
DC_21A-42C_n257G	DC_21A_n257A	CA_21A-42C	CA_n257G	21A	n257A	No
	DC_21A_n257D	CA_21A-42C	CA_n257G	21A	CA_n257D	No
	DC_42A_n257A	CA_21A-42C	CA_n257G	42A	n257A	No
	DC_42A_n257D	CA_21A-42C	CA_n257G	42A	CA_n257D	No
	DC_21A_n257G	CA_21A-42C	CA_n257G	21A	CA_n257G	No
DC_21A-42C_n257H	DC_21A_n257A	CA_21A-42C	CA_n257H	21A	n257A	No
	DC_21A_n257D	CA_21A-42C	CA_n257H	21A	CA_n257D	No
	DC_42A_n257A	CA_21A-42C	CA_n257H	42A	n257A	No
	DC_42A_n257D	CA_21A-42C	CA_n257H	42A	CA_n257D	No
	DC_21A_n257G	CA_21A-42C	CA_n257H	21A	CA_n257G	No
	DC_21A_n257H	CA_21A-42C	CA_n257H	21A	CA_n257H	No
DC_21A-42C_n257I	DC_21A_n257A	CA_21A-42C	CA_n257I	21A	n257A	No
	DC_21A_n257D	CA_21A-42C	CA_n257I	21A	CA_n257D	No

EN-DC configuration	Uplink EN-DC Configuration	E-UTRA downlink configuration	NR downlink configuration	E-UTRA uplink configuration	NR uplink configuration	Applicable for protocol testing (Note 1)
	DC_42A_n257A	CA_21A-42C	CA_n257I	42A	n257A	No
	DC_42A_n257D	CA_21A-42C	CA_n257I	42A	CA_n257D	No
	DC_21A_n257G	CA_21A-42C	CA_n257I	21A	CA_n257G	No
	DC_21A_n257H	CA_21A-42C	CA_n257I	21A	CA_n257H	No
	DC_21A_n257I	CA_21A-42C	CA_n257I	21A	CA_n257I	No

Note 1: Protocol testing is limited to EN-DC configurations with 1 CC E-UTRA and 1CC or 2CC NR configurations.



## 4.3.1.5.1.4

## Inter-band EN-DC configurations including FR2 (four bands)

Table 4.3.1.5.1.4-1: Inter-band EN-DC configurations including FR2 (four bands)

EN-DC Configuration	Uplink EN-DC configuration	E-UTRA downlink configuration	NR downlink configuration	E-UTRA uplink configuration	NR uplink configuration	Applicable for protocol testing (Note 1)
DC_1A-3A-19A_n257A	DC_1A_n257A	CA_1A-3A-19A	n257A	1A	n257A	No
	DC_3A_n257A	CA_1A-3A-19A	n257A	3A	n257A	No
	DC_19A_n257A	CA_1A-3A-19A	n257A	19A	n257A	No
DC_1A-3A-19A_n257G	DC_1A_n257A	CA_1A-3A-19A	CA_n257G	1A	n257A	No
	DC_3A_n257A	CA_1A-3A-19A	CA_n257G	3A	n257A	No
	DC_3A_n257A	CA_1A-3A-19A	CA_n257G	3A	n257A	No
	DC_3A_n257G	CA_1A-3A-19A	CA_n257G	3A	CA_n257G	No
	DC_19A_n257A	CA_1A-3A-19A	CA_n257G	19A	n257A	No
DC_1A-3A-19A_n257H	DC_1A_n257A	CA_1A-3A-19A	CA_n257H	1A	n257A	No
	DC_3A_n257A	CA_1A-3A-19A	CA_n257H	3A	n257A	No
	DC_3A_n257A	CA_1A-3A-19A	CA_n257H	3A	n257A	No
	DC_3A_n257G	CA_1A-3A-19A	CA_n257H	3A	CA_n257G	No
	DC_3A_n257H	CA_1A-3A-19A	CA_n257H	3A	CA_n257H	No
	DC_19A_n257A	CA_1A-3A-19A	CA_n257H	19A	n257A	No
DC_1A-3A-19A_n257I	DC_1A_n257A	CA_1A-3A-19A	CA_n257I	1A	n257A	No
	DC_3A_n257A	CA_1A-3A-19A	CA_n257I	3A	n257A	No
	DC_3A_n257A	CA_1A-3A-19A	CA_n257I	3A	n257A	No
	DC_3A_n257G	CA_1A-3A-19A	CA_n257I	3A	CA_n257G	No
	DC_3A_n257H	CA_1A-3A-19A	CA_n257I	3A	CA_n257H	No
	DC_3A_n257I	CA_1A-3A-19A	CA_n257I	3A	CA_n257I	No
	DC_19A_n257A	CA_1A-3A-19A	CA_n257I	19A	n257A	No
DC_1A-3A-21A_n257A	DC_1A_n257A	CA_1A-3A-21A	n257A	1A	n257A	No
	DC_3A_n257A	CA_1A-3A-21A	n257A	3A	n257A	No
	DC_21A_n257A	CA_1A-3A-21A	n257A	21A	n257A	No
DC_1A-3A-21A_n257G	DC_1A_n257A	CA_1A-3A-21A	CA_n257G	1A	n257A	No
	DC_3A_n257A	CA_1A-3A-21A	CA_n257G	3A	n257A	No
	DC_3A_n257G	CA_1A-3A-21A	CA_n257G	3A	CA_n257G	No
	DC_21A_n257A	CA_1A-3A-21A	CA_n257G	21A	n257A	No
DC_1A-3A-21A_n257H	DC_1A_n257A	CA_1A-3A-21A	CA_n257H	1A	n257A	No
	DC_3A_n257A	CA_1A-3A-21A	CA_n257H	3A	n257A	No
	DC_3A_n257G	CA_1A-3A-21A	CA_n257H	3A	CA_n257G	No
	DC_3A_n257H	CA_1A-3A-21A	CA_n257H	3A	CA_n257H	No
	DC_21A_n257A	CA_1A-3A-21A	CA_n257H	21A	n257A	No
DC_1A-3A-21A_n257I	DC_1A_n257A	CA_1A-3A-21A	CA_n257I	1A	n257A	No
	DC_3A_n257A	CA_1A-3A-21A	CA_n257I	3A	n257A	No
	DC_3A_n257G	CA_1A-3A-21A	CA_n257I	3A	CA_n257G	No
	DC_3A_n257H	CA_1A-3A-21A	CA_n257I	3A	CA_n257H	No
	DC_3A_n257I	CA_1A-3A-21A	CA_n257I	3A	CA_n257I	No
	DC_21A_n257A	CA_1A-3A-21A	CA_n257I	21A	n257A	No
DC_1A-3A-42A_n257A	DC_1A_n257A	CA_1A-3A-42A	n257A	1A	n257A	No
	DC_3A_n257A	CA_1A-3A-42A	n257A	3A	n257A	No
	DC_42A_n257A	CA_1A-3A-42A	n257A	42A	n257A	No
DC_1A-3A-42A_n257G	DC_1A_n257A	CA_1A-3A-42A	CA_n257G	1A	n257A	No
	DC_1A_n257G	CA_1A-3A-42A	CA_n257G	1A	CA_n257G	No
	DC_3A_n257A	CA_1A-3A-42A	CA_n257G	3A	n257A	No
	DC_3A_n257G	CA_1A-3A-42A	CA_n257G	3A	CA_n257G	No
DC_1A-3A-	DC_1A_n257A	CA_1A-3A-42A	CA_n257H	1A	n257A	No

EN-DC Configuration	Uplink EN-DC configuration	E-UTRA downlink configuration	NR downlink configuration	E-UTRA uplink configuration	NR uplink configuration	Applicable for protocol testing (Note 1)
42A_n257H						
	DC_1A_n257G	CA_1A-3A-42A	CA_n257H	1A	CA_n257G	No
	DC_1A_n257H	CA_1A-3A-42A	CA_n257H	1A	CA_n257H	No
	DC_3A_n257A	CA_1A-3A-42A	CA_n257H	3A	n257A	No
	DC_3A_n257G	CA_1A-3A-42A	CA_n257H	3A	CA_n257G	No
DC_1A-3A-42A_n257I	DC_1A_n257A	CA_1A-3A-42A	CA_n257I	1A	n257A	No
	DC_1A_n257G	CA_1A-3A-42A	CA_n257I	1A	CA_n257G	No
	DC_1A_n257H	CA_1A-3A-42A	CA_n257I	1A	CA_n257H	No
	DC_1A_n257I	CA_1A-3A-42A	CA_n257I	1A	CA_n257I	No
	DC_3A_n257A	CA_1A-3A-42A	CA_n257I	3A	n257A	No
	DC_3A_n257G	CA_1A-3A-42A	CA_n257I	3A	CA_n257G	No
	DC_3A_n257H	CA_1A-3A-42A	CA_n257I	3A	CA_n257H	No
DC_1A-3A-42C_n257A	DC_1A_n257A	CA_1A-3A-42C	n257A	1A	n257A	No
	DC_3A_n257A	CA_1A-3A-42C	n257A	3A	n257A	No
	DC_42A_n257A	CA_1A-3A-42C	n257A	42A	n257A	No
DC_1A-3A-42C_n257G	DC_1A_n257A	CA_1A-3A-42C	CA_n257G	1A	n257A	No
	DC_1A_n257G	CA_1A-3A-42C	CA_n257G	1A	CA_n257G	No
	DC_3A_n257A	CA_1A-3A-42C	CA_n257G	3A	n257A	No
	DC_3A_n257G	CA_1A-3A-42C	CA_n257G	3A	CA_n257G	No
DC_1A-3A-42C_n257H	DC_1A_n257A	CA_1A-3A-42C	CA_n257H	1A	n257A	No
	DC_1A_n257G	CA_1A-3A-42C	CA_n257H	1A	CA_n257G	No
	DC_1A_n257H	CA_1A-3A-42C	CA_n257H	1A	CA_n257H	No
	DC_3A_n257A	CA_1A-3A-42C	CA_n257H	3A	n257A	No
	DC_3A_n257G	CA_1A-3A-42C	CA_n257H	3A	CA_n257G	No
DC_1A-3A-42C_n257I	DC_1A_n257A	CA_1A-3A-42C	CA_n257I	1A	n257A	No
	DC_1A_n257G	CA_1A-3A-42C	CA_n257I	1A	CA_n257G	No
	DC_1A_n257H	CA_1A-3A-42C	CA_n257I	1A	CA_n257H	No
	DC_1A_n257I	CA_1A-3A-42C	CA_n257I	1A	CA_n257I	No
	DC_3A_n257A	CA_1A-3A-42C	CA_n257I	3A	n257A	No
	DC_3A_n257G	CA_1A-3A-42C	CA_n257I	3A	CA_n257G	No
	DC_3A_n257H	CA_1A-3A-42C	CA_n257I	3A	CA_n257H	No
DC_1A-3A-42D_n257G	DC_1A_n257A	CA_1A-3A-42D	CA_n257G	1A	n257A	No
	DC_1A_n257G	CA_1A-3A-42D	CA_n257G	1A	CA_n257G	No
	DC_3A_n257A	CA_1A-3A-42D	CA_n257G	3A	n257A	No
	DC_3A_n257G	CA_1A-3A-42D	CA_n257G	3A	CA_n257G	No
DC_1A-3A-42D_n257H	DC_1A_n257A	CA_1A-3A-42D	CA_n257H	1A	n257A	No
	DC_1A_n257G	CA_1A-3A-42D	CA_n257H	1A	CA_n257G	No
	DC_1A_n257H	CA_1A-3A-42D	CA_n257H	1A	CA_n257H	No
	DC_3A_n257A	CA_1A-3A-42D	CA_n257H	3A	n257A	No
	DC_3A_n257G	CA_1A-3A-42D	CA_n257H	3A	CA_n257G	No
	DC_3A_n257H	CA_1A-3A-42D	CA_n257H	3A	CA_n257H	No
DC_1A-3A-42D_n257I	DC_1A_n257A	CA_1A-3A-42D	CA_n257I	1A	n257A	No
	DC_1A_n257G	CA_1A-3A-42D	CA_n257I	1A	CA_n257G	No
	DC_1A_n257H	CA_1A-3A-42D	CA_n257I	1A	CA_n257H	No
	DC_1A_n257I	CA_1A-3A-42D	CA_n257I	1A	CA_n257I	No
	DC_3A_n257A	CA_1A-3A-42D	CA_n257I	3A	n257A	No
	DC_3A_n257G	CA_1A-3A-42D	CA_n257I	3A	CA_n257G	No
	DC_3A_n257H	CA_1A-3A-42D	CA_n257I	3A	CA_n257H	No
DC_1A-19A-	DC_1A_n257A	CA_1A-19A-21A	n257A	1A	n257A	No

EN-DC Configuration	Uplink EN-DC configuration	E-UTRA downlink configuration	NR downlink configuration	E-UTRA uplink configuration	NR uplink configuration	Applicable for protocol testing (Note 1)
21A_n257A						
	DC_19A_n257A	CA_1A-19A-21A	n257A	19A	n257A	No
	DC_21A_n257A	CA_1A-19A-21A	n257A	21A	n257A	No
DC_1A-19A-21A_n257G	DC_1A_n257A	CA_1A-19A-21A	CA_n257G	1A	n257A	No
	DC_1A_n257G	CA_1A-19A-21A	CA_n257G	1A	CA_n257G	No
	DC_19A_n257A	CA_1A-19A-21A	CA_n257G	19A	n257A	No
	DC_21A_n257A	CA_1A-19A-21A	CA_n257G	21A	n257A	No
	DC_21A_n257G	CA_1A-19A-21A	CA_n257G	21A	CA_n257G	No
DC_1A-19A-21A_n257H	DC_1A_n257A	CA_1A-19A-21A	CA_n257H	1A	n257A	No
	DC_1A_n257G	CA_1A-19A-21A	CA_n257H	1A	CA_n257G	No
	DC_1A_n257H	CA_1A-19A-21A	CA_n257H	1A	CA_n257H	No
	DC_19A_n257A	CA_1A-19A-21A	CA_n257H	19A	n257A	No
	DC_21A_n257A	CA_1A-19A-21A	CA_n257H	21A	n257A	No
	DC_21A_n257G	CA_1A-19A-21A	CA_n257H	21A	CA_n257G	No
	DC_21A_n257H	CA_1A-19A-21A	CA_n257H	21A	CA_n257H	No
DC_1A-19A-21A_n257I	DC_1A_n257A	CA_1A-19A-21A	CA_n257I	1A	n257A	No
	DC_1A_n257G	CA_1A-19A-21A	CA_n257I	1A	CA_n257G	No
	DC_1A_n257H	CA_1A-19A-21A	CA_n257I	1A	CA_n257H	No
	DC_1A_n257I	CA_1A-19A-21A	CA_n257I	1A	CA_n257I	No
	DC_19A_n257A	CA_1A-19A-21A	CA_n257I	19A	n257A	No
	DC_21A_n257A	CA_1A-19A-21A	CA_n257I	21A	n257A	No
	DC_21A_n257G	CA_1A-19A-21A	CA_n257I	21A	CA_n257G	No
	DC_21A_n257H	CA_1A-19A-21A	CA_n257I	21A	CA_n257H	No
DC_1A-19A-42A_n257A	DC_1A_n257A	CA_1A-19A-42A	n257A	1A	n257A	No
	DC_19A_n257A	CA_1A-19A-42A	n257A	19A	n257A	No
	DC_42A_n257A	CA_1A-19A-42A	n257A	42A	n257A	No
DC_1A-19A-42A_n257G	DC_1A_n257A	CA_1A-19A-42A	CA_n257G	1A	n257A	No
	DC_1A_n257G	CA_1A-19A-42A	CA_n257G	1A	CA_n257G	No
	DC_19A_n257A	CA_1A-19A-42A	CA_n257G	19A	n257A	No
	DC_42A_n257A	CA_1A-19A-42A	CA_n257G	42A	n257A	No
DC_1A-19A-42A_n257H	DC_1A_n257A	CA_1A-19A-42A	CA_n257H	1A	n257A	No
	DC_1A_n257G	CA_1A-19A-42A	CA_n257H	1A	CA_n257G	No
	DC_1A_n257H	CA_1A-19A-42A	CA_n257H	1A	CA_n257H	No
	DC_19A_n257A	CA_1A-19A-42A	CA_n257H	19A	n257A	No
	DC_42A_n257A	CA_1A-19A-42A	CA_n257H	42A	n257A	No
DC_1A-19A-42A_n257I	DC_1A_n257A	CA_1A-19A-42A	CA_n257I	1A	n257A	No
	DC_1A_n257G	CA_1A-19A-42A	CA_n257I	1A	CA_n257G	No
	DC_1A_n257H	CA_1A-19A-42A	CA_n257I	1A	CA_n257H	No
	DC_1A_n257I	CA_1A-19A-42A	CA_n257I	1A	CA_n257I	No
	DC_19A_n257A	CA_1A-19A-42A	CA_n257I	19A	n257A	No
	DC_42A_n257A	CA_1A-19A-42A	CA_n257I	42A	n257A	No
DC_1A-19A-42C_n257A	DC_1A_n257A	CA_1A-19A-42C	n257A	1A	n257A	No
	DC_19A_n257A	CA_1A-19A-42C	n257A	19A	n257A	No
	DC_42A_n257A	CA_1A-19A-42C	n257A	42A	n257A	No
DC_1A-19A-42C_n257G	DC_1A_n257A	CA_1A-19A-42C	CA_n257G	1A	n257A	No
	DC_1A_n257G	CA_1A-19A-42C	CA_n257G	1A	CA_n257G	No
	DC_19A_n257A	CA_1A-19A-42C	CA_n257G	19A	n257A	No
	DC_42A_n257A	CA_1A-19A-42C	CA_n257G	42A	n257A	No
DC_1A-19A-42C_n257H	DC_1A_n257A	CA_1A-19A-42C	CA_n257H	1A	n257A	No
	DC_1A_n257G	CA_1A-19A-42C	CA_n257H	1A	CA_n257G	No
	DC_1A_n257H	CA_1A-19A-42C	CA_n257H	1A	CA_n257H	No

EN-DC Configuration	Uplink EN-DC configuration	E-UTRA downlink configuration	NR downlink configuration	E-UTRA uplink configuration	NR uplink configuration	Applicable for protocol testing (Note 1)
	DC_19A_n257A	CA_1A-19A-42C	CA_n257H	19A	n257A	No
	DC_42A_n257A	CA_1A-19A-42C	CA_n257H	42A	n257A	No
DC_1A-19A-42C_n257I	DC_1A_n257A	CA_1A-19A-42C	CA_n257I	1A	n257A	No
	DC_1A_n257G	CA_1A-19A-42C	CA_n257I	1A	CA_n257G	No
	DC_1A_n257H	CA_1A-19A-42C	CA_n257I	1A	CA_n257H	No
	DC_1A_n257I	CA_1A-19A-42C	CA_n257I	1A	CA_n257I	No
	DC_19A_n257A	CA_1A-19A-42C	CA_n257I	19A	n257A	No
	DC_42A_n257A	CA_1A-19A-42C	CA_n257I	42A	n257A	No
DC_1A-21A-42A_n257A	DC_1A_n257A	CA_1A-21A-42A	n257A	1A	n257A	No
	DC_21A_n257A	CA_1A-21A-42A	n257A	21A	n257A	No
	DC_42A_n257A	CA_1A-21A-42A	n257A	42A	n257A	No
DC_1A-21A-42A_n257G	DC_1A_n257A	CA_1A-21A-42A	CA_n257G	1A	n257A	No
	DC_1A_n257G	CA_1A-21A-42A	CA_n257G	1A	CA_n257G	No
	DC_21A_n257A	CA_1A-21A-42A	CA_n257G	21A	n257A	No
	DC_21A_n257G	CA_1A-21A-42A	CA_n257G	21A	CA_n257G	No
	DC_42A_n257A	CA_1A-21A-42A	CA_n257G	42A	n257A	No
	DC_42A_n257D	CA_1A-21A-42A	CA_n257G	42A	CA_n257D	No
DC_1A-21A-42A_n257H	DC_1A_n257A	CA_1A-21A-42A	CA_n257H	1A	n257A	No
	DC_1A_n257G	CA_1A-21A-42A	CA_n257H	1A	CA_n257G	No
	DC_1A_n257H	CA_1A-21A-42A	CA_n257H	1A	CA_n257H	No
	DC_21A_n257A	CA_1A-21A-42A	CA_n257H	21A	n257A	No
	DC_21A_n257G	CA_1A-21A-42A	CA_n257H	21A	CA_n257G	No
	DC_21A_n257H	CA_1A-21A-42A	CA_n257H	21A	CA_n257H	No
	DC_42A_n257A	CA_1A-21A-42A	CA_n257H	42A	n257A	No
	DC_42A_n257D	CA_1A-21A-42A	CA_n257H	42A	CA_n257D	No
DC_1A-21A-42A_n257I	DC_1A_n257A	CA_1A-21A-42A	CA_n257I	1A	n257A	No
	DC_1A_n257G	CA_1A-21A-42A	CA_n257I	1A	CA_n257G	No
	DC_1A_n257H	CA_1A-21A-42A	CA_n257I	1A	CA_n257H	No
	DC_1A_n257I	CA_1A-21A-42A	CA_n257I	1A	CA_n257I	No
	DC_21A_n257A	CA_1A-21A-42A	CA_n257I	21A	n257A	No
	DC_21A_n257G	CA_1A-21A-42A	CA_n257I	21A	CA_n257G	No
	DC_21A_n257H	CA_1A-21A-42A	CA_n257I	21A	CA_n257H	No
	DC_21A_n257I	CA_1A-21A-42A	CA_n257I	21A	CA_n257I	No
	DC_42A_n257A	CA_1A-21A-42A	CA_n257I	42A	n257A	No
	DC_42A_n257D	CA_1A-21A-42A	CA_n257I	42A	CA_n257D	No
DC_1A-21A-42C_n257A	DC_1A_n257A	CA_1A-21A-42C	n257A	1A	n257A	No
	DC_21A_n257A	CA_1A-21A-42C	n257A	21A	n257A	No
	DC_42A_n257A	CA_1A-21A-42C	n257A	42A	n257A	No
DC_1A-21A-42C_n257G	DC_1A_n257A	CA_1A-21A-42C	CA_n257G	1A	n257A	No
	DC_1A_n257G	CA_1A-21A-42C	CA_n257G	1A	CA_n257G	No
	DC_21A_n257A	CA_1A-21A-42C	CA_n257G	21A	n257A	No
	DC_21A_n257G	CA_1A-21A-42C	CA_n257G	21A	CA_n257G	No
	DC_42A_n257A	CA_1A-21A-42C	CA_n257G	42A	n257A	No
	DC_42A_n257D	CA_1A-21A-42C	CA_n257G	42A	CA_n257D	No
DC_1A-21A-42C_n257H	DC_1A_n257A	CA_1A-21A-42C	CA_n257H	1A	n257A	No
	DC_1A_n257G	CA_1A-21A-42C	CA_n257H	1A	CA_n257G	No
	DC_1A_n257H	CA_1A-21A-42C	CA_n257H	1A	CA_n257H	No
	DC_21A_n257A	CA_1A-21A-42C	CA_n257H	21A	n257A	No
	DC_21A_n257G	CA_1A-21A-42C	CA_n257H	21A	CA_n257G	No
	DC_21A_n257H	CA_1A-21A-42C	CA_n257H	21A	CA_n257H	No
	DC_42A_n257A	CA_1A-21A-42C	CA_n257H	42A	n257A	No
	DC_42A_n257D	CA_1A-21A-42C	CA_n257H	42A	CA_n257D	No
DC_1A-21A-42C_n257I	DC_1A_n257A	CA_1A-21A-42C	CA_n257I	1A	n257A	No

EN-DC Configuration	Uplink EN-DC configuration	E-UTRA downlink configuration	NR downlink configuration	E-UTRA uplink configuration	NR uplink configuration	Applicable for protocol testing (Note 1)
	DC_1A_n257G	CA_1A-21A-42C	CA_n257I	1A	CA_n257G	No
	DC_1A_n257H	CA_1A-21A-42C	CA_n257I	1A	CA_n257H	No
	DC_1A_n257I	CA_1A-21A-42C	CA_n257I	1A	CA_n257I	No
	DC_21A_n257A	CA_1A-21A-42C	CA_n257I	21A	n257A	No
	DC_21A_n257G	CA_1A-21A-42C	CA_n257I	21A	CA_n257G	No
	DC_21A_n257H	CA_1A-21A-42C	CA_n257I	21A	CA_n257H	No
	DC_21A_n257I	CA_1A-21A-42C	CA_n257I	21A	CA_n257I	No
	DC_42A_n257A	CA_1A-21A-42C	CA_n257I	42A	n257A	No
DC_42A_n257D	CA_1A-21A-42C	CA_n257I	42A	CA_n257D	No	
DC_2A-2A-14A-66A_n260A	DC_2A_n260A	CA_2A-2A-14A-66A	n260A	2A	n260A	No
	DC_14A_n260A	CA_2A-2A-14A-66A	n260A	14A	n260A	No
	DC_66A_n260A	CA_2A-2A-14A-66A	n260A	66A	n260A	No
DC_2A-2A-14A-66A_n260G	DC_2A_n260A	CA_2A-2A-14A-66A	CA_n260G	2A	n260A	No
	DC_2A_n260G	CA_2A-2A-14A-66A	CA_n260G	2A	CA_n260G	No
	DC_14A_n260A	CA_2A-2A-14A-66A	CA_n260G	14A	n260A	No
	DC_14A_n260G	CA_2A-2A-14A-66A	CA_n260G	14A	CA_n260G	No
	DC_66A_n260A	CA_2A-2A-14A-66A	CA_n260G	66A	n260A	No
	DC_66A_n260G	CA_2A-2A-14A-66A	CA_n260G	66A	CA_n260G	No
DC_2A-2A-14A-66A_n260H	DC_2A_n260A	CA_2A-2A-14A-66A	CA_n260H	2A	n260A	No
	DC_2A_n260G	CA_2A-2A-14A-66A	CA_n260H	2A	CA_n260G	No
	DC_2A_n260H	CA_2A-2A-14A-66A	CA_n260H	2A	CA_n260H	No
	DC_14A_n260A	CA_2A-2A-14A-66A	CA_n260H	14A	n260A	No
	DC_14A_n260G	CA_2A-2A-14A-66A	CA_n260H	14A	CA_n260G	No
	DC_14A_n260H	CA_2A-2A-14A-66A	CA_n260H	14A	CA_n260H	No
	DC_66A_n260A	CA_2A-2A-14A-66A	CA_n260H	66A	n260A	No
	DC_66A_n260G	CA_2A-2A-14A-66A	CA_n260H	66A	CA_n260G	No
	DC_66A_n260H	CA_2A-2A-14A-66A	CA_n260H	66A	CA_n260H	No
DC_2A-2A-14A-66A_n260I	DC_2A_n260A	CA_2A-2A-14A-66A	CA_n260I	2A	n260A	No
	DC_2A_n260G	CA_2A-2A-14A-66A	CA_n260I	2A	CA_n260G	No
	DC_2A_n260H	CA_2A-2A-14A-66A	CA_n260I	2A	CA_n260H	No
	DC_2A_n260I	CA_2A-2A-14A-66A	CA_n260I	2A	CA_n260I	No
	DC_14A_n260A	CA_2A-2A-14A-66A	CA_n260I	14A	n260A	No
	DC_14A_n260G	CA_2A-2A-14A-66A	CA_n260I	14A	CA_n260G	No
	DC_14A_n260H	CA_2A-2A-14A-66A	CA_n260I	14A	CA_n260H	No
	DC_14A_n260I	CA_2A-2A-14A-66A	CA_n260I	14A	CA_n260I	No
	DC_66A_n260A	CA_2A-2A-14A-66A	CA_n260I	66A	n260A	No

EN-DC Configuration	Uplink EN-DC configuration	E-UTRA downlink configuration	NR downlink configuration	E-UTRA uplink configuration	NR uplink configuration	Applicable for protocol testing (Note 1)
	DC_66A_n260G	CA_2A-2A-14A-66A	CA_n260I	66A	CA_n260G	No
	DC_66A_n260H	CA_2A-2A-14A-66A	CA_n260I	66A	CA_n260H	No
	DC_66A_n260I	CA_2A-2A-14A-66A	CA_n260I	66A	CA_n260I	No
DC_2A-14A-30A_n260A	DC_2A_n260A	CA_2A-14A-30A	n260A	2A	n260A	No
	DC_14A_n260A	CA_2A-14A-30A	n260A	14A	n260A	No
	DC_30A_n260A	CA_2A-14A-30A	n260A	30A	n260A	No
DC_2A-14A-30A_n260G	DC_2A_n260A	CA_2A-14A-30A	CA_n260G	2A	n260A	No
	DC_2A_n260G	CA_2A-14A-30A	CA_n260G	2A	CA_n260G	No
	DC_14A_n260A	CA_2A-14A-30A	CA_n260G	14A	n260A	No
	DC_14A_n260G	CA_2A-14A-30A	CA_n260G	14A	CA_n260G	No
	DC_30A_n260A	CA_2A-14A-30A	CA_n260G	30A	n260A	No
	DC_30A_n260G	CA_2A-14A-30A	CA_n260G	30A	CA_n260G	No
DC_2A-14A-30A_n260H	DC_2A_n260A	CA_2A-14A-30A	CA_n260H	2A	n260A	No
	DC_2A_n260G	CA_2A-14A-30A	CA_n260H	2A	CA_n260G	No
	DC_2A_n260H	CA_2A-14A-30A	CA_n260H	2A	CA_n260H	No
	DC_14A_n260A	CA_2A-14A-30A	CA_n260H	14A	n260A	No
	DC_14A_n260G	CA_2A-14A-30A	CA_n260H	14A	CA_n260G	No
	DC_14A_n260H	CA_2A-14A-30A	CA_n260H	14A	CA_n260H	No
	DC_30A_n260A	CA_2A-14A-30A	CA_n260H	30A	n260A	No
	DC_30A_n260G	CA_2A-14A-30A	CA_n260H	30A	CA_n260G	No
	DC_30A_n260H	CA_2A-14A-30A	CA_n260H	30A	CA_n260H	No
DC_2A-14A-30A_n260I	DC_2A_n260A	CA_2A-14A-30A	CA_n260I	2A	n260A	No
	DC_2A_n260G	CA_2A-14A-30A	CA_n260I	2A	CA_n260G	No
	DC_2A_n260H	CA_2A-14A-30A	CA_n260I	2A	CA_n260H	No
	DC_2A_n260I	CA_2A-14A-30A	CA_n260I	2A	CA_n260I	No
	DC_14A_n260A	CA_2A-14A-30A	CA_n260I	14A	n260A	No
	DC_14A_n260G	CA_2A-14A-30A	CA_n260I	14A	CA_n260G	No
	DC_14A_n260H	CA_2A-14A-30A	CA_n260I	14A	CA_n260H	No
	DC_14A_n260I	CA_2A-14A-30A	CA_n260I	14A	CA_n260I	No
	DC_30A_n260A	CA_2A-14A-30A	CA_n260I	30A	n260A	No
	DC_30A_n260G	CA_2A-14A-30A	CA_n260I	30A	CA_n260G	No
DC_2A-14A-66A_n260A	DC_2A_n260A	CA_2A-14A-66A	n260A	2A	n260A	No
	DC_14A_n260A	CA_2A-14A-66A	n260A	14A	n260A	No
	DC_66A_n260A	CA_2A-14A-66A	n260A	66A	n260A	No
DC_2A-14A-66A_n260G	DC_2A_n260A	CA_2A-14A-66A	CA_n260G	2A	n260A	No
	DC_2A_n260G	CA_2A-14A-66A	CA_n260G	2A	CA_n260G	No
	DC_14A_n260A	CA_2A-14A-66A	CA_n260G	14A	n260A	No
	DC_14A_n260G	CA_2A-14A-66A	CA_n260G	14A	CA_n260G	No
	DC_66A_n260A	CA_2A-14A-66A	CA_n260G	66A	n260A	No
	DC_66A_n260G	CA_2A-14A-66A	CA_n260G	66A	CA_n260G	No
DC_2A-14A-66A_n260H	DC_2A_n260A	CA_2A-14A-66A	CA_n260H	2A	n260A	No
	DC_2A_n260G	CA_2A-14A-66A	CA_n260H	2A	CA_n260G	No
	DC_2A_n260H	CA_2A-14A-66A	CA_n260H	2A	CA_n260H	No
	DC_14A_n260A	CA_2A-14A-66A	CA_n260H	14A	n260A	No
	DC_14A_n260G	CA_2A-14A-66A	CA_n260H	14A	CA_n260G	No
	DC_14A_n260H	CA_2A-14A-66A	CA_n260H	14A	CA_n260H	No
	DC_66A_n260A	CA_2A-14A-66A	CA_n260H	66A	n260A	No
	DC_66A_n260G	CA_2A-14A-66A	CA_n260H	66A	CA_n260G	No
DC_2A-14A-	DC_2A_n260A	CA_2A-14A-66A	CA_n260I	2A	n260A	No

EN-DC Configuration	Uplink EN-DC configuration	E-UTRA downlink configuration	NR downlink configuration	E-UTRA uplink configuration	NR uplink configuration	Applicable for protocol testing (Note 1)
66A_n260I						
	DC_2A_n260G	CA_2A-14A-66A	CA_n260I	2A	CA_n260G	No
	DC_2A_n260H	CA_2A-14A-66A	CA_n260I	2A	CA_n260H	No
	DC_2A_n260I	CA_2A-14A-66A	CA_n260I	2A	CA_n260I	No
	DC_14A_n260A	CA_2A-14A-66A	CA_n260I	14A	n260A	No
	DC_14A_n260G	CA_2A-14A-66A	CA_n260I	14A	CA_n260G	No
	DC_14A_n260H	CA_2A-14A-66A	CA_n260I	14A	CA_n260H	No
	DC_14A_n260I	CA_2A-14A-66A	CA_n260I	14A	CA_n260I	No
	DC_66A_n260A	CA_2A-14A-66A	CA_n260I	66A	n260A	No
	DC_66A_n260G	CA_2A-14A-66A	CA_n260I	66A	CA_n260G	No
DC_66A_n260H	CA_2A-14A-66A	CA_n260I	66A	CA_n260H	No	
DC_66A_n260I	CA_2A-14A-66A	CA_n260I	66A	CA_n260I	No	
DC_2A-14A-66A-66A_n260A	DC_2A_n260A	CA_2A-14A-66A-66A	n260A	2A	n260A	No
	DC_14A_n260A	CA_2A-14A-66A-66A	n260A	14A	n260A	No
	DC_66A_n260A	CA_2A-14A-66A-66A	n260A	66A	n260A	No
DC_2A-14A-66A-66A_n260G	DC_2A_n260A	CA_2A-14A-66A-66A	CA_n260G	2A	n260A	No
	DC_2A_n260G	CA_2A-14A-66A-66A	CA_n260G	2A	CA_n260G	No
	DC_14A_n260A	CA_2A-14A-66A-66A	CA_n260G	14A	n260A	No
	DC_14A_n260G	CA_2A-14A-66A-66A	CA_n260G	14A	CA_n260G	No
	DC_66A_n260A	CA_2A-14A-66A-66A	CA_n260G	66A	n260A	No
	DC_66A_n260G	CA_2A-14A-66A-66A	CA_n260G	66A	CA_n260G	No
DC_2A-14A-66A-66A_n260H	DC_2A_n260A	CA_2A-14A-66A-66A	CA_n260H	2A	n260A	No
	DC_2A_n260G	CA_2A-14A-66A-66A	CA_n260H	2A	CA_n260G	No
	DC_2A_n260H	CA_2A-14A-66A-66A	CA_n260H	2A	CA_n260H	No
	DC_14A_n260A	CA_2A-14A-66A-66A	CA_n260H	14A	n260A	No
	DC_14A_n260G	CA_2A-14A-66A-66A	CA_n260H	14A	CA_n260G	No
	DC_14A_n260H	CA_2A-14A-66A-66A	CA_n260H	14A	CA_n260H	No
	DC_66A_n260A	CA_2A-14A-66A-66A	CA_n260H	66A	n260A	No
	DC_66A_n260G	CA_2A-14A-66A-66A	CA_n260H	66A	CA_n260G	No
	DC_66A_n260H	CA_2A-14A-66A-66A	CA_n260H	66A	CA_n260H	No
DC_2A-14A-66A-66A_n260I	DC_2A_n260A	CA_2A-14A-66A-66A	CA_n260I	2A	n260A	No
	DC_2A_n260G	CA_2A-14A-66A-66A	CA_n260I	2A	CA_n260G	No
	DC_2A_n260H	CA_2A-14A-66A-66A	CA_n260I	2A	CA_n260H	No
	DC_2A_n260I	CA_2A-14A-66A-66A	CA_n260I	2A	CA_n260I	No
	DC_14A_n260A	CA_2A-14A-66A-66A	CA_n260I	14A	n260A	No
	DC_14A_n260G	CA_2A-14A-66A-66A	CA_n260I	14A	CA_n260G	No
	DC_14A_n260H	CA_2A-14A-66A-66A	CA_n260I	14A	CA_n260H	No
	DC_14A_n260I	CA_2A-14A-66A-66A	CA_n260I	14A	CA_n260I	No

EN-DC Configuration	Uplink EN-DC configuration	E-UTRA downlink configuration	NR downlink configuration	E-UTRA uplink configuration	NR uplink configuration	Applicable for protocol testing (Note 1)
		66A				
	DC_66A_n260A	CA_2A-14A-66A-66A	CA_n260I	66A	n260A	No
	DC_66A_n260G	CA_2A-14A-66A-66A	CA_n260I	66A	CA_n260G	No
	DC_66A_n260H	CA_2A-14A-66A-66A	CA_n260I	66A	CA_n260H	No
	DC_66A_n260I	CA_2A-14A-66A-66A	CA_n260I	66A	CA_n260I	No
DC_3A-19A-21A_n257A	DC_3A_n257A	CA_3A-19A-21A	n257A	3A	n257A	No
	DC_19A_n257A	CA_3A-19A-21A	n257A	19A	n257A	No
	DC_21A_n257A	CA_3A-19A-21A	n257A	21A	n257A	No
DC_3A-19A-42A_n257A	DC_3A_n257A	CA_3A-19A-42A	n257A	3A	n257A	No
	DC_19A_n257A	CA_3A-19A-42A	n257A	19A	n257A	No
	DC_42A_n257A	CA_3A-19A-42A	n257A	42A	n257A	No
DC_3A-19A-42A_n257G	DC_3A_n257A	CA_3A-19A-42A	CA_n257G	3A	n257A	No
	DC_3A_n257D	CA_3A-19A-42A	CA_n257G	3A	CA_n257D	No
	DC_3A_n257G	CA_3A-19A-42A	CA_n257G	3A	CA_n257G	No
	DC_19A_n257A	CA_3A-19A-42A	CA_n257G	19A	n257A	No
	DC_19A_n257D	CA_3A-19A-42A	CA_n257G	19A	CA_n257D	No
	DC_19A_n257G	CA_3A-19A-42A	CA_n257G	19A	CA_n257G	No
	DC_42A_n257A	CA_3A-19A-42A	CA_n257G	42A	n257A	No
	DC_42A_n257D	CA_3A-19A-42A	CA_n257G	42A	CA_n257D	No
	DC_42A_n257G	CA_3A-19A-42A	CA_n257G	42A	CA_n257G	No
	DC_3A_n257A	CA_3A-19A-42A	CA_n257H	3A	n257A	No
DC_3A-19A-42A_n257H	DC_3A_n257D	CA_3A-19A-42A	CA_n257H	3A	CA_n257D	No
	DC_3A_n257G	CA_3A-19A-42A	CA_n257H	3A	CA_n257G	No
	DC_3A_n257H	CA_3A-19A-42A	CA_n257H	3A	CA_n257H	No
	DC_19A_n257A	CA_3A-19A-42A	CA_n257H	19A	n257A	No
	DC_19A_n257D	CA_3A-19A-42A	CA_n257H	19A	CA_n257D	No
	DC_19A_n257G	CA_3A-19A-42A	CA_n257H	19A	CA_n257G	No
	DC_19A_n257H	CA_3A-19A-42A	CA_n257H	19A	CA_n257H	No
	DC_42A_n257A	CA_3A-19A-42A	CA_n257H	42A	n257A	No
	DC_42A_n257D	CA_3A-19A-42A	CA_n257H	42A	CA_n257D	No
	DC_42A_n257G	CA_3A-19A-42A	CA_n257H	42A	CA_n257G	No
DC_3A-19A-42A_n257I	DC_3A_n257A	CA_3A-19A-42A	CA_n257I	3A	n257A	No
	DC_3A_n257D	CA_3A-19A-42A	CA_n257I	3A	CA_n257D	No
	DC_3A_n257G	CA_3A-19A-42A	CA_n257I	3A	CA_n257G	No
	DC_3A_n257H	CA_3A-19A-42A	CA_n257I	3A	CA_n257H	No
	DC_3A_n257I	CA_3A-19A-42A	CA_n257I	3A	CA_n257I	No
	DC_19A_n257A	CA_3A-19A-42A	CA_n257I	19A	n257A	No
	DC_19A_n257D	CA_3A-19A-42A	CA_n257I	19A	CA_n257D	No
	DC_19A_n257G	CA_3A-19A-42A	CA_n257I	19A	CA_n257G	No
	DC_19A_n257H	CA_3A-19A-42A	CA_n257I	19A	CA_n257H	No
	DC_19A_n257I	CA_3A-19A-42A	CA_n257I	19A	CA_n257I	No
	DC_42A_n257A	CA_3A-19A-42A	CA_n257I	42A	n257A	No
	DC_42A_n257D	CA_3A-19A-42A	CA_n257I	42A	CA_n257D	No
	DC_42A_n257G	CA_3A-19A-42A	CA_n257I	42A	CA_n257G	No
DC_42A_n257H	CA_3A-19A-42A	CA_n257I	42A	CA_n257H	No	
DC_3A-19A-42C_n257A	DC_3A_n257A	CA_3A-19A-42C	n257A	3A	n257A	No
	DC_19A_n257A	CA_3A-19A-42C	n257A	19A	n257A	No
	DC_42A_n257A	CA_3A-19A-42C	n257A	42A	n257A	No
DC_3A-19A-42C_n257G	DC_3A_n257A	CA_3A-19A-42C	CA_n257G	3A	n257A	No



EN-DC Configuration	Uplink EN-DC configuration	E-UTRA downlink configuration	NR downlink configuration	E-UTRA uplink configuration	NR uplink configuration	Applicable for protocol testing (Note 1)
	DC_3A_n257D	CA_3A-19A-42C	CA_n257G	3A	CA_n257D	No
	DC_3A_n257G	CA_3A-19A-42C	CA_n257G	3A	CA_n257G	No
	DC_19A_n257A	CA_3A-19A-42C	CA_n257G	19A	n257A	No
	DC_19A_n257D	CA_3A-19A-42C	CA_n257G	19A	CA_n257D	No
	DC_19A_n257G	CA_3A-19A-42C	CA_n257G	19A	CA_n257G	No
	DC_42A_n257A	CA_3A-19A-42C	CA_n257G	42A	n257A	No
	DC_42A_n257D	CA_3A-19A-42C	CA_n257G	42A	CA_n257D	No
	DC_42A_n257G	CA_3A-19A-42C	CA_n257G	42A	CA_n257G	No
DC_3A-19A-42C_n257H	DC_3A_n257A	CA_3A-19A-42C	CA_n257H	3A	n257A	No
	DC_3A_n257D	CA_3A-19A-42C	CA_n257H	3A	CA_n257D	No
	DC_3A_n257G	CA_3A-19A-42C	CA_n257H	3A	CA_n257G	No
	DC_3A_n257H	CA_3A-19A-42C	CA_n257H	3A	CA_n257H	No
	DC_19A_n257A	CA_3A-19A-42C	CA_n257H	19A	n257A	No
	DC_19A_n257D	CA_3A-19A-42C	CA_n257H	19A	CA_n257D	No
	DC_19A_n257G	CA_3A-19A-42C	CA_n257H	19A	CA_n257G	No
	DC_19A_n257H	CA_3A-19A-42C	CA_n257H	19A	CA_n257H	No
	DC_42A_n257A	CA_3A-19A-42C	CA_n257H	42A	n257A	No
	DC_42A_n257D	CA_3A-19A-42C	CA_n257H	42A	CA_n257D	No
DC_42A_n257G	CA_3A-19A-42C	CA_n257H	42A	CA_n257G	No	
DC_42A_n257H	CA_3A-19A-42C	CA_n257H	42A	CA_n257H	No	
DC_3A-19A-42C_n257I	DC_3A_n257A	CA_3A-19A-42C	CA_n257I	3A	n257A	No
	DC_3A_n257D	CA_3A-19A-42C	CA_n257I	3A	CA_n257D	No
	DC_3A_n257G	CA_3A-19A-42C	CA_n257I	3A	CA_n257G	No
	DC_3A_n257H	CA_3A-19A-42C	CA_n257I	3A	CA_n257H	No
	DC_3A_n257I	CA_3A-19A-42C	CA_n257I	3A	CA_n257I	No
	DC_19A_n257A	CA_3A-19A-42C	CA_n257I	19A	n257A	No
	DC_19A_n257D	CA_3A-19A-42C	CA_n257I	19A	CA_n257D	No
	DC_19A_n257G	CA_3A-19A-42C	CA_n257I	19A	CA_n257G	No
	DC_19A_n257H	CA_3A-19A-42C	CA_n257I	19A	CA_n257H	No
	DC_19A_n257I	CA_3A-19A-42C	CA_n257I	19A	CA_n257I	No
	DC_42A_n257A	CA_3A-19A-42C	CA_n257I	42A	n257A	No
	DC_42A_n257D	CA_3A-19A-42C	CA_n257I	42A	CA_n257D	No
	DC_42A_n257G	CA_3A-19A-42C	CA_n257I	42A	CA_n257G	No
	DC_42A_n257H	CA_3A-19A-42C	CA_n257I	42A	CA_n257H	No
DC_42A_n257I	CA_3A-19A-42C	CA_n257I	42A	CA_n257I	No	
DC_3A-21A-42A_n257A	DC_3A_n257A	CA_3A-21A-42A	n257A	3A	n257A	No
	DC_21A_n257A	CA_3A-21A-42A	n257A	21A	n257A	No
	DC_42A_n257A	CA_3A-21A-42A	n257A	42A	n257A	No
DC_3A-21A-42A_n257G	DC_3A_n257A	CA_3A-21A-42A	CA_n257G	3A	n257A	No
	DC_3A_n257D	CA_3A-21A-42A	CA_n257G	3A	CA_n257D	No
	DC_3A_n257G	CA_3A-21A-42A	CA_n257G	3A	CA_n257G	No
	DC_21A_n257A	CA_3A-21A-42A	CA_n257G	21A	n257A	No
	DC_21A_n257D	CA_3A-21A-42A	CA_n257G	21A	CA_n257D	No
	DC_21A_n257G	CA_3A-21A-42A	CA_n257G	21A	CA_n257G	No
	DC_42A_n257A	CA_3A-21A-42A	CA_n257G	42A	n257A	No
	DC_42A_n257D	CA_3A-21A-42A	CA_n257G	42A	CA_n257D	No
DC_42A_n257G	CA_3A-21A-42A	CA_n257G	42A	CA_n257G	No	
DC_3A-21A-42A_n257H	DC_3A_n257A	CA_3A-21A-42A	CA_n257H	3A	n257A	No
	DC_3A_n257D	CA_3A-21A-42A	CA_n257H	3A	CA_n257D	No
	DC_3A_n257G	CA_3A-21A-42A	CA_n257H	3A	CA_n257G	No
	DC_3A_n257H	CA_3A-21A-42A	CA_n257H	3A	CA_n257H	No
	DC_21A_n257A	CA_3A-21A-42A	CA_n257H	21A	n257A	No
	DC_21A_n257D	CA_3A-21A-42A	CA_n257H	21A	CA_n257D	No
	DC_21A_n257G	CA_3A-21A-42A	CA_n257H	21A	CA_n257G	No
	DC_21A_n257H	CA_3A-21A-42A	CA_n257H	21A	CA_n257H	No
	DC_42A_n257A	CA_3A-21A-42A	CA_n257H	42A	n257A	No
DC_42A_n257D	CA_3A-21A-42A	CA_n257H	42A	CA_n257D	No	

EN-DC Configuration	Uplink EN-DC configuration	E-UTRA downlink configuration	NR downlink configuration	E-UTRA uplink configuration	NR uplink configuration	Applicable for protocol testing (Note 1)
	DC_42A_n257G	CA_3A-21A-42A	CA_n257H	42A	CA_n257G	No
	DC_42A_n257H	CA_3A-21A-42A	CA_n257H	42A	CA_n257H	No
DC_3A-21A-42A_n257I	DC_3A_n257A	CA_3A-21A-42A	CA_n257I	3A	n257A	No
	DC_3A_n257D	CA_3A-21A-42A	CA_n257I	3A	CA_n257D	No
	DC_3A_n257G	CA_3A-21A-42A	CA_n257I	3A	CA_n257G	No
	DC_3A_n257H	CA_3A-21A-42A	CA_n257I	3A	CA_n257H	No
	DC_3A_n257I	CA_3A-21A-42A	CA_n257I	3A	CA_n257I	No
	DC_21A_n257A	CA_3A-21A-42A	CA_n257I	21A	n257A	No
	DC_21A_n257D	CA_3A-21A-42A	CA_n257I	21A	CA_n257D	No
	DC_21A_n257G	CA_3A-21A-42A	CA_n257I	21A	CA_n257G	No
	DC_21A_n257H	CA_3A-21A-42A	CA_n257I	21A	CA_n257H	No
	DC_21A_n257I	CA_3A-21A-42A	CA_n257I	21A	CA_n257I	No
	DC_42A_n257A	CA_3A-21A-42A	CA_n257I	42A	n257A	No
	DC_42A_n257D	CA_3A-21A-42A	CA_n257I	42A	CA_n257D	No
	DC_42A_n257G	CA_3A-21A-42A	CA_n257I	42A	CA_n257G	No
	DC_42A_n257H	CA_3A-21A-42A	CA_n257I	42A	CA_n257H	No
DC_3A-21A-42C_n257A	DC_3A_n257A	CA_3A-21A-42C	n257A	3A	n257A	No
	DC_21A_n257A	CA_3A-21A-42C	n257A	21A	n257A	No
	DC_42A_n257A	CA_3A-21A-42C	n257A	42A	n257A	No
DC_3A-21A-42C_n257G	DC_3A_n257A	CA_3A-21A-42C	CA_n257G	3A	n257A	No
	DC_3A_n257D	CA_3A-21A-42C	CA_n257G	3A	CA_n257D	No
	DC_3A_n257G	CA_3A-21A-42C	CA_n257G	3A	CA_n257G	No
	DC_21A_n257A	CA_3A-21A-42C	CA_n257G	21A	n257A	No
	DC_21A_n257D	CA_3A-21A-42C	CA_n257G	21A	CA_n257D	No
	DC_21A_n257G	CA_3A-21A-42C	CA_n257G	21A	CA_n257G	No
	DC_42A_n257A	CA_3A-21A-42C	CA_n257G	42A	n257A	No
	DC_42A_n257D	CA_3A-21A-42C	CA_n257G	42A	CA_n257D	No
DC_3A-21A-42C_n257H	DC_3A_n257A	CA_3A-21A-42C	CA_n257H	3A	n257A	No
	DC_3A_n257D	CA_3A-21A-42C	CA_n257H	3A	CA_n257D	No
	DC_3A_n257G	CA_3A-21A-42C	CA_n257H	3A	CA_n257G	No
	DC_3A_n257H	CA_3A-21A-42C	CA_n257H	3A	CA_n257H	No
	DC_21A_n257A	CA_3A-21A-42C	CA_n257H	21A	n257A	No
	DC_21A_n257D	CA_3A-21A-42C	CA_n257H	21A	CA_n257D	No
	DC_21A_n257G	CA_3A-21A-42C	CA_n257H	21A	CA_n257G	No
	DC_21A_n257H	CA_3A-21A-42C	CA_n257H	21A	CA_n257H	No
	DC_42A_n257A	CA_3A-21A-42C	CA_n257H	42A	n257A	No
	DC_42A_n257D	CA_3A-21A-42C	CA_n257H	42A	CA_n257D	No
DC_3A-21A-42C_n257I	DC_3A_n257A	CA_3A-21A-42C	CA_n257I	3A	n257A	No
	DC_3A_n257D	CA_3A-21A-42C	CA_n257I	3A	CA_n257D	No
	DC_3A_n257G	CA_3A-21A-42C	CA_n257I	3A	CA_n257G	No
	DC_3A_n257H	CA_3A-21A-42C	CA_n257I	3A	CA_n257H	No
	DC_3A_n257I	CA_3A-21A-42C	CA_n257I	3A	CA_n257I	No
	DC_21A_n257A	CA_3A-21A-42C	CA_n257I	21A	n257A	No
	DC_21A_n257D	CA_3A-21A-42C	CA_n257I	21A	CA_n257D	No
	DC_21A_n257G	CA_3A-21A-42C	CA_n257I	21A	CA_n257G	No
	DC_21A_n257H	CA_3A-21A-42C	CA_n257I	21A	CA_n257H	No
	DC_21A_n257I	CA_3A-21A-42C	CA_n257I	21A	CA_n257I	No
	DC_42A_n257A	CA_3A-21A-42C	CA_n257I	42A	n257A	No
	DC_42A_n257D	CA_3A-21A-42C	CA_n257I	42A	CA_n257D	No
	DC_42A_n257G	CA_3A-21A-42C	CA_n257I	42A	CA_n257G	No
	DC_42A_n257H	CA_3A-21A-42C	CA_n257I	42A	CA_n257H	No
DC_14A-30A-	DC_14A_n260A	CA_14A-30A-66A	n260A	14A	n260A	No

EN-DC Configuration	Uplink EN-DC configuration	E-UTRA downlink configuration	NR downlink configuration	E-UTRA uplink configuration	NR uplink configuration	Applicable for protocol testing (Note 1)
66A_n260A						
	DC_30A_n260A	CA_14A-30A-66A	n260A	30A	n260A	No
	DC_66A_n260A	CA_14A-30A-66A	n260A	66A	n260A	No
DC_14A-30A-66A_n260G	DC_14A_n260A	CA_14A-30A-66A	CA_n260G	14A	n260A	No
	DC_14A_n260G	CA_14A-30A-66A	CA_n260G	14A	CA_n260G	No
	DC_30A_n260A	CA_14A-30A-66A	CA_n260G	30A	n260A	No
	DC_30A_n260G	CA_14A-30A-66A	CA_n260G	30A	CA_n260G	No
	DC_66A_n260A	CA_14A-30A-66A	CA_n260G	66A	n260A	No
	DC_66A_n260G	CA_14A-30A-66A	CA_n260G	66A	CA_n260G	No
DC_14A-30A-66A_n260H	DC_14A_n260A	CA_14A-30A-66A	CA_n260H	14A	n260A	No
	DC_14A_n260G	CA_14A-30A-66A	CA_n260H	14A	CA_n260G	No
	DC_14A_n260H	CA_14A-30A-66A	CA_n260H	14A	CA_n260H	No
	DC_30A_n260A	CA_14A-30A-66A	CA_n260H	30A	n260A	No
	DC_30A_n260G	CA_14A-30A-66A	CA_n260H	30A	CA_n260G	No
	DC_30A_n260H	CA_14A-30A-66A	CA_n260H	30A	CA_n260H	No
	DC_66A_n260A	CA_14A-30A-66A	CA_n260H	66A	n260A	No
	DC_66A_n260G	CA_14A-30A-66A	CA_n260H	66A	CA_n260G	No
	DC_66A_n260H	CA_14A-30A-66A	CA_n260H	66A	CA_n260H	No
	DC_66A_n260I	CA_14A-30A-66A	CA_n260I	66A	CA_n260I	No
DC_14A-30A-66A_n260I	DC_14A_n260A	CA_14A-30A-66A	CA_n260I	14A	n260A	No
	DC_14A_n260G	CA_14A-30A-66A	CA_n260I	14A	CA_n260G	No
	DC_14A_n260H	CA_14A-30A-66A	CA_n260I	14A	CA_n260H	No
	DC_14A_n260I	CA_14A-30A-66A	CA_n260I	14A	CA_n260I	No
	DC_30A_n260A	CA_14A-30A-66A	CA_n260I	30A	n260A	No
	DC_30A_n260G	CA_14A-30A-66A	CA_n260I	30A	CA_n260G	No
	DC_30A_n260H	CA_14A-30A-66A	CA_n260I	30A	CA_n260H	No
	DC_30A_n260I	CA_14A-30A-66A	CA_n260I	30A	CA_n260I	No
	DC_66A_n260A	CA_14A-30A-66A	CA_n260I	66A	n260A	No
	DC_66A_n260G	CA_14A-30A-66A	CA_n260I	66A	CA_n260G	No
	DC_66A_n260H	CA_14A-30A-66A	CA_n260I	66A	CA_n260H	No
	DC_66A_n260I	CA_14A-30A-66A	CA_n260I	66A	CA_n260I	No
DC_14A-30A-66A-66A_n260A	DC_14A_n260A	CA_14A-30A-66A-66A	n260A	14A	n260A	No
	DC_30A_n260A	CA_14A-30A-66A-66A	n260A	30A	n260A	No
	DC_66A_n260A	CA_14A-30A-66A-66A	n260A	66A	n260A	No
DC_14A-30A-66A-66A_n260G	DC_14A_n260A	CA_14A-30A-66A-66A	CA_n260G	14A	n260A	No
	DC_14A_n260G	CA_14A-30A-66A-66A	CA_n260G	14A	CA_n260G	No
	DC_30A_n260A	CA_14A-30A-66A-66A	CA_n260G	30A	n260A	No
	DC_30A_n260G	CA_14A-30A-66A-66A	CA_n260G	30A	CA_n260G	No
	DC_66A_n260A	CA_14A-30A-66A-66A	CA_n260G	66A	n260A	No
	DC_66A_n260G	CA_14A-30A-66A-66A	CA_n260G	66A	CA_n260G	No
DC_14A-30A-66A-66A_n260H	DC_14A_n260A	CA_14A-30A-66A-66A	CA_n260H	14A	n260A	No
	DC_14A_n260G	CA_14A-30A-66A-66A	CA_n260H	14A	CA_n260G	No
	DC_14A_n260H	CA_14A-30A-66A-66A	CA_n260H	14A	CA_n260H	No
	DC_30A_n260A	CA_14A-30A-66A-66A	CA_n260H	30A	n260A	No
	DC_30A_n260G	CA_14A-30A-66A-66A	CA_n260H	30A	CA_n260G	No
	DC_30A_n260H	CA_14A-30A-66A-66A	CA_n260H	30A	CA_n260H	No

EN-DC Configuration	Uplink EN-DC configuration	E-UTRA downlink configuration	NR downlink configuration	E-UTRA uplink configuration	NR uplink configuration	Applicable for protocol testing (Note 1)	
		66A					
	DC_66A_n260A	CA_14A-30A-66A-66A	CA_n260H	66A	n260A	No	
	DC_66A_n260G	CA_14A-30A-66A-66A	CA_n260H	66A	CA_n260G	No	
	DC_66A_n260H	CA_14A-30A-66A-66A	CA_n260H	66A	CA_n260H	No	
DC_14A-30A-66A-66A_n260I	DC_14A_n260A	CA_14A-30A-66A-66A	CA_n260I	14A	n260A	No	
	DC_14A_n260G	CA_14A-30A-66A-66A	CA_n260I	14A	CA_n260G	No	
	DC_14A_n260H	CA_14A-30A-66A-66A	CA_n260I	14A	CA_n260H	No	
	DC_14A_n260I	CA_14A-30A-66A-66A	CA_n260I	14A	CA_n260I	No	
	DC_30A_n260A	CA_14A-30A-66A-66A	CA_n260I	30A	n260A	No	
	DC_30A_n260G	CA_14A-30A-66A-66A	CA_n260I	30A	CA_n260G	No	
	DC_30A_n260H	CA_14A-30A-66A-66A	CA_n260I	30A	CA_n260H	No	
	DC_30A_n260I	CA_14A-30A-66A-66A	CA_n260I	30A	CA_n260I	No	
	DC_66A_n260A	CA_14A-30A-66A-66A	CA_n260I	66A	n260A	No	
	DC_66A_n260G	CA_14A-30A-66A-66A	CA_n260I	66A	CA_n260G	No	
	DC_66A_n260H	CA_14A-30A-66A-66A	CA_n260I	66A	CA_n260H	No	
	DC_66A_n260I	CA_14A-30A-66A-66A	CA_n260I	66A	CA_n260I	No	
DC_19A-21A-42A_n257A	DC_19A_n257A	CA_19A-21A-42A	n257A	19A	n257A	No	
	DC_21A_n257A	CA_19A-21A-42A	n257A	21A	n257A	No	
	DC_42A_n257A	CA_19A-21A-42A	n257A	42A	n257A	No	
DC_19A-21A-42A_n257G	DC_19A_n257A	CA_19A-21A-42A	CA_n257G	19A	n257A	No	
	DC_19A_n257D	CA_19A-21A-42A	CA_n257G	19A	CA_n257D	No	
	DC_19A_n257G	CA_19A-21A-42A	CA_n257G	19A	CA_n257G	No	
	DC_21A_n257A	CA_19A-21A-42A	CA_n257G	21A	n257A	No	
	DC_21A_n257D	CA_19A-21A-42A	CA_n257G	21A	CA_n257D	No	
	DC_21A_n257G	CA_19A-21A-42A	CA_n257G	21A	CA_n257G	No	
	DC_42A_n257A	CA_19A-21A-42A	CA_n257G	42A	n257A	No	
	DC_42A_n257D	CA_19A-21A-42A	CA_n257G	42A	CA_n257D	No	
DC_19A-21A-42A_n257H	DC_19A_n257A	CA_19A-21A-42A	CA_n257H	19A	n257A	No	
	DC_19A_n257D	CA_19A-21A-42A	CA_n257H	19A	CA_n257D	No	
	DC_19A_n257G	CA_19A-21A-42A	CA_n257H	19A	CA_n257G	No	
	DC_19A_n257H	CA_19A-21A-42A	CA_n257H	19A	CA_n257H	No	
	DC_21A_n257A	CA_19A-21A-42A	CA_n257H	21A	n257A	No	
	DC_21A_n257D	CA_19A-21A-42A	CA_n257H	21A	CA_n257D	No	
	DC_21A_n257G	CA_19A-21A-42A	CA_n257H	21A	CA_n257G	No	
	DC_21A_n257H	CA_19A-21A-42A	CA_n257H	21A	CA_n257H	No	
	DC_42A_n257A	CA_19A-21A-42A	CA_n257H	42A	n257A	No	
	DC_42A_n257D	CA_19A-21A-42A	CA_n257H	42A	CA_n257D	No	
	DC_42A_n257G	CA_19A-21A-42A	CA_n257H	42A	CA_n257G	No	
	DC_42A_n257H	CA_19A-21A-42A	CA_n257H	42A	CA_n257H	No	
	DC_19A-21A-42A_n257I	DC_19A_n257A	CA_19A-21A-42A	CA_n257I	19A	n257A	No
		DC_19A_n257D	CA_19A-21A-42A	CA_n257I	19A	CA_n257D	No
DC_19A_n257G		CA_19A-21A-42A	CA_n257I	19A	CA_n257G	No	

EN-DC Configuration	Uplink EN-DC configuration	E-UTRA downlink configuration	NR downlink configuration	E-UTRA uplink configuration	NR uplink configuration	Applicable for protocol testing (Note 1)
	DC_19A_n257H	CA_19A-21A-42A	CA_n257I	19A	CA_n257H	No
	DC_19A_n257I	CA_19A-21A-42A	CA_n257I	19A	CA_n257I	No
	DC_21A_n257A	CA_19A-21A-42A	CA_n257I	21A	n257A	No
	DC_21A_n257D	CA_19A-21A-42A	CA_n257I	21A	CA_n257D	No
	DC_21A_n257G	CA_19A-21A-42A	CA_n257I	21A	CA_n257G	No
	DC_21A_n257H	CA_19A-21A-42A	CA_n257I	21A	CA_n257H	No
	DC_21A_n257I	CA_19A-21A-42A	CA_n257I	21A	CA_n257I	No
	DC_42A_n257A	CA_19A-21A-42A	CA_n257I	42A	n257A	No
	DC_42A_n257D	CA_19A-21A-42A	CA_n257I	42A	CA_n257D	No
	DC_42A_n257G	CA_19A-21A-42A	CA_n257I	42A	CA_n257G	No
	DC_42A_n257H	CA_19A-21A-42A	CA_n257I	42A	CA_n257H	No
	DC_42A_n257I	CA_19A-21A-42A	CA_n257I	42A	CA_n257I	No
DC_19A-21A-42C_n257A	DC_19A_n257A	CA_19A-21A-42C	n257A	19A	n257A	No
	DC_21A_n257A	CA_19A-21A-42C	n257A	21A	n257A	No
	DC_42A_n257A	CA_19A-21A-42C	n257A	42A	n257A	No
DC_19A-21A-42C_n257G	DC_19A_n257A	CA_19A-21A-42C	CA_n257G	19A	n257A	No
	DC_19A_n257D	CA_19A-21A-42C	CA_n257G	19A	CA_n257D	No
	DC_19A_n257G	CA_19A-21A-42C	CA_n257G	19A	CA_n257G	No
	DC_21A_n257A	CA_19A-21A-42C	CA_n257G	21A	n257A	No
	DC_21A_n257D	CA_19A-21A-42C	CA_n257G	21A	CA_n257D	No
	DC_21A_n257G	CA_19A-21A-42C	CA_n257G	21A	CA_n257G	No
	DC_42A_n257A	CA_19A-21A-42C	CA_n257G	42A	n257A	No
	DC_42A_n257D	CA_19A-21A-42C	CA_n257G	42A	CA_n257D	No
	DC_42A_n257G	CA_19A-21A-42C	CA_n257G	42A	CA_n257G	No
DC_19A-21A-42C_n257H	DC_19A_n257A	CA_19A-21A-42C	CA_n257H	19A	n257A	No
	DC_19A_n257D	CA_19A-21A-42C	CA_n257H	19A	CA_n257D	No
	DC_19A_n257G	CA_19A-21A-42C	CA_n257H	19A	CA_n257G	No
	DC_19A_n257H	CA_19A-21A-42C	CA_n257H	19A	CA_n257H	No
	DC_21A_n257A	CA_19A-21A-42C	CA_n257H	21A	n257A	No
	DC_21A_n257D	CA_19A-21A-42C	CA_n257H	21A	CA_n257D	No
	DC_21A_n257G	CA_19A-21A-42C	CA_n257H	21A	CA_n257G	No
	DC_21A_n257H	CA_19A-21A-42C	CA_n257H	21A	CA_n257H	No
	DC_42A_n257A	CA_19A-21A-42C	CA_n257H	42A	n257A	No
	DC_42A_n257D	CA_19A-21A-42C	CA_n257H	42A	CA_n257D	No
	DC_42A_n257G	CA_19A-21A-42C	CA_n257H	42A	CA_n257G	No
	DC_42A_n257H	CA_19A-21A-42C	CA_n257H	42A	CA_n257H	No
DC_19A-21A-42C_n257I	DC_19A_n257A	CA_19A-21A-42C	CA_n257I	19A	n257A	No
	DC_19A_n257D	CA_19A-21A-42C	CA_n257I	19A	CA_n257D	No
	DC_19A_n257G	CA_19A-21A-42C	CA_n257I	19A	CA_n257G	No
	DC_19A_n257H	CA_19A-21A-42C	CA_n257I	19A	CA_n257H	No
	DC_19A_n257I	CA_19A-21A-42C	CA_n257I	19A	CA_n257I	No
	DC_21A_n257A	CA_19A-21A-42C	CA_n257I	21A	n257A	No
	DC_21A_n257D	CA_19A-21A-42C	CA_n257I	21A	CA_n257D	No
	DC_21A_n257G	CA_19A-21A-42C	CA_n257I	21A	CA_n257G	No
	DC_21A_n257H	CA_19A-21A-42C	CA_n257I	21A	CA_n257H	No
	DC_21A_n257I	CA_19A-21A-42C	CA_n257I	21A	CA_n257I	No
	DC_42A_n257A	CA_19A-21A-42C	CA_n257I	42A	n257A	No
	DC_42A_n257D	CA_19A-21A-42C	CA_n257I	42A	CA_n257D	No
	DC_42A_n257G	CA_19A-21A-42C	CA_n257I	42A	CA_n257G	No
	DC_42A_n257H	CA_19A-21A-42C	CA_n257I	42A	CA_n257H	No
	DC_42A_n257I	CA_19A-21A-42C	CA_n257I	42A	CA_n257I	No

Note 1: Protocol testing is limited to EN-DC configurations with 1 CC E-UTRA and 1CC or 2CC NR configurations.

## 4.3.1.5.1.5 Inter-band EN-DC configurations including FR2 (five bands)

Table 4.3.1.5.1.5-1: Inter-band EN-DC configurations including FR2 (five bands)

EN-DC Configuration	Uplink EN-DC configuration	E-UTRA downlink configuration	NR downlink configuration	E-UTRA uplink configuration	NR uplink configuration	Applicable for protocol testing (Note 1)
DC_1A-3A-19A-42A_n257A	DC_1A_n257A	CA_1A-3A-19A-42A	n257A	1A	n257A	No
	DC_3A_n257A	CA_1A-3A-19A-42A	n257A	3A	n257A	No
	DC_19A_n257A	CA_1A-3A-19A-42A	n257A	19A	n257A	No
	DC_42A_n257A	CA_1A-3A-19A-42A	n257A	42A	n257A	No
DC_1A-3A-19A-42A_n257G	DC_1A_n257A	CA_1A-3A-19A-42A	CA_n257G	1A	n257A	No
	DC_3A_n257A	CA_1A-3A-19A-42A	CA_n257G	3A	n257A	No
	DC_3A_n257G	CA_1A-3A-19A-42A	CA_n257G	3A	CA_n257G	No
	DC_19A_n257A	CA_1A-3A-19A-42A	CA_n257G	19A	n257A	No
DC_1A-3A-19A-42A_n257C	DC_1A_n257A	CA_1A-3A-19A-42C	n257A	1A	n257A	No
	DC_3A_n257A	CA_1A-3A-19A-42C	n257A	3A	n257A	No
	DC_19A_n257A	CA_1A-3A-19A-42C	n257A	19A	n257A	No
	DC_42A_n257A	CA_1A-3A-19A-42C	n257A	42A	n257A	No
DC_1A-3A-19A-42C_n257G	DC_1A_n257A	CA_1A-3A-19A-42C	CA_n257G	1A	n257A	No
	DC_3A_n257A	CA_1A-3A-19A-42C	CA_n257G	3A	n257A	No
	DC_3A_n257G	CA_1A-3A-19A-42C	CA_n257G	3A	CA_n257G	No
	DC_19A_n257A	CA_1A-3A-19A-42C	CA_n257G	19A	n257A	No
DC_1A-3A-19A-42C_n257H	DC_1A_n257A	CA_1A-3A-19A-42C	CA_n257H	1A	n257A	No
	DC_3A_n257A	CA_1A-3A-19A-42C	CA_n257H	3A	n257A	No
	DC_3A_n257G	CA_1A-3A-19A-42C	CA_n257H	3A	CA_n257G	No
	DC_3A_n257H	CA_1A-3A-19A-42C	CA_n257H	3A	CA_n257H	No
DC_1A-3A-19A-42C_n257I	DC_1A_n257A	CA_1A-3A-19A-42C	CA_n257I	1A	n257A	No
	DC_3A_n257A	CA_1A-3A-19A-42C	CA_n257I	3A	n257A	No
	DC_3A_n257G	CA_1A-3A-19A-42C	CA_n257I	3A	CA_n257G	No
	DC_3A_n257H	CA_1A-3A-19A-42C	CA_n257I	3A	CA_n257H	No
DC_1A-3A-19A-42C_n257I	DC_1A_n257A	CA_1A-3A-19A-42C	CA_n257I	1A	n257A	No
	DC_3A_n257A	CA_1A-3A-19A-42C	CA_n257I	3A	n257A	No
	DC_3A_n257I	CA_1A-3A-19A-42C	CA_n257I	3A	CA_n257I	No
	DC_19A_n257A	CA_1A-3A-19A-42C	CA_n257I	19A	n257A	No

EN-DC Configuration	Uplink EN-DC configuration	E-UTRA downlink configuration	NR downlink configuration	E-UTRA uplink configuration	NR uplink configuration	Applicable for protocol testing (Note 1)
	DC_42A_n257A	CA_1A-3A-19A-42C	CA_n257I	42A	n257A	No
DC_1A-3A-21A-42A_n257A	DC_1A_n257A	CA_1A-3A-21A-42A	n257A	1A	n257A	No
	DC_3A_n257A	CA_1A-3A-21A-42A	n257A	3A	n257A	No
	DC_21A_n257A	CA_1A-3A-21A-42A	n257A	21A	n257A	No
	DC_42A_n257A	CA_1A-3A-21A-42A	n257A	42A	n257A	No
DC_1A-3A-21A-42C_n257A	DC_1A_n257A	CA_1A-3A-21A-42C	n257A	1A	n257A	No
	DC_3A_n257A	CA_1A-3A-21A-42C	n257A	3A	n257A	No
	DC_21A_n257A	CA_1A-3A-21A-42C	n257A	21A	n257A	No
	DC_42A_n257A	CA_1A-3A-21A-42C	n257A	42A	n257A	No
DC_1A-3A-21A-42C_n257G	DC_1A_n257A	CA_1A-3A-21A-42C	CA_n257G	1A	n257A	No
	DC_3A_n257A	CA_1A-3A-21A-42C	CA_n257G	3A	n257A	No
	DC_3A_n257G	CA_1A-3A-21A-42C	CA_n257G	3A	CA_n257G	No
	DC_21A_n257A	CA_1A-3A-21A-42C	CA_n257G	21A	n257A	No
	DC_42A_n257A	CA_1A-3A-21A-42C	CA_n257G	42A	n257A	No
DC_1A-3A-21A-42C_n257H	DC_1A_n257A	CA_1A-3A-21A-42C	CA_n257H	1A	n257A	No
	DC_3A_n257A	CA_1A-3A-21A-42C	CA_n257H	3A	n257A	No
	DC_3A_n257G	CA_1A-3A-21A-42C	CA_n257H	3A	CA_n257G	No
	DC_3A_n257H	CA_1A-3A-21A-42C	CA_n257H	3A	CA_n257H	No
	DC_21A_n257A	CA_1A-3A-21A-42C	CA_n257H	21A	n257A	No
	DC_42A_n257A	CA_1A-3A-21A-42C	CA_n257H	42A	n257A	No
DC_1A-3A-21A-42C_n257I	DC_1A_n257A	CA_1A-3A-21A-42C	CA_n257I	1A	n257A	No
	DC_3A_n257A	CA_1A-3A-21A-42C	CA_n257I	3A	n257A	No
	DC_3A_n257G	CA_1A-3A-21A-42C	CA_n257I	3A	CA_n257G	No
	DC_3A_n257H	CA_1A-3A-21A-42C	CA_n257I	3A	CA_n257H	No
	DC_3A_n257I	CA_1A-3A-21A-42C	CA_n257I	3A	CA_n257I	No
	DC_21A_n257A	CA_1A-3A-21A-42C	CA_n257I	21A	n257A	No
	DC_42A_n257A	CA_1A-3A-21A-42C	CA_n257I	42A	n257A	No
DC_1A-19A-21A-42A_n257A	DC_1A_n257A	CA_1A-19A-21A-42A	n257A	1A	n257A	No
	DC_19A_n257A	CA_1A-19A-21A-42A	n257A	19A	n257A	No
	DC_21A_n257A	CA_1A-19A-21A-42A	n257A	21A	n257A	No
	DC_42A_n257A	CA_1A-19A-21A-42A	n257A	42A	n257A	No
DC_1A-19A-21A-42A_n257G	DC_1A_n257A	CA_1A-19A-21A-42A	CA_n257G	1A	n257A	No
	DC_1A_n257G	CA_1A-19A-21A-42A	CA_n257G	1A	CA_n257G	No

EN-DC Configuration	Uplink EN-DC configuration	E-UTRA downlink configuration	NR downlink configuration	E-UTRA uplink configuration	NR uplink configuration	Applicable for protocol testing (Note 1)
	DC_19A_n257A	CA_1A-19A-21A-42A	CA_n257G	19A	n257A	No
	DC_21A_n257A	CA_1A-19A-21A-42A	CA_n257G	21A	n257A	No
	DC_21A_n257G	CA_1A-19A-21A-42A	CA_n257G	21A	CA_n257G	No
	DC_42A_n257A	CA_1A-19A-21A-42A	CA_n257G	42A	n257A	No
DC_1A-19A-21A-42A_n257H	DC_1A_n257A	CA_1A-19A-21A-42A	CA_n257H	1A	n257A	No
	DC_1A_n257G	CA_1A-19A-21A-42A	CA_n257H	1A	CA_n257G	No
	DC_1A_n257H	CA_1A-19A-21A-42A	CA_n257H	1A	CA_n257H	No
	DC_19A_n257A	CA_1A-19A-21A-42A	CA_n257H	19A	n257A	No
	DC_21A_n257A	CA_1A-19A-21A-42A	CA_n257H	21A	n257A	No
	DC_21A_n257G	CA_1A-19A-21A-42A	CA_n257H	21A	CA_n257G	No
	DC_21A_n257H	CA_1A-19A-21A-42A	CA_n257H	21A	CA_n257H	No
	DC_42A_n257A	CA_1A-19A-21A-42A	CA_n257H	42A	n257A	No
DC_1A-19A-21A-42A_n257I	DC_1A_n257A	CA_1A-19A-21A-42A	CA_n257I	1A	n257A	No
	DC_1A_n257G	CA_1A-19A-21A-42A	CA_n257I	1A	CA_n257G	No
	DC_1A_n257H	CA_1A-19A-21A-42A	CA_n257I	1A	CA_n257H	No
	DC_1A_n257I	CA_1A-19A-21A-42A	CA_n257I	1A	CA_n257I	No
	DC_19A_n257A	CA_1A-19A-21A-42A	CA_n257I	19A	n257A	No
	DC_21A_n257A	CA_1A-19A-21A-42A	CA_n257I	21A	n257A	No
	DC_21A_n257G	CA_1A-19A-21A-42A	CA_n257I	21A	CA_n257G	No
	DC_21A_n257H	CA_1A-19A-21A-42A	CA_n257I	21A	CA_n257H	No
	DC_21A_n257I	CA_1A-19A-21A-42A	CA_n257I	21A	CA_n257I	No
DC_1A-19A-21A-42C_n257A	DC_1A_n257A	CA_1A-19A-21A-42C	n257A	1A	n257A	No
	DC_19A_n257A	CA_1A-19A-21A-42C	n257A	19A	n257A	No
	DC_21A_n257A	CA_1A-19A-21A-42C	n257A	21A	n257A	No
	DC_42A_n257A	CA_1A-19A-21A-42C	n257A	42A	n257A	No
DC_1A-19A-21A-42A_n257G	DC_1A_n257A	CA_1A-19A-21A-42A	CA_n257G	1A	n257A	No
	DC_1A_n257G	CA_1A-19A-21A-42A	CA_n257G	1A	CA_n257G	No
	DC_19A_n257A	CA_1A-19A-21A-42A	CA_n257G	19A	n257A	No
	DC_21A_n257A	CA_1A-19A-21A-42A	CA_n257G	21A	n257A	No
	DC_21A_n257G	CA_1A-19A-21A-42A	CA_n257G	21A	CA_n257G	No
	DC_42A_n257A	CA_1A-19A-21A-42A	CA_n257G	42A	n257A	No
DC_1A-19A-21A-42A_n257H	DC_1A_n257A	CA_1A-19A-21A-42A	CA_n257H	1A	n257A	No
	DC_1A_n257G	CA_1A-19A-21A-42A	CA_n257H	1A	CA_n257G	No
	DC_1A_n257H	CA_1A-19A-21A-42A	CA_n257H	1A	CA_n257H	No



EN-DC Configuration	Uplink EN-DC configuration	E-UTRA downlink configuration	NR downlink configuration	E-UTRA uplink configuration	NR uplink configuration	Applicable for protocol testing (Note 1)
	DC_19A_n257A	CA_1A-19A-21A-42A	CA_n257H	19A	n257A	No
	DC_21A_n257A	CA_1A-19A-21A-42A	CA_n257H	21A	n257A	No
	DC_21A_n257G	CA_1A-19A-21A-42A	CA_n257H	21A	CA_n257G	No
	DC_21A_n257H	CA_1A-19A-21A-42A	CA_n257H	21A	CA_n257H	No
	DC_42A_n257A	CA_1A-19A-21A-42A	CA_n257H	42A	n257A	No
DC_1A-19A-21A-42A_n257I	DC_1A_n257A	CA_1A-19A-21A-42A	CA_n257I	1A	n257A	No
	DC_1A_n257G	CA_1A-19A-21A-42A	CA_n257I	1A	CA_n257G	No
	DC_1A_n257H	CA_1A-19A-21A-42A	CA_n257I	1A	CA_n257H	No
	DC_1A_n257I	CA_1A-19A-21A-42A	CA_n257I	1A	CA_n257I	No
	DC_19A_n257A	CA_1A-19A-21A-42A	CA_n257I	19A	n257A	No
	DC_21A_n257A	CA_1A-19A-21A-42A	CA_n257I	21A	n257A	No
	DC_21A_n257G	CA_1A-19A-21A-42A	CA_n257I	21A	CA_n257G	No
	DC_21A_n257H	CA_1A-19A-21A-42A	CA_n257I	21A	CA_n257H	No
	DC_21A_n257I	CA_1A-19A-21A-42A	CA_n257I	21A	CA_n257I	No
DC_42A_n257A	CA_1A-19A-21A-42A	CA_n257I	42A	n257A	No	
DC_1A-19A-21A-42C_n257G	DC_1A_n257A	CA_1A-19A-21A-42C	CA_n257G	1A	n257A	No
	DC_1A_n257G	CA_1A-19A-21A-42C	CA_n257G	1A	CA_n257G	No
	DC_19A_n257A	CA_1A-19A-21A-42C	CA_n257G	19A	n257A	No
	DC_21A_n257A	CA_1A-19A-21A-42C	CA_n257G	21A	n257A	No
	DC_21A_n257G	CA_1A-19A-21A-42C	CA_n257G	21A	CA_n257G	No
	DC_42A_n257A	CA_1A-19A-21A-42C	CA_n257G	42A	n257A	No
DC_1A-19A-21A-42C_n257H	DC_1A_n257A	CA_1A-19A-21A-42C	CA_n257H	1A	n257A	No
	DC_1A_n257G	CA_1A-19A-21A-42C	CA_n257H	1A	CA_n257G	No
	DC_1A_n257H	CA_1A-19A-21A-42C	CA_n257H	1A	CA_n257H	No
	DC_19A_n257A	CA_1A-19A-21A-42C	CA_n257H	19A	n257A	No
	DC_21A_n257A	CA_1A-19A-21A-42C	CA_n257H	21A	n257A	No
	DC_21A_n257G	CA_1A-19A-21A-42C	CA_n257H	21A	CA_n257G	No
	DC_21A_n257H	CA_1A-19A-21A-42C	CA_n257H	21A	CA_n257H	No
	DC_42A_n257A	CA_1A-19A-21A-42C	CA_n257H	42A	n257A	No
DC_1A-19A-21A-42C_n257I	DC_1A_n257A	CA_1A-19A-21A-42C	CA_n257I	1A	n257A	No
	DC_1A_n257G	CA_1A-19A-21A-42C	CA_n257I	1A	CA_n257G	No
	DC_1A_n257H	CA_1A-19A-21A-42C	CA_n257I	1A	CA_n257H	No
	DC_1A_n257I	CA_1A-19A-21A-42C	CA_n257I	1A	CA_n257I	No
	DC_19A_n257A	CA_1A-19A-21A-42C	CA_n257I	19A	n257A	No
	DC_21A_n257A	CA_1A-19A-21A-42C	CA_n257I	21A	n257A	No
	DC_21A_n257G	CA_1A-19A-21A-42C	CA_n257I	21A	CA_n257G	No
	DC_21A_n257H	CA_1A-19A-21A-42C	CA_n257I	21A	CA_n257H	No

EN-DC Configuration	Uplink EN-DC configuration	E-UTRA downlink configuration	NR downlink configuration	E-UTRA uplink configuration	NR uplink configuration	Applicable for protocol testing (Note 1)
	DC_21A_n257H	CA_1A-19A-21A-42C	CA_n257I	21A	CA_n257H	No
	DC_21A_n257I	CA_1A-19A-21A-42C	CA_n257I	21A	CA_n257I	No
	DC_42A_n257A	CA_1A-19A-21A-42C	CA_n257I	42A	n257A	No
DC_2A-14A-30A-66A_n260A	DC_2A_n260A	CA_2A-14A-30A-66A	n260A	2A	n260A	No
	DC_14A_n260A	CA_2A-14A-30A-66A	n260A	14A	n260A	No
	DC_30A_n260A	CA_2A-14A-30A-66A	n260A	30A	n260A	No
	DC_66A_n260A	CA_2A-14A-30A-66A	n260A	66A	n260A	No
DC_2A-14A-30A-66A_n260G	DC_2A_n260A	CA_2A-14A-30A-66A	CA_n260G	2A	n260A	No
	DC_2A_n260G	CA_2A-14A-30A-66A	CA_n260G	2A	CA_n260G	No
	DC_14A_n260A	CA_2A-14A-30A-66A	CA_n260G	14A	n260A	No
	DC_14A_n260G	CA_2A-14A-30A-66A	CA_n260G	14A	CA_n260G	No
	DC_30A_n260A	CA_2A-14A-30A-66A	CA_n260G	30A	n260A	No
	DC_30A_n260G	CA_2A-14A-30A-66A	CA_n260G	30A	CA_n260G	No
	DC_66A_n260A	CA_2A-14A-30A-66A	CA_n260G	66A	n260A	No
	DC_66A_n260G	CA_2A-14A-30A-66A	CA_n260G	66A	CA_n260G	No
DC_2A-14A-30A-66A_n260H	DC_2A_n260A	CA_2A-14A-30A-66A	CA_n260H	2A	n260A	No
	DC_2A_n260G	CA_2A-14A-30A-66A	CA_n260H	2A	CA_n260G	No
	DC_2A_n260H	CA_2A-14A-30A-66A	CA_n260H	2A	CA_n260H	No
	DC_14A_n260A	CA_2A-14A-30A-66A	CA_n260H	14A	n260A	No
	DC_14A_n260G	CA_2A-14A-30A-66A	CA_n260H	14A	CA_n260G	No
	DC_14A_n260H	CA_2A-14A-30A-66A	CA_n260H	14A	CA_n260H	No
	DC_30A_n260A	CA_2A-14A-30A-66A	CA_n260H	30A	n260A	No
	DC_30A_n260G	CA_2A-14A-30A-66A	CA_n260H	30A	CA_n260G	No
	DC_30A_n260H	CA_2A-14A-30A-66A	CA_n260H	30A	CA_n260H	No
	DC_66A_n260A	CA_2A-14A-30A-66A	CA_n260H	66A	n260A	No
DC_66A_n260G	CA_2A-14A-30A-66A	CA_n260H	66A	CA_n260G	No	
DC_66A_n260H	CA_2A-14A-30A-66A	CA_n260H	66A	CA_n260H	No	
DC_2A-14A-30A-66A_n260I	DC_2A_n260A	CA_2A-14A-30A-66A	CA_n260I	2A	n260A	No
	DC_2A_n260G	CA_2A-14A-30A-66A	CA_n260I	2A	CA_n260G	No
	DC_2A_n260H	CA_2A-14A-30A-66A	CA_n260I	2A	CA_n260H	No
	DC_2A_n260I	CA_2A-14A-30A-66A	CA_n260I	2A	CA_n260I	No
	DC_14A_n260A	CA_2A-14A-30A-66A	CA_n260I	14A	n260A	No
	DC_14A_n260G	CA_2A-14A-30A-66A	CA_n260I	14A	CA_n260G	No
	DC_14A_n260H	CA_2A-14A-30A-66A	CA_n260I	14A	CA_n260H	No
	DC_14A_n260I	CA_2A-14A-30A-66A	CA_n260I	14A	CA_n260I	No
DC_30A_n260A	CA_2A-14A-30A-66A	CA_n260I	30A	n260A	No	

EN-DC Configuration	Uplink EN-DC configuration	E-UTRA downlink configuration	NR downlink configuration	E-UTRA uplink configuration	NR uplink configuration	Applicable for protocol testing (Note 1)
	DC_30A_n260G	CA_2A-14A-30A-66A	CA_n260I	30A	CA_n260G	No
	DC_30A_n260H	CA_2A-14A-30A-66A	CA_n260I	30A	CA_n260H	No
	DC_30A_n260I	CA_2A-14A-30A-66A	CA_n260I	30A	CA_n260I	No
	DC_66A_n260A	CA_2A-14A-30A-66A	CA_n260I	66A	n260A	No
	DC_66A_n260G	CA_2A-14A-30A-66A	CA_n260I	66A	CA_n260G	No
	DC_66A_n260H	CA_2A-14A-30A-66A	CA_n260I	66A	CA_n260H	No
	DC_66A_n260I	CA_2A-14A-30A-66A	CA_n260I	66A	CA_n260I	No

Note 1: Protocol testing is limited to EN-DC configurations with 1 CC E-UTRA and 1CC or 2CC NR configurations.

#### 4.3.1.5.1.6 Inter-band EN-DC configurations including FR2 (six bands)

**Table 4.3.1.5.1.6-1: Inter-band EN-DC configurations including FR2 (six bands)**

EN-DC Configuration	Uplink EN-DC configuration	E-UTRA downlink configuration	NR downlink configuration	E-UTRA uplink configuration	NR uplink configuration	Applicable for protocol testing (Note 1)
FFS	FFS	FFS	FFS	FFS	FFS	FFS

#### 4.3.1.6 Test frequencies for EN-DC band combinations including FR1 and FR2

##### 4.3.1.6.1 Inter-band EN-DC configurations including FR1 and FR2

###### 4.3.1.6.1.1 General

For inter-band EN-DC configurations as listed in this clause, the following apply:

For the E-UTRA band and E-UTRA CA configurations, test frequencies as specified in TS 36.508 [2], clause 4.3.1 are used.

For the NR band and NR CA configurations, test frequencies as specified in clause 4.3.1 for FR1 and 4.3.2 for FR2 are used.

## 4.3.1.6.1.2

Inter-band EN-DC configurations including FR1 and FR2 (three bands)

Table 4.3.1.6.1.2-1: Inter-band EN-DC including FR1 and FR2 (three bands)

EN-DC Configuration	Uplink EN-DC configuration	E-UTRA downlink configuration	NR downlink configuration	E-UTRA uplink configuration	NR uplink configuration	Applicable for protocol testing (Note 1)
DC_1A_n78A-n257A	DC_1A_n78A	1A	CA_n78A-n257A	1A	n78A	Yes (NR 2CC)
	DC_1A_n257A	1A	CA_n78A-n257A	1A	n257A	No
	DC_1A_n78A-n257A	1A	CA_n78A-n257A	1A	CA_n78A-n257A	Yes (NR 2CC)
DC_1A_n79A-n257A	DC_1A_n79A	1A	CA_n79A-n257A	1A	n79A	Yes (NR 2CC)
	DC_1A_n257A	1A	CA_n79A-n257A	1A	n257A	No
	DC_1A_n79A-n257A	1A	CA_n79A-n257A	1A	CA_n79A-n257A	Yes (NR 2CC)
DC_3A_n78A-n257A	DC_3A_n78A	3A	CA_n78A-n257A	3A	n78A	Yes (NR 2CC)
	DC_3A_n257A	3A	CA_n78A-n257A	3A	n257A	No
	DC_3A_n78A-n257A	3A	CA_n78A-n257A	3A	CA_n78A-n257A	Yes (NR 2CC)
DC_3A_n79A-n257A	DC_3A_n79A	3A	CA_n79A-n257A	3A	n79A	Yes (NR 2CC)
	DC_3A_n257A	3A	CA_n79A-n257A	3A	n257A	No
	DC_3A_n79A-n257A	3A	CA_n79A-n257A	3A	CA_n79A-n257A	Yes (NR 2CC)
DC_19A_n78A-n257A	DC_19A_n78A	19A	CA_n78A-n257A	19A	n78A	Yes (NR 2CC)
	DC_19A_n257A	19A	CA_n78A-n257A	19A	n257A	No
	DC_19A_n78A-n257A	19A	CA_n78A-n257A	19A	CA_n78A-n257A	Yes (NR 2CC)
DC_19A_n79A-n257A	DC_19A_n79A	19A	CA_n79A-n257A	19A	n79A	Yes (NR 2CC)
	DC_19A_n257A	19A	CA_n79A-n257A	19A	n257A	No
	DC_19A_n79A-n257A	19A	CA_n79A-n257A	19A	CA_n79A-n257A	Yes (NR 2CC)

Note 1: Protocol testing is limited to EN-DC configurations with 1 CC E-UTRA and 1CC or 2CC NR configurations.

## 4.3.1.6.1.3 Inter-band EN-DC configurations including FR1 and FR2 (four bands)

Table 4.3.1.6.1.3-1: Inter-band EN-DC including FR1 and FR2 (four bands)

EN-DC Configuration	Uplink EN-DC configuration	E-UTRA downlink configuration	NR downlink configuration	E-UTRA uplink configuration	NR uplink configuration	Applicable for protocol testing (Note 1)
DC_1A-3A_n78A-n257A	DC_1A_n78A	CA_1A-3A	CA_n78A-n257A	1A	n78A	No
	DC_1A_n257A	CA_1A-3A	CA_n78A-n257A	1A	n257A	No
	DC_3A_n78A	CA_1A-3A	CA_n78A-n257A	3A	n78A	No
	DC_3A_n257A	CA_1A-3A	CA_n78A-n257A	3A	n257A	No
DC_1A-3A_n78A-n257G	DC_1A_n78A	CA_1A-3A	CA_n78A-n257G	1A	n78A	No
	DC_1A_n257A	CA_1A-3A	CA_n78A-n257G	1A	n257A	No
	DC_1A_n257D	CA_1A-3A	CA_n78A-n257G	1A	CA_n257D	No
	DC_1A_n257G	CA_1A-3A	CA_n78A-n257G	1A	CA_n257G	No
	DC_3A_n78A	CA_1A-3A	CA_n78A-n257G	3A	n78A	No
	DC_3A_n257A	CA_1A-3A	CA_n78A-n257G	3A	n257A	No
	DC_3A_n257D	CA_1A-3A	CA_n78A-n257G	3A	CA_n257D	No
	DC_3A_n257G	CA_1A-3A	CA_n78A-n257G	3A	CA_n257G	No
DC_1A-3A_n78A-n257H	DC_1A_n78A	CA_1A-3A	CA_n78A-n257H	1A	n78A	No
	DC_1A_n257A	CA_1A-3A	CA_n78A-n257H	1A	n257A	No
	DC_1A_n257D	CA_1A-3A	CA_n78A-n257H	1A	CA_n257D	No
	DC_1A_n257G	CA_1A-3A	CA_n78A-n257H	1A	CA_n257G	No
	DC_1A_n257H	CA_1A-3A	CA_n78A-n257H	1A	CA_n257H	No
	DC_3A_n78A	CA_1A-3A	CA_n78A-n257H	3A	n78A	No
	DC_3A_n257A	CA_1A-3A	CA_n78A-n257H	3A	n257A	No
	DC_3A_n257D	CA_1A-3A	CA_n78A-n257H	3A	CA_n257D	No
	DC_3A_n257G	CA_1A-3A	CA_n78A-n257H	3A	CA_n257G	No
	DC_3A_n257H	CA_1A-3A	CA_n78A-n257H	3A	CA_n257H	No
DC_1A-3A_n78A-n257I	DC_1A_n78A	CA_1A-3A	CA_n78A-n257I	1A	n78A	No
	DC_1A_n257A	CA_1A-3A	CA_n78A-n257I	1A	n257A	No
	DC_1A_n257D	CA_1A-3A	CA_n78A-n257I	1A	CA_n257D	No
	DC_1A_n257G	CA_1A-3A	CA_n78A-n257I	1A	CA_n257G	No
	DC_1A_n257H	CA_1A-3A	CA_n78A-n257I	1A	CA_n257H	No
	DC_1A_n257I	CA_1A-3A	CA_n78A-n257I	1A	CA_n257I	No
	DC_3A_n78A	CA_1A-3A	CA_n78A-n257I	3A	n78A	No
	DC_3A_n257A	CA_1A-3A	CA_n78A-n257I	3A	n257A	No
	DC_3A_n257D	CA_1A-3A	CA_n78A-n257I	3A	CA_n257D	No
	DC_3A_n257G	CA_1A-3A	CA_n78A-n257I	3A	CA_n257G	No
	DC_3A_n257H	CA_1A-3A	CA_n78A-n257I	3A	CA_n257H	No
	DC_3A_n257I	CA_1A-3A	CA_n78A-n257I	3A	CA_n257I	No

Note 1: Protocol testing is limited to EN-DC configurations with 1 CC E-UTRA and 1CC or 2CC NR configurations.

## 4.3.1.6.1.4 Inter-band EN-DC configurations including FR1 and FR2 (five bands)

**Table 4.3.1.6.1.4-1: Inter-band EN-DC including FR1 and FR2 (five bands)**

EN-DC Configuration	Uplink EN-DC configuration	E-UTRA downlink configuration	NR downlink configuration	E-UTRA uplink configuration	NR uplink configuration	Applicable for protocol testing (Note 1)
FFS	FFS	FFS	FFS	FFS	FFS	FFS
Note 1: Protocol testing is limited to EN-DC configurations with 1 CC E-UTRA and 1CC or 2CC NR configurations.						

## 4.3.1.6.1.5 Inter-band EN-DC configurations including FR1 and FR2 (six bands)

**Table 4.3.1.6.1.5-1: Inter-band EN-DC including FR1 and FR2 (six bands)**

EN-DC Configuration	Uplink EN-DC configuration	E-UTRA downlink configuration	NR downlink configuration	E-UTRA uplink configuration	NR uplink configuration	Applicable for protocol testing (Note 1)
FFS	FFS	FFS	FFS	FFS	FFS	FFS
Note 1: Protocol testing is limited to EN-DC configurations with 1 CC E-UTRA and 1CC or 2CC NR configurations.						

4.3.1.7 Test frequencies for Non-3GPP Access

4.3.1.7.1 WLAN Test frequencies

The same WLAN test frequencies as in TS 36.508 [2] clause 4.3.1.6 applies.

4.3.1.7.2 Bluetooth Test frequencies

The same Bluetooth test frequencies as in TS 36.508 [2] clause 4.3.1.7 applies.

4.3.1.8 Test frequencies for NR Sidelink operating bands

4.3.1.8.1 Test frequencies for NR Sidelink operating bands in FR1

4.3.1.8.1.1 Reference test frequencies for NR Sidelink operating band n38

FFS

4.3.1.8.1.2 Reference test frequencies for NR Sidelink operating band n47

**Table 4.3.1.8.1.2-1: Test frequencies for NR operating band n47 and SCS 15 kHz**

CBW [MHz]	carrierBand width [PRBs]	Range	Carrier centre [MHz]	Carrier centre [ARFCN ]	point A [MHz]	sl-absolute FrequencyPoint A [ARFCN]	offsetToCarrier [Carrier PRBs]	sl-absoluteFrequencySSB [ARFCN] (NOTE)		
								S-SSB Low	S-SSB Mid	S-SSB High
10	52	Low	5860.005	790667	5855.325	790355	0	790421	790673	790913
		Mid	5889.99	792666	5794.59	786306	504	792420	792672	792912
		High	5919.99	794666	5914.23	794282	6	794420	794672	794912
20	106	Low	5865	791000	5855.46	790364	0	790430	791006	791570
		Mid	5889.99	792666	5789.73	785982	504	792096	792672	793236
		High	5914.995	794333	5904.375	793625	6	793763	794339	794903
30	160	Low	5870.01	791334	5855.61	790374	0	790440	791340	792228
		Mid	5889.99	792666	5784.87	785658	504	791772	792672	793560
		High	5910	794000	5894.52	792968	6	793106	794006	794894
40	216	Low	5875.005	791667	5855.565	790371	0	790437	791673	792897
		Mid	5889.99	792666	5779.83	785322	504	791436	792672	793896
		High	5904.99	793666	5884.47	792298	6	792436	793672	794896

NOTE: S-SSB Mid is the default S-SSB frequency unless explicitly indicated.

Table 4.3.1.8.1.2-2: Test frequencies for NR operating band n47 and SCS 30 kHz

CBW [MHz]	carrierBand width [PRBs]	Range	Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	sl-absolute Frequency Point A [ARFCN]	offsetT oCarrier [Carrier PRBs]	sl-absoluteFrequencySSB [ARFCN] (NOTE)		
								S-SSB Low	S-SSB Mid	S-SSB High
10	24	Low	5860.005	790667	5855.685	790379	0	790511	790679	790823
		Mid	5889.99	792666	5704.23	780282	504	792510	792678	792822
		High	5919.99	794666	5913.51	794234	6	794510	794678	794822
20	51	Low	5865	791000	5855.82	790388	0	790520	791000	791480
		Mid	5889.99	792666	5699.37	779958	504	792186	792666	793146
		High	5914.995	794333	5903.655	793577	6	793853	794333	794813
30	78	Low	5870.01	791334	5855.97	790398	0	790530	791346	792138
		Mid	5889.9	792666	5694.51	779634	504	791862	792678	793470
		High	5910	794000	5893.8	792920	6	793196	794012	794804
40	106	Low	5875.005	791667	5855.925	790395	0	790527	791679	792807
		Mid	5889.99	792666	5689.47	779298	504	791526	792678	793806
		High	5904.99	793666	5883.75	792250	6	792526	793678	794806

NOTE: S-SSB Mid is the default S-SSB frequency unless explicitly indicated.

Table 4.3.1.8.1.2-3: Test frequencies for NR operating band n47 and SCS 60 kHz

CBW [MHz]	carrierBand width [PRBs]	Range	Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	sl-absolute Frequency Point A [ARFCN]	offsetT oCarrier [Carrier PRBs]	sl-absoluteFrequencySSB [ARFCN] (NOTE)		
								S-SSB Low	S-SSB Mid	S-SSB High
10	11	Low	5860.005	790667	5856.045	790403	0	790667	790667	790667
		Mid	5889.99	792666	5523.15	768210	504	792666	792666	792666
		High	5919.99	794666	5911.71	794114	6	794666	794666	794666
20	24	Low	5865	791000	5856.36	790424	0	790688	791024	791312
		Mid	5889.99	792666	5518.47	767898	504	792354	792690	792978
		High	5914.995	794333	5902.035	793469	6	794021	794357	794645
30	38	Low	5870.01	791334	5856.33	790422	0	790686	791358	791982
		Mid	5889.99	792666	5513.43	767562	504	792018	792690	793314
		High	5910	794000	5892	792800	6	793352	794024	794648
40	51	Low	5875.005	791667	5856.645	790443	0	790707	791667	792627
		Mid	5889.99	792666	5508.75	767250	504	791706	792666	793626
		High	5904.99	793666	5882.31	792154	6	792706	793666	794626

NOTE: S-SSB Mid is the default S-SSB frequency unless explicitly indicated.

#### 4.3.1.8.2 Test frequencies for concurrent NR sidelink operation

##### 4.3.1.8.2.1 Reference test frequencies for Inter-band concurrent NR sidelink configurations

For inter-band concurrent NR sidelink configurations as listed in this clause, the following apply:

For the NR Uu band, test frequencies as specified in clause 4.3.1.1 for FR1 are used.

For the NR PC5 band, test frequencies as specified in clause 4.3.1.8.1 for FR1 are used.

Table 4.3.1.8.2.1-1: Test frequencies for Inter-band concurrent NR sidelink operating bands

Inter-band concurrent NR sidelink configuration	Operating band for NR uplink	Operating band for NR downlink	Operating band for NR sidelink	Applicable for protocol testing
V2X_n71-n47	n71	n71	n47	Yes



## 4.3.2 Radio conditions

### 4.3.2.1 FR1, normal propagation condition for connected

The downlink connection between the System Simulator and the UE is without Additive White Gaussian Noise, and has no fading or multipath effects.

The uplink connection between the UE and System Simulator is without Additive White Gaussian Noise, and has no fading or multipath effects.

### 4.3.2.2 FR2, condition for OTA

FFS

## 4.3.3 Physical channel allocations

### 4.3.3.1 E-UTRA

The same physical channel allocations as in TS 36.508 [2] clause 4.3.3 applies.

### 4.3.3.2 NR

#### 4.3.3.2.1 Antennas

For FR1 testing, if the UE has two or four Rx antennas, the same downlink signal is applied to each antenna. All UE Rx antennas shall be connected unless otherwise stated in the test case.

#### 4.3.3.2.2 Downlink physical channels and physical signals

**Table 4.3.3.2.2-1: Power allocation for OFDM symbols and reference signals**

Parameter	Unit	Value
SSS transmit power	W	Test specific (Note 1)
EPRE ratio of PSS to SSS	dB	0
EPRE ratio of PBCH DMRS to SSS	dB	0
EPRE ratio of PBCH to PBCH DMRS	dB	0
EPRE ratio of PDCCH DMRS to SSS	dB	0
EPRE ratio of PDCCH to PDCCH DMRS	dB	0
EPRE ratio of PDSCH DMRS to SSS	dB	0
EPRE ratio of PDSCH to PDSCH DMRS	dB	0
EPRE ratio of PTRS to PDSCH	dB	0
EPRE ratio of CSI-RS to SSS	dB	0

Note 1: For signalling test cases the power allocation according to clause 6.2.1.2 applies.

#### 4.3.3.2.3 Mapping of downlink physical channels and signals to physical resources

Parameters for mapping of downlink physical channels and signals are specified as follows.

Normal Cyclic Prefix

$N_{ID}^{cell}$ , Physical layer cell identity = 0 is used as the default physical layer cell identity

For Signalling testing, the same subcarrier spacing (SCS) is used for carrier and SS blocks; the tables in clause 6.2.3.1 specify which SCS to use for a particular NR band. In general, SCS=15kHz is used for FR1 FDD, SCS=15kHz or SCS=30kHz is used for FR1 TDD and SCS=120kHz is used for FR2.

For Signalling testing, the default channel bandwidth is specified in clause 6.2.3.1 for each NR band.

For Signalling testing, single SS Tx antenna is used, in FR1, unless specified otherwise in the test case.

For RF testing, the mapping of DL physical channels to resource element is defined in Annex C of TS 38.101-1 [7] and TS 38.101-2 [8] and TS 38.101-3 [9].

## 4.3.4 Signal levels

### 4.3.4.1 Signal levels for conducted testing

#### 4.3.4.1.1 Downlink signal levels

For E-UTRA cell in EN-DC with FR1 NR, the downlink power setting specified in Table 4.3.4.1-1 of TS 36.508[2] are used unless otherwise specified in a test case.

### 4.3.4.2 Signal levels for OTA testing

As defined in clause 5.2.1.2 for RF tests.

As defined in clause 6.2.1.2 for Signalling tests.

As defined in clause 7.2.1.2 for RRM tests.

## 4.3.5 Standard test signals

## 4.3.6 Physical layer parameters

### 4.3.6.1 Downlink physical layer parameters

#### 4.3.6.1.1 Physical layer parameters for scheduling of PUSCH

##### 4.3.6.1.1.1 Physical layer parameters for DCI format 0\_0

DCI format 0\_0 is used for the scheduling of PUSCH in one cell.

Default physical layer parameters for DCI format 0\_0 are specified in table 4.3.6.1.1.1-1.

**Table 4.3.6.1.1.1-1: Physical layer parameters for DCI format 0\_0**

Parameter	Value	Value in binary
Identifier for DCI formats	Indicating an UL DCI format	"0"
Frequency domain resource assignment	Dependent on test parameters	-
Time domain resource assignment	Indicating the first entry of PUSCH-TimeDomainResourceAllocationList to be used	"0000"
Frequency hopping flag	w/o hopping	"0"
Modulation and coding scheme	Dependent on test parameters	-
New data indicator	Set for every data transmission/retransmission according to the rules specified in TS 38.321	-
Redundancy version	Dependent on test parameters	-
HARQ process number	Dependent on test parameters	-
TPC command for scheduled PUSCH	0 dB (accumulated TPC) as per Table 7.1.1-1 in TS 38.213	"01"
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)	-	
	1	1	SUL
Identifier for DCI formats	Indicating an UL DCI format	"0"	
Bandwidth part indicator	Not present (indicating active BWP, not present in case of only one <i>BWP-Id</i> as per Table 4.6.3-8)	-	
Frequency domain resource assignment	Dependent on test parameters	-	
Time domain resource assignment	Indicating the first entry of PUSCH-TimeDomainResourceAllocationList to be used	"0000"	
Frequency hopping flag	Not present	-	
Modulation and coding scheme	Dependent on test parameters	-	
New data indicator	Set for every data transmission / retransmission according to the rules specified in TS 38.321 [20]	-	
Redundancy version	Dependent on test parameters	-	
HARQ process number	Dependent on test parameters	-	
1 <sup>st</sup> downlink assignment index	Dependent on test parameters		
2 <sup>nd</sup> downlink assignment index	Not present (0 bit if one HARQ-ACK sub-codebook)	-	
TPC command for scheduled PUSCH	0 dB (accumulated TPC) as per Table 7.1.1-1 in TS 38.213 [22]	"01"	
SRS resource indicator	Not present	-	
Precoding information and number of layers	Not present (0 bits for 1 antenna port and if the higher layer parameter txConfig = Codebook as per clause 7.3.1.1.2 TS 38.212 [27])	-	
	2	"10"	2TX_UL_MIMO or ULFPTx_Mode1
	Dependent on UE reported full power PMI	1 bit as per Table 7.3.1.1.2-5 in TS 38.212	ULFPTx_Mode2
	0 or 1	1 bit	ULFPTx_ModeFull
Antenna ports	Port 0 (NOTE 2)	"000"	
		"00"	TRANSFORM_PRECODER_ENABLED
SRS request	No aperiodic SRS resource set triggered as per Table 7.3.1.1.2-24 in TS 38.212 (no SUL configured)	"00"	
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	$n_{SCII} = 0$ (ScramblingID0 is not present as per Table 4.6.3-50)	"0"	
	Not present	-	TRANSFORM_PRECODER_ENABLED

UL-SCH indicator	Dependent on test parameters 1 bit. A value of "1" indicates UL-SCH shall be transmitted on the PUSCH and a value of "0" indicates UL-SCH shall not be transmitted on the PUSCH.	-	
NOTE 1: codebookSubset = nonCoherent, 2 layers, TPMI = 0 as specified in TS 38.212 [27] Table 7.3.1.1.2-4			
NOTE 2: Bitsize depends on transform precoder being enabled/disabled (PUSCH_Config, Table 4.6.3-118) and on dmrs-Type and maxLength (DMRS-UplinkConfig, Table 4.6.3-51); 3 bits (transform precoder disabled) or 2 bits (transform precoder enabled) for DMRS type 1 and len1			

Condition	Explanation
2TX_UL_MIMO	UL-MIMO test cases with 2 Tx antenna ports
PTRS_UL_CONFIG	When PTRS Uplink is configured
TRANSFORM_PRECODER_ENABLED	Transform precoding is enabled (PUSCH_Config, Table 4.6.3-118)
SUL	On the SUL carrier when supplementary carrier is configured
ULFPTx_Mode1	UL-MIMO test cases with UEs supporting UL full power transmission Mode-1
ULFPTx_Mode2	UL-MIMO test cases with UEs supporting UL full power transmission Mode-2
ULFPTx_ModeFull	UL-MIMO test cases with UEs supporting UL full power transmission Mode-full power

#### 4.3.6.1.1.3 Physical layer parameters for DCI format 0\_2

DCI format 0\_2 is used for the scheduling of PUSCH in one cell.

Default physical layer parameters for DCI format 0\_2 are specified in table 4.3.6.1.1.3-1.

**Table 4.3.6.1.1.3-1: Physical layer parameters for DCI format 0\_2**

Parameter	Value	Value in binary	Condition
Identifier for DCI formats	Indicating an UL DCI format	"0"	
Carrier indicator	Not present	-	
UL/SUL indicator	Not present (0 bit for UEs not configured with SUL in the cell)	-	
Bandwidth part indicator	Not present (indicating active BWP, not present in case of only one <i>BWP-Id</i> as per Table 4.6.3-8)	-	
Frequency domain resource assignment	Dependent on test parameters	-	
Time domain resource assignment	Indicating the first entry of PUSCH-TimeDomainResourceAllocationList to be used	"0000"	
Frequency hopping flag	Not present (0 bit if the higher layer parameter frequencyHoppingDCI-0-2 is not configured)	-	
Modulation and coding scheme	Dependent on test parameters	-	
New data indicator	Set for every data transmission / retransmission according to the rules specified in TS 38.321 [20]	-	
Redundancy version	Dependent on test parameters	-	
HARQ process number	Dependent on test parameters	-	
Downlink assignment index	Not present (0 bit if the higher layer parameter downlinkAssignmentIndexDCI-0-2 is not configured)		
TPC command for scheduled PUSCH	0 dB (accumulated TPC) as per Table 7.1.1-1 in TS 38.213 [22]	"01"	
SRS resource indicator	Not present	-	
Precoding information and number of layers	Not present (0 bits for 1 antenna port and if the higher layer parameter txConfig = Codebook as per clause 7.3.1.1.2 TS 38.212 [27])	-	

Antenna ports	Not present (0 bit if higher layer parameter antennaPortsFieldPresenceDCI-0-2 is not configured)	-	
SRS request	Not present (0 bit if the higher layer parameter <i>srs-RequestDCI-0-2</i> is not configured)	-	
CSI request	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 betaOffsets = semiStatic)	-	
DMRS sequence initialization	Not present (0 bit if the higher layer parameter dmrs-SequenceInitializationDCI-0-2 is not configured or if transform precoder is enabled)	-	
UL-SCH indicator	Dependent on test parameters 1 bit. A value of "1" indicates UL-SCH shall be transmitted on the PUSCH and a value of "0" indicates UL-SCH shall not be transmitted on the PUSCH.	-	
Open-loop power control parameter set indication	Not present (0 bit if the higher layer parameter p0-PUSCH-SetList is not configured)	-	
Priority indicator	Not present (0 bit if higher layer parameter priorityIndicatorDCI-0-2 is not configured)	-	
Invalid symbol pattern indicator	Not present (0 bit if higher layer parameter invalidSymbolPatternIndicatorDCI-0-2 is not configured)	-	
NOTE 1: codebookSubset = nonCoherent, 2 layers, TPMI = 0 as specified in TS 38.212 [27] Table 7.3.1.1.2-4			
NOTE 2: Bitsize depends on transform precoder being enabled/disabled (PUSCH_Config, Table 4.6.3-118) and on dmrs-Type and maxLength (DMRS-UplinkConfig, Table 4.6.3-51); 3 bits (transform precoder disabled) or 2 bits (transform precoder enabled) for DMRS type 1 and len1			

Condition	Explanation
PTRS_UL_CONFIG	When PTRS Uplink is configured
TRANSFORM_PRECODER_ENABLED	Transform precoding is enabled (PUSCH_Config, Table 4.6.3-118)

#### 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	"0000"
VRB-to-PRB mapping	Non-interleaved	"0"
Modulation and coding scheme	Dependent on test parameters	-
New data indicator	Set for every data transmission/retransmission according to the rules specified in TS 38.321	-
Redundancy version	Dependent on test parameters	-
HARQ process number	Dependent on test parameters	-
Downlink assignment index	Dependent on test parameters	-
TPC command for scheduled PUCCH	0 dB (accumulated TPC) as per Table 7.2.1-1 in TS 38.213	"01"
PUCCH resource indicator	$PUCCH-ResourceID[7] = 6$ in $pucch-ResourceSetID[1]$ or $PUCCH-ResourceID[7] = 14$ in $pucch-ResourceSetID[2]$ as defined in Table 4.6.3-112 (Mapping as per Table 9.2.3-2 in TS 38.213)	"110"
PDSCH-to-HARQ_feedback timing indicator	$K_1$ slots as specified in 9.2.3 in TS 38.213 $\mu=0$ (SCS=15kHz): $K_1=7$ $\mu=1$ (SCS=30kHz): $K_1=5$ $\mu=3$ (SCS=120kHz): $K_1=8$	'110'B '100'B '111'B

**Table 4.3.6.1.2.1-2: Physical layer parameters for DCI format 1\_0 for paging**

Parameter	Value	Value in binary
Short Messages Indicator	Only scheduling information for Paging is present in the DCI	"01"
Short Messages	Reserved	-
Frequency domain resource assignment	Dependent on test parameters	-
Time domain resource assignment	Indicating the first entry of PDSCH-TimeDomainResourceAllocationList to be used	"0000"
VRB-to-PRB mapping	Non-interleaved	"0"
Modulation and coding scheme	Dependent on test parameters	-
TB scaling	Scaling factor $S=1$ as defined in Table 5.1.3.2-2 in TS 38.214)	"00"
Reserved bits	Reserved 6 bits	-

**Table 4.3.6.1.2.1-3: Physical layer parameters for DCI format 1\_0 for SI**

Parameter	Value	Value in binary	Condition
Frequency domain resource assignment	Dependent on test parameters	-	-
Time domain resource assignment	Indicating the first entry of Table 5.1.2.1.1-2 in TS 38.214 [21] to be used	"0000"	SIB1
	Indicating the first entry of PDSCH-TimeDomainResourceAllocationList to be used	"0000"	SI
VRB-to-PRB mapping	Non-interleaved	"0"	-
Modulation and coding scheme	Dependent on test parameters	-	-
Redundancy version	Dependent on test parameters	-	-
System information indicator	SIB1	"0"	SIB1
	SI message	"1"	SI
Reserved bits	Reserved 15 bits	-	-

Condition	Explanation
SIB1	Used for DCI format 1_0 for SIB1
SI	Used for DCI format 1_0 for SI

**Table 4.3.6.1.2.1-4: Physical layer parameters for DCI format 1\_0 for random access**

Parameter	Value	Value in binary
Frequency domain resource assignment	Dependent on test parameters	-
Time domain resource assignment	Indicating the first entry of PDSCH-TimeDomainResourceAllocationList to be used	"0000"
VRB-to-PRB mapping	Non-interleaved	"0"
Modulation and coding scheme	Dependent on test parameters	-
Redundancy version	Dependent on test parameters	-
TB scaling	Scaling factor S=[1] as defined in Table 5.1.3.2-2 in TS 38.214)	"00"
Reserved bits	Reserved 16 bits	-

#### 4.3.6.1.2.2 Physical layer parameters for DCI format 1\_1

DCI format 1\_1 is used for the scheduling of PDSCH in one cell.

Default physical layer parameters for DCI format 1\_1 are specified in table 4.3.6.1.2.2-1.

Table 4.3.6.1.2.2-1: Physical layer parameters for DCI format 1\_1

Parameter	Value	Value in binary	Condition
Carrier indicator	Not present	-	
Identifier for DCI formats	Indicating a DL DCI format	"1"	
Bandwidth part indicator	Not present	-	
Frequency domain resource assignment	Dependent on test parameters	-	
Time domain resource assignment	Indicating the first entry of PDSCH-TimeDomainResourceAllocationList to be used	"0000"	
VRB-to-PRB mapping	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 [20]	-	
Redundancy version (TB1)	Dependent on test parameters	-	
Modulation and coding scheme (TB2)	Dependent on test parameters	-	
New data indicator (TB2)	Set for every data transmission/retransmission according to the rules specified in TS 38.321 [20]	-	
Redundancy version (TB2)	Dependent on test parameters	-	
HARQ process number	Dependent on test parameters	-	
Downlink assignment index	Dependent on test parameters	-	
TPC command for scheduled PUCCH	0 dB (accumulated TPC) as per Table 7.2.1-1 in TS 38.213 [22]	"01"	
PUCCH resource indicator	$PUCCH-ResourceId[7] = 6$ in $pucch-ResourceSetID[1]$ or $PUCCH-ResourceId[7] = 14$ in $pucch-ResourceSetID[2]$ as defined in Table 4.6.3-112 (Mapping as per Table 9.2.3-2 in TS 38.213 [22])	"110"	
PDSCH-to-HARQ_feedback timing indicator	<p>corresponding to K1 slots as per Table 9.2.3-1 in TS 38.213 [22] and dl-DataToUL-ACK in Table 4.6.3-112</p> <p><math>\mu=0</math> (SCS=15kHz): K1=7  <math>\mu=1</math> (SCS=30kHz): K1=5  <math>\mu=3</math> (SCS=120kHz): K1=8</p>	<p>"101"  "011"  "110"</p>	
	<p>corresponding to K1 slots as per Table 9.2.3-1 in TS 38.213 [22] and dl-DataToUL-ACK in Table 4.6.3-112</p> <p>For 60KHz SCS  K1 = 4 if <math>\text{mod}(i,5) = 0</math>  K1 = 3 if <math>\text{mod}(i,5) = 1</math>  K1 = 7 if <math>\text{mod}(i,5) = 2</math>  where i is slot index per frame; <math>i = \{0, \dots, 39\}</math></p> <p>For 120KHz SCS  K1 = 4 if <math>\text{mod}(i,5) = 0</math>  K1 = 3 if <math>\text{mod}(i,5) = 1</math>  K1 = 7 if <math>\text{mod}(i,5) = 2</math>  where i is slot index per frame; <math>i = \{0, \dots, 79\}</math></p>		RF_FR2_DL



	<p>corresponding to K1 slots as per Table 9.2.3-1 in TS 38.213 [22] and dl-DataToUL-ACK in Table 4.6.3-112</p> <p>For TDD  <math>K1 = 4</math> if <math>\text{mod}(i,5) = 0</math>  <math>K1 = 3</math> if <math>\text{mod}(i,5) = 1</math>  <math>K1 = 2</math> if <math>\text{mod}(i,5) = 2</math>  where <math>i</math> is slot index per frame; <math>i = \{0, \dots, 9\}</math></p> <p>For FDD  <math>K1 = 2</math></p>		RF_FR1_15kHz
	<p>For TDD  corresponding to K1 slots as per Table 9.2.3-1 in TS 38.213 [22] and dl-DataToUL-ACK in Table 4.6.3-112  <math>K1 = 8</math> if <math>\text{mod}(i,10) = 0</math>  <math>K1 = 7</math> if <math>\text{mod}(i,10) = 1</math>  <math>K1 = 6</math> if <math>\text{mod}(i,10) = 2</math>  <math>K1 = 5</math> if <math>\text{mod}(i,10) = 3</math>  <math>K1 = 4</math> if <math>\text{mod}(i,10) = 4</math>  <math>K1 = 3</math> if <math>\text{mod}(i,10) = 5</math>  <math>K1 = 2</math> if <math>\text{mod}(i,10) = 6</math>  where <math>i</math> is slot index per frame; <math>i = \{0, \dots, 19\}</math></p> <p>For FDD  <math>K1 = 2</math></p>		RF_FR1_30kHz
	<p>corresponding to K1 slots as per Table 9.2.3-1 in TS 38.213 [22] and dl-DataToUL-ACK in Table 4.6.3-112</p> <p>For TDD  <math>K1 = 13</math> if <math>\text{mod}(i,20) = 2</math>  <math>K1 = 12</math> if <math>\text{mod}(i,20) = 3</math>  <math>K1 = 11</math> if <math>\text{mod}(i,20) = 4</math>  <math>K1 = 10</math> if <math>\text{mod}(i,20) = 5</math>  <math>K1 = 9</math> if <math>\text{mod}(i,20) = 6</math>  <math>K1 = 8</math> if <math>\text{mod}(i,20) = 7</math>  <math>K1 = 7</math> if <math>\text{mod}(i,20) = 8</math>  <math>K1 = 6</math> if <math>\text{mod}(i,20) = 9</math>  <math>K1 = 6</math> if <math>\text{mod}(i,20) = 10</math>  <math>K1 = 6</math> if <math>\text{mod}(i,20) = 11</math>  <math>K1 = 6</math> if <math>\text{mod}(i,20) = 12</math>  <math>K1 = 6</math> if <math>\text{mod}(i,20) = 13</math>  where <math>i</math> is slot index per frame; <math>i = \{0, \dots, 39\}</math></p> <p>For FDD  <math>K1 = 2</math></p>		RF_FR1_60kHz
Antenna port(s)	DMRS port 0 as per Table 7.3.1.2.2-1 in TS 38.212 [27] ( <i>dmrs-Type</i> = DMRS type 1 and <i>maxLength</i> = len1 as per Table 4.6.3-50)	"0000"	
Transmission configuration indication	Not present (0 bits, <i>tci-PresentInDCI</i> = Not present as per Table 4.6.3-28)	-	
SRS request	No aperiodic SRS resource set triggered as per Table 7.3.1.1.2-24 in TS 38.212 [27] (no SUL configured)	"00"	
CBG transmission information	Not present	-	
CBG flushing out information	Not present	-	
DMRS sequence initialization	fix length of 1 bit; '0'B for DMRS-DownlinkConfig.scramblingID0 (or physCellId if scramblingID0 is not present); see Table 4.6.3-50	"0"	

Condition	Explanation
RF_FR1_15kHz	RF testing in TS 38.521-x for FR1. SCS is set to 15kHz.
RF_FR1_30kHz	RF testing in TS 38.521-x for FR1. SCS is set to 30kHz.
RF_FR1_60kHz	RF testing in TS 38.521-x for FR1. SCS is set to 60kHz.
RF_FR2_DL	RF testing in TS 38.521-x for FR2. SCS is set to 60kHz or 120kHz

#### 4.3.6.1.2.3 Physical layer parameters for DCI format 1\_2

DCI format 1\_2 is used for the scheduling of PDSCH in one cell.

Default physical layer parameters for DCI format 1\_2 are specified in table 4.3.6.1.2.3-1.

**Table 4.3.6.1.2.3-1: Physical layer parameters for DCI format 1\_2**

Parameter	Value	Value in binary	Condition
Identifier for DCI formats	Indicating a DL DCI format	"1"	
Carrier indicator	Not present	-	
Bandwidth part indicator	Not present	-	
Frequency domain resource assignment	Dependent on test parameters	-	
Time domain resource assignment	Indicating the first entry of PDSCH-TimeDomainResourceAllocationList to be used	"0000"	
VRB-to-PRB mapping	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	Dependent on test parameters	-	
New data indicator	Set for every data transmission/retransmission according to the rules specified in TS 38.321 [20]	-	
Redundancy version	Dependent on test parameters	-	
HARQ process number	Dependent on test parameters	-	
Downlink assignment index	Dependent on test parameters	-	
TPC command for scheduled PUCCH	0 dB (accumulated TPC) as per Table 7.2.1-1 in TS 38.213 [22]	"01"	
PUCCH resource indicator	$PUCCH-ResourceID[7] = 6$ in $pucch-ResourceSetID[1]$ or $PUCCH-ResourceID[7] = 14$ in $pucch-ResourceSetID[2]$ as defined in Table 4.6.3-112 (Mapping as per Table 9.2.3-2 in TS 38.213 [22])	"110"	
PDSCH-to-HARQ_feedback timing indicator	corresponding to K1 slots as per Table 9.2.3-1 in TS 38.213 [22] and dl-DataToUL-ACK in Table 4.6.3-112 $\mu=0$ (SCS=15kHz): K1=7 $\mu=1$ (SCS=30kHz): K1=5 $\mu=3$ (SCS=120kHz): K1=8	"101" "011" "110"	
Antenna port(s)	Not present (0 bit if higher layer parameter $antennaPortsFieldPresenceDCI-1-2$ is not configured)	-	
Transmission configuration indication	Not present (0 bits, $tci-PresentInDCI =$ Not present as per Table 4.6.3-28)	-	
SRS request	Not present (0 bit if higher layer parameter $srs-RequestDCI-1-2$ is not configured)	-	
DMRS sequence initialization	Not present (0 bit if higher layer parameter $dmrs-SequenceInitializationDCI-1-2$ is not configured)	-	
Priority indicator	Not present (0 bit if higher layer parameter $priorityIndicatorDCI-1-2$ is not configured)	-	

4.3.6.1.3 Void

4.3.6.1.4 Physical layer parameters for scheduling of PSCCH/PSSCH

4.3.6.1.4.1 Physical layer parameters for DCI format 3\_0

DCI format 3\_0 is used to schedule PSCCH/PSSCH transmission on NR sidelink.

Default physical layer parameters for DCI format 3\_0 are specified in Table 4.3.6.1.4.1-1.

**Table 4.3.6.1.4.1-1: Physical layer parameters for DCI format 3\_0**

Parameter	Value	Value in binary	Condition
Resource pool index	Not present	-	
Time gap	Indicating the first entry of sl-DCI-ToSL-Trans to be used	"000"B	
HARQ process number	Dependent on test parameters	-	
New data indicator	Set for every data transmission/retransmission according to the rules specified in TS 38.321[20]	-	
Lowest index of the subchannel allocation to the initial transmission	Dependent on test parameters	-	
Frequency resource assignment	Dependent on test parameters	-	
Time resource assignment	only one PSCCH/PSSCH occasion is scheduled per grant	"00000"B	
PSFCH-to-HARQ feedback timing indicator	Indicating the first entry of sl-PSFCH-ToPUCCH to be used	"000"B	
PUCCH resource indicator	Indicating the first entry of sl-PUCCH-Config to be used	"000"B	
Configuration index	Not present	-	SL-RNTI
	Indicating the first entry of sl-ConfiguredGrantConfigList to be used	"000"	SL-CS-RNTI
Counter sidelink assignment index	PDCCH monitoring occasions in which DCI format 3_0 scheduling PSSCH transmissions with corresponding PSFCH reception occasions is present, denoted as Y, satisfies $(Y-1) \bmod 4 = 0$ , as specified in 38.213 Table 16.5.2.1-1	"00"	

Condition	Explanation
SL-RNTI	UE is configured to monitor DCI format 3_0 with CRC scrambled by SL-RNTI, i.e. dynamic sidelink grant
SL-CS-RNTI	UE is configured to monitor DCI format 3_0 with CRC scrambled by SL-CS-RNTI, i.e. configured sidelink grant

4.3.6.1.4.2 Physical layer parameters for DCI format 3\_1

DCI format 3\_1 is used to schedule PSCCH/PSSCH transmission on E-UTRA V2X sidelink.

FFS

## 4.3.6.2 Sidelink physical layer parameters

### 4.3.6.2.1 Physical layer parameters for scheduling of PSSCH on PSCCH

#### 4.3.6.2.1.1 Physical layer parameters for SCI format 1-A

SCI format 1-A is used to schedule PSSCH transmission.

Default physical layer parameters for SCI format 1-A are specified in Table 4.3.6.2.1.1-1.

**Table 4.3.6.2.1.1-1: Physical layer parameters for SCI format 1-A**

Parameter	Value	Value in binary	Condition
Priority	Dependent on test parameters	-	
Frequency resource assignment	Dependent on test parameters	-	
Time domain resource assignment	only one PSCCH/PSSCH occasion is scheduled per grant	"00000"B	
Resource reservation period	Not present	-	
DMRS pattern	Indicating the first entry of sl-PSSCH-DMRS-TimePatternList-r16 to be used	"0"B	
2 <sup>nd</sup> -stage SCI format	SCI format 2-A	"00"B	
	SCI format 2-B	"01"B	DISTANCE-BASED HARQ
Beta_offset indicator	Indicating the first entry of sl-BetaOffsets2ndSCI to be used	"00"B	
Number of DMRS port	Single port $p = 1000$ is used	"0"B	
	Two ports $p = 1000$ and $1001$ are used	"1"B	SL MIMO
Modulation and coding scheme	Dependent on test parameters	-	
Additional MCS table indicator	Not present	-	
PSFCH overhead indication	"1"B if $\text{mod}(i, n_{\text{PSFCH}}) = 0$ "0"B if $\text{mod}(i, n_{\text{PSFCH}}) \neq 0$ where $i$ is the logical slot index belong to resource pool per 1024 frame as specified in 38.214 [21] clause 8.	-	$n_{\text{PSFCH}} = 2$ OR $n_{\text{PSFCH}} = 4$ (Note 1)
	Not present		
Reserved	Number of reserved bits is given by sl-NumReservedBits-r16	"00"	

Note 1:  $n_{\text{PSFCH}}$  is the PSFCH period (in slots) provided by sl-PSFCH-Period-r16.  $n_{\text{PSFCH}} = 0$  if sl-PSFCH-Period-r16 is not configured.

Condition	Explanation
DISTANCE-BASED HARQ	For distance-based HARQ test
SL MIMO	For SL MIMO test

#### 4.3.6.2.2 Physical layer parameters for scheduling on PSSCH

##### 4.3.6.2.2.1 Physical layer parameters for SCI format 2-A

SCI format 2-A is used to provide HARQ information, to provide Source/Destination L1 ID or to trigger CSI reporting.

Default physical layer parameters for SCI format 2-A are specified in Table 4.3.6.2.2.1-1.

**Table 4.3.6.2.2.1-1: Physical layer parameters for SCI format 2-A**

Parameter	Value	Value in binary	Condition
HARQ process number	Dependent on test parameters		

New data indicator	Set for every data transmission/retransmission according to the rules specified in TS 38.321	-	
Redundancy version	Dependent on test parameters	-	
Source ID	Dependent on test parameters	-	
Destination ID	Dependent on test parameters	-	
HARQ feedback enabled/disabled indicator	HARQ feedback is enabled	"1"B	
Cast type indicator	broadcast	"00"B	BROADCAST
	groupcast with ACK/NACK HARQ	"01"B	GROUPCAST_ ACK_NACK
	unicast	"10"B	UNICAST
	groupcast with NACK-only HARQ	"11"B	GROUPCAST_ NACK_ONLY
CSI request	Not ask for SL CSI report	"0"B	
	Ask for SL CSI report	"1"B	SL_CSI

Condition	Explanation
BROADCAST	For broadcast SL communication test
GROUPCAST_ACK_NACK	For groupcast SL communication with ACK/NACK HARQ feedback test
GROUPCAST_NACK_ONLY	For groupcast SL communication with NACK-only HARQ feedback test
UNICAST	For unicast SL communication test
SL_CSI	For SL CSI reporting test

#### 4.3.6.2.2.2 Physical layer parameters for SCI format 2-B

SCI format 2-B is used to provide HARQ information, Source/Destination L1 ID or distance-based HARQ related parameters.

Default physical layer parameters for SCI format 2-B are specified in Table 4.3.6.2.2.2-1.

**Table 4.3.6.2.2-1: Physical layer parameters for SCI format 2-B**

Parameter	Value	Value in binary
HARQ process number	Dependent on test parameters	-
New data indicator	Set for every data transmission/retransmission according to the rules specified in TS 38.321	-
Redundancy version	Dependent on test parameters	-
Source ID	Dependent on test parameters	-
Destination ID	Dependent on test parameters	-
HARQ feedback enabled/disabled indicator	HARQ feedback enabled	"1"B
Zone ID	Dependent on test parameters	-
Communication range requirement	Indicating the first entry of sl-ZoneConfigMCR-List to be used	"0000"B

## 4.4 Reference system configurations

The reference system configurations specified in this sub clause apply to all test cases unless otherwise specified.

### 4.4.1 Simulated network scenarios

The simulated network scenarios will simulate UE operation in either standalone NR, standalone E-UTRA or in non-standalone NR and E-UTRA networks. For non-standalone case either the NR or the E-UTRA radio access acts as the master anchor node. For both standalone and non-standalone cases, the simulated networks may be single mode networks (FDD or TDD) or dual mode networks (FDD+TDD). For the standalone NR case the simulated networks may also be inter-RAT networks ((FDD or TDD) + (E-UTRA FDD or E-UTRA TDD or UTRA FDD)).

Simulated network scenarios to be tested are listed in this sub clause.

NOTE 1: The number of cells specified does not necessarily correspond to the maximum number of resources to be configured simultaneously in test equipment. Please refer to clause 6.1 for such information.

NOTE 2: For NAS test cases see sub clause 6.3.2.

#### 4.4.1.1 Standalone cell network scenarios

##### 4.4.1.1.1 Standalone E-UTRA single cell and multi cell network scenarios

For standalone E-UTRA FDD or TDD single cell environment see TS 36.508 [2], clause 4.4.1.1.

For standalone E-UTRA FDD or TDD multi cell network scenarios see TS 36.508 [2], clause 4.4.1.2.

##### 4.4.1.1.2 Standalone NR single cell network scenarios

For standalone NR FDD or TDD single cell environment, NR Cell 1 is used.

##### 4.4.1.1.3 Standalone NR single mode multi cell network scenarios

For standalone NR FDD or TDD intra-frequency multi cell environment, NR Cell 1, NR Cell 2 and NR Cell 4 are used.

For standalone NR FDD or TDD inter-frequency multi cell environment, NR Cell 1, NR Cell 3 and NR Cell 6 are used.

For standalone NR FDD or TDD inter-band cell environment, NR Cell 1 and NR Cell 10 are used.

For standalone NR FDD or TDD multi tracking area intra-frequency multi cell environment, NR Cell 1 and NR Cell 11 are used.

For standalone NR FDD or TDD multi tracking area inter-frequency multi cell environment, NR Cell 1 and NR Cell 23 are used.

For standalone NR FDD or TDD multi PLMN inter-frequency multi cell environment, NR Cell 1, NR Cell 12, NR Cell 13 and NR Cell 14 are used.

##### 4.4.1.1.4 Standalone NR dual mode multi cell network scenarios

For standalone NR FDD and TDD multi cell environment, NR Cell 1, NR Cell 10 and NR Cell 31 are used.

For standalone NR FDD and TDD multi PLMN multi cell environment, NR Cell 1, NR Cell 28, NR Cell 29 and NR Cell 30 are used.

In addition, standalone NR single mode multi cell network scenarios defined in clause 4.4.1.1.3 are combined with the dual mode scenarios defined in this clause when additional intra or inter-frequency cells are used.

##### 4.4.1.1.5 Standalone NR 3GPP Inter-RAT network scenarios

For standalone NR FDD or TDD single cell with E-UTRA FDD, E-UTRA TDD or UTRA FDD single cell inter-RAT environment:

- NR Cell 1 is used for the NR cell; and
- Cell 1, as specified in TS 36.508 [2] clause 4.4.1.1, is used for the E-UTRA cell; or
- Cell 5, as specified in TS 36.508 [2] clause 4.4.2, is used for the UTRA cell.

For standalone NR FDD or TDD single cell with E-UTRA FDD or E-UTRA TDD multi cell inter-RAT environment:

- NR Cell 1 is used for the NR cell; and
- Cell 1, Cell 2 and Cell 4, as specified in TS 36.508 [2] clause 4.4.1.2, is used for the E-UTRA cell; and

#### 4.4.1.2 Non-standalone cell network scenarios

##### 4.4.1.2.1 Non-standalone E-UTRA single cell and NR single cell network scenarios

For non-standalone NR FDD or TDD single cell and E-UTRA FDD or TDD single cell environment:

- Cell 1, as specified in TS 36.508 [2] clause 4.4.1.1, is used for the E-UTRA cell; and
- NR Cell 1 is used for the NR cell.

##### 4.4.1.2.2 Non-standalone E-UTRA single cell and NR single mode multi cell network scenarios

For non-standalone E-UTRA single cell and FDD or TDD NR intra-frequency single mode multi cell environment:

- Cell 1, as specified in TS 36.508 [2] clause 4.4.1.1, is used for the E-UTRA cell; and
- NR Cell 1, NR Cell 2 and NR Cell 4 are used for NR cells.

For non-standalone E-UTRA single cell and FDD or TDD NR inter-frequency single mode multi cell environment:

- Cell 1, as specified in TS 36.508 [2] clause 4.4.1.1, is used for the E-UTRA cell; and
- NR Cell 1, NR Cell 3 and NR Cell 6 are used for the NR cells.

For non-standalone E-UTRA single cell and FDD or TDD NR inter-band single mode multi cell environment:

- Cell 1, as specified in TS 36.508 [2] clause 4.4.1.1, is used for the E-UTRA cell; and
- NR Cell 1 and NR Cell 10 are used for the NR cells.

##### 4.4.1.2.3 Non-standalone E-UTRA single mode multi cell and NR single mode multi cell network scenarios

For non-standalone E-UTRA intra-frequency single mode multi cell and FDD or TDD NR intra-frequency single mode multi cell environment:

- E-UTRA Cell 1, Cell 2 and Cell 4, as specified in TS 36.508 [2] clause 4.4.1.2, is used for the E-UTRA cell; and
- NR Cell 1, NR Cell 2 and NR Cell 4 are used for NR cells.

For non-standalone FDD or TDD E-UTRA intra-frequency single mode multi cell and FDD or TDD NR inter-frequency single mode multi cell environment:

- E-UTRA Cell 1, Cell 2 and Cell 4, as specified in TS 36.508 [2] clause 4.4.1.2, is used for the E-UTRA cell; and
- NR Cell 1, NR Cell 3 and NR Cell 6 are used for the NR cells.

For non-standalone FDD or TDD E-UTRA inter-frequency single mode multi cell and FDD or TDD NR inter-frequency single mode multi cell environment:

- E-UTRA Cell 1, Cell 3 and Cell 6, as specified in TS 36.508 [2] clause 4.4.1.2, is used for the E-UTRA cell; and
- NR Cell 1, NR Cell 3 and NR Cell 6 are used for the NR cells.

For non-standalone single E-UTRA cell and FDD or TDD NR inter-band single mode multi cell environment:

- E-UTRA Cell 1, Cell 2 and Cell 4, as specified in TS 36.508 [2] clause 4.4.1.2, is used for the E-UTRA cell; and
- NR Cell 1 and NR Cell 10 are used for the NR cells.

#### 4.4.1.2.4 Non-standalone E-UTRA single cell and NR dual mode multi cell network scenarios

**Editor's note: It is FFS if the NR dual mode multi cell environment needs to include multiple E-UTRA cells in addition to the multiple NR cells.**

For non-standalone single E-UTRA cell and FDD and TDD NR dual mode multi cell environment:

- Cell 1, as specified in TS 36.508 [2] clause 4.4.1.1, is used for the E-UTRA cell; and
- NR Cell 1, NR Cell 10 and NR Cell 31 are used for the NR cells.

In addition, standalone NR single mode multi cell network scenarios defined in clause 4.4.1.2.2 are combined with the dual mode scenarios defined in this clause when additional intra or inter-frequency NR cells are used.

#### 4.4.1.3 Non-3GPP Access network scenarios

##### 4.4.1.3.1 WLAN network scenario

For non-3GPP access over WLAN single cell environment Cell 27, Cell 27a and Cell 27b as specified in TS 36.508 [2] clauses 4.4.2 and 4.4.8 with condition 'IMSoWLAN' is used.

##### 4.4.1.3.2 Bluetooth network scenario

For non-3GPP access over Bluetooth single cell environment Cell 40 and Cell 41, as specified in TS 36.508 [2] clauses 4.4.2.

#### 4.4.2 Simulated cells

NOTE 1: For NAS test cases see clause 6.3.2.

NOTE 2: Test frequency and range defined in table 4.4.2-1 do not apply to TS 38.521-1, TS 38.521-2 and TS 38.521-3 test cases.

Test frequencies and simulated NR cells are defined in table 4.4.2-1. Test frequencies and simulated E-UTRA and UTRA cells are defined in TS 36.508 [2] table 4.4.2-1.

For NR cells, NRf1 is the default test frequency. For UTRA cells, f8 as specified in TS 36.508 [2] table 4.2.2-1 is the default test frequency. For E-UTRA cells, f1 as specified in TS 36.508 [2] table 4.2.2-1 is the default test frequency.

Default parameters for simulated NR cells are specified in table 4.4.2-2 and table 4.4.2-3.

Default parameters for simulated E-UTRA cells are specified in TS 36.508 [2] table 4.4.2-1A and table 4.4.2-2.

Default parameters for simulated UTRA cells are specified in TS 36.508 [2] clause 4.4.4.

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

Other cell specific parameters are specified in TS 36.508 [2] clause 4.4.3 to 4.4.7.



**Table 4.4.2-1: Definition of test frequencies and simulated NR cells**

<b>Test frequency</b>	<b>RAT</b>	<b>Operating band</b>	<b>Range</b>	<b>Simulated NR cells</b>
NRf1	NR	Operating band under test	Mid (Note 1, Note 3)	NR Cell 1, NR Cell 2, NR Cell 4, NR Cell 11, NR Cell 489
NRf2	NR	Operating band under test	High (Note 1, Note 3)	NR Cell 3, NR Cell 12, NR Cell 23
NRf3	NR	Operating band under test	Low (Note 1, Note 3)	NR Cell 6, NR Cell 13
NRf4	NR	Operating band under test	(Note 1)	NR Cell 14
NRf5	NR	Operating band for inter-band cells	Mid (Note 1)	NR Cell 10, NR Cell 30, NR Cell 31
NRf6	NR	Operating band for inter-band cells	High (Note 1)	NR Cell 28, NR Cell 29
NRf7	NR	Operating band for inter-band cells	Low (Note 1)	
NRf8	NR	Operating band for SDL cell	Mid (Note 1)	NR Cell 32
NRf9	NR	Operating band for SUL cell	Mid (Note 1)	NR Cell 33
NRf10	NR	Operating band for inter-band cells	Mid (Note bb)	NR Cell 500
Note 1:	For signalling test, see clause 6.2.3.			
Note 2:	Void.			
Note 3:	For RRM test with NR intra-band non-contiguous CA, the test frequencies for the set of non-contiguous component carriers are specified in clauses 4.3.1.1.4 for FR1 and in clause 4.3.1.2.4 for FR2 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.			
Note 4:	For signalling test with NR inter-band CA three bands only, the test band is different from the Operating band for NRf1 and the Operating band for NRf5.			

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	SSB-Index <sup>2,3</sup>
	gNB Identifier	Cell Identity		$L_{RA}=13\zeta$ Note 1	$L_{RA}=13\zeta$ Note 1	
NR Cell 1	'00 0000 0000 0000 0000 0000 0001'B	'00 0000 0000'B	0	0	0	1
NR Cell 2	'00 0000 0000 0000 0000 0000 0001'B	'00 0000 0010'B	2	32	32	0
NR Cell 3	'00 0000 0000 0000 0000 0000 0010'B	'00 0000 0011'B	3	0	0	1
NR Cell 4	'00 0000 0000 0000 0000 0000 0011'B	'00 0000 0100'B	4	64	64	1
NR Cell 6	'00 0000 0000 0000 0000 0000 0100'B	'00 0000 0110'B	6	0	0	1
NR Cell 10	'00 0000 0000 0000 0000 0000 0101'B	'00 0000 1010'B	10	0	0	1
NR Cell 11	'00 0000 0000 0000 0000 0000 0110'B	'00 0000 1011'B	11	96	96	0
NR Cell 12	'00 0000 0000 0000 0000 0000 0010'B	'00 0000 1100'B	12	32	32	0
NR Cell 13	'00 0000 0000 0000 0000 0000 0100'B	'00 0000 1101'B	13	32	32	0
NR Cell 14	'00 0000 0000 0000 0000 0000 0111'B	'00 0000 1110'B	14	0	0	1
NR Cell 23	'00 0000 0000 0000 0000 0000 0110'B	'00 0001 0111'B	23	64	64	1
NR Cell 28	'00 0000 0000 0000 0000 0000 0010'B	'00 0001 1100'B	28	0	0	1
NR Cell 29	'00 0000 0000 0000 0000 0000 0100'B	'00 0001 1101'B	29	32	32	0
NR Cell 30	'00 0000 0000 0000 0000 0000 0111'B	'00 0001 1110'B	30	32	32	0
NR Cell 31	'00 0000 0000 0000 0000 0000 0110'B	'00 0001 1111'B	31	64	64	1

NR Cell 32	'00 0000 0000 0000 0000 0001'B	'00 0010 0000'B	32	-	-	1
NR Cell 33	'00 0000 0000 0000 0000 0001'B	'00 0010 0001'B	33	-	-	-
NR Cell 489	'00 0000 0000 0000 0000 0000 0001'B	'01 1110 1001'B	489	128	128	0
NR Cell 500	'00 0000 0000 0000 0000 0000 1000'B	'00 0000 0111'B	500	0	0	1

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.

Note 2: This SSB-Index does not apply for RRM test cases in TS 38.533 [18]. RRM test cases shall use the SSB index defined in A.3 of TS 38.533 [18].

Note 3: For signalling test, simultaneous co-existence of active NR cells defined on the same frequency and same SSB-Index is not recommended due to the same timing used for intra-frequency NR cells in TS 38.523-3 [23].

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

cell ID	Tracking Area			TA# list (Note 1)	5G-GUTI (Note 2)			5G-TMSI	
	TA#	PLMN			TAC	AMF Identifier			
		MCC	MNC			AMF region ID	AMF Set ID		AMF Pointer
NR Cell 1	TAI-1	(Note 3)		1	TAI-1	254	1	1	Arbitrarily selected according to TS 23.003 [26] clause 2.10
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	
NR Cell 489	TAI-1	(Note 3)		1	TAI-1	254	1	1	
NR Cell 500	TAI-1	(Note 3)		1	TAI-1	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<sub>IMSI</sub> on the test USIM card (subclause 4.9.3).

Table 4.4.2-4: Default parameters for simulated SNPN cells

cell ID	Network Identifier (NID)	
	Assignment mode (Note 1)	NID value
NR Cell 1	1	1
NR Cell 2	1	2
NR Cell 3	1	3
NR Cell 4	1	4
NR Cell 6	1	6
NR Cell 10	1	10
NR Cell 11	1	11
NR Cell 12	1	12
NR Cell 13	1	13
NR Cell 14	1	14
NR Cell 23	1	23
NR Cell 28	1	28
NR Cell 29	1	29
NR Cell 30	1	30
NR Cell 31	1	32
NR Cell 32	1	32
NR Cell 33	1	33
NR Cell 489	1	489
NR Cell 500	1	500

Note 1: As per TS 23.003 [26] clause 12.7.1, Network Identifier comprises of Assignment mode (one hexadecimal digit) and NID value (10 hexadecimal digits). Self-assignment NIDs are chosen by setting the assignment mode to value 1.

### 4.4.3 Common parameters for simulated NR cells

The parameters specified in this sub clause apply to the simulated NR cells in standalone NR and non-standalone network scenarios unless otherwise specified.

The common parameters for the simulated E-UTRA cells for standalone E-UTRA and non-standalone network scenarios are specified in TS 36.508 [2] clause 4.4.3 unless otherwise specified.

#### 4.4.3.1 Common configurations of system information blocks

##### 4.4.3.1.1 Combinations of system information blocks for E-UTRA standalone, EN-DC and NGEN-DC

The combination of system information blocks for standalone E-UTRA, EN-DC and NGEN-DC network scenarios are specified in TS 36.508 [2] clause 4.4.3.1.

For EN-DC and NGEN-DC network scenarios the SS shall in addition to broadcasting the E-UTRA system information blocks also broadcast the NR MIB on the NR cell(s).

##### 4.4.3.1.2 Combinations of system information blocks for NR standalone and NE-DC

The combination of system information blocks required by a test case depends on the test case scenario. In this clause, several combinations of system information blocks are defined.

Regardless of the combination of system information blocks indicated as being used by a test case, the SS shall broadcast only the NR MIB on the NR Cell(s) configured on an SDL band.

For NE-DC network scenario the SS shall in addition to broadcasting the NR system information blocks also broadcast the E-UTRA system information combination 1 on the E-UTRA cell(s) as specified in TS 36.508 [2].

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

- NR FDD single cell scenario except RRM test case scenarios
- NR TDD single cell scenario except RRM test case scenarios

- NR FDD inter-band DC component carriers cell scenario
- NR TDD inter-band DC component carriers cell scenario
- NR FDD and NR TDD inter-band DC component carriers cell scenario

Combination NR-2 applies to the following test case scenarios:

- NR FDD intra-frequency multi cell scenario
- NR TDD intra-frequency multi cell scenario
- NR FDD and NR TDD dual mode multi cell roaming scenario
- NR FDD single cell RRM test case scenario
- NR TDD single cell RRM test case scenario

Combination NR-3 applies to the following test case scenarios:

- NR FDD intra-frequency multi cell scenario with neighbouring cell related information
- NR TDD intra-frequency multi cell scenario with neighbouring cell related information

Combination NR-4 applies to the following test case scenarios:

- NR FDD inter-frequency multi cell scenario
- NR TDD inter-frequency multi cell scenario
- NR FDD inter-band multi cell scenario
- NR TDD inter-band multi cell scenario
- NR FDD and NR TDD dual mode multi cell non-roaming scenario
- NR FDD intra-band carrier aggregation component carriers cell scenario
- NR FDD inter-band carrier aggregation component carriers cell scenario
- NR TDD intra-band carrier aggregation component carriers cell scenario
- NR FDD and NR TDD inter-band carrier aggregation component carriers cell scenario

Combination NR-5 applies to the following test case scenarios:

- NR FDD intra-band carrier aggregation component carriers cell scenario + NR FDD intra-frequency neighbour.
- NR FDD inter-band carrier aggregation component carriers cell scenario+ NR FDD intra-frequency neighbour.
- NR TDD intra-band carrier aggregation component carriers cell scenario+ NR FDD intra-frequency neighbour.
- NR FDD and NR TDD inter-band carrier aggregation component carriers cell scenario+ NR FDD intra-frequency neighbour.

Combination NR-6 applies to the following test case scenarios:

- 3GPP inter-RAT NR FDD + E-UTRA FDD multi cell scenario
- 3GPP inter-RAT NR TDD + E-UTRA TDD multi cell scenario
- 3GPP inter-RAT NR TDD + E-UTRA FDD multi cell scenario

Combination NR-7 applies to the following test case scenarios:

- NR FDD inter-frequency + 3GPP inter-RAT E-UTRA multi-cell scenario
- NR TDD inter-frequency + 3GPP inter-RAT E-UTRA multi-cell scenario

Combination NR-8 applies to the following test case scenarios:

- NR FDD ETWS single cell scenario
- NR TDD ETWS single cell scenario

Combination NR-9 applies to the following test case scenarios:

- 3GPP NR FDD + CMAS single cell scenario
- 3GPP NR TDD + CMAS single cell scenario

Combination NR-10 applies to the following test case scenarios:

- 3GPP NR FDD + ETWS primary notification single cell scenario
- 3GPP NR TDD + ETWS primary notification single cell scenario

Combination NR-11 applies to the following test case scenarios:

- 3GPP NR FDD + ETWS secondary notification single cell scenario
- 3GPP NR TDD + ETWS secondary notification single cell scenario

Combination NR-12 applies to the following test case scenarios:

- 3GPP NR FDD + SNPN only single cell scenario
- 3GPP NR TDD + SNPN only single cell scenario

Combination NR-13 applies to the following test case scenarios:

- 3GPP NR FDD + CAG cell multi cell scenario
- 3GPP NR TDD + CAG cell multi cell scenario

Combination NR-14 applies to the following test case scenarios:

- 3GPP NR FDD single cell scenario + NR sidelink communication with or without network scheduling.
- 3GPP NR TDD single cell scenario + NR sidelink communication with or without network scheduling.
- 3GPP NR FDD intra-frequency multi cell scenario + NR sidelink communication with or without network scheduling.
- 3GPP NR TDD intra-frequency multi cell scenario + NR sidelink communication with or without network scheduling.
- 3GPP NR FDD inter-frequency multi cell scenario + NR sidelink communication with or without network scheduling.
- 3GPP NR TDD inter-frequency multi cell scenario + NR sidelink communication with or without network scheduling.
- 3GPP NR FDD inter-band multi cell scenario + NR sidelink communication with or without network scheduling.
- 3GPP NR TDD inter-band multi cell scenario + NR sidelink communication with or without network scheduling.

Combination NR-15 applies to the following test case scenarios:

- 3GPP NR FDD single cell scenario + positioning test case which require posSIBs.
- 3GPP NR TDD single cell scenario + positioning test case which require posSIBs.

Combination NR-16 applies to the following test case scenarios:

- 3GPP NR FDD intra-frequency multi cell scenario + positioning test case which require posSIBs.

- 3GPP NR TDD intra-frequency multi cell scenario + positioning test case which require posSIBs.

Combination NR-17 applies to the following test case scenarios:

- 3GPP NR FDD inter-frequency multi cell scenario + positioning test case which require posSIBs.
- 3GPP NR TDD inter-frequency multi cell scenario + positioning test case which require posSIBs.

Combination NR-18 applies to the following test case scenarios:

- 3GPP NR FDD inter-frequency multi cell scenario + idle/inactive measurements.
- 3GPP NR TDD inter-frequency multi cell scenario + idle/inactive measurements.

Combination NR-19 applies to the following test case scenarios:

- 3GPP NR FDD + Extended field in SI scenario
- 3GPP NR TDD + Extended field in SI scenario

**Table 4.4.3.1.2-1: Combinations of system information blocks**

Combination No.	System information block type														posSIBs
	SIB1	SIB2	SIB3	SIB4	SIB5	SIB6	SIB7	SIB8	SIB9	SIB10	SIB11	SIB12	SIB13	SIB14	
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								
NR-9	X							X							
NR-10	X					X									
NR-11	X						X								
NR-12	X									X					
NR-13	X	X								X					
NR-14	X	X		X								X			
NR-15	X														X
NR-16	X	X													X
NR-17	X	X		X											X
NR-18	X			X							X				
NR-19	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	SIB6
2	32	SIB7

**Table 4.4.3.1.3-8: Scheduling for combination NR-9**

Scheduling Information No.	Periodicity [radio frames]	Mapping of system information blocks
1	32	SIB8

**Table 4.4.3.1.3-9: Scheduling for combination NR-10**

Scheduling Information No.	Periodicity [radio frames]	Mapping of system information blocks
	32	SIB6

**Table 4.4.3.1.3-10: Scheduling for combination NR-11**

Scheduling Information No.	Periodicity [radio frames]	Mapping of system information blocks
1	32	SIB7



Table 4.4.3.1.3-11: Scheduling for combination NR-12

Scheduling Information No.	Periodicity [radio frames]	Mapping of system information blocks
1	64	SIB10

Table 4.4.3.1.3-12: Scheduling for combination NR-13

Scheduling Information No.	Periodicity [radio frames]	Mapping of system information blocks
1	32	SIB2
2	64	SIB10

Table 4.4.3.1.3-13: Scheduling for combination NR-14

Scheduling Information No.	Periodicity [radio frames]	Mapping of system information blocks
1	32	SIB2
2	64	SIB4
3	64	SIB12

Table 4.4.3.1.3-14: Scheduling for combination NR-15

Scheduling Information No.	Periodicity [radio frames]	Mapping of system information blocks
1	32	posSibType1-1, posSibType1-2, posSibType1-3 (Note 1)
	32	posSibType4-1 (Note 2)
	32	posSibType5-1 (Note 3)
	32	posSibType6-1 (Note 4)
2	32	posSibType2-1, posSibType2-3, posSibType2-6, posSibType2-7, posSibType2-8, posSibType2-9 (Note 4)

Note 1: Content of SI message 1 when UE supports GNSS as defined in TS 37.571-2 [20] Table 8.1-1: Sub-test 25.

Note 2: Content of SI message 1 when UE supports Sensor as defined in TS 37.571-2 [20] Table 8.1-1: Sub-test 24.

Note 3: Content of SI message 1 when UE supports MBS as defined in TS 37.571-2 [20] Table 8.1-1: Sub-test 23.

Note 4: Content of SI message 2, only present when UE supports GNSS as defined in TS 37.571-2 [20] Table 8.1-1: Sub-test 25. If UE supports N GNSS systems, SI message 2 needs to be broadcasted N times, once per each GNSS system.

Table 4.4.3.1.3-15: Scheduling for combination NR-16

Scheduling Information No.	Periodicity [radio frames]	Mapping of system information blocks
1	32	SIB2
2	32	posSibType6-1

Table 4.4.3.1.3-16: Scheduling for combination NR-17

Scheduling Information No.	Periodicity [radio frames]	Mapping of system information blocks
1	32	SIB2
2	64	SIB4
3	32	posSibType6-1

Table 4.4.3.1.3-17: Scheduling for combination NR-18

Scheduling Information No.	Periodicity [radio frames]	Mapping of system information blocks
1	64	SIB4
2	64	SIB11

Table 4.4.3.1.3-18: Scheduling for combination NR-19

Scheduling Information No.	Periodicity [radio frames]	Mapping of system information blocks
1	32	SIB2, SIB11

## 4.4A Test states

### 4.4A.1 General

The purpose of the test states is to get the UE into specific 5GC and RRC protocol states in the initial condition of test cases. Each test state is identified by a test state ID. The syntax used for test state IDs is described in sub-clause 4.4A.4. The list of defined test states and the associated UE 5GC and RRC/ N3AN protocol states are specified in sub-clause 4.4A.2.

A test case may request that one or more test functions and/or configurations are activated/configured by the SS as part of the procedure used for the requested test state. The test case requests the additional test functions and/or configurations by specifying one or more test state parameters. The list of defined test state parameters is specified in sub-clause 4.4A.3.

### 4.4A.2 Test states and associated 5GC and RRC protocol states

Table 4.4A.2-0: 5GC and RRC/N3AN protocol states for UE Switched Off

5GS state ID	Connectivity	RRC/N3AN state	5GMM modes	5GMM sublayer	5GSM sublayer	Comments
0-A	-	-	-	-	-	UE switched off. No change to PLMN stored in the USIM
0N-B	NR	-	-	-	-	UE switched off with the PLMN under test stored in the USIM
0E-B	E-UTRA	-	-	-	-	
0W-B	WLAN	-	-	-	-	

**Table 4.4A.2-1: 5GC and RRC/N3AN protocol states for IDLE**

5GS state ID	Connectivity	RRC/N3AN state	5GMM modes	5GMM sublayer	5GSM sublayer
1N-A	NR	NR RRC_IDLE	5GMM-IDLE	5GMM-REGISTERED	PDU SESSION INACTIVE
					PDU SESSION ACTIVE
1E-A	E-UTRA	EUTRA RRC_IDLE	5GMM-IDLE	5GMM-REGISTERED	PDU SESSION INACTIVE
					PDU SESSION ACTIVE
1W-A	WLAN	Ipsec_SA_Released	5GMM-IDLE	5GMM-REGISTERED	PDU SESSION INACTIVE
					PDU SESSION ACTIVE
1N-B	NR	NR RRC_IDLE	5GMM-IDLE	5GMM-REGISTERED	PDU SESSION INACTIVE
					PDU SESSION ACTIVE

**Table 4.4A.2-2: 5GC and RRC protocol states for INACTIVE**

5GS state ID	Connectivity	RRC state	5GMM modes	5GMM sublayer	5GSM sublayer
2N-A	NR	NR RRC_INACTIVE	5GMM-CONNECTED	5GMM-REGISTERED	PDU SESSION INACTIVE
					PDU SESSION ACTIVE
2E-A	E-UTRA	EUTRA RRC_INACTIVE	5GMM-CONNECTED	5GMM-REGISTERED	PDU SESSION INACTIVE
					PDU SESSION ACTIVE

**Table 4.4A.2-3: 5GC and RRC/N3AN protocol states for CONNECTED**

5GS state ID	Connectivity	RRC/N3AN state	5GMM modes	5GMM sublayer	5GSM sublayer
3N-A	NR	NR RRC_CONNECTED	5GMM-CONNECTED	5GMM-REGISTERED	PDU SESSION INACTIVE
					PDU SESSION ACTIVE
3E-A	E-UTRA	EUTRA RRC_CONNECTED	5GMM-CONNECTED	5GMM-REGISTERED	PDU SESSION INACTIVE
					PDU SESSION ACTIVE
3W-A	WLAN	Ipsec_SA_Established	5GMM-CONNECTED	5GMM-REGISTERED	PDU SESSION INACTIVE
					PDU SESSION ACTIVE
3N-B	NR	NR RRC_CONNECTED	5GMM-CONNECTED	5GMM-REGISTERED	PDU SESSION INACTIVE
					PDU SESSION ACTIVE

**Table 4.4A.2-4: 5GC and RRC/N3AN protocol states for Out of Coverage**

5GS state ID	Connectivity	RRC/N3AN state	5GMM modes	5GMM sublayer	5GSM sublayer
4-A	-	-	-	-	-

### 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
<i>UE test loop mode &lt;X&gt; prepared</i>	If included the UE test mode is activated in the preamble indicating that UE test loop mode <X> will be activated in the test case test procedure, where <X> is A, B or E. (Note 1, Note 2, Note 3, Note 4)
<i>UE test loop mode &lt;X&gt; active</i>	If included the UE Test Mode and UE test loop mode <X> will be activated in the preamble, where <X> is A, B or E. (Note 1, Note 2, Note 3, Note 4)
Note 1:	See TS 38.509 [11], clause 5.2.2 for details of UE test mode.
Note 2:	See TS 38.509 [11], clause 5.3.4.1 for details of UE test loop mode A.
Note 3:	See TS 38.509 [11], clause 5.3.4.2.2 for details of UE test loop mode B.
Note 4:	See TS 38.509 [11], clause 5.3.4.3 for details of UE test loop mode E.

### 4.4A.4 Test state ID syntax

A test state ID is defined as:

<RRC state><Connectivity>-<Variant>

, where <RRC state>, <Connectivity> and <Variant> are defined in Table 4.4A.2-1.

**Table 4.4A.4-1: Test state fields**

Test state field	Value	Description
<RRC state>	0	Indicates that the requested test state will end up in SWITCHED_OFF state.
	1	Indicates that the requested test state will end up in RRC_IDLE/Ipsec_SA_Released state.
	2	Indicates that the requested test state will end up in RRC_INACTIVE state.
	3	Indicates that the requested test state will end up in RRC_CONNECTED/Ipsec_SA_Released state.
<Connectivity>	4	Indicates that the requested test state will end up in Out_of_Coverage state.
	E	E-UTRA is used as the initial access.
	N	NR is used as the initial access.
	W	Un trusted non 3GPP Access over WLAN 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

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

- 1> use the applicable generic procedure as specified in Table 4.4A.5-1 using the:
  - 2> applicable generic procedure parameters as specified in Table 4.4A.5-1 and Table 4.4A.5-2; and
  - 2> applicable message conditions as specified in Table 4.4A.5-2.

**Table 4.4A.5-1: Test state ID mapping to generic procedures and Connectivity generic procedure parameter**

Test state ID			Generic Procedure		
RRC state field	Connectivity field	Variant field	Name	Generic procedure parameter (Note 1)	Clause
0	-	A	SWITCHED_OFF		4.5.5
0	N	B	SWITCHED_OFF	Connectivity=NR	4.5.5
0	E	B	SWITCHED_OFF	Connectivity=E-UTRA	4.5.5
0	W	B	SWITCHED_OFF	Connectivity=WLAN	4.5.5
1	N	A	RRC_IDLE	Connectivity=NR	4.5.2
1	E	A	RRC_IDLE	Connectivity=E-UTRA	4.5.2
1	W	A	Ipsec_SA_Released	Connectivity=WLAN	4.5.2
1	N	B	RRC_IDLE_with_SL	Connectivity=NR, Sidelink = On	4.5.2
2	N	A	RRC_INACTIVE	Connectivity=NR	4.5.3
2	E	A	RRC_INACTIVE	Connectivity=E-UTRA	4.5.3
3	N	A	RRC_CONNECTED	Connectivity=NR	4.5.4
3	E	A	RRC_CONNECTED	Connectivity=E-UTRA	4.5.4
3	W	A	Ipsec_SA_Established	Connectivity=WLAN	4.5.4
3	N	B	RRC_CONNECTED_w ith_SL	Connectivity=NR, Sidelink = On	4.5.4
4	-	A	Out_of_Coverage	Sidelink = On	4.5.7

Note 1: In addition to the Connectivity parameter specified in this table the applicable additional generic procedure parameters and conditions as stated in Table 4.4A.5-2 shall be used

**Table 4.4A.5-2: Additional generic procedure parameters and message conditions**

Test state parameter	Additional generic procedure parameter(s)	Specific message conditions	
		Message	Condition
<i>UE test loop mode A prepared</i>	Test Mode=On	Note 1	Note 1
<i>UE test loop mode B prepared</i>	Test Mode=On	ACTIVATE UE TEST MODE (see subclause 4.7A.1)	UE test loop mode B
<i>UE test loop mode E prepared</i>	Test Mode=On	ACTIVATE UE TEST MODE (ee subclause 4.7A.1)	UE test loop mode E
<i>UE test loop mode A active</i>	Test Loop Function=On	Note 1	Note 1
<i>UE test loop mode B active</i>	Test Loop Function=On	ACTIVATE UE TEST MODE (see subclause 4.7A.1)	UE test loop mode B
		CLOSE UE TEST LOOP (see subclause 4.7A.2)	UE test loop mode B
<i>UE test loop mode E active</i>	Test Loop Function=On	ACTIVATE UE TEST MODE (see subclause 4.7A.1)	UE test loop mode E
		CLOSE UE TEST LOOP (see subclause 4.7A.2)	UE test loop mode E

Note 1: For test state parameters *UE test loop mode A prepared* and *UE test loop mode A active* there is no specific message conditions needed as the default UE test loop mode in the messages ACTIVATE UE TEST MODE and CLOSE UE TEST LOOP is UE test loop mode A.

## 4.5 Generic procedures

### 4.5.1 General

The generic procedures are used by test cases to get UE under test into SWITCHED\_OFF, RRC\_IDLE/Ipsec SA not established, RRC\_INACTIVE, RRC\_CONNECTED/Ipsec SA or Out of Coverage established state.

A test case controls the SS by specifying the required RRC state and a set of generic procedure parameters applicable for the intended testing.

The connectivity values *EN-DC* and *E-UTRA/EPC* are both a UE connected to the EPC. The connectivity values *E-UTRA/5GC*, *NR*, *NGEN-DC*, *NE-DC* and *NR-DC* are all a UE connected to the 5GC.

Table 4.5.1-1: Generic procedure parameters

Parameter	Values	Description	Parameter condition
Connectivity	<i>E-UTRA/5GC</i>	E-UTRA connected to 5GC	Mandatory. For value <i>NR</i> see note 1.
	<i>NR</i>	NR connected to 5GC	
	<i>EN-DC</i>	E-UTRA-NR Dual Connectivity with E-UTRA connected to EPC	
	<i>NGEN-DC</i>	E-UTRA-NR Dual Connectivity with E-UTRA connected to 5GC	
	<i>NE-DC</i>	NR E-UTRA Dual Connectivity	
	<i>NR-DC</i>	NR-NR Dual Connectivity	
	<i>WLAN</i>	Un trusted non 3GPP access over WLAN	
	<i>E-UTRA/EPC</i>	E-UTRA connected to EPC	
Bearers	<i>MCG(s) and SCG</i>	MCG and SCG	Mandatory when Connectivity is set to <i>EN-DC</i> , <i>NGEN-DC</i> , <i>NE-DC</i> and <i>NR-DC</i> and when the generic procedures are used by test cases to get UE under test into RRC_CONNECTED state. s=1 if MULTI_PDN= FALSE and s=2 if MULTI_PDN=TRUE. N/A otherwise.
	<i>MCG(s) and split</i>	MCG and split	
Test Mode	<i>On</i>	UE test mode active as specified in TS 38.509 [11], clause 5.2.2.	Optional
Test Loop Function	<i>On</i>	UE test mode active with one of the UE test loop modes activated as specified in TS 38.509 [11], clauses 5.2.2 and 5.3.2.	Optional
Connected without release	<i>On</i>	Enter RRC_Connected with Ipsec_SA_Established and without any release.	Optional N/A for <i>NR-DC</i> .
Interworking without N26 interface supported	<i>On</i>	The NWK sets the REGISTRATION ACCEPT message, IE 5GS network feature support, IWK N26 (octet 3, bit 7) = 1	Optional, Depends on test case scenario. Default message content for REGISTRATION ACCEPT is set to Interworking without N26 interface NOT supported
Unrestricted nr PDN	<i>On</i>	Allow unrestricted numbers of PDNs.	Optional for Connectivity <i>E-UTRA/EPC</i> . N/A otherwise.
Sidelink	<i>On</i>	NR sidelink	Optional
Cast type	<i>Unicast</i>	To establish unicast sidelink and PC5-RRC connection.	Optional
GNSS Sync	<i>On</i>	To use GNSS as the synchronization reference source.	Optional
SL MIMO	<i>On</i>	To transmit PSSCH with 2 spatial layers, i.e. SL MIMO	Optional
Note 1: The TS 38.331 [6] abbreviation for NR connected to 5GC is NR/5GC.			

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/5GC* and *NGEN-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 *E-UTRA/EPC*:
  - 2> use 1 E-UTRA cell, default parameters;
  - 2> if unrestricted nr PDN is not present:
    - 3> perform according to the table 4.5.2.2-1: E-UTRA RRC\_IDLE;
  - 2> else:
    - 3> perform according to the table 4.5.2.2-5: E-UTRA RRC\_IDLE Unrestricted nr PDN:
    - 3> if `pc_noOf_PDNsNewConnection > 0`:
      - 4> perform according to the table 4.5.2.2-6: E-UTRA RRC\_IDLE Unrestricted nr PDN Extension;
- 1> if connectivity is *NR*:
  - 2> use 1 NR cell, default parameters;
  - 2> if sidelink is *On*
    - 3> use 1 NR-SS-UE;
    - 3> if GNSS Sync is *On*
      - 4> use 1 GNSS simulator.
  - 2> perform according to the table 4.5.2.2-2: NR RRC\_IDLE;
  - 2> if `pc_noOf_PDUsNewConnection > 0`
    - 3> perform according to the table 4.5.2.2-4: NR RRC\_IDLE Extension;
- 1> if connectivity is *WLAN*:
  - 2> use 1 WLAN cell, default parameters;
  - 2> if connected without release is not present:
    - 3> perform according to the table 4.5.2.2-3: WLAN Ipsec\_SA\_Released;
  - 2> else:
    - 3> Not defined;
- 1> if connectivity is *NR-DC*:
  - 2> use 2 NR cells, default parameters;
  - 2> perform according to the table 4.5.2.2-2: NR RRC\_IDLE.
- 1> if connectivity is *NE-DC*:
  - 2> use 1 E-UTRA cell and 1 NR cell, default parameters;
  - 2> perform according to the table 4.5.2.2-2: NR RRC\_IDLE.

## 4.5.2.2 Procedures

Table 4.5.2.2-1: E-UTRA RRC\_IDLE

St	Procedure	Message Sequence		TP	Verdict
		U - S	Message		
1-9a2	Same as TS 36.508 [2] table 4.5.2.3-1, steps 1-9a2.	-	-	-	-
-	EXCEPTION: Steps 10a1 to 10b8 describe behaviour which depends on procedure parameters; the "lower case letter" identifies a step sequence that take place if a procedure parameter has a particular value.	-	-	-	-
10a1-10a10	IF Test Mode = On OR Test Loop Function = On THEN steps 10-19 as defined in TS 36.508 [2] table 4.5.2A.3-1, are performed. The ACTIVATE TEST MODE is using the associated condition for the test loop.	-	-	-	-
10b1-10b8	ELSE steps 10-17 as defined in TS 36.508 [2], table 4.5.2.3-1 are performed.	-	-	-	-



Table 4.5.2.2-2: NR RRC\_IDLE

St	Procedure	Message Sequence		TP	Verdict
		U - S	Message		
1	-	<--	NR RRC: SYSTEM INFORMATION (BCCH)	-	-
2	The UE transmits an <i>RRCSetupRequest</i> message.	-->	NR RRC: <i>RRCSetupRequest</i>	-	-
3	The SS transmits an <i>RRCSetup</i> message.	<--	NR RRC: <i>RRCSetup</i>	-	-
4	The UE transmits an <i>RRCSetupComplete</i> message and a REGISTRATION REQUEST message.	-->	NR RRC: <i>RRCSetupComplete</i> 5GMM: REGISTRATION REQUEST	-	-
5	The SS transmits a <i>DLInformationTransfer</i> message and an AUTHENTICATION REQUEST message.	<--	NR RRC: <i>DLInformationTransfer</i> 5GMM: AUTHENTICATION REQUEST	-	-
6	The UE transmits an <i>ULInformationTransfer</i> message and an AUTHENTICATION RESPONSE message.	-->	NR RRC: <i>ULInformationTransfer</i> 5GMM: AUTHENTICATION RESPONSE	-	-
7	Void	-	-	-	-
8	The SS transmits a <i>DLInformationTransfer</i> message and a SECURITY MODE COMMAND message.	<--	NR RRC: <i>DLInformationTransfer</i> 5GMM: SECURITY MODE COMMAND	-	-
9	The UE transmits an <i>ULInformationTransfer</i> message and a SECURITY MODE COMPLETE message.	-->	NR RRC: <i>ULInformationTransfer</i> 5GMM: SECURITY MODE COMPLETE	-	-
-	EXCEPTION: Step 9Aa1 to 9Aa2 describes behaviour that depends on the UE capability; the "lower case letter" identifies a step sequence that takes place if a capability is supported and the procedure parameter Interworking without N26 interface supported is not present.	-	-	-	-
9Aa1	IF UE_S1_SUPPORTED the SS transmits a <i>DLInformationTransfer</i> message and a SECURITY MODE COMMAND message.	<--	NR RRC: <i>DLInformationTransfer</i> 5GMM: SECURITY MODE COMMAND	-	-
9Aa2	The UE transmits an <i>ULInformationTransfer</i> message and a SECURITY MODE COMPLETE message.	-->	NR RRC: <i>ULInformationTransfer</i> 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 = <i>On</i> OR Test Loop Function = <i>On</i> , the SS transmits an ACTIVATE TEST MODE message to activate UE radio bearer test mode procedure. The ACTIVATE TEST MODE message is using the associated condition for the test loop.	<--	RRC: <i>DLInformationTransfer</i> TC: ACTIVATE TEST MODE	-	-
9a2	The UE transmits an ACTIVATE TEST MODE COMPLETE message.	-->	RRC: <i>ULInformationTransfer</i> TC: ACTIVATE TEST MODE COMPLETE	-	-
10	The SS transmits a <i>SecurityModeCommand</i> message.	<--	NR RRC: <i>SecurityModeCommand</i>	-	-
11	The UE transmits a <i>SecurityModeComplete</i> message.	-->	NR RRC: <i>SecurityModeComplete</i>	-	-
12	The SS transmits a <i>UECapabilityEnquiry</i> message.	<--	NR RRC: <i>UECapabilityEnquiry</i>	-	-
13	The UE transmits a <i>UECapabilityInformation</i> message.	-->	NR RRC: <i>UECapabilityInformation</i>	-	-
14	The SS transmits a <i>DLInformationTransfer</i> message and a REGISTRATION ACCEPT message.	<--	NR RRC: <i>DLInformationTransfer</i> 5GMM: REGISTRATION ACCEPT	-	-
15	The UE transmits an <i>ULInformationTransfer</i> message and a REGISTRATION COMPLETE message.	-->	NR RRC: <i>ULInformationTransfer</i> 5GMM: REGISTRATION COMPLETE	-	-
16	Void	-	-	-	-

17	Void	-	-	-	-
18	Void	-	-	-	-
-	EXCEPTION: Step 19a1 describes behaviour depending UE implementation; the "lower case letter" identifies a step sequence that take place if the UE performs a specific action.	-	-	-	-
19a1	IF <i>pc_noOf_PDUsSameConnection</i> > 0 THEN the generic procedure for UE-requested PDU session establishment, specified in subclause 4.5A.2, takes place performing establishment of UE-requested PDU session(s) with <i>ExpectedNumberOfNewPDUSessions</i> = <i>pc_noOf_PDUsSameConnection</i> .	-	-	-	-
-	EXCEPTION: Steps 19Aa1 to 19Aa2 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.	-	-	-	-
19Aa1	IF connected without release is <i>On</i> AND Test Loop Function= <i>On</i> AND <i>pc_noOf_PDUsNewConnection</i> =0 THEN the SS transmits a CLOSE UE TEST LOOP message to enter the UE test loop mode. The CLOSE UE TEST LOOP is using the associated condition for the test loop.	<--	NR RRC: <i>DLInformationTransfer</i> TC: CLOSE UE TEST LOOP	-	-
19Aa2	The UE transmits a CLOSE UE TEST LOOP COMPLETE message to confirm that loopback entities for the radio bearer(s) have been created and loop back is activated.	-->	NR RRC: <i>ULInformationTransfer</i> TC: CLOSE UE TEST LOOP COMPLETE	-	-
-	EXCEPTION: Step 20a1 depends on the SS sequence depending on procedure parameters; the "lower case letter" identifies a step sequence that take place if a procedure parameter has a particular value.	-	-	-	-
20a1	IF <i>connected without release</i> is not present THEN, the SS transmits an <i>RRCRelease</i> message.	<--	NR RRC: <i>RRCRelease</i>	-	-
-	EXCEPTION: Step 20Aa1 depends on the SS sequence depending on procedure parameters; the "lower case letter" identifies a step sequence that take place if a procedure parameter has a particular value.	-	-	-	-
20Aa1	IF <i>GNSS Sync</i> = <i>On</i> THEN trigger UE to reset or clear the current UTC time that has been calculated from GNSS.  NOTE: The UTC time can be reset or clear on the UE using AT command (+CUTCRCR).	-	-	-	-
-	EXCEPTION: Step 21a1 and 21b1 depend on the SS sequence depending on procedure parameters; the "lower case letter" identifies a step sequence that take place if a procedure parameter has a particular value.	-	-	-	-
21a1	IF <i>Sidelink</i> = <i>On</i> AND <i>Cast type</i> = <i>Unicast</i> AND UE initiated unicast mode NR sidelink communication THEN generic procedure specified in subclause 4.9.22 is performed to establish unicast mode sidelink communication between the UE and the NR-SS-UE.				
21b1	ELSE IF <i>Sidelink</i> = <i>On</i> AND <i>Cast type</i> = <i>Unicast</i> AND NR-SS-UE initiated unicast mode NR sidelink communication THEN generic procedure specified in subclause 4.9.23 is performed to establish unicast mode sidelink communication between the UE and the NR-SS-UE.				
22a1	Void	-	-	-	-

Table 4.5.2.2-3: WLAN Ipsec\_SA\_Released

St	Procedure	Message Sequence		TP	Verdict
		U - S	Message		
1	The UE associates with the WLAN AP and obtains the local IP address.	-	-	-	-
2	The UE performs a dynamic selection of N3IWF using DNS query	-	-	-	-
-	Exception: The UE establishes an IPsec tunnel in parallel to 5GC registration steps 3 to 7 as per the IKEv2 protocol as defined in TS 23.502 [33] clause 4.12.2.2 figure 4.12.2.2-1.	-	-	-	-
3	The UE transmits a REGISTRATION REQUEST message.	-->	5GMM: REGISTRATION REQUEST	-	-
4	The SS transmits an AUTHENTICATION REQUEST message including EAP-Request/AKA'-Challenge or 5G AKA Challenge.	<--	5GMM: AUTHENTICATION REQUEST	-	-
5	The UE transmits an AUTHENTICATION RESPONSE message including EAP-Response/AKA'-Challenge or 5G AKA Response.	-->	5GMM: AUTHENTICATION RESPONSE	-	-
6	The SS transmits a SECURITY MODE COMMAND message including EAP-Success if EAP-AKA' used.	<--	5GMM: SECURITY MODE COMMAND	-	-
7	The UE transmits a SECURITY MODE COMPLETE message.	-->	5GMM: SECURITY MODE COMPLETE	-	-
8	The SS transmits a REGISTRATION ACCEPT message.	<--	5GMM: REGISTRATION ACCEPT	-	-
9	The UE transmits a REGISTRATION COMPLETE message.	-->	5GMM: REGISTRATION COMPLETE	-	-
10	The generic procedure for UE-requested PDU session establishment, specified in subclause 4.5A.2A, takes place performing establishment of UE-requested PDU session.	-	-	-	-
-	EXCEPTION: Step 11a1 depends on the SS sequence depending on procedure parameters; the "lower case letter" identifies a step sequence that take place if a procedure parameter has a particular value.	-	-	-	-
11a1	IF <i>connected without release</i> is not present THEN generic procedure for SS-requested IPsec Secure tunnel disconnection, specified in subclause 4.5A.5, takes place performing disconnection of security association.	-	-	-	-

Note: The current procedure assumes UE establishes a single PDU session over Non 3GPP Access.

Table 4.5.2.2-4: NR RRC\_IDLE Extension

St	Procedure	Message Sequence		TP	Verdict
		U - S	Message		
0	Wait for 10 sec to allow the UE to start PDU session establishment automatically. IF it does THEN stop the 10 sec timer and continue with the steps from step 2 onwards. IF it does not and the 10 sec timer expires THEN go to step 1.	-	-	-	-
-	EXCEPTION: Step 1a1 and 1b1 depends on the status of the UE; the "lower case letter" identifies a step sequence that take place if a PDU connection is already active.	-	-	-	-
1a1	IF there is no PDU connection already active THEN Trigger the UE to perform PDU session establishment via AT or MMI command. NOTE: For the DNN name in the AT command, check the default PDU type from the value the ICS parameter pc_APN_Default_Configuration and take the value of the corresponding ICS parameter. If it is set to 'none' then use pc_APN_ID_Internet.	-	-	-	-
1b1	ELSE skip the steps 2-9a1	-	-	-	-
2-6	Steps 2-6 from Table 4.5.4.2-3 are performed.	-	-	-	-
7	The SS transmits a SERVICE ACCEPT message.	<--	NR RRC: <i>DLInformationTransfer</i> 5GMM: SERVICE ACCEPT	-	-
8	The generic procedure for UE-requested PDU session establishment, specified in subclause 4.5A.2, takes place performing establishment of UE-requested PDU session(s) with ExpectedNumberOfNewPDUSessions = pc_noOf_PDUsNewConnection.	-	-	-	-
-	EXCEPTION: Steps 8Aa1 to 8Aa2 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.	-	-	-	-
8Aa1	IF connected without release is <i>On</i> AND Test Loop Function= <i>On</i> THEN the SS transmits a CLOSE UE TEST LOOP message to enter the UE test loop mode. The CLOSE UE TEST LOOP is using the associated condition for the test loop.	<--	NR RRC: <i>DLInformationTransfer</i> TC: CLOSE UE TEST LOOP	-	-
8Aa2	The UE transmits a CLOSE UE TEST LOOP COMPLETE message to confirm that loopback entities for the radio bearer(s) have been created and loop back is activated.	-->	NR RRC: <i>ULInformationTransfer</i> TC: CLOSE UE TEST LOOP COMPLETE	-	-
-	EXCEPTION: Step 9a1 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 <i>connected without release</i> is not present THEN, the SS transmits an <i>RRCRelease</i> message.	<--	NR RRC: <i>RRCRelease</i>	-	-

Table 4.5.2.2-5: E-UTRA RRC\_IDLE Unrestricted nr PDN

St	Procedure	Message Sequence		TP	Verdict
		U - S	Message		
1-9a2	Steps 1 to 9a2 of the generic procedure for UE Registration (State 2) as specified in TS 36.508 [2], table 4.5.2.3-1 take place.	-	-	-	-
-	EXCEPTION: Steps 10a1 to 10b8 describe behaviour which depends on procedure parameters; the "lower case letter" identifies a step sequence that take place if a procedure parameter has a particular value.	-	-	-	-
10a1-10a8	IF Test Mode = On OR Test Loop Function = On THEN steps 10-17 of the generic procedure for UE Registration, UE Test Mode Activated (State 2A) as specified in TS 36.508 [2] table 4.5.2A.3-1, take place. The ACTIVATE TEST MODE is using the associated condition for the test loop.	-	-	-	-
10b1-10b6	ELSE steps 10-15 as defined in TS 36.508 [2], table 4.5.2.3-1 take place.	-	-	-	-
-	EXCEPTION: IF the 'IP address allocation' for the APN for which the PDN connection is established is set to "Yes" in Table 4.8.4-1 THEN, in parallel to the event described in step 10A below the generic procedure for IP address allocation in the U-plane specified in TS 36.508 [2], subclause 4.5A.1 takes place performing IP address allocation in the U-plane if requested by the UE.	-	-	-	-
-	EXCEPTION: IF the 'IMS registration' for the APN for which the PDN connection is established is set to "Yes" in Table 4.8.4-1, THEN in parallel to the event described in step 10A below the relevant generic procedure for IMS signalling in the U-plane specified in Table 4.8.4-1 takes place.	-	-	-	-
10A	This message includes the ATTACH COMPLETE message. The ACTIVATE DEFAULT EPS BEARER CONTEXT ACCEPT message is piggybacked in ATTACH COMPLETE.	-->	RRC: <i>ULInformationTransfer</i> NAS: ATTACH COMPLETE NAS: ACTIVATE DEFAULT EPS BEARER CONTEXT ACCEPT	-	-
11	The Generic Test Procedure to establish multiple additional PDN connections as specified in subclause 4.5A.2B takes place, ExpectedNumberOfNewPDNConnections=pc_noOf_PDNsSameConnection.	-	-	-	-
-	EXCEPTION: Steps 11Aa1 to 11Aa2 describe behaviour which depends on the SS sequence depending on procedure parameters; the "lower case letter" identifies a step sequence that take place if a procedure parameter has a particular value.	-	-	-	-
11Aa1	IF connected without release is On AND Test Loop Function=On AND pc_noOf_PDUsNewConnection =0 THEN the SS transmits a CLOSE UE TEST LOOP message to enter the UE test loop mode. The CLOSE UE TEST LOOP is using the associated condition for the test loop.	<--	RRC: <i>DLInformationTransfer</i> TC: CLOSE UE TEST LOOP	-	-
11Aa2	The UE transmits a CLOSE UE TEST LOOP COMPLETE message to confirm that loopback entities for the radio bearer(s) have been created and loop back is activated.	-->	RRC: <i>ULInformationTransfer</i> TC: CLOSE UE TEST LOOP COMPLETE	-	-
-	EXCEPTION: Step 12a1 depends on procedure parameters; the "lower case letter" identifies a step sequence that take place if a procedure parameter has a particular value.	-	-	-	-

12a1	IF <i>connected without release</i> is not present THEN, the SS transmits an <i>RRCConnectionRelease</i> message to release RRC connection and move to E-UTRA RRC_IDLE (State 2).	<--	RRC: <i>RRCConnectionRelease</i>	-	-
------	---	-----	----------------------------------	---	---

Table 4.5.2.2-6: E-UTRA RRC\_IDLE Unrestricted nr PDN Extension

St	Procedure	Message Sequence		TP	Verdict
		U - S	Message		
0	Wait for 10 sec to allow the UE to start PDN connection establishment automatically. IF it does THEN stop the 10 sec timer and continue with the steps from step 2 onwards. IF it does not and the 10 sec timer expires THEN go to step 1.	-	-	-	-
-	EXCEPTION: Step 1a1 and 1b1 depends on the status of the UE; the "lower case letter" identifies a step sequence that take place if a PDU connection is already active.	-	-	-	-
1a1	IF there is no PDN connection already active THEN Trigger the UE to perform PDN connection establishment via AT or MMI command. NOTE: For the DNN name in the AT command, check the default PDU type from the value the ICS parameter <i>pc_APN_Default_Configuration</i> and take the value of the corresponding ICS parameter. If it is set to 'none' then use <i>pc_APN_ID_Internet</i> .	-	-	-	-
1b1	ELSE skip the steps 2-8a1	-	-	-	-
2-6	Steps 3 to 7 of the generic procedure specified in TS 36.508 [2], table 4.5.3.3-1 take place.	-	-	-	-
7	The Generic Test Procedure to establish multiple additional PDN connections as specified in subclause 4.5A.2B takes place, <i>ExpectedNumberOfNewPDNConnections=pc_n oOf_PDNsNewConnection</i> .	-	-	-	-
-	EXCEPTION: Steps 7Aa1 to 7Aa2 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.	-	-	-	-
7Aa1	IF <i>connected without release</i> is On AND Test Loop Function=On THEN the SS transmits a CLOSE UE TEST LOOP message to enter the UE test loop mode. The CLOSE UE TEST LOOP is using the associated condition for the test loop.	<--	RRC: <i>DLInformationTransfer</i> TC: CLOSE UE TEST LOOP	-	-
7Aa2	The UE transmits a CLOSE UE TEST LOOP COMPLETE message to confirm that loopback entities for the radio bearer(s) have been created and loop back is activated.	-->	RRC: <i>ULInformationTransfer</i> TC: CLOSE UE TEST LOOP COMPLETE	-	-
-	EXCEPTION: Step 18a1 depends on procedure parameters; the "lower case letter" identifies a step sequence that take place if a procedure parameter has a particular value.	-	-	-	-
8a1	IF <i>connected without release</i> is not present THEN, the SS transmits an <i>RRCConnectionRelease</i> message to release RRC connection and move to E-UTRA RRC_IDLE (State 2).	<--	RRC: <i>RRCConnectionRelease</i>	-	-

### 4.5.2.3 Specific message contents

All specific message contents shall be according clause 4.6 and 4.7 and TS 36.508 [2] clause 4.6 and 4.7 with the following exception(s).

**Table 4.5.2.3-1: SECURITY MODE COMMAND (Step 9Aa1, Table 4.5.2.2-2)**

Derivation path: Table 4.7.1-25 with condition UE\_S1\_SUPPORTED

**Table 4.5.2.3-2: SERVICE REQUEST (Step 4, Table 4.5.2.2-4)**

Derivation Path: Table 4.7.1-16.			
Information Element	Value/remark	Comment	Condition
Service type	'0000'B	signalling	

**Table 4.5.2.3-3: Message PDN CONNECTIVITY REQUEST (step 4, Table 4.5.2.2-5)**

Derivation path: TS 36.508 [2], Table 4.7.3-20.

Information Element	Value/Remark	Comment	Condition
Access point name	Not present or One of the provided APN(s) in the Table 4.8.4-1	If present, the SS shall initialise the APN_Default=False If not present NOTE 2	
NOTE 1: Unless explicitly specified otherwise, the SS uses the Access point name value to address the entry of Table 4.8.4-1 to be used for the subsequent signalling of the PDN connectivity establishment and verifying specific UE behaviour e.g. depending on the type of the APN the UE may perform some actions.			
NOTE 2: The SS uses pc_APN_Default_Configuration to address the entry of Table 4.8.4-1 to be used for the subsequent signalling of the PDN connectivity establishment.			

**Table 4.5.2.3-4: Message ESM INFORMATION RESPONSE (step 9a2, Table 4.5.2.2-5)**

Derivation path: TS 36.508 [2], Table 4.7.3-14.

Information Element	Value/Remark	Comment	Condition
Access point name	Not present or One of the provided APN(s) in the Table 4.8.4-1	If present, the SS shall initialise the APN_Default=False If not present NOTE 2	
NOTE 1: Unless explicitly specified otherwise, the SS uses the Access point name value to address the entry of Table 4.8.4-1 to be used for the subsequent signalling of the PDN connectivity establishment and verifying specific UE behaviour e.g. depending on the type of the APN the UE may perform some actions.			
NOTE 2: The SS uses pc_APN_Default_Configuration to address the entry of Table 4.8.4-1 to be used for the subsequent signalling of the PDN connectivity establishment.			

**Table 4.5.2.3-5: Message ACTIVATE DEFAULT EPS BEARER CONTEXT REQUEST (Steps 10a5, 10b7, Table 4.5.2.2-5)**

Derivation path: TS 36.508 [2], Table 4.7.3-6 with CONDITION Interworking_with_5GS.			
Information Element	Value/Remark	Comment	Condition
EPS QoS	The EPC default bearer context of the entry in Table 4.8.4-1 which has been determined at step 1		
Access point name	IF the UE provided an Access point name in step 1 THEN the SS returns this name; OTHERWISE the SS includes the DNN/APN ID value of the entry in Table 4.8.4-1 which has been determined at step 1.		
Container ID n+3	'001C'H		
Length of container ID n+3 contents			
Container ID n+3 contents	5GC QoS rule of the entry in Table 4.8.4-1 which has been determined at step 1		
Container ID n+4	'001F'H		
Length of container ID n+4 contents			
Container ID n+4 contents	As per the relevant QoS rule (Container ID n+3)		

## 4.5.3 RRC\_INACTIVE

### 4.5.3.1 Initiation

The SS shall:

- 1> if connectivity is *NR*
- 2> use 1 NR cell, default parameters;
- 2> perform according to the table 4.5.3.2-1: NR RRC\_INACTIVE;

### 4.5.3.2 Procedures

**Table 4.5.3.2-1: NR RRC\_INACTIVE**

St	Procedure	Message Sequence		TP	Verdict
		U - S	Message		
1-19a1	Same as table 4.5.2.2-2, steps 1-19a1.	-	-	-	-
-	EXCEPTION: Steps 19Aa1-19Ab9 describes behaviour depending UE implementation; the "lower case letter" identifies a step sequence that take place if the UE performs a specific action.	-	-	-	-
19Aa1	IF <i>pc_noOf_PDUsNewConnection</i> = 0 AND <i>Test Loop Function=On</i> , table 4.5.2.2-2 steps 19Aa1-19Aa2 take place.	-	-	-	-
19Ab1	IF <i>pc_noOf_PDUsNewConnection</i> > 0 THEN the SS transmits an <i>RRCRelease</i> message	<--	NR RRC: <i>RRCRelease</i>	-	-
19Ab2-Ab9	Steps 1-8 of the NR RRC_IDLE extension procedure specified in table 4.5.2.2-4, take place.	-	-	-	-
20	The SS transmits an <i>RRCRelease</i> message with <i>suspend</i> .	<--	NR RRC: <i>RRCRelease</i>	-	-



## 4.5.4 RRC\_CONNECTED

### 4.5.4.1 Initiation

The SS shall:

- 1> perform according to clause 4.5.2 RRC\_IDLE;
- 1> if connectivity is *EN-DC*:
  - 2> use 1 E-UTRA cell and 1 NR cell, default parameters;
  - 2> if connected without release is *On*:
    - 3> perform according to the table 4.5.4.2-2: RF E-UTRA RRC\_CONNECTED;
  - 2> else:
    - 3> perform according to the table 4.5.4.2-1: E-UTRA RRC\_CONNECTED;
- 1> if connectivity is *E-UTRA/EPC*:
  - 2> use 1 E-UTRA cell, default parameters;
  - 2> perform according to the table 4.5.4.2-1: E-UTRA RRC\_CONNECTED;
- 1> if connectivity is *NR*:
  - 2> use 1 NR cell, default parameters;
  - 2> if sidelink is *On*:
    - 3> use 1 NR-SS-UE;
    - 3> if GNSS Sync is *On*:
      - 4> use 1 GNSS simulator.
  - 2> if connected without release is not present:
    - 3> perform according to the table 4.5.4.2-3: NR RRC\_CONNECTED;
- 1> if connectivity is *WLAN*:
  - 2> use 1 WLAN cell, default parameters;
  - 2> if connected without release is not present:
    - 3> perform according to the table 4.5.4.2-4: WLAN IPsec\_SA\_Established;
  - 2> else:
    - 3> Not defined;
- 1> if connectivity is *NR-DC*:
  - 2> use 2 NR cells, default parameters;
  - 2> perform according to the table 4.5.4.2-5: NR-DC RRC\_CONNECTED;
- 1> if connectivity is *NE-DC*:
  - 2> use 1 E-UTRA cell and 1 NR cell, default parameters;
  - 2> perform according to the table 4.5.4.2-6: NE-DC RRC\_CONNECTED;

## 4.5.4.2 Procedures

Table 4.5.4.2-1: E-UTRA RRC\_CONNECTED

St	Procedure	Message Sequence		TP	Verdict
		U - S	Message		
1-6	Same as TS 36.508 [2] table 4.5.3.3-1, steps 2-7.	-	-	-	-
7	Same as TS 36.508 [2] table 4.5.3.3-1, step 8. The <i>RRCConnectionReconfiguration</i> is using condition EN-DC_SRB2-DRB for connectivity EN-DC and bearers <i>MCG(s) and SCG</i> or connectivity <i>E-UTRA/EPC</i> . The <i>RRCConnectionReconfiguration</i> is using an associated condition <i>MCG_and_SCG</i> for bearers <i>MCG(s) and SCG</i> or condition <i>MCG_and_split</i> for bearers <i>MCG(s) and split</i> . For connectivity <i>E-UTRA/EPC</i> there's no associated condition.	<--	<i>RRC:</i> <i>RRCConnectionReconfiguration</i> <i>NAS:</i> ACTIVATE DEDICATED EPS BEARER CONTEXT REQUEST	-	-
-	EXCEPTION: IF <i>MCG(s) and SCG</i> or <i>MCG(s) and split</i> . In parallel to steps 8-9 the UE performs a C-RNTI based Contention Based Random Access (CBRA) procedure on the NR cell.	-	-	-	-
8-9	Same as TS 36.508 [2] table 4.5.3.3-1, steps 9-10a1	-	-	-	-
10a1-10a2	IF Test Loop Function= <i>On</i> , same as TS 36.508 [2] table 4.5.4.3-1, steps 1-2. The CLOSE UE TEST LOOP is using the associated condition for the test loop.	-	-	-	-

Table 4.5.4.2-2: RF E-UTRA RRC\_CONNECTED

St	Procedure	Message Sequence		TP	Verdict
		U - S	Message		
1-9	Same as table 4.5.2.2-1, steps 1-9.	-	-	-	-
10a1-10a2	IF Test Mode = <i>On</i> OR Test Loop Function = <i>On</i> THEN same as TS 36.508 [2] table 4.5.2A.3-1, steps 10-11. The ACTIVATE TEST MODE is using the associated condition for the test loop.	-	-	-	-
-	EXCEPTION: Steps 11a1 to 11b8 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 = <i>On</i> OR Test Loop Function = <i>On</i> THEN same as TS 36.508 [2] table 4.5.2A.3-1, steps 12-18.	-	-	-	-
11b1-11b8	ELSE, same as TS 36.508 [2] table 4.5.2.3-1, steps 10-16.	-	-	-	-
12	The SS transmits an <i>RRConnectionReconfiguration</i> for connectivity <i>EN-DC</i> and bearers <i>MCG(s) and SCG</i> . The <i>RRConnectionReconfiguration</i> is using an associated condition <i>MCG_and_SCG</i> for bearers <i>MCG(s) and SCG</i> or condition <i>MCG_and_split</i> for bearers <i>MCG(s) and split</i> .	<--	RRC: <i>RRConnectionReconfiguration</i>  NAS: ACTIVATE DEDICATED EPS BEARER CONTEXT REQUEST	-	-
-	EXCEPTION: In parallel to steps 13-14 the UE performs a C-RNTI based Contention Based Random Access (CBRA) procedure on the NR cell.	-	-	-	-
-	EXCEPTION: the steps 13 and 14 happen in any order.	-	-	-	-
13	The UE transmits an <i>RRConnectionReconfigurationComplete</i>	-->	RRC: <i>RRConnectionReconfigurationComplete</i>		
14	The UE transmits an ACTIVATE DEDICATED EPS BEARER CONTEXT ACCEPT message	-->	RRC: <i>ULInformationTransfer</i> NAS: ACTIVATE DEDICATED EPS BEARER CONTEXT ACCEPT		
15a1-15a2	IF Test Loop Function= <i>On</i> , same as TS 36.508 [2] table 4.5.4.3-1, steps 1-2. The CLOSE UE TEST LOOP is using the associated condition for the test loop.	-	-	-	-

Table 4.5.4.2-3: NR RRC\_CONNECTED

St	Procedure	Message Sequence		TP	Verdict
		U - S	Message		
1	The SS transmits a <i>Paging</i> message.	<--	NR RRC: <i>Paging</i>	-	-
2	The UE transmits an <i>RRCSetupRequest</i> message.	-->	NR RRC: <i>RRCSetupRequest</i>	-	-
3	The SS transmits an <i>RRCSetup</i> message.	<--	NR RRC: <i>RRCSetup</i>	-	-
4	The UE transmits an <i>RRCSetupComplete</i> message and a SERVICE REQUEST message.	-->	NR RRC: <i>RRCSetupComplete</i> 5GMM: SERVICE REQUEST	-	-
5	The SS transmits a <i>SecurityModeCommand</i> message.	<--	NR RRC: <i>SecurityModeCommand</i>	-	-
6	The UE transmits a <i>SecurityModeComplete</i> message.	-->	NR RRC: <i>SecurityModeComplete</i>	-	-
7	The SS transmits an <i>RRCReconfiguration</i> message and a SERVICE ACCEPT message to establish SRB2 and DRB(s). The <i>RRCReconfiguration</i> message is configured using <i>RRCReconfiguration-SRB2-DRB(n, m)</i> where n and m are the number of DRB(s) configured with RLC-AM and RLC-UM respectively.	<--	NR RRC: <i>RRCReconfiguration</i> 5GMM: SERVICE ACCEPT	-	-
8	The UE transmits an <i>RRCReconfigurationComplete</i> message.	-->	NR RRC: <i>RRCReconfigurationComplete</i>	-	-
-	EXCEPTION: Steps 9a1 to 9a2 describe behaviour which depends on the SS sequence depending on procedure parameters; the "lower case letter" identifies a step sequence that take place if a procedure parameter has a particular value.	-	-	-	-
9a1	IF Test Loop Function= <i>On</i> , the SS transmits a CLOSE UE TEST LOOP message to enter the UE test loop mode. The CLOSE UE TEST LOOP is using the associated condition for the test loop.	<--	NR RRC: <i>DLInformationTransfer</i> TC: CLOSE UE TEST LOOP	-	-
9a2	The UE transmits a CLOSE UE TEST LOOP COMPLETE message to confirm that loopback entities for the radio bearer(s) have been created and loop back is activated.	-->	NR RRC: <i>ULInformationTransfer</i> TC: CLOSE UE TEST LOOP COMPLETE	-	-

Table 4.5.4.2-4: WLAN IPsec\_SA\_Established

St	Procedure	Message Sequence		TP	Verdict
		U - S	Message		
1	Trigger UE to initiate IPsec SA.	-	-	-	-
2	The generic procedure for UE-requested IPsec Secure tunnel establishment, specified in subclause 4.5A.64, takes place performing establishment of security association and one child security association.	-	-	-	-

Table 4.5.4.2-5: NR-DC RRC\_CONNECTED

St	Procedure	Message Sequence		TP	Verdict
		U - S	Message		
1-8	Same as table 4.5.4.2-3, steps 1-8.	-	-	-	-
8A	The SS transmits an <i>RRCReconfiguration</i> message and a PDU SESSION MODIFICATION COMMAND to add a new SCG DRB or a new split DRB	<--	NR RRC: <i>RRCReconfiguration</i> 5GMM: DL NAS TRANSPORT 5GSM: PDU SESSION MODIFICATION COMMAND	-	-
-	EXCEPTION: In parallel to steps 8B and 8C the UE performs a C-RNTI based Contention Based Random Access (CBRA) procedure on the PSCell.	-	-	-	-
-	EXCEPTION: Depending upon UE implementation, step 8B and 8C can occur in any order	-	-	-	-
8B	The UE transmits an <i>RRCReconfigurationComplete</i> message including nr-SCG-Response.	-->	NR RRC: <i>RRCReconfigurationComplete</i>	-	-
8C	The UE transmits a <i>ULInformationTransfer</i> message and an PDU SESSION MODIFICATION COMPLETE message.	-->	NR RRC: <i>ULInformationTransfer</i> 5GMM: UL NAS TRANSPORT 5GSM: PDU SESSION MODIFICATION COMPLETE	-	-
-	EXCEPTION: Steps 9a1 to 9a2 describe behaviour which depends on the SS sequence depending on procedure parameters; the "lower case letter" identifies a step sequence that take place if a procedure parameter has a particular value.	-	-	-	-
9a1	IF Test Loop Function= <i>On</i> , the SS transmits a CLOSE UE TEST LOOP message to enter the UE test loop mode. The CLOSE UE TEST LOOP is using the associated condition for the test loop.	<--	NR RRC: <i>DLInformationTransfer</i> TC: CLOSE UE TEST LOOP	-	-
9a2	The UE transmits a CLOSE UE TEST LOOP COMPLETE message to confirm that loopback entities for the radio bearer(s) have been created and loop back is activated.	-->	NR RRC: <i>ULInformationTransfer</i> TC: CLOSE UE TEST LOOP COMPLETE	-	-

**Table 4.5.4.2-6: NE-DC RRC\_CONNECTED**

St	Procedure	Message Sequence		TP	Verdict
		U - S	Message		
1-8	Same as table 4.5.4.2-3, steps 1-8.	-	-	-	-
8A	The SS transmits an <i>RRCReconfiguration</i> message and a PDU SESSION MODIFICATION COMMAND to add a new SCG DRB or a new split DRB	<--	NR RRC: <i>RRCReconfiguration</i> 5GMM: DL NAS TRANSPORT 5GSM: PDU SESSION MODIFICATION COMMAND	-	-
-	EXCEPTION: In parallel to steps 8B and 8C the UE performs a C-RNTI based Contention Free Random Access (CFRA) procedure on the PSCell.	-	-	-	-
8B	The UE transmits an <i>RRCReconfigurationComplete</i> message including eutra-SCG-Response.	-->	NR RRC: <i>RRCReconfigurationComplete</i>	-	-
8C	The UE transmits a <i>ULInformationTransfer</i> message and an PDU SESSION MODIFICATION COMPLETE message.	-->	NR RRC: <i>ULInformationTransfer</i> 5GMM: UL NAS TRANSPORT 5GSM: PDU SESSION MODIFICATION COMPLETE	-	-
-	EXCEPTION: Steps 9a1 to 9a2 describe behaviour which depends on the SS sequence depending on procedure parameters; the "lower case letter" identifies a step sequence that take place if a procedure parameter has a particular value.	-	-	-	-
9a1	IF Test Loop Function= <i>On</i> , the SS transmits a CLOSE UE TEST LOOP message to enter the UE test loop mode. The CLOSE UE TEST LOOP is using the associated condition for the test loop.	<--	NR RRC: <i>DLInformationTransfer</i> TC: CLOSE UE TEST LOOP	-	-
9a2	The UE transmits a CLOSE UE TEST LOOP COMPLETE message to confirm that loopback entities for the radio bearer(s) have been created and loop back is activated.	-->	NR RRC: <i>ULInformationTransfer</i> TC: CLOSE UE TEST LOOP COMPLETE	-	-

**4.5.4.3 Specific message contents**

All specific message contents shall be according clause 4.6 and 4.7 and TS 36.508 [2] clause 4.6 and 4.7 with the exceptions below.

**Table 4.5.4.3-0: RRCConnectionReconfiguration (step 7, Table 4.5.4.2-1)**

Derivation Path: 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	
dedicatedInfoNASList SEQUENCE (SIZE(1..maxDRB)) OF	1 entry		MCG_and_S CG OR MCG_and_s plit
dedicatedInfoNAS [1]	OCTET STRING including ACTIVATE DEDICATED EPS BEARER CONTEXT REQUEST	according to table 4.5.4.3-1	
}			
}			
}			

**Table 4.5.4.3-1: 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		

**Table 4.5.4.3-1A: RRCConnectionReconfiguration (step 12, Table 4.5.4.2-2)**

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 SEQUENCE (SIZE(1..maxDRB)) OF	1 entry		
dedicatedInfoNAS [1]	OCTET STRING including ACTIVATE DEDICATED EPS BEARER CONTEXT REQUEST	according to table 4.5.4.3-1B	
}			
}			
}			
}			

**Table 4.5.4.3-1B: Message ACTIVATE DEDICATED EPS BEARER CONTEXT REQUEST (step 12, Table 4.5.4.2-2)**

Derivation path: TS 36.508 [2] Table 4.7.3-3			
Information Element	Value/Remark	Comment	Condition
Linked EPS bearer identity	5		
EPS QoS	According to reference dedicated EPS bearer context #6 - in TS 36.508 [2] table 6.6.2-1A		
TFT	According to reference dedicated EPS bearer context #6 - in TS 36.508 [2] table 6.6.2-1A		
Negotiated QoS	According to reference dedicated EPS bearer context #6 - in TS 36.508 [2] table 6.6.2-1A		
Negotiated LLC SAPI	According to reference dedicated EPS bearer context #6 - in TS 36.508 [2] table 6.6.2-1A		
Radio priority	According to reference dedicated EPS bearer context #6 - in TS 36.508 [2] table 6.6.2-1A		
Protocol configuration options	According to reference dedicated EPS bearer context #6 - in TS 36.508 [2] table 6.6.2-1A		
Extended protocol configuration options	According to reference dedicated EPS bearer context #6 - in TS 36.508 [2] table 6.6.2-1A		

**Table 4.5.4.3-2: RRCReconfiguration (step 7, Table 4.5.4.2-3)**

Derivation Path: TS 38.508-1, table 4.8.1-1B
--

**Table 4.5.4.3-3: Void****Table 4.5.4.3-4: PDU SESSION MODIFICATION COMMAND (step 8A, Table 4.5.4.2-5 and Table 4.5.4.2-6)**

Derivation Path: Table 4.7.2-9.			
Information Element	Value/remark	Comment	Condition
PDU session ID	The same as the PDU session ID in PDU SESSION ESTABLISHMENT REQUEST associated with the Internet PDU session if available or with the first PDU session		
Authorized QoS rules	One entry		
QoS rule [1]	Reference QoS rule #5 as defined in Table 4.8.2.1-5.	QFI=5	
Authorized QoS flow descriptions	One entry		
QoS flow [1]	Reference QoS flow #5 as defined in Table 4.8.2.3-5.	QFI=5	



**Table 4.5.4.3-5: RRCReconfiguration (step 8A, Table 4.5.4.2-5)**

Derivation Path: TS 38.508-1, table 4.8.1-1CA

**Table 4.5.4.3-6: RRCReconfigurationComplete (step 8B, Table 4.5.4.2-5)**

Derivation Path: TS 38.508-1, table 4.6.1-14 with condition NR-DC

**Table 4.5.4.3-7: RRCReconfiguration (step 8A, Table 4.5.4.2-6)**

Derivation Path: TS 38.508-1, table 4.8.1-1CB

**Table 4.5.4.3-8: RRCReconfigurationComplete (step 8B, Table 4.5.4.2-6)**

Derivation Path: TS 38.508-1, table 4.6.1-14 with condition NE-DC

## 4.5.5 SWITCHED\_OFF

### 4.5.5.1 Initiation

The SS shall:

- 1> if Test State ID=0-A:
  - 2> Do nothing;
- 1> else if Test State ID=0N-B:
  - 2> use 1 NR cell, default parameters;
  - 2> perform the procedure according to the table 4.5.5.2-1: NR SWITCHED\_OFF\_0\_B;
- 1> else if Test State ID=0E-B:
  - 2> FFS

NOTE: The procedure for State 0N-B is used as default.

### 4.5.5.2 Procedures

**Table 4.5.5.2-1: NR SWITCHED\_OFF\_0N\_B**

St	Procedure	Message Sequence		TP	Verdict
		U - S	Message		
1-20	Same as table 4.5.2.2-2, steps 1-20.	-	-	-	-
21-26	Same as table 4.9.6.1-1, steps 1a1-1b1	-	-	-	-

### 4.5.5.3 Specific message contents

All specific message contents shall be according clause 4.6 and 4.7.

NOTE: The procedure refers to default messages content. If a test case requires specific parameters to be set during the procedure e.g. list with ePLMNs or/and TAIs is stored, new or not 5G-GUTI, etc. then, this needs to be specified in the test case, which uses the procedure.

## 4.5.6 Void

## 4.5.7 Out of Coverage

### 4.5.7.1 Initiation

The SS shall:

- 1> If sidelink is *On*
  - 2> use neither NR cell nor E-UTRA cell;
  - 2> use 1 GNSS simulator;
  - 2> use 1 NR-SS-UE;
  - 2> perform the procedure according to the table 4.5.7.2-1: Out of Coverage (NR sidelink).

## 4.5.7.2 Procedures

Table 4.5.7.2-1: Out of Coverage (NR sidelink)

St	Procedure	Message Sequence		TP	Verdict
		U - S	Message		
-	EXCEPTION: Steps 1a1 describe the SS sequence depending on procedure parameters; the "lower case letter" identifies a step sequence that take place if a procedure parameter has a particular value.	-	-	-	-
1a1	IF Test Mode = <i>On</i> OR Test Loop Function = <i>On</i> THEN the SS triggers UE to activate UE test mode E.  NOTE: The activation of UE test mode may be performed by MMI or AT command (+CATM).	-	-	-	-
1A	Trigger UE to reset or clear the current UTC time that has been calculated from GNSS.  NOTE: The UTC time can be reset or clear on the UE using AT command (+CUTCRC).	-	-	-	-
-	EXCEPTION: Steps 2a1 and 2b1 describe the SS sequence depending on procedure parameters; the "lower case letter" identifies a step sequence that take place if a procedure parameter has a particular value.	-	-	-	-
2a1	IF Cast type = <i>Unicast</i> AND UE initiated unicast mode NR sidelink communication THEN generic procedure specified in subclause 4.9.22 is performed to establish unicast mode sidelink communication between the UE and the NR-SS-UE.				
2b1	ELSE IF Cast type = <i>Unicast</i> AND NR-SS-UE initiated unicast mode NR sidelink communication THEN generic procedure specified in subclause 4.9.23 is performed to establish unicast mode sidelink communication between the UE and the NR-SS-UE.				
-	EXCEPTION: Steps 3a1 and 3b1 describe the SS sequence depending on procedure parameters; the "lower case letter" identifies a step sequence that take place if a procedure parameter has a particular value.	-	-	-	-
3a1	IF Test Loop Function = <i>On</i> AND the NR-SS-UE is configured as transmitting UE THEN the SS triggers UE to close UE test loop mode E (Receive Mode).  NOTE: Closing of UE test loop mode E may be performed by MMI or AT command (+CCUTLE).				
3b1	IF Test Loop Function = <i>On</i> AND NR-SS-UE is configured as receiving UE AND SL MIMO ≠ <i>On</i> THEN the SS triggers UE to close UE test loop mode E (Transmit Mode).  NOTE: Closing of UE test loop mode E may be performed by MMI or AT command (+CCUTLE).				
3c1	IF Test Loop Function = <i>On</i> AND NR-SS-UE is configured as receiving UE AND SL MIMO = <i>On</i> THEN the SS triggers UE to close UE test loop mode E (Transmit Mode with SL-MIMO).  NOTE: Closing of UE test loop mode E may be performed by MMI or AT command				

	(+CCUTLE).				
4	Void	-	-		

### 4.5.7.3 Specific message contents

All specific message contents shall be according subclause 4.7B with the exceptions below.

#### Table 4.5.7.3-1: +CATM (Table 4.5.7.2-1, Step 1a1)

Derivation Path: +CATM specified in subclause 4.7B with condition Activation

#### Table 4.5.7.3-2: +CCUTLE (Table 4.5.7.2-1, Step 3a1)

Derivation Path: Table 4.7B-1 with condition Close and Receive

#### Table 4.5.7.3-3: +CCUTLE (Table 4.5.7.2-1, Step 3b1)

Derivation Path: Table 4.7B-1 with condition Close and Transmit

#### Table 4.5.7.3-4: +CCUTLE (Table 4.5.7.2-1, Step 3c1)

Derivation Path: Table 4.7B-1 with condition Close, Transmit and SL\_MIMO

## 4.5A Auxiliary procedures

### 4.5A.1 General

### 4.5A.2 UE-requested PDU session establishment procedure

#### 4.5A.2.1 Scope

The purpose of this procedure is to establish UE-requested PDU session(s).

Table 4.5A.2.1-1: Conditions and other parameters

Condition	Explanation
ExpectedNumberOfNewPDUSessions	<p><b>Usage:</b> Parameter determining procedure sequence. A value for this parameter shall be provided when the procedure is called. Unless the test requires specific number of PDU sessions to be established the value should be either pc_noOf_PDUsSameConnection or pc_noOf_PDUsNewConnection ([23]).</p> <p><b>Meaning:</b> The number of PDU sessions which are expected to happen. Depends on the UE configuration and/or the context in which the procedure is used.</p>
K	<p><b>Usage:</b> Parameter determining procedure sequence.</p> <p><b>Meaning:</b> The number of PDU SESSION ESTABLISHMENT REQUEST messages already processed including the one that is currently being processed.</p>
L	<p><b>Usage:</b> Parameter determining procedure sequence.</p> <p><b>Meaning:</b> The number of PDU SESSION ESTABLISHMENT REQUEST messages being received so far.</p>
N	<p><b>Usage:</b> Parameter determining procedure sequence. The parameter is initialised with the value of ExpectedNumberOfNewPDUSessions</p> <p><b>Meaning:</b> Loop (step sequence repetition) control.</p>
IMS_PDU	<p><b>Usage:</b> Condition determining specific message contents.</p> <p><b>Meaning:</b> PDU session establishment for IMS. Whether a PDU session is for IMS is determined by the DNN/APN type of the entry in Table 4.8.4-1 which itself has been determined by the DNN IE in the UL NAS TRANSPORT message which carried the corresponding PDU SESSION ESTABLISHMENT REQUEST or by pc_APN_Default_Configuration if the DNN IE was not present</p>

## 4.5A.2.2 Procedure description

## 4.5A.2.2.1 Initial conditions

The UE is in RRC\_CONNECTED state.

## 4.5A.2.2.2 Procedure sequence

Table 4.5A.2.2.2-1: PDU session establishment procedure

St	Procedure	Message Sequence		Verdict
		U - S	Message	
0	Set K = 0, L = 0, N = ExpectedNumberOfNewPDUSessions	-	-	-
1	The procedure specified in Table 4.5A.2.2.2-2 takes place.	-	-	-
2	Set K = K +1	-	-	-
-	EXCEPTION: In parallel to the events described in steps 3-6a1 below the events specified in Table 4.5A.2.2.2-2 may take place.	-	-	-
3	The SS transmits an <i>RRCReconfiguration</i> message and an PDU SESSION ESTABLISHMENT ACCEPT	<--	NR RRC: <i>RRCReconfiguration</i> 5GMM: DL NAS TRANSPORT 5GSM: PDU SESSION ESTABLISHMENT ACCEPT	-
4	The UE transmits an <i>RRCReconfigurationComplete</i> message.	-->	NR RRC: <i>RRCReconfigurationComplete</i>	-
-	EXCEPTION: Step 5a1 describes behaviour depending UE implementation; the "lower case letter" identifies a step sequence that take place if the UE performs a specific action.	-	-	-
5a1	IF the 'IP address allocation' for the DNN for which the PDU session is established is set to "Yes" in Table 4.8.4-1 THEN, the generic procedure for IP address allocation in the user plane, specified in subclause 4.5A.3, takes place performing IP address allocation in the user plane.	-	-	-
-	EXCEPTION: Step 6a1 describes behaviour depending UE implementation; the "lower case letter" identifies a step sequence that take place if the UE performs a specific action.	-	-	-
6a1	IF the 'IMS registration' for the DNN for which the PDU session is established is set to "Yes" in Table 4.8.4-1, THEN the generic procedure for IMS signalling in the U-plane specified in subclause 4.5A.4 takes place.	-	-	-
-	EXCEPTION: Steps 7a1 to 7b2 describe behaviour depending UE implementation; the "lower case letter" identifies a step sequence that take place if the UE performs a specific action.	-	-	-
7a1	IF L > K (NOTE 1) THEN repeat from step 2	-	-	-
7b1	ELSE IF K < N (NOTE 2) THEN repeat from step 1.	-	-	-
NOTE 1: One (or more) further PDU SESSION ESTABLISHMENT REQUEST message has been received in parallel.				
NOTE 2: Less PDU SESSION ESTABLISHMENT REQUEST messages than expected have been received and processed so far -> further request are expected from the UE.				

**Table 4.5A.2.2-2: Reception of PDU SESSION ESTABLISHMENT REQUEST message**

St	Procedure	Message Sequence		Verdict
		U – S	Message	
1	Start Wait_Timer = 8 sec. NOTE: 8s were chosen to cater for T3540 being set to 10s.	-	-	-
-	EXCEPTION: Steps 2a1 to 2b1 describe behaviour depending UE implementation; the "lower case letter" identifies a step sequence that take place if the UE performs a specific action.	-	-	-
2a1	The UE transmits an <i>ULInformationTransfer</i> message and a PDU SESSION ESTABLISHMENT REQUEST	-->	NR RRC: <i>ULInformationTransfer</i> 5GMM: UL NAS TRANSPORT 5GSM: PDU SESSION ESTABLISHMENT REQUEST	-
2a2	Stop Wait_Timer.	-	-	-
2a3	Set L = L +1.	-	-	-
2a4	Check: Does the L>N? (NOTE 1)	-	-	F
2b1	Check: Does Wait_Timer expire? (NOTE 2)	-	-	F
NOTE 1: The SS shall raise a fail verdict when there are more PDU SESSION ESTABLISHMENT REQUEST messages than expected and terminate the test. The reason for such a behaviour can be e.g. wrongly set I_XIT with which the ExpectedNumberOfNewPDNConnections was initiated,				
NOTE 2: Unless this is specified explicitly otherwise e.g. in a test procedure which calls the procedure specified in the present table, the SS shall raise a fail verdict when there are less PDN CONNECTIVITY REQUEST messages than expected received at this point and terminate the test. The reason for such a behaviour can be e.g. wrongly set PICS with which the ExpectedNumberOfNewPDUSessions was initiated.				

## 4.5A.2.2.3 Specific message contents

All specific message contents shall be according clause 4.6 and 4.7 with the exceptions below.

**Table 4.5A.2.2.3-1: RRCReconfiguration (step 3, Table 4.5A.2.2-1)**

Derivation Path: Table 4.6.1-13 and condition NR if SRB2 is not yet established			
Information Element	Value/remark	Comment	Condition
RRCReconfiguration ::= SEQUENCE {			
criticalExtensions CHOICE {			
rrcReconfiguration ::= SEQUENCE {			
radioBearerConfig	RadioBearerConfig with conditions SRB2 and DRB2		NOT IMS_PDU
nonCriticalExtension SEQUENCE {			
masterCellGroup	CellGroupConfig with condition SRB2_DRB2		NOT IMS_PDU
dedicatedNAS-MessageList SEQUENCE (SIZE(1..maxDRB)) OF DedicatedNAS-Message {}	DedicatedNAS-Message		
}			
}			
}			
}			

**Table 4.5A.2.2.3-2: RRCReconfiguration (step 3, Table 4.5A.2.2.2-1)**

Derivation Path: Table 4.6.1-13 and condition NR if SRB2 is already established			
Information Element	Value/remark	Comment	Condition
RRCReconfiguration ::= SEQUENCE {			
criticalExtensions CHOICE {			
rrcReconfiguration ::= SEQUENCE {			
radioBearerConfig	RadioBearerConfig with condition DRBn	n is chosen as the next available number higher or equal to 2	
	RadioBearerConfig with condition DRB1		IMS_PDU
nonCriticalExtension SEQUENCE {			
masterCellGroup	CellGroupConfig with condition DRBn	n is set to the same value as for the radioBearerConfig IE above	
	CellGroupConfig with condition DRB1		IMS_PDU
dedicatedNAS-MessageList SEQUENCE (SIZE(1..maxDRB)) OF DedicatedNAS-Message {	DedicatedNAS-Message		
}			
}			
}			
}			

### 4.5A.2A UE-requested PDU session establishment procedure over Non 3GPP Access

#### 4.5A.2A.1 Scope

The purpose of this procedure is to establish UE-requested PDU session.

#### 4.5A.2A.2 Procedure description

##### 4.5A.2A.2.1 Initial conditions

The UE has established an IPsec security association

##### 4.5A.2A.2.2 Procedure sequence

**Table 4.5A.2A.2.2-1: PDU session establishment procedure over Non 3GPP Access**

St	Procedure	Message Sequence	
		U – S	Message
1	The UE transmits a PDU SESSION ESTABLISHMENT REQUEST	-->	5GMM: UL NAS TRANSPORT 5GSM: PDU SESSION ESTABLISHMENT REQUEST
2	The SS establishes an IPsec child security association according to the IKEv2 specification in RFC 7296 [34]		
3	The SS transmits an PDU SESSION ESTABLISHMENT ACCEPT	<--	5GMM: DL NAS TRANSPORT 5GSM: PDU SESSION ESTABLISHMENT ACCEPT

Note 1: The current procedure assumes UE establishes a single PDU session over Non 3GPP Access.

#### 4.5A.2A.3 Specific message contents

None



## 4.5A.2B Procedure to establish multiple additional PDN connections in S1

### 4.5A.2B.1 Scope

The present procedure is intended for test scenarios where it is desirable, due to the tested requirements (e.g. intersystem change between S1 and N1 mode), to allow the UE to set up as many as it may want, and in any order, PDN connections after the first PDN connection is established during the ATTACH to EPS procedure (i.e. when the UE is operating in S1 mode).

**Table 4.5A.2B.1-1: Conditions and other parameters**

Condition	Explanation
ExpectedNumberOfNewPDNConnections	<p><b>Usage:</b> Parameter determining procedure sequence. A value for this parameter shall be provided when the procedure is called. Unless the test requires specific number of PDN connections to be established the value should be either <code>pc_noOf_PDNsSameConnection</code> or <code>pc_noOf_PDNsNewConnection</code> ([19]).</p> <p><b>Meaning:</b> The number of PDN connections which are expected to happen. Depends on the UE configuration and/or the context in which the procedure is used.</p>
K	<p><b>Usage:</b> Parameter determining procedure sequence.</p> <p><b>Meaning:</b> The number of PDN CONNECTIVITY REQUEST messages already processed including the one that is currently being processed.</p>
L	<p><b>Usage:</b> Parameter determining procedure sequence.</p> <p><b>Meaning:</b> The number of PDN CONNECTIVITY REQUEST messages being received so far.</p>
N	<p><b>Usage:</b> Parameter determining procedure sequence. The parameter is initialised with the value of <code>ExpectedNumberOfNewPDNConnections</code></p> <p><b>Meaning:</b> Loop (step sequence repetition) control.</p>

### 4.5A.2B.2 Procedure description

#### 4.5A.2B.2.1 Initial conditions

System Simulator:

- 1 cell, default parameters.
- The procedure shall be performed under ideal radio conditions as defined in clause 5.

User Equipment:

- The UE is in Registered, RRC\_CONNECTED state (State 2).

The default system information messages are used.

## 4.5A.2B.2.2 Procedure sequence

**Table 4.5A.2B.2.2-1: Establishment of additional PDN connectivity**

St	Procedure	Message Sequence		Verdict
		U - S	Message	
0	Set $K = 0$ , $L = 0$ , $N = \text{ExpectedNumberOfNewPDNConnections}$	-	-	-
1	The procedure specified in Table 4.5A.2B.2.2-2 takes place.	-	-	-
2	Set $K = K + 1$ .	-	-	-
-	EXCEPTION: In parallel to the events described in steps 3-6a1 below the events specified in Table 4.5A.2B.2.2-2 may take place.	-	-	-
3-4	Step 2-3 as defined in TS 36.508 [2], Table 4.5A.16.3-1, Generic Test Procedure to establish additional PDN connectivity take place.	-	-	-
-	EXCEPTION: IF the 'IP address allocation' for the APN for which the PDN connection is established is set to "Yes" in Table 4.8.4-1 THEN, in parallel to the event described in step 5 below the generic procedure for IP address allocation in the U-plane specified in TS 36.508 [2], subclause 4.5A.1 takes place performing IP address allocation in the U-plane if requested by the UE.	-	-	-
-	EXCEPTION: IF the 'IMS registration' for the APN for which the PDN connection is established is set to "Yes" in Table 4.8.4-1, THEN in parallel to the event described in step 5 below the relevant generic procedure for IMS signalling in the U-plane specified in Table 4.8.4-1 takes place.	-	-	-
5	Step 4 as defined in TS 36.508 [2], Table 4.5A.16.3-1, Generic Test Procedure to establish additional PDN connectivity takes place.	-	-	-
-	EXCEPTION: Steps 6a1 to 6b1 describe behaviour depending UE implementation; the "lower case letter" identifies a step sequence that take place if the UE performs a specific action.	-	-	-
6a1	IF $L > K$ (NOTE 1) THEN repeat from step 2.	-	-	-
6b1	ELSE IF $K < N$ (NOTE 2) THEN repeat from step 1.	-	-	-
NOTE 1: One (or more) further PDN CONNECTIVITY REQUEST message has been received in parallel.				
NOTE 2: Less PDN CONNECTIVITY REQUEST messages than expected have been received and processed so far and consequently further requests are expected from the UE.				

Table 4.5A.2B.2.2-2: Reception of PDN CONNECTIVITY REQUEST message

St	Procedure	Message Sequence		Verdict
		U - S	Message	
1	Start Wait_Timer = 10 sec. NOTE: 10 sec is an arbitrary value.	-	-	-
-	EXCEPTION: Steps 2a1 to 2b1 describe behaviour depending UE implementation; the "lower case letter" identifies a step sequence that take place if the UE performs a specific action.	-	-	-
2a1	Step 1 as defined in Table 4.5A.16.3-1, specified in TS 36.508 [2], subclause 4.5A.16 Generic Test Procedure to establish additional PDN connectivity takes place. The UE transmits a PDN CONNECTIVITY REQUEST message to request an additional PDN.	-->	PDN CONNECTIVITY REQUEST	-
2a2	Stop Wait_Timer.	-	-	-
2a3	Set L = L + 1.	-	-	-
2a4	Check: Does the L > N? (NOTE 1)	-	-	F
2b1	Check: Does Wait_Timer expire? (NOTE 2)	-	-	F
NOTE 1: The SS shall raise a fail verdict when there are more PDN CONNECTIVITY REQUEST messages received than expected (L > N) and terminate the test. The reason for such a behaviour can be e.g. wrongly set PICS with which the ExpectedNumberOfNewPDNConnections was initiated,				
NOTE 2: Unless this is specified explicitly otherwise, e.g. in a test procedure which calls the procedure specified in the present table, the SS shall raise a fail verdict when there are less PDN CONNECTIVITY REQUEST messages than expected received at this point (note that when this procedure is called from the main behaviour K < N). The reason for such a behaviour can be e.g. wrongly set PICS with which the ExpectedNumberOfNewPDNConnections was initiated.				

### 4.5A.2B.3 Specific message contents

All specific message contents shall be referred to TS 36.508 [2] subclauses 4.6 and 4.7 with the exceptions specified below.

Table 4.5A.2B.3-1: Message PDN CONNECTIVITY REQUEST (step 2a1, Table 4.5A.2B.2.2-2)

Derivation path: TS 36.508 [2], Table 4.7.3-20.			
Information Element	Value/Remark	Comment	Condition
Access point name	Not present or One of the provided APN(s) in the Table 4.8.4-1	If present, the SS shall initialise the APN_Default=False If not present NOTE 2	
NOTE 1: Unless explicitly specified otherwise, the SS uses the Access point name value to address the entry of Table 4.8.4-1 to be used for the subsequent signalling of the PDN connectivity establishment and verifying specific UE behaviour e.g. depending on the type of the APN the UE may perform some actions.			
NOTE 2: The SS uses pc_APN_Default_Configuration to address the entry of Table 4.8.4-1 to be used for the subsequent signalling of the PDN connectivity establishment.			

**Table 4.5A.2B.3-2: Message ACTIVATE DEFAULT EPS BEARER CONTEXT REQUEST (step 3, Table 4.5A.2B.2.2-1; Step 2, Table 4.5A.16.3-1 TS 36.508 [2])**

Derivation path: TS 36.508 [2], Table 4.7.3-6 with CONDITION Interworking_with_5GS.			
Information Element	Value/Remark	Comment	Condition
EPS QoS	The EPC default bearer context of the entry in Table 4.8.4-1 which has been determined at step 1		
Access point name	IF the UE provided an Access point name in step 1 THEN the SS returns this name; OTHERWISE the SS includes the DNN/APN ID value of the entry in Table 4.8.4-1 which has been determined at step 1.		
Container ID n+3	'001C'H		
Length of container ID n+3 contents			
Container ID n+3 contents	5GC QoS rule of the entry in Table 4.8.4-1 which has been determined at step 1		
Container ID n+4	'001F'H		
Length of container ID n+4 contents			
Container ID n+4 contents	As per the relevant QoS rule (Container ID n+3)		

## 4.5A.2C Procedure for UE-requested PDU session modification after the first S1 to N1 mode change / Single-registration mode with N26

### 4.5A.2C.1 Scope

The purpose of this procedure is to handle UE-requested PDU session modification after the first S1 to N1 mode change in the scenario of Single-registration mode, 'Interworking without N26 interface not supported'.

**Table 4.5A.2C.1-1: Conditions and other parameters**

Condition	Explanation
ExpectedNumberOfPDUSessionModifications	<b>Usage:</b> Parameter determining procedure sequence. A value for this parameter shall be provided when the procedure is called. Unless the test requires specific number of PDU modifications to take place the value should be set to <code>pc_noOf_PDNsSameConnection + pc_noOf_PDNsNewConnection + 1</code> ([19]). <b>Meaning:</b> The number of PDU sessions which are expected to happen. Depends on the UE configuration and/or the context in which the procedure is used.
K	<b>Usage:</b> Parameter determining procedure sequence. <b>Meaning:</b> The number of PDN SESSION MODIFICATION REQUEST messages already processed including the one that is currently being processed.
L	<b>Usage:</b> Parameter determining procedure sequence. <b>Meaning:</b> The number of PDN SESSION MODIFICATION REQUEST being received so far.
N	<b>Usage:</b> Parameter determining procedure sequence. The parameter is initialised with the value of <code>ExpectedNumberOfPDUSessionModifications</code> <b>Meaning:</b> Loop (step sequence repetition) control.

### 4.5A.2C.2 Procedure description

#### 4.5A.2C.2.1 Initial conditions

The UE is in RRC\_CONNECTED state.

## 4.5A.2C.2.2 Procedure sequence

**Table 4.5A.2C.2.2-1: Procedure for UE-requested PDU session modification after the first S1 to N1 mode change**

St	Procedure	Message Sequence		Verdict
		U - S	Message	
0	Set $K = 0$ , $L = 0$ , $N = (\text{ExpectedNumberOfPDUSessionModifications})$ .	-	-	-
1	The procedure specified in Table 4.5A.2C.2.2-2 takes place.	-	-	-
2	Set $K = K + 1$ .	-	-	-
-	EXCEPTION: In parallel to the events described in steps 3-5a1 below the events specified in Table 4.5A.2C.2.2-2 may take place.	-	-	-
3	The SS transmits a <i>RRCReconfiguration</i> message and a PDU SESSION MODIFICATION COMMAND.	<--	NR RRC: <i>RRCReconfiguration</i> 5GMM: DL NAS TRANSPORT 5GSM: PDU SESSION MODIFICATION COMMAND	-
-	EXCEPTION: Depending upon UE implementation, step 4 and 4A can occur in any order	-	-	-
4	The UE transmits a <i>RRCReconfigurationComplete</i> message.	-->	NR RRC: <i>RRCReconfigurationComplete</i>	-
4A	The UE transmits a PDU SESSION MODIFICATION COMPLETE message.	-->	5GMM: UL NAS TRANSPORT 5GSM: PDU SESSION MODIFICATION COMPLETE	-
-	EXCEPTION: Steps 5a1 to 5b1 describe behaviour depending UE implementation; the "lower case letter" identifies a step sequence that take place if the UE performs a specific action.	-	-	-
5a1	IF $L > K$ (NOTE 1) THEN repeat from step 2.	-	-	-
5b1	ELSE IF $K < N$ (NOTE 2) THEN repeat from step 1.	-	-	-
NOTE 1: One (or more) further PDU SESSION MODIFICATION REQUEST message has been received in parallel.				
NOTE 2: Less PDU SESSION MODIFICATION REQUEST messages than expected have been received and processed so far -> Further request are expected from the UE.				

**Table 4.5A.2C.2.2-2: Reception of PDU SESSION MODIFICATION REQUEST message**

St	Procedure	Message Sequence		Verdict
		U - S	Message	
1	Start Wait_Timer = 8 sec. NOTE: 8s were chosen to cater for T3540 being set to 10s.	-	-	-
-	EXCEPTION: Steps 2a1 to 2b1 describe behaviour depending UE implementation; the "lower case letter" identifies a step sequence that take place if the UE performs a specific action.	-	-	-
2a1	The UE transmits an <i>ULInformationTransfer</i> message and a PDU SESSION MODIFICATION REQUEST with PDU session ID which has been associated with a default EPS bearer set up during the UE operation in S1.	-->	NR RRC: <i>ULInformationTransfer</i> 5GSM: PDU SESSION MODIFICATION REQUEST	-
2a2	Stop Wait_Timer.	-	-	-
2a3	Set L = L + 1.	-	-	-
2a4	Check: Does the L>N? (NOTE 1)	-	-	F
2b1	Check: Does Wait_Timer expire? (NOTE 2)	-	-	F
NOTE 1: The SS shall raise a fail verdict when there are more PDU SESSION MODIFICATION REQUEST messages received than expected and terminate the test. The reason for such a behaviour can be e.g. wrongly set PICS with which the ExpectedNumberOfNewPDNConnections was initiated.				
NOTE 2: Unless this is specified explicitly otherwise e.g. in a test procedure which calls the procedure specified in the present table, the SS shall raise a fail verdict when there are less PDU SESSION MODIFICATION REQUEST messages than expected received at this point and terminate the test. The reason for such a behaviour can be e.g. wrongly set PICS with which the ExpectedNumberOfNewPDUSessions was initiated,				

## 4.5A.2C.2.3 Specific message contents

All specific message contents shall be according clause 4.6 and 4.7 with the below exceptions:

**Table 4.5A.2C.2.3-1: UL NAS TRANSPORT (Step 1, Table 4.5A.2C.2.2-2)**

Derivation Path: Table 4.7.1-10.			
Information Element	Value/remark	Comment	Condition
Request type	'101'B	"modification request"	

**Table 4.5A.2C.2.3-2: PDU SESSION MODIFICATION REQUEST (Step 1, Table 4.5A.2C.2.2-2)**

Derivation Path: Table 4.7.2-7.			
Information Element	Value/remark	Comment	Condition
PDU session ID	The PDU session ID associated with the default EPS bearer of the PDN connection which is being transferred into PDU session and for which the UE needs to indicate its capabilities via the modification procedure. (NOTE 1)		
5GSM capability	Present. Contents not checked.		
Integrity protection maximum data rate	Present. Contents not checked.		
NOTE 1: The PDU session ID was provided in the ACTIVATE DEFAULT EPS BEARER CONTEXT ACCEPT when the UE attached in S1. If the UE provides here an unknown PDU session ID then the SS shall set an Inconclusive verdict.			

**Table 4.5A.2C.2.3-3: RRCReconfiguration (step 3, Table 4.5A.2C.2.2-1)**

Derivation Path: Table 4.6.1-13 and condition NR if SRB2 is not yet established			
Information Element	Value/remark	Comment	Condition
RRCReconfiguration ::= SEQUENCE {			
criticalExtensions CHOICE {			
rrcReconfiguration ::= SEQUENCE {			
radioBearerConfig	RadioBearerConfig with conditions SRB2 and DRB2		NOT IMS_PDU
nonCriticalExtension SEQUENCE {			
masterCellGroup	CellGroupConfig with condition SRB2_DRB2		NOT IMS_PDU
}			
}			
}			
}			

**Table 4.5A.2C.2.3-4: RRCReconfiguration (step 3, 4.5A.2C.2.2-1)**

Derivation Path: Table 4.6.1-13 and condition NR if SRB2 is already established			
Information Element	Value/remark	Comment	Condition
RRCReconfiguration ::= SEQUENCE {			
criticalExtensions CHOICE {			
rrcReconfiguration ::= SEQUENCE {			
radioBearerConfig	RadioBearerConfig with condition DRBn	n is chosen as the next available number higher or equal to 2	
	RadioBearerConfig with condition DRB1		IMS_PDU
nonCriticalExtension SEQUENCE {			
masterCellGroup	CellGroupConfig with condition DRBn	n is set to the same value as for the radioBearerConfig IE above	
	CellGroupConfig with condition DRB1		IMS_PDU
}			
}			
}			
}			

## 4.5A.3 Procedure for IP address allocation in the user plane

### 4.5A.3.1 Scope

The purpose of this procedure is to allow the successful completion of IP address allocation if it is initiated by the UE therefore the result from the execution of the Procedure for IP address allocation in the user plane shall not lead to assignment of a verdict.

Depending on the UE configuration there may be unpredictable delay in the start of the procedure. A guarding time of 1.2 sec is suggested within which the procedure is expected to start. If the timer expires then the test procedure, from which the Procedure for IP address allocation in the user plane is called, shall advance to the next specified step.

### 4.5A.3.2 Procedure description

#### 4.5A.3.2.1 Initial conditions

N/A

4.5A.3.2.2 Procedure sequence

**Table 4.5A.3.2.2-1: Procedure for IP address allocation in the user plane**

Step	Procedure	Message Sequence	
		U - S	Message
-	EXCEPTION: Step 1 below and Step 1 in Table 4.5A.3.2.2-2 describe behaviour that depends on the contents of the latest PDU SESSION ESTABLISHMENT REQUEST message sent by the UE prior to this procedure.	-	-
-	EXCEPTION: In parallel to the event described in step 1 below the step specified in Table 4.5A.3.2.2-2 may take place.	-	-
1	If the "PDU session type" in the latest PDU SESSION ESTABLISHMENT REQUEST message prior to this procedure was 'IPv4' or 'IPv4v6' then, IPv4 address allocation by DHCPv4 may occur on the user plane bearer established for the QoS flow of the default QoS rule.	-	-

**Table 4.5A.3.2.2-2: Procedure for IP address allocation in the user plane, parallel behaviour**

Step	Procedure	Message Sequence	
		U - S	Message
1	If the "PDU session type" in the latest PDU SESSION ESTABLISHMENT REQUEST message prior to this procedure was 'IPv6' or 'IPv4v6' then stateless address auto configuration occurs on the user plane bearer established for the QoS flow of the default QoS rule.	-	-

4.5A.3.2.3 Specific message contents

None

**4.5A.4 Procedure for IMS signalling**

4.5A.4.1 Scope

The purpose of this procedure is to allow the successful completion of IMS signalling.

The procedure is applicable for UEs with IMS support (TS 38.508-2 A.4.4-1/2).

4.5A.4.2 Procedure description

4.5A.4.2.1 Initial conditions

N/A



## 4.5A.4.2.2 Procedure sequence

**Table 4.5A.4.2.2-1: Procedure for IMS signalling**

Step	Procedure	Message Sequence	
		U - S	Message
-	EXCEPTION: Steps 1a1 to 1a2b1 describe a transaction that depends on the UE capability	-	-
1a1	IF pc_IMS_5GS then the SS starts timer Timer_1 = 10 s (Note 1)	-	-
-	EXCEPTION: Steps 1a2a1 to 1a2b1 describe a transaction that depends on the UE implementation	-	-
1a2a1	Registration procedure according TS 34.229-5 [47] subclause A.2 (steps 1-8).	-	-
1a2a8	Note: SS cancels timer Timer_1 at step 1a2a1	-	-
1a2b1	Timer_1 expires	-	-
Note 1:	Depending on the UE configuration there may be unpredictable delay in the start of the procedure. A guarding time of [10] sec is suggested within which the procedure is expected to start. If the timer expires then the test procedure, from which the Procedure for IMS signalling U-plane is called, shall advance to the next specified step		

## 4.5A.4.2.3 Specific message contents

None

**4.5A.5 IPsec Tunnel Disconnection in 5GC / WLAN**

## 4.5A.5.1 Scope

The purpose of this procedure is to disconnect an Ipsec tunnel.

## 4.5A.5.2 Procedure description

## 4.5A.5.2.1 Initial conditions

The UE has established an IPsec security association

## 4.5A.5.2.2 Procedure sequence

**Table 4.5A.5.2.2-1: IPsec Tunnel Disconnection in 5GC / WLAN**

St	Procedure	Message Sequence	
		U - S	Message
1	The SS initiated disconnection from the existing IPsec tunnel as defined in TS 24.502 [35] clause 7.4.2	-	-
NOTE: It is assumed that the WLAN AP association remains throughout the procedure.			

## 4.5A.5.3 Specific message contents

None

**4.5A.6 IPsec Tunnel Establishment in 5GC / WLAN**

## 4.5A.6.1 Scope

The purpose of this procedure is to establish an Ipsec tunnel and NAS signalling connection.

4.5A.6.2 Procedure description

4.5A.6.2.1 Initial conditions

The UE has Registered to 5GC with a PDU session established and IPsec security association is released

4.5A.6.2.2 Procedure sequence

**Table 4.5A.6.2.2-1: IPsec Tunnel Establishment in 5GC / WLAN**

St	Procedure	Message Sequence	
		U – S	Message
-	Exception: In parallel to steps 1 to 2, the UE initiates an IPsec security association and one child security association as defined in TS 24.502 [35] clause 7.3.2	-	-
1	The UE transmits a SERVICE REQUEST message.	-->	5GMM: SERVICE REQUEST
2	The SS transmits a SERVICE Accept message.	<--	5GMM: SERVICE ACCEPT
Note 1: The current procedure assumes UE establishes a single PDU session over Non 3GPP Access.			

4.5A.6.3 Specific message contents

**Table 4.5A.6.3-1: SERVICE REQUEST (step 1, Table 4.5A.6.2.2-1)**

Derivation Path: 38.508-1 [4], Table 4.7.1-16			
Information Element	Value/remark	Comment	Condition
Service type			
Service type value	'0000'B	signalling	

## 4.6 Default NG-RAN RRC message and information elements contents

### 4.6.0 General

#### 4.6.0.1 Global conditions

Groups of RRC and 5GMM conditions including always one and only one condition set to true per table, unless explicitly stated.

**Table 4.6.0.1-1: Signalling, RF/RRM/Performance**

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

**Table 4.6.0.1-2: NR operating bands**

Condition	Explanation
FR1	410 MHz – 7125 MHz
FR2	24250 MHz – 52600 MHz

**Table 4.6.0.1-3: FDD/TDD**

Condition	Explanation
FDD	Frequency Division Duplex
TDD	Time Division Duplex

**Table 4.6.0.1-4: Subcarrier spacing**

Condition	Explanation
SCS15	15kHz
SCS30	30kHz
SCS60	60kHz
SCS120	120kHz
SCS240	240kHz

**Table 4.6.0.1-5: SST**

Condition	Explanation
SST_eMBB	Slice suitable for the handling of 5G enhanced Mobile Broadband.
SST_URLLC	Slice suitable for the handling of ultra- reliable low latency communications.
SST_MIoT	Slice suitable for the handling of massive IoT.
SST_V2X	Slice suitable for the handling of V2X services.
NOTE:	For the conditions in this table, one or more conditions are set to true.

Table 4.6.0.1-6: Channel bandwidth

Condition	Explanation
BW5	5mhz
BW10	10mhz
BW15	15mhz
BW20	20mhz
BW25	25mhz
BW30	30mhz
BW40	40mhz
BW50	50mhz
BW60	60mhz
BW80	80mhz
BW100	100mhz

## 4.6.1 Contents of RRC messages

### – CounterCheck

Table 4.6.1-1: CounterCheck

Derivation Path: TS 38.331 [6], clause 6.2.2			
Information Element	Value/remark	Comment	Condition
CounterCheck ::= SEQUENCE {			
rrc-TransactionIdentifier	RRC-TransactionIdentifier		
criticalExtensions CHOICE {			
counterCheck SEQUENCE {			
drb-CountMSB-InfoList SEQUENCE (SIZE (1..maxDRB)) OF DRB-CountMSB-Info	1 entry		
DRB-CountMSB-Info[1] SEQUENCE {		entry 1	
drb-Identity	DRB-Identity		
countMSB-Uplink	0		
countMSB-Downlink	0		
}			
}			
lateNonCriticalExtension	Not present		
nonCriticalExtension	Not present		
}			
}			

– CounterCheckResponse

**Table 4.6.1-2: CounterCheckResponse**

Derivation Path: TS 38.331 [6], clause 6.2.2			
Information Element	Value/remark	Comment	Condition
CounterCheckResponse ::= SEQUENCE {			
rrc-TransactionIdentifier	RRC-TransactionIdentifier		
criticalExtensions CHOICE {			
counterCheckResponse SEQUENCE {			
drb-CountInfoList SEQUENCE (SIZE (0..maxDRB)) OF DRB-CountInfo {	1 entry		
DRB-CountInfo[1] SEQUENCE {		entry 1	
drb-Identity	DRB-Identity		
count-Uplink	Not checked		
count-Downlink	Not checked		
}			
}			
lateNonCriticalExtension	Not checked		
nonCriticalExtension	Not checked		
}			
}			

– DedicatedSIBRequest

**Table 4.6.1-2A: DedicatedSIBRequest**

Derivation Path: TS 38.331 [6], clause 6.2.2			
Information Element	Value/remark	Comment	Condition
DedicatedSIBRequest-r16 ::= SEQUENCE {			
FFS			
}			

– DLDedicatedMessageSegment

**Table 4.6.1-2B: DLDedicatedMessageSegment**

Derivation Path: TS 38.331 [6], clause 6.2.2			
Information Element	Value/remark	Comment	Condition
DLDedicatedMessageSegment-r16 ::= SEQUENCE {			
criticalExtensions CHOICE {			
dlDedicatedMessageSegment-r16 SEQUENCE {			
segmentNumber-r16	0		firstSegment
	1		lastSegment
rrc-MessageSegmentContainer-r16	Set according to specific message content	OCTET STRING including segmented RRCReconfiguration or RRCResume message	
rrc-MessageSegmentType-r16	notLastSegment		firstSegment
	lastSegment		lastSegment
lateNonCriticalExtension	Not present		
nonCriticalExtension	Not present		
}			
}			
}			

Condition	Explanation
firstSegment	The first segment of the RRCReconfiguration or RRCResume message
lastSegment	The last segment of the RRCReconfiguration or RRCResume message

– *DLInformationTransfer*

**Table 4.6.1-3: 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 SEQUENCE {	Not present		
referenceTimeInfo-r16	ReferenceTimeInfo		
nonCriticalExtension	Not present		
}			
nonCriticalExtension	Not present		
}			
}			

Condition	Explanation
TSC	For test cases requiring TSC (Time Sensitive Communication) functions enabled.

– *DLInformationTransferMRDC*

**Table 4.6.1-3A: DLInformationTransferMRDC**

Derivation Path: TS 38.331 [6], clause 6.2.2			
Information Element	Value/remark	Comment	Condition
DLInformationTransferMRDC-r16 ::= SEQUENCE {			
FFS			
}			

– *FailureInformation*

**Table 4.6.1-4: FailureInformation**

Derivation Path: TS 38.331 [6], clause 6.2.2			
Information Element	Value/remark	Comment	Condition
FailureInformation ::= SEQUENCE {			
criticalExtensions CHOICE {			
failureInformation SEQUENCE {			
failureInfoRLC-Bearer SEQUENCE {			
cellGroupld	Not checked		
logicalChannelldentity	Not checked		
failureType	Not checked		
}			
lateNonCriticalExtension	Not checked		
nonCriticalExtension	Not checked		
nonCriticalExtension SEQUENCE {			DAPS_HOF
failureInfoDAPS-r16 SEQUENCE {			
failureType-r16	daps-failure	Indicate handover failure type is DAPS handover failure	
}			
nonCriticalExtension	Not checked		
}			
}			
}			
}			

Condition	Explanation
DAPS_HOF	DAPS handover failure

– *IABOtherInformation*

**Table 4.6.1-4A: IABOtherInformation**

Derivation Path: TS 38.331 [6], clause 6.2.2			
Information Element	Value/remark	Comment	Condition
IABOtherInformation-r16 ::= SEQUENCE {			
FFS			
}			

– *LocationMeasurementIndication*

**Table 4.6.1-5: LocationMeasurementIndication**

Derivation Path: TS 38.331 [6], clause 6.2.2			
Information Element	Value/remark	Comment	Condition
LocationMeasurementIndication ::= SEQUENCE {			
criticalExtensions CHOICE {			
locationMeasurementIndication SEQUENCE {			
measurementIndication CHOICE {			
setup	LocationMeasurementInfo		
}			
lateNonCriticalExtension	Not checked		
nonCriticalExtension	Not checked		
}			
}			
}			

– *LoggedMeasurementConfiguration***Table 4.6.1-5AA: LoggedMeasurementConfiguration (Thres1)**

Derivation Path: TS 38.331 [6], clause 6.2.2			
Information Element	Value/remark	Comment	Condition
LoggedMeasurementConfiguration-r16 ::= SEQUENCE {			
criticalExtensions CHOICE {			
loggedMeasurementConfiguration-r16 SEQUENCE {			
traceReference-r16 SEQUENCE {			
plmn-Identity-r16	plmn-Identity in USIM	MCC/MNC=MCC/MNC in USIM	
traceId-r16	'0EF'H	OCTET STRING (SIZE (3))	
}			
traceRecordingSessionRef-r16	'1A'H	OCTET STRING (SIZE (2))	
tce-Id-r16	'5'H	OCTET STRING (SIZE (1))	
absoluteTimeInfo-r16	Set to value corresponding to the absolute time when the message is sent	BIT STRING (SIZE (48))	
areaConfiguration-r16	Not present		
plmn-IdentityList-r16	Not present		
bt-NameList-r16	Not present		
wlan-NameList-r16	Not present		
sensor-NameList-r16	Not present		
loggingDuration-r16	min120		
reportType CHOICE {			
periodical SEQUENCE {			PERIODICAL
loggingInterval-r16	ms2560	2.56s	
}			
eventTriggered SEQUENCE {			EVENT
eventType-r16 CHOICE {			
outOfCoverage	NULL		OUT-OF-COVERAGE
eventL1 SEQUENCE {			EVENTL1
l1-Threshold CHOICE {			
rsrp	Thres1	Thres is an entry value into a mapping table in TS 38.133 [13].	
}			
hysteresis	0		
timeToTrigger	ms100	0.1s	
}			
loggingInterval-r16	ms2560	2.56s	
}			
lateNonCriticalExtension	Not present		
nonCriticalExtension	Not present		
}			
}			
}			



Condition	Explanation
PERIODICAL	Configuration of LoggedPeriodicalReport
EVENT	Configuration of LoggedEventTrigger
OUT-OF-COVERAGE	Configuration of outOfCoverage
EVENTL1	Configuration of eventL1

– *MCGFailureInformation*

**Table 4.6.1-5AB: MCGFailureInformation**

Derivation Path: TS 38.331 [6], clause 6.2.2			
Information Element	Value/remark	Comment	Condition
MCGFailureInformation-r16 ::= SEQUENCE {			
FFS			
}			

– *MeasurementReport*

**Table 4.6.1-5A: MeasurementReport**

Derivation Path: TS 38.331 [6], clause 6.2.2			
Information Element	Value/remark	Comment	Condition
MeasurementReport ::= SEQUENCE {			
criticalExtensions CHOICE {			
measurementReport SEQUENCE {			
measResults	MeasResults		
lateNonCriticalExtension	Not checked		
nonCriticalExtension	Not checked		
}			
}			

– *MIB*

**Table 4.6.1-6: MIB**

Derivation Path: TS 38.331 [6], clause 6.2.2			
Information Element	Value/remark	Comment	Condition
MIB ::= SEQUENCE {			
systemFrameNumber	A valid value as defined in TS 38.331 [6]		
subCarrierSpacingCommon	scs15or60	For signalling test cases see clause 6.2.3, otherwise see clause 4.3.1.	SCS15or60
	scs30or120	For signalling test cases see clause 6.2.3, otherwise see clause 4.3.1.	SCS30or120
ssb-subcarrierOffset	Set to the integer value of the 4 LSB of kSSB defined for the frequency of the cell	For signalling test cases see clause 6.2.3, otherwise see clause 4.3.1.	
dmrs-TypeA-Position	pos2		
pdcch-ConfigSIB1	PDCCH-ConfigSIB1		
cellBarred	notBarred		
intraFreqReselection	allowed		
spare	0		
}			

Condition	Explanation
SCS15or60	SCS is 15kHz or 60kHz
SCS30or120	SCS is 30kHz or 120kHz.

– *MobilityFromNRCommand*

**Table 4.6.1-8: *MobilityFromNRCommand***

Derivation Path: TS 38.331 [6], clause 6.2.2			
Information Element	Value/remark	Comment	Condition
MobilityFromNRCommand ::= SEQUENCE {			
rrc-TransactionIdentifier	RRC-TransactionIdentifier		
criticalExtensions CHOICE {			
mobilityFromNRCommand SEQUENCE {			
targetRAT-Type	eutra utra-fdd-v1610		HO-TO-UTRA_FDD
targetRAT-MessageContainer	OCTET STRING including the RRCConnectionReconfiguration message according TS 36.508 [2], table 4.6.1-8 with condition HO-TO-EUTRA OCTET STRING including the Handover TO UTRAN message specified in TS 36.508 [2] Table 4.7B.1-1 with condition UTRA FDD PS RB		HO-TO-UTRA_FDD
nas-SecurityParamFromNR	The 4 LSB of the downlink NAS COUNT		
lateNonCriticalExtension	Not present		
nonCriticalExtension	Not present		
}			
}			
}			

Condition	Explanation
HO-TO-UTRA_FDD	For Handover from NR to UTRA FDD

– *Paging*

**Table 4.6.1-9: Paging**

Derivation Path: TS 38.331 [6], clause 6.2.2			
Information Element	Value/remark	Comment	Condition
Paging ::= SEQUENCE {			
pagingRecordList SEQUENCE	1 entry		
(SIZE(1..maxNrofPageRec)) OF PagingRecord {			
PagingRecord[1] SEQUENCE {		entry 1	
ue-Identity CHOICE {			
ng-5G-S-TMSI	NG-5G-S-TMSI		
fullI-RNTI	I-RNTI-Value		NR_RRC_RESUME
}			
accessType	Not present		
}			
}			
lateNonCriticalExtension	Not present		
nonCriticalExtension	Not present		
}			

Condition	Explanation
NR_RRC_RESUME	To page a UE in RRC_INACTIVE state to request RRC connection resumption

– *RRCReestablishment*

**Table 4.6.1-10: RRCReestablishment**

Derivation Path: TS 38.331 [6], clause 6.2.2			
Information Element	Value/remark	Comment	Condition
RRCReestablishment ::= SEQUENCE {			
rrc-TransactionIdentifier	RRC-TransactionIdentifier		
criticalExtensions CHOICE {			
rrcReestablishment SEQUENCE {			
nextHopChainingCount	NextHopChainingCount		
lateNonCriticalExtension	Not present		
nonCriticalExtension	Not present		
}			
}			
}			

– *RRCReestablishmentComplete*

**Table 4.6.1-11: RRCReestablishmentComplete**

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

– *RRCReestablishmentRequest***Table 4.6.1-12: RRCReestablishmentRequest**

Derivation Path: TS 38.331 [6], clause 6.2.2			
Information Element	Value/remark	Comment	Condition
RRCReestablishmentRequest ::= SEQUENCE {			
ue-Identity SEQUENCE {			
c-RNTI	RNTI-Value		
physCellId	PhysCellId	The physical cell identity of the PCell the UE was connected to prior to the failure	
shortMAC-I	ShortMAC-I		
}			
reestablishmentCause	Not checked		
spare	Present but contents not checked		
}			

– *RRCReconfiguration*

**Table 4.6.1-13: *RRCReconfiguration***

Derivation Path: TS 38.331 [6], clause 6.2.2			
Information Element	Value/remark	Comment	Condition
RRCReconfiguration ::= SEQUENCE {			
rrc-TransactionIdentifier	RRC-TransactionIdentifier		
criticalExtensions CHOICE {			
rrcReconfiguration SEQUENCE {			
radioBearerConfig	Not present		
	RadioBearerConfig with conditions SRB2 and DRB1		NR, NR-DC
	RadioBearerConfig with conditions SRB2 and REEST		REEST
secondaryCellGroup	CellGroupConfig	OCTET STRING (CONTAINING CellGroupConfig)	EN-DC
	CellGroupConfig with condition NR-DC_SCG	OCTET STRING (CONTAINING CellGroupConfig)	NR-DC_SCG
	CellGroupConfig with conditions EN-DC and PSCell_change	OCTET STRING (CONTAINING CellGroupConfig)	EN-DC_HO
	CellGroupConfig with condition MEAS	OCTET STRING (CONTAINING CellGroupConfig)	EN-DC_MEAS
	CellGroupConfig with condition SCell_add	OCTET STRING (CONTAINING CellGroupConfig)	EN-DC_SCell_add
	Not present		
measConfig	Not present		
	MeasConfig	Measurements configuration	NR_MEAS, EN-DC_MEAS, IRAT_MEAS
lateNonCriticalExtension	Not present		
nonCriticalExtension	Not present		
nonCriticalExtension SEQUENCE {			NR, SCell_add, NR_MEAS, NR-DC, SIDELINK, DAPS_HO_ReleaseSource, CHO, CPC, REEST
masterCellGroup	CellGroupConfig with condition SRB2_DRB1	OCTET STRING (CONTAINING CellGroupConfig)	NR, NR-DC
	CellGroupConfig with condition SCell_add	OCTET STRING (CONTAINING CellGroupConfig)	SCell_add
	CellGroupConfig with condition MEAS	OCTET STRING (CONTAINING CellGroupConfig)	NR_MEAS
	CellGroupConfig with condition REEST	OCTET STRING (CONTAINING CellGroupConfig)	REEST
fullConfig	Not present		
dedicatedNAS-MessageList	Not present		
dedicatedNAS-MessageList SEQUENCE (SIZE(1..maxDRB)) OF DedicatedNAS-Message {	1 entry		NR

DedicatedNAS-Message[1]	DedicatedNAS-Message	entry 1 A sequence of OCTET STRING (s) containing one or more DedicatedNAS-Message(s)	
}			
masterKeyUpdate	Not present		
masterKeyUpdate SEQUENCE {			MasterKeyChange
keySetChangeIndicator	true		
nextHopChainingCount	NextHopChainingCount		
nas-Container	Not present		
	OCTET STRING including the 10 Octets value generated according to TS 24.501 [28] clause 9.11.2.9		Inter_Sys_HO
}			
dedicatedSIB1-Delivery	Not present		
dedicatedSystemInformationDelivery	Not present		
otherConfig	Not present		
nonCriticalExtension	Not present		
nonCriticalExtension SEQUENCE {			NR-DC, SIDELINK, DAPS_HO_ReleaseSource, CHO, CPC, NE-DC
otherConfig-v1540	Not present		
nonCriticalExtension SEQUENCE {			
mrdc-SecondaryCellGroupConfig	Not present		
mrdc-SecondaryCellGroupConfig CHOICE {			NR-DC, NE-DC
setup SEQUENCE {			
mrdc-ReleaseAndAdd	Not present		
mrdc-SecondaryCellGroup CHOICE {			
nr-SCG	RRCReconfiguration with condition NR-DC_SCG	OCTET STRING (CONTAINING RRCReconfiguration)	NR-DC
eutra-SCG	RRCConnectionReconfiguration according TS 36.508 [2], table 4.6.1-8 with condition NE-DC	OCTET STRING (CONTAINING RRCConnectionReconfiguration)	NE-DC
}			
}			
}			
}			
}			
radioBearerConfig2	Not present		NE-DC
	RadioBearerConfig with condition DRBn and SecondaryKeys	OCTET STRING (CONTAINING RadioBearerConfig)	NR-DC
sk-Counter	SK-Counter		
nonCriticalExtension	Not present		
nonCriticalExtension SEQUENCE {			SIDELINK, DAPS_HO_ReleaseSource, CHO, CPC
otherConfig-v1610	Not present		
bap-Config-r16	Not present		
iab-IP-AddressConfigurationList-r16	Not present		

conditionalReconfiguration-r16	Not present		
	ConditionalReconfiguration		CHO, CPC
daps-SourceRelease-r16	Not present		
	true		DAPS_HO_ReleaseSource
t316-r16	Not present		
needForGapsConfigNR-r16	Not present		
onDemandSIB-Request-r16	Not present		
dedicatedPosSysInfoDelivery-r16	Not present		
sl-ConfigDedicatedNR-r16	Not present		
sl-ConfigDedicatedNR-r16 CHOICE {			SIDELINK
setup	SL-ConfigDedicatedNR-r16		
}			
sl-ConfigDedicatedEUTRA-Info-r16	Not present		
smtc-r16	Not present		
nonCriticalExtension	Not present		
}			
}			
}			
}			
}			
}			
}			
}			
}			
}			

Condition	Explanation
EN-DC	E-UTRA-NR Dual Connectivity with E-UTRA connected to EPC
EN-DC_MEAS	An EN-DC measurement is configured
IRAT_MEAS	An IRAT measurement is configured in the NR PCell
NR_MEAS	A NR measurement is configured
NR	NR connected to 5GC
NR-DC	NR-NR Dual Connectivity is configured
NR-DC_SCG	Add SCG side configuration (NR-DC)
EN-DC_HO	NR PSCell change (EN-DC)
SCell_add	Add SCell
EN-DC_SCell_add	Add SCell (EN-DC)
MasterKeyChange	MasterKeyUpdate when performing ReconfigurationWithSync and indicating a change of the AS security algorithms associated to the master key
Inter_Sys_HO	Used during inter-system handover to NR procedure
REEST	The first RRCReconfiguration message after successful completion of the RRC re-establishment procedure
SIDELINK	For NR sidelink dedicated configuration
DAPS_HO_ReleaseSource	The source cell part of DAPS operation is to be stopped and the source cell part of DAPS configuration is to be released.
CHO	Conditional handover
CPC	Conditional PSCell change
NE-DC	NR E-UTRA Dual Connectivity



– *RRCReconfigurationComplete*

**Table 4.6.1-14: RRCReconfigurationComplete**

Derivation Path: TS 38.331 [6], clause 6.2.2			
Information Element	Value/remark	Comment	Condition
RRCReconfigurationComplete ::= SEQUENCE {			
rrc-TransactionIdentifier	Not checked		
criticalExtensions CHOICE {			
rrcReconfigurationComplete SEQUENCE {			
lateNonCriticalExtension	Not checked		
nonCriticalExtension	Not checked		
nonCriticalExtension SEQUENCE {			NR-DC, NE-DC
uplinkTxDirectCurrentList	Not checked		
nonCriticalExtension SEQUENCE {			
scg-Response CHOICE {			
nr-SCG-Response	RRCReconfigurationComplete	OCTET STRING (CONTAINING RRCReconfigurationComplete)	NR-DC
eutra-SCG-Response	RRCConnectionReconfigurationComplete	OCTET STRING	NE-DC
}			
nonCriticalExtension	Not checked		
}			
nonCriticalExtension	Not checked		
}			
}			

Condition	Explanation
NR-DC	Used in NR-DC configuration
NE-DC	NR E-UTRA Dual Connectivity is configured

– *RRCReject*

**Table 4.6.1-15: RRCReject**

Derivation Path: TS 38.331 [6], clause 6.2.2			
Information Element	Value/remark	Comment	Condition
RRCReject ::= SEQUENCE {			
criticalExtensions CHOICE {			
rrcReject SEQUENCE {			
waitTime	1		
lateNonCriticalExtension	Not present		
nonCriticalExtension	Not present		
}			
}			
}			

– RRCRelease

Table 4.6.1-16: RRCRelease

Derivation Path: TS 38.331 [6], clause 6.2.2			
Information Element	Value/remark	Comment	Condition
RRCRelease ::= SEQUENCE {			
rrc-TransactionIdentifier	RRC-TransactionIdentifier		
criticalExtensions CHOICE {			
rrcRelease SEQUENCE {			
redirectedCarrierInfo	Not present		
cellReselectionPriorities	Not present		
suspendConfig	Not present		
suspendConfig SEQUENCE {			NR_RRC_INACTIVE
fullI-RNTI	I-RNTI-Value		
shortI-RNTI	ShortI-RNTI-Value		
ran-PagingCycle	rf32		
ran-NotificationAreaInfo CHOICE {			
cellList SEQUENCE (SIZE (1..maxPLMNIdentities)) OF PLMN-RAN-AreaCell {	1 entry		
PLMN-RAN-AreaCellList[1] SEQUENCE {		entry 1	
plmn-Identity	Not present		
ran-AreaCells SEQUENCE (SIZE (1..32)) OF CellIdentity {	1 entry		
CellIdentity[1]	CellIdentity	entry 1 Cellidentity for the used cell.	
}			
}			
}			
}			
t380	Not present		
nextHopChainingCount	NextHopChainingCount		
}			
deprioritisationReq	Not present		
lateNonCriticalExtension	Not present		
nonCriticalExtension	Not present		
}			
}			
}			

Condition	Explanation
NR_RRC_INACTIVE	NR RRC state RRC_INACTIVE

– *RRCResume*

Table 4.6.1-17: RRCResume

Derivation Path: TS 38.331 [6], clause 6.2.2			
Information Element	Value/remark	Comment	Condition
RRCResume ::= SEQUENCE {			
rrc-TransactionIdentifier	RRC-TransactionIdentifier		
criticalExtensions CHOICE {			
rrcResume SEQUENCE {			
radioBearerConfig	RadioBearerConfig with condition RESUME		
masterCellGroup	CellGroupConfig with condition RESUME	OCTET STRING (CONTAINING CellGroupConfig)	
measConfig	Not present		
fullConfig	Not present		
lateNonCriticalExtension	Not present		
nonCriticalExtension	Not present		
}			
}			
}			

– *RRCResumeComplete*

Table 4.6.1-18: RRCResumeComplete

Derivation Path: TS 38.331 [6], clause 6.2.2			
Information Element	Value/remark	Comment	Condition
RRCResumeComplete ::= SEQUENCE {			
rrc-TransactionIdentifier	RRC-TransactionIdentifier		
criticalExtensions CHOICE {			
rrcResumeComplete SEQUENCE {			
dedicatedNAS-Message	Not checked		
selectedPLMN-Identity	Not checked		
uplinkTxDirectCurrentList	Not checked		
lateNonCriticalExtension	Not checked		
nonCriticalExtension	Not checked		
}			
}			
}			

– *RRCResumeRequest*

Table 4.6.1-19: RRCResumeRequest

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

– *RRCResumeRequest1*Table 4.6.1-20: *RRCResumeRequest1*

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

– *RRCSetup*Table 4.6.1-21: *RRCSetup*

Derivation Path: TS 38.331 [6], clause 6.2.2			
Information Element	Value/remark	Comment	Condition
RRCSetup ::= SEQUENCE {			
rrc-TransactionIdentifier	RRC-TransactionIdentifier		
criticalExtensions CHOICE {			
rrcSetup SEQUENCE {			
radioBearerConfig	RadioBearerConfig with condition SRB1		
masterCellGroup	CellGroupConfig with condition SRB1	OCTET STRING (CONTAINING CellGroupConfig)	
lateNonCriticalExtension	Not present		
nonCriticalExtension	Not present		
}			
}			
}			

– *RRCSetupComplete*Table 4.6.1-22: *RRCSetupComplete*

Derivation Path: TS 38.331 [6], clause 6.2.2			
Information Element	Value/remark	Comment	Condition
RRCSetupComplete ::= SEQUENCE {			
rrc-TransactionIdentifier	RRC-TransactionIdentifier		
criticalExtensions CHOICE {			
rrcSetupComplete SEQUENCE {			
selectedPLMN-Identity	Not checked		
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 checked		
nonCriticalExtension	Not checked		
}			
}			
}			

– *RRCSetupRequest***Table 4.6.1-23: RRCSetupRequest**

Derivation Path: TS 38.331 [6], clause 6.2.2			
Information Element	Value/remark	Comment	Condition
RRCSetupRequest ::= SEQUENCE {			
rrcSetupRequest SEQUENCE {			
ue-Identity CHOICE {			
randomValue	Not checked		
}			
establishmentCause	Not checked		
spare	Not checked		
}			
}			

– *RRCSystemInfoRequest***Table 4.6.1-24: RRCSystemInfoRequest**

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

– *SCGFailureInformation***Table 4.6.1-24A: SCGFailureInformation**

Derivation Path: TS 38.331 [6], clause 6.2.2			
Information Element	Value/remark	Comment	Condition
SCGFailureInformation ::= SEQUENCE {			
criticalExtensions CHOICE {			
scgFailureInformation SEQUENCE {			
failureReportSCG	Not checked		
nonCriticalExtension	Not checked		
}			
}			
}			

– *SCGFailureInformationEUTRA***Table 4.6.1-24B: SCGFailureInformationEUTRA**

Derivation Path: TS 38.331 [6], clause 6.2.2			
Information Element	Value/remark	Comment	Condition
SCGFailureInformationEUTRA ::= SEQUENCE {			
criticalExtensions CHOICE {			
scgFailureInformationEUTRA SEQUENCE {			
failureReportSCG-EUTRA	Not checked		
nonCriticalExtension	Not checked		
}			
}			
}			

– *SecurityModeCommand***Table 4.6.1-25: SecurityModeCommand**

Derivation Path: TS 38.331 [6], clause 6.2.2			
Information Element	Value/remark	Comment	Condition
SecurityModeCommand ::= SEQUENCE {			
rrc-TransactionIdentifier	RRC-TransactionIdentifier		
criticalExtensions CHOICE {			
securityModeCommand SEQUENCE {			
securityConfigSMC SEQUENCE {			
securityAlgorithmConfig	SecurityAlgorithmConfig		
}			
lateNonCriticalExtension	Not present		
nonCriticalExtension	Not present		
}			
}			
}			

– *SecurityModeComplete***Table 4.6.1-26: SecurityModeComplete**

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

– *SecurityModeFailure***Table 4.6.1-27: *SecurityModeFailure***

Derivation Path: TS 38.331 [6], clause 6.2.2			
<b>Information Element</b>	<b>Value/remark</b>	<b>Comment</b>	<b>Condition</b>
SecurityModeFailure ::= SEQUENCE {			
rrc-TransactionIdentifier	RRC-TransactionIdentifier		
criticalExtensions CHOICE {			
securityModeFailure SEQUENCE {			
lateNonCriticalExtension	Not checked		
nonCriticalExtension	Not checked		
}			
}			
}			

## SIB1

Table 4.6.1-28: SIB1

Derivation Path: TS 38.331 [6], clause 6.2.2			
Information Element	Value/remark	Comment	Condition
SIB1 ::= SEQUENCE {			
cellSelectionInfo SEQUENCE {			
q-RxLevMin	-70	-140 dBm	RF OR RRM
	-55	-110 dBm	SIG AND FR1
	ROUND((-110+Delta(NRfs))/2)	-110+Delta(NRfs)	SIG AND FR2
q-RxLevMinOffset	Not present		
q-RxLevMinSUL	Not Present		
	-70	-140 dBm	SUL AND (RF OR RRM)
	-55	-110 dBm	SUL AND SIG
q-QualMin	-20	-20dB	QBASED
	Not present		
q-QualMinOffset	Not present		
}			
cellAccessRelatedInfo	CellAccessRelatedInfo		
connEstFailureControl	ConnEstFailureControl		
si-SchedulingInfo	Not present		NR_1
	SI-SchedulingInfo		
servingCellConfigCommon	ServingCellConfigCommonSIB		
ims-EmergencySupport	Not present		
	true	Indicates the cell supports IMS emergency bearer services for UEs in limited service mode.	SIG
eCallOverIMS-Support	Not present		
	true	Support of eCall over IMS services	eCalloverIMSforNR
ue-TimersAndConstants	UE-TimersAndConstants		
uac-BarringInfo	Not present		
useFullResumeID	Not present		
lateNonCriticalExtension	Not present		
nonCriticalExtension	Not present		
nonCriticalExtension SEQUENCE {			EMR_EUTRA, EMR_NR, posSIB
idleModeMeasurementsEUTRA-r16	Not present		
	true		EMR_EUTRA
idleModeMeasurementsNR-r16	Not present		
	true		EMR_NR
posSI-SchedulingInfo-r16	PosSI-SchedulingInfo-r16		
	PosSI-SchedulingInfo-r16		posSIB
nonCriticalExtension	Not present		
}			
}			
NOTE 1: Delta(NRfs) is derived based on calibration procedure defined in the clause 6.1.3.3. NRfs is NR frequency on which SIB1 is broadcasted.			
NOTE 2: ROUND is rounded off to the nearest integer. As an example, '1 to 1.49' set to '1' while '1.5 to 2' to '2' and '-2.0 to 1.5' set to '-2' while '-1.49 to -1' set to '-1'.			



Condition	Explanation
SUL	For test cases using SUL frequency for the serving cell, Qrxlevmin is obtained from q-RxLevMinSUL.
QBASED	This condition applies to Quality based signalling test cases.
NR_1	System information combination NR-1 according table 4.4.3.1.2-1 is applied.
SIG	Used for signalling test cases.
eCalloverIMSforNR	Used for eCall over IMS test cases (TS 38.523-1[12], TS 34.229-5[47])
posSIB	For test cases using posSIBs in system information.
EMR_EUTRA	For E-UTRA idle/inactive measurement test cases.
EMR_NR	For NR idle/inactive measurement test cases.

– *SidelinkUEInformationNR*

**Table 4.6.1-28A: SidelinkUEInformationNR**

Derivation Path: TS 38.331 [6], clause 6.2.2			
Information Element	Value/remark	Comment	Condition
SidelinkUEInformationNR-r16 ::= SEQUENCE {			
criticalExtensions CHOICE {			
sidelinkUEInformationNR-r16 SEQUENCE {			
sl-RxInterestedFreqList-r16	Not present		
sl-RxInterestedFreqList-r16 SEQUENCE (SIZE (1..maxNrofFreqSL-r16)) OF INTEGER {	1 entry		SIDELINK_RX
INTEGER[1]	1	entry 1	
}			
sl-TxResourceReqList-r16	Not present		
sl-TxResourceReqList-r16 SEQUENCE (SIZE (1..maxNrofSL-Dest-r16)) OF SL-TxResourceReq-r16 {	1 entry		SIDELINK_TX
SL-TxResourceReq-r16[1] SEQUENCE {		entry 1	
sl-DestinationIdentity-r16	SL-DestinationIdentity-r16		
sl-CastType-r16	unicast		
sl-RLC-ModeIndicationList-r16	Not present		
sl-QoS-InfoList-r16 SEQUENCE (SIZE (1..maxNrofSL-QFIsPerDest-r16)) OF SL-QoS-Info-r16 {	1 entry		
SL-QoS-Info-r16[1] SEQUENCE {		entry 1	
sl-QoS-FlowIdentity-r16	SL-QoS-FlowIdentity-r16		
sl-QoS-Profile-r16	SL-QoS-Profile-r16		
}			
}			
sl-TypeTxSyncList-r16 SEQUENCE (SIZE (1..maxNrofFreqSL-r16)) OF SL-TypeTxSync-r16 {	1 entry		
SL-TypeTxSync-r16[1]	SL-TypeTxSync-r16	entry 1	
}			
sl-TxInterestedFreqList-r16 SEQUENCE (SIZE (1..maxNrofFreqSL-r16)) OF INTEGER {	1 entry		
INTEGER[1]	1	entry 1	
}			
sl-CapabilityInformationSidelink-r16[1]	Not present		
}			
}			
sl-FailureList-r16	Not present		
lateNonCriticalExtension	Not present		
nonCriticalExtension	Not present		
}			
}			
}			

Condition	Explanation
SIDELINK_TX	Used when UE indicates its interest on sidelink transmission.
SIDELINK_RX	Used when UE indicates its interest on sidelink reception.

– *SystemInformation*

**Table 4.6.1-29: SystemInformation**

Derivation Path: TS 38.331 [6], clause 6.2.2			
Information Element	Value/remark	Comment	Condition
SystemInformation ::= SEQUENCE {			
criticalExtensions CHOICE {			
systemInformation SEQUENCE {			
sib-TypeAndInfo SEQUENCE (SIZE (1..maxSIB))	See subclause 4.4.3.1.3		
OF CHOICE			
sibX	"X" denotes the SIB number		
...			
sibY	"Y" denotes the SIB number		
}			
lateNonCriticalExtension	Not present		
nonCriticalExtension	Not present		
}			
criticalExtensionsFuture-r16 CHOICE {			posSIB
posSystemInformation-r16	PosSystemInformation-r16-IEs		
}			
}			
}			

Condition	Explanation
posSIB	For test cases using posSIBs in system information.

– UEAssistanceInformation

**Table 4.6.1-30: UEAssistanceInformation**

Derivation Path: TS 38.331 [6], clause 6.2.2			
Information Element	Value/remark	Comment	Condition
UEAssistanceInformation ::= SEQUENCE {			
criticalExtensions CHOICE {			
ueAssistanceInformation SEQUENCE {			
delayBudgetReport CHOICE {			
type1	Not checked		
}			
lateNonCriticalExtension	Not checked		
nonCriticalExtension	Not checked		
nonCriticalExtension SEQUENCE {			SIDELINK
overheatingAssistance	Not checked		
nonCriticalExtension SEQUENCE {			
idc-Assistance-r16	Not checked		
drx-Preference-r16	Not checked		
maxBW-Preference-r16	Not checked		
maxCC-Preference-r16	Not checked		
maxMIMO-LayerPreference-r16	Not checked		
minSchedulingOffsetPreference-r16	Not checked		
releasePreference-r16	Not checked		
sl-UE-AssistanceInformationNR-r16	Not checked		
sl-UE-AssistanceInformationNR-r16	1 entry		SIDELINK
SEQUENCE (SIZE (1..maxNrofTrafficPattern-r16))			
OF SL-TrafficPatternInfo-r16 {		entry 1	
SL-TrafficPatternInfo-r16[1] SEQUENCE {			
trafficPeriodicity-r16	FFS		
timingOffset-r16	FFS		
messageSize-r16	FFS		
sl-QoS-FlowIdentity-r16	SL-QoS-FlowIdentity-r16		
}			
}			
referenceTimeInfoPreference-r16	Not checked		
nonCriticalExtension	Not checked		
}			
}			
}			
}			

– UECapabilityEnquiry

**Table 4.6.1-31: UECapabilityEnquiry**

Derivation Path: TS 38.331 [6], clause 6.2.2			
Information Element	Value/remark	Comment	Condition
UECapabilityEnquiry ::= SEQUENCE {			
rrc-TransactionIdentifier	RRC-TransactionIdentifier		
criticalExtensions CHOICE {			
ueCapabilityEnquiry SEQUENCE {			
ue-CapabilityRAT-RequestList	UE-CapabilityRAT-RequestList		
lateNonCriticalExtension	Not present		
ue-CapabilityEnquiryExt	Not present		
}			
}			
}			

– *UECapabilityInformation*

**Table 4.6.1-32: UECapabilityInformation**

Derivation Path: TS 38.331 [6], clause 6.2.2			
Information Element	Value/remark	Comment	Condition
UECapabilityInformation ::= SEQUENCE {			
rrc-TransactionIdentifier	RRC-TransactionIdentifier		
criticalExtensions CHOICE {			
ueCapabilityInformation SEQUENCE {			
ue-CapabilityRAT-ContainerList	UE-CapabilityRAT-ContainerList		
lateNonCriticalExtension	Not checked		
nonCriticalExtension	Not checked		
}			
}			
}			

– *UEInformationRequest*

**Table 4.6.1-32A: UEInformationRequest**

Derivation Path: TS 38.331 [6], clause 6.2.2			
Information Element	Value/remark	Comment	Condition
UEInformationRequest-r16 ::= SEQUENCE {			
rrc-TransactionIdentifier	RRC-TransactionIdentifier		
criticalExtensions CHOICE {			
ueInformationRequest-r16 SEQUENCE {			
idleModeMeasurementReq-r16	Not present		
	true		IDLE
logMeasReportReq-r16	Not present		
	true		LOG
connEstFailReportReq-r16	Not present		
	true		FAIL
ra-ReportReq-r16	Not present		
	true		RA
rlf-ReportReq-r16	Not present		
	true		RLF
mobilityHistoryReportReq-r16	Not present		
	true		HISTORY
lateNonCriticalExtension	Not present		
nonCriticalExtension	Not present		
}			
}			
}			

Condition	Explanation
IDLE	Idle/inactive measurement information reporting
LOG	Logged measurement information reporting
FAIL	Connection failure information reporting
RA	Random access procedure information reporting
RLF	Radio link failure information reporting
HISTORY	Mobility history information reporting

– *UEInformationResponse***Table 4.6.1-32B: UEInformationResponse**

Derivation Path: TS 38.331 [6], clause 6.2.2			
Information Element	Value/remark	Comment	Condition
UEInformationResponse-r16 ::= SEQUENCE {			
rrc-TransactionIdentifier	RRC-TransactionIdentifier		
criticalExtensions CHOICE {			
ueInformationResponse-r16 SEQUENCE {			
measResultIdleEUTRA-r16	Not checked		
measResultIdleNR-r16	Not checked		
logMeasReport-r16	Not checked		
connEstFailReport-r16	Not checked		
ra-ReportList-r16	Not checked		
rlf-Report-r16	Not checked		
mobilityHistoryReport-r16	Not checked		
lateNonCriticalExtension	Not present		
nonCriticalExtension	Not present		
}			
}			
}			

– *ULDedicatedMessageSegment***Table 4.6.1-32C: ULDedicatedMessageSegment**

Derivation Path: TS 38.331 [6], clause 6.2.2			
Information Element	Value/remark	Comment	Condition
ULDedicatedMessageSegment-r16 ::= SEQUENCE {			
criticalExtensions CHOICE {			
ulDedicatedMessageSegment-r16 SEQUENCE {			
segmentNumber-r16	Any allowed value between 0 to 15		
rrc-MessageSegmentContainer-r16	Not Checked	OCTET STRING including segmented UECapabilityInformation message	
rrc-MessageSegmentType-r16	Not Checked		
lateNonCriticalExtension	Not checked		
nonCriticalExtension	Not checked		
}			
}			
}			

– *ULInformationTransfer***Table 4.6.1-33: *ULInformationTransfer***

Derivation Path: TS 38.331 [6], clause 6.2.2			
Information Element	Value/remark	Comment	Condition
ULInformationTransfer ::= SEQUENCE {			
criticalExtensions CHOICE {			
ullInformationTransfer SEQUENCE {			
dedicatedNAS-Message	DedicatedNAS-Message		
lateNonCriticalExtension	Not checked		
nonCriticalExtension	Not checked		
}			
}			
}			

– *ULInformationTransferIRAT***Table 4.6.1-33A: *ULInformationTransferIRAT***

Derivation Path: TS 38.331 [6], clause 6.2.2			
Information Element	Value/remark	Comment	Condition
ULInformationTransferIRAT-r16 ::= SEQUENCE {			
FFS			
}			

– *ULInformationTransferMRDC***Table 4.6.1-34: *ULInformationTransferMRDC***

Derivation Path: TS 38.331 [6], clause 6.2.2			
Information Element	Value/remark	Comment	Condition
ULInformationTransferMRDC ::= SEQUENCE {			
criticalExtensions CHOICE {			
c1 CHOICE {			
ullInformationTransferMRDC SEQUENCE {			
ul-DCCH-MessageNR	Not checked		
ul-DCCH-MessageEUTRA	Not checked		
lateNonCriticalExtension	Not checked		
nonCriticalExtension	Not checked		
}			
}			
}			
}			

## 4.6.1A Contents of PC5 RRC messages

– *MasterInformationBlockSidelink*Table 4.6.1A-1: *MasterInformationBlockSidelink*

Derivation Path: TS 38.331 [6], clause 6.6.2			
Information Element	Value/remark	Comment	Condition
MasterInformationBlockSidelink ::= SEQUENCE {			
sl-TDD-Config-r16	111111111111		
inCoverage-r16	true		RX AND (GNSS_SYNC OR NB_SYNC)
	false		RX AND (UE_SYNC OR INTERNAL_SYNC)
	Not Checked		TX
directFrameNumber-r16	DFN of the radio frame in which the S-SSB containing this message is transmitted		
slotIndex-r16	slot index of the slot in which the S-SSB containing this message is transmitted		
reservedBits-r16	00		
}			

Condition	Explanation
GNSS_SYNC	GNSS is used as the synchronization reference source
NB_SYNC	gNB or eNB is used as the synchronization reference source
UE_SYNC	SyncRef UE is used as the synchronization reference source
INTERNAL_SYNC	Internal clock is used as the synchronization reference source
TX	UE transmits and NR-SS-UE receives.
RX	UE receives and NR-SS-UE transmits.

– *MeasurementReportSidelink*

**Table 4.6.1A-2: MeasurementReportSidelink**

Derivation Path: TS 38.331 [6], clause 6.6.2			
Information Element	Value/remark	Comment	Condition
MeasurementReportSidelink ::= SEQUENCE {			
criticalExtensions CHOICE {			
measurementReportSidelink-r16 SEQUENCE {			
sl-measResults-r16 SEQUENCE {			
sl-MeasId-r16	1		
sl-MeasResult-r16 SEQUENCE {			
sl-ResultDMRS-r16 SEQUENCE {			
sl-RSRP-r16	(0..127)		TX
	71	actual value is (71-156) = -85dBm	RX
}			
}			
}			
}			
lateNonCriticalExtension	Not checked		TX
	Not present		RX
nonCriticalExtension	Not checked		TX
	Not present		RX
}			
}			
}			

Condition	Explanation
TX	UE transmits and NR-SS-UE receives.
RX	UE receives and NR-SS-UE transmits.



– *RRCReconfigurationSidelink*

**Table 4.6.1A-3: *RRCReconfigurationSidelink***

Derivation Path: TS 38.331 [6], clause 6.6.2			
Information Element	Value/remark	Comment	Condition
RRCReconfigurationSidelink ::= SEQUENCE {			
rrc-TransactionIdentifier-r16	RRC-TransactionIdentifier		RX
	(0..3)		TX
criticalExtensions CHOICE {			
rrcReconfigurationSidelink-r16 SEQUENCE {			
slrb-ConfigToAddModList-r16	Not present		
slrb-ConfigToAddModList-r16 SEQUENCE (SIZE (1..maxNrofSLRB-r16)) OF SLRB-Config-r16 {	1 entry		SL_DRB
SLRB-Config-r16[1] SEQUENCE {		entry 1	
slrb-PC5-ConfigIndex-r16	Not checked		TX
	1		RX
sl-SDAP-ConfigPC5-r16	Set according to parameter given in test case		TX
sl-SDAP-ConfigPC5-r16 SEQUENCE {			RX
sl-MappedQoS-FlowsToAddList-r16 SEQUENCE (SIZE (1.. maxNrofSL-QFIsPerDest-r16)) OF SL-PQFI-r16 {	1 entry		
SL-PQFI-r16[1]	1	entry 1	
}			
sl-MappedQoS-FlowsToReleaseList-r16	Not present		
sl-SDAP-Header-r16	absent		
}			
sl-PDCP-ConfigPC5-r16	Set according to parameter given in test case		TX
sl-PDCP-ConfigPC5-r16 SEQUENCE {			RX
sl-PDCP-SN-Size-r16	len12bits		
sl-OutOfOrderDelivery-r16	Not present		
}			
sl-RLC-ConfigPC5-r16	Set according to parameter given in test case		TX
sl-RLC-ConfigPC5-r16 CHOICE {			RX
sl-AM-RLC-r16 SEQUENCE {			
sl-SN-FieldLengthAM-r16	size12		
}			
}			
sl-MAC-LogicalChannelConfigPC5-r16	Set according to parameter given in test case		TX
sl-MAC-LogicalChannelConfigPC5-r16 SEQUENCE {			RX
sl-LogicalChannelIdentity-r16	LogicalChannelIdentity with condition DRB1		
}			
}			
slrb-ConfigToReleaseList-r16	Not present		
sl-MeasConfig-r16	Not present		
sl-MeasConfig-r16 CHOICE {			SL_MEAS
setup	Set according to parameter given in test case		TX
setup SEQUENCE {			RX
sl-MeasObjectToRemoveList-r16	Not present		
sl-MeasObjectToAddModList-r16	SL-MeasObjectList-r16		
sl-ReportConfigToRemoveList-r16	Not present		
sl-ReportConfigToAddModList-r16	SL-ReportConfigList-r16		
sl-MeasIdToRemoveList-r16	Not present		
sl-MeasIdToAddModList-r16	SL-MeasIdList-r16		
sl-QuantityConfig-r16	SL-QuantityConfig-r16		
}			

}			
sl-CSI-RS-Config-r16	Not present		
sl-CSI-RS-Config-r16 CHOICE {			SL_CSI
setup	Set according to parameter given in test case		TX
setup SEQUENCE {			RX
sl-CSI-RS-FreqAllocation-r16 CHOICE {			
sl-OneAntennaPort-r16	000000000001		
}			
sl-CSI-RS-FirstSymbol-r16	6		
}			
}			
sl-ResetConfig-r16	Not present		
sl-LatencyBoundCSI-Report-r16	Not present		
	160		SL_CSI
lateNonCriticalExtension	Not checked		TX
	Not present		RX
nonCriticalExtension	Not checked		TX
	Not present		RX
}			
}			
}			

Condition	Explanation
SL_DRB	To provide peer UE SL DRB related configuration via PC5 RRC
SL_MEAS	To provide peer UE SL RSRP measurement and reporting related configuration via PC5 RRC
SL_CSI	To provide peer UE SL CSI reporting related configuration via PC5 RRC
TX	UE transmits and NR-SS-UE receives.
RX	UE receives and NR-SS-UE transmits.

*RRCReconfigurationCompleteSidelink*

**Table 4.6.1A-4: RRCReconfigurationCompleteSidelink**

Derivation Path: TS 38.331 [6], clause 6.6.2			
Information Element	Value/remark	Comment	Condition
RRCReconfigurationCompleteSidelink ::= SEQUENCE {			
rrc-TransactionIdentifier-r16	RRC-TransactionIdentifier		TX
	Set to the same value as the rrc-TransactionIdentifier-r16 field in corresponding RRCConfigurationSidelink message		RX
criticalExtensions CHOICE {			
rrcReconfigurationCompleteSidelink-r16 SEQUENCE {			
lateNonCriticalExtension	Not checked		TX
	Not present		RX
nonCriticalExtension	Not checked		TX
	Not present		RX
}			
}			
}			

Condition	Explanation
TX	UE transmits and NR-SS-UE receives.
RX	UE receives and NR-SS-UE transmits.

– *RRCReconfigurationFailureSidelink***Table 4.6.1A-5: RRCReconfigurationFailureSidelink**

Derivation Path: TS 38.331 [6], clause 6.6.2			
Information Element	Value/remark	Comment	Condition
RRCReconfigurationFailureSidelink ::= SEQUENCE {			
rrc-TransactionIdentifier-r16	RRC-TransactionIdentifier		TX
	Set to the same value as the rrc-TransactionIdentifier-r16 field in corresponding RRCConfigurationSidelink message		RX
criticalExtensions CHOICE {			
rrcReconfigurationFailureSidelink-r16 SEQUENCE			
{			
lateNonCriticalExtension	Not checked		TX
	Not present		RX
nonCriticalExtension	Not checked		TX
	Not present		RX
}			
}			
}			

Condition	Explanation
TX	UE transmits and NR-SS-UE receives.
RX	UE receives and NR-SS-UE transmits.

– *UECapabilityEnquirySidelink*

**Table 4.6.1A-6: UECapabilityEnquirySidelink**

Derivation Path: TS 38.331 [6], clause 6.6.2			
Information Element	Value/remark	Comment	Condition
UECapabilityEnquirySidelink ::= SEQUENCE {			
rrc-TransactionIdentifier-r16	RRC-TransactionIdentifier		RX
	(0..3)		TX
criticalExtensions CHOICE {			
ueCapabilityEnquirySidelink-r16 SEQUENCE {			
frequencyBandListFilterSidelink-r16	Not checked		TX
frequencyBandListFilterSidelink-r16 SEQUENCE (SIZE (1..maxBandsMRDC)) OF FreqBandInformation {	1 entry		RX
FreqBandInformation[1] CHOICE {		entry 1	
bandInformationNR SEQUENCE {			
bandNR	FreqBandIndicatorNR of the PC5 operating band		
maxBandwidthRequestedDL	Not present		
maxBandwidthRequestedUL	Not present		
maxCarriersRequestedDL	Not present		
maxCarriersRequestedUL	Not present		
}			
}			
}			
ue-CapabilityInformationSidelink-r16	Not present		
	Not checked		TWO_WAY_ENQUIRY AND TX
	OCTET STRING containing UECapabilityInformationSidelink specified in Table 4.6.1A-7 with condition RX		TWO_WAY_ENQUIRY AND RX
lateNonCriticalExtension	Not checked		TX
	Not present		RX
nonCriticalExtension	Not checked		TX
	Not present		RX
}			
}			
}			

Condition	Explanation
TWO_WAY_ENQUIRY	For two-way SL UE capability enquiry procedure
TX	UE transmits and NR-SS-UE receives.
RX	UE receives and NR-SS-UE transmits.

– *UECapabilityInformationSidelink*

**Table 4.6.1A-7: *UECapabilityInformationSidelink***

Derivation Path: TS 38.331 [6], clause 6.6.2			
Information Element	Value/remark	Comment	Condition
UECapabilityInformationSidelink ::= SEQUENCE {			
rrc-TransactionIdentifier-r16	RRC-TransactionIdentifier		TX
	Set to the same value as the rrc-TransactionIdentifier-r16 field in corresponding UECapabilityEnquirySidelink message		RX
criticalExtensions CHOICE {			
ueCapabilityInformationSidelink-r16 SEQUENCE {			
accessStratumReleaseSidelink-r16	rel16		
pdcp-ParametersSidelink-r16	Not checked		TX
pdcp-ParametersSidelink-r16 SEQUENCE {			RX
outOfOrderDeliverySidelink-r16	supported		
}			
rlc-ParametersSidelink-r16	Not checked		TX
rlc-ParametersSidelink-r16 SEQUENCE {			RX
am-WithLongSN-Sidelink-r16	supported		
um-WithLongSN-Sidelink-r16	supported		
}			
supportedBandCombinationListSidelinkNR-r16	Not checked		TX
supportedBandCombinationListSidelinkNR-r16 SEQUENCE (SIZE (1..maxBandComb)) OF BandCombinationParametersSidelinkNR-r16 {	1 entry		RX
BandCombinationParametersSidelinkNR-r16[1] SEQUENCE (SIZE (1..maxSimultaneousBands)) OF BandParametersSidelink-r16 {	1 entry	entry 1	
BandParametersSidelink-r16[1] SEQUENCE {		entry 1	
freqBandSidelink-r16	first FreqBandIndicatorNR contained in frequencyBandListFilterSidelink-r16 of corresponding UECapabilityEnquirySidelink message		
}			
}			
}			
supportedBandListSidelink-r16	Not checked		TX
supportedBandListSidelink-r16 SEQUENCE (SIZE (1..maxBands)) OF BandSidelinkPC5-r16 {	1 entry		RX
BandSidelinkPC5-r16[1] SEQUENCE {		entry 1	
freqBandSidelink-r16	first FreqBandIndicatorNR contained in frequencyBandListFilterSidelink-r16 of corresponding UECapabilityEnquirySidelink message		
sl-Reception-r16 SEQUENCE {			
harq-RxProcessSidelink-r16	n16		
pscch-RxSidelink-r16	value1		
scs-CP-PatternRxSidelink-r16 CHOICE {			
fr1-r16 SEQUENCE {			
scs-15kHz-r16	0101011000000000		
scs-30kHz-r16	0101011000000000		
scs-60kHz-r16	0101011000000000		
}			
}			
extendedCP-RxSidelink-r16	supported		
}			

sl-Tx-256QAM-r16	supported		
lowSE-64QAM-MCS-TableSidelink-r16	supported		
csi-ReportSidelink-r16 SEQUENCE {			
csi-RS-PortsSidelink-r16	p2		
}			
rankTwoReception-r16	supported		
sl-openLoopPC-RSRP-ReportSidelink-r16	supported		
sl-Rx-256QAM-r16	supported		
}			
}			
appliedFreqBandListFilter-r16	Not checked		TX
	Set to the same value as the frequencyBandListFilterSidelink-r16 of corresponding UECapabilityEnquirySidelink message		RX
lateNonCriticalExtension	Not checked		TX
	Not present		RX
nonCriticalExtension	Not checked		TX
	Not present		RX
}			
}			
}			

Condition	Explanation
TX	UE transmits and NR-SS-UE receives.
RX	UE receives and NR-SS-UE transmits.



## 4.6.2 System information blocks

## – SIB2

Table 4.6.2-1: SIB2

Derivation Path: TS 38.331 [6], clause 6.3.1			
Information Element	Value/remark	Comment	Condition
SIB2 ::= SEQUENCE {			
cellReselectionInfoCommon SEQUENCE {			
nrofSS-BlocksToAverage	2		
absThreshSS-BlocksConsolidation SEQUENCE {			
thresholdRSRP	RSRP-Range	Table 4.6.3-152	
thresholdRSRQ	Not present		
thresholdSINR	Not present		
}			
rangeToBestCell	dB0		
q-Hyst	dB0	To reduce interference between intra-frequency multiple cells	
speedStateReselectionPars	Not present		
}			
cellReselectionServingFreqInfo SEQUENCE {			
s-NonIntraSearchP	Not present		
s-NonIntraSearchQ	Not present		
threshServingLowP	0	Actual value of threshold = field value * 2 [dB]	
threshServingLowQ	Not present		
	3	3dB	QBASED
cellReselectionPriority	4	A middle value in the range has been selected	
cellReselectionSubPriority	Not present		
}			
intraFreqCellReselectionInfo SEQUENCE {			
q-RxLevMin	-70	-140dBm	
	-55	-110dBm	SIG
q-RxLevMinSUL	Not Present		
	-70	-140dBm	SUL

	-55	-110dBm	SUL AND SIG
q-QualMin	Not present		
	-20	-20dB	QBASED
s-IntraSearchP	31	Actual value of threshold = field value * 2 [dB]	
s-IntraSearchQ	Not present		
t-ReselectionNR	0		
frequencyBandList	Not present		
frequencyBandListSUL	Not present		
p-Max	Not present		
smtc	SSB-MTC	Table 4.6.3-185	
ss-RSSI-Measurement	Not present		
ssb-ToMeasure	SSB-ToMeasure		
deriveSSB-IndexFromCell	false		FDD
	true		TDD
}			
t-ReselectionNR-SF	Not present		
smtc2-LP-r16	Not present		
ssb-PositionQCL-Common-r16	Not present		
}			
relaxedMeasurement-r16	Not present		

Condition	Explanation
SUL	For test cases using SUL frequency for the serving cell, Qrxlevmin is obtained from <i>q-RxLevMin-sul</i> .
QBASED	This condition applies to Quality based signalling test cases.

– **SIB3**

**Table 4.6.2-2: SIB3**

Derivation Path: TS 38.331 [6], clause 6.3.1			
Information Element	Value/remark	Comment	Condition
SIB3 ::= SEQUENCE {			
intraFreqNeighCellList	Not present	Not required unless Qoffset configuration is tested. When Qoffset configuration is tested, see table 6.3.1.1-1	
intraFreqBlackCellList	Not present	Not required unless Blacklisted cell list configuration is tested. When Blacklisted cell list configuration is tested, see table 6.3.1.1-1	
lateNonCriticalExtension	Not present		
}			

– *SIB4*

**Table 4.6.2-3: *SIB4***

Derivation Path: TS 38.331 [6], clause 6.3.1			
Information Element	Value/remark	Comment	Condition
SIB4 ::= SEQUENCE {			
interFreqCarrierFreqList SEQUENCE (SIZE (1..maxFreq)) OF InterFreqCarrierFreqInfo {	The same number of entries as the configured inter-freq carriers defined in table 6.3.1.2-1	<i>n</i> denotes the index of the entry	
InterFreqCarrierFreqInfo[ <i>n</i> ] SEQUENCE {		entry <i>n</i>	
dl-CarrierFreq	Downlink NR SSB ARFCN. See table 6.3.1.2-1		
frequencyBandList	MultiFrequencyBandList NR-SIB		
frequencyBandListSUL	Not present		
nrofSS-BlocksToAverage	2		
absThreshSS-BlocksConsolidation SEQUENCE {			
thresholdRSRP	RSRP-Range	Table 4.6.3-152	
thresholdRSRQ	Not present		
thresholdSINR	Not present		
}			
smtc	SSB-MTC	Table 4.6.3-185	
ssbSubcarrierSpacing	SubcarrierSpacing	Table 4.6.3-188	
ssb-ToMeasure	SSB-ToMeasure		
deriveSSB-IndexFromCell	false		FDD
	true		TDD
ss-RSSI-Measurement	Not present		
q-RxLevMin	-70	-140dBm	
	-55	-110dBm	SIG and FR1
	$\text{ROUND}((-110 + \Delta(\text{NRfn}))/2)$	NOTE1 and NOTE2.	SIG and FR2
q-RxLevMinSUL	-70	-140dBm, For RF/RRM test cases	SUL
	Not present		
	-55	-110dBm	SUL and SIG
q-QualMin	Not present		
	-20	-20dB	QBASED
p-Max	Not present		
t-ReselectionNR	0		
t-ReselectionNR-SF	Not present	Not required unless speed-dependent cell re-selection is tested.	
threshX-HighP	2	4dB, this value should be higher than threshServingLow of the serving cell to avoid ping-pong with lower priority cells.	
threshX-LowP	1	2dB	
threshX-Q	Not present		
threshX-Q SEQUENCE {			QBASED
threshX-HighQ	5	5dB	
threshX-LowQ	5	5dB	
}			
cellReselectionPriority	4	The same priority as the one used for serving cell in SIB 2.	

cellReselectionSubPriority	Not present	The same subpriority as the one used for serving cell in SIB 2.	
q-OffsetFreq	$d_{BXY}$ with $XY = (\text{FLOOR}((\Delta(\text{NRfn}) - \Delta(\text{NRfs}))/2)) * 2$ (NOTE 3)	This value is type of Q-OffsetRange in TS 38.331 [6] which must be even value when its absolute value is larger than dB5.	FR2 AND NOT AbsoluteValue_Within_dB5
	$d_{BXY}$ with $XY = \Delta(\text{NRfn}) - \Delta(\text{NRfs})$		FR2 AND AbsoluteValue_Within_dB5
	dB0		
interFreqNeighCellList	Not present	Not required unless Qoffset configuration is tested.	
interFreqBlackCellList	Not present	Not required unless Blacklisted cell list configuration is tested.	
}			
}			
lateNonCriticalExtension	Not present		
}			
<p>NOTE 1: <math>\Delta(\text{NRfn})</math> and <math>\Delta(\text{NRfs})</math> is derived based on calibration procedure defined in the clause 6.1.3.3. <math>\text{NRfn}</math> and <math>\text{NRfs}</math> are NR frequencies in <math>\text{dl-CarrierFreq}[n]</math> and serving cell frequency on which SIB4 is broadcasted.</p> <p>NOTE 2: ROUND is rounded off to the nearest integer. As an example, '1 to 1.49' set to '1' while '1.5 to 2' to '2' and '-2.0 to 1.5' set to '-2' while '-1.49 to -1' set to '-1'.</p> <p>NOTE 3: FLOOR is rounded off to the smaller integer. As an example, '1.0 to 1.99' set to 1, '-1.01 to -2.00' set to -2.</p>			

Condition	Explanation
SUL	For test cases using SUL frequency for the serving cell, $Q_{rxlevmin}$ is obtained from $q_{RxLevMin-sul}$ .
QBASED	This condition applies to Quality based signalling test cases.
AbsoluteValue_Within_dB5	$-5\text{dB} \leq (\Delta(\text{NRfn}) - \Delta(\text{NRfs})) \leq 5\text{dB}$ .

## SIB5

Table 4.6.2-4: SIB5

Derivation Path: TS 38.331 [6], clause 6.3.1			
Information Element	Value/remark	Comment	Condition
SIB5 ::= SEQUENCE {			
carrierFreqListEUTRA SEQUENCE (SIZE (1..maxEUTRA-Carrier)) OF CarrierFreqEUTRA {	The same number of entries as the configured E-UTRA carriers. For Signalling test cases, see table 6.3.1.3-1.	<i>n</i> denotes the index of the entry	
CarrierFreqEUTRA[n] SEQUENCE {		entry <i>n</i>	
carrierFreq	Downlink E-UTRA ARFCN under test. For Signalling test cases, see table 6.3.1.3-1.		
eutra-multiBandInfoList	Not present		
eutra-FreqNeighCellList	Not present	Not required unless EUTRA Qoffset configuration is tested.	
eutra-BlackCellList	Not present	Not required unless Blacklisted cell list configuration is tested.	
allowedMeasBandwidth	EUTRA-AllowedMeasBandwidth	The value of EUTRA-AllowedMeasBandwidth in Table 4.6.5-1.	
presenceAntennaPort1	FALSE		
	TRUE	At least two cell-specific antenna ports are used in all neighbouring cells.	All neighCells with port1
cellReselectionPriority	3		
cellReselectionSubPriority	Not Present		
threshX-High	2 (4 dB)		
threshX-Low	1 (2 dB)		
q-RxLevMin	-70 (-140 dBm)	For RF/RRM test cases	
	-55(-110dBm)	For signalling test cases	
q-QualMin	-20 (-20dB)		
p-MaxEUTRA	23		
threshX-Q	Not present		
threshX-Q SEQUENCE {			QBASED
threshX-HighQ	9 (9dB)		
threshX-LowQ	9 (9dB)		
}			
}			
}			
t-ReselectionEUTRA	0		
t-ReselectionEUTRA-SF	Not present	Not required unless speed-dependent cell re-selection is tested.	
lateNonCriticalExtension	Not present		
}			

Condition	Explanation
QBASED	This condition applies to Quality based cell (re)selection signalling test cases.
All neighCells with port1	Used for all neighbouring cells with at least two cell-specific antenna ports

– *SIB6*

**Table 4.6.2-5: SIB6**

Derivation Path: TS 38.331 [6], clause 6.3.1			
Information Element	Value/remark	Comment	Condition
SIB6 ::= SEQUENCE {			
messageIdentifier	'0001 0001 0000 0010'B	ETWS message identifier for earthquake and tsunami message (see TS 23.041 [25])	
serialNumber	'0011 0000 0000 0000'B	Note 1	
warningType	'0000 0101 1000 0000'B	Note 2	
lateNonCriticalExtension	Not present		
}			
<p>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].</p> <p>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.</p>			

– *SIB7*

**Table 4.6.2-6: SIB7 (1<sup>st</sup> 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		
}			
<p>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].</p>			

Condition	Explanation
Segment1	The field is mandatory present in the first segment of SIB7, otherwise it is not present.

Table 4.6.2-7: SIB7 (2<sup>nd</sup> Segment)

Derivation Path: TS 38.331 [6], clause 6.3.1			
Information Element	Value/remark	Comment	Condition
SIB7 ::= SEQUENCE {			
messageIdentifier	'0001 0001 0000 0010'B	ETWS message identifier for earthquake and tsunami message (see TS 23.041 [25])	
serialNumber	'0011 0000 0000 0000'B	Note 1	
warningMessageSegmentType	notLastSegment		
warningMessageSegmentNumber	1		
warningMessageSegment	Octetstring of N	Where $N \geq 1$ and less than 1246 (see TS 23.041 [25])	
dataCodingScheme	Not present		
lateNonCriticalExtension	Not present		
}			
Note 1: Geographical Scope (Octet 1 bit 7 ~ 6) set to 'Cell wide', Emergency User Alert (Octet 1 bit 5) set to 'Activate emergency user alert', Popup (Octet 1 bit 4) set to 'Activate popup', Update Number (Octet 2 bits 3~0) for each update, incremented by one, See TS 23.041 [25].			

Table 4.6.2-8: SIB7 (3<sup>rd</sup> 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 $N \geq 1$ and less than 1246 (see TS 23.041 [25])	
dataCodingScheme	Not present		
lateNonCriticalExtension	Not present		
}			
Note 1: Geographical Scope (Octet 1 bit 7 ~ 6) set to 'Cell wide', Emergency User Alert (Octet 1 bit 5) set to 'Activate emergency user alert', Popup (Octet 1 bit 4) set to 'Activate popup', Update Number (Octet 2 bits 3~0) for each update, incremented by one, See TS 23.041 [25].			



## SIB8

Table 4.6.2-9: SIB8 (1<sup>st</sup> 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 $N \geq 1$ and less than 1246 (see TS 23.041 [25])	
dataCodingScheme	Bitstring (8) ID of the alphabet/coding and the applied language	see TS 23.041 [25]	Segment 1
warningAreaCoordinatesSegment	Not present		
lateNonCriticalExtension	Not present		
}			
Note 1: Geographical Scope (Octet 1 bit 7 ~ 6) set to 'Cell wide', Emergency User Alert (Octet 1 bit 5) set to 'Activate emergency user alert', Popup (Octet 1 bit 4) set to 'Activate popup', Update Number (Octet 2 bits 3~0) for each update, incremented by one, See TS 23.041 [25].			

Condition	Explanation
Segment1	The field is mandatory present in the first segment of SIB8, otherwise it is not present.

Table 4.6.2-10: SIB8 (2<sup>nd</sup> Segment)

Derivation Path: TS 38.331 [6], clause 6.3.1			
Information Element	Value/remark	Comment	Condition
SIB8 ::= SEQUENCE {			
messageIdentifier	'0001 0001 0001 0010'B	CMAS CBS Message Identifier for CMAS Presidential Level Alerts (see TS 23.041 [25])	
serialNumber	'0011 0000 0000 0000'B	Note 1	
warningMessageSegmentType	notLastSegment		
warningMessageSegmentNumber	1		
warningMessageSegment	Octetstring of N	Where $N \geq 1$ and less than 1246 (see TS 23.041 [25])	
dataCodingScheme	Not present		
warningAreaCoordinatesSegment	Not present		
lateNonCriticalExtension	Not present		
}			
Note 1: Geographical Scope (Octet 1 bit 7 ~ 6) set to 'Cell wide', Emergency User Alert (Octet 1 bit 5) set to 'Activate emergency user alert', Popup (Octet 1 bit 4) set to 'Activate popup', Update Number (Octet 2 bits 3~0) for each update, incremented by one, See TS 23.041 [25].			

**Table 4.6.2-11: SIB8 (3<sup>rd</sup> 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**

**Table 4.6.2-11A: SIB9**

Derivation Path: TS 38.331 [6], clause 6.3.1			
Information Element	Value/remark	Comment	Condition
SIB9 ::= SEQUENCE {			
timeInfo ::= SEQUENCE {			
FFS			
}			
lateNonCriticalExtension	Not present		
referenceTimeInfo-r16	ReferenceTimeInfo		TSC
}			

Condition	Explanation
TSC	For test cases requiring TSC (Time Sensitive Communication) functions enabled.

– SIB10

Table 4.6.2-12: SIB10

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
SIB10-r16 ::= SEQUENCE {			
hrnn-List-r16 SEQUENCE (SIZE (1..maxNPN-r16))			
OF HRNN-r16 {			
HRNN-r16[1] SEQUENCE {		1 entry	
hrnn-r16	"3gppTest"	charstring "3gppTest" converted to OCTETSTRING	
}			
}			
lateNonCriticalExtension	Not present		
}			

– *SIB11*

**Table 4.6.2-13: *SIB11***

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
SIB11-r16 ::= SEQUENCE {			
measIdleConfigSIB-r16 SEQUENCE {			
measIdleCarrierListNR-r16	Not present		
measIdleCarrierListNR-r16 SEQUENCE (SIZE (1..maxFreqIdle-r16)) OF MeasIdleCarrierNR-r16 {	The same number of entries as NR cells configured for measurements	Serving cell not included	EMR_NR_S IB4, EMR_NR_S IB11
MeasIdleCarrierNR-r16[n] SEQUENCE {		entry n	
carrierFreq-r16	ARFCN value of configured NR cell		
ssbSubcarrierSpacing-r16	SubcarrierSpacing	Table 4.6.3-188	
frequencyBandList	Not present		
measCellListNR-r16	Not present		
reportQuantities-r16	both		
qualityThreshold-r16	Not present		
ssb-MeasConfig-r16	Not present		EMR_NR_S IB4
ssb-MeasConfig-r16 SEQUENCE {			EMR_NR_S IB11
nrofSS-BlocksToAverage-r16	2		
absThreshSS-BlocksConsolidation-r16 SEQUENCE {			
thresholdRSRP	RSRP-Range	Table 4.6.3-152	
thresholdRSRQ	Not present		
thresholdSINR	Not present		
}			
smtc-r16	SSB-MTC	Table 4.6.3-185	
ssb-ToMeasure-r16	SSB-ToMeasure	Table 4.6.3-187	
deriveSSB-IndexFromCell-r16	false		
	true		FR1_TDD, FR2_TDD
ss-RSSI-Measurement-r16	Not present		
}			
beamMeasConfigIdle-r16	Not present		
}			
measIdleCarrierListEUTRA-r16	Not present		
measIdleCarrierListEUTRA-r16 SEQUENCE (SIZE (1..maxFreqIdle-r16)) OF MeasIdleCarrierEUTRA-r16 {	The same number of entries as E-UTRA cells configured for measurements	Serving cell not included	EMR_EUTR A_SIB11
MeasIdleCarrierEUTRA-r16[n] SEQUENCE {		entry n	
carrierFreqEUTRA-r16	ARFCN value of configured E-UTRA cell		
allowedMeasBandwidth-r16	EUTRA-AllowedMeasBandwidth	Table 4.6.5-1.	
measCellListEUTRA-r16 SEQUENCE (SIZE (1..maxCellMeasIdle-r16)) OF EUTRA-PhysCellIdRange {			
EUTRA-PhysCellIdRange[n] SEQUENCE {		entry n	
start	EUTRA-PhysCellId corresponding to E-UTRA cell		
range	Not present		
}			
}			
reportQuantitiesEUTRA-r16	both		
qualityThresholdEUTRA-r16	Not present		
}			
}			
lateNonCriticalExtension	Not present		
}			

## – SIB12

Table 4.6.2-14: SIB12

Derivation Path: TS 38.331 [6], clause 6.3.1			
Information Element	Value/remark	Comment	Condition
SIB12-r16 ::= SEQUENCE {			
segmentNumber-r16	index of the segment contained in segmentContainer-r16		
segmentType-r16	notLastSegment		NOT_LAST_SEG
	lastSegment		LAST_SEG
segmentContainer-r16	OCTET STRING (CONTAINING SIB12-IEs-r16 or segment of SIB12-IEs-r16)	Note 1	
}			
Note 1: Size of the SIB12-IEs-r16 or segment of SIB12-IEs-r16 contained in segmentContainer-r16 shall not exceed the maximum TBS size of the SI. For signalling test cases, the size is defined in TS 38.523-3[23] clause 7.3.3.2.			

Condition	Explanation
NOT_LAST_SEG	Used when SIB12-IEs-r16 is segmented and the segment contained in segmentContainer-r16 is not the last segment
LAST_SEG	Used when SIB12-IEs-r16 is not segmented, or SIB12-IEs-r16 is segmented and the segment contained in segmentContainer-r16 is the last segment

Table 4.6.2-14A: SIB12-IEs-r16

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
SIB12-IEs-r16 ::= SEQUENCE {			
sl-ConfigCommonNR-r16 SEQUENCE {			
sl-FreqInfoList-r16 SEQUENCE (SIZE (1..maxNrofFreqSL-r16)) OF SL-FreqConfigCommon-r16 {	1 entry		
SL-FreqConfigCommon-r16[1]	SL-FreqConfigCommon-r16	entry 1	
}			
sl-UE-SelectedConfig-r16	SL-UE-SelectedConfig-r16		
sl-NR-AnchorCarrierFreqList-r16	Not present		
sl-EUTRA-AnchorCarrierFreqList-r16	Not present		
sl-RadioBearerConfigList-r16 SEQUENCE (SIZE (1..maxNrofSLRB-r16)) OF SL-RadioBearerConfig-r16 {	1 entry		
SL-RadioBearerConfig-r16[1]	SL-RadioBearerConfig-r16	entry 1	
}			
sl-RLC-BearerConfigList-r16 SEQUENCE (SIZE (1..maxSL-LCID-r16)) OF SL-RLC-BearerConfig-r16 {	1 entry		
SL-RLC-BearerConfig-r16[1]	SL-RLC-BearerConfig-r16	entry 1	
}			
sl-MeasConfigCommon-r16	SL-MeasConfigCommon-r16		
sl-CSI-Acquisition-r16	Not present		
sl-OffsetDFN-r16	Not present		
t400-r16	ms1000		
sl-MaxNumConsecutiveDTX-r16	Not present		
sl-SSB-PriorityNR-r16	1		
}			
lateNonCriticalExtension	Not present		
}			

## – SIB13

Table 4.6.2-15: SIB13

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
SIB13-r16 ::= SEQUENCE {			
FFS			
}			

## – SIB14

Table 4.6.2-16: SIB14

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
SIB14-r16 ::= SEQUENCE {			
FFS			
}			

## 4.6.2A Positioning System information blocks

– *PosSystemInformation-r16-IEs*Table 4.6.2a-1: *PosSystemInformation-r16-IEs*

Derivation Path: TS 38.331 [6], clause 6.3.1a			
Information Element	Value/remark	Comment	Condition
PosSystemInformation-r16-IEs ::= SEQUENCE {			
posSIB-TypeAndInfo-r16 SEQUENCE (SIZE (1..maxSIB))	n entries	The number of entries depends on the sub-test, as specified in TS 37.571-2 [40]	
lateNonCriticalExtension	Not present		
nonCriticalExtension	Not present		
}			

– *PosSI-SchedulingInfo*Table 4.6.2a-2: *PosSI-SchedulingInfo*

Derivation Path: TS 38.331 [6], clause 6.3.1a			
Information Element	Value/remark	Comment	Condition
PosSI-SchedulingInfo-r16 ::= SEQUENCE {			
posSchedulingInfoList-r16 SEQUENCE (SIZE (1..maxSI-Message)) OF PosSchedulingInfo-r16 {	n entries	The size of PosSchedulingInfo-r16 is depending on the sub-tests, as specified in TS 37.571-2 [40]	
PosSchedulingInfo-r16[n] SEQUENCE {		entry n	
offsetToSI-Used-r16	Not present		
posSI-Periodicity-r16	rf32		
posSI-BroadcastStatus-r16	broadcasting		
posSIB-MappingInfo-r16 SEQUENCE (SIZE (1..maxSIB)) OF PosSIB-Type-r16 {	n entries	The number of entries depends on the sub-test, as specified in TS 37.571-2 [40]	
PosSIB-Type-r16[n]			
}			
}			
}			
posSI-RequestConfig-r16	Not present		
posSI-RequestConfigSUL-r16	Not present		
}			



– *SIBpos*

**Table 4.6.2a-3: *SIBpos***

Derivation Path: TS 38.331 [6], clause 6.3.1a			
Information Element	Value/remark	Comment	Condition
SIBpos-r16 ::= SEQUENCE {			
assistanceDataSIB-Element-r16	OCTET STRING containing AssistanceDataSIBElement as specified in TS 37.571-2 [40]		
lateNonCriticalExtension	Not present		
}			

### 4.6.3 Radio resource control information elements

– *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 4.6.3-3: *AMF-Identifier***

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

– *ARFCN-ValueEUTRA*

**Table 4.6.3-4: *ARFCN-ValueEUTRA***

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

– ARFCN-ValueNR

**Table 4.6.3-5: ARFCN-ValueNR**

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
ARFCN-ValueNR	absoluteFrequencySSB as defined for the frequency of the cell	For signalling test cases see subclause 6.2.3. Otherwise, see subclause 4.3.1.	DL_SSB
	absoluteFrequencyPoint A as defined for the DL frequency of the cell	For signalling test cases see subclause 6.2.3. Otherwise, see subclause 4.3.1.	DL_PointA
	absoluteFrequencyPoint A as defined for the UL frequency of the cell	For signalling test cases see subclause 6.2.3. Otherwise, see subclause 4.3.1.	UL_PointA
	sl-absoluteFrequencySSB as defined for the SL NRf1 carrier	For signalling test cases see subclause 6.2.3.7. Otherwise, see subclause 4.3.1.8.	SL_SSB
	sl-AbsoluteFrequencyPoint A as defined for the SL NRf1 carrier	For signalling test cases see subclause 6.2.3.7. Otherwise, see subclause 4.3.1.8.	SL_PointA

Condition	Explanation
DL_SSB	IE absoluteFrequencySSB for downlink
SL_SSB	IE sl-absoluteFrequencySSB for sidelink
DL_PointA	IE absoluteFrequencyPointA for downlink
UL_PointA	IE absoluteFrequencyPointA for uplink
SL_PointA	IE sl-absoluteFrequencyPointA for sidelink

– ARFCN-ValueUTRA-FDD

**Table 4.6.3-5A: ARFCN-ValueUTRA-FDD**

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
ARFCN-ValueUTRA-FDD-r16	FFS		

– AvailabilityCombinationsPerCell

**Table 4.6.3-5B: AvailabilityCombinationsPerCell**

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
AvailabilityCombinationsPerCell-r16 ::= SEQUENCE {			
FFS			
}			

– *AvailabilityIndicator*

**Table 4.6.3-5C: *AvailabilityIndicator***

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
AvailabilityIndicator-r16 ::= SEQUENCE {			
FFS			
}			

– *BAP-Routing-ID*

**Table 4.6.3-5D: *BAP-Routing-ID***

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
BAP-Routing-ID-r16 ::= SEQUENCE {			
FFS			
}			

– *BeamFailureRecoveryConfig***Table 4.6.3-6: *BeamFailureRecoveryConfig***

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
BeamFailureRecoveryConfig SEQUENCE {			
rootSequenceIndex-BFR	Set according to the PRACH-rootSequenceIndex given in Table 4.4.2-2		
rach-ConfigBFR	RACH-ConfigGeneric		
rsrp-ThresholdSSB	57	Actual value = 100 dBm	
candidateBeamRSList SEQUENCE (SIZE(1..maxNrofCandidateBeams)) OF PRACH-ResourceDedicatedBFR {	1 entry		
PRACH-ResourceDedicatedBFR[1] CHOICE {		entry 1	
ssb SEQUENCE {			SSB
ssb	SSB-Index for BFR		
ra-PreambleIndex	56		
}			
}			
csi-rs[1] SEQUENCE {			CSI-RS
csi-rs	NZP-CSI-RS-ResourceId for BFR		
ra-OccasionList	Not present	The RA occasion associated with the SSB that is QCLed with this CSI-RS is used	
ra-PreambleIndex	Not present	The preamble index associated with the SSB that is QCLed with CSI-RS is used	
}			
}			
ssb-perRACH-Occasion	one		
ra-ssb-OccasionMaskIndex	0		
recoverySearchSpaceId	searchSpaceId for BFR search space	The CORESET associated with the BFR search space can not be associated with another search space according to 38.331 [6]	
ra-Prioritization	RA-Prioritization		
beamFailureRecoveryTimer	ms200		
msg1-SubcarrierSpacing	SubcarrierSpacing		
}			

Condition	Explanation
SSB	SSB is used as reference signal for BFR
CSI-RS	CSI-RS is used as reference signal for BFR

– *BeamFailureRecoverySCellConfig***Table 4.6.3-6AA: *BeamFailureRecoverySCellConfig***

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
BeamFailureRecoverySCellConfig-r16 ::= SEQUENCE {			
FFS			
}			

– *BetaOffsets***Table 4.6.3-6A: *BetaOffsets***

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
BetaOffsets ::= SEQUENCE {			
betaOffsetACK-Index1	9		
betaOffsetACK-Index2	9		
betaOffsetACK-Index3	9		
betaOffsetCSI-Part1-Index1	6		
betaOffsetCSI-Part1-Index2	6		
betaOffsetCSI-Part2-Index1	6		
betaOffsetCSI-Part2-Index2	6		
}			

– *BH-RLC-ChannelConfig***Table 4.6.3-6B: *BH-RLC-ChannelConfig***

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
BH-RLC-ChannelConfig-r16 ::= SEQUENCE {			
FFS			
}			

– *BH-LogicalChannelIdentity***Table 4.6.3-6C: *BH-LogicalChannelIdentity***

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
BH-LogicalChannelIdentity-r16 ::= CHOICE {			
FFS			
}			

– *BH-LogicalChannelIdentity-Ext***Table 4.6.3-6D: *BH-LogicalChannelIdentity-Ext***

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
BH-LogicalChannelIdentity-Ext-r16	FFS		

– *BH-RLC-ChannelID***Table 4.6.3-6E: BH-RLC-ChannelID**

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
BH-RLC-ChannelID-r16	FFS		

– *BSR-Config***Table 4.6.3-7: BSR-Config**

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
BSR-Config ::= SEQUENCE {			
periodicBSR-Timer	sf1		
retxBSR-Timer	sf80		
logicalChannelSR-DelayTimer	Not present		
}			

– *BWP***Table 4.6.3-8: BWP**

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
BWP ::= SEQUENCE {			
locationAndBandwidth	Set to value of locationAndBandwidth in Table 4.3.1.0D-1 for the bandwidth and subcarrier spacing under test		FR1
	Set to value of locationAndBandwidth in Table 4.3.1.0D-2 for the bandwidth and subcarrier spacing under test		FR2
subcarrierSpacing	SubcarrierSpacing		
cyclicPrefix	Not present		
}			

– *BWP-Downlink***Table 4.6.3-9: BWP-Downlink**

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
BWP-Downlink ::= SEQUENCE {			
bwp-Id	BWP-Id with condition BWP-Id1		
bwp-Common	BWP-DownlinkCommon with condition BWP-Id1		
bwp-Dedicated	BWP-DownlinkDedicated		
}			

*BWP-DownlinkCommon*

**Table 4.6.3-10: BWP-DownlinkCommon**

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
BWP-DownlinkCommon ::= SEQUENCE {			
genericParameters	BWP		
pdcch-ConfigCommon CHOICE {			
setup	PDCCH-ConfigCommon		
	PDCCH-ConfigCommon with condition SCell_add		SCell_Add
	PDCCH-ConfigCommon with condition InitialBWP_SIB		InitialBWP_SIB
	PDCCH-ConfigCommon with condition BWP-Id1		BWP-Id1
}			
pdsch-ConfigCommon CHOICE {			
setup	PDSCH-ConfigCommon		
}			
}			

Condition	Explanation
InitialBWP_SIB	Configured via DownlinkConfigCommonSIB
BWP-Id1	Additional BWP 1

*BWP-DownlinkDedicated*

**Table 4.6.3-11: BWP-DownlinkDedicated**

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
BWP-DownlinkDedicated ::= SEQUENCE {			
pdcch-Config CHOICE {			
setup	PDCCH-Config		
}			
pdsch-Config CHOICE {			
setu	PDSCH-Config		
}			
sps-Config	Not present		
radioLinkMonitoringConfig	Not present		Scell_Add
radioLinkMonitoringConfig CHOICE {			
setup	RadioLinkMonitoringConfig		
}			
sps-ConfigToAddModList-r16	Not present		
sps-ConfigToReleaseList-r16	Not present		
sps-ConfigDeactivationStateList-r16	Not present		
beamFailureRecoverySCellConfig-r16	Not present		
sl-PDCCH-Config-r16	Not present		
sl-PDCCH-Config-r16 CHOICE {			SIDELINK
setup	PDCCH-Config		
}			
sl-V2X-PDCCH-Config-r16	Not present		
}			

Condition	Explanation
SIDELINK	Used for sidelink communication
Scell_Add	Add SCell

– *BWP-Id*

**Table 4.6.3-12: *BWP-Id***

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
BWP-Id	0	Initial BWP	
	1		BWP-Id1

Condition	Explanation
BWP-Id1	Additional BWP 1

– *BWP-Uplink*

**Table 4.6.3-13: *BWP-Uplink***

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
BWP-Uplink ::= SEQUENCE {			
bwp-Id	BWP-Id with condition BWP-Id1		
bwp-Common	BWP-UplinkCommon		
bwp-Dedicated	BWP-UplinkDedicated		
}			

– *BWP-UplinkCommon*

**Table 4.6.3-14: *BWP-UplinkCommon***

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
BWP-UplinkCommon ::= SEQUENCE {			
genericParameters	BWP		
rach-ConfigCommon CHOICE {			
setup	RACH-ConfigCommon		
}			
rach-ConfigCommon	Not present		SUL_SUL AND (RF OR RRM)
pusch-ConfigCommon CHOICE {			
setup	PUSCH-ConfigCommon		
}			
pucch-ConfigCommon CHOICE {			
setup	PUCCH-ConfigCommon		
}			
}			

Condition	Explanation
SUL_SUL	On the SUL carrier when supplementary carrier is configured



*BWP-UplinkDedicated*

**Table 4.6.3-15: BWP-UplinkDedicated**

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
BWP-UplinkDedicated ::= SEQUENCE {			
pucch-Config CHOICE {			
setup	PUCCH-Config		
}			
pucch-Config	Not present		SUL_NUL
pusch-Config	Not present		RESUME
pusch-Config CHOICE {			
setup	PUSCH-Config		
}			
configuredGrantConfig	Not present		
srs-Config	Not present		Short_DCI
	SRS-Config		
beamFailureRecoveryConfig	Not present		
sl-PUCCH-Config-r16	Not present		
sl-PUCCH-Config-r16 CHOICE {			SIDELINK
setup	PUCCH-Config		
}			
cp-ExtensionC2-r16	Not present		
cp-ExtensionC3-r16	Not present		
useInterlacePUCCH-PUSCH-r16	Not present		
pucch-ConfigurationList-r16	Not present		
lbt-FailureRecoveryConfig-r16	Not present		
configuredGrantConfigToAddModList-r16	Not present		
configuredGrantConfigToReleaseList-r16	Not present		
configuredGrantConfigType2DeactivationStateList-r16	Not present		
}			

Condition	Explanation
Short_DCI	Used in test scenarios requiring DCI formats 0-0 and 1-0 on USS
SUL_NUL	On the NUL carrier when supplementary carrier is configured
RESUME	Used in RRCResume Message
SIDELINK	Used for sidelink communication

*CellAccessRelatedInfo*

**Table 4.6.3-16: CellAccessRelatedInfo**

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
CellAccessRelatedInfo ::= SEQUENCE {			
plmn-IdentityInfoList	PLMN-IdentityInfoList		
cellReservedForOtherUse	Not present		
cellReservedForFutureUse-r16	Not present		
npr-IdentityInfoList-r16	Not present		
	NPN-IdentityInfoList-r16		SNPN
}			

Condition	Explanation
SNPN	Standalone NPN cell

– *CellAccessRelatedInfo-EUTRA-5GC***Table 4.6.3-17: *CellAccessRelatedInfo-EUTRA-5GC***

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
CellAccessRelatedInfo-EUTRA-5GC ::= SEQUENCE			
{			
FFS			
}			

– *CellAccessRelatedInfo-EUTRA-EPC***Table 4.6.3-18: *CellAccessRelatedInfo-EUTRA-EPC***

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

– *CellGroupConfig*

**Table 4.6.3-19: *CellGroupConfig***

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
CellGroupConfig ::= SEQUENCE {			
cellGroupld	CellGroupld		
	CellGroupld condition NR-DC_SCG		NR- DC_SCG
rlc-BearerToAddModList SEQUENCE (SIZE(1..maxLCH)) OF RLC-BearerConfig {	1 entry		EN-DC
RLC-BearerConfig[1]	RLC-BearerConfig with conditions AM and DRB2	entry 1	
	RLC-BearerConfig with conditions AM and DRB2 and Re-establish_RLC		PSCell_cha nge
}			
rlc-BearerToAddModList SEQUENCE (SIZE(1..maxLCH)) OF RLC-BearerConfig {	1 entry		SRB1
RLC-BearerConfig[1]	RLC-BearerConfig with condition SRB1	entry 1	
}			
rlc-BearerToAddModList SEQUENCE (SIZE(1..maxLCH)) OF RLC-BearerConfig {	2 entries		SRB2_DRB 1
RLC-BearerConfig[1]	RLC-BearerConfig with condition SRB2	entry 1	
RLC-BearerConfig[2]	RLC-BearerConfig with conditions AM and DRB1	entry 2	
}			
rlc-BearerToAddModList SEQUENCE (SIZE(1..maxLCH)) OF RLC-BearerConfig {	2 entries		SRB2_DRB 2
RLC-BearerConfig[1]	RLC-BearerConfig with condition SRB2	entry 1	
RLC-BearerConfig[2]	RLC-BearerConfig with conditions AM and DRB2	entry 2	
}			
rlc-BearerToAddModList SEQUENCE (SIZE(1..maxLCH)) OF RLC-BearerConfig {	1 entry		DRBn, NR- DC_SCG
RLC-BearerConfig[1]	RLC-BearerConfig with conditions AM and DRBn	entry 1 DRBn is allocated according to internal TTCN mapping	
}			
rlc-BearerToAddModList SEQUENCE (SIZE(1..maxLCH)) OF RLC-BearerConfig {	3 entries		PCell_chang e
RLC-BearerConfig[1]	RLC-BearerConfig with conditions SRB1 and Re- establish_RLC	entry 1	
RLC-BearerConfig[2]	RLC-BearerConfig with conditions SRB2 and Re- establish_RLC	entry 2	
RLC-BearerConfig[3]	RLC-BearerConfig with conditions AM, DRB1 and Re-establish_RLC	entry 3	
}			
rlc-BearerToAddModList SEQUENCE (SIZE(1..maxLCH)) OF RLC-BearerConfig {	1+n entries	n is the number of DRBs established before RRC resume	RESUME
RLC-BearerConfig[1]	RLC-BearerConfig with condition SRB2 and RESUME	entry 1	
RLC-BearerConfig[k+1, k=1..n]	RLC-BearerConfig with condition DRBk and RESUME	entry [k+1, k=1..n]	
}			

rlc-BearerToAddModList SEQUENCE (SIZE(1..maxLCH)) OF RLC-BearerConfig {	2+n entries	n is the number of DRBs established before RRC re-establishment	REEST
RLC-BearerConfig[1]	RLC-BearerConfig with condition SRB1	entry 1	
RLC-BearerConfig[2]	RLC-BearerConfig with condition SRB2 and Re-establish_RLC	entry 2	
RLC-BearerConfig[k+2, k=1..n]	RLC-BearerConfig with condition DRBk and Re-establish_RLC	entry [k+2, k=1..n]	
}			
rlc-BearerToAddModList	Not present		
rlc-BearerToReleaseList	Not present		
mac-CellGroupConfig	MAC-CellGroupConfig Not present		SRB2_DRB 1, MEAS, SRB2_DRB 2, SCell_add
physicalCellGroupConfig	PhysicalCellGroupConfig Not present		SRB2_DRB 1, MEAS, SRB2_DRB 2, SCell_add
spCellConfig	Not present		SRB2_DRB 1, SRB2_DRB 2, SCell_add
spCellConfig SEQUENCE {			
servCellIndex	Not present ServCellIndex ServCellIndex with condition NR-DC_SCG		EN-DC, EN-DC AND MEAS NR-DC_SCG
reconfigurationWithSync	Not present		
reconfigurationWithSync SEQUENCE {			EN-DC, PCell_change, PSCell_change, NR-DC_SCG
spCellConfigCommon	ServingCellConfigCommon		
newUE-Identity	RNTI-Value RNTI-Value with condition NR-DC_SCG		NR-DC_SCG
t304	ms1000		
rach-ConfigDedicated	Not present		
rach-ConfigDedicated CHOICE {			CFRA
uplink	RACH-ConfigDedicated		
supplementaryUplink	RACH-ConfigDedicated		SUL AND SIG
}			
}			
rlf-TimersAndConstants CHOICE {			
setup	RLF-TimersAndConstants		
}			
rlf-TimersAndConstants	Not present		MEAS, RESUME
rlmInSyncOutOfSyncThreshold	Not present		

spCellConfigDedicated	ServingCellConfig		EN-DC, SRB1, PCell_change, PSCell_change, NR-DC_SCG, REEST
	Not present		
	ServingCellConfig with condition MEAS		MEAS
	ServingCellConfig with condition RESUME		RESUME
}			
sCellToAddModList	Not present		
sCellToAddModList SEQUENCE (SIZE (1..maxNrofSCells)) OF SCellConfig {	1 entry		SCell_add
SCellConfig[1] SEQUENCE {		entry 1	
sCellIndex	SCellIndex		
sCellConfigCommon	ServingCellConfigCommon with condition No_UL		
sCellConfigDedicated	ServingCellConfig with condition No_UL and SCell_Add		
}			
}			
sCellToReleaseList	Not present		
reportUplinkTxDirectCurrent	Not present		
bap-Address-r16	Not present		
bh-RLC-ChannelToAddModList-r16	Not present		
bh-RLC-ChannelToReleaseList-r16	Not present		
f1c-TransferPath-r16	Not present		
simultaneousTCI-UpdateList1-r16	Not present		
simultaneousTCI-UpdateList2-r16	Not present		
simultaneousSpatial-UpdatedList1-r16	Not present		
simultaneousSpatial-UpdatedList2-r16	Not present		
uplinkTxSwitchingOption-r16	Not present		
uplinkTxSwitchingPowerBoosting-r16	Not present		
}			

Condition	Explanation
EN-DC	E-UTRA-NR Dual Connectivity with E-UTRA connected to EPC
CFRA	This condition applies when CFRA is configured
SUL	Supplementary Uplink
SRB1	Establishment of SRB1
SRB2_DRB1	Establishment of SRB2 and DRB1
SRB2_DRB2	Establishment of SRB2 and DRB2
DRBn	Establishment of DRBn
PCell_change	Intra-NR PCell change (NR)
PSCell_change	NR PSCell change (EN-DC)
SCell_add	Add SCell
MEAS	A NR or EN-DC measurement is configured
NR-DC_SCG	Add SCG (NR-DC)
RESUME	Used in RRCResume Message
REEST	The first RRCReconfiguration message after successful completion of the RRC re-establishment procedure.

– *CellGroupId***Table 4.6.3-20: CellGroupId**

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
CellGroupId	0		
	1		EN-DC, NR-DC_SCG

Condition	Explanation
EN-DC	E-UTRA-NR Dual Connectivity with E-UTRA connected to EPC
NR-DC_SCG	Add SCG (NR-DC)

– *CellIdentity***Table 4.6.3-21: CellIdentity**

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
CellIdentity	Set to NR Cell Identifier defined in table 4.4.2-2	BIT STRING (SIZE (36))	

– *CellReselectionPriority***Table 4.6.3-22: CellReselectionPriority**

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

– *CellReselectionSubPriority***Table 4.6.3-23: CellReselectionSubPriority**

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

– *CGI-InfoEUTRA***Table 4.6.3-23A: CGI-InfoEUTRA**

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

– *CGI-InfoEUTRALogging***Table 4.6.3-23B: CGI-InfoEUTRALogging**

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

– *CGI-InfoNR***Table 4.6.3-24: CGI-InfoNRo**

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

– *CGI-Info-Logging***Table 4.6.3-24A: CGI-Info-Logging**

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
CGI-Info-Logging-r16 ::= SEQUENCE {			
FFS			
}			

– *CLI-RSSI-Range***Table 4.6.3-24B: CLI-RSSI-Range**

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
CLI-RSSI-Range-r16	FFS		



– CodebookConfig

**Table 4.6.3-25: CodebookConfig**

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
CodebookConfig ::= SEQUENCE {			
codebookType CHOICE {			
type1 SEQUENCE {			
subType CHOICE {			
type1-SinglePanel SEQUENCE {			
nrOfAntennaPorts CHOICE {			
two SEQUENCE {			2TX
twoTX-CodebookSubsetRestriction	111111		
}			
moreThanTwo SEQUENCE {			
n1-n2 CHOICE {			
two-one-Type1-SinglePanel-Restriction	11111111		FR2
four-one-Type1-SinglePanel-Restriction	11111111 11111111		FR1
}			
type1-SinglePanel-codebookSubsetRestriction-i2	Not present		
}			
}			
type1-SinglePanel-ri-Restriction	11111111		
}			
}			
codebookMode	1		
}			
}			
}			

Condition	Explanation
2TX	2 Tx CSI-RS configuration.

– CommonLocationInfo

**Table 4.6.3-25A: CommonLocationInfo**

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
CommonLocationInfo-r16 ::= SEQUENCE {			
gnss-TOD-msec-r16	Not checked	OCTET STRING	
locationTimestamp-r16	Not checked	OCTET STRING	
locationCoordinate-r16	Not checked	OCTET STRING	
locationError-r16	Not checked	OCTET STRING	
locationSource-r16	Not checked	OCTET STRING	
velocityEstimate-r16	Not checked	OCTET STRING	
}			

– CondReconfigId

**Table 4.6.3-25B: CondReconfigId**

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
CondReconfigId-r16	1		

– *CondReconfigToAddModList***Table 4.6.3-25C: CondReconfigToAddModList**

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
CondReconfigToAddModList-r16 ::= SEQUENCE (SIZE (1.. maxNrofCondCells-r16)) OF CondReconfigToAddMod-r16 {	1 entry		
CondReconfigToAddMod-r16[1] ::= SEQUENCE {		entry 1	
condReconfigId-r16	CondReconfigId-r16		
condExecutionCond-r16 ::= SEQUENCE {			
MeasId [1]	1	identify a measurement configuration	
}			
condRRCReconfig-r16	RRCReconfiguration-HO	Table 4.8.1-1A	
}			

– *ConditionalReconfiguration***Table 4.6.3-25D: ConditionalReconfiguration**

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
ConditionalReconfiguration-r16 ::= SEQUENCE {			
attemptCondReconfig-r16	true		
condReconfigToRemoveList-r16	Not present		
condReconfigToAddModList-r16	CondReconfigToAddModList-r16		
}			

– *ConfiguredGrantConfig***Table 4.6.3-26: ConfiguredGrantConfig**

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

– *ConfiguredGrantConfigIndex***Table 4.6.3-26A: ConfiguredGrantConfigIndex**

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
ConfiguredGrantConfigIndex-r16	FFS		

– *ConfiguredGrantConfigIndexMAC***Table 4.6.3-26B: ConfiguredGrantConfigIndexMAC**

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
ConfiguredGrantConfigIndexMAC-r16	FFS		

– ConnEstFailureControl

**Table 4.6.3-27: ConnEstFailureControl**

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
ConnEstFailureControl ::= SEQUENCE {			
connEstFailCount	n1		
connEstFailOffsetValidity	s30		
connEstFailOffset	1		
}			

– ControlResourceSet

**Table 4.6.3-28: ControlResourceSet**

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
ControlResourceSet ::= SEQUENCE {			
controlResourceSetId	ControlResourceSetId		
frequencyDomainResources	11110000 00000000 00000000 00000000 00000000 000000	CORESET to use the least significant 24 RBs of the BWP	
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		
pdccch-DMRS-ScramblingID	Not present		
rb-Offset-r16	Not present		
tci-PresentDCI-1-2-r16	Not present		
coresetPoolIndex-r16	Not present		
controlResourceSetId-v1610	Not present		
}			

– ControlResourceSetId

**Table 4.6.3-29: ControlResourceSetId**

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
ControlResourceSetId	1		
	0		Common0

Condition	Explanation
Common0	CommonCORESET#0

– *ControlResourceSetZero*

**Table 4.6.3-30: ControlResourceSetZero**

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
ControlResourceSetZero	Set to CORESET#0 Index as defined for the frequency of the cell	For signalling test cases see subclause 6.2.3. Otherwise, see subclause 4.3.1.	

– *CrossCarrierSchedulingConfig*

**Table 4.6.3-31: CrossCarrierSchedulingConfig**

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

– *CSI-AperiodicTriggerStateList*

**Table 4.6.3-32: CSI-AperiodicTriggerStateList**

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
CSI-AperiodicTriggerStateList ::= SEQUENCE (SIZE (1..maxNrOfCSI-AperiodicTriggers)) OF CSI-AperiodicTriggerState {	1 entry		
CSI-AperiodicTriggerState[1] SEQUENCE {		entry 1	
associatedReportConfigInfoList SEQUENCE (SIZE(1..maxNrofReportConfigPerAperiodicTrigger)) OF CSI-AssociatedReportConfigInfo {	1 entry		
CSI-AssociatedReportConfigInfo[1] SEQUENCE {		entry 1	
reportConfigId	CSI-ReportConfigId		
resourcesForChannel CHOICE {			
nzp-CSI-RS SEQUENCE {			
resourceSet	8		FR1
	16		FR2
qcl-info SEQUENCE (SIZE(1..maxNrofAP-CSI-RS-ResourcesPerSet)) OF TCI-StateId {	1 entry		
TCI-StateId[1]	TCI-StateId	entry 1	
}			
}			
}			
csi-IM-ResourcesforInteference	8		FR1
	16		FR2
nzp-CSI-RS-ResourcesforInterference	8		FR1
	16		FR2
}			
}			
}			
}			

– *CSI-FrequencyOccupation*

**Table 4.6.3-33: CSI-FrequencyOccupation**

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
CSI-FrequencyOccupation ::= SEQUENCE {			
startingRB	0		
nrofRBs	160		FR1 AND BW60
	216		FR1 AND BW80
	108		FR1 AND BW40
	52		FR1 AND BW10
	276		FR1 AND BW100
	64		FR2 AND BW100
	52		TRS
	40		TRS AND ((FR1 AND BW15 AND SCS30) OR (FR1 AND BW30AND SCS60))
	32		TRS AND ((FR1 AND BW25 AND SCS60) OR (FR2 AND BW50 AND SCS120))
	28		TRS AND FR1 AND BW5 AND SCS15
	24		TRS AND ((FR1 AND BW5 AND SCS30) OR (FR1 AND BW10 AND SCS30) OR (FR1 AND BW10 AND SCS60) OR (FR1 AND BW15 AND SCS60) OR (FR1 AND BW20 AND SCS60))
	64		
}			

Condition	Explanation
TRS	Tracking-Reference Signal

– *CSI-IM-Resource*

**Table 4.6.3-34: CSI-IM-Resource**

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
CSI-IM-Resource ::= SEQUENCE {			
csi-IM-ResourceId	CSI-IM-ResourceId		
csi-IM-ResourceElementPattern CHOICE {			
pattern1 SEQUENCE {			
subcarrierLocation-p1	s4		
symbolLocation-p1	3		FR1
	4		FR2
}			
}			
freqBand	CSI-FrequencyOccupation		
periodicityAndOffset	Not present		
}			

– *CSI-IM-ResourceId*

**Table 4.6.3-35: CSI-IM-ResourceId**

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
CSI-IM-ResourceId	7		FR1
	31		FR2

– *CSI-IM-ResourceSet*

**Table 4.6.3-36: CSI-IM-ResourceSet**

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
CSI-IM-ResourceSet ::= SEQUENCE {			
csi-IM-ResourceSetId	CSI-IM-ResourceSetId		
csi-IM-Resources SEQUENCE (SIZE(1..maxNrofCSI-IM-ResourcesPerSet)) OF CSI-IM-ResourceId {	1 entry		
CSI-IM-ResourceId[1]	CSI-IM-ResourceId	entry 1	
}			
}			

– *CSI-IM-ResourceSetId*

**Table 4.6.3-37: CSI-IM-ResourceSetId**

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

## – CSI-MeasConfig

Table 4.6.3-38: CSI-MeasConfig

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
CSI-MeasConfig ::= SEQUENCE {			
nzp-CSI-RS-ResourceToAddModList SEQUENCE (SIZE (1..maxNrofNZP-CSI-RS-Resources)) OF NZP-CSI-RS-Resource {	1 entry		
NZP-CSI-RS-Resource[1]	NZP-CSI-RS-Resource	entry 1	
}			
nzp-CSI-RS-ResourceToReleaseList	Not present		
nzp-CSI-RS-ResourceSetToAddModList SEQUENCE (SIZE (1..maxNrofNZP-CSI-RS-ResourceSets)) OF NZP-CSI-RS-ResourceSetId {	1 entry		
NZP-CSI-RS-ResourceSet[1]	NZP-CSI-RS-ResourceSet	entry 1	
}			
nzp-CSI-RS-ResourceSetToReleaseList	Not present		
csi-IM-ResourceToAddModList SEQUENCE (SIZE (1..maxNrofCSI-IM-Resources)) OF CSI-IM-Resource {	1 entry		
CSI-IM-Resource[1]	CSI-IM-Resource	entry 1	
}			
csi-IM-ResourceToReleaseList	Not present		
csi-IM-ResourceSetToAddModList SEQUENCE (SIZE (1..maxNrofCSI-SSB-ResourceSets)) OF CSI-SSB-ResourceSet {	1 entry		
CSI-IM-ResourceSet[1]	CSI-IM-ResourceSet	entry 1	
}			
csi-IM-ResourceSetToReleaseList	Not present		
csi-SSB-ResourceSetToAddModList SEQUENCE (SIZE (1..maxNrofCSI-SSB-ResourceSets)) OF CSI-SSB-ResourceSet {	1 entry		
CSI-SSB-ResourceSet[1]	CSI-SSB-ResourceSet	entry 1	
}			
csi-SSB-ResourceSetToReleaseList	Not present		
csi-ResourceConfigToAddModList SEQUENCE (SIZE (1..maxNrofCSI-ResourceConfigurations)) OF CSI-ResourceConfig {	1 entry		
CSI-ResourceConfig[1]	CSI-ResourceConfig	entry 1	
}			
csi-ResourceConfigToReleaseList	Not present		
csi-ReportConfigToAddModList SEQUENCE (SIZE (1..maxNrofCSI-ReportConfigurations)) OF CSI-ReportConfig {	1 entry		
CSI-ReportConfig[1]	CSI-ReportConfig	entry 1	
}			
csi-ReportConfigToReleaseList	Not present		
reportTriggerSize	0		
aperiodicTriggerStateList CHOICE {			
setup	CSI-AperiodicTriggerStateList		
}			
semiPersistentOnPUSCH-TriggerStateList	Not present		
reportTriggerSizeDCI-0-2-r16	Not present		
}			

– *CSI-ReportConfig*

**Table 4.6.3-39: CSI-ReportConfig**

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
CSI-ReportConfig ::= SEQUENCE {			
reportConfigId	CSI-ReportConfigId		
carrier	ServCellIndex		
resourcesForChannelMeasurement	CSI-ResourceConfigId		
csi-IM-ResourcesForInterference	CSI-ResourceConfigId		
nzp-CSI-RS-ResourcesForInterference	CSI-ResourceConfigId		
reportConfigType CHOICE {			
aperiodic SEQUENCE {			
reportSlotOffsetList SEQUENCE (SIZE (1..maxNrofUL-Allocations)) OF INTEGER {	1 entry		
INTEGER[1]	14	entry 1	
}			
}			
reportQuantity CHOICE {			
cri-RI-PMI-CQI	NULL,		FR1
cri-RI-LI-PMI-CQI	NULL		FR2
}			
reportFreqConfiguration SEQUENCE {			
cqi-FormatIndicator	widebandCQI		
pmi-FormatIndicator	widebandPMI		
csi-ReportingBand	Not present		
}			
timeRestrictionForChannelMeasurements	notConfigured		
timeRestrictionForInterferenceMeasurements	notConfigured		
codebookConfig	CodebookConfig		
dummy	Not present		
groupBasedBeamReporting CHOICE {			
disabled SEQUENCE {			
nrofReportedRS	n1		
}			
}			
cqi-Table	table1	64QAM	
	table2		256QAM
subbandSize	value2		
non-PMI-PortIndication	Not present		
semiPersistentOnPUSCH-v1530	Not present		
semiPersistentOnPUSCH-v1610	Not present		
aperiodic-v1610	Not present		
reportQuantity-r16	Not present		
codebookConfig-r16	Not present		
}			

Condition	Explanation
256QAM	Test cases using 256QAM for PDSCH

– *CSI-ReportConfigId*

**Table 4.6.3-40: CCSI-ReportConfigId**

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



– *CSI-ResourceConfig***Table 4.6.3-41: CSI-ResourceConfig**

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
CSI-ResourceConfig ::= SEQUENCE {			
csi-ResourceConfigId	CSI-ResourceConfigId		
csi-RS-ResourceSetList CHOICE {			
nzp-CSI-RS-SSB SEQUENCE {			
nzp-CSI-RS-ResourceSetList SEQUENCE (SIZE (1..maxNrofNZP-CSI-RS-ResourceSetsPerConfig)) OF NZP-CSI-RS-ResourceSetId {	2 entries		
NZP-CSI-RS-ResourceSetId[1]	0	entry 1	
NZP-CSI-RS-ResourceSetId[2]	1	entry 2	
}			
csi-SSB-ResourceSetList	Not present		
}			
}			
bwp-Id	BWP-Id		
resourceType	periodic		
}			

– *CSI-ResourceConfigId***Table 4.6.3-42: CSI-ResourceConfigId**

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

– *CSI-ResourcePeriodicityAndOffset***Table 4.6.3-43: CSI-ResourcePeriodicityAndOffset**

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
CSI-ResourcePeriodicityAndOffset ::= CHOICE {			
slots80	10		FR1
slots320	40		FR2
}			

– *CSI-RS-ResourceConfigMobility***Table 4.6.3-44: CSI-RS-ResourceConfigMobility**

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
CSI-RS-ResourceConfigMobility ::= SEQUENCE {			
subcarrierSpacing	SubcarrierSpacing		
csi-RS-CellList-Mobility	FFS		
}			

– *CSI-RS-ResourceMapping*

**Table 4.6.3-45: CSI-RS-ResourceMapping**

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
CSI-RS-ResourceMapping ::= SEQUENCE {			
frequencyDomainAllocation CHOICE {			
row1	1000		(FR1 AND TRS) OR (FR2 AND TRS)
row4	010		FR2
other	011110		FR1
}			
nrofPorts	p8		FR1
	p4		FR2
	p1		(FR1 AND TRS) OR (FR2 AND TRS)
firstOFDMSymbolInTimeDomain	3		FR1
	13		FR2
	4		(FR1 AND TRS) OR (FR2 AND TRS)
firstOFDMSymbolInTimeDomain2	Not present		
cdm-Type	fd-CDM2		
	noCDM		TRS
density CHOICE {			
one	NULL		
three	NULL		TRS
}			
freqBand	CSI-FrequencyOccupation		
}			

Condition	Explanation
TRS	Tracking-Reference Signal is configured.

– *CSI-SemiPersistentOnPUSCH-TriggerStateList*

**Table 4.6.3-46: CSI-SemiPersistentOnPUSCH-TriggerStateList**

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

– *CSI-SSB-ResourceSet***Table 4.6.3-47: CSI-SSB-ResourceSet**

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
CSI-SSB-ResourceSet ::= SEQUENCE {			
csi-SSB-ResourceSetId	CSI-SSB-ResourceSetId		
csi-SSB-ResourceList SEQUENCE (SIZE (1..maxNrofCSI-SSB-ResourcePerSet)) OF SSB-Index {	1 entry		
SSB-Index[1]	SSB-Index	entry 1	
}			
}			

– *CSI-SSB-ResourceSetId***Table 4.6.3-48: CSI-SSB-ResourceSetId**

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

**Table 4.6.3-48A: Void**– *DedicatedNAS-Message***Table 4.6.3-49: DedicatedNAS-Message**

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
DedicatedNAS-Message	Set according to specific message content		

– *DMRS-DownlinkConfig***Table 4.6.3-50: DMRS-DownlinkConfig**

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
DMRS-DownlinkConfig ::= SEQUENCE {			
dmsr-Type	Not present	DMRS type 1	
dmsr-AdditionalPosition	pos1		FR1
	pos0		FR2
maxLength	Not present	len1	
scramblingID0	Not present		
scramblingID1	Not present		
phaseTrackingRS	Not present		FR1
phaseTrackingRS CHOICE {			FR2
setup	PTRS-DownlinkConfig		
}			
}			

– *DMRS-UplinkConfig***Table 4.6.3-51: DMRS-UplinkConfig**

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
DMRS-UplinkConfig ::= SEQUENCE {			
dmrs-Type	Not present	DMRS type 1	
dmrs-AdditionalPosition	pos1		FR1
	pos0		FR2
phaseTrackingRS	Not present		
phaseTrackingRS CHOICE {			PTRS_UL_CONFIG
setup	PTRS-UplinkConfig		
}			
maxLength	Not present	len1	
transformPrecodingDisabled SEQUENCE {			
scramblingID0	Not present		
scramblingID1	Not present		
}			
transformPrecodingEnabled	Not present		
}			

Condition	Explanation
PTRS_UL_CONFIG	When PTRS Uplink is configured

– *DownlinkConfigCommon***Table 4.6.3-52: DownlinkConfigCommon**

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

– *DownlinkConfigCommonSIB***Table 4.6.3-53: DownlinkConfigCommonSIB**

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
DownlinkConfigCommonSIB ::= SEQUENCE {			
frequencyInfoDL	FrequencyInfoDL-SIB		
initialDownlinkBWP	BWP-DownlinkCommon with condition InitialBWP_SIB		
bcch-Config SEQUENCE {			
modificationPeriodCoeff	n4		
}			
pcch-Config SEQUENCE {			
defaultPagingCycle	rf128		
nAndPagingFrameOffset CHOICE {			
halfT	0		
}			
ns	one		
firstPDCCH-MonitoringOccasionOfPO	Not present		
}			
}			

– *DownlinkPreemption***Table 4.6.3-54: DownlinkPreemption**

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

– *DRB-Identity***Table 4.6.3-55: DRB-Identity**

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
DRB-Identity	n		DRBn

Condition	Explanation
DRBn	DRB-Identity n

– *DRX-Config***Table 4.6.3-56: DRX-Config**

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
DRX-Config ::= SEQUENCE {			
drx-onDurationTimer CHOICE {			
milliSeconds	ms6		
}			
drx-InactivityTimer	ms1280		
drx-HARQ-RTT-TimerDL	56		
drx-HARQ-RTT-TimerUL	56		
drx-RetransmissionTimerDL	sl16		FR1
	sl64		FR2
drx-RetransmissionTimerUL	sl16		FR1
	sl64		FR2
drx-LongCycleStartOffset CHOICE {			
ms10240	0		
}			
shortDRX	not present		
drx-SlotOffset	0		
}			

– *DRX-ConfigSecondaryGroup***Table 4.6.3-56A: DRX-ConfigSecondaryGroup**

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

– *FilterCoefficient***Table 4.6.3-57: FilterCoefficient**

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

– *FreqBandIndicatorNR***Table 4.6.3-58: FreqBandIndicatorNR**

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
FreqBandIndicatorNR	Operating band of the frequency as specified in Table 4.4.2-1		
	Secondary band under test		CA-InterBand, NR-DC-SecondaryB and

Condition	Explanation
CA-InterBand	Used in CA interBand test cases
NR-DC-SecondaryBand	Used in NR-DC test cases

– *FrequencyInfoDL*

**Table 4.6.3-59: FrequencyInfoDL**

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
FrequencyInfoDL ::= SEQUENCE {			
absoluteFrequencySSB	ARFCN-ValueNR with condition DL_SSB		
frequencyBandList	MultiFrequencyBandList NR		
absoluteFrequencyPointA	ARFCN-ValueNR with condition DL_PointA		
scs-SpecificCarrierList SEQUENCE (SIZE (1..maxSCSs)) OF SCS-SpecificCarrier {	1 entry		
SCS-SpecificCarrier[1]	SCS-SpecificCarrier with condition DL_PointA	entry 1	
}			
}			

– *FrequencyInfoDL-SIB*

**Table 4.6.3-60: FrequencyInfoDL-SIB**

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
FrequencyInfoDL-SIB ::= SEQUENCE {			
frequencyBandList	MultiFrequencyBandList NR-SIB		
offsetToPointA	For signalling test cases see subclause 6.2.3. Otherwise, see subclause 4.3.1.		
scs-SpecificCarrierList SEQUENCE (SIZE (1..maxSCSs)) OF SCS-SpecificCarrier {	1 entry		
SCS-SpecificCarrier[1]	SCS-SpecificCarrier with condition DL_PointA	entry 1	
}			
}			

– *FrequencyInfoUL*

**Table 4.6.3-61: *FrequencyInfoUL***

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

Condition	Explanation
DSS	Dynamic Spectrum Sharing

– *FrequencyInfoUL-SIB*

**Table 4.6.3-62: *FrequencyInfoUL-SIB***

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



– *HighSpeedConfig*

**Table 4.6.3-62A: HighSpeedConfig**

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
HighSpeedConfig-r16 ::= SEQUENCE {			
highSpeedMeasFlag-r16	Not present		
highSpeedDemodFlag-r16	Not present		
}			

– *Hysteresis*

**Table 4.6.3-63: Hysteresis**

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

– *InvalidSymbolPattern*

**Table 4.6.3-63A: InvalidSymbolPattern**

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
InvalidSymbolPattern-r16 ::= SEQUENCE {			
FFS			
}			

– *I-RNTI-Value*

**Table 4.6.3-64: I-RNTI-Value**

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
I-RNTI-Value	SS arbitrarily selects a value between '00 0000 0001'H and 'FF FFFF FFFF'H.	BIT STRING (SIZE(40))	

– *LBT-FailureRecoveryConfig*

**Table 4.6.3-64A: LBT-FailureRecoveryConfig**

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
LBT-FailureRecoveryConfig-r16 ::= SEQUENCE {			
FFS			
}			

– *LocationInfo*

**Table 4.6.3-64B: LocationInfo**

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
LocationInfo-r16 ::= SEQUENCE {			
commonLocationInfo-r16	CommonLocationInfo-r16		MDT_LocationInfo
bt-LocationInfo-r16	LogMeasResultListBT-r16		MDT_BT
wlan-LocationInfo-r16	LogMeasResultListWLAN-r16		MDT_WLAN
sensor-LocationInfo-r16	Sensor-LocationInfo-r16		MDT_Sensor
}			

Condition	Explanation
MDT_LocationInfo	Used for CommonLocationInfo included in MDT (Minimized Driving Test)
MDT_BT	Used for Bluetooth measurement in MDT (Minimized Driving Test) services
MDT_WLAN	Used for WLAN measurement in MDT (Minimized Driving Test) services
MDT_Sensor	Used for Sensor measurement in MDT (Minimized Driving Test) services

– *LocationMeasurementInfo*

**Table 4.6.3-65: LocationMeasurementInfo**

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
LocationMeasurementInfo ::= CHOICE {			
eutra-RSTD SEQUENCE (SIZE (1..maxInterRAT-RSTD-Freq)) OF EUTRA-RSTD-Info {	1 entry		
EUTRA-RSTD-Info[1] SEQUENCE {		entry 1	
carrierFreq	ARFCN-ValueEUTRA		
measPRS-Offset	FFS		
}			
}			
}			

– *LogicalChannelConfig*

**Table 4.6.3-66: LogicalChannelConfig**

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
LogicalChannelConfig ::= SEQUENCE {			
ul-SpecificParameters SEQUENCE {			
priority	1		
	3		SRB2
prioritisedBitRate	infinity		
bucketSizeDuration	ms50		
allowedServingCells	Not present		
allowedSCS-List	Not present		
maxPUSCH-Duration	Not present		
configuredGrantType1Allowed	Not present		
logicalChannelGroup	1		HI
	2		LO
	0		SRB1, SRB2, SRB3
schedulingRequestID	SchedulingRequestId		
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
SRB1	Establishment of SRB1
SRB2	Establishment of SRB2
SRB3	Establishment of SRB3

– *LogicalChannelIdentity*

**Table 4.6.3-67: LogicalChannelIdentity**

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
LogicalChannelIdentity	1		SRB1
LogicalChannelIdentity	2		SRB2
LogicalChannelIdentity	3		SRB3
LogicalChannelIdentity	n+3		DRBn

Condition	Explanation
SRB1	Establishment of SRB1
SRB2	Establishment of SRB2
SRB3	Establishment of SRB3
DRBn	Establishment of DRBn; n=1..29

– *MAC-CellGroupConfig*

**Table 4.6.3-68: MAC-CellGroupConfig**

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
MAC-CellGroupConfig ::= SEQUENCE {			
drx-Config	Not present		
drx-Config CHOICE {			DRX
setup	DRX-Config		
}			
schedulingRequestConfig	SchedulingRequest-Config		
bsr-Config	BSR-Config		
tag-Config	TAG-Config		
phr-Config CHOICE {			
setup	PHR-Config		
}			
skipUplinkTxDynamic	false		
csi-Mask	Not present		
dataInactivityTimer	Not present		
usePreBSR-r16	Not present		
schedulingRequestID-LBT-SCell-r16	Not present		
lch-BasedPrioritization-r16	Not present		
schedulingRequestID-BFR-SCell-r16	Not present		
drx-ConfigSecondaryGroup-r16	Not present		
enhancedSkipUplinkTxDynamic-r16	Not present		
enhancedSkipUplinkTxConfigured-r16	Not present		
}			

Condition	Explanation
DRX	This condition applies when DRX is configured

– *MeasConfig*

**Table 4.6.3-69: MeasConfig**

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
MeasConfig ::= SEQUENCE {			
measObjectToRemoveList	Not present		
measObjectToAddModList	MeasObjectToAddModList		
reportConfigToRemoveList	Not present		
reportConfigToAddModList	ReportConfigToAddModList		
measIdToRemoveList	Not present		
measIdToAddModList	MeasIdToAddModList		
s-MeasureConfig	Not present		
quantityConfig	QuantityConfig		
measGapConfig	Not present		
measGapSharingConfig	Not present		
}			

*MeasGapConfig*

**Table 4.6.3-70: MeasGapConfig**

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
MeasGapConfig ::= SEQUENCE {			
gapFR2	Not present		
gapFR2 CHOICE {			GAP_FR2
setup SEQUENCE {			
gapOffset	159		
mgl	ms3dot5		
mgrp	ms160		
mgta	ms0		
}			
}			
gapFR1	Not present		
gapFR1 CHOICE {			GAP_FR1
setup SEQUENCE {			
gapOffset	39		
	9		SIG AND INTER-FREQ_ODD
mgl	ms6		
mgrp	ms40		
mgta	ms0		
}			
}			
gapUE	Not present		GAP_FR1 OR GAP_FR2
gapUE CHOICE {			
setup SEQUENCE {			
gapOffset	39		
	9		SIG AND INTER-FREQ_ODD
mgl	ms6		
mgrp	ms40		
mgta	ms0		
}			
}			
}			

Condition	Explanation
GAP_FR1	Configuration for FR1 per-FR gaps
GAP_FR2	Configuration for FR2 per-FR gaps
INTER-FREQ_ODD	When the SFNoffset of inter frequency neighbour cell is odd number. SFNoffset is defined in TS 38.523-3 [23]Table 7.1.5.2-1

*MeasGapSharingConfig*

**Table 4.6.3-71: MeasGapSharingConfig**

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

– *MeasId***Table 4.6.3-72: *MeasId***

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

– *MeasIdleConfig***Table 4.6.3-72A: *MeasIdleConfig***

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
MeasIdleConfigSIB-r16 ::= SEQUENCE {			
FFS			
}			

– *MeasIdToAddModList***Table 4.6.3-73: *MeasIdToAddModList***

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

– *MeasObjectCLI***Table 4.6.3-73A: *MeasObjectCLI***

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
MeasObjectCLI-r16 ::= SEQUENCE {			
FFS			
}			

– *MeasObjectEUTRA***Table 4.6.3-74: MeasObjectEUTRA**

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
MeasObjectEUTRA ::= SEQUENCE {			
carrierFreq	Downlink EARFCN for Freq		
allowedmeasBandwidth	Set according to TS 36.508 [2] Table 4.4.3.4-1 for E-UTRA cell	row 'measurement Bandwidth'	
cellsToRemoveListEUTRAN	Not present		
cellsToAddModListEUTRAN	Not present		
blackCellsToRemoveListEUTRAN	Not present		
blackCellsToAddModListEUTRAN	Not present		
eutra-PresenceAntennaPort1	false		
	true	at least two cell-specific antenna ports are used in all neighbouring cells	All neighCells with port1
eutra-Q-OffsetRange	Not present		
widebandRSRQ-Meas	false		
}			

Condition	Explanation
All neighCells with port1	Used for all neighbouring cells with at least two cell-specific antenna ports

– *MeasObjectId***Table 4.6.3-75: MeasObjectId**

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

– *MeasObjectNR*

**Table 4.6.3-76: *MeasObjectNR*(Thres)**

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
MeasObjectNR ::= SEQUENCE {			
ssbFrequency	ARFCN-ValueNR with condition DL_SSB		
ssbSubcarrierSpacing	SubcarrierSpacing		
smtc1	SSB-MTC		
smtc2	Not present		
refFreqCSI-RS	Not present		
referenceSignalConfig SEQUENCE {			
ssb-ConfigMobility SEQUENCE {			
ssb-ToMeasure CHOICE {			
setup	SSB-ToMeasure		
}			
deriveSSB-IndexFromCell	false		FDD
	true		TDD
ssb-PositionQCL-Common-r16	Not present		
	SSB-PositionQCL-Relation		SharedSpec trum
ssb-PositionQCL-CellsToAddModList-r16	Not present		
ssb-PositionQCL-CellsToRemoveList-r16	Not present		
ss-RSSI-Measurement	Not present		
}			
csi-rs-ResourceConfigMobility	Not present		
}			
absThreshSS-BlocksConsolidation SEQUENCE {			
thresholdRSRP	Thres	Thres is an entry value into a mapping table in TS 38.133 [13].	
thresholdRSRQ	Not present		
thresholdSINR	Not present		
}			
absThreshCSI-RS-Consolidation	Not present		
nrofSS-BlocksToAverage	2		
nrofCSI-RS-ResourcesToAverage	Not present		
quantityConfigIndex	1		
offsetMO SEQUENCE {			
rsrpOffsetSSB	dB0		
rsrqOffsetSSB	dB0		
sinrOffsetSSB	dB0		
rsrpOffsetCSI-RS	dB0		
rsrqOffsetCSI-RS	dB0		
sinrOffsetCSI-RS	dB0		
}			
cellsToRemoveList	Not present		
cellsToAddModList	Not present		
blackCellsToRemoveList	Not present		
blackCellsToAddModList	Not present		
whiteCellsToRemoveList	Not present		
whiteCellsToAddModList	Not present		
freqBandIndicatorNR	FreqBandIndicatorNR		
}			

Condition	Explanation
SharedSpectrum	Operation with shared spectrum channel access



– *MeasObjectNR-SL*

**Table 4.6.3-76A: *MeasObjectNR-SL***

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
MeasObjectNR-SL-r16 ::= SEQUENCE {			
tx-PoolMeasToRemoveList-r16	Not present		
tx-PoolMeasToAddModList-r16 SEQUENCE (SIZE (1..maxNrofSL-PoolToMeasureNR-r16)) OF SL-ResourcePoolID-r16{	1 entry		
SL-ResourcePoolID-r16[1]	SL-ResourcePoolID-r16	entry 1	
}			
}			

– *MeasObjectToAddModList*

**Table 4.6.3-77: *MeasObjectToAddModList***

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
MeasObjectToAddModList ::= SEQUENCE (SIZE (1..maxNrofMeasId)) OF MeasObjectToAddMod {	1 entry		
MeasObjectToAddMod[1] SEQUENCE {		entry 1	
measObjectId	MeasObjectId		
measObject CHOICE {			
measObjectNR	MeasObjectNR		
}			
}			
MeasObjectToAddModList ::= SEQUENCE (SIZE (1..maxNrofMeasId)) OF MeasObjectToAddMod {	2 entries		InterRAT
MeasObjectToAddMod[1] SEQUENCE {		entry 1	
measObjectId	1		
measObject CHOICE {			
measObjectNR	MeasObjectNR		
}			
}			
MeasObjectToAddMod[2] SEQUENCE {		entry 2	
measObjectId	2		
measObject CHOICE {			
measObjectEUTRA	MeasObjectEUTRA		
}			
}			
}			

Condition	Explanation
InterRAT	Configuration with at least one NR PCell and one or more E-UTRA neighbour cell(s)

– *MeasObjectUTRA-FDD***Table 4.6.3-77A: MeasObjectUTRA-FDD**

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
MeasObjectUTRA-FDD-r16 ::= SEQUENCE {			
carrierFreq-r16	ARFCN-ValueUTRA-FDD-r16		
utra-FDD-Q-OffsetRange-r16	UTRA-FDD-Q-OffsetRange-r16		
cellsToRemoveList-r16	Not present		
cellsToAddModList-r16	Not present		
}			

– *MeasResultCellListSFTD-NR***Table 4.6.3-78: MeasResultCellListSFTD-NR**

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

– *MeasResultCellListSFTD-EUTRA***Table 4.6.3-78A: MeasResultCellListSFTD-EUTRA**

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

– *MeasResults*

**Table 4.6.3-79: *MeasResults***

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
MeasResults ::= SEQUENCE {			
measId	MeasId		
measResultServingMOList	Not checked		SFTD_NEIG HBOUR or SFTD_PSC ELL
measResultServingMOList SEQUENCE (SIZE (1.. maxNrofServingCells)) OF MeasResultServMO {	1 entry		
MeasResultServMO[1] SEQUENCE {		entry 1	
servCellId	ServCellIndex		
measResultServingCell SEQUENCE {			
physCellId	PhysCellId		
measResult SEQUENCE {			
cellResults SEQUENCE {			
resultsSSB-Cell SEQUENCE {			
rsrp	Not checked		
rsrq	Not checked		
sinr	Not checked		
}			
resultsCSI-RS-Cell	Not present		
}			
rsIndexResults	Not present		
}			
cgi-Info	Not present		
}			
measResultBestNeighCell	Not present		
}			
measResultNeighCells	Not present		A1, A2, SFTD_NEIG HBOUR or SFTD_PSC ELL
measResultNeighCells CHOICE {			
measResultListNR	Set according to specific message content		A3, A4, A5, A6
measResultListEUTRA	Set according to specific message content		B1, B2
measResultListUTRA-FDD-r16	Set according to specific message content		B1_UTRA, B2_UTRA
}			
measResultServFreqListEUTRA-SCG	Not present		
measResultServFreqListNR-SCG	Not checked		
measResultSFTD-EUTRA	Not present		
measResultSFTD-NR	Not present		
measResultSFTD-NR SEQUENCE {			SFTD_PSC ELL
physCellId	PhysCellId of PSCell		
sfn-OffsetResult	Not checked		
frameBoundaryOffsetResult	Not checked		
rsrp-Result	Not checked		
}			
measResultCellListSFTD-NR	Not present		
measResultCellListSFTD-NR SEQUENCE (SIZE (1..maxCellsFTD)) OF MeasResultCellsFTD-NR {	1 entry		SFTD_NEIG HBOUR
MeasResultCellsFTD-NR[1] SEQUENCE {		entry 1	
physCellId	PhysCellId		
sfn-OffsetResult	Not checked		
frameBoundaryOffsetResult	Not checked		
rsrp-Result	Not checked		
}			
}			

measResultForRSSI-r16	Not present		
locationInfo-r16	Not present		
ul-PDCP-DelayValueResultList-r16	Not present		
measResultsSL-r16	Not present		
measResultCLI-r16	Not present		
}			

Condition	Explanation
A1	If event trigger Id in corresponding Measurement Configuration was Event A1
A2	If event trigger Id in corresponding Measurement Configuration was Event A2
A3	If event trigger Id in corresponding Measurement Configuration was Event A3
A4	If event trigger Id in corresponding Measurement Configuration was Event A4
A5	If event trigger Id in corresponding Measurement Configuration was Event A5
A6	If event trigger Id in corresponding Measurement Configuration was Event A6
B1	If event trigger Id in corresponding Measurement Configuration was Event B1
B2	If event trigger Id in corresponding Measurement Configuration was Event B2
B1_UTRA	If event trigger Id in corresponding Measurement Configuration was Event B1-UTRA-FDD
B2_UTRA	If event trigger Id in corresponding Measurement Configuration was Event B2-UTRA-FDD
SFTD_NEIGHBOUR	Measurement reporting triggered by SFTD measurement on NR neighbour
SFTD_PSCCELL	Measurement reporting triggered by SFTD measurement on NR PSCell

– *MeasResult2EUTRA*

**Table 4.6.3-79A: *MeasResult2EUTRA***

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
MeasResult2EUTRA ::= SEQUENCE {			
FFS			
}			

– *MeasResult2NR*

**Table 4.6.3-79B: *MeasResult2NR***

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
MeasResult2NR ::= SEQUENCE {			
FFS			
}			

– *MeasResultIdleEUTRA*

**Table 4.6.3-79C: *MeasResultIdleEUTRA***

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
MeasResultIdleEUTRA-r16 ::= SEQUENCE {			
FFS			
}			

– *MeasResultIdleNR*

**Table 4.6.3-79D: *MeasResultIdleNR***

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
MeasResultIdleNR-r16 ::= SEQUENCE {			
FFS			
}			

– *MeasResultSCG-Failure*

**Table 4.6.3-80: *MeasResultSCG-Failure***

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
MeasResultSCG-Failure ::= SEQUENCE {		<i>measResultPerMOList</i> for each <i>MeasObjectNR</i> for which a <i>measId</i> is configured (by the NR <i>RRCConfiguration message</i> ) and measurement results are available include an entry	
<i>measResultPerMOList</i> SEQUENCE (SIZE (1..maxFreq)) OF <i>MeasResult2NR</i> {	<i>n</i> entries of <i>MeasResult2NR</i>	<i>MOList</i> [1]  <i>n</i> denotes the number of non-serving frequencies being measured	
<i>MeasResult2NR</i> [1] SEQUENCE {		entry 1	
<i>ssbFrequency</i>	ARFCN-ValueNR with condition DL_SSB	the ARFCN if there is a <i>measId</i> configured with the <i>MeasObjectNR</i> and a <i>reportConfig</i> which has <i>rsType</i> set to <i>ssb</i>	
<i>refFreqCSI-RS</i>	INTEGER (0..3279165)	the ARFCN if there is a <i>measId</i> configured with the <i>MeasObjectNR</i> and a <i>reportConfig</i> which has <i>rsType</i> set to <i>csi-rs</i>	
<i>measResultServingCell</i> SEQUENCE {		if a serving cell is associated with the <i>MeasObjectNR</i>	
<i>physCellId</i>	INTEGER (0..1007)	the <i>physCellId</i> configured for this serving cell	
<i>measResult</i> SEQUENCE {			
<i>cellResults</i> SEQUENCE {			
<i>resultsSSB-Cell</i> SEQUENCE {			
<i>rsrp</i>	as specified in Table 4.6.3-152	Integer value for RSRP measurements	
<i>rsrq</i>	as specified in Table 4.6.3-153	Integer value for RSRQ measurements	
<i>sinr</i>	as specified in Table 4.6.3-172	Integer value for SINR measurements	
}			
<i>resultsCSI-RS-Cell</i> SEQUENCE {			
<i>rsrp</i>	as specified in Table 4.6.3-152	Integer value for RSRP measurements	
<i>rsrq</i>	as specified in Table 4.6.3-153	Integer value for RSRQ measurements	



sinr	as specified in Table 4.6.3-172	Integer value for SINR measurements	
}			
}			
rsIndexResults SEQUENCE {			
resultsSSB-Indexes SEQUENCE (SIZE (1..maxNrofSSBs)) OF ResultsPerSSB-Index {	<i>n</i> entries of ResultsPerSSB-Index	<i>ResultsPerSSB-IndexList</i>	
ResultsPerSSB-Index[1] SEQUENCE {		entry 1	
ssb-Index	SSB-Index	an SS-Block within an SS-Burst	
ssb-Results SEQUENCE {		<i>MeasQuantityResults</i>	
rsrp	as specified in Table 4.6.3-152	Integer value for RSRP measurements	
rsrq	as specified in Table 4.6.3-153	Integer value for RSRQ measurements	
sinr	as specified in Table 4.6.3-172	Integer value for SINR measurements	
}			
}			
}		<i>ResultsPerSSB-Index</i> entry [x] if any	
}			
resultsCSI-RS-Indexes SEQUENCE (SIZE (1..maxNrofCSI-RS)) OF ResultsPerCSI-RS-Index {	<i>n</i> entries of ResultsPerCSI-RS-Index	<i>ResultsPerCSI-RS-IndexList</i>	
ResultsPerCSI-RS-Index[1] SEQUENCE {		entry 1	
csi-RS-Index	INTEGER (0..maxNrofCSI-RS-ResourcesRRM-1)	CSI-RS resource index associated to the measurement information to be reported	
csi-RS-Results SEQUENCE {		<i>MeasQuantityResults</i>	
rsrp	as specified in Table 4.6.3-152	Integer value for RSRP measurements	
rsrq	as specified in Table 4.6.3-153	Integer value for RSRQ measurements	
sinr	as specified in Table 4.6.3-172	Integer value for SINR measurements	
}			
}			
}		<i>ResultsPerCSI-RS-Index</i> entry [x] if any	
}			
}			
}			
}			

measResultNeighCellListNR SEQUENCE (SIZE (1..maxCellReport)) OF MeasResultNR {	<i>n</i> entires of MeasResultNR	include the best measured cells, ordered such that the best cell is listed first, and based on measurements collected up to the moment the UE detected the failure	
MeasResultNR[1] SEQUENCE {		entry 1	
physCellId	INTEGER (0..1007)	the <i>physCellId</i> configured for the measured cell	
measResult SEQUENCE {			
cellResults SEQUENCE {			
resultsSSB-Cell SEQUENCE {			
rsrp	as specified in Table 4.6.3-152	Integer value for RSRP measurements	
rsrq	as specified in Table 4.6.3-153	Integer value for RSRQ measurements	
sinr	as specified in Table 4.6.3-172	Integer value for SINR measurements	
}			
resultsCSI-RS-Cell SEQUENCE {			
rsrp	as specified in Table 4.6.3-152	Integer value for RSRP measurements	
rsrq	as specified in Table 4.6.3-153	Integer value for RSRQ measurements	
sinr	as specified in Table 4.6.3-172	Integer value for SINR measurements	
}			
}			
}			
}			
		<i>MeasResultNR</i> entry [x] if any	
}			
		<i>MeasResult2NR</i> entry [x] if any	
}			
		MOList [x] if any	
}			
}			

– *MeasResultsSL*

**Table 4.6.3-80A: *MeasResultsSL***

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
MeasResultsSL-r16 ::= SEQUENCE {			
measResultsListSL-r16 CHOICE {			
measResultNR-SL-r16 SEQUENCE {			
measResultListCBR-NR-r16 SEQUENCE (SIZE (1.. maxNrofSL-PoolToMeasureNR-r16)) OF MeasResultCBR-NR-r16 {	1 entry		
MeasResultCBR-NR-r16[1] SEQUENCE {		entry 1	
sl-poolReportIdentity-r16	SL-ResourcePoolID-r16		
sl-CBR-ResultsNR-r16	SL-CBR-r16		
}			
}			
}			
}			
}			

– *MeasTriggerQuantityEUTRA*

**Table 4.6.3-80B: *MeasTriggerQuantityEUTRA***

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
MeasTriggerQuantityEUTRA-r16 ::= SEQUENCE {			
FFS			
}			

– *MobilityStateParameters*

**Table 4.6.3-81: *MobilityStateParameters***

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

– *MsgA-ConfigCommon*

**Table 4.6.3-81A: *MsgA-ConfigCommon***

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
MsgA-ConfigCommonL-r16 ::= SEQUENCE {			
rach-ConfigCommonTwoStepRA-r16	RACH-ConfigCommonTwoStepRA		
msgA-PUSCH-Config-r16	MsgA-PUSCH-Config		
}			

– *MsgA-PUSCH-Config***Table 4.6.3-81B: MsgA-PUSCH-Config**

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
MsgA-PUSCH-Config-r16 ::= SEQUENCE {			
MsgA-PUSCH-Resource-r16 SEQUENCE {			
msgA-MCS-r16	1		
nrofSlotsMsgA-PUSCH-r16	1		
nrofMsgA-PO-PerSlot-r16	one		
msgA-PUSCH-TimeDomainOffset-r16	4		
msgA-PUSCH-TimeDomainAllocation-r16	Not present		
startSymbolAndLengthMsgA-PO-r16	32		
mappingTypeMsgA-PUSCH-r16	typeA		
guardPeriodMsgA-PUSCH-r16	0		
guardBandMsgA-PUSCH-r16	0		
frequencyStartMsgA-PUSCH-r16	1		
nrofPRBs-PerMsgA-PO-r16	1		
nrofMsgA-PO-FDM-r16	one		
msgA-IntraSlotFrequencyHopping-r16	Not present		
msgA-HoppingBits-r16	Not present		
MsgA-DMRS-Config-r16 SEQUENCE {			
msgA-DMRS-AdditionalPosition-r16	pos0		
msgA-MaxLength-r16	Len2		
msgA-PUSCH-DMRS-CDM-Group-r16	0		
msgA-PUSCH-NrofPorts-r16	0		
msgA-ScramblingID0-r16	Not present		
msgA-ScramblingID1-r16	Not present		
}			
nrofDMRS-Sequences-r16	1		
msgA-Alpha-r16	alpha0		
interlaceIndexFirstPO-MsgA-PUSCH-r16	1		
nrofInterlacesPerMsgA-PO-r16	1		
}			
msgA-PUSCH-ResourceGroupB-r16	Not present		
msgA-TransformPrecoder-r16	enabled		
msgA-DataScramblingIndex-r16	Not present		
msgA-DeltaPreamble-r16	1		
}			

– *MultiFrequencyBandListNR***Table 4.6.3-82: MultiFrequencyBandListNR**

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

– *MultiFrequencyBandListNR-SIB***Table 4.6.3-82A: MultiFrequencyBandListNR-SIB**

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
MultiFrequencyBandListNR-SIB ::= SEQUENCE (SIZE (1.. maxNrofMultiBands)) OF NR-MultiBandInfo {	1 entry		
NR-MultiBandInfo[1] SEQUENCE {		entry 1	
freqBandIndicatorNR	FreqBandIndicatorNR		
nr-NS-PmaxList	NR-NS-PmaxList		
}			
}			

– *NeedForGapsConfigNR***Table 4.6.3-82B: NeedForGapsConfigNR**

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
NeedForGapsConfigNR-r16 ::= SEQUENCE {			
FFS			
}			

– *NeedForGapsInfoNR***Table 4.6.3-82C: NeedForGapsInfoNR**

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
NeedForGapsInfoNR-r16 ::= SEQUENCE {			
FFS			
}			

– *NextHopChainingCount***Table 4.6.3-83: NextHopChainingCount**

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

– *NG-5G-S-TMSI***Table 4.6.3-84: NG-5G-S-TMSI**

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
NG-5G-S-TMSI	Set to the value of the NG-5G-S-TMSI of the UE	BIT STRING (SIZE(40))	

– *NPN-Identity*

**Table 4.6.3-84AA: NPN-Identity**

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
NPN-Identity-r16 ::= CHOICE {			
pni-npn-r16 SEQUENCE {			CAG
plmn-Identity-r16	PLMN-Identity		
cag-IdentityList-r16 SEQUENCE (SIZE (1..maxNPN-r16)) OF CAG-IdentityInfo-r16 {	1 entry		
cag-Identity-r16[1]	1	cag-Identity is coded as a 32 bit BITSTRING	
manualCAGselectionAllowed-r16	true		
}			
snpn-r16 SEQUENCE {			SNPN
plmn-Identity-r16	PLMN-Identity		
nid-List-r16 SEQUENCE (SIZE (1..maxNPN-r16)) OF NID-r16{	1 entry		
NID-r16[1]	See table 4.4.2-4	NID is coded as a BITSTRING based on TS 38.508-1 Table 4.4.2-4	
}			
}			
}			

Condition	Explanation
CAG	PNI-NPN
SNPN	Standalone NPN cell

– *NPN-IdentityInfoList*

**Table 4.6.3-84AB: NPN-IdentityInfoList**

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
NPN-IdentityInfoList-r16 ::= SEQUENCE (SIZE (1..maxNPN-r16)) OF NPN-IdentityInfo-r16 {	1 entry		
NPN-IdentityInfo-r16[1] SEQUENCE {			
nnp-IdentityList-r16 SEQUENCE (SIZE (1..maxNPN-r16)) OF NPN-Identity-r16 {	1 entry		
NPN-Identity-r16[1]	NPN-Identity with condition CAG		CAG
}	NPN-Identity with condition SNPN		SNPN
}			
trackingAreaCode-r16	TrackingAreaCode		
ranac-r16	RAN-AreaCode		
cellIdentity-r16	CellIdentity		
cellReservedForOperatorUse-r16	notReserved		
}			
}			

Condition	Explanation
CAG	PNI-NPN
SNPN	Standalone NPN cell

– *NR-NS-PmaxList***Table 4.6.3-84A: NR-NS-PmaxList**

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
NR-NS-PmaxList ::= SEQUENCE (SIZE (1.. maxNrofMultiBands)) OF NR-NS-PmaxValue {	1 entry		
NR-NS-PmaxValue[1] SEQUENCE {		entry 1	
additionalPmax	Not present		
additionalSpectrumEmission	AdditionalSpectrumEmission		
}			
}			

– *NZP-CSI-RS-Resource***Table 4.6.3-85: NZP-CSI-RS-Resource**

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
NZP-CSI-RS-Resource ::= SEQUENCE {			
nzp-CSI-RS-ResourceId	NZP-CSI-RS-ResourceId		
resourceMapping	CSI-RS-ResourceMapping		
powerControlOffset	-3		
powerControlOffsetSS	Not present		
scramblingID	ScramblingId		
periodicityAndOffset	CSI-ResourcePeriodicityAndOffset		
qcl-InfoPeriodicCSI-RS	TCI-StateId		
}			

– *NZP-CSI-RS-ResourceId***Table 4.6.3-86: NZP-CSI-RS-ResourceId**

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

– *NZP-CSI-RS-ResourceSet*

**Table 4.6.3-87: NZP-CSI-RS-ResourceSet**

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
NZP-CSI-RS-ResourceSet ::= SEQUENCE {			
nzp-CSI-ResourceSetId	NZP-CSI-RS-ResourceSetId		
nzp-CSI-RS-Resources SEQUENCE (SIZE (1..maxNrofNZP-CSI-RS-ResourcesPerSet)) OF NZP-CSI-RS-ResourceId {	1 entry		
NZP-CSI-RS-ResourceId[1]	NZP-CSI-RS-ResourceId	entry 1	
}			
repetition	off		
aperiodicTriggeringOffset	Not present		TRS
trs-Info	Not present		
	true		TRS
}			

Condition	Explanation
TRS	Tracking-Reference Signal

– *NZP-CSI-RS-ResourceSetId*

**Table 4.6.3-88: NZP-CSI-RS-ResourceSetId**

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

– *P-Max*

**Table 4.6.3-89: P-Max**

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
P-Max	23		NR OR (EN-DC AND pc_dynamic PowerSharing)
	20		EN-DC AND (NOT pc_dynamic PowerSharing)

Condition	Explanation
NR	NR connected to 5GC
EN-DC	E-UTRA-NR Dual Connectivity with E-UTRA connected to EPC



– *PCI-List***Table 4.6.3-90: *PCI-List***

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

– *PCI-Range***Table 4.6.3-91: *PCI-Range***

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
PCI-Range ::= SEQUENCE {			
start	PhysCellId		
range	FFS		
}			

– *PCI-RangeElement***Table 4.6.3-92: *PCI-RangeElement***

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

– *PCI-RangeIndex***Table 4.6.3-93: *PCI-RangeIndex***

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

– *PCI-RangeIndexList***Table 4.6.3-94: *PCI-RangeIndexList***

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

## – PDCCH-Config

Table 4.6.3-95: PDCCH-Config

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
PDCCH-Config ::= SEQUENCE {			
controlResourceSetToAddModList	Not present		EN-DC
controlResourceSetToAddModList	1 entry		
SEQUENCE(SIZE (1..3)) OF ControlResourceSet {			
ControlResourceSet[1]	ControlResourceSet	entry 1	
}			
controlResourceSetToReleaseList	Not present		
searchSpacesToAddModList SEQUENCE(SIZE	1 entry		
(1..10)) OF SearchSpace {			
SearchSpace[1]	SearchSpace with condition USS	entry 1	
}			
searchSpacesToReleaseList	Not present		
downlinkPreemption	Not present		
tpc-PUSCH	Not present		
tpc-PUCCH	Not present		
tpc-SRS	Not present		
controlResourceSetToAddModListSizeExt-v1610	Not present		
controlResourceSetToReleaseListSizeExt-r16	Not present		
searchSpacesToAddModListExt-r16	Not present		
uplinkCancellation-r16	Not present		
monitoringCapabilityConfig-r16	Not present		
searchSpaceSwitchConfig-r16	Not present		
}			

*PDCCH-ConfigCommon*

**Table 4.6.3-96: PDCCH-ConfigCommon**

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
PDCCH-ConfigCommon ::= SEQUENCE {			
controlResourceSetZero	ControlResourceSetZero Not present	Initial BWP	SCell_Add InitialBWP_ SIB, BWP- Id1
commonControlResourceSet	ControlResourceSet Not present		EN-DC
searchSpaceZero	SearchSpaceZero Not present	Initial BWP	SCell_Add InitialBWP_ SIB, BWP- Id1
commonSearchSpaceList SEQUENCE (SIZE (1..4)) OF SearchSpace {	2 entries		
SearchSpace[1]	SearchSpace with condition CSS	entry 1	
SearchSpace[2]	SearchSpace with condition SISS	entry 2	
}			
commonSearchSpaceList SEQUENCE (SIZE (1..4)) OF SearchSpace {	1 entry		EN-DC
SearchSpace[1]	SearchSpace with condition CSS	entry 1	
}			
commonSearchSpaceList	Not present		SCell_Add
searchSpaceSIB1	0 Not present		EN-DC, SCell_Add
searchSpaceOtherSystemInformation	SearchSpaceId with condition SISS Not present		EN-DC, SCell_Add
pagingSearchSpace	0 Not present		EN-DC, SCell_Add
ra-SearchSpace	SearchSpaceId with condition CSS Not present		SCell_Add
firstPDCCH-MonitoringOccasionOfPO	Not present		
commonSearchSpaceListExt-r16	Not present		
}			

Condition	Explanation
EN-DC	E-UTRA-NR Dual Connectivity with E-UTRA connected to EPC
SCell_Add	Add SCell
InitialBWP_SIB	Configured via DownlinkConfigCommonSIB
BWP-Id1	Additional BWP 1

– *PDCCH-ConfigSIB1***Table 4.6.3-97: PDCCH-ConfigSIB1**

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

– *PDCCH-ServingCellConfig***Table 4.6.3-98: PDCCH-ServingCellConfig**

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
PDCCH-ServingCellConfig ::= SEQUENCE {			
slotFormatIndicator	Not present		
}			

– *PDCP-Config***Table 4.6.3-99: PDCP-Config**

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
PDCP-Config ::= SEQUENCE {			
drb SEQUENCE {			
discardTimer	infinity		
pdcp-SN-Size-UL	len18bits		
pdcp-SN-Size-DL	len18bits		
headerCompression CHOICE {			
notUsed	NULL		
}			
integrityProtection	Not present		
statusReportRequired	true	AM is default	
outOfOrderDelivery	Not present		UM
}			
drb	Not present		SRB, Split_SRB
moreThanOneRLC	Not present		
moreThanOneRLC SEQUENCE {			Split, Split_SRB, NR_split
primaryPath SEQUENCE {			
cellGroup	CellGroupId 0	MCG path	Split_SRB, NR_split
logicalChannel	LogicalChannelIdentity		
}			
ul-DataSplitThreshold	infinity Not present		Split_SRB
pdcp-Duplication	false Not present	one UL path	Split_SRB
}			
t-Reordering	Not present 80ms		UM
}			

Condition	Explanation
Split	More than one RLC
SRB	SRB
UM	RLC UM DRB
Split_SRB	SRB with more than one RLC
NR_split	MCG and split for NR-DC.

– *PDSCH-Config*

**Table 4.6.3-100: *PDSCH-Config***

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
PDSCH-Config ::= SEQUENCE {			
dataScramblingIdentityPDSCH	0		
dmrs-DownlinkForPDSCH-MappingTypeA CHOICE {			
setup	DMRS-DownlinkConfig		
}			
dmrs-DownlinkForPDSCH-MappingTypeB	Not present		
tci-StatesToAddModList SEQUENCE(SIZE (1.. maxNrofTCI-States)) OF TCI-State {	1 entry		
TCI-State[1]	TCI-State	entry 1	
}			
tci-StatesToReleaseList	Not present		
vrb-ToPRB-Interleaver	Not present		
resourceAllocation	resourceAllocationType1 resourceAllocationType0		Used_for_Type0
pdsch-TimeDomainAllocationList	Not present		
pdsch-AggregationFactor	Not present		
rateMatchPatternToAddModList	Not present		
rateMatchPatternToReleaseList	Not present		
rateMatchPatternGroup1	Not present		
rateMatchPatternGroup2	Not present		
rbg-Size	config1		
mcs-Table	Not present	qam64 per default	
maxNrofCodeWordsScheduledByDCI	Not present		
prb-BundlingType CHOICE {			
staticBundling SEQUENCE {			
bundleSize	wideband		
}			
}			
zp-CSI-RS-ResourceToAddModList	Not present		
zp-CSI-RS-ResourceToReleaseList	Not present		
aperiodic-ZP-CSI-RS-ResourceSetsToAddModList	Not present		
aperiodic-ZP-CSI-RS-ResourceSetsToReleaseList	Not present		
sp-ZP-CSI-RS-ResourceSetsToAddModList	Not present		
sp-ZP-CSI-RS-ResourceSetsToReleaseList	Not present		
p-ZP-CSI-RS-ResourceSet	Not present		
maxMIMO-Layers-r16	Not present		
minimumSchedulingOffsetK0-r16	Not present		
antennaPortsFieldPresenceDCI-1-2-r16	Not present		
aperiodicZP-CSI-RS-ResourceSetsToAddModListDCI-1-2-r16	Not present		
aperiodicZP-CSI-RS-ResourceSetsToReleaseListDCI-1-2-r16	Not present		
dmrs-DownlinkForPDSCH-MappingTypeA-DCI-1-2-r16	Not present		
dmrs-DownlinkForPDSCH-MappingTypeB-DCI-1-2-r16	Not present		
dmrs-SequenceInitializationDCI-1-2-r16	Not present		
harq-ProcessNumberSizeDCI-1-2-r16	Not present		
mcs-TableDCI-1-2-r16	Not present		
numberOfBitsForRV-DCI-1-2-r16	Not present		
pdsch-TimeDomainAllocationListDCI-1-2-r16	Not present		
prb-BundlingTypeDCI-1-2-r16	Not present		
priorityIndicatorDCI-1-2-r16	Not present		
rateMatchPatternGroup1DCI-1-2-r16	Not present		
rateMatchPatternGroup2DCI-1-2-r16	Not present		
resourceAllocationType1GranularityDCI-1-2-r16	Not present		
vrb-ToPRB-InterleaverDCI-1-2-r16	Not present		
referenceOfSLIVDCI-1-2-r16	Not present		
resourceAllocationDCI-1-2-r16	Not present		
priorityIndicatorDCI-1-1-r16	Not present		
dataScramblingIdentityPDSCH2-r16	Not present		
pdsch-TimeDomainAllocationList-r16	Not present		

repetitionSchemeConfig-r16	Not present		
repetitionSchemeConfig-v1630	Not present		
}			

Condition	Explanation
Used_for_Type0	Used for RF performance test cases

– *PDSCH-ConfigCommon*

**Table 4.6.3-101: PDSCH-ConfigCommon**

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
PDSCH-ConfigCommon ::= SEQUENCE {			
pdsch-TimeDomainAllocationList	PDSCH-TimeDomainResourceAllocationList		
}			

– *PDSCH-ServingCellConfig*

**Table 4.6.3-102: PDSCH-ServingCellConfig**

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
PDSCH-ServingCellConfig ::= SEQUENCE {			
codeBlockGroupTransmission	Not present		
xOverhead	Not present		
nrofHARQ-ProcessesForPDSCH	n4		(RF OR RRM) AND FDD
	Not present	Default value: 8 HARQ processes	
pucch-Cell	Not present		
maxMIMO-Layers	Not present		
processingType2Enabled	Not present		
pdsch-CodeBlockGroupTransmissionList-r16	Not present		
}			



*PDSCH-TimeDomainResourceAllocationList*

**Table 4.6.3-103: PDSCH-TimeDomainResourceAllocationList**

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
PDSCH-TimeDomainResourceAllocationList ::= SEQUENCE(SIZE(1..maxNrofDL-Allocations)) OF PDSCH-TimeDomainResourceAllocation {	2 entries		FR1
PDSCH-TimeDomainResourceAllocation[1]		entry 1	
SEQUENCE {			
k0	Not present		
mappingType	typeA		
startSymbolAndLength	53	Start symbol(S)=2, Length(L)=12	
}			
PDSCH-TimeDomainResourceAllocation[2]		entry 2	
SEQUENCE {			
k0	Not present		
mappingType	typeA		
startSymbolAndLength	72	S=2, L=6	
}			
}			
PDSCH-TimeDomainResourceAllocationList SEQUENCE (SIZE(1..maxNrofDL-Allocations)) OF PDSCH-TimeDomainResourceAllocation {	1 entry		FR2
PDSCH-TimeDomainResourceAllocation[1]		entry 1	
SEQUENCE {			
k0	Not present		
mappingType	typeA		
startSymbolAndLength	53	S=2, L=12	
}			
}			

*PHR-Config*

**Table 4.6.3-104: PHR-Config**

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
PHR-Config ::= CHOICE {			
setup SEQUENCE {			
phr-PeriodicTimer	sf10		
phr-ProhibitTimer	sf0		
phr-Tx-PowerFactorChange	dB1		
multiplePHR	false		
	true		MR-DC OR NR-CA
dummy	false		
Phr-Type2OtherCell	false		
phr-ModeOtherCG	real		
}			
}			

Condition	Explanation
MR-DC	EN-DC, NGEN-DC, NE-DC or NR-DC.
NR-CA	UL CA for NR

– *PhysCellId*

**Table 4.6.3-105: *PhysCellId***

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
PhysCellId	Set according to table 4.4.2-2 for the NR Cell.		

– *PhysicalCellGroupConfig*

**Table 4.6.3-106: *PhysicalCellGroupConfig***

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
PhysicalCellGroupConfig ::= SEQUENCE {			
harq-ACK-SpatialBundlingPUCCH	Not present		
harq-ACK-SpatialBundlingPUSCH	Not present		
p-NR-FR1	P-Max		
pdsch-HARQ-ACK-Codebook	dynamic		
tpc-SRS-RNTI	Not present		
tpc-PUCCH-RNTI	Not present		
tpc-PUSCH-RNTI	Not present		
sp-CSI-RNTI	Not present		
cs-RNTI	Not present		
dcp-Config-r16	Not present		
dcp-Config-r16 CHOICE {			DCP
setup SEQUENCE {			
ps-RNTI-r16	RNTI-Value		
ps-Offset-r16	120		
sizeDCI-2-6-r16	6		
ps-PositionDCI-2-6-r16	0		
ps-WakeUp-r16	Not present		
ps-TransmitPeriodicL1-RSRP-r16	Not present		
ps-TransmitOtherPeriodicCSI-r16	Not present		
}			
}			
harq-ACK-SpatialBundlingPUCCH-secondaryPUCCHgroup-r16	Not present		
harq-ACK-SpatialBundlingPUSCH-secondaryPUCCHgroup-r16	Not present		
pdsch-HARQ-ACK-Codebook-secondaryPUCCHgroup-r16	Not present		
p-NR-FR2-r16	Not present		
p-UE-FR2-r16	Not present		
nr-dc-PCmode-FR1-r16	Not present		
nr-dc-PCmode-FR2-r16	Not present		
pdsch-HARQ-ACK-Codebook-r16	Not present		
nfi-TotalDAI-Included-r16	Not present		
ul-TotalDAI-Included-r16	Not present		
pdsch-HARQ-ACK-OneShotFeedback-r16	Not present		
pdsch-HARQ-ACK-OneShotFeedbackNDI-r16	Not present		
pdsch-HARQ-ACK-OneShotFeedbackCBG-r16	Not present		
downlinkAssignmentIndexDCI-0-2-r16	Not present		
downlinkAssignmentIndexDCI-1-2-r16	Not present		
pdsch-HARQ-ACK-CodebookList-r16	Not present		
ackNackFeedbackMode-r16	Not present		
pdcch-BlindDetectionCA-CombIndicator-r16	Not present		
pdcch-BlindDetection2-r16	Not present		
pdcch-BlindDetection3-r16	Not present		
bdFactorR-r16	Not present		
}			

Condition	Explanation
DCP	This condition applies when DCP is configured

– *PLMN-Identity*

**Table 4.6.3-107: *PLMN-Identity***

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

– *PLMN-IdentityInfoList*

**Table 4.6.3-108: *PLMN-IdentityInfoList***

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
PLMN-IdentityInfoList ::= SEQUENCE (SIZE (1..maxPLMN)) OF PLMN-IdentityInfo {	1 entry		
PLMN-IdentityInfo[1] SEQUENCE {		entry 1	
plmn-IdentityList SEQUENCE (SIZE (1..maxPLMN)) OF PLMN-Identity {	1 entry		
PLMN-Identity[1]	PLMN-Identity	entry 1	
}			
trackingAreaCode	TrackingAreaCode		
ranac	RAN-AreaCode		
cellIdentity	CellIdentity		
cellReservedForOperatorUse	notReserved		
}			
}			

– *PLMN-IdentityList2*

**Table 4.6.3-108A: *PLMN-IdentityList2***

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
PLMN-IdentityList2-r16 ::= SEQUENCE {			
FFS			
}			

– *PRB-Id***Table 4.6.3-109: PRB-Id**

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
PRB-Id	0 Set to value of the <i>L_RBs</i> - <i>nrofPRBs</i> where <i>L_RBs</i> is found in Table 4.3.1.0D-1 or Table 4.3.1.0D-2 for the bandwidth and SCS configured and <i>nrofPRBs</i> is defined for the corresponding <i>PUCCH-Resource</i> (1 otherwise).		secondHopPRB

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

– *PTRS-DownlinkConfig***Table 4.6.3-110: PTRS-DownlinkConfig**

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
PTRS-DownlinkConfig ::= SEQUENCE {			
frequencyDensity	Not present		
timeDensity	Not present		
epre-Ratio	0		
resourceElementOffset	Not present		
}			

– *PTRS-UplinkConfig***Table 4.6.3-111: PTRS-UplinkConfig**

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
PTRS-UplinkConfig ::= SEQUENCE {			
transformPrecoderDisabled SEQUENCE {			
frequencyDensity	Not present		
timeDensity	Not present		
maxNrofPorts	n1		
resourceElementOffset	Not present		
ptrs-Power	p00		
}			
transformPrecoderEnabled SEQUENCE {			
sampleDensity SEQUENCE (SIZE (5)) OF INTEGER {	5 entries		
INTEGER[1]	1	entry 1	
INTEGER[2]	8	entry 2	
INTEGER[3]	32	entry 3	
INTEGER[4]	32	entry 4	
INTEGER[5]	108	entry 5	
}			
timeDensityTransformPrecoding	Not present		
}			
}			

– *PUCCH-Config*

**Table 4.6.3-112: *PUCCH-Config***

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
PUCCH-Config ::= SEQUENCE {			
resourceSetToAddModList SEQUENCE (SIZE (1..maxNrofPUCCH-ResourceSets)) OF PUCCH-ResourceSet {	2 entries		
PUCCH-ResourceSet[1] SEQUENCE {		entry 1	
pucch-ResourceSetId	0		
resourceList SEQUENCE (SIZE (0..maxNrofPUCCH-ResourcesPerSet)) OF PUCCH-ResourceId {	8 entries		
PUCCH-ResourceId[1]	0	entry 1	
PUCCH-ResourceId[2]	1	entry 2	
PUCCH-ResourceId[3]	2	entry 3	
PUCCH-ResourceId[4]	3	entry 4	
PUCCH-ResourceId[5]	4	entry 5	
PUCCH-ResourceId[6]	5	entry 6	
PUCCH-ResourceId[7]	6	entry 7	
PUCCH-ResourceId[8]	7	entry 8	
}			
maxPayloadSize	Not present		
}			
PUCCH-ResourceSet[2] SEQUENCE {		entry 2	
pucch-ResourceSetId	1		
resourceList SEQUENCE (SIZE (8..maxNrofPUCCH-ResourcesPerSet)) OF PUCCH-ResourceId {	8 entries		
PUCCH-ResourceId[1]	8	entry 1	
PUCCH-ResourceId[2]	9	entry 2	
PUCCH-ResourceId[3]	10	entry 3	
PUCCH-ResourceId[4]	11	entry 4	
PUCCH-ResourceId[5]	12	entry 5	
PUCCH-ResourceId[6]	13	entry 6	
PUCCH-ResourceId[7]	14	entry 7	
PUCCH-ResourceId[8]	15	entry 8	
}			
maxPayloadSize	Not present		
}			
}			
resourceSetToReleaseList	Not present		
resourceToAddModList SEQUENCE (SIZE (1..maxNrofPUCCH-Resources)) OF PUCCH-Resource {	16 entries		
PUCCH-Resource[1] SEQUENCE {		entry 1	
pucch-ResourceId	0		
startingPRB	PRB-Id		
intraSlotFrequencyHopping	enabled		
secondHopPRB	PRB-Id with condition secondHopPRB		
format CHOICE {			
format0 SEQUENCE {			
initialCyclicShift	0		
nrofSymbols	2		
startingSymbolIndex	0		
}			
}			
}			
PUCCH-Resource[2] SEQUENCE {		entry 2	
pucch-ResourceId	1		
startingPRB	PRB-Id		
intraSlotFrequencyHopping	enabled		
secondHopPRB	PRB-Id with condition secondHopPRB		
format CHOICE {			
format0 SEQUENCE {			
initialCyclicShift	0		

nrofSymbols	2		
startingSymbolIndex	2		
}			
}			
PUCCH-Resource[3] SEQUENCE {		entry 3	
pucch-ResourceId	2		
startingPRB	PRB-Id		
intraSlotFrequencyHopping	enabled		
secondHopPRB	PRB-Id with condition secondHopPRB		
format CHOICE {			
format0 SEQUENCE {			
initialCyclicShift	0		
nrofSymbols	2		
startingSymbolIndex	4		
}			
}			
}			
PUCCH-Resource[4] SEQUENCE {		entry 4	
pucch-ResourceId	3		
startingPRB	PRB-Id		
intraSlotFrequencyHopping	enabled		
secondHopPRB	PRB-Id with condition secondHopPRB		
format CHOICE {			
format0 SEQUENCE {			
initialCyclicShift	0		
nrofSymbols	2		
startingSymbolIndex	6		
}			
}			
}			
PUCCH-Resource[5] SEQUENCE {		entry 5	
pucch-ResourceId	4		
startingPRB	PRB-Id		
intraSlotFrequencyHopping	enabled		
secondHopPRB	PRB-Id with condition secondHopPRB		
format CHOICE {			
format0 SEQUENCE {			
initialCyclicShift	0		
nrofSymbols	2		
startingSymbolIndex	8		
}			
}			
}			
PUCCH-Resource[6] SEQUENCE {		entry 6	
pucch-ResourceId	5		
startingPRB	PRB-Id		
intraSlotFrequencyHopping	enabled		
secondHopPRB	PRB-Id with condition secondHopPRB		
format CHOICE {			
format0 SEQUENCE {			
initialCyclicShift	0		
nrofSymbols	2		
startingSymbolIndex	10		
}			
}			
}			
PUCCH-Resource[7] SEQUENCE {		entry 7	
pucch-ResourceId	6		
startingPRB	PRB-Id		
intraSlotFrequencyHopping	enabled		

secondHopPRB	PRB-Id with condition secondHopPRB		
format CHOICE {			
format0 SEQUENCE {			
initialCyclicShift	0		
nrofSymbols	2		
startingSymbolIndex	12		
}			
}			
}			
PUCCH-Resource[8] SEQUENCE {		entry 8	
pucch-ResourceId	7		
startingPRB	PRB-Id		
intraSlotFrequencyHopping	enabled		
secondHopPRB	PRB-Id with condition secondHopPRB		
format CHOICE {			
format1 SEQUENCE {			
initialCyclicShift	0		
nrofSymbols	14		
startingSymbolIndex	0		
timeDomainOCC	0		
}			
}			
}			
PUCCH-Resource[9] SEQUENCE {		entry 9	
pucch-ResourceId	8		
startingPRB	PRB-Id		
intraSlotFrequencyHopping	enabled		
secondHopPRB	PRB-Id with condition secondHopPRB		
format CHOICE {			
format2 SEQUENCE {			
nrofPRBs	6		
nrofSymbols	2		
startingSymbolIndex	0		
}			
}			
}			
PUCCH-Resource[10] SEQUENCE {		entry 10	
pucch-ResourceId	9		
startingPRB	PRB-Id		
intraSlotFrequencyHopping	enabled		
secondHopPRB	PRB-Id with condition secondHopPRB		
format CHOICE {			
format2 SEQUENCE {			
nrofPRBs	6		
nrofSymbols	2		
startingSymbolIndex	2		
}			
}			
}			
PUCCH-Resource[11] SEQUENCE {		entry 11	
pucch-ResourceId	10		
startingPRB	PRB-Id		
intraSlotFrequencyHopping	enabled		
secondHopPRB	PRB-Id with condition secondHopPRB		
format CHOICE {			
format2 SEQUENCE {			
nrofPRBs	6		
nrofSymbols	2		
startingSymbolIndex	4		
}			
}			
}			



}			
PUCCH-Resource[12] SEQUENCE {		entry 12	
pucch-ResourceId	11		
startingPRB	PRB-Id		
intraSlotFrequencyHopping	enabled		
secondHopPRB	PRB-Id with condition secondHopPRB		
format CHOICE {			
format2 SEQUENCE {			
nrofPRBs	6		
nrofSymbols	2		
startingSymbolIndex	6		
}			
}			
}			
PUCCH-Resource[13] SEQUENCE {		entry 13	
pucch-ResourceId	12		
startingPRB	PRB-Id		
intraSlotFrequencyHopping	enabled		
secondHopPRB	PRB-Id with condition secondHopPRB		
format CHOICE {			
format2 SEQUENCE {			
nrofPRB	6		
nrofSymbols	2		
startingSymbolIndex	8		
}			
}			
}			
PUCCH-Resource[14] SEQUENCE {		entry 14	
pucch-ResourceId	13		
startingPRB	PRB-Id		
intraSlotFrequencyHopping	enabled		
secondHopPRB	PRB-Id with condition secondHopPRB		
format CHOICE {			
format2 SEQUENCE {			
nrofPRBsinitial	6		
nrofSymbols	2		
startingSymbolIndex	10		
}			
}			
}			
PUCCH-Resource[15] SEQUENCE {		entry 15	
pucch-ResourceId	14		
startingPRB	PRB-Id		
intraSlotFrequencyHopping	enabled		
secondHopPRB	PRB-Id with condition secondHopPRB		
format CHOICE {			
format2 SEQUENCE {			
nrofPRB	6		
nrofSymbols	2		
startingSymbolIndex	12		
}			
}			
}			
PUCCH-Resource[16] SEQUENCE {		entry 16	
pucch-ResourceId	15		
startingPRB	PRB-Id		
intraSlotFrequencyHopping	enabled		
secondHopPRB	PRB-Id with condition secondHopPRB		
format CHOICE {			
format3 SEQUENCE {			
nrofPRBs	1		

nrofSymbols	14		
startingSymbolIndex	0		
}			
}			
}			
resourceToReleaseList	Not present		
format1 CHOICE {			
setup SEQUENCE {			
interslotFrequencyHopping	enabled		
additionalDMRS	Not Present		
maxCodeRate	Not Present		
nrofSlots	Not present		
pi2BPSK	Not present		
simultaneousHARQ-ACK-CSI	Not Present		
}			
}			
format2 CHOICE {			
setup SEQUENCE {			
interslotFrequencyHopping	Not Present		
additionalDMRS	Not Present		
maxCodeRate	zeroDot25		
nrofSlots	Not present		
pi2BPSK	Not present		
simultaneousHARQ-ACK-CSI	True		
}			
}			
format3 CHOICE {			
setup SEQUENCE {			
interslotFrequencyHopping	enabled		
additionalDMRS	True		
maxCodeRate	zeroDot25		
nrofSlots	Not present		
pi2BPSK	Not present		
simultaneousHARQ-ACK-CSI	true		
}			
}			
format4	Not present		
schedulingRequestResourceToAddModList	1 entry		
SEQUENCE (SIZE (1..maxNrofSR-Resources)) OF			
SchedulingRequestResourceConfig {			
SchedulingRequestResourceConfig[1]	SchedulingRequestResourceConfig	entry 1	
}			
schedulingRequestResourceToReleaseList	Not present		
multi-CSI-PUCCH-ResourceList	Not present		
dl-DataToUL-ACK SEQUENCE (SIZE (1..8)) OF	8 entries		
INTEGER {			
INTEGER[1]	2	entry 1	
INTEGER[2]	3	entry 2	
INTEGER[3]	4	entry 3	
INTEGER[4]	5	entry 4	
INTEGER[5]	6	entry 5	
INTEGER[6]	7	entry 6	
INTEGER[7]	8	entry 7	
INTEGER[8]	9	entry 8	
}			
dl-DataToUL-ACK	Not present		Short_DCI
spatialRelationInfoToAddModList	Not present		
spatialRelationInfoToReleaseList	Not present		
pucch-PowerControl	PUCCH-PowerControl		
resourceToAddModListExt-r16	Not present		
dl-DataToUL-ACK-r16	Not present		
ul-AccessConfigListDCI-1-1-r16	Not present		
subslotLengthForPUCCH-r16	Not present		
dl-DataToUL-ACK-DCI-1-2-r16	Not present		

numberOfBitsForPUCCH-ResourceIndicatorDCI-1-2-r16	Not present		
dmrs-UplinkTransformPrecodingPUCCH-r16	Not present		
spatialRelationInfoToAddModListSizeExt-v1610	Not present		
spatialRelationInfoToReleaseListSizeExt-v1610	Not present		
spatialRelationInfoToAddModListExt-v1610	Not present		
spatialRelationInfoToReleaseListExt-v1610	Not present		
resourceGroupToAddModList-r16	Not present		
resourceGroupToReleaseList-r16	Not present		
sps-PUCCH-AN-List-r16	Not present		
schedulingRequestResourceToAddModListExt-v1610	Not present		
}			

Condition	Explanation
Short_DCI	Used in test scenarios requiring DCI formats 0-0 and 1-0 on USS

– *PUCCH-ConfigCommon*

**Table 4.6.3-113: PUCCH-ConfigCommon**

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
PUCCH-ConfigCommon ::= SEQUENCE {			
pucch-ResourceCommon	0		
pucch-GroupHopping	enable		
hoppingId	Not present		
p0-nominal	-90		
}			

– *PUCCH-ConfigurationList*

**Table 4.6.3-113A: PUCCH-ConfigurationList**

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
PUCCH-ConfigurationList-r16 ::= SEQUENCE {			
FFS			
}			

– *PUCCH-PathlossReferenceRS-Id*

**Table 4.6.3-114: PUCCH-PathlossReferenceRS-Id**

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

– *PUCCH-PowerControl***Table 4.6.3-115: PUCCH-PowerControl**

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
PUCCH-PowerControl ::= SEQUENCE {			
deltaF-PUCCH-f0	0		
deltaF-PUCCH-f1	0		
deltaF-PUCCH-f2	0		
deltaF-PUCCH-f3	0		
deltaF-PUCCH-f4	0		
p0-Set	Not present		
pathlossReferenceRSs SEQUENCE (SIZE (1..maxNrofPUCCH-PathlossReferenceRSs)) OF PUCCH-PathlossReferenceRS {	1 entry		
PUCCH-PathlossReferenceRS[1] SEQUENCE {		entry 1	
pucch-PathlossReferenceRS-Id	PUCCH-PathlossReferenceRS-Id		
referenceSignal CHOICE {			
ssb-Index	SSB-Index		
}			
}			
twoPUCCH-PC-AdjustmentStates	Not present		
}			

– *PUCCH-SpatialRelationInfo***Table 4.6.3-116: PUCCH-SpatialRelationInfo**

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
PUCCH-SpatialRelationInfo ::= SEQUENCE {			
pucch-SpatialRelationInfoId	1		
servingCellId	ServCellIndex		
referenceSignal CHOICE {			
ssb-Index	SSB-Index		
}			
pucch-PathlossReferenceRS-Id	PUCCH-PathlossReferenceRS-Id		
p0-PUCCH-Id	1		
closedLoopIndex	i0		
}			

– *PUCCH-SpatialRelationInfo-Id***Table 4.6.3-116A: PUCCH-SpatialRelationInfo-Id**

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

– *PUCCH-TPC-CommandConfig*

**Table 4.6.3-117: *PUCCH-TPC-CommandConfig***

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

– *PUSCH-Config*

**Table 4.6.3-118: *PUSCH-Config***

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
PUSCH-Config ::= SEQUENCE {			
dataScramblingIdentityPUSCH	Not present		
txConfig	Not Present		Short_DCI
codebook			
dmrs-UplinkForPUSCH-MappingTypeA CHOICE {			
setup	DMRS-UplinkConfig		
}			
dmrs-UplinkForPUSCH-MappingTypeB	Not present		
pusch-PowerControl	PUSCH-PowerControl		
frequencyHopping	Not present		
frequencyHoppingOffsetLists	Not present		
resourceAllocation	resourceAllocationType1		
pusch-TimeDomainAllocationList	Not present		
pusch-AggregationFactor	Not present		
mcs-Table	Not present		
mcs-TableTransformPrecoder	Not present		
transformPrecoder	enabled		TRANSFORM_P RECORDER_ENABL ED
	Not present	TRANSFORM_P RECORDER_DISA BLED	
codebookSubset	Not present		Short_DCI
nonCoherent			
maxRank	Not present		Short_DCI
1			
2			2TX_UL_MI MO
rbg-Size	Not present		
uci-OnPUSCH CHOICE {			
setup SEQUENCE {			
betaOffsets CHOICE {			
semiStatic	BetaOffsets		
}			
scaling	f1		
}			
}			
tp-pi2BPSK	Not present		
minimumSchedulingOffsetK2-r16	Not present		
ul-AccessConfigListDCI-0-1-r16	Not present		
harq-ProcessNumberSizeDCI-0-2-r16	Not present		
dmrs-SequenceInitializationDCI-0-2-r1	Not present		
numberOfBitsForRV-DCI-0-2-r16	Not present		
antennaPortsFieldPresenceDCI-0-2-r16	Not present		
dmrs-UplinkForPUSCH-MappingTypeA-DCI-0-2-r16	Not present		
dmrs-UplinkForPUSCH-MappingTypeB-DCI-0-2-r16	Not present		
frequencyHoppingDCI-0-2-r16	Not present		
frequencyHoppingOffsetListsDCI-0-2-r16	Not present		
codebookSubsetDCI-0-2-r16	Not present		
invalidSymbolPatternIndicatorDCI-0-2-r16	Not present		
maxRankDCI-0-2-r16	Not present		
mcs-TableDCI-0-2-r16	Not present		
mcs-TableTransformPrecoderDCI-0-2-r16	Not present		
priorityIndicatorDCI-0-2-r16	Not present		
pusch-RepTypeIndicatorDCI-0-2-r16	Not present		
resourceAllocationDCI-0-2-r16	Not present		
resourceAllocationType1GranularityDCI-0-2-r16	Not present		
uci-OnPUSCH-ListDCI-0-2-r16	Not present		
pusch-TimeDomainAllocationListDCI-0-2-r16	Not present		
pusch-TimeDomainAllocationListDCI-0-1-r16	Not present		
invalidSymbolPatternIndicatorDCI-0-1-r16	Not present		
priorityIndicatorDCI-0-1-r16	Not present		
pusch-RepTypeIndicatorDCI-0-1-r16	Not present		

frequencyHoppingDCI-0-1-r16	Not present		
uci-OnPUSCH-ListDCI-0-1-r16	Not present		
invalidSymbolPattern-r16	Not present		
pusch-PowerControl-v1610	Not present		
ul-FullPowerTransmission-r16	Not present		
pusch-TimeDomainAllocationListForMultiPUSCH-r16	Not present		
numberOfInvalidSymbolsForDL-UL-Switching-r16	Not present		
}			

Condition	Explanation
TRANSFORM_PRECODER_ENABLED	Transform precoding is enabled (DFT-s-OFDM UL waveform is configured)
2TX_UL_MIMO	UL-MIMO test cases with 2 Tx antenna ports
Short_DCI	Used in test scenarios requiring DCI formats 0-0 and 1-0 on USS

– *PUSCH-ConfigCommon*

**Table 4.6.3-119: PUSCH-ConfigCommon**

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
PUSCH-ConfigCommon ::= SEQUENCE {			
groupHoppingEnabledTransformPrecoding	Not present		
pusch-TimeDomainAllocationList	PUSCH-TimeDomainResourceAllocationList		
msg3-DeltaPreamble	1		
p0-NominalWithGrant	-90		
}			



– *PUSCH-PowerControl*Table 4.6.3-120: *PUSCH-PowerControl*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
PUSCH-PowerControl ::= SEQUENCE {			
tpc-Accumulation	Not present		
msg3-Alpha	alpha08		
p0-NominalWithoutGrant	-90		
p0-AlphaSets SEQUENCE (SIZE (1..maxNrofP0-PUSCH-AlphaSets)) OF P0-PUSCH-AlphaSet {	1 entry		
P0-PUSCH-AlphaSet[1] SEQUENCE {		entry 1	
p0-PUSCH-AlphaSetId	0		
p0	0		
alpha	alpha08		
}			
}			
pathlossReferenceRSToAddModList SEQUENCE (SIZE (1..maxNrofPUSCH-PathlossReferenceRSs)) OF PUSCH-PathlossReferenceRS {	1 entry		
PUSCH-PathlossReferenceRS[1] SEQUENCE {		entry 1	
pusch-PathlossReferenceRS-Id	0		
referenceSignal CHOICE{			
ssb-Index	SSB-Index		
}			
}			
}			
pathlossReferenceRSToReleaseList	Not present		
twoPUSCH-PC-AdjustmentStates	Not present		
deltaMCS	Not present		
sri-PUSCH-MappingToAddModList SEQUENCE (SIZE (1..maxNrofSRI-PUSCH-Mappings)) OF SRI-PUSCH-PowerControl {	1 entry		
SRI-PUSCH-PowerControl[1] SEQUENCE {		entry 1	
sri-PUSCH-PowerControlId	0		
sri-PUSCH-PathlossReferenceRS-Id	0		
sri-P0-PUSCH-AlphaSetId	0		
sri-PUSCH-ClosedLoopIndex	i0		
}			
}			
sri-PUSCH-MappingToReleaseList	Not present		
}			

– *PUSCH-ServingCellConfig*Table 4.6.3-121: *PUSCH-ServingCellConfig*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
PUSCH-ServingCellConfig ::= SEQUENCE {			
codeBlockGroupTransmission	Not present		
rateMatching	Not present		
xOverhead	Not present		
maxMIMO-Layers	Not present		
processingType2Enabled	Not present		
maxMIMO-LayersDCI-0-2-r16	Not present		
}			

– *PUSCH-TimeDomainResourceAllocationList*

**Table 4.6.3-122: *PUSCH-TimeDomainResourceAllocationList***

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
PUSCH-TimeDomainResourceAllocationList ::= SEQUENCE (SIZE(1..maxNrofUL-Allocations)) OF PUSCH-TimeDomainResourceAllocation {	2 entries		
PUSCH-TimeDomainResourceAllocation[1]		entry 1	
SEQUENCE {			
k2	4		
	2		(RF OR RRM) AND (FR1 AND (SCS15 OR SCS30)) OR (FR2 AND SCS60 AND (DL OR RRM))
	3		((RF AND DL) OR RRM) AND FR2 AND SCS120
	6		((RF AND DL) OR RRM) AND FR1 AND SCS60
	4		RF AND FR2 AND SCS60 AND UL
	8		RF_FR2_12 0kHz_UL
mappingType	typeA		
startSymbolAndLength	27	Start symbol(S)=0, Length(L)=14	
}			
PUSCH-TimeDomainResourceAllocation[2]		entry 2 addressed by Msg3 PUSCH time resource allocation field of the Random Access Response acc. to TS 38.213 [22] Table 8.2-1.	
SEQUENCE {			
k2	Not present		
	2	K2+ Δ=4 acc. to TS 38.214 [21] Table 6.1.2.1.1-5 (NOTE 1)	FR1 AND SCS15
	6	K2+ Δ=9 acc. to TS 38.214 [21] Table 6.1.2.1.1-5 (NOTE 1)	FR1 AND SCS30
	3	K2+ Δ=9 acc. to TS 38.214 [21] Table 6.1.2.1.1-5 (NOTE 1)	FR2
mappingType	typeA		
startSymbolAndLength	27	Start symbol(S)=0, Length(L)=14	
}			
}			

NOTE 1: Values are chosen so that first slot of a TDD-UL-DL slot configuration period can be used for the Random Access Response and the last slot (of the same or another period) for the corresponding Msg3.

Condition	Explanation
DL	RF Rx measurements.
UL	RF UL measurements.

– *PUSCH-TPC-CommandConfig*

**Table 4.6.3-123: PUSCH-TPC-CommandConfig**

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
PUSCH-TPC-CommandConfig ::= SEQUENCE {			
tpc-Index	Not present		
tpc-IndexSUL	Not present		
targetCell	Not present		
}			

– *Q-OffsetRange*

**Table 4.6.3-124: Q-OffsetRange**

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

– *Q-QualMin*

**Table 4.6.3-125: Q-QualMin**

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

– *Q-RxLevMin*

**Table 4.6.3-126: Q-RxLevMin**

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

– *QuantityConfig*

**Table 4.6.3-127: *QuantityConfig***

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
QuantityConfig ::= SEQUENCE {			
quantityConfigNR-List SEQUENCE (SIZE (1..maxNrofQuantityConfig)) OF QuantityConfigNR {	2 entries		
QuantityConfigNR[1] SEQUENCE {		entry 1	
quantityConfigCell SEQUENCE {			
ssb-FilterConfig SEQUENCE {			
filterCoefficientRSRP	FilterCoefficient		
filterCoefficientRSRQ	FilterCoefficient		
filterCoefficientRS-SINR	FilterCoefficient		
}			
csi-RS-FilterConfig SEQUENCE {			
filterCoefficientRSRP	FilterCoefficient		
filterCoefficientRSRQ	FilterCoefficient		
filterCoefficientRS-SINR	FilterCoefficient		
}			
}			
}			
quantityConfigRS-Index SEQUENCE {			
ssb-FilterConfig SEQUENCE {			
filterCoefficientRSRP	FilterCoefficient		
filterCoefficientRSRQ	FilterCoefficient		
filterCoefficientRS-SINR	FilterCoefficient		
}			
csi-RS-FilterConfig SEQUENCE {			
filterCoefficientRSRP	FilterCoefficient		
filterCoefficientRSRQ	FilterCoefficient		
filterCoefficientRS-SINR	FilterCoefficient		
}			
}			
QuantityConfigNR[2] SEQUENCE {		entry 2	
quantityConfigCell SEQUENCE {			
ssb-FilterConfig SEQUENCE {			
filterCoefficientRSRP	FilterCoefficient		
filterCoefficientRSRQ	FilterCoefficient		
filterCoefficientRS-SINR	FilterCoefficient		
}			
csi-RS-FilterConfig SEQUENCE {			
filterCoefficientRSRP	FilterCoefficient		
filterCoefficientRSRQ	FilterCoefficient		
filterCoefficientRS-SINR	FilterCoefficient		
}			
}			
}			
quantityConfigRS-Index SEQUENCE {			
ssb-FilterConfig SEQUENCE {			
filterCoefficientRSRP	FilterCoefficient		
filterCoefficientRSRQ	FilterCoefficient		
filterCoefficientRS-SINR	FilterCoefficient		
}			
csi-RS-FilterConfig SEQUENCE {			
filterCoefficientRSRP	FilterCoefficient		
filterCoefficientRSRQ	FilterCoefficient		
filterCoefficientRS-SINR	FilterCoefficient		
}			
}			
quantityConfigEUTRA	Not present		
quantityConfigEUTRA SEQUENCE {			INTER-RAT
filterCoefficientRSRP	FilterCoefficient		
filterCoefficientRSRQ	FilterCoefficient		
filterCoefficientRS-SINR	FilterCoefficient		
}			

quantityConfigUTRA-FDD-r16	Not present		INTER-RAT_UTRA
quantityConfigUTRA-FDD-r16 SEQUENCE {			
filterCoefficientRSCP-r16	FilterCoefficient		
filterCoefficientEcNO-r16	FilterCoefficient		
}			
quantityConfigCLI-r16	Not present		
}			

Condition	Explanation
INTER-RAT	Configuration for EUTRA inter-RAT measurements
INTER-RAT_UTRA	Configuration for UTRA inter-RAT measurements

– *RACH-ConfigCommon*

**Table 4.6.3-128: RACH-ConfigCommon**

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
RACH-ConfigCommon ::= SEQUENCE {			
rach-ConfigGeneric	RACH-ConfigGeneric		
totalNumberOfRA-Preambles	Not present		
ssb-perRACH-OccasionAndCB-PreamblesPerSSB CHOICE {			
one	n8		FR1
	n4		FR2
}			
groupBconfigured	Not present		
ra-ContentionResolutionTimer	sf64		
rsrp-ThresholdSSB	RSRP-Range		
rsrp-ThresholdSSB-SUL	Not present		
	RSRP-Range		SUL
prach-RootSequenceIndex CHOICE {			
l139	Set according to table 4.4.2-2 for the NR Cell.		
}			
msg1-SubcarrierSpacing	SubcarrierSpacing		
restrictedSetConfig	unrestrictedSet		
msg3-transformPrecoder	Not present	transform precoding is disabled for Msg3 PUSCH transmission and any PUSCH transmission scheduled with DCI format 0_0	
}			

Condition	Explanation
SUL	Supplementary uplink

*RACH-ConfigCommonTwoStepRA*

**Table 4.6.3-128A: RACH-ConfigCommonTwoStepRA**

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
RACH-ConfigCommonTwoStepRA-r16 ::= SEQUENCE {			
rach-ConfigGenericTwoStepRA-r16	RACH-ConfigGenericTwoStepRA		
msgA-TotalNumberOfRA-Preambles-r16	Not present		
msgA-SSB-PerRACH-OccasionAndCB-PreamblesPerSSB-r16 CHOICE {	Not present		
one	n8		FR1
}	n4		FR2
}			
msgA-CB-PreamblesPerSSB-PerSharedRO-r16	Not present		
msgA-SSB-SharedRO-MaskIndex-r16	Not present		
groupB-ConfiguredTwoStepRA-r16	Not present		
msgA-PRACH-RootSequenceIndex-r16 CHOICE {}	Not present		
msgA-TransMax-r16	N8		
msgA-RSRP-Threshold-r16	RSRP-Range		
msgA-RSRP-ThresholdSSB-r16	RSRP-Range		
msgA-SubcarrierSpacing-r16	Not present		
msgA-RestrictedSetConfig-r16	Not present		
ra-PrioritizationForAccessIdentityTwoStep-r16 SEQUENCE {			
ra-Prioritization-r16	RA-Prioritization		
ra-PrioritizationForAI-r16	'10'B		
}			
ra-ContentionResolutionTimer-r16	sf32		
}			

*RACH-ConfigDedicated*

**Table 4.6.3-129: RACH-ConfigDedicated**

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
RACH-ConfigDedicated ::= SEQUENCE {			
cfra SEQUENCE {			
occasions SEQUENCE {			
rach-ConfigGeneric	RACH-ConfigGeneric		
ssb-perRACH-Occasion	one		
}			
resources CHOICE {			
ssb SEQUENCE {			
ssb-ResourceList SEQUENCE (SIZE(1..maxRA-SSB-Resources)) OF CFRA-SSB-Resource {	1 entry		
CFRA-SSB-Resource[1] SEQUENCE {		entry 1	
ssb	SSB-Index		
ra-PreambleIndex	8		
}			
}			
ra-ssb-OccasionMaskIndex	0		
}			
}			
ra-Prioritization	Not present		
}			



– *RACH-ConfigGeneric***Table 4.6.3-130: RACH-ConfigGeneric**

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
RACH-ConfigGeneric ::= SEQUENCE {			
prach-ConfigurationIndex	160		FR1
	149		FR2
msg1-FDM	four		FR1
	one		FR2
msg1-FrequencyStart	0		
zeroCorrelationZoneConfig	15		
preambleReceivedTargetPower	-118		
preambleTransMax	n7		
powerRampingStep	dB4		
ra-ResponseWindow	sl20		
	sl10		FR1 AND SCS15
}			

– *RACH-ConfigGenericTwoStepRA***Table 4.6.3-130A: RACH-ConfigGenericTwoStepRA**

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
RACH-ConfigGenericTwoStepRA-r16 ::= SEQUENCE {			
msgA-PRACH-ConfigurationIndex-r16	120		
msgA-RO-FDM-r16	four		
msgA-RO-FrequencyStart-r16	0		
msgA-ZeroCorrelationZoneConfig-r16	15		
msgA-PreamblePowerRampingStep-r16	dB0		
msgA-PreambleReceivedTargetPower-r16	-118		
msgB-ResponseWindow-r16	sl2		
preambleTransMax-r16	n10		
}			

– *RA-Prioritization***Table 4.6.3-131: RA-Prioritization**

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

– *RadioBearerConfig*

**Table 4.6.3-132: *RadioBearerConfig***

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
RadioBearerConfig ::= SEQUENCE {			
srb-ToAddModList	Not present		
srb-ToAddModList SEQUENCE (SIZE (1..2)) OF SRB-ToAddMod {	1 entry		SRB1
SRB-ToAddMod[1] SEQUENCE {		entry 1	
SRB-Identity	SRB-Identity with condition SRB1		
reestablishPDCP	Not present		
discardOnPDCP	Not present		
pdcpc-Config	Not present	Default	
}			
}			
srb-ToAddModList SEQUENCE (SIZE (1..2)) OF SRB-ToAddMod {	1 entry		SRB2, RESUME
SRB-ToAddMod[1] SEQUENCE {		entry 1	
SRB-Identity	SRB-Identity with condition SRB2		
reestablishPDCP	Not present		
discardOnPDCP	true		RESUME
pdcpc-Config	Not present	Default	
}			
}			
srb-ToAddModList SEQUENCE (SIZE (1..2)) OF SRB-ToAddMod {	1 entry		SRB3
SRB-ToAddMod[1] SEQUENCE {		entry 1	
srb-Identity	SRB-Identity with condition SRB3		
reestablishPDCP	Not present		
discardOnPDCP	Not present		
pdcpc-Config	Not present	Default	
}			
}			
srb-ToAddModList SEQUENCE (SIZE (1..2)) OF SRB-ToAddMod {	2 entries		SRB_NR_P DCP REEST
SRB-ToAddMod[1] SEQUENCE {		entry 1	
SRB-Identity	SRB-Identity with condition SRB1		
reestablishPDCP	Not present		
discardOnPDCP	true		SRB_NR_P DCP AND Re-establish_P DCP
pdcpc-Config	Not present	Default	
}			
SRB-ToAddMod[2] SEQUENCE {		entry 2	
SRB-Identity	SRB-Identity with condition SRB2		
reestablishPDCP	Not present		
discardOnPDCP	true		SRB_NR_P DCP AND Re-establish_P DCP, REEST
pdcpc-Config	Not present	Default	
}			
}			
srb3-ToRelease	Not present		
drb-ToAddModList	Not present		

drb-ToAddModList SEQUENCE (SIZE (1..maxDRB)) OF DRB-ToAddMod {	1 entry		EN- DC_DRB
DRB-ToAddMod[1] SEQUENCE {		entry 1	
cnAssociation CHOICE {			
eps-BearerIdentity	6		
}			
drb-Identity	DRB-Identity using condition DRB2		
reestablishPDCP	Not present true		EN- DC_DRB AND Re- establish_P DCP
recoverPDCP	Not present true		EN- DC_DRB AND Recover_PD CP
pdcp-Config	PDCP-Config		
}			
drb-ToAddModList SEQUENCE (SIZE (1..maxDRB)) OF DRB-ToAddMod {	1 entry		MCG_NR_P DCP
DRB-ToAddMod[1] SEQUENCE {		entry 1	
cnAssociation CHOICE {			
eps-BearerIdentity	12	EPS Bearer Id of default MCG DRB	
}			
drb-Identity	8	DRB Id of default MCG DRB	
reestablishPDCP	Not present		
recoverPDCP	Not present		
pdcp-Config	PDCP-Config		
}			
drb-ToAddModList SEQUENCE (SIZE (1..maxDRB)) OF DRB-ToAddMod {	1 entry		DRB1
DRB-ToAddMod[1] SEQUENCE {		entry 1	
cnAssociation CHOICE {			
sdap-Config	SDAP-Config		
}			
drb-Identity	DRB-Identity using condition DRB1		
reestablishPDCP	Not present true		DRB1 AND Re- establish_P DCP
recoverPDCP	Not present true		DRB1 AND Recover_PD CP
pdcp-Config	PDCP-Config		
daps-Config-r16	Not present true		DRB1 AND DAPS_PDC P
}			
drb-ToAddModList SEQUENCE (SIZE (1..maxDRB)) OF DRB-ToAddMod {	1 entry		DRB2
DRB-ToAddMod[1] SEQUENCE {		entry 1	
cnAssociation CHOICE {			
sdap-Config	SDAP-Config		

}			
drb-Identity	DRB-Identity using condition DRB2		
reestablishPDCP	Not present		
	true		DRB2 AND Re-establish_PDCP
recoverPDCP	Not present		
	true		DRB2 AND Recover_PDCP
pdcp-Config	PDCP-Config		
daps-Config-r16	Not present		
}			
}			
drb-ToAddModList SEQUENCE (SIZE (1..maxDRB)) OF DRB-ToAddMod {	n entries	n is the number of DRBs established before RRC resume or RRC re-establishment entry [k, k=1..n]	RESUME, REEST
DRB-ToAddMod[k, k=1..n] SEQUENCE {			
cnAssociation	Not present		
drb-Identity	DRB-Identity with condition DRBk		
reestablishPDCP	true		
recoverPDCP	Not present		
pdcp-Config	Not present		
daps-Config-r16	Not present		
}			
}			
drb-ToAddModList SEQUENCE (SIZE (1..maxDRB)) OF DRB-ToAddMod {	1 entry		DRBn
DRB-ToAddMod[1] SEQUENCE {		entry 1	
cnAssociation CHOICE {			
sdap-Config	SDAP-Config		
	SDAP-Config with conditionNo-defaultDRB		SCG_DRB
}			
drb-Identity	DRB-Identity with condition DRBn		
reestablishPDCP	Not present		
recoverPDCP	Not present		
pdcp-Config	PDCP-Config		
	PDCP-Config with condition Split		Split
}			
}			
drb-ToReleaseList	Not present		
securityConfig	Not present		SRB1
securityConfig SEQUENCE {			
securityAlgorithmConfig	SecurityAlgorithmConfig		
keyToUse	master		
	secondary		SRB3, EN-DC_DRB, SecondaryKeys
}			
}			

Condition	Explanation
SRB3	Establishment of SRB3
MCG_NR_PDCP	EN-DC MCG DRB configured or reconfigured 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
DRB2	Establishment of DRB2
DRBn	Establishment of DRBn
EN-DC_DRB	EN-DC DRB configured on SCG
Re-establish_PDCP	Re-establishment of PDCP
Recover_PDCP	Recovery of PDCP
RESUME	Used in RRCResume Message
REEST	The first RRCReconfiguration message after successful completion of the RRC re-establishment procedure.
SecondaryKeys	NR-DC SCG or MCG DRB configured or reconfigured with secondary security keys
Split	Split PDCP: more than one RLC
DAPS_PDCP	Used when the bearer is configured as DAPS bearer
SCG_DRB	Used when the bearer is configured as an SCG bearer in either NR-DC or NE-DC

– *RadioLinkMonitoringConfig*

**Table 4.6.3-133: RadioLinkMonitoringConfig**

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
RadioLinkMonitoringConfig ::= SEQUENCE {			
failureDetectionResourcesToAddModList	1 entry		
SEQUENCE (SIZE(1..maxNrofFailureDetectionResources)) OF			
RadioLinkMonitoringRS {			
RadioLinkMonitoringRS[1] SEQUENCE {		entry 1	
radioLinkMonitoringRS-Id	RadioLinkMonitoringRS-Id		
purpose	r1f		
detectionResource CHOICE {			
ssb-Index	SSB-Index		
}			
}			
}			
failureDetectionResourcesToReleaseList	Not present		
beamFailureInstanceMaxCount	Not present		
beamFailureDetectionTimer	Not present		
}			

– *RadioLinkMonitoringRS-Id*

**Table 4.6.3-134: RadioLinkMonitoringRS-Id**

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

– *RAN-AreaCode*

**Table 4.6.3-135: *RAN-AreaCode***

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

– *RateMatchPattern*

**Table 4.6.3-136: *RateMatchPattern***

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
RateMatchPattern ::= SEQUENCE {			
rateMatchPatternId	RateMatchPatternId		
patternType CHOICE {			
controlResourceSet	ControlResourceSetId		
}			
subcarrierSpacing	SubcarrierSpacing		
dummy	semiStatic	Dummy IE value	
}			

– *RateMatchPatternId*

**Table 4.6.3-137: *RateMatchPatternId***

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

– *RateMatchPatternLTE-CRS*

**Table 4.6.3-138: *RateMatchPatternLTE-CRS***

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

– *ReferenceTimeInfo***Table 4.6.3-138A: ReferenceTimeInfo**

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
ReferenceTimeInfo-r16 ::= SEQUENCE {			
time-r16 ::= SEQUENCE {			
refDays-r16	obtained from the local clock		
refSeconds-r16	obtained from the local clock		
refMilliSeconds-r16	obtained from the local clock		
refTenNanoSeconds-r16	obtained from the local clock		
}			
uncertainty-r16	not present		
timeInfoType-r16	localClock		
referenceSFN-r16	SFN of PCell		
}			

– *RejectWaitTime***Table 4.6.3-139: RejectWaitTime**

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

– *RepetitionSchemeConfig***Table 4.6.3-139A: RepetitionSchemeConfig**

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
RepetitionSchemeConfig-r16 ::= CHOICE {			
FFS			
}			

– *ReportConfigId***Table 4.6.3-140: ReportConfigId**

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



– *ReportConfigInterRAT*

**Table 4.6.3-141: *ReportConfigInterRAT (InterRAT-Thres, NR-Thres)***

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
ReportConfigInterRAT ::= SEQUENCE {			
reportType CHOICE {			
periodical SEQUENCE {			PERIODICAL OR PERIODICAL_UTRA
reportInterval	ReportInterval		
reportAmount	infinity		
reportQuantity SEQUENCE {		UE shall ignore the value(s) provided in reportQuantity if reportQuantityUTRA-FDD-r16 is configured.	
rsrp	true		
rsrq	true		
sinr	false		
}			
maxReportCells	8		
reportQuantityUTRA-FDD-r16	Not present		
reportQuantityUTRA-FDD-r16 SEQUENCE {			PERIODICAL_UTRA
cpich-RSCP	true		
cpich-EcN0	false		
}			
includeCommonLocationInfo-r16	Not present		
includeBT-Meas-r16	Not present		
includeWLAN-Meas-r16	Not present		
}			
eventTriggered SEQUENCE {			EVENT_B1 OR EVENT_B2 OR EVENT_B1_UTRA OR EVENT_B2_UTRA
eventId CHOICE {			
eventB1 SEQUENCE {			EVENT_B1
b1-ThresholdEUTRA CHOICE {			
rsrp	InterRAT-Thres	INTEGER (0..97)	
}			
reportOnLeave	false		
Hysteresis	0 (0 dB)	The actual value is field value * 0.5 dB	
timeToTrigger	ms0		
}			
eventB2 SEQUENCE {			EVENT_B2
b2-Threshold1 CHOICE {			
rsrp	NR-Thres	INTEGER(0..127)	
}			
b2-Threshold2EUTRA CHOICE {			
rsrp	InterRAT-Thres	INTEGER (0..97)	
}			
reportOnLeave	FALSE		
Hysteresis	3 (1.5dB)	The actual value is field value * 0.5 dB	
timeToTrigger	ms1024		
}			

eventB1-UTRA-FDD-r16 SEQUENCE {			EVENT_B1_ UTRA
b1-ThresholdUTRA-FDD-r16 CHOICE {			
utra-FDD-EcN0-r16	InterRAT-Thres		
}			
reportOnLeave-r16	false		
hysteresis-r16	0		
timeToTrigger-r16	ms0		
}			
eventB2-UTRA-FDD-r16 SEQUENCE {			EVENT_B2_ UTRA
b2-Threshold1-r16 CHOICE {			
rsrp	NR-Thres	INTEGER(0..127)	
}			
b2-Threshold2UTRA-FDD-r16 CHOICE {			
utra-FDD-EcN0-r16	InterRAT-Thres		
}			
reportOnLeave-r16	false		
hysteresis-r16	0		
timeToTrigger-r16	ms0		
}			
}			
rsType	ssb		
reportInterval	ms120		
reportAmount	r2		
reportQuantity SEQUENCE {		UE shall ignore the value(s) provided in reportQuantity if reportQuantityUTRA-FDD-r16 is configured.	
Rsrp	true		
rsrq	true		
sinr	false		
}			
maxReportCells	8		
reportQuantityUTRA-FDD-r16	Not present		
reportQuantityUTRA-FDD-r16 SEQUENCE {			EVENT_B1_ UTRA OR EVENT_B2_ UTRA
cpich-RSCP	false		
cpich-EcN0	true		
}			
includeCommonLocationInfo-r16	Not present		
includeBT-Meas-r16	Not present		
includeWLAN-Meas-r16	Not present		
includeSensor-Meas-r16	Not present		
}			
reportCGI SEQUENCE {			CGI
cellForWhichToReportCGI	EUTRA-PhysCellId		
}			
}			
}			

Condition	Explanation
EVENT_B1	Configuration of Event B1 on E-UTRA carrier
EVENT_B2	Configuration of Event B2 on E-UTRA carrier
EVENT_B1_UTRA	Configuration of Event B1 on UTRA carrier
EVENT_B2_UTRA	Configuration of Event B2 on UTRA carrier
CGI	Configuration of CGI measurement
PERIODICAL	Configuration of periodical reporting on E-UTRA carrier
PERIODICAL_UTRA	Configuration of periodical reporting on UTRA carrier

– *ReportConfigNR*

**Table 4.6.3-142: *ReportConfigNR*(Thres1, Thres2)**

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
ReportConfigNR ::= SEQUENCE {			
reportType CHOICE {			
periodical SEQUENCE {			PERIODICAL
rsType	ssb		
reportInterval	ReportInterval		
reportAmount	infinity		
reportQuantityCell SEQUENCE {			
rsrp	true		
rsrq	true		
sinr	false		
	true		pc_ss_SINR_Meas
}			
maxReportCells	8		
reportQuantityRS-Indexes	Not present		
maxNrofRS-IndexesToReport	Not present		
includeBeamMeasurements	false		
useWhiteCellList	false		
measRSSI-ReportConfig-r16	Not present		
includeCommonLocationInfo-r16	Not present		
includeBT-Meas-r16	Not present		
includeBT-Meas-r16 CHOICE {			MDT_BT
setup	BT-NameList		
}			
includeWLAN-Meas-r16	Not present		
includeWLAN-Meas-r16 CHOICE {			MDT_WLAN
setup	WLAN-NameList		
}			
includeSensor-Meas-r16	Not present		
includeSensor-Meas-r16 CHOICE {			MDT_SENSOR
setup	Sensor-NameList		
}			
ul-DelayValueConfig-r16	Not present		
ul-DelayValueConfig-r16 CHOICE {			MDT_DELAY
setup	UL-DelayValueConfig		
}			
reportAddNeighMeas-r16	Not present		
}			
eventTriggered SEQUENCE {			
eventId CHOICE {			
eventA1 SEQUENCE {			EVENT_A1
a1-Threshold CHOICE {			
rsrp	Thres1	Thres is an entry value into a mapping table in TS 38.133 [13].	
}			
reportOnLeave	false		
hysteresis	Hysteresis		
timeToTrigger	TimeToTrigger		
}			
eventA2 SEQUENCE {			EVENT_A2
a2-Threshold CHOICE {			
rsrp	Thres1	Thres is an entry value into a mapping table in TS 38.133 [13].	
}			
reportOnLeave	false		
hysteresis	Hysteresis		
timeToTrigger	TimeToTrigger		

}			
eventA3 SEQUENCE {			EVENT_A3
a3-Offset CHOICE {			
rsrp	Thres1	Thres is an entry value into a mapping table in TS 38.133 [13].	
}			
reportOnLeave	false		
hysteresis	Hysteresis		
timeToTrigger	TimeToTrigger		
useWhiteCellList	false		
}			
eventA4 SEQUENCE {			EVENT_A4
a4-Threshold CHOICE {			
rsrp	Thres1	Thres is an entry value into a mapping table in TS 38.133 [13].	
}			
reportOnLeave	false		
hysteresis	Hysteresis		
timeToTrigger	TimeToTrigger		
useWhiteCellList	false		
}			
eventA5 SEQUENCE {			EVENT_A5
a5-Threshold1 CHOICE {			
rsrp	Thres1	Thres is an entry value into a mapping table in TS 38.133 [13].	
}			
a5-Threshold2 CHOICE {			
rsrp	Thres2	Thres is an entry value into a mapping table in TS 38.133 [13].	
}			
reportOnLeave	false		
hysteresis	Hysteresis		
timeToTrigger	TimeToTrigger		
useWhiteCellList	false		
}			
eventA6 SEQUENCE {			EVENT_A6
a6-Offset CHOICE {			
rsrp	Thres1	Thres is an entry value into a mapping table in TS 38.133 [13].	
}			
reportOnLeave	false		
hysteresis	Hysteresis		
timeToTrigger	TimeToTrigger		
useWhiteCellList	false		
}			
}			
rsType	ssb		
reportInterval	ReportInterval		
reportAmount	r2		
reportQuantityCell SEQUENCE {			
rsrp	true		
rsrq	true		
sinr	false		
	true		pc_ss_SINR_Meas
}			

maxReportCells	8		
reportQuantityRS-Indexes	Not present		
maxNrofRS-IndexesToReport	Not present		
includeBeamMeasurements	false		
reportAddNeighMeas	Not present		
measRSSI-ReportConfig-r16	Not present		
useT312-r16	Not present		
includeCommonLocationInfo-r16	Not present		MDT
includeBT-Meas-r16	Not present		
includeBT-Meas-r16 CHOICE {			MDT_BT
setup	BT-NameList		
}			
includeWLAN-Meas-r16	Not present		
includeWLAN-Meas-r16 CHOICE {			MDT_WLAN
setup	WLAN-NameList		
}			
includeSensor-Meas-r16	Not present		
includeSensor-Meas-r16 CHOICE {			MDT_SENSOR
setup	Sensor-NameList		
}			
}			
reportCGI SEQUENCE {			CGI
cellForWhichToReportCGI	PhysCellId		
}			
reportSFTD SEQUENCE {			SFTD_NEIGH HBOUR or SFTD_PSC ELL
reportSFTD-Meas	false		SFTD_NEIGH HBOUR
	true		SFTD_PSC ELL
reportRSRP	false		
reportSFTD-NeighMeas	true		SFTD_NEIGH HBOUR
	Not present		SFTD_PSC ELL
drx-SFTD-NeighMeas	Not present		
cellsForWhichToReportSFTD	Not present		
}			
condTriggerConfig SEQUENCE {			CHO, CPC
condEventId CHOICE {			
condEventA3 SEQUENCE {			CHO AND EVENT_A3
a3-Offset CHOICE {			
rsrp	Thres1	Thres is an entry value into a mapping table in TS 38.133 [13].	
}			
hysteresis	Hysteresis		
timeToTrigger	TimeToTrigger		
}			
condEventA5 SEQUENCE {			CHO AND EVENT_A5
a5-Threshold1 CHOICE {			
rsrp	Thres1	Thres is an entry value into a mapping table in TS 38.133 [13].	
}			
a5-Threshold2 CHOICE {			

rsrp	Thres2	Thres is an entry value into a mapping table in TS 38.133 [13].	
}			
hysteresis	Hysteresis		
timeToTrigger	TimeToTrigger		
}			
}			
rsType-r16	ssb		
}			
}			
}			

Condition	Explanation
EVENT_A1	Configuration of Event A1
EVENT_A2	Configuration of Event A2
EVENT_A3	Configuration of Event A3
EVENT_A4	Configuration of Event A4
EVENT_A5	Configuration of Event A5
EVENT_A6	Configuration of Event A6
PERIODICAL	Configuration of periodical reporting
CGI	Configuration of CGI measurement
CHO	Configuration of conditional handover
CPC	Conditional PScell change
MDT	Configuration of MDT
MDT_BT	Configuration of MDT including Bluetooth measurements
MDT_WLAN	Configuration of MDT including WLAN measurements
MDT_SENSOR	Configuration of MDT including Sensor measurements
MDT_DELAY	Configuration of UL PDCP Packet Delay per DRB
SFTD_NEIGHBOUR	Configurations of SFTD measurement on NR neighbour
SFTD_PSCCELL	Configurations of SFTD measurement on NR PSCell



– *ReportConfigNR-SL*

**Table 4.6.3-142A: ReportConfigNR-SL**

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
ReportConfigNR-SL-r16 ::= SEQUENCE {			
reportType-r16 CHOICE {			
periodical-r16 SEQUENCE {			PERIODICAL
reportInterval-r16	ReportInterval		
reportAmount-r16	r2		
reportQuantity-r16 SEQUENCE {			
cbr-r16	true		
}			
eventTriggered-r16 SEQUENCE {			EVENT_C1, EVENT_C2
eventId-r16 CHOICE {			
eventC1 SEQUENCE {			EVENT_C1
c1-Threshold-r16	SL-CBR-r16		
hysteresis-r16	Hysteresis		
timeToTrigger-r16	TimeToTrigger		
}			
eventC2 SEQUENCE {			EVENT_C2
c2-Threshold-r16	SL-CBR-r16		
hysteresis-r16	Hysteresis		
timeToTrigger-r16	TimeToTrigger		
}			
}			
}			
}			
}			

Condition	Explanation
PERIODICAL	Configuration of periodical reporting
EVENT_C1	Configuration of Event C1
EVENT_C2	Configuration of Event C2

– *ReportConfigToAddModList*

**Table 4.6.3-143: ReportConfigToAddModList**

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

Condition	Explanation
InterRAT	Configuration with at least one NR PCell and one or more E-UTRA neighbour cell(s)

– *ReportInterval***Table 4.6.3-144: ReportInterval**

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

– *ReselectionThreshold***Table 4.6.3-145: ReselectionThreshold**

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

– *ReselectionThresholdQ***Table 4.6.3-146: ReselectionThresholdQ**

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

– *ResumeCause***Table 4.6.3-147: ResumeCause**

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
ResumeCause	mt-Access		

## – RLC-BearerConfig

Table 4.6.3-148: RLC-BearerConfig

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
RLC-BearerConfig ::= SEQUENCE {			
logicalChannelIdentity	LogicalChannelIdentity with condition DRBn		DRBn
	LogicalChannelIdentity with condition SRB1		SRB1
	LogicalChannelIdentity with condition SRB2		SRB2
	LogicalChannelIdentity with condition SRB3		SRB3
servedRadioBearer CHOICE {			
srb-Identity	SRB-Identity with condition SRB1		SRB1
	SRB-Identity with condition SRB2		SRB2
	SRB-Identity with condition SRB3		SRB3
drb-Identity	DRB-Identity with condition DRBn		DRBn
}			
servedRadioBearer	Not present		RESUME
reestablishRLC	Not present		
	true		Re-establish_RLC, RESUME
rlc-Config	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	SRB1, SRB2, SRB3, RESUME
mac-LogicalChannelConfig	LogicalChannelConfig using condition HI		AM
	LogicalChannelConfig using condition LO		UM
	LogicalChannelConfig using condition SRBn	n= 1, 2, 3 for SRB1, SRB2, SRB3 resp.	SRB1, SRB2, SRB3, RESUME
rlc-Config-v1610	Not present		
}			

Condition	Explanation
AM	RLC AM DRB
UM	RLC UM DRB
SRB1	Establishment of SRB1
SRB2	Establishment of SRB2
SRB3	Establishment of SRB3
DRBn	Establishment of DRBn
Re-establish_RLC	Re-establishment of RLC
RESUME	Used in RRCResume Message

– RLC-Config

Table 4.6.3-149: RLC-Config

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
RLC-Config ::= CHOICE {			
am SEQUENCE {			AM
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

– *RLF-TimersAndConstants***Table 4.6.3-150: RLF-TimersAndConstants**

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

– *RNTI-Value***Table 4.6.3-151: RNTI-Value**

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
RNTI-Value	SS arbitrarily selects a value between '0001'H and 'FFEF'H		
	SS arbitrarily selects a value between '0001'H and 'FFEF'H different from the MCG RNTI-Value.		NR-DC_SCG

Condition	Explanation
NR-DC_SCG	Add SCG (NR-DC)

– *RSRP-Range***Table 4.6.3-152: RSRP-Range**

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
RSRP-Range	0	For measurements, 0 means L3 SS-RSRP < -156dBm according to Table 10.1.6.1-1 in TS 38.133 [13]. For thresholds, 0 means -156dBm.	

– *RSRQ-Range*

**Table 4.6.3-153: RSRQ-Range**

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
RSRQ-Range	0	For measurements, 0 means SS-RSRQ<-43dB according to Table 10.1.11.1-1 in TS 38.133 [14]. For thresholds, 0 means -43.5dB.	

– *RSSI-Range*

**Table 4.6.3-153A: RSSI-Range**

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
RSSI-Range-r16	FFS		

– *SCellIndex*

**Table 4.6.3-154: SCellIndex**

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

Condition	Explanation
EN-DC	E-UTRA-NR Dual Connectivity with E-UTRA connected to EPC

– *SchedulingRequestConfig*

**Table 4.6.3-155: SchedulingRequestConfig**

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

– *SchedulingRequestId***Table 4.6.3-156: SchedulingRequestId**

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

– *SchedulingRequestResourceConfig***Table 4.6.3-157: SchedulingRequestResourceConfig**

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
SchedulingRequestResourceConfig ::= SEQUENCE {			
schedulingRequestResourceCellId	SchedulingRequestResourceCellId		
schedulingRequestID	SchedulingRequestID		
periodicityAndOffset CHOICE {			
sl10	9	With SCS = kHz15 results in repetition every 10 ms	SCS15
sl20	9	With SCS = kHz30 results in repetition every 10 ms	SCS30
sl40	19	With SCS = kHz60 results in repetition every 10 ms	FR1 AND SCS60
sl80	9	With SCS = kHz120 results in repetition every 10 ms	SCS120
}			
resource	0	ID of the PUCCH resource as configured by PUCCH-Config (Table 4.6.3-84)	
}			

– *SchedulingRequestResourceCellId***Table 4.6.3-158: SchedulingRequestResourceCellId**

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

– *ScramblingId*Table 4.6.3-159: *ScramblingId*

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

– *SCS-SpecificCarrier*Table 4.6.3-160: *SCS-SpecificCarrier*

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
SCS-SpecificCarrier ::= SEQUENCE {			
offsetToCarrier	offsetToCarrier as defined for the DL frequency of the cell	For signalling test cases see subclause 6.2.3. Otherwise, see subclause 4.3.1.	DL_PointA
	offsetToCarrier as defined for the UL frequency of the cell	For signalling test cases see subclause 6.2.3. Otherwise, see subclause 4.3.1.	UL_PointA
	offsetToCarrier as defined for the SL NRf1 frequency	For signalling test cases see subclause 6.2.3.7. Otherwise, see subclause 4.3.1.8.	SL_PointA
subcarrierSpacing	SubcarrierSpacing		
carrierBandwidth	carrierBandwidth as defined for the frequency of the cell	For signalling test cases see subclause 6.2.3. Otherwise, see subclause 4.3.1.	
txDirectCurrentLocation	Not present		
}			

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



## – SDAP-Config

Table 4.6.3-161: SDAP-Config

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
SDAP-Config ::= SEQUENCE {			
pdu-Session	The same value as the PDU session ID IE of the contained message		
sdap-HeaderDL	absent		
sdap-HeaderUL	present		
defaultDRB	true		
	false		No-defaultDRB
mappedQoS-FlowsToAdd SEQUENCE (SIZE (1..maxNrofQFIs)) OF QFI {	n entries		
QFI[n]	The list of QFIs of the Authorized QoS flow descriptions IE of the contained 5GSM message	entry n	
}			
mappedQoS-FlowsToRelease	Not present		
}			

Condition	Explanation
No-defaultDRB	The defaultDRB value is false.

– SearchSpace

Table 4.6.3-162: SearchSpace

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
SearchSpace ::= SEQUENCE {			
searchSpaceId	SearchSpaceId with condition CSS		CSS
	SearchSpaceId with condition USS		USS
	SearchSpaceId with condition SISS		SISS
controlResourceSetId	ControlResourceSetId		
	ControlResourceSetId with condition Common0		CSS, SISS
monitoringSlotPeriodicityAndOffset CHOICE {			
s1	NULL		
s10	5		SISS
}			
duration	Not present	1 slot per default	
	2		SISS
monitoringSymbolsWithinSlot	10000000000000		
nrofCandidates SEQUENCE {			
aggregationLevel1	n0		
aggregationLevel2	n4		FR1
	n3		FR2
aggregationLevel4	n2		
aggregationLevel8	n1		
aggregationLevel16	n0		
}			
searchSpaceType CHOICE {			
common SEQUENCE {			CSS, SISS
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		Short_DCI
dci-Formats	formats0-1-And-1-1		
}			
}			
}			

Condition	Explanation
CSS	Common SearchSpace
USS	UE-Specific SearchSpace
Short_DCI	Used in test scenarios requiring DCI formats 0-0 and 1-0 on USS
SISS	SearchSpace for SI

– *SearchSpaceId***Table 4.6.3-163: SearchSpaceId**

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

Condition	Explanation
CSS	Common SearchSpace
USS	UE-Specific SearchSpace
SISS	SearchSpace for SI

– *SearchSpaceZero***Table 4.6.3-164: SearchSpaceZero**

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
SearchSpaceZero	0	Index addressing SearchSpace#0 parameter set in Tables 13.11 .. 13.15 of TS 38.213 [22]	

– *SecurityAlgorithmConfig***Table 4.6.3-165: SecurityAlgorithmConfig**

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
SecurityAlgorithmConfig ::= SEQUENCE {			
cipheringAlgorithm	nea0 Set according to PIXIT px_NR_CipheringAlgorithm	see TS 38.523-3 [23]	RF OR RRM SIG
integrityProtAlgorithm	nia2 Set according to PIXIT px_NR_IntegrityProtAlgorithm	see TS 38.523-3 [23]	SIG
}			

– *SemiStaticChannelAccessConfig***Table 4.6.3-165A: SemiStaticChannelAccessConfig**

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
SemiStaticChannelAccessConfig-r16 ::= SEQUENCE {			
FFS			
}			

– *Sensor-LocationInfo***Table 4.6.3-165B: *Sensor-LocationInfo***

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
Sensor-LocationInfo-r16 ::= SEQUENCE {			
sensor-MeasurementInformation-r16	Not checked	OCTET STRING	
sensor-MotionInformation-r16	Not checked	OCTET STRING	
}			

– *ServCellIndex***Table 4.6.3-166: *ServCellIndex***

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
ServCellIndex	0		
	1		EN-DC, NR-DC_SCG

Condition	Explanation
EN-DC	E-UTRA-NR Dual Connectivity with E-UTRA connected to EPC
NR-DC_SCG	Add SCG (NR-DC)

– *ServingCellConfig*

**Table 4.6.3-167: *ServingCellConfig***

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
ServingCellConfig ::= SEQUENCE {			
tdd-UL-DL-ConfigurationDedicated	Not present		
initialDownlinkBWP	BWP-DownlinkDedicated		
	BWP-DownlinkDedicated with condition Scell_Add		Scell_Add
	Not present		MEAS, RESUME
downlinkBWP-ToReleaseList	Not present		
downlinkBWP-ToAddModList	Not present		
firstActiveDownlinkBWP-Id	BWP-Id		
	Not present		MEAS
bwp-InactivityTimer	Not present		
defaultDownlinkBWP-Id	BWP-Id		
	Not present		MEAS, RESUME
uplinkConfig	Not present		MEAS, No_UL
uplinkConfig SEQUENCE {			
initialUplinkBWP	BWP-UplinkDedicated		
	BWP-UplinkDedicated with condition SUL_NUL		PUSCH_PU CCH_ON_S UL
	BWP-UplinkDedicated with condition RESUME		RESUME
uplinkBWP-ToReleaseList	Not present		
uplinkBWP-ToAddModList	Not present		
firstActiveUplinkBWP-Id	BWP-Id		
pusch-ServingCellConfig	Not present		RESUME
pusch-ServingCellConfig CHOICE {			
setup	PUSCH-ServingCellConfig		
}			
carrierSwitching	Not present		
powerBoostPi2BPSK	Not present		
uplinkChannelBW-PerSCS-List	Not present		
enablePL-RS-UpdateForPUSCH-SRS-r16	Not present		
enableDefaultBeamPL-ForPUSCH0-0-r16	Not present		
enableDefaultBeamPL-ForPUCCH-r16	Not present		
enableDefaultBeamPL-ForSRS-r16	Not present		
uplinkTxSwitching-r16	Not present		
mpr-PowerBoost-FR2-r16	Not present		
}			
supplementaryUplink	Not present		
supplementaryUplink SEQUENCE {			
initialUplinkBWP	BWP-UplinkDedicated		
	BWP-UplinkDedicated with condition RESUME		RESUME
uplinkBWP-ToReleaseList	Not present		
uplinkBWP-ToAddModList	Not present		
firstActiveUplinkBWP-Id	BWP-Id		
pusch-ServingCellConfig CHOICE {			
setup	PUSCH-ServingCellConfig		
}			
carrierSwitching	Not present		
powerBoostPi2BPSK	Not present		
uplinkChannelBW-PerSCS-List	Not present		
enablePL-RS-UpdateForPUSCH-SRS-r16	Not present		
enableDefaultBeamPL-ForPUSCH0-0-r16	Not present		
enableDefaultBeamPL-ForPUCCH-r16	Not present		
enableDefaultBeamPL-ForSRS-r16	Not present		
uplinkTxSwitching-r16	Not present		

mpr-PowerBoost-FR2-r16	Not present		
}			
pdccch-ServingCellConfig CHOICE {			
setup	PDCCH-ServingCellConfig		
}			
pdccch-ServingCellConfig	Not present		MEAS, RESUME
pdsch-ServingCellConfig CHOICE {			
setup	PDSCH-ServingCellConfig		
}			
pdsch-ServingCellConfig	Not present		MEAS, RESUME
csi-MeasConfig	Not present		
sCellDeactivationTimer	Not present		
crossCarrierSchedulingConfig	Not present		
tag-Id	0		
dummy1	Not present		
pathlossReferenceLinking	Not present		
servingCellMO	Not present		
	MeasObjectId		MEAS
}			

Condition	Explanation
PUSCH_PUCCH_ON_SUL	For the purpose of SUL test under condition that supplementary uplink is configured with both PUSCH and PUCCH on SUL carrier.
MEAS	A NR or EN-DC measurement is configured.
No_UL	No uplink CA
RESUME	Used in RRCResume Message
Scell_Add	Add SCell

– *ServingCellConfigCommon*

**Table 4.6.3-168: *ServingCellConfigCommon***



Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
ServingCellConfigCommon ::= SEQUENCE {			
physCellId	PhysCellId		
downlinkConfigCommon	DownlinkConfigCommon		
	DownlinkConfigCommon with condition SCell_add		SCell_add
uplinkConfigCommon	UplinkConfigCommon		
	Not present		No_UL
supplementaryUplinkConfig	Not present		
n-TimingAdvanceOffset	Not present		
ssb-PositionsInBurst CHOICE {			
shortBitmap	0100		FR1 AND SSB#1 AND (2.3GHz<FR EQ<=3GHz AND (FDD OR (TDD AND SCS15)) OR FREQ<=2.3 GHZ)
	1000		FR1 AND SSB#0 AND (2.3GHz<FR EQ<=3GHz AND (FDD OR (TDD AND SCS15)) OR FREQ<=2.3 GHZ)
mediumBitmap	01000000		FR1 AND SSB#1 AND (2.3GHz<FR EQ<=3GHz AND (TDD AND SCS30) OR FREQ>3GH z)
	10000000		FR1 AND SSB#0 AND (2.3GHz<FR EQ<=3GHz AND (TDD AND SCS30) OR FREQ>3GH z)
longBitmap	01000000000000000000000000000000		FR2 AND SSB#1
	10000000000000000000000000000000		FR2 AND SSB#0
}			
ssb-periodicityServingCell	ms20		
dmrs-TypeA-Position	pos2		
lte-CRS-ToMatchAround	Not present		
rateMatchPatternToAddModList	Not present		
rateMatchPatternToReleaseList	Not present		

ssbSubcarrierSpacing	SubcarrierSpacing	For signalling test cases see subclause 6.2.3. Otherwise, see subclause 4.3.1. Value SS block SCS.	
tdd-UL-DL-ConfigurationCommon	TDD-UL-DL-ConfigCommon		TDD
	Not present		FDD
ss-PBCH-BlockPower	0		
channelAccessMode-r16	Not present		
channelAccessMode-r16 CHOICE {			SharedSpectrum
	dynamic	NULL	
}			
discoveryBurstWindowLength-r16	Not present		
ssb-PositionQCL-r16	Not present		
	SSB-PositionQCL-Relation-r16		SharedSpectrum
highSpeedConfig-r16	Not present		
	HighSpeedConfig-r16		HST
}			

Condition	Explanation
FREQ<=2.3GHz	Frequency range <= 2.3GHz
2.3GHz<FREQ<=3GHz	Frequency range > 2.3GHz and <= 3GHz
FREQ>3GHz	Frequency range > 3GHz
No_UL	No uplink CA
SSB#N	Cell configured with SSB-Index set to N as defined in Table 4.4.2-2
SharedSpectrum	Operation with shared spectrum channel access
HST	For HST test

*ServingCellConfigCommonSIB*

**Table 4.6.3-169: ServingCellConfigCommonSIB**

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
ServingCellConfigCommonSIB ::= SEQUENCE {			
downlinkConfigCommon	DownlinkConfigCommonSIB		
uplinkConfigCommon	UplinkConfigCommonSIB		
supplementaryUplink	Not present		
	UplinkConfigCommonSIB with condition SUL_SUL		SUL
n-TimingAdvanceOffset	Not present		
ssb-PositionsInBurst SEQUENCE {			
inOneGroup	'0100 0000'B	When carrier frequency is smaller than or equal to 3 GHz, only the 4 leftmost bits are valid	SSB#1
	'1000 0000'B		SSB#0
groupPresence	Not present		FR1
	'1000 0000'B		FR2
}			
ssb-PeriodicityServingCell	ms20		
tdd-UL-DL-ConfigurationCommon	TDD-UL-DL-ConfigCommon		TDD
	Not present		FDD
ss-PBCH-BlockPower	0		
channelAccessMode-r16	Not present		
channelAccessMode-r16 CHOICE {			SharedSpectrum
dynamic	NULL		
}			
discoveryBurstWindowLength-r16	Not present		
highSpeedConfig-r16	Not present		
	HighSpeedConfig-r16		HST
}			

Condition	Explanation
SUL	Supplementary uplink
SSB#N	Cell configured with SSB-Index set to N as defined in Table 4.4.2-2
SharedSpectrum	Operation with shared spectrum channel access
HST	For HST test

*ShortI-RNTI-Value*

**Table 4.6.3-170: ShortI-RNTI-Value**

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
ShortI-RNTI-Value	SS arbitrarily selects a value between '00 0001'H and 'FF FFFF'H.	BIT STRING (SIZE(24))	

– *ShortMAC-I*

**Table 4.6.3-171: ShortMAC-I**

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
ShortMAC-I	The 16 least significant bits of the MAC-I calculated using the security configuration of the source PCell.		

– *SINR-Range*

**Table 4.6.3-172: SINR-Range**

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
SINR-Range	0	For measurements, 0 means SS-SINR<-23dB according to Table 10.1.16.1-1 in TS 38.133 [14]. For thresholds, 0 means -23dB.	

– *SI-RequestConfig*

**Table 4.6.3-172A: SI-RequestConfig**

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

– *SI-SchedulingInfo*

**Table 4.6.3-173: SI-SchedulingInfo**

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
SI-SchedulingInfo ::= SEQUENCE {			
schedulingInfoList SEQUENCE (SIZE (1..maxSI-Message)) OF SchedulingInfo {	n entries See subclause 4.4.3.1		
SchedulingInfo[n] SEQUENCE {		entry n	
si-BroadcastStatus	broadcasting		
si-Periodicity	See subclause 4.4.3.1		
sib-MappingInfo SEQUENCE (SIZE (1..maxSIB)) OF SIB-TypeInfo {	n entries		
SIB-TypeInfo[1] SEQUENCE {		entry n	
type	See subclause 4.4.3.1		
valueTag	0		
areaScope	Not present		
}			
}			
}			
si-WindowLength	s80 s160		FR1 FR2
si-RequestConfig	Not present		
si-RequestConfigSUL	Not present		
systemInformationAreaID	'0000 0000 0000 0000 0000 0001'B		
}			

– *SK-Counter*

**Table 4.6.3-173A: SK-Counter**

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

– *SlotFormatCombinationsPerCell*

**Table 4.6.3-174: SlotFormatCombinationsPerCell**

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

– *SlotFormatIndicator*

**Table 4.6.3-175: SlotFormatIndicator**

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

– *S-NSSAI***Table 4.6.3-176: S-NSSAI**

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

– *SpeedStateScaleFactors***Table 4.6.3-177: SpeedStateScaleFactors**

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

– *SPS-Config***Table 4.6.3-179: SPS-Config**

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

– *SPS-ConfigIndex***Table 4.6.3-179A: SPS-ConfigIndex**

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
SPS-ConfigIndex-r16	FFS		

– *SPS-PUCCH-AN***Table 4.6.3-179B: SPS-PUCCH-AN**

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
SPS-PUCCH-AN-r16 ::= SEQUENCE {			
FFS			
}			

– *SPS-PUCCH-AN-List***Table 4.6.3-179C: SPS-PUCCH-AN-List**

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
SPS-PUCCH-AN-List-r16 ::= SEQUENCE {			
FFS			
}			

– *SRB-Identity***Table 4.6.3-180: SRB-Identity**

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
SRB-Identity	1		SRB1
	2		SRB2
	3		SRB3

Condition	Explanation
SRB1	SRB1
SRB2	SRB2
SRB3	SRB3

– *SRS-CarrierSwitching***Table 4.6.3-181: SRS-CarrierSwitching**

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

– *SRS-Config*

**Table 4.6.3-182: *SRS-Config***



Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
SRS-Config ::= SEQUENCE {			
srs-ResourceSetToReleaseList	Not present		
srs-ResourceSetToAddModList SEQUENCE (SIZE(0..maxNrofSRS-ResourceSets)) OF SRS- ResourceSet {	1 entry		
SRS-ResourceSet[1] SEQUENCE {		entry 1	
srs-ResourceSetId	0		
srs-ResourceIdList SEQUENCE (SIZE(1..maxNrofSRS-ResourcesPerSet)) OF SRS- ResourceId {	1 entry		
SRS-ResourceId[1]	0	entry 1	
}			
resourceType CHOICE {			
aperiodic SEQUENCE {			
aperiodicSRS-ResourceTrigger	1		
csi-RS	Not present		
slotOffset	7		FR1
	4		FR2
}			
}			
usage	codebook		
alpha	Alpha		
p0	0		
pathlossReferenceRS CHOICE {			
ssb-Index	SSB-Index		
}			
srs-PowerControlAdjustmentStates	Not present		
}			
}			
srs-ResourceToReleaseList	Not present		
srs-ResourceToAddModList SEQUENCE (SIZE(1..maxNrofSRS-Resources)) OF SRS- Resource {	1 entry		
SRS-Resource[1] SEQUENCE {		entry 1	
srs-ResourceId	0		
nrofSRS-Ports	ports2		2TX_UL_MI MO
	port1		
ptrs-PortIndex	Not present		
transmissionComb CHOICE {			
n2 SEQUENCE {			
combOffset-n2	0		
cyclicShift-n2	0		
}			
}			
}			
resourceMapping SEQUENCE {			
startPosition	0		
nrofSymbols	n1		
repetitionFactor	n1		
}			
freqDomainPosition	0		
freqDomainShift	0		
freqHopping SEQUENCE {			
c-SRS	0		
	63		FR1_100MH Z
	17		FR2_100MH Z
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		
srs-RequestDCI-1-2-r16	Not present		
srs-RequestDCI-0-2-r16	Not present		
srs-ResourceSetToAddModListDCI-0-2-r16	Not present		
srs-ResourceSetToReleaseListDCI-0-2-r16	Not present		
srs-PosResourceSetToReleaseList-r16	Not present		
srs-PosResourceSetToAddModList-r16	Not present		
srs-PosResourceToReleaseList-r16	Not present		
srs-PosResourceToAddModList-r16	Not present		
}			

Condition	Explanation
2TX_UL_MIMO	UL-MIMO test cases with 2 Tx antenna ports
FR1_100MHz	FR1 is used under the test. CBW is set to 100MHz.
FR2_100MHz	FR2 is used under the test. CBW is set to 100MHz.

– *SRS-RSRP-Range*

**Table 4.6.3-182A: SRS-RSRP-Range**

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
SRS-RSRP-Range-r16	FFS		

– *SRS-TPC-CommandConfig*

**Table 4.6.3-183: SRS-TPC-CommandConfig**

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

– *SSB-Index*

**Table 4.6.3-184: SSB-Index**

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
SSB-Index	Set according to Table 4.4.2-2 for the NR Cell		

– *SSB-MTC***Table 4.6.3-185: SSB-MTC**

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
SSB-MTC ::= SEQUENCE {			
periodicityAndOffset CHOICE {			
sf20	0		
	10		SIG AND INTER-FREQ_ODD
}			
duration	sf2		FR1
	sf3		FR2
}			

Condition	Explanation
INTER-FREQ_ODD	When the (SFNoffset of inter frequency neighbour cell - SFNoffset of serving cell) is odd number. SFNoffset is defined in TS 38.523-3 [23] Table 7.1.5.2-1

**Table 4.6.3-186: SSB-MTC2**

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

– *SSB-PositionQCL-Relation***Table 4.6.3-186A: SSB-PositionQCL-Relation**

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
SSB-PositionQCL-Relation-r16	n1		

– *SSB-ToMeasure*

**Table 4.6.3-187: SSB-ToMeasure**

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
SSB-ToMeasure ::= CHOICE {			
shortBitmap	1100		FR1 AND (2.3GHz<FREQ<=3GHz AND (FDD OR (TDD AND SCS15)) OR FREQ<=2.3GHZ)
mediumBitmap	11000000		FR1 AND (2.3GHz<FREQ<=3GHz AND (TDD AND SCS30) OR FREQ>3GHz)
longBitmap	11000000 00000000 00000000 00000000 00000000 00000000 00000000 00000000		FR2
}			

Condition	Explanation
FREQ<=2.3GHz	Frequency range <= 2.4GHz
2.3GHz<FREQ<=3GHz	Frequency range > 2.3GHz and <= 3GHz
FREQ>3GHz	Frequency range > 3GHz

– *SS-RSSI-Measurement*

**Table 4.6.3-187A: SS-RSSI-Measurement**

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

– *SubcarrierSpacing*

**Table 4.6.3-188: SubcarrierSpacing**

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
SubcarrierSpacing	According to clause 6.2.3 for signalling test cases and clause 4.3.1 otherwise.		

## – TAG-Config

Table 4.6.3-189: TAG-Config

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
TAG-Config ::= SEQUENCE {			
tag-ToReleaseList	Not present		
tag-ToAddModList SEQUENCE (SIZE (1..maxNrofTAGs)) OF TAG {	1 entry		
TAG[1] SEQUENCE {		entry 1	
tag-Id	0		
timeAlignmentTimer	infinity		
}			
}			
}			

## – TCI-State

Table 4.6.3-190: TCI-State

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
TCI-State ::= SEQUENCE {			
tci-StateId	TCI-StateId		
qcl-Type1 SEQUENCE {			
cell	Not present		
bwp-Id	Not present		
referenceSignal CHOICE {			
ssb	SSB-Index		
}			
qcl-Type	typeD		
}			
qcl-Type2	Not present		
}			

## – TCI-StateId

Table 4.6.3-191: TCI-StateId

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

– *TDD-UL-DL-ConfigCommon*

**Table 4.6.3-192: *TDD-UL-DL-ConfigCommon***

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
TDD-UL-DL-ConfigCommon ::= SEQUENCE {			
referenceSubcarrierSpacing	SubcarrierSpacing		
pattern1 SEQUENCE {			
dl-UL-TransmissionPeriodicity	ms5		FR1
	msOp625		SIG AND FR2
	ms2		RF AND FR2
nrofDownlinkSlots	7		(FR1 AND SCS30) OR (RF AND FR2 AND SCS120)
	3		(FR1 AND SCS15) OR (FR2 AND SCS60) OR (SIG AND FR2 AND SCS120)
	14		FR1 AND SCS60
nrofDownlinkSymbols	6		FR1 AND SCS30
	10		(FR1 AND SCS15) OR (SIG AND FR2 AND (SCS60 OR SCS120))
	12		(FR1 AND SCS60) OR (RF AND FR2 AND SCS120)
	4		RF AND FR2 AND SCS60
nrofUplinkSlots	2		FR1 AND SCS30
	1		(FR1 AND SCS15) OR (SIG AND FR2 AND (SCS60 OR SCS120))
	4		(FR1 AND SCS60) OR (RF AND FR2 AND SCS60)
	8		RF AND FR2 AND SCS120
nrofUplinkSymbols	4		(FR1 AND SCS30) OR (RF AND FR2 AND SCS60)
	2		(FR1 AND SCS15) OR (SIG AND FR2 AND (SCS60 OR SCS120))

	8		FR1 AND SCS60
	0		RF AND FR2 AND SCS120
}			
pattern2	Not present		
}			

– *TDD-UL-DL-ConfigDedicated*

**Table 4.6.3-192A: TDD-UL-DL-ConfigDedicated**

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
TDD-UL-DL-ConfigDedicated ::= SEQUENCE {			
FFS			
}			

– *TrackingAreaCode*

**Table 4.6.3-193: 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 4.6.3-194: T-Reselection**

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

– *TimeToTrigger*

**Table 4.6.3-195: TimeToTrigger**

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

– *UAC-BarringInfoSetIndex*

**Table 4.6.3-196: UAC-BarringInfoSetIndex**

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



– *UAC-BarringInfoSetList***Table 4.6.3-197: UAC-BarringInfoSetList**

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

– *UAC-BarringPerCatList***Table 4.6.3-198: UAC-BarringPerCatList**

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

– *UAC-BarringPerPLMN-List***Table 4.6.3-199: UAC-BarringPerPLMN-List**

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

– *UE-TimersAndConstants***Table 4.6.3-200: UE-TimersAndConstants**

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

– *UL-DelayValueConfig***Table 4.6.3-200A: UL-DelayValueConfig**

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
UL-DelayValueConfig-r16 ::= SEQUENCE {			
delay-DRBlist	Set according to specific message content		
}			

– *UplinkCancellation*

**Table 4.6.3-200B: UplinkCancellation**

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
UplinkCancellation-r16 ::= SEQUENCE {			
FFS			
}			

– *UplinkConfigCommon*

**Table 4.6.3-201: UplinkConfigCommon**

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
UplinkConfigCommon ::= SEQUENCE {			
frequencyInfoUL	FrequencyInfoUL		
initialUplinkBWP	BWP-UplinkCommon		
timeAlignmentTimerCommon	infinity		
}			

– *UplinkConfigCommonSIB*

**Table 4.6.3-202: UplinkConfigCommonSIB**

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
UplinkConfigCommonSIB SEQUENCE {			
frequencyInfoUL	FrequencyInfoUL-SIB		
initialUplinkBWP	BWP-UplinkCommon		
	BWP-UplinkCommon with confition SUL_SUL		SUL_SUL
timeAlignmentTimerCommon	infinity		
}			

Condition	Explanation
SUL_SUL	On the SUL carrier when supplementary carrier is configured

– *UplinkTxDirectCurrentList*

**Table 4.6.3-203: UplinkTxDirectCurrentList**

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

– *ZP-CSI-RS-Resource***Table 4.6.3-204: ZP-CSI-RS-Resource**

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
ZP-CSI-RS-Resource ::= SEQUENCE {			
zp-CSI-RS-ResourceId	ZP-CSI-RS-ResourceId		
resourceMapping	CSI-RS-ResourceMapping		
periodicityAndOffset	CSI-ResourcePeriodicityAndOffset		
}			

– *ZP-CSI-RS-ResourceSet***Table 4.6.3-205: ZP-CSI-RS-ResourceSet**

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
ZP-CSI-RS-ResourceSet ::= SEQUENCE {			
zp-CSI-RS-ResourceSetId	ZP-CSI-RS-ResourceSetId		
zp-CSI-RS-ResourceIdList SEQUENCE (SIZE(1..maxNrofZP-CSI-RS-ResourcesPerSet)) OF ZP-CSI-RS-ResourceId {	1 entry		
ZP-CSI-RS-ResourceId[1]	FFS	entry 1	
}			
}			

– *ZP-CSI-RS-ResourceSetId***Table 4.6.3-206: ZP-CSI-RS-ResourceSetId**

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
ZP-CSI-RS-ResourceSetId	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 BandCombination {	At least 1 entry		
BandCombination[1] SEQUENCE {		entry 1	
bandList SEQUENCE (SIZE (1..maxSimultaneousBands)) OF BandParameters {	1 entry		
BandParameters[1] CHOICE {		entry 1	
eutra SEQUENCE {			
bandEUTRA	FreqBandIndicatorEUTRA		
ca-BandwidthClassDL-EUTRA	Not checked		
ca-BandwidthClassUL-EUTRA	Not checked		
}			
nr SEQUENCE {			
bandNR	FreqBandIndicatorNR		
ca-BandwidthClassDL-NR	Not checked		
ca-BandwidthClassUL-NR	Not checked		
}			
}			
featureSetCombination	Not checked		
ca-ParametersEUTRA	Not checked		
ca-ParametersNR	Not checked		
mrdc-Parameters	Not checked		
supportedBandwidthCombinationSet	BIT STRING (SIZE (1..32))		
powerClass-v1530	Not Checked		
}			
}			

– *BandCombinationListSidelinkEUTRA-NR***Table 4.6.4-2A: BandCombinationListSidelinkEUTRA-NR**

Derivation Path: TS 38.331 [6], clause 6.3.3			
Information Element	Value/remark	Comment	Condition
BandParametersSidelinkEUTRA-NR-r16 ::= SEQUENCE {			
FFS			
}			

– *CA-BandwidthClassEUTRA***Table 4.6.4-3: CA-BandwidthClassEUTRA**

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

## – CA-BandwidthClassNR

Table 4.6.4-4: CA-BandwidthClassNR

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

## – CA-ParametersEUTRA

Table 4.6.4-5: CA- ParametersEUTRA

Derivation Path: TS 38.331 [6], clause 6.3.3			
Information Element	Value/remark	Comment	Condition
CA-ParametersEUTRA ::= SEQUENCE {			
multipleTimingAdvance	Not checked		
simultaneousRx-Tx	Not checked		
supportedNAICS-2CRS-AP	Not checked		
additionalRx-Tx-PerformanceReq	Not checked		
ue-CA-PowerClass-N	Not checked		
supportedBandwidthCombinationSetEUTRA-v1530	Not checked		
}			

## – CA-ParametersNR

Table 4.6.4-6: CA- ParametersNR

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

## – CA-ParametersNRDC

Table 4.6.4-6AA: CA- ParametersNRDC

Derivation Path: TS 38.331 [6], clause 6.3.3			
Information Element	Value/remark	Comment	Condition
CA-ParametersNRDC ::= SEQUENCE {			
ca-ParametersNR-ForDC	Not checked		
ca-ParametersNR-ForDC-v1540	Not checked		
ca-ParametersNR-ForDC-v1550	Not checked		
ca-ParametersNR-ForDC-v1560	Not checked		
featureSetCombinationDC	Not checked		
}			

– *CarrierAggregationVariant*

**Table 4.6.4-6AB: *CarrierAggregationVariant***

Derivation Path: TS 38.331 [6], clause 6.3.3			
Information Element	Value/remark	Comment	Condition
<i>CarrierAggregationVariant</i> ::= SEQUENCE {			
FFS			
}			

CodebookParameters

Table 4.6.4-6A: CodebookParameters

Derivation Path: TS 38.331 [6], clause 6.3.3			
Information Element	Value/remark	Comment	Condition
CodebookParameters ::= SEQUENCE {			
type1 SEQUENCE {			
singlePanel SEQUENCE {			
supportedCSI-RS-ResourceList SEQUENCE (SIZE (1.. maxNrofCSI-RS-Resources)) OF SupportedCSI-RS-Resource {	1 entry		
SupportedCSI-RS-Resource[1] SEQUENCE {		entry 1	
maxNumberTxPortsPerResource	Not checked		
maxNumberResourcesPerBand	Not checked		
totalNumberTxPortsPerBand	Not checked		
}			
}			
modes	Not checked		
maxNumberCSI-RS-PerResourceSet	Not checked		
}			
multiPanel SEQUENCE {			
supportedCSI-RS-ResourceList SEQUENCE (SIZE (1.. maxNrofCSI-RS-Resources)) OF SupportedCSI-RS-Resource {	1 entry		
SupportedCSI-RS-Resource[1] SEQUENCE {		entry 1	
maxNumberTxPortsPerResource	Not checked		
maxNumberResourcesPerBand	Not checked		
totalNumberTxPortsPerBand	Not checked		
}			
}			
modes	Not checked		
nrofPanels	Not checked		
maxNumberCSI-RS-PerResourceSet	Not checked		
}			
}			
type2 SEQUENCE {			
supportedCSI-RS-ResourceList SEQUENCE (SIZE (1.. maxNrofCSI-RS-Resources)) OF SupportedCSI-RS-Resource {	1 entry		
SupportedCSI-RS-Resource[1] SEQUENCE {		entry 1	
maxNumberTxPortsPerResource	Not checked		
maxNumberResourcesPerBand	Not checked		
totalNumberTxPortsPerBand	Not checked		
}			
}			
parameterLx	Not checked		
amplitudeScalingType	Not checked		
amplitudeSubsetRestriction	Not checked		
}			
type2-PortSelection SEQUENCE {			
supportedCSI-RS-ResourceList SEQUENCE (SIZE (1.. maxNrofCSI-RS-Resources)) OF SupportedCSI-RS-Resource {	1 entry		
SupportedCSI-RS-Resource[1] SEQUENCE {		entry 1	
maxNumberTxPortsPerResource	Not checked		
maxNumberResourcesPerBand	Not checked		
totalNumberTxPortsPerBand	Not checked		
}			
}			
parameterLx	Not checked		
amplitudeScalingType	Not checked		
}			
}			

– *FeatureSetCombination*

**Table 4.6.4-7: FeatureSetCombination**

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

– *FeatureSetCombinationId*

**Table 4.6.4-8: FeatureSetCombinationId**

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



– *FeatureSetDownlink*

Table 4.6.4-9: FeatureSetDownlink

Derivation Path: TS 38.331 [6], clause 6.3.3			
Information Element	Value/remark	Comment	Condition
FeatureSetDownlink ::= SEQUENCE {			
featureSetListPerDownlinkCC SEQUENCE (SIZE (1..maxNrofServingCells)) OF	1 entry		
FeatureSetDownlinkPerCC-Id {			
FeatureSetDownlinkPerCC-Id[1]	Not checked	entry 1	
}			
intraBandFreqSeparationDL	FreqSeparationClass		
scalingFactor	Not checked		
crossCarrierSchedulingDL-OtherSCS	Not checked		
scellWithoutSSB	Not checked		
csi-RS-MeasSCellWithoutSSB	Not checked		
dummy1	Not checked		
type1-3-CSS	Not checked		
pdcchMonitoringAnyOccasions	Not checked		
dummy2	Not checked		
ue-SpecificUL-DL-Assignment	Not checked		
searchSpaceSharingCA-DL	Not checked		
timeDurationForQCL SEQUENCE {			
scs-60kHz	Not checked		
scsh-120kHz	Not checked		
}			
pdsch-ProcessingType1-DifferentTB-PerSlot			
SEQUENCE {			
scs-15kHz	Not checked		
scs-30kHz	Not checked		
scs-60kHz	Not checked		
scs-120kHz	Not checked		
}			
dummy3	Not checked		
dummy4	Not checked		
dummy5	Not checked		
dummy6	Not checked		
dummy7	Not checked		
}			

– *FeatureSetDownlinkId*

Table 4.6.4-10: FeatureSetDownlinkId

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

– *FeatureSetDownlinkPerCC***Table 4.6.4-11: FeatureSetDownlinkPerCC**

Derivation Path: TS 38.331 [6], clause 6.3.3			
Information Element	Value/remark	Comment	Condition
FeatureSetDownlinkPerCC ::= SEQUENCE {			
supportedSubcarrierSpacingDL	Not checked		
supportedBandwidthDL	SupportedBandwidth		
channelBW-90mhz	Not checked		
maxNumberMIMO-LayersPDSCH	MIMO-LayersDL		
supportedModulationOrderDL	ModulationOrder		
}			

– *FeatureSetDownlinkPerCC-Id***Table 4.6.4-12: FeatureSetDownlinkPerCC-Id**

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

– *FeatureSetEUTRA-DownlinkId***Table 4.6.4-13: FeatureSetEUTRA-DownlinkId**

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

– *FeatureSetEUTRA-UplinkId***Table 4.6.4-14: FeatureSetEUTRA-UplinkId**

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

– *FeatureSets*Table 4.6.4-15: *FeatureSets*

Derivation Path: TS 38.331 [6], clause 6.3.3			
Information Element	Value/remark	Comment	Condition
FeatureSets ::= SEQUENCE {			
featureSetsDownlink SEQUENCE (SIZE (1..maxDownlinkFeatureSets)) OF FeatureSetDownlink {	1 entry		
FeatureSetDownlink[1]	FeatureSetDownlink	entry 1	
}			
featureSetsDownlinkPerCC SEQUENCE (SIZE (1..maxPerCC-FeatureSets)) OF FeatureSetDownlinkPerCC {	1 entry		
FeatureSetDownlinkPerCC[1]	FeatureSetDownlinkPerCC	entry 1	
}			
featureSetsUplink SEQUENCE (SIZE (1..maxUplinkFeatureSets)) OF FeatureSetUplink {	1 entry		
FeatureSetUplink[1]	FeatureSetUplink	entry 1	
}			
featureSetsUplinkPerCC SEQUENCE (SIZE (1..maxPerCC-FeatureSets)) OF FeatureSetUplinkPerCC {	1 entry		
FeatureSetUplinkPerCC[1]	FeatureSetUplinkPerCC	entry 1	
}			
}			

– *FeatureSetUplink*

Table 4.6.4-16: FeatureSetUplink

Derivation Path: TS 38.331 [6], clause 6.3.3			
Information Element	Value/remark	Comment	Condition
FeatureSetUplink ::= SEQUENCE {			
featureSetListPerUplinkCC SEQUENCE (SIZE (1.. maxNrofServingCells)) OF FeatureSetUplinkPerCC-Id {	1 entry		
FeatureSetUplinkPerCC-Id[1]	Not checked	entry 1	
}			
scalingFactor	Not checked		
crossCarrierSchedulingUL-OtherSCS	Not checked		
intraBandFreqSeparationUL	FreqSeparationClass		
searchSpaceSharingCA-UL	Not checked		
dummy1	Not checked		
supportedSRS-Resources SEQUENCE {			
maxNumberAperiodicSRS-PerBWP	Not Checked		
maxNumberAperiodicSRS-PerBWP-PerSlot	Not Checked		
maxNumberPeriodicSRS-PerBWP	Not Checked		
maxNumberPeriodicSRS-PerBWP-PerSlot	Not Checked		
maxNumberSemiPersistentSRS-PerBWP	Not Checked		
maxNumberSemiPersistentSRS-PerBWP-PerSlot	Not Checked		
maxNumberSRS-Ports-PerResource	Not Checked		
}			
twoPUCCH-Group	Not checked		
dynamicSwitchSUL	Not checked		
pusch- ProcessingType1-DifferentTB-PerSlot SEQUENCE {			
scs-15kHz	Not checked		
scs-30kHz	Not checked		
scs-60kHz	Not checked		
scs-120kHz	Not checked		
}			
dummy2	Not checked		
}			

– *FeatureSetUplinkId*

Table 4.6.4-17: FeatureSetUplinkId

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

– *FeatureSetUplinkPerCC***Table 4.6.4-18: FeatureSetUplinkPerCC**

Derivation Path: TS 38.331 [6], clause 6.3.3			
Information Element	Value/remark	Comment	Condition
FeatureSetUplinkPerCC ::= SEQUENCE {			
supportedSubcarrierSpacingUL	Not checked		
supportedBandwidthUL	SupportedBandwidth		
channelBW-90mhz	Not checked		
mimo-CB-PUSCH SEQUENCE {			
maxNumberMIMO-LayersCB-PUSCH	MIMO-LayersUL		
maxNumberSRS-ResourcePerSet	Not checked		
}			
maxNumberMIMO-LayersNonCB-PUSCH	MIMO-LayersUL		
supportedModulationOrderUL	ModulationOrder		
}			

– *FeatureSetUplinkPerCC-Id***Table 4.6.4-19: FeatureSetUplinkPerCC-Id**

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

– *FreqBandIndicatorEUTRA***Table 4.6.4-20: FreqBandIndicatorEUTRA**

Derivation Path: TS 38.331 [6], clause 6.3.3			
Information Element	Value/remark	Comment	Condition
FreqBandIndicatorEUTRA	EUTRA Operating band under test		

– *FreqBandList*

**Table 4.6.4-21: *FreqBandList***

Derivation Path: TS 38.331 [6], clause 6.3.3			
Information Element	Value/remark	Comment	Condition
FreqBandList::= SEQUENCE (SIZE (1..maxBandsMRDC)) OF FreqBandInformation {	Number of entries depends on the conditions		
FreqBandInformation[1] CHOICE {		entry 1	EN-DC, NE-DC
bandInformationEUTRA SEQUENCE {			
bandEUTRA	FreqBandIndicatorEUTRA		
ca-BandwidthClassDL-EUTRA	Not checked		
ca-BandwidthClassUL-EUTRA	Not checked		
}			
FreqBandInformation[2] CHOICE {		entry 2	
bandInformationNR SEQUENCE {			
bandNR	FreqBandIndicatorNR		
maxBandwidthRequestedDL	Not checked		
maxBandwidthRequestedUL	Not checked		
maxCarriersRequestedDL	Not checked		
maxCarriersRequestedUL	Not checked		
}			
FreqBandInformation[3] CHOICE {		entry 3	EN-DC AND CA-InterBand
bandInformationNR SEQUENCE {			
bandNR	FreqBandIndicatorNR with condition CA-InterBand		
maxBandwidthRequestedDL	Not checked		
maxBandwidthRequestedUL	Not checked		
maxCarriersRequestedDL	Not checked		
maxCarriersRequestedUL	Not checked		
}			
FreqBandInformation[1] CHOICE {		entry 1	NR
bandInformationNR SEQUENCE {			
bandNR	FreqBandIndicatorNR		
maxBandwidthRequestedDL	Not checked		
maxBandwidthRequestedUL	Not checked		
maxCarriersRequestedDL	Not checked		
maxCarriersRequestedUL	Not checked		
}			
FreqBandInformation[2] CHOICE {		entry 2	NR AND CA-InterBand
bandInformationNR SEQUENCE {			
bandNR	FreqBandIndicatorNR with condition CA-InterBand		
maxBandwidthRequestedDL	Not checked		
maxBandwidthRequestedUL	Not checked		
maxCarriersRequestedDL	Not checked		
maxCarriersRequestedUL	Not checked		
}			
FreqBandInformation[2] CHOICE {		entry 2	NR-DC
bandInformationNR SEQUENCE {			
bandNR	FreqBandIndicatorNR with condition NR-DC-SecondaryBand		
maxBandwidthRequestedDL	Not checked		
maxCarriersRequestedDL	Not checked		

maxCarriersRequestedUL	Not checked		
}			
}			
}			

Condition	Explanation
EN-DC	E-UTRA-NR Dual Connectivity with E-UTRA connected to EPC
CA-InterBand	Used in NR CA Inter-band test cases
NR	NG-RAN NR Radio Access
NR-DC	NR-NR Dual Connectivity
NE-DC	NR E-UTRA Dual Connectivity

– *FreqSeparationClass*

**Table 4.6.4-22: FreqSeparationClass**

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

– *FreqSeparationClassDL-Only*

**Table 4.6.4-22A: FreqSeparationClassDL-Only**

Derivation Path: TS 38.331 [6], clause 6.3.3			
Information Element	Value/remark	Comment	Condition
FreqSeparationClassDL-Only-r16	FFS		

– *HighSpeedParameters*

**Table 4.6.4-22B: HighSpeedParameters**

Derivation Path: TS 38.331 [6], clause 6.3.3			
Information Element	Value/remark	Comment	Condition
HighSpeedParameters-r16 ::= SEQUENCE {			
FFS			
}			

– *IMS-Parameters*

**Table 4.6.4-23: IMS-Parameters**

Derivation Path: TS 38.331 [6], clause 6.3.3			
Information Element	Value/remark	Comment	Condition
IMS-Parameters ::= SEQUENCE {			
ims-ParametersCommon SEQUENCE {			
voiceOverEUTRA-5GC	Not Checked		
}			
ims-ParametersFRX-Diff SEQUENCE {			
voiceOverNR	Not Checked		
}			
}			



*InterRAT-Parameters*

**Table 4.6.4-24: InterRAT-Parameters**

Derivation Path: TS 38.331 [6], clause 6.3.3			
Information Element	Value/remark	Comment	Condition
InterRAT-Parameters ::= SEQUENCE {			
eutra SEQUENCE {			
supportedBandListEUTRA SEQUENCE (SIZE (1..maxBandsEUTRA)) OF FreqBandIndicatorEUTRA	1 entry		
FreqBandIndicatorEUTRA[1]	FreqBandIndicatorEUTRA	entry 1	
}			
eutra-ParametersCommon SEQUENCE {			
mfbf-EUTRA	Not Checked		
modifiedMPR-BehaviorEUTRA	Not Checked		
multiNS-Pmax-EUTRA	Not Checked		
rs-SINR-MeasEUTRA	Not Checked		
ne-DC	Not Checked		
nr-HO-ToEN-DC-r16	Not Checked		>=Rel16
}			
eutra-ParametersXDD-Diff SEQUENCE {			
rsrqMeasWidebandEUTRA	Not Checked		
}			
}			
}			

*MAC-Parameters*

**Table 4.6.4-25: MAC-Parameters**

Derivation Path: TS 38.331 [6], clause 6.3.3			
Information Element	Value/remark	Comment	Condition
MAC-Parameters ::= SEQUENCE {			
mac-ParametersCommon SEQUENCE {			
lcp-Restriction	Not checked		
dummy	Not checked		
lch-ToSCellRestriction	Not checked		
}			
mac-ParametersXDD-Diff SEQUENCE {			
skipUplinkTxDynamic	Not checked		
logicalChannelSR-DelayTimer	Not checked		
longDRX-Cycle	Not checked		
shortDRX-Cycle	Not checked		
multipleSR-Configurations	Not checked		
multipleConfiguredGrants	Not checked		
}			
}			

– *MeasAndMobParameters***Table 4.6.4-26: MeasAndMobParameters**

Derivation Path: TS 38.331 [6], clause 6.3.3			
Information Element	Value/remark	Comment	Condition
MeasAndMobParameters ::= SEQUENCE {			
measAndMobParametersCommon SEQUENCE {			
supportedGapPattern	Not checked		
ssb-RLM	Not checked		
ssb-AndCSI-RS-RLM	Not checked		
}			
measAndMobParametersXDD-Diff SEQUENCE {			
intraAndInterF-MeasAndReport	Not checked		
eventA-MeasAndReport	Not checked		
}			
MeasAndMobParametersFRX-Diff SEQUENCE {			
ss-SINR-Meas	Not checked		
csi-RSRP-AndRSRQ-MeasWithSSB	Not checked		
csi-RSRP-AndRSRQ-MeasWithoutSSB	Not checked		
csi-SINR-Meas	Not checked		
csi-RS-RLM	Not checked		
}			
}			

– *MeasAndMobParametersMRDC***Table 4.6.4-27: MeasAndMobParametersMRDC**

Derivation Path: TS 38.331 [6], clause 6.3.3			
Information Element	Value/remark	Comment	Condition
MeasAndMobParametersMRDC ::= SEQUENCE {			
measAndMobParametersMRDC-Common SEQUENCE {			
independentGapConfig	Not checked		
}			
measAndMobParametersMRDC-XDD-Diff SEQUENCE {			
sftd-MeasPSCell	Not checked		
sftd-MeasNR-Cell	Not checked		
}			
measAndMobParametersMRDC-FRX-Diff SEQUENCE {			
simultaneousRxDataSSB-DiffNumerology	Not checked		
}			
}			

– *MIMO-Layers***Table 4.6.4-28: MIMO-Layers**

Derivation Path: TS 38.331 [6], clause 6.3.3			
Information Element	Value/remark	Comment	Condition
MIMO-LayersDL	Not checked		
MIMO-LayersUL	Not checked		

– *MIMO-ParametersPerBand*

**Table 4.6.4-29: *MIMO-ParametersPerBand***

Derivation Path: TS 38.331 [6], clause 6.3.3			
Information Element	Value/remark	Comment	Condition
MIMO-ParametersPerBand ::= SEQUENCE {			
tci-StatePDSCH SEQUENCE {			
maxNumberConfiguredTCIstatesPerCC	Not checked		
maxNumberActiveTCI-PerBWP	Not checked		
}			
additionalActiveTCI-StatePDCCH	Not checked		
pusch-TransCoherence	Not checked		
beamCorrespondenceWithoutUL-BeamSweeping	Not checked		
periodicBeamReport	Not checked		
aperiodicBeamReport	Not checked		
sp-BeamReportPUCCH	Not checked		
sp-BeamReportPUSCH	Not checked		
dummy1	Not checked		
maxNumberRxBeam	Not checked		
maxNumberRxTxBeamSwitchDL SEQUENCE {			
scs-15kHz	Not checked		
scs-30kHz	Not checked		
scs-60kHz	Not checked		
scs-120kHz	Not checked		
scs-240kHz	Not checked		
}			
maxNumberNonGroupBeamReporting	Not checked		
groupBeamReporting	Not checked		
uplinkBeamManagement SEQUENCE {			
maxNumberSRS-ResourcePerSet	Not checked		
maxNumberSRS-ResourceSet	Not checked		
}			
maxNumberCSI-RS-BFD	Not checked		
maxNumbeSSB-BFD	Not checked		
maxNumberCSI-RS-SSB-CBD	Not checked		
dummy2	Not checked		
twoPortsPTRS-UL	Not checked		
dummy5	Not checked		
dummy3	Not checked		
beamReportTiming SEQUENCE {			
scs-15kHz	Not checked		
scs-30kHz	Not checked		
scs-60kHz	Not checked		
scs-120kHz	Not checked		
}			
ptrs-DensityRecommendationSetDL SEQUENCE {			
scs-15kHz			
frequencyDensity1	Not checked		
frequencyDensity2	Not checked		
timeDensity1	Not checked		
timeDensity2	Not checked		
timeDensity3	Not checked		
}			
scs-30kHz			
frequencyDensity1	Not checked		
frequencyDensity2	Not checked		
timeDensity1	Not checked		
timeDensity2	Not checked		
timeDensity3	Not checked		
}			
scs-60kHz			
frequencyDensity1	Not checked		
frequencyDensity2	Not checked		
timeDensity1	Not checked		
timeDensity2	Not checked		
timeDensity3	Not checked		
}			
scs-120kHz			

frequencyDensity1	Not checked		
frequencyDensity2	Not checked		
timeDensity1	Not checked		
timeDensity2	Not checked		
timeDensity3	Not checked		
}			
}			
ptrs-DensityRecommendationSetUL SEQUENCE {			
scs-15kHz SEQUENCE {			
frequencyDensity1	Not checked		
frequencyDensity2	Not checked		
timeDensity1	Not checked		
timeDensity2	Not checked		
timeDensity3	Not checked		
sampleDensity1	Not checked		
sampleDensity2	Not checked		
sampleDensity3	Not checked		
sampleDensity4	Not checked		
sampleDensity5	Not checked		
}			
scs-30kHz SEQUENCE {			
frequencyDensity1	Not checked		
frequencyDensity2	Not checked		
timeDensity1	Not checked		
timeDensity2	Not checked		
timeDensity3	Not checked		
sampleDensity1	Not checked		
sampleDensity2	Not checked		
sampleDensity3	Not checked		
sampleDensity4	Not checked		
sampleDensity5	Not checked		
scs-60kHz SEQUENCE {			
frequencyDensity1	Not checked		
frequencyDensity2	Not checked		
timeDensity1	Not checked		
timeDensity2	Not checked		
timeDensity3	Not checked		
sampleDensity1	Not checked		
sampleDensity2	Not checked		
sampleDensity3	Not checked		
sampleDensity4	Not checked		
sampleDensity5	Not checked		
scs-120kHz SEQUENCE {			
frequencyDensity1	Not checked		
frequencyDensity2	Not checked		
timeDensity1	Not checked		
timeDensity2	Not checked		
timeDensity3	Not checked		
sampleDensity1	Not checked		
sampleDensity2	Not checked		
sampleDensity3	Not checked		
sampleDensity4	Not checked		
sampleDensity5	Not checked		
}			
dummy4	Not checked		
aperiodicTRS	Not checked		
}			

– *ModulationOrder***Table 4.6.4-30: *ModulationOrder***

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

– *MRDC-Parameters***Table 4.6.4-31: *MRDC-Parameters***

Derivation Path: TS 38.331 [6], clause 6.3.3			
Information Element	Value/remark	Comment	Condition
MRDC-Parameters ::= SEQUENCE {			
singleUL-Transmission	Not checked		
dynamicPowerSharingENDC	Not checked		
tdm-Pattern	Not checked		
ul-SharingEUTRA-NR	Not checked		
ul-SwitchingTimeEUTRA-NR	Not checked		
simultaneousRxTxInterBandENDC	Not checked		
asynclntraBandENDC	Not checked		
}			

NRDC-Parameters

Table 4.6.4-31A: NRDC-Parameters

Derivation Path: TS 38.331 [6], clause 6.3.3			
Information Element	Value/remark	Comment	Condition
NRDC-Parameters ::= SEQUENCE {			
measAndMobParametersNRDC	Not checked		
generalParametersNRDC SEQUENCE {			
splitSRB-WithOneUL-Path	Not checked		
splitDRB-withUL-Both-MCG-SCG	Not checked		
srb3	Not checked		
v2x-EUTRA	Not checked		
}			
fdd-Add-UE-NRDC-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-NRDC-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-NRDC-Capabilities SEQUENCE {	UE-MRDC-CapabilityAddFRX-Mode		
measAndMobParametersMRDC-FRX-Diff SEQUENCE {			
simultaneousRxDataSSB-DiffNumerology	Not checked		
}			
}			
fr2-Add-UE-NRDC-Capabilities SEQUENCE {			
measAndMobParametersMRDC-FRX-Diff SEQUENCE {			
simultaneousRxDataSSB-DiffNumerology	Not checked		
}			
}			
lateNonCriticalExtension	Not checked		
nonCriticalExtension	Not checked		
}			

– *OLPC-SRS-Pos***Table 4.6.4-31B: OLPC-SRS-Pos**

Derivation Path: TS 38.331 [6], clause 6.3.3			
Information Element	Value/remark	Comment	Condition
OLPC-SRS-Pos-r16 ::= SEQUENCE {			
FFS			
}			

– *PDCP-Parameters***Table 4.6.4-32: 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-DuplicationSRB	Not checked		
pdcp-DuplicationMCG-OrSCG-DRB	Not checked		
}			

– *PDCP-ParametersMRDC***Table 4.6.4-33: 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 4.6.4-34: *Phy-Parameters***

Derivation Path: TS 38.331 [6], clause 6.3.3			
Information Element	Value/remark	Comment	Condition
Phy-Parameters ::= SEQUENCE {			
phy-ParametersCommon SEQUENCE {			
csi-RS-CFRA-ForHO	Not checked		
dynamicPRB-BundlingDL	Not checked		
sp-CSI-ReportPUCCH	Not checked		
sp-CSI-ReportPUSCH	Not checked		
nzp-CSI-RS-IntefMgmt	Not checked		
type2-SP-CSI-Feedback-LongPUCCH	Not checked		
precoderGranularityCORESET	Not checked		
dynamicHARQ-ACK-Codebook	Not checked		
semiStaticHARQ-ACK-Codebook	Not checked		
spatialBundlingHARQ-ACK	Not checked		
dynamicBetaOffsetInd-HARQ-ACK-CSI	Not checked		
pucch-Repetition-F1-3-4	Not checked		
ra-Type0-PUSCH	Not checked		
dynamicSwitchRA-Type0-1-PDSCH	Not checked		
dynamicSwitchRA-Type0-1-PUSCH	Not checked		
pdsch-MappingTypeA	Not checked		
pdsch-MappingTypeB	Not checked		
interleavingVRB-ToPRB-PDSCH	Not checked		
interSlotFreqHopping-PUSCH	Not checked		
type1-PUSCH-RepetitionMultiSlots	Not checked		
type2-PUSCH-RepetitionMultiSlots	Not checked		
pusch-RepetitionMultiSlots	Not checked		
pdsch-RepetitionMultiSlots	Not checked		
downlinkSPS	Not checked		
configuredUL-GrantType1	Not checked		
configuredUL-GrantType2	Not checked		
pre-EmptIndication-DL	Not checked		
cbg-TransIndication-DL	Not checked		
cbg-TransIndication-UL	Not checked		
cbg-FlushIndication-DL	Not checked		
dynamicHARQ-ACK-CodeB-CBG-Retx-DL	Not checked		
rateMatchingResrcSetSemi-Static	Not checked		
rateMatchingResrcSetDynamic	Not checked		
bwp-SwitchingDelay	Not checked		
}			
phy-ParametersXDD-Diff SEQUENCE {			
dynamicSFI	Not checked		
twoPUCCH-F0-2-ConsecSymbols	Not checked		
twoDifferentTPC-Loop-PUSCH	Not checked		
twoDifferentTPC-Loop-PUCCH	Not checked		
}			
phy-ParametersFRX-Diff SEQUENCE {			
dynamicSFI	Not checked		
dummy1	Not checked		
twoFL-DMRS	Not checked		
dummy2	Not checked		
dummy3	Not checked		
supportedDMRS-TypeDL	Not checked		
supportedDMRS-TypeUL	Not checked		
semiOpenLoopCSI	Not checked		
csi-ReportWithoutPMI	Not checked		
csi-ReportWithoutCQI	Not checked		
onePortsPTRS	Not checked		
twoPUCCH-F0-2-ConsecSymbols	Not checked		
pucch-F2-WithFH	Not checked		
pucch-F3-WithFH	Not checked		
pucch-F4-WithFH	Not checked		
freqHoppingPUCCH-F0-2	Not checked		
freqHoppingPUCCH-F1-3-4	Not checked		
mux-SR-HARQ-ACK-CSI-PUCCH- MultiPerSlot	Not checked		
uci-CodeBlockSegmentation	Not checked		

onePUCCH-LongAndShortFormat	Not checked		
twoPUCCH-AnyOthersInSlot	Not checked		
intraSlotFreqHopping-PUSCH	Not checked		
pusch-LBRM	Not checked		
pdccch-BlindDetectionCA	Not checked		
tpc-PUSCH-RNTI	Not checked		
tpc-PUCCH-RNTI	Not checked		
tpc-SRS-RNTI	Not checked		
absoluteTPC-Command	Not checked		
twoDifferentTPC-Loop-PUSCH	Not checked		
twoDifferentTPC-Loop-PUCCH	Not checked		
pusch-HalfPi-BPSK	Not checked		
pucch-F3-4-HalfPi-BPSK	Not checked		
almostContiguousCP-OFDM-UL	Not checked		
sp-CSI-RS	Not checked		
sp-CSI-IM	Not checked		
tdd-MultiDL-UL-SwitchPerSlot	Not checked		
multipleCORESET	Not checked		
}			
phy-ParametersFR1 SEQUENCE {			
pdccchMonitoringSingleOccasion	Not checked		
scs-60kHz	Not checked		
pdsch-256QAM-FR1	Not checked		
pdsch-RE-MappingFR1- PerSymbol	Not checked		
}			
phy-ParametersFR2 SEQUENCE {			
dummy	Not checked		
pdsch-RE-MappingFR2- PerSymbol	Not checked		
}			
}			

– *Phy-ParametersMRDC*

**Table 4.6.4-35: *Phy-ParametersMRDC***

Derivation Path: TS 38.331 [6], clause 6.3.3			
Information Element	Value/remark	Comment	Condition
Phy-ParametersMRDC ::= SEQUENCE {			
naics-Capability-List SEQUENCE (SIZE (1..maxNrofNAICS-Entries)) OF NAICS-Capability-Entry {	1 entry		
NAICS-Capability-Entry[1] SEQUENCE {		entry 1	
numberOfNAICS-CapableCC	Not checked		
numberOfAggregatedPRB	Not checked		
}			
}			

– *Phy-ParametersSharedSpectrumChAccess*

**Table 4.6.4-35AA: *Phy-ParametersSharedSpectrumChAccess***

Derivation Path: TS 38.331 [6], clause 6.3.3			
Information Element	Value/remark	Comment	Condition
Phy-ParametersSharedSpectrumChAccess-r16 ::= SEQUENCE {			
FFS			
}			

– *PowSav-Parameters***Table 4.6.4-35A: PowSav-Parameters**

Derivation Path: TS 38.331 [6], clause 6.3.3			
Information Element	Value/remark	Comment	Condition
PowSav-Parameters-r16 ::= SEQUENCE {			
FFS			
}			

– *ProcessingParameters***Table 4.6.4-36: ProcessingParameters**

Derivation Path: TS 38.331 [6], clause 6.3.3			
Information Element	Value/remark	Comment	Condition
ProcessingParameters ::= SEQUENCE {			
fallback	Not checked		
differentTB-PerSlot SEQUENCE {			
upto1	Not checked		
upto2	Not checked		
upto4	Not checked		
upto7	Not checked		
}			
}			

– *RAT-Type***Table 4.6.4-37: RAT-Type**

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

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

– *RF-Parameters*

**Table 4.6.4-38: *RF-Parameters***

Derivation Path: TS 38.331 [6], clause 6.3.3			
Information Element	Value/remark	Comment	Condition
RF-Parameters ::= SEQUENCE {			
supportedBandListNR SEQUENCE (SIZE (1..maxBands)) OF BandNR {	At least 1 entry		
BandNR[1] SEQUENCE {		entry 1	
bandNR	FreqBandIndicatorNR with condition NR		
modifiedMPR-Behaviour	Not checked		
mimo-ParametersPerBand	Not checked		
extendedCP	Not checked		
multipleTCI	Not checked		
bwp-WithoutRestriction	Not checked		
bwp-SameNumerology	Not checked		
bwp-DiffNumerology	Not checked		
crossCarrierScheduling-SameSCS	Not checked		
pdsch-256QAM-FR2	Not checked		
pusch-256QAM	Not checked		
ue-PowerClass	Not checked		
rateMatchingLTE-CRS	Not checked		
channelBWs-DL CHOICE {			
fr1 SEQUENCE {			
scs-15kHz	Not checked		
scs-30kHz	Not checked		
scs-60kHz	Not checked		
}			
fr2 SEQUENCE {			
scs-60kHz	Not checked		
scs-120kHz	Not checked		
}			
}			
channelBWs-UL CHOICE {			
fr1 SEQUENCE {			
scs-15kHz	Not checked		
scs-30kHz	Not checked		
scs-60kHz	Not checked		
}			
fr2 SEQUENCE {			
scs-60kHz	Not checked		
scs-120kHz	Not checked		
}			
}			
}			
BandNR[2] SEQUENCE {		entry 2	NR-DC-SecondaryB and NR_CA-InterBand
bandNR	FreqBandIndicatorNR with condition NR-DC-SecondaryBand		NR-DC-SecondaryB and
	FreqBandIndicatorNR with condition NR_CA-InterBand		NR_CA-InterBand
modifiedMPR-Behaviour	Not checked		
mimo-ParametersPerBand	Not checked		
extendedCP	Not checked		
multipleTCI	Not checked		
bwp-WithoutRestriction	Not checked		
bwp-SameNumerology	Not checked		
bwp-DiffNumerology	Not checked		
crossCarrierScheduling-SameSCS	Not checked		
pdsch-256QAM-FR2	Not checked		
pusch-256QAM	Not checked		
ue-PowerClass	Not checked		
rateMatchingLTE-CRS	Not checked		
channelBWs-DL CHOICE {			

fr1 SEQUENCE {			
scs-15kHz	Not checked		
scs-30kHz	Not checked		
scs-60kHz	Not checked		
}			
fr2 SEQUENCE {			
scs-60kHz	Not checked		
scs-120kHz	Not checked		
}			
}			
channelBWs-UL CHOICE {			
fr1 SEQUENCE {			
scs-15kHz	Not checked		
scs-30kHz	Not checked		
scs-60kHz	Not checked		
}			
fr2 SEQUENCE {			
scs-60kHz	Not checked		
scs-120kHz	Not checked		
}			
}			
}			
}			
maxUplinkDutyCycle-PC2-FR1	Not checked		
pucch-SpatialRelInfoMAC-CE	Not checked		
powerBoosting-pi2BPSK	Not checked		
maxUplinkDutyCycle-FR2	Not checked		
channelBWs-DL-v1590	Not checked		
channelBWs-UL-v1590	Not checked		
asymmetricBandwidthCombinationSet	Not checked		
sharedSpectrumChAccessParamsPerBand-r16	Not checked		
cancelOverlappingPUSCH-r16	Not checked		
multipleRateMatchingEUTRA-CRS-r16	Not checked		
overlapRateMatchingEUTRA-CRS-r16	Not checked		
pdsch-MappingTypeB-Alt-r16	Not checked		
oneSlotPeriodicTRS-r16	Not checked		
olpc-SRS-Pos-r16	Not checked		
spatialRelationsSRS-Pos-r16	Not checked		
simulSRS-MIMO-TransWithinBand-r16	Not checked		
channelBW-DL-IAB-r16	Not checked		
channelBW-UL-IAB-r16	Not checked		
rasterShift7dot5-IAB-r16	Not checked		
ue-PowerClass-v1610	Not checked		
condHandover-r16	Not checked		
condHandoverFailure-r16	Not checked		
condHandoverTwoTriggerEvents-r16	Not checked		
condPSCellChange-r16	Not checked		
condPSCellChangeTwoTriggerEvents-r16	Not checked		
mpr-PowerBoost-FR2-r16	Not checked		
activeConfiguredGrant-r16	Not checked		
maxNumberConfigsPerBWP-r16	Not checked		
maxNumberConfigsAllCC-r16	Not checked		
jointReleaseConfiguredGrantType2-r16	Not checked		
sps-r16	Not checked		
maxNumberConfigsPerBWP-r16	Not checked		
maxNumberConfigsAllCC-r16	Not checked		
jointReleaseSPS-r16	Not checked		
simulSRS-TransWithinBand-r16	Not checked		
trs-AdditionalBandwidth-r16	Not checked		
handoverIntraF-IAB-r16	Not checked		
simulTX-SRS-AntSwitchingIntraBandUL-CA-r16	Not checked		
sharedSpectrumChAccessParamsPerBand-v1630	Not checked		
handoverUTRA-FDD-r16	Not checked		
enhancedUL-TransientPeriod-r16	Not checked		

sharedSpectrumChAccessParamsPerBand-v1640	Not checked		
supportedBandCombinationList	Not checked		
appliedFreqBandListFilter	Not present		
	FreqBandList		FILTER_RE QUESTED
}			

Condition	Explanation
FILTER_REQUESTED	This condition shall be set to true when UE is requested to filter the information via 'capabilityRequestFilter' IE in the NR5GC UECapabilityEnquiry message or via 'requestedFreqBandsNR-MRDC' IE in the EN-DC UECapabilityEnquiry message
NR-DC-SecondaryBand	Used in NR-DC test cases
NR_CA-InterBand	NG-RAN NR Radio Access using NR CA Inter-band test cases

– *RF-ParametersMRDC*

**Table 4.6.4-39: RF-ParametersMRDC**

Derivation Path: TS 38.331 [6], clause 6.3.3			
Information Element	Value/remark	Comment	Condition
RF-ParametersMRDC ::= SEQUENCE {			
supportedBandCombinationList	BandCombinationList		
appliedFreqBandListFilter	FreqBandList with condition EN-DC		EN-DC
	FreqBandList with condition NE-DC		NE-DC
	FreqBandList with condition EN-DC and CA-InterBand		ENDC_CA-InterBand
}			

Condition	Explanation
EN-DC	E-UTRA-NR Dual Connectivity
EN-DC_CA-InterBand	E-UTRA-NR Dual Connectivity used in NR CA Inter-band test cases
NE-DC	NR E-UTRA Dual Connectivity

– *RLC-Parameters*

**Table 4.6.4-40: RLC-Parameters**

Derivation Path: TS 38.331 [6], clause 6.3.3			
Information Element	Value/remark	Comment	Condition
RLC-Parameters ::= SEQUENCE {			
am-WithShortSN	Not checked		
um-WithShortSN	Not checked		
um-WithLongSN	Not checked		
}			



– *SDAP-Parameters***Table 4.6.4-41: SDAP-Parameters**

Derivation Path: TS 38.331 [6], clause 6.3.3			
Information Element	Value/remark	Comment	Condition
SDAP-Parameters ::= SEQUENCE {			
as-ReflectiveQoS	Not checked		
}			

– *SidelinkParameters***Table 4.6.4-41A: SidelinkParameters**

Derivation Path: TS 38.331 [6], clause 6.3.3			
Information Element	Value/remark	Comment	Condition
SidelinkParameters-r16 ::= SEQUENCE {			
FFS			
}			

– *SON-Parameters***Table 4.6.4-41B: SON-Parameters**

Derivation Path: TS 38.331 [6], clause 6.3.3			
Information Element	Value/remark	Comment	Condition
SON-Parameters-r16 ::= SEQUENCE {			
FFS			
}			

– *SpatialRelationsSRS-Pos***Table 4.6.4-41C: SpatialRelationsSRS-Pos**

Derivation Path: TS 38.331 [6], clause 6.3.3			
Information Element	Value/remark	Comment	Condition
SpatialRelationsSRS-Pos-r16 ::= SEQUENCE {			
FFS			
}			

– *SRS-SwitchingTimeNR***Table 4.6.4-42: SRS-SwitchingTimeNR**

Derivation Path: TS 38.331 [6], clause 6.3.3			
Information Element	Value/remark	Comment	Condition
SRS-SwitchingTimeNR ::= SEQUENCE {			
switchingTimeDL	Not checked		
switchingTimeUL	Not checked		
}			

– *SRS-SwitchingTimeEUTRA***Table 4.6.4-43: SRS-SwitchingTimeEUTRA**

Derivation Path: TS 38.331 [6], clause 6.3.3			
Information Element	Value/remark	Comment	Condition
SRS-SwitchingTimeEUTRA ::= SEQUENCE {			
switchingTimeDL	Not checked		
switchingTimeUL	Not checked		
}			

– *SupportedBandwidth***Table 4.6.4-44: SupportedBandwidth**

Derivation Path: TS 38.331 [6], clause 6.3.3			
Information Element	Value/remark	Comment	Condition
SupportedBandwidth ::= CHOICE {			
fr1	Not checked		FR1
fr2	Not checked		FR2
}			

– *UE-BasedPerfMeas-Parameters***Table 4.6.4-44A: UE-BasedPerfMeas-Parameters**

Derivation Path: TS 38.331 [6], clause 6.3.3			
Information Element	Value/remark	Comment	Condition
UE-BasedPerfMeas-Parameters-r16 ::= SEQUENCE {			
FFS			
}			

– *UE-CapabilityRAT-ContainerList***Table 4.6.4-45: UE-CapabilityRAT-ContainerList**

Derivation Path: TS 38.331 [6], clause 6.3.3			
Information Element	Value/remark	Comment	Condition
UE-CapabilityRAT-ContainerList ::= SEQUENCE (SIZE (0.. maxRAT-CapabilityContainers)) OF UE-CapabilityRAT-Container {	n entries		
UE-CapabilityRAT-Container[1] SEQUENCE {		entry 1	
rat-Type	RAT-Type		
ue-CapabilityRAT-Container	UE-NR-Capability with condition NR		
	UE-NR-Capability with condition NR-DC		NR-DC
	UE-NR-Capability with condition NR_CA-InterBand		NR_CA-InterBand
}			
UE-CapabilityRAT-Container[2] SEQUENCE {		entry 2	EN-DC, NE-DC, EN-DC_CA-InterBand
rat-Type	RAT-Type with condition NE-DC		
ue-CapabilityRAT-Container	UE-MRDC-Capability with condition EN-DC		EN-DC
	UE-MRDC-Capability with condition NE-DC		NE-DC
	UE-MRDC-Capability with condition EN-DC_CA-InterBand		EN-DC_CA-InterBand
}			
}			

Condition	Explanation
EN-DC	E-UTRA-NR Dual Connectivity
EN-DC_CA-InterBand	E-UTRA-NR Dual Connectivity using NR CA Inter-band test cases
NE-DC	NR E-UTRA Dual Connectivity
NR_CA-InterBand	NG-RAN NR Radio Access using NR CA Inter-band test cases
NR-DC	Used in NR-DC test cases

– UE-CapabilityRAT-RequestList

**Table 4.6.4-46: UE-CapabilityRAT-RequestList**

Derivation Path: TS 38.331 [6], clause 6.3.3			
Information Element	Value/remark	Comment	Condition
UE-CapabilityRAT-RequestList ::= SEQUENCE (SIZE (0.. maxRAT-CapabilityContainers)) OF UE-CapabilityRAT-Request {	n entries		
UE-CapabilityRAT-Request[1] SEQUENCE {		entry 1	NR, NR-DC, NR_CA-InterBand
rat-Type	RAT-Type		
capabilityRequestFilter	UE-CapabilityRequestFilterNR with condition NR	OCTET STRING (CONTAINING UE-CapabilityRequestFilterNR)	
	UE-CapabilityRequestFilterNR with condition NR-DC	OCTET STRING (CONTAINING UE-CapabilityRequestFilterNR)	NR-DC
	UE-CapabilityRequestFilterNR with condition NR_CA-InterBand	OCTET STRING (CONTAINING UE-CapabilityRequestFilterNR)	NR_CA-InterBand
}			
UE-CapabilityRAT-Request[1] SEQUENCE {		entry 1	NE-DC, EN-DC, EN-DC_CA-InterBand
rat-Type	RAT-Type with condition NR		
capabilityRequestFilter	UE-CapabilityRequestFilterNR with condition NR	OCTET STRING (CONTAINING UE-CapabilityRequestFilterNR)	
}			
UE-CapabilityRAT-Request[2] SEQUENCE {		entry 2	NE-DC
rat-Type	RAT-Type with condition NE-DC		
capabilityRequestFilter	UE-CapabilityRequestFilterNR with condition NE-DC	OCTET STRING (CONTAINING UE-CapabilityRequestFilterNR)	
}			
UE-CapabilityRAT-Request[2] SEQUENCE {		entry 2	EN-DC, EN-DC_CA-InterBand
rat-Type	RAT-Type with condition EN-DC		
capabilityRequestFilter	UE-CapabilityRequestFilterNR with condition EN-DC	OCTET STRING (CONTAINING UE-CapabilityRequestFilterNR)	
	UE-CapabilityRequestFilterNR with condition EN-DC_CA-InterBand		
}			
}			

Condition	Explanation
EN-DC	E-UTRA-NR Dual Connectivity
EN-DC_CA-InterBand	E-UTRA-NR Dual Connectivity using NR CA Inter-band test cases
NR	NG-RAN NR Radio Access
NR-DC	Used in NR-DC test cases
NR_CA-InterBand	NG-RAN NR Radio Access using NR CA Inter-band test cases
NE-DC	NR E-UTRA Dual Connectivity

– *UE-CapabilityRequestFilterCommon*

**Table 4.6.4-46A: UE-CapabilityRequestFilterCommon**

Derivation Path: TS 38.331 [6], clause 6.3.3			
Information Element	Value/remark	Comment	Condition
UE-CapabilityRequestFilterCommon ::= SEQUENCE {			
mrdc-Request SEQUENCE {			
omitEN-DC	Not checked		
includeNR-DC	Not checked		
includeNE-DC	Not checked		
}			
}			

– *UE-CapabilityRequestFilterNR*

**Table 4.6.4-47: UE-CapabilityRequestFilterNR**

Derivation Path: TS 38.331 [6], clause 6.3.3			
Information Element	Value/remark	Comment	Condition
UE-CapabilityRequestFilterNR ::= SEQUENCE {			
frequencyBandListFilter	FreqBandList with condition NR		NR
	FreqBandList with condition EN-DC		EN-DC
	FreqBandList with condition EN-DC AND CA-InterBand		EN-DC_CA-InterBand
	FreqBandList with condition NR AND CA-InterBand		NR_CA-InterBand
	FreqBandList with condition NR and NR-DC		NR-DC
	FreqBandList with condition NR and NE-DC		NE-DC
nonCriticalExtension SEQUENCE {	Not present		
srs-SwitchingTimeRequest	Not present		
nonCriticalExtension SEQUENCE {			
srs-SwitchingTimeRequest	Not present		
nonCriticalExtension	Not present		
}			
}			

<b>Condition</b>	<b>Explanation</b>
EN-DC	E-UTRA-NR Dual Connectivity
EN-DC_CA-InterBand	E-UTRA-NR Dual Connectivity using NR CA Inter-band test cases
NR_CA-InterBand	NG-RAN NR Radio Access using NR CA Inter-band test cases
NR	NG-RAN NR Radio Access
NR-DC	Used in NR-DC test cases
NE-DC	NR E-UTRA Dual Connectivity

– *UE-MRDC-Capability*

**Table 4.6.4-48: UE-MRDC-Capability**

Derivation Path: TS 38.331 [6], clause 6.3.3			
Information Element	Value/remark	Comment	Condition
UE-MRDC-Capability ::= SEQUENCE {			
measAndMobParametersMRDC	Not checked		
phy-ParametersMRDC-v1530	Not checked		
rf-ParametersMRDC	RF-ParametersMRDC with condition EN-DC		
	RF-ParametersMRDC with condition NE-DC		NE-DC
	RF-ParametersMRDC with condition EN-DC_CA-InterBand		EN-DC_CA-InterBand
generalParametersMRDC SEQUENCE {			
splitSRB-WithOneUL-Path	Not checked		
splitDRB-withUL-Both-MCG-SCG	Not checked		
srb3	Not checked		
v2x-EUTRA	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	Not checked		
pdcp-ParametersMRDC-v1530	Not checked		
lateNonCriticalExtension	Not checked		
nonCriticalExtension SEQUENCE {			
UE-MRDC-Capability-v1560 SEQUENCE {			
receivedFilters	Not checked		
measAndMobParametersMRDC-v1560 SEQUENCE {			
measAndMobParametersMRDC-XDD-Diff-v1560 SEQUENCE {			



sftd-MeasPSCell-NEDC	Not checked		
}			
}			
fdd-Add-UE-MRDC-Capabilities-v1560 SEQUENCE {			
measAndMobParametersMRDC-XDD-Diff-v1560			
SEQUENCE {			
sftd-MeasPSCell-NEDC	Not checked		
}			
}			
tdd-Add-UE-MRDC-Capabilities-v1560 SEQUENCE {			
measAndMobParametersMRDC-XDD-Diff-v1560			
SEQUENCE {			
sftd-MeasPSCell-NEDC	Not checked		
}			
}			
nonCriticalExtension	Not checked		
}			
}			
}			

Condition	Explanation
EN-DC	E-UTRA-NR Dual Connectivity
EN-DC_CA-InterBand	E-UTRA-NR Dual Connectivity used in NR CA Inter-band test cases
NE-DC	NR E-UTRA Dual Connectivity

– *UE-NR-Capability*

**Table 4.6.4-49: UE-NR-Capability**

Derivation Path: TS 38.331 [6], clause 6.3.3			
Information Element	Value/remark	Comment	Condition
UE-NR-Capability ::= SEQUENCE {			
accessStratumRelease	AccessStratumRelease		
pdcP-Parameters	Not checked		
rlc-Parameters	Not checked		
mac-Parameters	Not checked		
phy-Parameters	Not checked		
rf-Parameters	RF-Parameters		
	RF-Parameters with condition NR-DC		NR-DC
	RF-Parameters with condition NR_CA-InterBand		NR_CA-InterBand
measAndMobParameters	Not checked		
fdd-Add-UE-NR-Capabilities SEQUENCE {			
phy-ParametersXDD-Diff SEQUENCE {			
dynamicSFI	Not checked		
twoPUCCH-F0-2-ConsecSymbols	Not checked		
twoDifferentTPC-Loop-PUSCH	Not checked		
twoDifferentTPC-Loop-PUCCH	Not checked		
}			
mac-ParametersXDD-Diff SEQUENCE {			
skipUplinkTxDynamic	Not checked		
logicalChannelSR-DelayTimer	Not checked		
longDRX-Cycle	Not checked		
shortDRX-Cycle	Not checked		
multipleSR-Configurations	Not checked		
multipleConfiguredGrants	Not checked		
}			
measAndMobParametersXDD-Diff SEQUENCE {			
intraAndInterF-MeasAndReport	Not checked		
eventA-MeasAndReport	Not checked		
}			
}			
tdd-Add-UE-NR-Capabilities SEQUENCE {			
phy-ParametersXDD-Diff SEQUENCE {			
dynamicSFI	Not checked		
twoPUCCH-F0-2-ConsecSymbols	Not checked		
twoDifferentTPC-Loop-PUSCH	Not checked		
twoDifferentTPC-Loop-PUCCH	Not checked		
}			
mac-ParametersXDD-Diff SEQUENCE {			
skipUplinkTxDynamic	Not checked		
logicalChannelSR-DelayTimer	Not checked		
longDRX-Cycle	Not checked		
shortDRX-Cycle	Not checked		
multipleSR-Configurations	Not checked		
multipleConfiguredGrants	Not checked		
}			
measAndMobParametersXDD-Diff SEQUENCE {			
intraAndInterF-MeasAndReport	Not checked		
eventA-MeasAndReport	Not checked		
}			
fr1-Add-UE-NR-Capabilities SEQUENCE {			
phy-ParametersFRX-Diff SEQUENCE {			
dynamicSFI	Not checked		
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		
pdcc-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		
pdcc-BlindDetectionCA	Not checked		
tpc-PUSCH-RNTI	Not checked		
tpc-PUCCH-RNTI	Not checked		

tpc-SRS-RNTI	Not checked		
absoluteTPC-Command	Not checked		
twoDifferentTPC-Loop-PUSCH	Not checked		
twoDifferentTPC-Loop-PUCCH	Not checked		
pusch-HalfPi-BPSK	Not checked		
pucch-F3-4-HalfPi-BPSK	Not checked		
almostContiguousCP-OFDM-UL	Not checked		
sp-CSI-RS	Not checked		
sp-CSI-IM	Not checked		
tdd-MultiDL-UL-SwitchPerSlot	Not checked		
multipleCORESET	Not checked		
}			
measAndMobParametersFRX-Diff SEQUENCE {			
ss-SINR-Meas	Not checked		
csi-RSRP-AndRSRQ-MeasWithSSB	Not checked		
csi-RSRP-AndRSRQ-MeasWithoutSSB	Not checked		
csi-SINR-Meas	Not checked		
csi-RS-RLM	Not checked		
}			
}			
featureSets	Not checked		
featureSetCombinations	Not checked		
lateNonCriticalExtension	Not checked		
nonCriticalExtension SEQUENCE {			
fdd-Add-UE-NR-Capabilities-1530 SEQUENCE {			
eutra-ParametersXDD-Diff SEQUENCE {			
rsrqMeasWidebandEUTRA	Not checked		
}			
}			
tdd-Add-UE-NR-Capabilities-v1530 SEQUENCE {			
eutra-ParametersXDD-Diff SEQUENCE {			
rsrqMeasWidebandEUTRA	Not Checked		
}			
}			
}			
dummy	Not checked		
interRAT-Parameters	Not checked		
inactiveState	Not checked		
delayBudgetReporting	Not checked		
nonCriticalExtension SEQUENCE {			
sdap-Parameters	Not checked		
overheatingInd	Not checked		
ims-Parameters	Not checked		
fr1-Add-UE-NR-Capabilities-v1540 SEQUENCE {			
ims-ParametersFRX-Diff SEQUENCE {			
voiceOverNR	Not checked		
}			
}			
fr2-Add-UE-NR-Capabilities-v1540 SEQUENCE {			
ims-ParametersFRX-Diff SEQUENCE {			
voiceOverNR	Not checked		
}			
}			
}			
fr1-fr2-Add-UE-NR-Capabilities SEQUENCE {			
phy-ParametersFRX-Diff SEQUENCE {			
dynamicSFI	Not checked		
dummy1	Not checked		
twoFL-DMRS	Not checked		
dummy2	Not checked		
dummy3	Not checked		
supportedDMRS-TypeDL	Not checked		
supportedDMRS-TypeUL	Not checked		
semiOpenLoopCSI	Not checked		
csi-ReportWithoutPMI	Not checked		
csi-ReportWithoutCQI	Not checked		
onePortsPTRS	Not checked		

twoPUCCH-F0-2-ConsecSymbols	Not checked		
pucch-F2-WithFH	Not checked		
pucch-F3-WithFH	Not checked		
pucch-F4-WithFH	Not checked		
freqHoppingPUCCH-F0-2	Not checked		
freqHoppingPUCCH-F1-3-4	Not checked		
mux-SR-HARQ-ACK-CSI-PUCCH- MultiPerSlot	Not checked		
uci-CodeBlockSegmentation	Not checked		
onePUCCH-LongAndShortFormat	Not checked		
twoPUCCH-AnyOthersInSlot	Not checked		
intraSlotFreqHopping-PUSCH	Not checked		
pusch-LBRM	Not checked		
pdccch-BlindDetectionCA	Not checked		
tpc-PUSCH-RNTI	Not checked		
tpc-PUCCH-RNTI	Not checked		
tpc-SRS-RNTI	Not checked		
absoluteTPC-Command	Not checked		
twoDifferentTPC-Loop-PUSCH	Not checked		
twoDifferentTPC-Loop-PUCCH	Not checked		
pusch-HalfPi-BPSK	Not checked		
pucch-F3-4-HalfPi-BPSK	Not checked		
almostContiguousCP-OFDM-UL	Not checked		
sp-CSI-RS	Not checked		
sp-CSI-IM	Not checked		
tdd-MultiDL-UL-SwitchPerSlot	Not checked		
multipleCORESET	Not checked		
}			
measAndMobParametersFRX-Diff SEQUENCE {			
ss-SINR-Meas	Not checked		
csi-RSRP-AndRSRQ-MeasWithSSB	Not checked		
csi-RSRP-AndRSRQ-MeasWithoutSSB	Not checked		
csi-SINR-Meas	Not checked		
csi-RS-RLM	Not checked		
}			
nonCriticalExtension SEQUENCE {	Not checked		
reducedCP-Latency	Not checked		
nonCriticalExtension SEQUENCE {			
nrdc-Parameters	Not checked		
receivedFilters	Not checked		
nonCriticalExtension	Not checked		
}			
}			
}			
}			
}			
}			

Condition	Explanation
NR-DC	Used in NR-DC test cases
NR_CA-InterBand	NG-RAN NR Radio Access using NR CA Inter-band test cases

– SharedSpectrumChAccessParamsPerBand

Table 4.6.4-50: SharedSpectrumChAccessParamsPerBand

Derivation Path: TS 38.331 [6], clause 6.3.3			
Information Element	Value/remark	Comment	Condition
SharedSpectrumChAccessParamsPerBand-r16 ::= SEQUENCE {			
FFS			
}			

## 4.6.5 Other information elements

### – *AbsoluteTimeInfo*

**Table 4.6.5-0A: *AbsoluteTimeInfo***

Derivation Path: TS 38.331 [6], clause 6.3.4			
Information Element	Value/remark	Comment	Condition
AbsoluteTimeInfo-r16	FFS		

### – *AreaConfiguration*

**Table 4.6.5-0B: *AreaConfiguration***

Derivation Path: TS 38.331 [6], clause 6.3.4			
Information Element	Value/remark	Comment	Condition
AreaConfiguration-r16 ::= SEQUENCE {			
FFS			
}			

### – *BT-NameList*

**Table 4.6.5-0C: *BT-NameList***

Derivation Path: TS 38.331 [6], clause 6.3.4			
Information Element	Value/remark	Comment	Condition
BT-NameList-r16 ::= SEQUENCE (SIZE (1..maxBT-Name-r16)) OF {	1 entry		
BT-Name-r16[1]	Set according to specific message content	OCTET STRING (SIZE (1..248))	
}			

### – *EUTRA-AllowedMeasBandwidth*

**Table 4.6.5-1: *EUTRA-AllowedMeasBandwidth***

Derivation Path: TS 38.331 [6], clause 6.3.4			
Information Element	Value/remark	Comment	Condition
EUTRA-AllowedMeasBandwidth	Set according to TS 36.508 [2] Table 4.4.3.4-1 for E-UTRA cell	row 'measurement Bandwidth'	

– *EUTRA-MBSFN-SubframeConfigList*

**Table 4.6.5-2: EUTRA-MBSFN-SubframeConfigList**

Derivation Path: TS 38.331 [6], clause 6.3.4			
Information Element	Value/remark	Comment	Condition
EUTRA-MBSFN-SubframeConfigList ::= SEQUENCE (SIZE (1..maxMBSFN-Allocations)) OF EUTRA-MBSFN-SubframeConfig {	1 entry		
MBSFN-SubframeConfig[1] SEQUENCE {		entry 1	
radioframeAllocationPeriod	FFS		
radioframeAllocationOffset	FFS		
subframeAllocation1 CHOICE {			
oneFrame	FFS		
fourFrames	FFS		
}			
subframeAllocation2 CHOICE {			
oneFrame	FFS		
fourFrames	FFS		
}			
}			
}			

– *EUTRA-MultiBandInfoList*

**Table 4.6.5-3: EUTRA-MultiBandInfoList**

Derivation Path: TS 38.331 [6], clause 6.3.4			
Information Element	Value/remark	Comment	Condition
EUTRA-MultiBandInfoList ::= SEQUENCE (SIZE (1..maxMultiBands)) OF EUTRA-MultiBandInfo {	1 entry		
EUTRA-MultiBandInfo[1] SEQUENCE {		entry 1	
eutra-FreqBandIndicator	FreqBandIndicatorEUTRA		
eutra-NS-PmaxList	EUTRA-NS-PmaxList		
}			
}			

– *EUTRA-NS-PmaxList*

**Table 4.6.5-4: EUTRA-NS-PmaxList**

Derivation Path: TS 38.331 [6], clause 6.3.4			
Information Element	Value/remark	Comment	Condition
EUTRA-NS-PmaxList ::= SEQUENCE (SIZE (1..maxEUTRA-NS-Pmax)) OF EUTRA-NS-PmaxValue {	1 entry		
EUTRA-NS-PmaxValue[1] SEQUENCE {		entry 1	
additionalPmax	FFS		
additionalSpectrumEmission	FFS		
}			
}			



– *EUTRA-PhysCellId***Table 4.6.5-5: EUTRA-PhysCellId**

Derivation Path: TS 38.331 [6], clause 6.3.4			
Information Element	Value/remark	Comment	Condition
EUTRA-PhysCellId	Set according to TS 36.508 [2] Table 4.4.2-1A for E-UTRA cell		

– *EUTRA-PhysCellIdRange***Table 4.6.5-6: EUTRA-PhysCellIdRange**

Derivation Path: TS 38.331 [6], clause 6.3.4			
Information Element	Value/remark	Comment	Condition
EUTRA-PhysCellIdRange ::= SEQUENCE {			
start	EUTRA-PhysCellId		
Range	FFS		
}			

– *EUTRA-PresenceAntennaPort1***Table 4.6.5-7: EUTRA-PresenceAntennaPort1**

Derivation Path: TS 38.331 [6], clause 6.3.4			
Information Element	Value/remark	Comment	Condition
EUTRA-PresenceAntennaPort1	FFS		

– *EUTRA-Q-OffsetRange***Table 4.6.5-8: EUTRA-Q-OffsetRange**

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

**Table 4.6.5-9: Void****Table 4.6.5-10: Void**– *IAB-IP-Address***Table 4.6.5-10A: IAB-IP-Address**

Derivation Path: TS 38.331 [6], clause 6.3.4			
Information Element	Value/remark	Comment	Condition
IAB-IP-Address-r16 ::= SEQUENCE {			
FFS			
}			

– *IAB-IP-AddressIndex***Table 4.6.5-10B: *IAB-IP-AddressIndex***

Derivation Path: TS 38.331 [6], clause 6.3.4			
Information Element	Value/remark	Comment	Condition
IAB-IP-AddressIndex-r16	FFS		

– *IAB-IP-Usage***Table 4.6.5-10C: *IAB-IP-Usage***

Derivation Path: TS 38.331 [6], clause 6.3.4			
Information Element	Value/remark	Comment	Condition
IAB-IP-Usage-r16	FFS		

– *LoggingDuration***Table 4.6.5-10D: *LoggingDuration***

Derivation Path: TS 38.331 [6], clause 6.3.4			
Information Element	Value/remark	Comment	Condition
LoggingDuration-r16	FFS		

– *LoggingInterval***Table 4.6.5-10E: *LoggingInterval***

Derivation Path: TS 38.331 [6], clause 6.3.4			
Information Element	Value/remark	Comment	Condition
LoggingInterval-r16	FFS		

– *LogMeasResultListBT***Table 4.6.5-10F: *LogMeasResultListBT***

Derivation Path: TS 38.331 [6], clause 6.3.4			
Information Element	Value/remark	Comment	Condition
LogMeasResultListBT-r16 ::= SEQUENCE {			
LogMeasResultBT-r16 ::= SEQUENCE {			
bt-Addr-r16	Not checked	BIT STRING (SIZE (48))	
rssi-BT-r16	Not checked	INTEGER (-128..127)	
}			
}			

– *LogMeasResultListWLAN***Table 4.6.5-10G: LogMeasResultListWLAN**

Derivation Path: TS 38.331 [6], clause 6.3.4			
Information Element	Value/remark	Comment	Condition
LogMeasResultListWLAN-r16 ::= SEQUENCE {SIZE (1..maxWLAN-Id-Report-r16)) OF LogMeasResultWLAN-r16 {			
LogMeasResultWLAN-r16 SEQUENCE {			
wlan-Identifiers-r16 SEQUENCE {			
ssid-r16	Not checked	OCTET STRING (SIZE (1..32))	
bssid-r16	Not checked	OCTET STRING (SIZE (6))	
hessid-r16	Not checked	OCTET STRING (SIZE (6))	
}			
rssiWLAN-r16	Not checked	INTEGER(0..141)	
rtt-WLAN-r16 SEQUENCE {			
rttValue-r16	Not checked	INTEGER (0..16777215)	
rttUnits-r16	Not checked		
rttAccuracy-r16	Not checked	INTEGER (0..255)	
}			
}			

– *OtherConfig***Table 4.6.5-11: OtherConfig**

Derivation Path: TS 38.331 [6], clause 6.3.4			
Information Element	Value/remark	Comment	Condition
OtherConfig ::=SEQUENCE {			
delayBudgetReportingConfig CHOICE{			
release	FFS		
setup SEQUENCE {			
delayBudgetReportingProhibitTimer	FFS		
}			
}			
}			

– *PhysCellIdUTRA-FDD***Table 4.6.5-11A: PhysCellIdUTRA-FDD**

Derivation Path: TS 38.331 [6], clause 6.3.4			
Information Element	Value/remark	Comment	Condition
PhysCellIdUTRA-FDD-r16	FFS		

– *RRC-TransactionIdentifier***Table 4.6.5-12: RRC-TransactionIdentifier**

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

– *Sensor-NameList***Table 4.6.5-13: Sensor-NameList**

Derivation Path: TS 38.331 [6], clause 6.3.4			
Information Element	Value/remark	Comment	Condition
Sensor-NameList-r16 ::= SEQUENCE {			
measUncomBarPre-r16	Set according to specific message content		
measUeSpeed	Set according to specific message content		
measUeOrientation	Set according to specific message content		
}			

– *TraceReference***Table 4.6.5-14: TraceReference**

Derivation Path: TS 38.331 [6], clause 6.3.4			
Information Element	Value/remark	Comment	Condition
TraceReference-r16 ::= SEQUENCE {			
FFS			
}			

– *UE-MeasurementsAvailable-r16***Table 4.6.5-15: UE-MeasurementsAvailable-r16**

Derivation Path: TS 38.331 [6], clause 6.3.4			
Information Element	Value/remark	Comment	Condition
UE-MeasurementsAvailable-r16 ::= SEQUENCE {			
FFS			
}			

– *UTRA-FDD-Q-OffsetRange***Table 4.6.5-16: UTRA-FDD-Q-OffsetRange**

Derivation Path: TS 38.331 [6], clause 6.3.4			
Information Element	Value/remark	Comment	Condition
UTRA-FDD-Q-OffsetRange-r16	dB0		

– *VisitedCellInfoList***Table 4.6.5-17: VisitedCellInfoList**

Derivation Path: TS 38.331 [6], clause 6.3.4			
Information Element	Value/remark	Comment	Condition
VisitedCellInfoList-r16 ::= SEQUENCE {			
FFS			
}			

– *WLAN-NameList***Table 4.6.5-18: WLAN-NameList**

Derivation Path: TS 38.331 [6], clause 6.3.4			
Information Element	Value/remark	Comment	Condition
WLAN-NameList-r16 ::= SEQUENCE (SIZE (1..maxWLAN-Name-r16)) OF {	1 entry		
WLAN-Name-r16[1]	Set according to specific message content	OCTET STRING (SIZE (1..32))	
}			

## 4.6.6 Sidelink information elements

– *SL-BWP-Config***Table 4.6.6-1: SL-BWP-Config**

Derivation Path: TS 38.331 [6], clause 6.3.5			
Information Element	Value/remark	Comment	Condition
SL-BWP-Config-r16 ::= SEQUENCE {			
sl-BWP-Id	BWP-Id		
sl-BWP-Generic-r16 SEQUENCE {			
sl-BWP-r16	BWP		
sl-LengthSymbols-r16	sym14	All symbols in slot are used for SL	
	sym12	All symbols in slot are used for SL	EXTENDED
sl-StartSymbol-r16	sym0		
sl-PSBCH-Config-r16	Not present		
sl-TxDirectCurrentLocation-r16	Not present		
}			
sl-BWP-PoolConfig-r16	SL-BWP-PoolConfig-r16 with condition SCHEDULING		
}			

Condition	Explanation
EXTENDED	When cyclicPrefix is configured in sl-BWP-r16, i.e. extended CP is used

– *SL-BWP-ConfigCommon***Table 4.6.6-2: *SL-BWP-ConfigCommon***

Derivation Path: TS 38.331 [6], clause 6.3.5			
Information Element	Value/remark	Comment	Condition
SL-BWP-ConfigCommon-r16 ::= SEQUENCE {			
sl-BWP-Generic-r16 SEQUENCE {			
sl-BWP-r16	BWP		
sl-LengthSymbols-r16	sym14	All symbols in slot are used for SL	
	sym12	All symbols in slot are used for SL	EXTENDED
sl-StartSymbol-r16	sym0		
sl-PSBCH-Config-r16	Not present		
sl-TxDirectCurrentLocation-r16	Not present		
}			
sl-BWP-PoolConfigCommon-r16	SL-BWP-PoolConfigCommon-r16 with RXPOOL and SELECTED		
}			

Condition	Explanation
EXTENDED	When cyclicPrefix is configured in sl-BWP-r16, i.e. extended CP is used

– *SL-BWP-PoolConfig*Table 4.6.6-3: *SL-BWP-PoolConfig*

Derivation Path: TS 38.331 [6], clause 6.3.5			
Information Element	Value/remark	Comment	Condition
SL-BWP-PoolConfig-r16 ::= SEQUENCE {			
sl-RxPool-r16	Not present		
sl-TxPoolSelectedNormal-r16	Not present		
sl-TxPoolSelectedNormal-r16 SEQUENCE {			SELECTED
sl-PoolToReleaseList-r16	Not present		
sl-PoolToAddModList-r16 SEQUENCE (SIZE (1..maxNrofTXPool-r16)) OF SL-ResourcePoolConfig-r16 {	1 entry		
SL-ResourcePoolConfig-r16[1] SEQUENCE {		entry 1	
sl-ResourcePoolID-r16	1	Index of the resource pool for normal case	
sl-ResourcePool-r16	SL-ResourcePool with condition SL_HARQ		
}			
}			
}			
sl-TxPoolScheduling-r16	Not present		
sl-TxPoolScheduling-r16 SEQUENCE {			SCHEDULING
sl-PoolToReleaseList-r16	Not present		
sl-PoolToAddModList-r16 SEQUENCE (SIZE (1..maxNrofTXPool-r16)) OF SL-ResourcePoolConfig-r16 {	1 entry		
SL-ResourcePoolConfig-r16[1] SEQUENCE {		entry 1	
sl-ResourcePoolID-r16	1	Index of the resource pool used for normal case	
sl-ResourcePool-r16	SL-ResourcePool with condition SL_HARQ		
}			
}			
}			
sl-TxPoolExceptional-r16	Not present		
sl-TxPoolExceptional-r16 SEQUENCE {			EXCEPTIONAL
sl-ResourcePoolID-r16	2	Index of the pool used during exceptional cases	
sl-ResourcePool-r16	SL-ResourcePool with condition EXCEPTIONAL and SL_HARQ		
}			
}			

Condition	Explanation
SCHEDULING	To configure Tx resource pool for Mode 1 SL transmission
SELECTED	To configure Tx resource pool for Mode 2 SL transmission
EXCEPTIONAL	To configure Tx resource pool for exceptional cases such as HO, re-establishment etc.

– *SL-BWP-PoolConfigCommon***Table 4.6.6-4: SL-BWP-PoolConfigCommon**

Derivation Path: TS 38.331 [6], clause 6.3.5			
Information Element	Value/remark	Comment	Condition
SL-BWP-PoolConfigCommon-r16 ::= SEQUENCE {			
sl-RxPool-r16	Not present		
sl-RxPool-r16 SEQUENCE (SIZE (1..maxNrofRXPool-r16)) OF SL-ResourcePool-r16 {	1 entry		RXPOOL
SL-ResourcePool-r16[1]	SL-ResourcePool with condition SL_HARQ	entry 1	
}			
sl-TxPoolSelectedNormal-r16	Not present		
sl-TxPoolSelectedNormal-r16 SEQUENCE (SIZE (1..maxNrofTXPool-r16)) OF SL-ResourcePoolConfig-r16 {	1 entry		SELECTED
SL-ResourcePoolConfig-r16[1] SEQUENCE {		entry 1	
sl-ResourcePoolID-r16	1	Index of the resource pool for normal case	
sl-ResourcePool-r16	SL-ResourcePool with condition SL_HARQ		
}			
}			
sl-TxPoolExceptional-r16	Not present		
sl-TxPoolExceptional-r16 SEQUENCE {			EXCEPTIONAL
sl-ResourcePoolID-r16	2	Index of the resource pool used for normal case	
sl-ResourcePool-r16	SL-ResourcePool with condition EXCEPTIONAL and SL_HARQ		
}			

Condition	Explanation
RXPOOL	To configure Rx resource pool
SELECTED	To configure Tx resource pool for Mode 2 SL transmission
EXCEPTIONAL	To configure Tx resource pool for exceptional cases such as HO, re-establishment etc.



– *SL-CBR-PriorityTxConfigList*

**Table 4.6.6-5: *SL-CBR-PriorityTxConfigList***

Derivation Path: TS 38.331 [6], clause 6.3.5			
Information Element	Value/remark	Comment	Condition
SL-CBR-PriorityTxConfigList -r16 ::= SEQUENCE (SIZE (1..8)) OF SL-PriorityTxConfigIndex-r16 {	8 entries		
SL-PriorityTxConfigIndex-r16[k, k=1..8] SEQUENCE {		entry k	
sl-PriorityThreshold-r16	k	priority value = k	
sl-DefaultTxConfigIndex-r16	0	PSSCH Tx configuration corresponding to the first CBR level is used by UE when UE has no available CBR results.	
sl-CBR-ConfigIndex-r16	0	1st CBR level table is used	
sl-Tx-ConfigIndexList-r16 SEQUENCE (SIZE (1..maxCBR-Level-r16)) OF SL-TxConfigIndex-r16 {	2 entries		
SL-TxConfigIndex-r16[1]	0	entry 1 for CBR level corresponding to the first entry in sl-CBR-RangeConfigList	
SL-TxConfigIndex-r16[2]	0	entry 2 for CBR level corresponding to the second entry in sl-CBR-RangeConfigList	
}			
}			
}			

– *SL-CBR-CommonTxConfigList***Table 4.6.6-6: *SL-CBR-CommonTxConfigList***

Derivation Path: TS 38.331 [6], clause 6.3.5			
Information Element	Value/remark	Comment	Condition
SL-CBR-CommonTxConfigList-r16 ::= SEQUENCE {			
sl-CBR-RangeConfigList-r16 SEQUENCE (SIZE (1..maxCBR-Config-r16)) OF SL-CBR-LevelsConfig-r16 {	1 entry		
SL-CBR-LevelsConfig-r16[1] SEQUENCE (SIZE (1..maxCBR-Level-r16)) OF SL-CBR-r16 {	2 entries		
SL-CBR-r16[1]	50	entry 1 0<=CBR<0.5	
SL-CBR-r16[2]	100	entry 2 0.5<=CBR<1	
}			
}			
sl-CBR-PSSCH-TxConfigList-r16 SEQUENCE (SIZE (1..maxTxConfig-r16)) OF SL-CBR-PSSCH-TxConfig-r16 {	1 entry		
SL-CBR-PSSCH-TxConfig-r16 SEQUENCE {			
sl-CR-Limit-r16	10000	CR limit = 100%	
sl-TxParameters-r16 SEQUENCE {			
sl-MinMCS-PSSCH-r16	0		
sl-MaxMCS-PSSCH-r16	26		
sl-MinSubChannelNumPSSCH-r16	1		
sl-MaxSubchannelNumPSSCH-r16	27		
sl-MaxTxTransNumPSSCH-r16	4		
sl-MaxTxPower-r16	Not present		
}			
}			
}			
}			

– *SL-ConfigDedicatedNR*Table 4.6.6-7: *SL-ConfigDedicatedNR*

Derivation Path: TS 38.331 [6], clause 6.3.5			
Information Element	Value/remark	Comment	Condition
SL-ConfigDedicatedNR-r16 ::= SEQUENCE {			
sl-PHY-MAC-RLC-Config-r16	Not present		
sl-PHY-MAC-RLC-Config-r16 SEQUENCE {			SCHEDULING, SELECTED
sl-ScheduledConfig-r16	Not present		
sl-ScheduledConfig-r16 CHOICE {			SCHEDULING
setup	SL-ScheduledConfig-r16		
}			
sl-UE-SelectedConfig-r16	Not present		
sl-UE-SelectedConfig-r16 CHOICE {			SELECTED
setup	SL-UE-SelectedConfig-r16		
}			
sl-FreqInfoToReleaseList-r16	Not present		
sl-FreqInfoToAddModList-r16	Not present		
sl-FreqInfoToAddModList-r16 SEQUENCE (SIZE (1..maxNrofFreqSL-r16)) OF SL-FreqConfig-r16 {	1 entry		SCHEDULING, SELECTED
SL-FreqConfig-r16[1]	SL-FreqConfig-r16	entry 1	
}			
sl-RLC-BearerToReleaseList-r16	Not present		
sl-RLC-BearerToAddModList-r16	Not present		
sl-RLC-BearerToAddModList-r16 SEQUENCE (SIZE (1..maxSL-LCID-r16)) OF SL-RLC-BearerConfig-r16 {	1 entry		SL_DRB
SL-RLC-BearerConfig-r16[1]	SL-RLC-BearerConfig-r16	entry 1	
}			
sl-MaxNumConsecutiveDTX-r16	Not present		
sl-CSI-Acquisition-r16	Not present		
sl-CSI-SchedulingRequestId-r16	Not present		
	enabled		SL_CSI_REPORT
sl-SSB-PriorityNR-r16	1		
networkControlledSyncTx-r16	off	UE doesn't send SL SSB by default	
}			
sl-RadioBearerToReleaseList-r16	Not present		
sl-RadioBearerToAddModList-r16	Not present		
sl-RadioBearerToAddModList-r16 SEQUENCE (SIZE (1..maxNrofSLRB-r16)) OF SL-RadioBearerConfig-r16 {	1 entry		SL_DRB
SL-RadioBearerConfig-r16[1]	SL-RadioBearerConfig-r16		
}			
sl-MeasConfigInfoToReleaseList-r16	Not present		
sl-MeasConfigInfoToAddModList-r16	Not present		
sl-MeasConfigInfoToAddModList-r16 SEQUENCE (SIZE (1..maxNrofSL-Dest-r16)) OF SL-MeasConfigInfo-r16 {	1 entry		SL_MEAS
SL-MeasConfigInfo-r16[1]	SL-MeasConfigInfo-r16		
}			
t400-r16	ms2000		
}			

Condition	Explanation
SCHEDULING	To configure UE performing mode 1 SL transmission
SELECTED	To configure UE performing mode 2 SL transmission
SL_DRB	To establish SL DRB
SL_MEAS	To configure UE performing measurements based on RS sent by peer UE
SL_CSI_REPORT	To configure UE performing SL CSI reporting

– *SL-ConfiguredGrantConfig*

**Table 4.6.6-8: SL-ConfiguredGrantConfig**

Derivation Path: TS 38.331 [6], clause 6.3.5			
Information Element	Value/remark	Comment	Condition
SL-ConfiguredGrantConfig-r16 ::= SEQUENCE {			
sl-ConfigIndexCG-r16	1		
sl-PeriodCG-r16 CHOICE {			
sl-PeriodCG1-r16	ms100		
}			
sl-NrOfHARQ-Processes-r16	4		
sl-HARQ-ProclD-offset-r16	1		
sl-CG-MaxTransNumList-r16 SEQUENCE (SIZE (1..8)) OF SL-CG-MaxTransNum-r16	8 entries		
SL-CG-MaxTransNum-r16[k, k=1..8] SEQUENCE {		entry k	
sl-Priority-r16	k		
sl-MaxTransNum-r16	8	max Tx number = 8 for all priorities	
}			
}			
rrc-ConfiguredSidelinkGrant-r16	Not present	TYPE 2 CG is configured by default	
rrc-ConfiguredSidelinkGrant-r16 SEQUENCE {			TYPE 1
sl-TimeResourceCG-Type1-r16	a TRIV chosen by SS from the range 0 to 496 as specified in 38.214		
sl-StartSubchannelCG-Type1-r16	0		
sl-FreqResourceCG-Type1-r16	a FRIV chosen by SS from the range 0 to 6929 as specified in 38.214		
sl-TimeOffsetCG-Type1-r16	0		
sl-N1PUCCH-AN-r16	Not present		
	PUCCH-ResourceId		SL_HARQ_VIA_UU
sl-PSFCH-ToPUCCH-CG-Type1-r16	Not present		
	1		SL_HARQ_VIA_UU
sl-ResourcePoolID-r16	1	Resource pool for normal case is used	
sl-TimeReferenceSFN-Type1-r16	Not present	Default value sfno is used	
}			
}			

Condition	Explanation
TYPE 1	To configure a type 1 SL configured grant for UE
SL_HARQ_VIA_UU	to report HARQ-ACK information that the UE generates based on PSFCH reception via UL

– *SL-DestinationIdentity***Table 4.6.6-9: SL-DestinationIdentity**

Derivation Path: TS 38.331 [6], clause 6.3.5			
Information Element	Value/remark	Comment	Condition
SL-DestinationIdentity-r16 ::=	24 bits destination ID chosen by SS		

– *SL-FreqConfig***Table 4.6.6-10: SL-FreqConfig**

Derivation Path: TS 38.331 [6], clause 6.3.5			
Information Element	Value/remark	Comment	Condition
SL-FreqConfig-r16 ::= SEQUENCE {			
sl-Freq-Id-r16	1		
sl-SCS-SpecificCarrierList-r16 SEQUENCE (SIZE (1..maxSCSs)) OF SCS-SpecificCarrier {	1 entry		
SCS-SpecificCarrier[1]	SCS-SpecificCarrier with condition SL_PointA	entry 1	
}			
sl-AbsoluteFrequencyPointA-r16	ARFCN-ValueNR with condition SL_PointA		
sl-AbsoluteFrequencySSB-r16	ARFCN-ValueNR with condition SL_SSB		
frequencyShift7p5khzSL-r16	Not present		
valueN-r16	0		
sl-BWP-ToReleaseList-r16	Not present		
sl-BWP-ToAddModList-r16 SEQUENCE (SIZE (1..maxNrofSL-BWPs-r16)) OF SL-BWP-Config-r16 {	1 entry		
SL-BWP-Config-r16[1]	SL-BWP-Config	entry 1	
}			
sl-SyncConfigList-r16	Not present		
sl-SyncPriority-r16	gnss		
}			

– *SL-FreqConfigCommon***Table 4.6.6-11: SL-FreqConfigCommon**

Derivation Path: TS 38.331 [6], clause 6.3.5			
Information Element	Value/remark	Comment	Condition
SL-FreqConfigCommon-r16 ::= SEQUENCE {			
sl-SCS-SpecificCarrierList-r16 SEQUENCE (SIZE (1..maxSCSs)) OF SCS-SpecificCarrier {	1 entry		
SCS-SpecificCarrier[1]	SCS-SpecificCarrier with condition SL_PointA	entry 1	
}			
sl-AbsoluteFrequencyPointA-r16	ARFCN-ValueNR with condition SL_PointA		
sl-AbsoluteFrequencySSB-r16	ARFCN-ValueNR with condition SL_SSB		
frequencyShift7p5khzSL-r16	Not present		
valueN-r16	0		
sl-BWP-List-r16 SEQUENCE (SIZE (1..maxNrofSL-BWPs-r16)) OF SL-BWP-ConfigCommon-r16 {	1 entry		
SL-BWP-ConfigCommon-r16[1]	SL-BWP-ConfigCommon		
}			
sl-SyncPriority-r16	gnss		
sl-NbAsSync-r16	Not present		
sl-SyncConfigList-r16 SEQUENCE (SIZE (1..maxSL-SyncConfig-r16)) OF SL-SyncConfig-r16 {	1 entry		
SL-SyncConfig-r16[1]	SL-SyncConfig	entry 1	
}			

– *SL-LogicalChannelConfig***Table 4.6.6-12: SL-LogicalChannelConfig**

Derivation Path: TS 38.331 [6], clause 6.3.5			
Information Element	Value/remark	Comment	Condition
SL-LogicalChannelConfig-r16 ::= SEQUENCE {			
sl-Priority-r16	1		
sl-PrioritisedBitRate-r16	infinity		
sl-BucketSizeDuration-r16	ms50		
sl-ConfiguredGrantType1Allowed-r16	Not present		
sl-HARQ-FeedbackEnabled-r16	enabled		
sl-AllowedCG-List-r16	Not present		
sl-AllowedSCS-List-r16	Not present		
sl-MaxPUSCH-Duration-r16	Not present		
sl-LogicalChannelGroup-r16	1	Avoiding using LCG #0, which is reserved for SL SRB	
	5	Avoiding using LCG #0, which s reserved for SL SRB	LO
sl-SchedulingRequestId-r16	SchedulingRequestId		
sl-LogicalChannelSR-DelayTimerApplied-r16	Not present		
}			

Condition	Explanation
LO	LCG of the lower priority logical channels mapped to SL DRBs

– *SL-MeasConfigCommon*Table 4.6.6-13: *SL-MeasConfigCommon*

Derivation Path: TS 38.331 [6], clause 6.3.5			
Information Element	Value/remark	Comment	Condition
SL-MeasConfigCommon-r16 ::= SEQUENCE {			
sl-MeasObjectListCommon-r16			
sl-ReportConfigListCommon-r16	SL-ReportConfigList-r16 with condition PERIODICAL		
sl-MeasIdListCommon-r16	SL-MeasIdList-r16		
sl-QuantityConfigCommon-r16	SL-QuantityConfig-r16		
}			

– *SL-MeasConfigInfo*Table 4.6.6-14: *SL-MeasConfigInfo*

Derivation Path: TS 38.331 [6], clause 6.3.5			
Information Element	Value/remark	Comment	Condition
SL-MeasConfigInfo-r16 ::= SEQUENCE {			
sl-DestinationIndex-r16	0	The first destination UE reported in sl-TxResourceReqList in SidelinkUEInformationNR	
sl-MeasConfig-r16 SEQUENCE {			
sl-MeasObjectToRemoveList-r16	Not present		
sl-MeasObjectToAddModList-r16	SL-MeasObjectList-r16		
sl-ReportConfigToRemoveList-r16	Not present		
sl-ReportConfigToAddModList-r16	SL-ReportConfigList-r16 with condition PERIODICAL		
sl-MeasIdToRemoveList-r16	Not present		
sl-MeasIdToAddModList-r16	SL-MeasIdList-r16		
sl-QuantityConfig-r16	SL-QuantityConfig-r16		
}			
}			

– *SL-MeasIdList*Table 4.6.6-15: *SL-MeasIdList*

Derivation Path: TS 38.331 [6], clause 6.3.5			
Information Element	Value/remark	Comment	Condition
SL-MeasIdList-r16 ::= SEQUENCE (SIZE (1..maxNrofSL-MeasId-r16)) OF SL-MeasIdInfo-r16	1 entry		
SL-MeasIdInfo-r16[1] SEQUENCE {		entry 1	
sl-MeasId-r16	1		
sl-MeasObjectId-r16	1		
sl-ReportConfigId-r16	1		
}			
}			

– *SL-MeasObjectList***Table 4.6.6-16: SL-MeasObjectList**

Derivation Path: TS 38.331 [6], clause 6.3.5			
Information Element	Value/remark	Comment	Condition
SL-MeasObjectList-r16 ::= SEQUENCE (SIZE (1..maxNrofSL-ObjectId-r16)) OF SL-MeasObjectInfo-r16 {	1 entry		
SL-MeasObjectInfo-r16[1] SEQUENCE {		entry 1	
sl-MeasObjectId-r16	1		
sl-MeasObject-r16 SEQUENCE {			
frequencyInfoSL-r16	ARFCN-ValueNR with condition SL_SSB		
}			
}			
}			

– *SL-PDCP-Config***Table 4.6.6-17: SL-PDCP-Config**

Derivation Path: TS 38.331 [6], clause 6.3.5			
Information Element	Value/remark	Comment	Condition
SL-PDCP-Config-r16 ::= SEQUENCE {			
sl-DiscardTimer-r16	infinity		
sl-PDCP-SN-Size-r16	len12bits		
sl-OutOfOrderDelivery	Not present		
}			

– *SL-PSBCH-Config***Table 4.6.6-18: SL-PSBCH-Config**

Derivation Path: TS 38.331 [6], clause 6.3.5			
Information Element	Value/remark	Comment	Condition
SL-PSBCH-Config-r16 ::= SEQUENCE {			
dl-P0-PSBCH-r16	0		
dl-Alpha-PSBCH-r16	Not present	Default value 1 is used	
}			



– *SL-PSSCH-TxConfigList***Table 4.6.6-19: SL-PSSCH-TxConfigList**

Derivation Path: TS 38.331 [6], clause 6.3.5			
Information Element	Value/remark	Comment	Condition
SL-PSSCH-TxConfigList-r16 ::= SEQUENCE (SIZE (1..maxPSSCH-TxConfig-r16)) OF SL-PSSCH-TxConfig-r16 {	1 entry		
sl-TypeTxSync-r16	Not present	Applicable for all synchronization reference types	
sl-ThresUE-Speed-r16	kmph60		
sl-ParametersAboveThres-r16 SEQUENCE {			
sl-MinMCS-PSSCH-r16	0		
sl-MaxMCS-PSSCH-r16	15		
sl-MinSubChannelNumPSSCH-r16	1		
sl-MaxSubchannelNumPSSCH-r16	27		
sl-MaxTxTransNumPSSCH-r16	4		
sl-MaxTxPower-r16	Not present		
}			
sl-ParametersBelowThres-r16 SEQUENCE {			
sl-MinMCS-PSSCH-r16	16		
sl-MaxMCS-PSSCH-r16	26		
sl-MinSubChannelNumPSSCH-r16	1		
sl-MaxSubchannelNumPSSCH-r16	27		
sl-MaxTxTransNumPSSCH-r16	4		
sl-MaxTxPower-r16	Not present		
}			
}			

– *SL-QoS-FlowIdentity***Table 4.6.6-20: SL-QoS-FlowIdentity**

Derivation Path: TS 38.331 [6], clause 6.3.5			
Information Element	Value/remark	Comment	Condition
SL-QoS-FlowIdentity-r16	1		

– *SL-QoS-Profile***Table 4.6.6-21: SL-QoS-Profile**

Derivation Path: TS 38.331 [6], clause 6.3.5			
Information Element	Value/remark	Comment	Condition
SL-QoS-Profile-r16 ::= SEQUENCE {			
sl-PQI-r16 CHOICE {			
sl-StandardizedPQI-r16	0		
}			
sl-GFBR-r16	500		
sl-MFBR-r16	1000		
sl-Range-r16	Not present		
}			

– *SL-QuantityConfig***Table 4.6.6-22: SL-QuantityConfig**

Derivation Path: TS 38.331 [6], clause 6.3.5			
Information Element	Value/remark	Comment	Condition
SL-QuantityConfig-r16 ::= SEQUENCE {			
sl-FilterCoefficientDMRS-r16	fc4		
}			

– *SL-RadioBearerConfig***Table 4.6.6-23: SL-RadioBearerConfig**

Derivation Path: TS 38.331 [6], clause 6.3.5			
Information Element	Value/remark	Comment	Condition
SL-RadioBearerConfig-r16 ::= SEQUENCE {			
slrb-Uu-ConfigIndex-r16	SLRB-Uu-ConfigIndex-r16		
sl-SDAP-Config-r16	SL-SDAP-Config-r16		
sl-PDCP-Config-r16	SL-PDCP-Config-r16		
sl-TransRange-r16	Not present		
}			



– *SL-ResourcePool*

**Table 4.6.6-25: *SL-ResourcePool***

Derivation Path: TS 38.331 [6], clause 6.3.5			
Information Element	Value/remark	Comment	Condition
SL-ResourcePool-r16 ::= SEQUENCE {			
sl-PSCCH-Config-r16 CHOICE {			
setup SEQUENCE {			
sl-TimeResourcePSCCH-r16	n2		
sl-FreqResourcePSCCH-r16	n10		
sl-DMRS-ScrambleID-r16	0		
sl-NumReservedBits-r16	2		
}			
}			
sl-PSSCH-Config-r16 CHOICE {			
setup SEQUENCE {			
sl-PSSCH-DMRS-TimePatternList-r16	2 entries		
SEQUENCE (SIZE (1..3)) OF INTEGER (2..4) {			
INTEGER[1]	2	entry 1	
INTEGER[2]	4	entry 2	
}			
sl-BetaOffsets2ndSCI-r16 SEQUENCE (SIZE (4))	4 entries		
OF SL-BetaOffsets-r16 {			
SL-BetaOffsets-r16[k, k=1..4]	1	entry k	
}			
sl-Scaling-r16	f1		
}			
}			
sl-PSFCH-Config-r16	Not present		
sl-PSFCH-Config-r16 CHOICE {			SL_HARQ
setup SEQUENCE {			
sl-PSFCH-Period-r16	sl4		
sl-PSFCH-RB-Set-r16	bitstring of length n, The leftmost $p \cdot \text{floor}(m/p) \cdot \text{floor}(n/m)$ bits are set to "1" and the rest are set to "0"	Note 1, Note 2, Note 3	
sl-NumMuxCS-Pair-r16	n2		
sl-MinTimeGapPSFCH-r16	sl2		
sl-PSFCH-HopID-r16	Not present	Default frequency hopping ID 0 is used	
sl-PSFCH-CandidateResourceType-r16	startSubCH		
}			
}			
sl-SyncAllowed-r16 SEQUENCE {			
gns-Sync-r16	true		
gnbEnb-Sync-r16	true		
ue-Sync-r16	true		
}			
sl-SubchannelSize-r16	n10		
dummy	Not present		
sl-StartRB-Subchannel-r16	0	start RB of BWP	
sl-NumSubchannel-r16	$\text{floor}(n/m)$	Note 1, Note 2	
sl-Additional-MCS-Table-r16	Not present		
sl-ThreshS-RSSI-CBR-r16	0	actual value is -112 dBm	
sl-TimeWindowSizeCBR-r16	slot100		
sl-TimeWindowSizeCR-r16	slot1000		
sl-PTRS-Config-r16	Not present		
sl-UE-SelectedConfigRP-r16 SEQUENCE {			
sl-CBR-PriorityTxConfigList-r16	SL-CBR-PriorityTxConfigList-r16		
sl-ThresPSSCH-RSRP-List-r16	SL-ThresPSSCH-RSRP-List-r16		
sl-MultiReserveResource-r16	Not present		
sl-MaxNumPerReserve-r16	n2		
sl-SensingWindow-r16	ms100		

sl-SelectionWindowList-r16 SEQUENCE (SIZE (8)) OF SL-SelectionWindowConfig-r16 {	8 entries		
SL-SelectionWindowConfig-r16[k, k=1..8] SEQUENCE {		entry k	
sl-Priority-r16	k		
sl-SelectionWindow-r16	n10		
}			
}			
sl-ResourceReservePeriodList-r16	Not present		
sl-RS-ForSensing-r16	pssch		
}			
sl-RxParametersNcell-r16	Not present		
sl-ZoneConfigMCR-List-r16	Not present		
sl-FilterCoefficient-r16	fc4		
sl-RB-Number-r16	10*floor(n/10)	Note 1	
sl-PreemptionEnable-r16	Not present		
sl-PriorityThreshold-UL-URLLC-r16	Not present		
sl-PriorityThreshold-r16	Not present		
sl-X-Overhead-r16	Not present	Default value n0 is used	
sl-PowerControl-r16	Not present		
sl-TxPercentageList-r16 SEQUENCE (SIZE (8)) OF SL-TxPercentageConfig-r16 {	8 entries		
SL-TxPercentageConfig-r16[k, k=1..8] SEQUENCE {		entry k	
sl-Priority-r16	k		
sl-TxPercentage-r16	p50		
}			
}			
sl-MinMaxMCS-List-r16	Not present		
sl-TimeResource-r16	1111111100	First 8 of every 10 logical slots	
	0000000011	Last 2 of every 10 logical slots	EXCEPTIONAL
}			
Note 1: n is the bandwidth of active SL BWP (in RB). n is determined in Table 4.3.1.0D-1 and Table 4.3.1.0D-2 for FR1 and FR2 respectively.			
Note 2: m is subchannel size configured by sl-SubchannelSize-r16.			
Note 3: p is the PSFCH period configured by sl-PSFCH-Period-r16			

Condition	Explanation
SL_HARQ	To enable SL HARQ feedback
EXCEPTIONAL	For exceptional resource pool

– *SL-RLC-BearerConfig*

**Table 4.6.6-26: SL-RLC-BearerConfig**

Derivation Path: TS 38.331 [6], clause 6.3.5			
Information Element	Value/remark	Comment	Condition
SL-RLC-BearerConfig-r16 ::= SEQUENCE {			
sl-RLC-BearerConfigIndex-r16	SL-RLC-BearerConfigIndex-r16		
sl-ServedRadioBearer-r16	SLRB-Uu-ConfigIndex-r16		
sl-RLC-Config-r16	SL-RLC-Config-r16 with condition AM		
sl-MAC-LogicalChannelConfig-r16	SL-LogicalChannelConfig-r16		
}			

– *SL-RLC-BearerConfigIndex*Table 4.6.6-27: *SL-RLC-BearerConfigIndex*

Derivation Path: TS 38.331 [6], clause 6.3.5			
Information Element	Value/remark	Comment	Condition
SL-RLC-BearerConfigIndex-r16	1		

– *SL-RLC-Config*Table 4.6.6-28: *SL-RLC-Config*

Derivation Path: TS 38.331 [6], clause 6.3.5			
Information Element	Value/remark	Comment	Condition
SL-RLC-Config-r16 ::= CHOICE {			
sl-AM-RLC-r16 SEQUENCE {			AM
sl-SN-FieldLengthAM-r16	size12		
sl-T-PollRetransmit-r16	ms80		
sl-PollPDU-r16	p32768		
sl-PollByte-r16	kB750		
sl-MaxRetxThreshold-r16	t8		
}			
sl-UM-RLC-r16 SEQUENCE {			UM
sl-SN-FieldLengthUM-r16	size6		
}			
}			

Condition	Explanation
AM	RLC AM
UM	RLC UM

– *SL-ScheduledConfig***Table 4.6.6-29: SL-ScheduledConfig**

Derivation Path: TS 38.331 [6], clause 6.3.5			
Information Element	Value/remark	Comment	Condition
SL-ScheduledConfig-r16 ::= SEQUENCE {			
sl-RNTI-r16	RNTI-Value		
mac-MainConfigSL-r16 SEQUENCE {			
sl-BSR-Config-r16	BSR-Config		
ul-PrioritizationThres-r16	Not present		
sl-PrioritizationThres-r16	Not present		
}			
sl-CS-RNTI-r16	Not present		
	RNTI-Value which is different with sl-RNTI-r16		SL_CG
sl-PSFCH-ToPUCCH-r16	Not present		
sl-PSFCH-ToPUCCH-r16 SEQUENCE (SIZE (1..8)) OF INTEGER {	1 entry		SL HARQ_VIA_UU
INTEGER[1]	4		
}			
sl-ConfiguredGrantConfigList-r16	Not present		
sl-ConfiguredGrantConfigList-r16 SEQUENCE {			SL_CG
sl-ConfiguredGrantConfigToReleaseList-r16	Not present		
sl-ConfiguredGrantConfigToAddModList-r16 SEQUENCE (SIZE (1..maxNrofCG-SL-r16)) OF SL-ConfiguredGrantConfig-r16 {	1 entry		
SL-ConfiguredGrantConfig-r16[1]	SL-ConfiguredGrantConfig-r16	entry 1	
}			
}			
sl-DCI-ToSL-Trans-r16 SEQUENCE (SIZE (1..8)) OF INTEGER {	1 entry		
INTEGER[1]	4		
}			
}			

Condition	Explanation
SL_CG	To provide UE SL configured grant
SL HARQ_VIA_UU	to report HARQ-ACK information that the UE generates based on PSFCH reception via PUCCH/PUSCH

– *SL-SDAP-Config***Table 4.6.6-30: SL-SDAP-Config**

Derivation Path: TS 38.331 [6], clause 6.3.5			
Information Element	Value/remark	Comment	Condition
SL-SDAP-Config-r16 ::= SEQUENCE {			
sl-SDAP-Header-r16	present		
sl-DefaultRB-r16	true		
sl-MappedQoS-Flows-r16	Not present	All PC5 QoS flows are mapped to default SL DRB	
sl-CastType-r16	Unicast		
}			



– *SL-SyncConfig***Table 4.6.6-31: SL-SyncConfig**

Derivation Path: TS 38.331 [6], clause 6.3.5			
Information Element	Value/remark	Comment	Condition
SL-SyncConfig-r16 ::= SEQUENCE (SIZE (1..maxSL-SyncConfig-r16)) OF SL-SyncConfig-r16 {	1 entry		
SL-SyncConfig-r16[1] SEQUENCE {			
sl-SyncRefMinHyst-r16	dB3		
sl-SyncRefDiffHyst-r16	dB3		
sl-filterCoefficient-r16	fc4		
sl-SSB-TimeAllocation1-r16 SEQUENCE {			
sl-NumSSB-WithinPeriod-r16	n1		SCS15
	n2		SCS30, SCS60, SCS120
sl-TimeOffsetSSB-r16	0		
sl-TimeInterval-r16	Not present		SCS15
	1		SCS30, SCS60, SCS120
}			
sl-SSB-TimeAllocation2-r16	Not present		
sl-SSB-TimeAllocation3-r16	Not present		
sl-SSID-r16	Arbitrarily chosen by SS from the range 1 to 335		
}			
txParameters-r16 SEQUENCE {			
syncTxThreshIC-r16	Not present		
syncTxThreshOoC-r16	4	actual threshold is -100 dBm	
syncTxThreshOoC-r16			
syncInfoReserved-r16	00		
}			
gnss-Sync-r16	Not present		
}			

– *SL-Thres-RSRP-List***Table 4.6.6-32: SL-Thres-RSRP-List**

Derivation Path: TS 38.331 [6], clause 6.3.5			
Information Element	Value/remark	Comment	Condition
SL-Thres-RSRP-List-r16 ::= SEQUENCE (SIZE (64)) OF INTEGER {	64 entries		
INTEGER[k, k=1..64]	0	entry k	
}			

– *SL-TxPower***Table 4.6.6-33: SL-TxPower**

Derivation Path: TS 38.331 [6], clause 6.3.5			
Information Element	Value/remark	Comment	Condition
SL-TxPower-r16 ::= CHOICE {			
txPower-r16	23	23dBm	
}			

– *SL-TypeTxSync***Table 4.6.6-34: *SL-TypeTxSync***

Derivation Path: TS 38.331 [6], clause 6.3.5			
Information Element	Value/remark	Comment	Condition
SL-TypeTxSync-r16	gnss		

– *SL-UE-SelectedConfig***Table 4.6.6-35: *SL-UE-SelectedConfig***

Derivation Path: TS 38.331 [6], clause 6.3.5			
Information Element	Value/remark	Comment	Condition
SL-UE-SelectedConfig-r16 ::= SEQUENCE {			
sl-PSSCH-TxConfigList-r16	SL-PSSCH-TxConfigList-r16		
sl-ProbResourceKeep-r16	v0		
sl-ReselectAfter-r16	n9		
sl-CBR-CommonTxConfigList-r16	SL-CBR-CommonTxConfigList-r16		
ul-PrioritizationThres-r16	Not present		
sl-PrioritizationThres-r16	Not present		
}			

– *SL-ZoneConfig***Table 4.6.6-36: *SL-ZoneConfig***

Derivation Path: TS 38.331 [6], clause 6.3.5			
Information Element	Value/remark	Comment	Condition
SL-ZoneConfig-r16 ::= SEQUENCE {			
sl-ZoneLength-r16	m50		
}			

– *SLRB-Uu-ConfigIndex***Table 4.6.6-37: *SLRB-Uu-ConfigIndex***

Derivation Path: TS 38.331 [6], clause 6.3.5			
Information Element	Value/remark	Comment	Condition
SLRB-Uu-ConfigIndex-r16	1		

## 4.7 Default 5GC NAS message and information elements contents

### 4.7.0 General

#### 4.7.0.1 Interpretation of IE presence and values

For Uplink NAS messages, the following terms and their meanings shall be used to determine how to test specific IEs:

- "Not present": test cases fail if IE is present.
- "Present but contents not checked": test cases fail if IE is not present. No requirements regarding contents of the IE.

- "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.

#### 4.7.0.2 Security protected 5GS NAS messages

In subclause 4.7.1, all 5GS NAS messages are described in the plain 5GS NAS message format.

When a 5GS NAS message is security protected, the message shall be contained by SECURITY PROTECTED 5GS NAS MESSAGE unless contained by another NAS message.

The default contents of SECURITY PROTECTED 5GS NAS MESSAGE message is defined in table 4.7.1-28.

### 4.7.1 Contents of 5GMM messages

#### – Authentication request

**Table 4.7.1-1: AUTHENTICATION REQUEST**

Derivation Path: 24.501 clause 8.2.1			
Information Element	Value/remark	Comment	Condition
Extended protocol discriminator	'0111 1110'B	5GS mobility management messages	
Security header type	'0000'B	Plain 5GS NAS message, not security protected	
Spare half octet	'0000'B		
Authentication request message identity	'0101 0110'B		
ngKSI			
NAS key set identifier	An arbitrarily selected value between '000'B and '110'B, different from the valid NAS key set identifier of the UE if such a value exists.		
TSC	'0'B	native security context (for KSI <sub>AMF</sub> )	
Spare half octet	'0000'B		
ABBA	'0000 0000 0000 0000'B		
Authentication parameter RAND (5G authentication challenge)	Not Present		EAP-AKA
	An arbitrarily selected 128 bits value		5G-AKA
Authentication parameter AUTN (5G authentication challenge)	Not Present		EAP-AKA
	128 bits value generated according to TS 24.501 [28] subclause 9.11.3.15		5G-AKA
EAP message	Not Present		5G-AKA
EAP message	EAP-request/AKA'-challenge	See Table 4.7.3.2-01	EAP-AKA

Condition	Explanation
EAP_AKA	EAP based primary authentication and key agreement procedure
5G-AKA	5G AKA based primary authentication and key agreement procedure

NOTE: Within a test execution this message is sent without integrity protection before NAS security mode control procedure has been successfully completed; and sent integrity protected and ciphered within SECURITY PROTECTED 5GS NAS MESSAGE message after 5GS NAS security mode control procedure has been successfully completed. SS does not maintain information for 5GS NAS security mode control procedure after a TC is completed.

– *Authentication response*

**Table 4.7.1-2: AUTHENTICATION RESPONSE**

Derivation Path: 24.501 clause 8.2.2			
Information Element	Value/remark	Comment	Condition
Extended protocol discriminator	5GMM		
Security header type	'0000'B	Plain 5GS NAS message, not security protected	
Spare half octet	'0000'B		
Authentication response message identity	'0101 0111'B		
Authentication response parameter	16 octets RES* value calculated according to TS 24.501 [28] subclause 9.11.3.17		5G-AKA
	Not Present		EAP-AKA
EAP message	EAP-response/AKA'-challenge	See Table 4.7.3.2-02	EAP-AKA

Condition	Explanation
EAP-AKA	EAP based primary authentication and key agreement procedure
5G-AKA	5G AKA based primary authentication and key agreement procedure

NOTE: When sent in response to an AUTHENTICATION REQUEST message which is not integrity protected and not ciphered, the AUTHENTICATION RESPONSE message is sent integrity protected when a valid security context exists and without integrity protection and ciphering otherwise.

– *Authentication result*

**Table 4.7.1-3: AUTHENTICATION RESULT**

Derivation Path: 24.501 clause 8.2.3			
Information Element	Value/remark	Comment	Condition
Extended protocol discriminator	5GMM		
Security header type	'0000'B	Plain 5GS NAS message, not security protected	
Spare half octet	'0000'B		
Authentication result message identity	'0101 1010'B		
ngKSI	The same value as the last AUTHENTICATION REQUEST message		
Spare half octet	'0000'B		
EAP message	EAP-Success	See Table 4.7.3.2-03	
ABBA	'0000 0000 0000 0000'B		

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		

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

– *Authentication reject***Table 4.7.1-5: AUTHENTICATION REJECT**

Derivation Path: 24.501 clause 8.2.5			
Information Element	Value/remark	Comment	Condition
Extended protocol discriminator	5GMM		
Security header type	'0000'B	Plain 5GS NAS message, not security protected	
Spare half octet	'0000'B		
Authentication reject message identity	'0101 1000'B		
EAP message	Not present		
EAP message	EAP-Response/AKA-Authentication-Reject	See Table 4.7.3.2-04	EAP-AKA

Condition	Explanation
EAP-AKA	EAP based primary authentication and key agreement procedure

NOTE: This message is sent without integrity protection.

– *Registration request*

**Table 4.7.1-6: REGISTRATION REQUEST**

Derivation Path: 24.501 clause 8.2.6			
Information Element	Value/remark	Comment	Condition
Extended protocol discriminator	'0111 1110'B	5GS mobility management messages	
Security header type	'0000'B	Plain 5GS NAS message, not security protected	
Spare half octet	'0000'B		
Registration request message identity	'0100 0001'B		
5GS registration type			
5GS registration type value	'001'B	Initial registration	
	'010'B		MOBILITY
	'011'B		PERIODIC
	'100'B		EMERGENCY
FOR	Present but contents not checked		
FOR	'1'B	Follow-on request pending	EMERGENCY
ngKSI	Present but contents not checked		
5GS mobile identity	Present but contents not checked		
Non-current native NAS key set identifier	If present: contents not checked		NON_CLEAR TEXT_IE
5GMM capability	If present: contents not checked		NON_CLEAR TEXT_IE
UE security capability	If present: contents not checked		
Requested NSSAI	If present: contents not checked		NON_CLEAR TEXT_IE
Last visited registered TAI	If present: contents not checked		NON_CLEAR TEXT_IE
S1 UE network capability	If present: contents not checked		NON_CLEAR TEXT_IE
Uplink data status	If present: contents not checked		NON_CLEAR TEXT_IE
PDU session status	If present: contents not checked		NON_CLEAR TEXT_IE
MICO indication	If present: contents not checked		NON_CLEAR TEXT_IE
UE status	If present: contents not checked		
Additional GUTI	If present: contents not checked		
Allowed PDU session status	If present: contents not checked		NON_CLEAR TEXT_IE
UE's usage setting	If present: contents not checked		NOT pc_IMS AND NON_CLEAR TEXT_IE
UE's usage setting	Present but contents not checked		NON_CLEAR TEXT_IE
Requested DRX parameters	If present: contents not checked		NON_CLEAR TEXT_IE
EPS NAS message container	If present: contents not checked		
LADN indication	If present: contents not checked		NON_CLEAR TEXT_IE
Payload container type	If present: '0101'B	UE policy container	NON_CLEAR TEXT_IE
Payload container	If present: contents not checked		NON_CLEAR TEXT_IE
Network slicing indication	If present: contents not checked		NON_CLEAR TEXT_IE

5GS update type	If present: contents not checked		NON_CLEAR TEXT_IE
Mobile station classmark 2	If present: contents not checked		NON_CLEAR TEXT_IE
Supported codecs	If present: contents not checked		NON_CLEAR TEXT_IE
NAS message container	The complete, ciphered, REGISTRATION REQUEST message including all IEs.		CIPHERED_MESSAGE
EPS bearer context status	If present: contents not checked		NON_CLEAR TEXT_IE
Requested extended DRX parameters	If present: contents not checked		NON_CLEAR TEXT_IE
T3324 value	If present: contents not checked		NON_CLEAR TEXT_IE
UE radio capability ID	If present: contents not checked		NON_CLEAR TEXT_IE
Requested mapped NSSAI	If present: contents not checked		NON_CLEAR TEXT_IE
Additional information requested	If present: contents not checked		NON_CLEAR TEXT_IE
Requested WUS assistance information	If present: contents not checked		NON_CLEAR TEXT_IE
N5GC indication	If present: contents not checked		NON_CLEAR TEXT_IE
Requested NB-N1 mode DRX parameters	If present: contents not checked		NON_CLEAR TEXT_IE

Condition	Explanation
INITIAL	Initial registration
MOBILITY	Mobility registration updating
PERIODIC	Periodic registration updating
EMERGENCY	Emergency registration
NON_CLEARTEXT_IE	An information element that is not allowed to be sent in cleartext and shall only be included in the complete REGISTRATION REQUEST message in the NAS message container IE.
CIPHERED_MESSAGE	If any of the IEs marked with the condition NON_CLEARTEXT_IE is present, and the UE has a valid 5G NAS security context, this condition applies.

NOTE: This message is sent integrity protected when a valid security context exists otherwise sent without integrity protection, including only cleartext IEs.



– *Registration accept*

**Table 4.7.1-7: REGISTRATION ACCEPT**

Derivation Path: 24.501 clause 8.2.7			
Information Element	Value/remark	Comment	Condition
Extended protocol discriminator	'0111 1110'B	5GS mobility management messages	
Security header type	'0000'B	Plain 5GS NAS message, not security protected	
Spare half octet	'0000'B		
Registration accept message identity	'0100 0010'B		
5GS registration result			
5GS registration result value	'001'B	3GPP access	
SMS allowed	'0'B	SMS over NAS not allowed	
5G-GUTI	See Table 4.4.2-3	For 5GC NAS test cases see Table 6.3.2.2-1	
Equivalent PLMNs	Not Present		
TAI list			
Length of tracking area identity list contents	'0000 0111'B	7 octets	
Partial tracking area identity list 1			
Number of elements	'0 0000'B	1 element	
Type of list	'00'B	list of TACs belonging to one PLMN, with non-consecutive TAC values	
MCC	See Table 4.4.2-3	For 5GC NAS test cases see Table 6.3.2.2-1	
MNC	See Table 4.4.2-3	For 5GC NAS test cases see Table 6.3.2.2-1	
TAC 1	See Table 4.4.2-3	For 5GC NAS test cases see Table 6.3.2.2-1	
Allowed NSSAI			
Length of NSSAI contents	4 entries	Equal to the number of S-NSSAI values included	
S-NSSAI			
Length of S-NSSAI contents	'0000 0001'B	SST	
SST	'0000 0001'B	SST value 1 (eMBB)	
S-NSSAI			
Length of S-NSSAI contents	'0000 0001'B	SST	
SST	'0000 0010'B	SST value 2 (URLLC)	
S-NSSAI			
Length of S-NSSAI contents	'0000 0001'B	SST	
SST	'0000 0011'B	SST value 3 (MIoT)	
S-NSSAI			
Length of S-NSSAI contents	'0000 0001'B	SST	
SST	'0000 0100'B	SST value 4 (V2X)	
Rejected NSSAI	Not Present		
Configured NSSAI	Not Present		

5GS network feature support	'0000 1101 0000 0000 0000 0000'B	IMS voice over PS session supported over 3GPP access, Emergency services supported in NR connected to 5GCN and E-UTRA connected to 5GCN. All other features set to "not supported" including the 'Interworking without N26 interface not supported'.	
5GS network feature support	Not Present		SST_URLLC OR SST_V2X OR SST_MIoT
PDU session status	The same value as the PDU session status IE of the most recently received REGISTRATION REQUEST message		
PDU session reactivation result	Not Present		
PDU session reactivation result error cause	Not Present		
LADN information	Not Present		
MICO indication	Not Present		
Network slicing indication	Not Present		
Service area list	Not Present		
T3512 value			INITIAL
Timer value	'0 0000'B		
Unit	'111'B	value indicates that the timer is deactivated	
T3512 value	Not Present		
Non-3GPP de-registration timer value	Not Present		
T3502 value	Not Present		
Emergency number list	Not Present		
Extended emergency number list	Not Present		
SOR Transparent container	Not Present		
EAP message	Not Present		
NSSAI inclusion mode	Not Present		
Operator-defined access category definitions	Not Present		
Negotiated DRX parameters	Not Present		
Non-3GPP NW policies	Not Present		
EPS bearer context status	The same value as the EPS bearer context status IE of the most recently received REGISTRATION REQUEST message		
Negotiated extended DRX parameters	Not Present		
T3447 value	Not Present		
T3448 value	Not Present		
T3324 value	Not Present		
UE radio capability ID	Not Present		

UE radio capability ID	The same value as received in UE radio capability ID; if any of the REGISTRATION REQUEST message		pc_5GC_RA CS
UE radio capability ID deletion indication	Not Present		
Pending NSSAI	Not Present		
Ciphering key data	Not Present		
CAG information list	Not Present		
Truncated 5G-S-TMSI configuration	Not Present		
Negotiated WUS assistance information	Not Present		
Negotiated NB-N1 mode DRX parameters	Not Present		
Extended rejected NSSAI	Not Present		
NSSRG information	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		

NOTE: This message is always sent within SECURITY PROTECTED 5GS NAS MESSAGE message.

– *Registration reject*

**Table 4.7.1-9: REGISTRATION REJECT**

Derivation Path: 24.501 clause 8.2.9			
Information Element	Value/remark	Comment	Condition
Extended protocol discriminator	'0111 1110'B	5GS mobility management messages	
Security header type	'0000'B	Plain 5GS NAS message, not security protected	
Spare half octet	'0000'B		
Registration reject message identity	'0100 0100'B		
5GMM cause	Set according to specific message content		
T3346 value	Not Present		
T3502 value	Not Present		
EAP message	Not Present		
Rejected NSSAI	Not Present		
CAG information list	Not Present		
Extended rejected NSSAI	Not Present		

NOTE: This message is sent without integrity protection before the secure exchange of NAS messages has been established and sent within SECURITY PROTECTED 5GS NAS MESSAGE message after the secure exchange of NAS messages has been established.

– *UL NAS transport*

**Table 4.7.1-10: UL NAS TRANSPORT**

Derivation Path: 24.501 clause 8.2.10			
Information Element	Value/remark	Comment	Condition
Extended protocol discriminator	'0111 1110'B	5GS mobility management messages	
Security header type	'0000'B	Plain 5GS NAS message, not security protected	
Spare half octet	'0000'B		
UL NAS TRANSPORT message identity	'0110 0111'B		
Payload container type	Set according to specific message content		
Payload container type	'0001'B	N1 SM information	INITIAL_PDU_REQUEST
Spare half octet	'0000'B		
Payload container	Set according to specific message content		
Payload container	PDU SESSION ESTABLISHMENT REQUEST message		INITIAL_PDU_REQUEST
PDU session ID	If present: contents not checked		
PDU session ID	Same PDU session ID as defined in the PDU SESSION ESTABLISHMENT REQUEST message in the Payload container		INITIAL_PDU_REQUEST
Old PDU session ID	If present: contents not checked		
Request type	If present: contents not checked		
Request type	'001'B	initial request	INITIAL_PDU_REQUEST
S-NSSAI	If present: contents not checked		
DNN	If present: contents not checked	(NOTE 1)	
Additional information	If present: contents not checked		
MA PDU session information	If present: contents not checked		
Release assistance indication	If present: contents not checked		
NOTE 1: Although the contents of the IE is not required to be verified for PASS/FAIL purposes, the provided information shall be taken into account e.g. for the building the content of messages and allowing for specific UE behaviour as specified in Table 4.8.4-1.			

Condition	Explanation
INITIAL_PDU_REQUEST	The UL NAS TRANSPORT message is used to transport a PDU SESSION ESTABLISHMENT REQUEST message to establish a new PDU session.

NOTE: This message is always sent within SECURITY PROTECTED 5GS NAS MESSAGE message.

## – DL NAS transport

Table 4.7.1-11: DL NAS TRANSPORT

Derivation Path: 24.501 clause 8.2.11			
Information Element	Value/remark	Comment	Condition
Extended protocol discriminator	'0111 1110'B	5GS mobility management messages	
Security header type	'0000'B	Plain 5GS NAS message, not security protected	
Spare half octet	'0000'B		
DL NAS TRANSPORT message identity	'0110 1000'B		
Payload container type	Set according to specific message content		
Payload container type	'0001'B	N1 SM information	5GSM_MESSAGE
Spare half octet	'0000'B		
Payload container	Set according to specific message content		
Payload container	5GSM message		5GSM_MESSAGE
PDU session ID	Not Present		
PDU session ID	Set to the same value as the PDU session ID of the 5GSM message in the Payload container.		5GSM_MESSAGE
Additional information	Not Present		
5GMM cause	Not Present		
Back-off timer value	Not Present		

Condition	Explanation
5GSM_MESSAGE	The DL NAS TRANSPORT message is used to transport a 5GSM message

NOTE: This message is always sent within SECURITY PROTECTED 5GS NAS MESSAGE message.

## – De-registration request (UE originating de-registration)

Table 4.7.1-12: DEREGISTRATION REQUEST\_1

Derivation Path: 24.501 clause 8.2.12			
Information Element	Value/remark	Comment	Condition
Extended protocol discriminator	'0111 1110'B	5GS mobility management messages	
Security header type	'0000'B	Plain 5GS NAS message, not security protected	
Spare half octet	'0000'B		
De-registration request message identity	'0100 0101'B		
De-registration type			
Switch off	'0'B		NORMAL
	'1'B		SWITCH_OFF
Re-registration required	'0'B		
Access type	'01'B	3GPP access	
ngKSI	Present but contents not checked		
5GS mobile identity	Present but contents not checked		

Condition	Explanation
NORMAL	Normal de-registration
SWITCH_OFF	Switch off

NOTE: If this message is sent as an initial NAS message, it is sent with integrity protection but without ciphering. Otherwise it is sent without integrity protection and ciphering before SS has started the ciphering and integrity and ciphered protected after SS has started the ciphering.

– *De-registration accept (UE originating de-registration)*

**Table 4.7.1-13: DEREGISTRATION ACCEPT\_1**

Derivation Path: 24.501 clause 8.2.13			
Information Element	Value/remark	Comment	Condition
Extended protocol discriminator	'0111 1110'B	5GS mobility management messages	
Security header type	'0000'B	Plain 5GS NAS message, not security protected	
Spare half octet	'0000'B		
De-registration accept message identity	'0100 0110'B		

NOTE: This message is sent using the same security protection as in the previous DETACH REQUEST message received from the UE.

– *De-registration request (UE terminated de-registration)*

**Table 4.7.1-14: DEREGISTRATION REQUEST\_2**

Derivation Path: 24.501 clause 8.2.14			
Information Element	Value/remark	Comment	Condition
Extended protocol discriminator	'0111 1110'B	5GS mobility management messages	
Security header type	'0000'B	Plain 5GS NAS message, not security protected	
Spare half octet	'0000'B		
De-registration request message identity	'0100 0111'B		
De-registration type	Set according to specific message content		
Spare half octet	'0000'B		
5GMM cause	Not Present		
T3346 value	Not Present		
Rejected NSSAI	Not Present		
CAG information list	Not Present		
Extended rejected NSSAI	Not Present		

NOTE: This message is always sent within SECURITY PROTECTED 5GS NAS MESSAGE message.

– *De-registration accept (UE terminated de-registration)***Table 4.7.1-15: DEREGISTRATION ACCEPT\_2**

Derivation Path: 24.501 clause 8.2.15			
Information Element	Value/remark	Comment	Condition
Extended protocol discriminator	'0111 1110'B	5GS mobility management messages	
Security header type	'0000'B	Plain 5GS NAS message, not security protected	
Spare half octet	'0000'B		
De-registration accept message identity	'0100 1000'B		

NOTE: This message is always sent within SECURITY PROTECTED 5GS NAS MESSAGE message.

– *Service request***Table 4.7.1-16: SERVICE REQUEST**

Derivation Path: 24.501 clause 8.2.16			
Information Element	Value/remark	Comment	Condition
Extended protocol discriminator	'0111 1110'B	5GS mobility management messages	
Security header type	'0000'B	Plain 5GS NAS message, not security protected	
Spare half octet	'0000'B		
Service request message identity	'0100 1100'B		
ngKSI			
NAS key set identifier	The valid NAS key set identifier of the UE		
TSC	'0'B	native security context (for KSI <sub>AMF</sub> )	
Service type	'0010'B	mobile terminated services	
5G-S-TMSI	The valid 5G-S-TMSI of the UE		
Uplink data status	If present: contents not checked		NON_CLEARTEXT_IE
PDU session status	If present: contents not checked		NON_CLEARTEXT_IE
Allowed PDU session status	If present: contents not checked		NON_CLEARTEXT_IE
NAS message container	If present, the complete, ciphered, SERVICE REQUEST message including all IEs.		CIPHERED_MESSAGE

Condition	Explanation
NON_CLEARTEXT_IE	An information element that is not allowed to be sent in cleartext and shall only be included in the complete SERVICE REQUEST message in the NAS message container IE. NOTE: This condition is only applicable if the SERVICE REQUEST message is sent as an initial NAS message.
CIPHERED_MESSAGE	If any of the IEs marked with the condition NON_CLEARTEXT_IE is present, this condition applies. NOTE: This condition is only applicable if the SERVICE REQUEST message is sent as an initial NAS message.



NOTE: This message is sent without integrity protection, including only cleartext IEs, before NAS security mode control procedure has been successfully completed and sent within SECURITY PROTECTED 5GS NAS MESSAGE message after NAS security mode control procedure has been successfully completed

– *Service accept*

**Table 4.7.1-17: SERVICE ACCEPT**

Derivation Path: 24.501 clause 8.2.17			
Information Element	Value/remark	Comment	Condition
Extended protocol discriminator	'0111 1110'B	5GS mobility management messages	
Security header type	'0000'B	Plain 5GS NAS message, not security protected	
Spare half octet	'0000'B		
Service accept message identity	'0100 1110'B		
PDU session status	Not Present		
PDU session reactivation result	Not Present		
PDU session reactivation result error cause	Not Present		
EAP message	Not Present		
T3448 value	Not Present		

NOTE: This message is always sent within SECURITY PROTECTED 5GS NAS MESSAGE message.

– *Service reject*

**Table 4.7.1-18: SERVICE REJECT**

Derivation Path: 24.501 clause 8.2.18			
Information Element	Value/remark	Comment	Condition
Extended protocol discriminator	'0111 1110'B	5GS mobility management messages	
Security header type	'0000'B	Plain 5GS NAS message, not security protected	
Spare half octet	'0000'B		
Service reject message identity	'0100 1101'B		
5GMM cause	The value is set according to specific message content		
PDU session status	Not Present		
T3346 value	Not Present		
EAP message	Not Present		
T3448 value	Not Present		
CAG information list	Not Present		

NOTE: This message is sent without integrity protection before NAS security mode control procedure has been successfully completed and sent within SECURITY PROTECTED 5GS NAS MESSAGE message after NAS security mode control procedure has been successfully completed

– *Configuration update command***Table 4.7.1-19: CONFIGURATION UPDATE COMMAND**

Derivation Path: 24.501 clause 8.2.19			
Information Element	Value/remark	Comment	Condition
Extended protocol discriminator	'0111 1110'B	5GS mobility management messages	
Security header type	'0000'B	Plain 5GS NAS message, not security protected	
Spare half octet	'0000'B		
Configuration update command message identity	'0101 0100'B		
Configuration update indication	Not Present		
5G-GUTI	Not Present		
TAI list	Not Present		
Allowed NSSAI	Not Present		
Service area list	Not Present		
Full name for network	Not Present		
Short name for network	Not Present		
Local time zone	Not Present		
Universal time and local time zone	Not Present		
Network daylight saving time	Not Present		
LADN information	Not Present		
MICO indication	Not Present		
Network slicing indication	Not Present		
Configured NSSAI	Not Present		
Rejected NSSAI	Not Present		
Operator-defined access category definitions	Not Present		
SMS indication	Not Present		
T3447 value	Not Present		
CAG information list	Not Present		
UE radio capability ID	Not Present		
UE radio capability ID deletion indication	Not Present		
5GS registration result	Not Present		
Truncated 5G-S-TMSI configuration	Not Present		
Additional configuration indication	Not Present		
Extended rejected NSSAI	Not Present		
NSSRG information	Not Present		

NOTE: This message is always sent within SECURITY PROTECTED 5GS NAS MESSAGE message.

– *Configuration update complete***Table 4.7.1-20: CONFIGURATION UPDATE COMPLETE**

Derivation Path: 24.501 clause 8.2.20			
Information Element	Value/remark	Comment	Condition
Extended protocol discriminator	'0111 1110'B	5GS mobility management messages	
Security header type	'0000'B	Plain 5GS NAS message, not security protected	
Spare half octet	'0000'B		
Configuration update complete message identity	'0101 0101'B		

NOTE: This message is always sent within SECURITY PROTECTED 5GS NAS MESSAGE message.

– *Identity request***Table 4.7.1-21: IDENTITY REQUEST**

Derivation Path: 24.501 clause 8.2.21			
Information Element	Value/remark	Comment	Condition
Extended protocol discriminator	'0111 1110'B	5GS mobility management messages	
Security header type	'0000'B	Plain 5GS NAS message, not security protected	
Spare half octet	'0000'B		
Identity request message identity	'0101 1011'B		
Identity type	Set according to specific message contents		
Spare half octet	'0000'B		

NOTE: This message is sent without integrity protection before 5GS NAS security mode control procedure has been successfully completed and sent within SECURITY PROTECTED 5GS NAS MESSAGE message after 5GS NAS security mode control procedure has been successfully completed.

– *Identity response***Table 4.7.1-22: IDENTITY RESPONSE**

Derivation Path: 24.501 clause 8.2.22			
Information Element	Value/remark	Comment	Condition
Extended protocol discriminator	'0111 1110'B	5GS mobility management messages	
Security header type	'0000'B	Plain 5GS NAS message, not security protected	
Spare half octet	'0000'B		
Identity response message identity	0101 1100'B		
Mobile identity	Present but contents not checked		

NOTE: This message is sent without integrity protection before 5GS NAS security mode control procedure has been successfully completed and sent within SECURITY PROTECTED 5GS NAS MESSAGE message after 5GS NAS security mode control procedure has been successfully completed.

– *Notification***Table 4.7.1-23: NOTIFICATION**

Derivation Path: 24.501 clause 8.2.23			
Information Element	Value/remark	Comment	Condition
Extended protocol discriminator	'0111 1110'B	5GS mobility management messages	
Security header type	'0000'B	Plain 5GS NAS message, not security protected	
Spare half octet	'0000'B		
Notification message identity	'0110 0101'B		
Access type	'01'B	3GPP access	
Spare half octet	'0000'B		

NOTE: This message is always sent within SECURITY PROTECTED 5GS NAS MESSAGE message.

– *Notification response*

**Table 4.7.1-24: NOTIFICATION RESPONSE**

Derivation Path: 24.501 clause 8.2.24			
Information Element	Value/remark	Comment	Condition
Extended protocol discriminator	'0111 1110'B	5GS mobility management messages	
Security header type	'0000'B	Plain 5GS NAS message, not security protected	
Spare half octet	'0000'B		
Notification response message identity	'0110 0110'B		
PDU session status	If present: contents not checked		

NOTE: This message is always sent within SECURITY PROTECTED 5GS NAS MESSAGE message.

– *Security mode command*

**Table 4.7.1-25: SECURITY MODE COMMAND**

Derivation Path: 24.501 clause 8.2.25			
Information Element	Value/remark	Comment	Condition
Extended protocol discriminator	'0111 1110'B	5GS mobility management messages	
Security header type	'0000'B	Plain 5GS NAS message, not security protected	
Spare half octet	'0000'B		
Security mode command message identity	'0101 1101'B		
Selected NAS security algorithms			
Type of ciphering algorithm	Set according to PIXIT px_NAS_5GC_CipheringAlgorithm for default ciphering algorithm		
Type of ciphering algorithm	'0000'B	5G encryption algorithm 5G EAO (null ciphering algorithm)	For RF
Type of integrity protection algorithm	Set according to PIXIT px_NAS_5GC_IntegrityProtAlgorithm for default integrity protection algorithm	This value should not be equal to the null integrity algorithm.	
ngKSI			
NAS key set identifier	The valid NAS key set identifier		
TSC	'0'B	native security context (for KSI <sub>AMF</sub> )	
Spare half octet	'0000'B		
Replayed UE security capabilities	Set according to the received UE security capabilities		
IMEISV request	Not Present		
Selected EPS NAS security algorithms	Not Present		
Selected EPS NAS security algorithms			UE_S1_SUPPORTED
Type of ciphering algorithm	Set according to PIXIT px_NAS_CipheringAlgorithm for default ciphering algorithm	The px_NAS_CipheringAlgorithm PIXIT is defined in TS 36.523-3 [x]	
Type of integrity protection algorithm	Set according to PIXIT px_NAS_IntegrityProtAlgorithm for default integrity protection algorithm	The px_NAS_IntegrityProtAlgorithm is defined in TS 36.523-3 [x]	
Additional 5G security information	Not Present		
Additional 5G security information			NO_VALID_SS_SECURITY_CONTEXT
RINMR	'1'B	Retransmission of the initial NAS message requested	
HDP	'0'B	K <sub>AMF</sub> derivation is not required	
EAP message	Not Present		
EAP message	EAP-Success	See Table 4.7.3.2-03	EAP-AKA
ABBA	'0000 0000 0000 0000'B		EAP-AKA
Replayed S1 UE security capabilities	Not Present		

Replayed S1 UE security capabilities	Set according to the received UE security capabilities in the last REGISTRATION REQUEST message		UE_S1_SUPPORTED
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Condition	Explanation
NO_VALID_SS_SECURITY_CONTEXT	If the SS doesn't have a valid security context
EAP_AKA	EAP based primary authentication and key agreement procedure
For RF	Used for RF/RRM test cases
UE_S1_SUPPORTED	The UE indicated support of S1 in the last REGISTRATION REQUEST message

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

### – Security mode complete

**Table 4.7.1-26: SECURITY MODE COMPLETE**

Derivation Path: 24.501 clause 8.2.26			
Information Element	Value/remark	Comment	Condition
Extended protocol discriminator	'0111 1110'B	5GS mobility management messages	
Security header type	'0000'B	Plain 5GS NAS message, not security protected	
Spare half octet	'0000'B		
Security mode complete message identity	'0101 1110'B		
IMEISV	Not present		
NAS message container	Not present		
	Complete initial NAS message		RINMR_INDICATED
non-IMEISV PEI	Not present		

Condition	Explanation
RINMR_INDICATED	The SS requested retransmission of the initial NAS message in the last SECURITY MODE COMMAND

NOTE: This message is always sent within SECURITY PROTECTED 5GS NAS MESSAGE message with new 5GS NAS security context.

### – Security mode reject

**Table 4.7.1-27: SECURITY MODE REJECT**

Derivation Path: 24.501 clause 8.2.27			
Information Element	Value/remark	Comment	Condition
Extended protocol discriminator	'0111 1110'B	5GS mobility management messages	
Security header type	'0000'B	Plain 5GS NAS message, not security protected	
Spare half octet	'0000'B		
Security mode reject message identity	'0101 1111'B		
5GMM cause	The value is set according to specific message content		

NOTE: This message is sent without integrity protection before 5GS NAS security mode control procedure has been successfully completed and sent within SECURITY PROTECTED 5GS NAS MESSAGE message after 5GS NAS security mode control procedure has been successfully completed.

– *Security protected 5GS NAS message*

**Table 4.7.1-28: SECURITY PROTECTED 5GS NAS MESSAGE**

Derivation Path: 24.501 clause 8.2.28			
Information Element	Value/remark	Comment	Condition
Extended protocol discriminator	5GMM		
Security header type	'0001'B	Integrity protected	UNCIPHERED
	'0010'B	Integrity protected and ciphered	CIPHERED
	'0011'B	Integrity protected with new 5G NAS security context	UNCIPHERED-NEW
	'0100'B	Integrity protected and ciphered with new 5G NAS security context	CIPHERED-NEW
Spare half octet	'0000'B		
Message authentication code	The calculated value of MAC-I for this message.	The value of MAC-I is calculated by SS using Sequence number sent by UE.	SENT-BY-SS
	The same value as the XMAC-I value calculated by SS.		SENT-BY-UE
Sequence number	The internal counter of the SS		SENT-BY-SS
	Any allowed value		SENT-BY-UE
Plain 5GS NAS message	Set according to specific message content		

Condition	Explanation
UNCIPHERED	This condition applies to unciphered NAS message exchange
CIPHERED	This condition applies to ciphered NAS message exchange
UNCIPHERED-NEW	This condition applies to unciphered NAS message exchange with new 5G NAS security context
CIPHERED-NEW	This condition applies to ciphered NAS message exchange with new 5G NAS security context
SENT-BY-SS	Use for the message sent from SS to UE
SENT-BY-UE	Use for the message sent from UE to SS



## – 5GMM status

Table 4.7.1-29: 5GMM STATUS

Derivation Path: 24.501 clause 8.2.29			
Information Element	Value/remark	Comment	Condition
Extended protocol discriminator	5GMM		
Security header type	'0000'B	Plain 5GS NAS message, not security protected	
Spare half octet	'0000'B		
5GMM STATUS message identity	'0110 0100'B		
5GMM cause	'0110 1111'B	Protocol error, unspecified	SENT-BY-SS
	Present but contents not checked		SENT-BY-UE

Condition	Explanation
SENT-BY-SS	Use for the message sent from SS to UE
SENT-BY-UE	Use for the message sent from UE to SS

NOTE: This message is always sent within SECURITY PROTECTED 5GS NAS MESSAGE message.

## – Control plane service request

Table 4.7.1-30: CONTROL PLANE SERVICE REQUEST

Derivation Path: 24.501 clause 8.2.30			
Information Element	Value/remark	Comment	Condition
Extended protocol discriminator	'0111 1110'B	5GS mobility management messages	
Security header type	'0000'B	Plain 5GS NAS message, not security protected	
Spare half octet	'0000'B		
Control plane service request message identity	'0100 1111'B		
Control plane service type	'001'B	mobile terminated request	
ngKSI			
NAS key set identifier	The valid NAS key set identifier of the UE		
TSC	'0'B	native security context (for KSI <sub>AMF</sub> )	
CIoT small data container	If present: contents not checked		NON_CLEARTEXT_IE
Payload container type	If present: contents not checked		NON_CLEARTEXT_IE
Payload container	If present: contents not checked		NON_CLEARTEXT_IE
PDU session ID	If present: contents not checked		NON_CLEARTEXT_IE
PDU session status	If present: contents not checked		NON_CLEARTEXT_IE
Release assistance indication	If present: contents not checked		NON_CLEARTEXT_IE
Uplink data status	If present: contents not checked		NON_CLEARTEXT_IE
NAS message container	If present: contents not checked		CIPHERED_MESSAGE
Additional information	If present: contents not checked		NON_CLEARTEXT_IE

Condition	Explanation
NON_CLEARTEXT_IE	An information element that is not allowed to be sent in cleartext and shall only be included in the complete CONTROL PLANE SERVICE REQUEST message in the NAS message container IE. NOTE: This condition is only applicable if the CONTROL PLANE SERVICE REQUEST message is sent as an initial NAS message.
CIPHERED_MESSAGE	If any of the IEs marked with the condition NON_CLEARTEXT_IE is present, this condition applies. NOTE: This condition is only applicable if the CONTROL PLANE SERVICE REQUEST message is sent as an initial NAS message.

NOTE: This message is sent without integrity protection, including only cleartext IEs, before NAS security mode control procedure has been successfully completed and sent within SECURITY PROTECTED 5GS NAS MESSAGE message after NAS security mode control procedure has been successfully completed

– *Network slice-specific authentication command***Table 4.7.1-31: NETWORK SLICE-SPECIFIC AUTHENTICATION COMMAND**

Derivation Path: 24.501 clause 8.2.31			
Information Element	Value/remark	Comment	Condition
Extended protocol discriminator	'0111 1110'B	5GS mobility management messages	
Security header type	'0000'B	Plain 5GS NAS message, not security protected	
Spare half octet	'0000'B		
NETWORK SLICE-SPECIFIC AUTHENTICATION COMMAND message identity	'0101 0000'B		
S-NSSAI	Set according to specific message content		
EAP message	Set according to Table 4.7.3.2-1	See TS 24.501 [25] subclause 9.11.2.2	

NOTE: This message is always sent within SECURITY PROTECTED 5GS NAS MESSAGE message.

– *Network slice-specific authentication complete***Table 4.7.1-32: NETWORK SLICE-SPECIFIC AUTHENTICATION COMPLETE**

Derivation Path: 24.501 clause 8.2.32			
Information Element	Value/remark	Comment	Condition
Extended protocol discriminator	'0111 1110'B	5GS mobility management messages	
Security header type	'0000'B	Plain 5GS NAS message, not security protected	
Spare half octet	'0000'B		
NETWORK SLICE-SPECIFIC AUTHENTICATION COMPLETE message identity	'0101 0001'B		
S-NSSAI	Set according to specific message content		
EAP message	Set according to Table 4.7.3.2-2	See TS 24.501 [25] subclause 9.11.2.2	

NOTE: This message is always sent within SECURITY PROTECTED 5GS NAS MESSAGE message.

– *Network slice-specific authentication result***Table 4.7.1-33: NETWORK SLICE-SPECIFIC AUTHENTICATION RESULT**

Derivation Path: 24.501 clause 8.2.33			
Information Element	Value/remark	Comment	Condition
Extended protocol discriminator	'0111 1110'B	5GS mobility management messages	
Security header type	'0000'B	Plain 5GS NAS message, not security protected	
Spare half octet	'0000'B		
NETWORK SLICE-SPECIFIC AUTHENTICATION COMPLETE message identity	'0101 0010'B		
S-NSSAI	Set according to specific message content		
EAP message	EAP-Success	See Table 4.7.3.2-3	NSSAA Success
	EAP-Failure	See Table 4.7.3.2-6	NSSAA Failure

Condition	Explanation
NSSAA Success	Network slice-specific authentication succeeds
NSSAA Failure	Network slice-specific authentication fails

NOTE: This message is always sent within SECURITY PROTECTED 5GS NAS MESSAGE message.

## 4.7.2 Contents of 5GSM messages

- *PDU session establishment request*

**Table 4.7.2-1: PDU SESSION ESTABLISHMENT REQUEST**

Derivation Path: 24.501 clause 8.3.1			
Information Element	Value/remark	Comment	Condition
Extended protocol discriminator	'0010 1110'B	5GS session management messages	
PDU session ID	Any value according to TS 24.501 [25] subclause 9.4		
PTI	Any value from 1 to 254		
PDU SESSION ESTABLISHMENT REQUEST message identity	'1100 0001'B		
Integrity protection maximum data rate	Present but contents not checked		
PDU session type	Any value between '001'B, '010'B, '011'B and '101'B	The allowed values are respectively IPv4, IPv6, IPv4v6 and Ethernet (EtherType as defined in IEEE 802.3)	
SSC mode	If present: contents not checked		
5GSM capability	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		
Always-on PDU session requested			SST_URLLC
APSR	'1'B	Always-on PDU session requested	
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.	
Extended protocol configuration options	Present including at least the following container		DATA_OFF
Container ID n	'0017'H	3GPP PS data off UE status	
Length of container ID n contents		1 octet	
Container ID n contents	'01'H	'deactivated'	
IP header compression configuration	If present: contents not checked		
DS-TT Ethernet port MAC address	If present: contents not checked		
UE-DS-TT residence time	If present: contents not checked		
Port management information container	If present: contents not checked		
Ethernet header compression configuration	If present: contents not checked		
Suggested interface identifier	If present: contents not checked		

<b>Condition</b>	<b>Explanation</b>
DATA_OFF	If the UE supports 3GPP PS data off as specified in TS 38.508-2 [10], Table A.4.3.7-1/xx

– *PDU session establishment accept*

**Table 4.7.2-2: PDU SESSION ESTABLISHMENT ACCEPT**



Derivation Path: 24.501 clause 8.3.2			
Information Element	Value/remark	Comment	Condition
Extended protocol discriminator	'0010 1110'B	5GS session management messages	
PDU session ID	The same value as the value set in PDU SESSION ESTABLISHMENT REQUEST message		
PTI	The same value as the value set in PDU SESSION ESTABLISHMENT REQUEST message		
PDU SESSION ESTABLISHMENT ACCEPT message identity	'1100 0010'B		
Selected PDU session type	'001'B		IPv4
	'010'B		IPv6
	'011'B		IPv4v6
	'101'B		Ethernet
Selected SSC mode	'001'B	SSC mode 1	
Authorized QoS rules	5GC QoS rule of the entry in Table 4.8.4-1 which has been determined by the DNN IE in the UL NAS TRANSPORT message which carried the corresponding PDU SESSION ESTABLISHMENT REQUEST or by pc_APN_Default_Configuration if the DNN IE was not present		
Session AMBR			
Unit for Session-AMBR for downlink	'000 00101'	Value is incremented in multiples of 256 Kbps	
Session-AMBR for downlink	'0000 0000 0000 0100'B	1024 Kbps	
Unit for Session-AMBR for uplink	'000 00101'	Value is incremented in multiples of 256 Kbps	
Session-AMBR for uplink	'0000 0000 0000 0100'B	1024 Kbps	
5GSM cause	Not Present		
PDU address			IPv4
Length of PDU address contents	5 octets		
PDU type value	'001'B	IPv4	
PDU address information	IPv4 address	The SS provides a valid IPv4 address	NOT IPv4-DHCP
	0.0.0.0	DHCPv4 is to be used to allocate the IPv4 address	IPv4-DHCP
PDU address			IPv6
Length of PDU address contents	9 octets		
PDU type value	'010'B	IPv6	
PDU address information	IPv6 interface identifier	The SS provides a valid IPv6 interface identifier	
PDU address			IPv4v6
Length of PDU address contents	13 octets		
PDU type value	'011'B	IPv4v6	

PDU address information (Octets 4 to 11)	IPv6 interface identifier	The SS provides a valid IPv6 interface identifier	
PDU address information (Octets 12 to 15)	IPv4 address	The SS provides a valid IPv4 address	NOT IPv4-DHCP
	0.0.0.0	DHCPv4 is to be used to allocate the IPv4 address	IPv4-DHCP
RQ timer value	Not Present		
S-NSSAI			
Length of S-NSSAI contents	'0000 0001'B	SST	
SST	'0000 0001'B	SST value 1 (eMBB)	SST_eMBB
SST	'0000 0010'B	SST value 2 (URLLC)	SST_URLLC
SST	'0000 0011'B	SST value 3 (MIoT)	SST_MIoT
SST	'0000 0100'B	SST value 4 (V2X)	SST_V2X
Always-on PDU session indication	Not Present		
Always-on PDU session indication			
APSI	'0'B	Always-on PDU session not allowed	Always_On_Requested
APSI	'1'B	Always-on PDU session required	Always_On_Requested AND SST_URLLC
Mapped EPS bearer contexts	Not Present		
Mapped EPS bearer contexts			Interworking_with_EPS
Mapped EPS bearer context			
EPS bearer identity	The same value as the one specified in the Reference QoS flow referred to from the Reference QoS rule indicated in the IE Authorized QoS rules		
Operation code	'001'B	Create new EPS bearer	
E bit	'1'B	Parameters list is included	
Number of EPS parameters	'0001'B	1 parameter	
Mapped EPS QoS parameters	EPC default bearer context of the entry in Table 4.8.4-1 which has been determined by the DNN IE in the UL NAS TRANSPORT message which carried the corresponding PDU SESSION ESTABLISHMENT REQUEST or by pc_APN_Default_Configuration if the DNN IE was not present		
EAP message	Not Present		
Authorized QoS flow descriptions	The QoS flow referred to in the relevant Authorized QoS rules IE		
Extended protocol configuration options	Not Present		

Extended protocol configuration options			P-CSCF_IPv6 OR P-CSCF_IPv4
Container ID 1	'0001'H		P-CSCF_IPv6
Length of container ID 1 contents		Length value determined by test implementation	
Container ID 1 contents	IPv6 address	P-CSCF IPv6 Address	
Container ID 2	'000C'H		P-CSCF_IPv4
Length of container ID 2 contents		Length value determined by test implementation	
Container ID 2 contents	IPv4 address	P-CSCF IPv4 Address	
Container ID 3	'0001'H		Additional_P-CSCF_IPv6
Length of container ID 3 contents		Length value determined by test implementation	
Container ID 3 contents	IPv6 address	Additional P-CSCF IPv6 Address	
Container ID 4	'000C'H		Additional_P-CSCF_IPv4
Length of container ID 4 contents		Length value determined by test implementation	
Container ID 4 contents	IPv4 address	Additional P-CSCF IPv4 Address	
DNN	The DNN/APN ID of the entry in Table 4.8.4-1 which has been determined by the DNN IE in the UL NAS TRANSPORT message which carried the corresponding PDU SESSION ESTABLISHMENT REQUEST or by pc_APN_Default_Configuration if the DNN IE was not present		
5GSM network feature support	Not Present		
Serving PLMN rate control	Not Present		
ATSSS container	Not Present		
Control plane only indication	Not Present		
IP header compression configuration	Not Present		
Ethernet header compression configuration	Not Present		

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	<p>If in the last PDU SESSION ESTABLISHMENT REQUEST sent prior to this message, the IE Extended protocol configuration options contains a configuration protocol option = '000BH' ("IPv4 address allocation via DHCPv4", length of contents = 0).</p> <p>Note: This condition is used in conjunction with IPv4 or IPv4v6 as indicated in the "PDU address information" just above.</p>
Ethernet	If in the last PDU SESSION ESTABLISHMENT REQUEST sent prior to this message, the PDU session type = '101'B.
Always_On_Requested	If the last PDU SESSION ESTABLISHMENT REQUEST message included the Always-on PDU session requested IE
P-CSCF_IPv6	If in the last PDU SESSION ESTABLISHMENT REQUEST sent prior to this message the IE Extended protocol configuration options contains a configuration protocol option = '0001H' ("P-CSCF IPv6 Address Request", length of contents = 0)
P-CSCF_IPv4	If in the last PDU SESSION ESTABLISHMENT REQUEST sent prior to this message the IE Extended protocol configuration options contains a configuration protocol option = '000CH' ("P-CSCF IPv4 Address Request", length of contents = 0)
Interworking_with_EPS	If the UE has indicated support of S1, then the SS shall include this IE to provide details for the interworking with EPS being supported for a PDU session. This requirement is set up for the purpose of facilitating the test description. It is not mandatory for the Network to support Mapped EPS bearer contexts.
Additional_P-CSCF_IPv6	P-CSCF_IPv6 AND SS requires to be configured with second P-CSCF Ipv6 address
Additional_P-CSCF_IPv4	P-CSCF_IPv6 AND SS requires to be configured with second P-CSCF Ipv4 address

– *PDU session establishment reject***Table 4.7.2-3: PDU SESSION ESTABLISHMENT REJECT**

Derivation Path: 24.501 clause 8.3.3			
Information Element	Value/remark	Comment	Condition
Extended protocol discriminator	'0010 1110'B	5GS session management messages	
PDU session ID	The same value as the value set in PDU SESSION ESTABLISHMENT REQUEST message		
PTI	The same value as the value set in PDU SESSION ESTABLISHMENT REQUEST message		
PDU SESSION ESTABLISHMENT REJECT message identity	'1100 0011'B		
5GSM cause	The value is set according to specific message content		
Back-off timer value	Not Present		
Allowed SSC mode	Not Present		
EAP message	Not Present		
5GSM congestion re-attempt indicator	Not Present		
Extended protocol configuration options	Not Present		
Re-attempt indicator	Not Present		

– *PDU session authentication command***Table 4.7.2-4: PDU SESSION AUTHENTICATION COMMAND**

Derivation Path: 24.501 clause 8.3.4			
Information Element	Value/remark	Comment	Condition
Extended protocol discriminator	'0010 1110'B	5GS session management messages	
PDU session ID	Set according to specific message content		
PTI	'0000 0000'B	No procedure transaction identity assigned	
PDU SESSION AUTHENTICATION COMMAND message identity	'1100 0101'B		
EAP message	Set according to TS 38.508 Table 4.7.3.2-1	See TS 24.501 [25] subclause 9.11.2.2	
Extended protocol configuration options	Not Present		

– *PDU session authentication complete***Table 4.7.2-5: PDU SESSION AUTHENTICATION COMPLETE**

Derivation Path: 24.501 clause 8.3.5			
Information Element	Value/remark	Comment	Condition
Extended protocol discriminator	'0010 1110'B	5GS session management messages	
PDU session ID	The value indicated in PDU SESSION AUTHENTICATION COMMAND message		
PTI	'0000 0000'B	No procedure transaction identity assigned	
PDU SESSION AUTHENTICATION COMPLETE message identity	'1100 0110'B		
EAP message	Set according to TS 38.508 Table 4.7.3.2-2	See TS 24.501 [25] subclause 9.11.2.2	
Extended protocol configuration options	If present: contents not checked		

– *PDU session authentication result***Table 4.7.2-6: PDU SESSION AUTHENTICATION RESULT**

Derivation Path: 24.501 clause 8.3.6			
Information Element	Value/remark	Comment	Condition
Extended protocol discriminator	'0010 1110'B	5GS session management messages	
PDU session ID	The value indicated in PDU SESSION AUTHENTICATION COMMAND message		
PTI	'0000 0000'B	No procedure transaction identity assigned	
PDU SESSION AUTHENTICATION RESULT message identity	'1100 0111'B		
EAP message	Set according to specific message content	See TS 24.501 [25] subclause 9.11.2.2	
Extended protocol configuration options	Not Present		

– *PDU session modification request***Table 4.7.2-7: PDU SESSION MODIFICATION REQUEST**

Derivation Path: 24.501 clause 8.3.7			
Information Element	Value/remark	Comment	Condition
Extended protocol discriminator	'0010 1110'B	5GS session management messages	
PDU session ID	The value indicated in PDU SESSION ESTABLISHMENT REQUEST message		
PTI	Any value from 1 to 254		
PDU SESSION MODIFICATION REQUEST message identity	'1100 1001'B		
5GSM capability	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		
Mapped EPS bearer contexts	If present: contents not checked		
Extended protocol configuration options	If present: contents not checked		
Port management information container	If present: contents not checked		
IP header compression configuration	If present: contents not checked		
Ethernet header compression configuration	If present: contents not checked		

– *PDU session modification reject*

**Table 4.7.2-8: PDU SESSION MODIFICATION REJECT**

Derivation Path: 24.501 clause 8.3.8			
Information Element	Value/remark	Comment	Condition
Extended protocol discriminator	'0010 1110'B	5GS session management messages	
PDU session ID	The value indicated in PDU SESSION MODIFICATION REQUEST message.		
PTI	The value indicated in PDU SESSION MODIFICATION REQUEST message.		
PDU SESSION MODIFICATION REJECT message identity	'1100 1010'B		
5GSM cause	Set according to specific message content.		
Back-off timer value	Not Present		
5GSM congestion re-attempt indicator	Not Present		
Extended protocol configuration options	Not Present		
Re-attempt indicator	Not Present		



## – PDU session modification command

Table 4.7.2-9: PDU SESSION MODIFICATION COMMAND

Derivation Path: 24.501 clause 8.3.9			
Information Element	Value/remark	Comment	Condition
Extended protocol discriminator	'0010 1110'B	5GS session management messages	
PDU session ID	Set according to specific message content.		
PDU session ID	The value indicated in PDU SESSION MODIFICATION REQUEST message.		UE_Initiated_Modification
PTI	'0000 0000'B	No procedure transaction identity assigned	
PTI	The value indicated in PDU SESSION MODIFICATION REQUEST message.		UE_Initiated_Modification
PDU SESSION MODIFICATION COMMAND message identity	'1100 1011'B		
5GSM cause	Not Present		
Session AMBR	Not Present		
RQ timer value	Not Present		
Always-on PDU session indication	Not Present		
Always-on PDU session indication			
APSI	'0'B	Always-on PDU session not allowed	Always_On_Requested
APSI	'1'B	Always-on PDU session required	Always_On_Requested AND SST_URLLC
Authorized QoS rules	Not Present		
Mapped EPS bearer contexts	Not Present		
Authorized QoS flow descriptions	Not Present		
Extended protocol configuration options	Not Present		
ATSSS container	Not Present		
IP header compression configuration	Not Present		
Port management information container	Not Present		
Serving PLMN rate control	Not Present		
Ethernet header compression configuration	Not Present		

Condition	Explanation
Always_On_Requested	If the last PDU SESSION MODIFICATION REQUEST message included the Always-on PDU session requested IE
UE_Initiated_Modification	If this message was triggered by a PDU SESSION MODIFICATION REQUEST message sent by the UE

– *PDU session modification complete*

**Table 4.7.2-10: PDU SESSION MODIFICATION COMPLETE**

Derivation Path: 24.501 clause 8.3.10			
Information Element	Value/remark	Comment	Condition
Extended protocol discriminator	'0010 1110'B	5GS session management messages	
PDU session ID	The value indicated in PDU SESSION MODIFICATION COMMAND message		
PTI	'0000 0000'B	No procedure transaction identity assigned	
PTI	The value indicated in PDU SESSION MODIFICATION REQUEST message.		UE_Initiated_Modification
PDU SESSION MODIFICATION COMPLETE message identity	'1100 1100'B		
Extended protocol configuration options	If present: contents not checked		
Port management information container	If present: contents not checked		

Condition	Explanation
UE_Initiated_Modification	If this message was triggered by a PDU SESSION MODIFICATION REQUEST message sent by the UE

– *PDU session modification command reject*

**Table 4.7.2-11: PDU SESSION MODIFICATION COMMAND REJECT**

Derivation Path: 24.501 clause 8.3.11			
Information Element	Value/remark	Comment	Condition
Extended protocol discriminator	'0010 1110'B	5GS session management messages	
PDU session ID	The value indicated in PDU SESSION MODIFICATION COMMAND message		
PTI	'0000 0000'B	No procedure transaction identity assigned	
PDU SESSION MODIFICATION COMMAND REJECT message identity	'1100 1101'B		
5GSM cause	If present: contents not checked		
Extended protocol configuration options	If present: contents not checked		

– *PDU session release request***Table 4.7.2-12: PDU SESSION RELEASE REQUEST**

Derivation Path: 24.501 clause 8.3.12			
Information Element	Value/remark	Comment	Condition
Extended protocol discriminator	'0010 1110'B	5GS session management messages	
PDU session ID	The value indicated in PDU SESSION ESTABLISHMENT REQUEST message		
PTI	Any value from 1 to 254		
PDU SESSION RELEASE REQUEST message identity	'1101 0001'B		
5GSM cause	If present: contents not checked		
Extended protocol configuration options	If present: contents not checked		

– *PDU session release reject***Table 4.7.2-13: PDU SESSION RELEASE REJECT**

Derivation Path: 24.501 clause 8.3.13			
Information Element	Value/remark	Comment	Condition
Extended protocol discriminator	'0010 1110'B	5GS session management messages	
PDU session ID	The value indicated in PDU SESSION RELEASE REQUEST message.		
PTI	The value indicated in PDU SESSION RELEASE REQUEST message.		
PDU SESSION RELEASE REJECT message identity	'1101 0010'B		
5GSM cause	Set according to specific message content.		
Extended protocol configuration options	Not Present		

– *PDU session release command*

**Table 4.7.2-14: PDU SESSION RELEASE COMMAND**

Derivation Path: 24.501 clause 8.3.14			
Information Element	Value/remark	Comment	Condition
Extended protocol discriminator	'0010 1110'B	5GS session management messages	
PDU session ID	Set according to specific message content.		
PTI	'0000 0000'B	No procedure transaction identity assigned	
PDU SESSION RELEASE COMMAND message identity	'1101 0011'B		
5GSM cause	'0001 1010'B	Insufficient resources	
Back-off timer value	Not Present		
EAP message	Not Present		
5GSM congestion re-attempt indicator	Not Present		
Extended protocol configuration options	Not Present		
Access type	Not Present		

– *PDU session release complete*

**Table 4.7.2-15: PDU SESSION RELEASE COMPLETE**

Derivation Path: 24.501 clause 8.3.15			
Information Element	Value/remark	Comment	Condition
Extended protocol discriminator	'0010 1110'B	5GS session management messages	
PDU session ID	The value indicated in PDU SESSION RELEASE COMMAND message.		
PTI	'0000 0000'B	No procedure transaction identity assigned	
PDU SESSION RELEASE COMPLETE message identity	'1101 0100'B		
5GSM cause	If present: contents not checked		
Extended protocol configuration options	If present: contents not checked		

## – 5GSM status

Table 4.7.2-16: 5GSM STATUS

Derivation Path: 24.501 clause 8.3.16			
Information Element	Value/remark	Comment	Condition
Extended protocol discriminator	'0010 1110'B	5GS session management messages	
PDU session ID	Set according to specific message content.		
PTI	Set according to specific message content.		
5GSM STATUS message identity	'1101 0110'B		
5GSM cause	Set according to specific message content.		

## 4.7.3 Contents of EAP-AKA' messages

For all the message definitions below, the acceptable order and syntax of attributes and fields within these attributes must be according to IETF RFCs where those attributes have been defined. Typically the order of attributes is not significant, but there could be well defined exceptions where the order is important.

The contents of the messages described in the present Annex is not complete - only the attributes required to be checked or generated by SS are listed here. The messages sent by the UE may contain additional attributes which are not checked and must thus be ignored by SS.

## 4.7.3.1 EAP-AKA' message attributes

Table 4.7.3.1-1: AT\_RANDOM\_Def

Derivation Path: IETF RFC 4187 [30] clause 10.6			
Information Element	Value/remark	Comment	Condition
AT_RANDOM	'0000 0001'B	1	
Length	'0000 0101'B	5	
Reserved	'0000 0000 0000 0000'B		
RAND	An arbitrarily selected 128 bits value		

Table 4.7.3.1-2: AT\_AUTN\_Def

Derivation Path: IETF RFC 4187 [30] clause 10.7			
Information Element	Value/remark	Comment	Condition
AT_AUTN	'0000 0010'B	2	
Length	'0000 0101'B	5	
Reserved	'0000 0000 0000 0000'B		
AUTN	128 bits value generated according to TS 24.501 [28] subclause 9.11.3.15		

Table 4.7.3.1-3: AT\_KDF\_Def

Derivation Path: IETF RFC 5448 [31] clause 3.3			
Information Element	Value/remark	Comment	Condition
AT_KDF	'0001 1000'B	24	
Length	'0000 0001'B	1	
KDF	'0000 0000 0000 0001'	1: EAP_AKA'	

Table 4.7.3.1-4: AT\_KDF\_INPUT\_Def

Derivation Path: IETF RFC 5448 [31] clause 3.2			
Information Element	Value/remark	Comment	Condition
AT_KDF_INPUT	'0001 0111'B	23	
Length	Set to the Length of attribute AT_KDF_INPUT in 4 bytes		
Actual Network Name Length	Set to the actual length of 'Network Name' in bytes excluding any appended all zero bytes at end		
Network Name	Value generated according to TS 24.501 [28] clause 9.12.1 and shall be a multiple of 4 bytes (appended with 1,2 or 3 bytes of all zero bits when necessary)		

Table 4.7.3.1-5: AT\_MAC\_Def

Derivation Path: IETF RFC 4187 [30] clause 10.15			
Information Element	Value/remark	Comment	Condition
AT_MAC	'0000 1011'B	11	
Length	'0000 0101'B	5	
Reserved	'0000 0000 0000 0000'B		
MAC	128 bits value generated according to RFC 4187 [30] subclause 10.15		

Table 4.7.3.1-6: AT\_RES\_Def

Derivation Path: IETF RFC 4187 [30] clause 10.08			
Information Element	Value/remark	Comment	Condition
AT_RES	'0000 0011'B	3	
Length	Set to Length of AT_RES attribute in 4 bytes.	1 byte	
RES_LENGTH	Set to the actual length of 'RES' in bytes excluding any appended all zero bytes at end		
RES	RES* value calculated according to TS 24.501 [28] clause 9.11.3.17, possibly appended with 1,2 or 3 bytes of all zero bits to make length multiple of 4 bytes.		

Table 4.7.3.1-7: AT\_AUTS\_Def

Derivation Path: IETF RFC 4187 [30] clause 10.08			
Information Element	Value/remark	Comment	Condition
AT_AUTS	'0000 0100'B	4	
Length	'0000 0100'B	4	
AUTS	14 octets RES* value not checked		

Table 4.7.3.1-8: AT\_PERMANENT\_ID\_Def

Derivation Path: IETF RFC 4187 [30] clause 10.2			
Information Element	Value/remark	Comment	Condition
AT_PERMANENT_ID_REQ	'0000 1010'B	10	
Length	'0000 0001'B	1	
Reserved	'0000 0000 0000 0000'B		

Table 4.7.3.1-9: AT\_ANY\_ID\_REQ\_Def

Derivation Path: IETF RFC 4187 [30] clause 10.3			
Information Element	Value/remark	Comment	Condition
AT_ANY_ID_REQ	'0000 1101'B	13	
Length	'0000 0001'B	1	
Reserved	'0000 0000 0000 0000'B		

Table 4.7.3.1-10: AT\_FULLAUTH\_ID\_Def

Derivation Path: IETF RFC 4187 [30] clause 10.4			
Information Element	Value/remark	Comment	Condition
AT_FULLAUTH_ID_REQ	'0001 0001'B	17	
Length	'0000 0001'B	1	
Reserved	'0000 0000 0000 0000'B		

Table 4.7.3.1-11: AT\_IDENTITY\_Def

Derivation Path: IETF RFC 4187 [30] clause 10.5			
Information Element	Value/remark	Comment	Condition
AT_IDENTITY	'0000 1110'B	14	
Length	Set to the Length of AT_IDENTITY attribute in 4 bytes		
Actual Identity Length	Set to the actual length of 'identity' in bytes excluding any appended all zero bytes at end		
Identity	Value generated according to TS 24.501 [28] clause 9.11.3.4 and shall be a multiple of 4 bytes (appended with 1,2 or 3 bytes of all zero bits when necessary)		

Table 4.7.3.1-12: AT\_NOTIFICATION\_Def

Derivation Path: IETF RFC 4187 [30] clause 10.19			
Information Element	Value/remark	Comment	Condition
AT_NOTIFICATION	'0000 1100'B	12	
Length	'0000 0001'B	1	
Notification Code	16 bits value generated according to RFC 4187 [30] subclause 10.19.		

## 4.7.3.2 EAP-AKA' messages

Table 4.7.3.2-1: EAP-Request/AKA'-Challenge

Derivation Path: IETF RFC 4187 [30] clause 9.3, RFC 3748 [32] clause 4			
Information Element	Value/remark	Comment	Condition
Code	1	Request	
Length	Set to length of EAP packet		
Data			
AT_RAND	AT_RAND_Def		
AT_AUTN	AT_AUTN_Def		
AT_KDF	AT_KDF_Def		
AT_KDF_INPUT	AT_KDF_INPUT_Def		
AT_MAC	AT_MAC_Def		

Table 4.7.3.2-2: EAP-Response/AKA'-Challenge

Derivation Path: IETF RFC 4187 [30] clause 9.4, RFC 3748 [32] clause 4			
Information Element	Value/remark	Comment	Condition
Code	2	Response	
Length	Set to length of EAP packet		
Data			
AT_Res	AT_Res_Def		
AT_MAC	AT_MAC_Def		

Table 4.7.3.2-3: EAP-Success

Derivation Path: IETF RFC 4187 [30] clause 6.3.4, RFC 3748 [32] clause 4			
Information Element	Value/remark	Comment	Condition
Code	3	Success	
Length	Set to length of EAP packet		
Data	Not present	Specific attributes not present	

Table 4.7.3.2-4: EAP-Response/AKA-Authentication-Reject

Derivation Path: IETF RFC 4187 [30] clause 9.5, RFC 3748 [32] clause 4			
Information Element	Value/remark	Comment	Condition
Code	4	Failure	
Length	Set to length of EAP packet		
Data	Not checked		

Table 4.7.3.2-5: EAP-Response/AKA-Synchronization-Failure

Derivation Path: IETF RFC 4187 [30] clause 9.6, RFC 3748 [32] clause 4			
Information Element	Value/remark	Comment	Condition
Code	4	Failure	
Length	Set to length of EAP packet		
Data			
AT_AUTS	AT_AUTS_Def		



Table 4.7.3.2-6: EAP-Failure

Derivation Path: IETF RFC 4187 [30] clause 6.3.3, RFC 3748 [32] clause 4			
Information Element	Value/remark	Comment	Condition
Code	4	Failure	
Length	Set to length of EAP packet		
Data	Not present	Specific attributes not present	

Table 4.7.3.2-7: EAP-Request/AKA-Identity

Derivation Path: IETF RFC 4187 [30] clause 9.1, RFC 3748 [32] clause 4			
Information Element	Value/remark	Comment	Condition
Code	1	Request	
Length	Set to length of EAP packet		
Data			
AT_PERMANENT_ID_REQ	AT_PERMANENT_ID_REQ_Def		SS requests that the UE send its permanent identity.
AT_ANY_ID_REQ	AT_ANY_ID_REQ_Def		SS does not specify which kind of an identity the UE should return.
AT_FULLAUTH_ID_REQ	AT_FULLAUTH_ID_REQ_Def		SS requests either the permanent identity or a pseudonym identity.

Table 4.7.3.2-8: EAP-Response/AKA-Identity

Derivation Path: IETF RFC 4187 [30] clause 9.2, RFC 3748 [32] clause 4			
Information Element	Value/remark	Comment	Condition
Code	2	Response	
Length	Set to length of EAP packet		
Data			
AT_IDENTITY	AT_IDENTITY_Def		

Table 4.7.3.2-9: EAP-Request/AKA-Notification

Derivation Path: IETF RFC 4187 [30] clause 9.10, RFC 3748 [32] clause 4			
Information Element	Value/remark	Comment	Condition
Code	1	Request	
Length	Set to length of EAP packet		
Data			
AT_NOTIFICATION	AT_NOTIFICATION_Def		

Table 4.7.3.2-10: EAP-Response/AKA-Notification

Derivation Path: IETF RFC 4187 [30] clause 9.11, RFC 3748 [32] clause 4			
Information Element	Value/remark	Comment	Condition
Code	2	Response	
Length	Set to length of EAP packet		
Data	Not present	Specific attributes not present	

#### 4.7.4 Contents of V2X messages

Table 4.7.4-1 to -6: Void

#### – DIRECT LINK ESTABLISHMENT REQUEST

Table 4.7.4-7: DIRECT LINK ESTABLISHMENT REQUEST

Derivation Path: TS 24.587 [54] Table 7.3.1.1.1			
Information Element	Value/remark	Comment	Condition
DIRECT LINK ESTABLISHMENT REQUEST message identity	'0000 0001'B		
Sequence number	Not Checked	0~255, uniquely identify a PC5 signalling message being sent or received	Tx
	Incremented by TTCN by 1 for each outgoing new PC5 Signalling message.	0~255, uniquely identify a PC5 signalling message being sent or received	Rx
V2X service identifiers			
Length of V2X service identifier contents	'04'H		
V2X service identifier 1	'00 00 00 01'H		
Source user info			
Length of Application layer ID contents	'04'H		
Application Layer ID 1	'00 00 01 00'H	Application Layer ID in initiating UE side	
UE security capabilities			
Length of UE security capabilities contents	'02'H		
5G-EA algorithms	'1000 0000'B	5G-EA0 supported	
5G-IA algorithms	'1000 0000'B	5G-IA0 supported	
UE PC5 unicast signalling security policy	'0000 0000'B	Signalling integrity protection not needed, Signalling ciphering not needed.	
Key establishment information container	Not Present		
Nonce_1	Not Present		
MSBs of K <sub>NRP-<i>sess</i></sub> ID	Not Present		
Target user info	Not Checked		Tx
Target user info			Rx
Application layer ID IEI	'28'H		
Length of Application layer ID contents	'04'H		
Application layer ID contents	'00 00 11 00'H		
K <sub>NRP</sub> ID	Not Present		

<b>Condition</b>	<b>Explanation</b>
Tx	UE transmits and NR-SS-UE receives
Rx	UE receives and NR-SS-UE transmits

– *DIRECT LINK ESTABLISHMENT ACCEPT*

**Table 4.7.4-8: DIRECT LINK ESTABLISHMENT ACCEPT**

Derivation Path: TS 24.587 [54] Table 7.3.1.1.1			
Information Element	Value/remark	Comment	Condition
DIRECT LINK ESTABLISHMENT ACCEPT message identity	'0000 0010'B		
Sequence number	Not Checked	0~255, uniquely identify a PC5 signalling message being sent or received	Tx
	Incremented by TTCN by 1 for each outgoing new PC5 Signalling message.	0~255, uniquely identify a PC5 signalling message being sent or received	Rx
Source user info			
Length of Application layer ID contents	'04'H		
Application Layer ID 1	'00 00 02 00'H	Application Layer ID in target UE side	
QoS flow descriptions			
Length of PC5 QoS flow descriptions contents	Set to the actual length of 'PC5 QoS flow descriptions contents' in bytes		
PC5 QoS flow description 1			
PQFI	'00 0001'B		
Operation Code	'001'B	Create new PC5 QoS flow description	
Number of parameters	5		
E	1	parameters list is included	
Associated V2X service identifiers			
Length of V2X service identifier contents	'04'H		
V2X service identifier 1	'00 00 00 01'H		
Parameters list			
Parameter 1			
Parameter identifier	'01'H	PQI	
Length of parameter contents	1		
Parameter contents	22	Sensor sharing, See Table 5.4.4-1 in TS 23.287[xx]	
Parameter 2			
Parameter identifier	'02'H	GFBR	
Length of parameter contents	3		
Parameter contents	'0000 0110 0000 0000 0000 1010'B	10 * 1Mbps = 10Mbps.	
Parameter 3			
Parameter identifier	'03'H	MFBR	
Length of parameter contents	3		
Parameter contents	'0000 0110 0000 0000 0001 0100'B	20 * 1Mbps = 20Mbps.	
Parameter 4			
Parameter identifier	'04'H	Averaging window	
Length of parameter contents	2		
Parameter contents	'0000 0111 1101 0000'B	2000ms	
Parameter 5			
Parameter identifier	'06'H	Default priority level	
Length of parameter contents	1		
Parameter contents	4		
Configuration of UE PC5 unicast user plane security protection	'0000 0000'B	User plane integrity protection and ciphering is off	
IP address configuration	Not Checked		Tx

IP address configuration			Rx
IP address configuration IEI	'57'H		
IP address configuration content	'0000 0001'B	IPv6 Router	
Link local IPv6 address	Not Present		

<b>Condition</b>	<b>Explanation</b>
Tx	UE transmits and NR-SS-UE receives
Rx	UE receives and NR-SS-UE transmits

## – DIRECT LINK MODIFICATION REQUEST

Table 4.7.4-9: DIRECT LINK MODIFICATION REQUEST

Derivation Path: TS 24.587 [54] Table 7.3.4.1.1			
Information Element	Value/remark	Comment	Condition
DIRECT LINK MODIFICATION REQUEST message identity	'0000 0100'B		
Sequence number	Not Checked	0~255, uniquely identify a PC5 signalling message being sent or received	Tx
	Incremented by TTCN by 1 for each outgoing new PC5 Signalling message.	0~255, uniquely identify a PC5 signalling message being sent or received	Rx
Link modification operation code	'0000 0011'B	Add new PC5 QoS flow(s) to the existing PC5 unicast link	
QoS flow descriptions			
Length of PC5 QoS flow descriptions contents	Set to the actual length of 'PC5 QoS flow descriptions contents' in bytes		
PC5 QoS flow description 1			
PQFI	'00 0010'B		
Operation Code	'001'B	Create new PC5 QoS flow description	
Number of parameters	5		
E	1	parameters list is included	
Associated V2X service identifiers			
Length of V2X service identifier contents	'04'H		
V2X service identifier 1	'00 00 00 02'H		
Parameters list			
Parameter 1			
Parameter identifier	'01'H	PQI	
Length of parameter contents	1		
Parameter contents	23	Platooning between UEs, See Table 5.4.4-1 in TS 23.287[xx]	
Parameter 2			
Parameter identifier	'02'H	GFBR	
Length of parameter contents	3		
Parameter contents	'0000 0111 0000 0000 0000 1010'B	10 * 4Mbps = 40Mbps.	
Parameter 3			
Parameter identifier	'03'H	MFBR	
Length of parameter contents	3		
Parameter contents	'0000 0111 0000 0000 0001 0100'B	20 * 4Mbps = 80Mbps.	
Parameter 4			
Parameter identifier	'04'H	Averaging window	
Length of parameter contents	2		
Parameter contents	'0000 0111 1101 0000'B	2000ms	
Parameter 5			
Parameter identifier	'06'H	Default priority level	
Length of parameter contents	1		
Parameter contents	3		

<b>Condition</b>	<b>Explanation</b>
Tx	UE transmits and NR-SS-UE receives
Rx	UE receives and NR-SS-UE transmits



## – DIRECT LINK MODIFICATION ACCEPT

Table 4.7.4-10: DIRECT LINK MODIFICATION ACCEPT

Derivation Path: TS 24.587 [54] Table 7.3.5.1.1			
Information Element	Value/remark	Comment	Condition
DIRECT LINK MODIFICATION ACCEPT message identity	'0000 0101'B		
Sequence number	Not Checked	0~255, uniquely identify a PC5 signalling message being sent or received	Tx
	Incremented by TTCN by 1 for each outgoing new PC5 Signalling message.	0~255, uniquely identify a PC5 signalling message being sent or received	Rx
QoS flow descriptions			
PC5 QoS flow descriptions IEI	'79'H		
Length of PC5 QoS flow descriptions contents	Set to the actual length of 'PC5 QoS flow descriptions contents' in bytes		
PC5 QoS flow description 1			
PQFI	'00 0010'B		
Operation Code	'001'B	Create new PC5 QoS flow description	
Number of parameters	5		
E	1	parameters list is included	
Associated V2X service identifiers			
Length of V2X service identifier contents	'04'H		
V2X service identifier 1	'00 00 00 02'H		
Parameters list			
Parameter 1			
Parameter identifier	'01'H	PQI	
Length of parameter contents	1		
Parameter contents	23	Platooning between UEs, See Table 5.4.4-1 in TS 23.287[xx]	
Parameter 2			
Parameter identifier	'02'H	GFBR	
Length of parameter contents	3		
Parameter contents	'0000 0111 0000 0000 0000 1010'B	10 * 4Mbps = 40Mbps.	
Parameter 3			
Parameter identifier	'03'H	MFBR	
Length of parameter contents	3		
Parameter contents	'0000 0111 0000 0000 0001 0100'B	20 * 4Mbps = 80Mbps.	
Parameter 4			
Parameter identifier	'04'H	Averaging window	
Length of parameter contents	2		
Parameter contents	'0000 0111 1101 0000'B	2000ms	
Parameter 5			
Parameter identifier	'06'H	Default priority level	
Length of parameter contents	1		
Parameter contents	3		

Condition	Explanation
Tx	UE transmits and NR-SS-UE receives
Rx	UE receives and NR-SS-UE transmits

– *DIRECT LINK RELEASE REQUEST*

**Table 4.7.4-11: DIRECT LINK RELEASE REQUEST**

Derivation Path: TS 24.587 [54] Table 7.3.6.1.1			
Information Element	Value/remark	Comment	Condition
DIRECT LINK RELEASE REQUEST message identity	'0000 0111'B		
Sequence number	Not Checked	0~255, uniquely identify a PC5 signalling message being sent or received	Tx
	Incremented by TTCN by 1 for each outgoing new PC5 Signalling message.	0~255, uniquely identify a PC5 signalling message being sent or received	Rx
PC5 signalling protocol cause	'0110 1111'B	Protocol error, unspecified	Rx
	Not Checked		Tx
MSB of KNRP ID	Not Checked		Tx
	'00 00'H		Rx

Condition	Explanation
Tx	UE transmits and NR-SS-UE receives
Rx	UE receives and NR-SS-UE transmits

– *DIRECT LINK RELEASE ACCEPT*

**Table 4.7.4-12: DIRECT LINK RELEASE ACCEPT**

Derivation Path: TS 24.587 [54] Table 7.3.7.1.1			
Information Element	Value/remark	Comment	Condition
DIRECT LINK RELEASE ACCEPT message identity	'0000 1000'B		
Sequence number	Not Checked	0~255, uniquely identify a PC5 signalling message being sent or received	Tx
	Incremented by TTCN by 1 for each outgoing new PC5 Signalling message.	0~255, uniquely identify a PC5 signalling message being sent or received	Rx
LSB of KNRP ID	Not Checked		Tx
	'00 00'H		Rx

Condition	Explanation
Tx	UE transmits and NR-SS-UE receives
Rx	UE receives and NR-SS-UE transmits

– *DIRECT LINK KEEPALIVE REQUEST*

**Table 4.7.4-13: DIRECT LINK KEEPALIVE REQUEST**

Derivation Path: TS 24.587 [54] Table 7.3.8.1.1			
Information Element	Value/remark	Comment	Condition
DIRECT LINK KEEPALIVE REQUEST message identity	'0000 1001'B		
Sequence number	Not Checked	0~255, uniquely identify a PC5 signalling message being sent or received	Tx
	Incremented by TTCN by 1 for each outgoing new PC5 Signalling message.	0~255, uniquely identify a PC5 signalling message being sent or received	Rx
Keep-alive counter	'00 00 00 00'H	Increase by 1 after each keep-alive procedure.	
Maximum inactivity period	Not Checked		Tx
Maximum inactivity period			Rx
Maximum inactivity period IEI	'55'H		
Maximum inactivity period contents	'00 00 00 06'H	6 seconds, higher value than T5003=5s	

Condition	Explanation
Tx	UE transmits and NR-SS-UE receives
Rx	UE receives and NR-SS-UE transmits

– *DIRECT LINK KEEPALIVE RESPONSE*

**Table 4.7.4-14: DIRECT LINK KEEPALIVE RESPONSE**

Derivation Path: TS 24.587 [54] Table 7.3.9.1.1			
Information Element	Value/remark	Comment	Condition
DIRECT LINK KEEPALIVE RESPONSE message identity	'0000 1010'B		
Sequence number	Not Checked	0~255, uniquely identify a PC5 signalling message being sent or received	Tx
	Incremented by TTCN by 1 for each outgoing new PC5 Signalling message.	0~255, uniquely identify a PC5 signalling message being sent or received	Rx
Keep-alive counter	'00 00 00 01'H		

Condition	Explanation
Tx	UE transmits and NR-SS-UE receives
Rx	UE receives and NR-SS-UE transmits

– *DIRECT LINK AUTHENTICATION REQUEST*

**Table 4.7.4-15: DIRECT LINK AUTHENTICATION REQUEST**

Derivation Path: TS 24.587 [54] Table 7.3.10.1.1			
Information Element	Value/remark	Comment	Condition
DIRECT LINK AUTHENTICATION REQUEST message identity	'0000 1011'B		
Sequence number	Not Checked	0~255, uniquely identify a PC5 signalling message being sent or received	Tx
	Incremented by TTCN by 1 for each outgoing new PC5 Signalling message.	0~255, uniquely identify a PC5 signalling message being sent or received	Rx
Key establishment information container			
Length of key establishment information container contents	Not checked		Tx
	'00'H		Rx
Key establishment information container contents	Not checked		Tx
	Not Present		Rx

Condition	Explanation
Tx	UE transmits and NR-SS-UE receives
Rx	UE receives and NR-SS-UE transmits

– *DIRECT LINK AUTHENTICATION RESPONSE*

**Table 4.7.4-16: DIRECT LINK AUTHENTICATION RESPONSE**

Derivation Path: TS 24.587 [54] Table 7.3.11.1.1			
Information Element	Value/remark	Comment	Condition
DIRECT LINK AUTHENTICATION RESPONSE message identity	'0000 1100'B		
Sequence number	Not Checked	0~255, uniquely identify a PC5 signalling message being sent or received	Tx
	Incremented by TTCN by 1 for each outgoing new PC5 Signalling message.	0~255, uniquely identify a PC5 signalling message being sent or received	Rx
Key establishment information container			
Length of key establishment information container contents	Not checked		Tx
	'00'H		Rx
Key establishment information container contents	Not checked		Tx
	Not Present		Rx

Condition	Explanation
Tx	UE transmits and NR-SS-UE receives
Rx	UE receives and NR-SS-UE transmits

– *DIRECT LINK AUTHENTICATION REJECT*

**Table 4.7.4-17: DIRECT LINK AUTHENTICATION REJECT**

Derivation Path: TS 24.587 [54] Table 7.3.12.1.1			
Information Element	Value/remark	Comment	Condition
DIRECT LINK AUTHENTICATION REJECT message identity	'0000 1101'B		
Sequence number	Not Checked	0~255, uniquely identify a PC5 signalling message being sent or received	Tx
	Incremented by TTCN by 1 for each outgoing new PC5 Signalling message.	0~255, uniquely identify a PC5 signalling message being sent or received	Rx
PC5 signalling protocol cause value	'0110 1111'B	Protocol error, unspecified	

Condition	Explanation
Tx	UE transmits and NR-SS-UE receives
Rx	UE receives and NR-SS-UE transmits

– **DIRECT LINK SECURITY MODE COMMAND**

**Table 4.7.4-18: DIRECT LINK SECURITY MODE COMMAND**

Derivation Path: TS 24.587 [54] Table 7.3.13.1.1			
Information Element	Value/remark	Comment	Condition
DIRECT LINK SECURITY MODE COMMAND message identity	'0000 1110'B		
Sequence number	Not Checked	0~255, uniquely identify a PC5 signalling message being sent or received	Tx
	Incremented by TTCN by 1 for each outgoing new PC5 Signalling message.	0~255, uniquely identify a PC5 signalling message being sent or received	Rx
Selected security algorithms	'0000 0000'B		
UE security capabilities			
Length of UE security capabilities contents	'02'H		
5G-EA algorithms	'1000 0000'B	5G-EA0 supported	
5G-IA algorithms	'1000 0000'B	5G-IA0 supported	
UE PC5 unicast signalling security policy			
UE PC5 unicast signalling security policy IEI	'59'H		
Signalling integrity protection policy	'000'B	Signalling integrity protection not needed	
Signalling ciphering policy	'000'B	Signalling ciphering not needed.	
Nonce_2	Not Checked		Tx
	Not Present		Rx
LSBs of K <sub>NRP-sess</sub> ID	Not Checked		Tx
	Not Present		Rx
Key establishment information container	Not Checked		Tx
	Not Present		Rx
MSBs of K <sub>NRP</sub> ID	Not Checked		Tx
	Not Present		Rx

Condition	Explanation
Tx	UE transmits and NR-SS-UE receives
Rx	UE receives and NR-SS-UE transmits

– *DIRECT LINK SECURITY MODE COMPLETE*

**Table 4.7.4-19: DIRECT LINK SECURITY MODE COMPLETE**

Derivation Path: TS 24.587 [54] Table 7.3.14.1.1			
Information Element	Value/remark	Comment	Condition
DIRECT LINK SECURITY MODE COMPLETE message identity	'0000 1111'B		
Sequence number	Not Checked	0~255, uniquely identify a PC5 signalling message being sent or received	Tx
	Incremented by TTCN by 1 for each outgoing new PC5 Signalling message.	0~255, uniquely identify a PC5 signalling message being sent or received	Rx
QoS flow descriptions			
Length of PC5 QoS flow descriptions contents	Set to the actual length of 'PC5 QoS flow descriptions contents' in bytes		
PC5 QoS flow description 1			
PQFI	'00 0001'B		
Operation Code	'001'B	Create new PC5 QoS flow description	
Number of parameters	5		
E	1	parameters list is included	
Associated V2X service identifiers			
Length of V2X service identifier contents	'04'H		
V2X service identifier 1	'00 00 00 01'H		
Parameters list			
Parameter 1			
Parameter identifier	'01'H	PQI	
Length of parameter contents	1		
Parameter contents	22	Sensor sharing, See Table 5.4.4-1 in TS 23.287[xx]	
Parameter 2			
Parameter identifier	'02'H	GFBR	
Length of parameter contents	3		
Parameter contents	'0000 0110 0000 0000 0000 1010'B	10 * 1Mbps = 10Mbps.	
Parameter 3			
Parameter identifier	'03'H	MFBR	
Length of parameter contents	3		
Parameter contents	'0000 0110 0000 0000 0001 0100'B	20 * 1Mbps = 20Mbps.	
Parameter 4			
Parameter identifier	'04'H	Averaging window	
Length of parameter contents	2		
Parameter contents	'0000 0111 1101 0000'B	2000ms	
Parameter 5			
Parameter identifier	'06'H	Default priority level	
Length of parameter contents	1		
Parameter contents	4		
UE PC5 unicast user plane security policy	'0000 0000'B	Signalling integrity protection not needed, Signalling ciphering not needed.	
IP address configuration	Not Checked		Tx
IP address configuration			Rx
IP address configuration IEI	'57'H		
IP address configuration content	'0000 0001'B	IPv6 Router	



Link local IPv6 address	Not Present		Rx
	Not Checked		Tx
LSBs of KNRP ID	Not Checked		Tx
	Not present		Rx

Condition	Explanation
Tx	UE transmits and NR-SS-UE receives
Rx	UE receives and NR-SS-UE transmits

– *DIRECT LINK SECURITY MODE REJECT*

**Table 4.7.4-20: DIRECT LINK SECURITY MODE REJECT**

Derivation Path: TS 24.587 [54] Table 7.3.15.1.1			
Information Element	Value/remark	Comment	Condition
DIRECT LINK SECURITY MODE REJECT message identity	'0001 0000'B		
Sequence number	Not Checked	0~255, uniquely identify a PC5 signalling message being sent or received	Tx
	Incremented by TTCN by 1 for each outgoing new PC5 Signalling message.	0~255, uniquely identify a PC5 signalling message being sent or received	Rx
PC5 signalling protocol cause	'0110 1111'B	Protocol error, unspecified	

Condition	Explanation
Tx	UE transmits and NR-SS-UE receives
Rx	UE receives and NR-SS-UE transmits

– *DIRECT LINK REKEYING REQUEST*

**Table 4.7.4-21: DIRECT LINK REKEYING REQUEST**

Derivation Path: TS 24.587 [54] Table 7.3.16.1.1			
Information Element	Value/remark	Comment	Condition
DIRECT LINK REKEYING REQUEST message identity	'0001 0001'B		
Sequence number	Not Checked	0~255, uniquely identify a PC5 signalling message being sent or received	Tx
	Incremented by TTCN by 1 for each outgoing new PC5 Signalling message.	0~255, uniquely identify a PC5 signalling message being sent or received	Rx
UE security capabilities			
Length of UE security capabilities contents	'02'H		
5G-EA algorithms	'1000 0000'B	5G-EA0 supported	
5G-IA algorithms	'1000 0000'B	5G-IA0 supported	
Key establishment information container	Not Checked		
Nonce_1	Not Checked		
MSBs of $K_{NR-P-sess}$ ID	Not Checked		
Re-authentication indication			
Re-authentication indication IE1	'56'H		
Re-authentication indication contents	'0000 0000'B	$K_{NR-P}$ is not requested to be refreshed	

Condition	Explanation
Tx	UE transmits and NR-SS-UE receives
Rx	UE receives and NR-SS-UE transmits

– *DIRECT LINK REKEYING RESPONSE*

**Table 4.7.4-22: DIRECT LINK REKEYING RESPONSE**

Derivation Path: TS 24.587 [54] Table 7.3.17.1.1			
Information Element	Value/remark	Comment	Condition
DIRECT LINK REKEYING RESPONSE message identity	'0001 0010'B		
Sequence number	Not Checked	0~255, uniquely identify a PC5 signalling message being sent or received	Tx
	Incremented by TTCN by 1 for each outgoing new PC5 Signalling message.	0~255, uniquely identify a PC5 signalling message being sent or received	Rx

Condition	Explanation
Tx	UE transmits and NR-SS-UE receives
Rx	UE receives and NR-SS-UE transmits

– *DIRECT LINK IDENTIFIER UPDATE REQUEST*

**Table 4.7.4-23: DIRECT LINK IDENTIFIER UPDATE REQUEST**

Derivation Path: TS 24.587 [54] Table 7.3.18.1.1			
Information Element	Value/remark	Comment	Condition
DIRECT LINK IDENTIFIER UPDATE REQUEST message identity	'0001 0011'B		
Sequence number	Not Checked	0~255, uniquely identify a PC5 signalling message being sent or received	Tx
	Incremented by TTCN by 1 for each outgoing new PC5 Signalling message.	0~255, uniquely identify a PC5 signalling message being sent or received	Rx
MSB of $K_{NRP\text{-}sess}$ ID	Not checked		Tx
	'00'H		Rx
Source layer-2 ID	'00 00 10'H		
Source user info			
Application layer ID IEI	'57'H		
Length of Application layer ID contents	'04'H		
Application Layer ID 1	'00 00 01 00'H	Application Layer ID in initiating UE side	
Source link local IPv6 address	Not present		

Condition	Explanation
Tx	UE transmits and NR-SS-UE receives
Rx	UE receives and NR-SS-UE transmits

– *DIRECT LINK IDENTIFIER UPDATE ACCEPT*

**Table 4.7.4-24: DIRECT LINK IDENTIFIER UPDATE ACCEPT**

Derivation Path: TS 24.587 [54] Table 7.3.19.1.1			
Information Element	Value/remark	Comment	Condition
DIRECT LINK IDENTIFIER UPDATE ACCEPT message identity	'0001 0100'B		
Sequence number	Not Checked	0~255, uniquely identify a PC5 signalling message being sent or received	Tx
	Incremented by TTCN by 1 for each outgoing new PC5 Signalling message.	0~255, uniquely identify a PC5 signalling message being sent or received	Rx
LSB of K <sub>NRP-<i>sess</i></sub> ID	Not checked		Tx
	'00'H		Rx
MSB of K <sub>NRP-<i>sess</i></sub> ID	Not checked		Tx
	'00'H		Rx
Source layer-2 ID	'00 00 20'H		
Target layer-2 ID	'00 00 10'H		
Target user info			
Application layer ID IEI	'28'H		
Length of Application layer ID contents	'04'H		
Application Layer ID 1	'00 00 01 00'H	Application Layer ID in initiating UE side	
Target link local IPv6 address	Not Present		
Source user info			
Application layer ID IEI	'57'H		
Length of Application layer ID contents	'04'H		
Application Layer ID 1	'00 00 02 00'H	Application Layer ID in target UE side	
Source link local IPv6 address	Not Present		

Condition	Explanation
Tx	UE transmits and NR-SS-UE receives
Rx	UE receives and NR-SS-UE transmits

– *DIRECT LINK IDENTIFIER UPDATE ACK*

**Table 4.7.4-25: DIRECT LINK IDENTIFIER UPDATE ACK**

Derivation Path: TS 24.587 [54] Table 7.3.20.1.1			
Information Element	Value/remark	Comment	Condition
DIRECT LINK IDENTIFIER UPDATE ACK message identity	'0001 0101'B		
Sequence number	Not Checked	0~255, uniquely identify a PC5 signalling message being sent or received	Tx
	Incremented by TTCN by 1 for each outgoing new PC5 Signalling message.	0~255, uniquely identify a PC5 signalling message being sent or received	Rx
LSB of K <sub>NRP-<i>sess</i></sub> ID	Not checked		Tx
	'00'H		Rx
Target layer-2 ID	'00 00 20'H		
Target user info			
Application layer ID IEI	'28'H		
Length of Application layer ID contents	'04'H		
Application Layer ID 1	'00 00 02 00'H	Application Layer ID in target UE side	
Target link local IPv6 address	Not Present		

Condition	Explanation
Tx	UE transmits and NR-SS-UE receives
Rx	UE receives and NR-SS-UE transmits

– *DIRECT LINK IDENTIFIER UPDATE REJECT*

**Table 4.7.4-26: DIRECT LINK IDENTIFIER UPDATE REJECT**

Derivation Path: TS 24.587 [54] Table 7.3.21.1.1			
Information Element	Value/remark	Comment	Condition
DIRECT LINK IDENTIFIER UPDATE REJECT message identity	'0001 0110'B		
Sequence number	Not Checked	0~255, uniquely identify a PC5 signalling message being sent or received	Tx
	Incremented by TTCN by 1 for each outgoing new PC5 Signalling message.	0~255, uniquely identify a PC5 signalling message being sent or received	Rx
PC5 signalling protocol cause	'0110 1111'B	Protocol error, unspecified	

Condition	Explanation
Tx	UE transmits and NR-SS-UE receives
Rx	UE receives and NR-SS-UE transmits

– *DIRECT LINK MODIFICATION REJECT***Table 4.7.4-27: DIRECT LINK MODIFICATION REJECT**

Derivation Path: TS 24.587 [54] Table 7.3.22.1.1			
Information Element	Value/remark	Comment	Condition
DIRECT LINK MODIFICATION REJECT message identity	'0000 0110'B		
Sequence number	Not Checked	0~255, uniquely identify a PC5 signalling message being sent or received	Tx
	Incremented by TTCN by 1 for each outgoing new PC5 Signalling message.	0~255, uniquely identify a PC5 signalling message being sent or received	Rx
PC5 signalling protocol cause	'0110 1111'B	Protocol error, unspecified	

Condition	Explanation
Tx	UE transmits and NR-SS-UE receives
Rx	UE receives and NR-SS-UE transmits

– *DIRECT LINK ESTABLISHMENT REJECT***Table 4.7.4-28: DIRECT LINK ESTABLISHMENT REJECT**

Derivation Path: TS 24.587 [54] Table 7.3.23.1.1			
Information Element	Value/remark	Comment	Condition
DIRECT LINK ESTABLISHMENT REJECT message identity	'0000 0011'B		
Sequence number	Not Checked	0~255, uniquely identify a PC5 signalling message being sent or received	Tx
	Incremented by TTCN by 1 for each outgoing new PC5 Signalling message.	0~255, uniquely identify a PC5 signalling message being sent or received	Rx
PC5 signalling protocol cause	'0110 1111'B	Protocol error, unspecified	

Condition	Explanation
Tx	UE transmits and NR-SS-UE receives
Rx	UE receives and NR-SS-UE transmits

## 4.7.5 V2X information elements

4.7.5.1 Void

4.7.5.2 Void

4.7.5.3 Void

4.7.5.4 V2X information elements for UE policy part

– *UE policy part when UE policy part type = {V2XP}*

**Table 4.7.5.4-1: UE policy part when UE policy part type = {V2XP}**

Derivation Path: TS 24.588 Figure 5.2.1.1			
Information Element	Value/remark	Comment	Condition
UE policy part contents length	Set to the actual length of 'UE policy part contents' in bytes		
UE policy part type	'0001'B	UE policy part type={ V2XP }	
Spare	'0000'B		
UE policy part contents={V2XP contents}	See Table 4.7.5.4-2		

– *V2XP contents*

**Table 4.7.5.4-2: V2XP contents**

Derivation Path: TS 24.588 Figure 5.2.1.2			
Information Element	Value/remark	Comment	Condition
V2XP info #1	See Table 4.7.5.4-3		
V2XP info #2	FFS		

– *V2XP info*

**Table 4.7.5.4-3: V2XP info**

Derivation Path: TS 24.588 Figure 5.3.1.1			
Information Element	Value/remark	Comment	Condition
V2XP info type	'0001'B	UE policies for V2X communication over PC5	
Spare	'0000'B		
Length of V2XP info contents	Set to the actual length of 'V2XP info contents' in bytes		
V2XP info contents	See Table 4.7.5.5-1		

## 4.7.5.5 V2X information elements of UE policies for V2X communication over PC5

– *V2XP info = {UE policies for V2X communication over PC5}*

**Table 4.7.5.5-1: V2XP info = {UE policies for V2X communication over PC5}**

Derivation Path: TS 24.588 Figure 5.3.1.1			
Information Element	Value/remark	Comment	Condition
V2XP info type	'0001'B	UE policies for V2X communication over PC5	
Length of V2XP info contents	Set to the actual length of 'V2XP info contents' in bytes		
Validity timer	'FF FF FF FF FF FF FF FF FF FF'H	5 bytes, Expiration UTC time of validity of the UE policies, in seconds since midnight UTC of January 1, 1970 (not counting leap seconds)	
VSITPMRI	'1'B	'V2X service identifier to PC5 RAT and Tx profiles mapping rules' is present	
Served by E-UTRA or served by NR	See Table 4.7.5.5-2		
Not served by E-UTRA and not served by NR	See Table 4.7.5.5-6		
V2X service identifier to PC5 RAT and Tx profiles mapping rules	See Table 4.7.5.5-12		
Privacy config	See Table 4.7.5.5-15		
V2X communication over PC5 in E-UTRA-PC5	See Table 4.7.5.5-19		
V2X communication over PC5 in NR-PC5	See Table 4.7.5.5-31		

– *Served by E-UTRA or served by NR*

**Table 4.7.5.5-2: Served by E-UTRA or served by NR**

Derivation Path: TS 24.588 Figure 5.3.1.2			
Information Element	Value/remark	Comment	Condition
Length of served by E-UTRA or served by NR contents	Set to the actual length of 'served by E-UTRA or served by NR contents' in bytes		
Authorized PLMN and RATs combinations	See Table 4.7.5.5-3		



– *Authorized PLMN and RATs combinations*

**Table 4.7.5.5-3: Authorized PLMN and RATs combinations**

Derivation Path: TS 24.588 Figure 5.3.1.3			
Information Element	Value/remark	Comment	Condition
Length of authorized PLMN and RATs combinations contents	Set to the actual length of 'authorized PLMN and RATs combinations contents' in bytes		
Authorized PLMN and RATs combination 1	See Table 4.7.5.5-4		
Authorized PLMN and RATs combination 2	FFS		

– *Authorized PLMN and RATs combination*

**Table 4.7.5.5-4: Authorized PLMN and RATs combination**

Derivation Path: TS 24.588 Figure 5.3.1.4			
Information Element	Value/remark	Comment	Condition
PLMN ID	Set according to parameter given in test case		
NPIEN	'1'B	UE is authorized to use V2X communication over NR-PC5 when served by E-UTRA or served by NR	
EPIEN	'1'B	UE is authorized to use V2X communication over E-UTRA-PC5 when served by E-UTRA or served by NR	

– *PLMN ID***Table 4.7.5.5-5: *PLMN ID***

Derivation Path: TS 24.588 Figure 5.3.1.5			
Information Element	Value/remark	Comment	Condition
MCC digit 1	Set according to parameter given in test case		
MCC digit 2	Set according to parameter given in test case		
MCC digit 3	Set according to parameter given in test case		
MNC digit 3	Set according to parameter given in test case		
MNC digit 1	Set according to parameter given in test case		
MNC digit 2	Set according to parameter given in test case		

– *Not served by E-UTRA and not served by NR***Table 4.7.5.5-6: *Not served by E-UTRA and not served by NR***

Derivation Path: TS 24.588 Figure 5.3.1.6			
Information Element	Value/remark	Comment	Condition
Length of not served by E-UTRA and not served by NR contents	Set to the actual length of 'not served by E-UTRA and not served by NR contents' in bytes		
VPNENNI	'1'B	UE is authorized to use V2X communication over PC5	
NPINENN	'1'B	UE is authorized to use V2X communication over NR-PC5 when not served by E-UTRA and not served by NR	
EPINENN	'1'B	UE is authorized to use V2X communication over E-UTRA-PC5 when not served by E-UTRA and not served by NR	
E-UTRA radio parameters per geographical area list	See Table 4.7.5.5-7		
NR radio parameters per geographical area list	See Table 4.7.5.5-7		

– *Radio parameters per geographical area list*

**Table 4.7.5.5-7: Radio parameters per geographical area list**

Derivation Path: TS 24.588 Figure 5.3.1.7			
Information Element	Value/remark	Comment	Condition
Length of radio parameters per geographical area list contents	Set to the actual length of 'radio parameters per geographical area list contents' in bytes		
Radio parameters per geographical area info 1	See Table 4.7.5.5-8		
Radio parameters per geographical area info 2	FFS		

– *Radio parameters per geographical area info*

**Table 4.7.5.5-8: Radio parameters per geographical area info**

Derivation TS 24.588 Figure 5.3.1.8			
Information Element	Value/remark	Comment	Condition
Length of radio parameters per geographical area contents	Set to the actual length of 'radio parameters per geographical area contents' in bytes		
Geographical area	See Table 4.7.5.5-9		
Radio parameters	See Table 4.7.5.5-11		
MI	'1'B	Operator managed	

– *Geographical area*

**Table 4.7.5.5-9: Geographical area**

Derivation Path: TS 24.588 Figure 5.3.1.9			
Information Element	Value/remark	Comment	Condition
Length of geographical area contents	Set to the actual length of 'geographical area contents' in bytes		
Coordinate 1	See Table 4.7.5.5-10		
Coordinate 2	See Table 4.7.5.5-10		
Coordinate 3	See Table 4.7.5.5-10		

– *Coordinate area*

**Table 4.7.5.5-10: Coordinate area**

Derivation Path: TS 24.588 Figure 5.3.1.10			
Information Element	Value/remark	Comment	Condition
Latitude	35.753056		Coordinate 1
	35.735278		Coordinate 2
	35.744167		Coordinate 3
Longitude	139.689167		Coordinate 1
	139.689167		Coordinate 2
	139.709167		Coordinate 3

– *Radio parameters***Table 4.7.5.5-11: Radio parameters**

Derivation Path: TS 24.588 Figure 5.3.1.11			
Information Element	Value/remark	Comment	Condition
Length of radio parameters contents	Set to the actual length of 'radio parameters contents' in bytes		
Radio parameters contents	See Table 4.10.1.1-1: SL-V2X-Preconfiguration in TS 36.508 [2]		E-UTRAN V2X
	See Table 4.10.1-1: SL-PreconfigurationNR		NR V2X

– *V2X service identifier to PC5 RAT and Tx profiles mapping rules***Table 4.7.5.5-12: V2X service identifier to PC5 RAT and Tx profiles mapping rules**

Derivation Path: TS 24.588 Figure 5.3.1.12			
Information Element	Value/remark	Comment	Condition
Length of V2X service identifier to PC5 RAT and Tx profiles mapping rules contents	Set to the actual length of 'V2X service identifier to PC5 RAT and Tx profiles mapping rules contents' in bytes		
V2X service identifier to PC5 RAT and Tx profiles mapping rule 1	See Table 4.7.5.5-13		
V2X service identifier to PC5 RAT and Tx profiles mapping rule 2	FFS		

– *V2X service identifier to PC5 RAT and Tx profiles mapping rule***Table 4.7.5.5-13: V2X service identifier to PC5 RAT and Tx profiles mapping rule**

Derivation Path: TS 24.588 Figure 5.3.1.13			
Information Element	Value/remark	Comment	Condition
Length of V2X service identifier to PC5 RAT and Tx profiles mapping rule contents	Set to the actual length of 'V2X service identifier to PC5 RAT and Tx profiles mapping rule contents' in bytes		
V2X service identifiers	See Table 4.7.5.5-14		
PC5 RAT	'00'B		E-UTRA-PC5
	'01'B		NR-PC5
Length of E-UTRA-PC5 Tx profiles	Set to the actual length of 'E-UTRA-PC5 Tx profiles' in bytes		E-UTRA-PC5
E-UTRA-PC5 Tx profiles	rel14	UE shall use Release 14 compatible format (i.e. using MCS table in Table 8.6.1-1 with 64 QAM indices overridden by 16QAM in TS 36.213 [23] and not Rel-15 feature) to transmit the corresponding V2X packet, Refer to IE v2x-TxProfileList in TS 36.331	E-UTRA-PC5

– *V2X service identifiers***Table 4.7.5.5-14: V2X service identifiers**

Derivation Path: TS 24.588 Figure 5.3.1.14			
Information Element	Value/remark	Comment	Condition
Length of V2X service identifiers contents	Set to the actual length of 'V2X service identifiers contents' in bytes		
V2X service identifier 1	'00 00 00 01'H	4 bytes for each V2X service identifier	
V2X service identifier 2	'00 00 00 02'H		

– *Privacy config***Table 4.7.5.5-15: Privacy config**

Derivation Path: TS 24.588 Figure 5.3.1.15			
Information Element	Value/remark	Comment	Condition
Length of privacy config contents	Set to the actual length of 'privacy config contents' in bytes		
V2X services requiring privacy	See Table 4.7.5.5-16		
Privacy timer	'FF FF'H	Expressed in units of seconds, after which the UE shall change the source Layer-2 ID self-assigned by the UE	

– *V2X services requiring privacy***Table 4.7.5.5-16: V2X services requiring privacy**

Derivation Path: TS 24.588 Figure 5.3.1.16			
Information Element	Value/remark	Comment	Condition
Length of V2X services requiring privacy contents	Set to the actual length of 'V2X services requiring privacy contents' in bytes		
V2X service requiring privacy 1	See Table 4.7.5.5-17		
V2X service requiring privacy 2	FFS		

– *V2X service requiring privacy***Table 4.7.5.5-17: V2X service requiring privacy**

Derivation Path: TS 24.588 Figure 5.3.1.17			
Information Element	Value/remark	Comment	Condition
Length of V2X service requiring privacy contents	Set to the actual length of 'V2X service requiring privacy contents' in bytes		
V2X service identifiers	See Table 4.7.5.5-14		
Geographical areas	See Table 4.7.5.5-18		

– *Geographical areas***Table 4.7.5.5-18: Geographical areas**

Derivation Path: TS 24.588 Figure 5.3.1.18			
Information Element	Value/remark	Comment	Condition
Length of geographical areas contents	Set to the actual length of 'geographical areas contents' in bytes		
Geographical area 1	See Table 4.7.5.5-9		
Geographical area 2	FFS		

– *V2X communication over PC5 in E-UTRA-PC5***Table 4.7.5.5-19: V2X communication over PC5 in E-UTRA-PC5**

Derivation Path: TS 24.588 Figure 5.3.1.19			
Information Element	Value/remark	Comment	Condition
Length of V2X communication over PC5 in E-UTRA-PC5 contents	Set to the actual length of 'V2X communication over PC5 in E-UTRA-PC5 contents' in bytes		
PPMR	'1'B	PPPP to PDB mapping rules field is present	
VSAPI	'1'B	V2X services authorized for PPPR field is present	
VSIEFMRI	'1'B	V2X service identifier to V2X E-UTRA frequency mapping rules field is present	
DDL2II	'1'B	Default destination layer-2 ID field is present	
V2X service identifier to destination layer-2 ID mapping rules	See Table 4.7.5.5-20		
PPPP to PDB mapping rules	See Table 4.7.5.5-22		
V2X service identifier to V2X E-UTRA frequency mapping rules	See Table 4.7.5.5-24		
V2X services authorized for PPPR	See Table 4.7.5.5-29		
Default destination layer-2 ID	'00 00 40'H	3 bytes, Random value	

– *V2X service identifier to destination layer-2 ID mapping rules***Table 4.7.5.5-20: V2X service identifier to destination layer-2 ID mapping rules**

Derivation Path: TS 24.588 Figure 5.3.1.20			
Information Element	Value/remark	Comment	Condition
Length of V2X service identifier to destination layer-2 ID mapping rules contents	Set to the actual length of 'V2X service identifier to destination layer-2 ID mapping rules contents' in bytes		
V2X service identifier to destination layer-2 ID mapping rule 1	See Table 4.7.5.5-21		
V2X service identifier to destination layer-2 ID mapping rule 2	FFS		

– *V2X service identifier to destination layer-2 ID mapping rule***Table 4.7.5.5-21: V2X service identifier to destination layer-2 ID mapping rule**

Derivation Path: TS 24.588 Figure 5.3.1.21			
Information Element	Value/remark	Comment	Condition
Length of V2X service identifier to destination layer-2 ID mapping rule contents	Set to the actual length of 'V2X service identifier to destination layer-2 ID mapping rule contents' in bytes		
V2X service identifiers	See Table 4.7.5.5-14		
Destination layer-2 ID	'00 00 41'H		

– *PPPP to PDB mapping rules***Table 4.7.5.5-22: PPPP to PDB mapping rules**

Derivation Path: TS 24.588 Figure 5.3.1.22			
Information Element	Value/remark	Comment	Condition
Length of PPPP to PDB mapping rules contents	Set to the actual length of 'PPPP to PDB mapping rules contents' in bytes		
PPPP to PDB mapping rule 1	See Table 4.7.5.5-23		
PPPP to PDB mapping rule 2	FFS		

– *PPPP to PDB mapping rule***Table 4.7.5.5-23: PPPP to PDB mapping rule**

Derivation Path: TS 24.588 Figure 5.3.1.23			
Information Element	Value/remark	Comment	Condition
PPPP	'000'B	PPPP value 1	
PDB	'00 32'H	50ms	

– *V2X service identifier to V2X E-UTRA frequency mapping rules***Table 4.7.5.5-24: V2X service identifier to V2X E-UTRA frequency mapping rules**

Derivation Path: TS 24.588 Figure 5.3.1.24			
Information Element	Value/remark	Comment	Condition
Length of V2X service identifier to V2X E-UTRA frequency mapping rules contents	Set to the actual length of 'V2X service identifier to V2X E-UTRA frequency mapping rules contents' in bytes		
V2X service identifier to V2X E-UTRA frequency mapping rule 1	See Table 4.7.5.5-25		
V2X service identifier to V2X E-UTRA frequency mapping rule 2	FFS		



– *V2X service identifier to V2X E-UTRA frequency mapping rule*

**Table 4.7.5.5-25: V2X service identifier to V2X E-UTRA frequency mapping rule**

Derivation Path: TS 24.588 Figure 5.3.1.25			
Information Element	Value/remark	Comment	Condition
Length of V2X service identifier to V2X E-UTRA frequency mapping rule contents	Set to the actual length of 'V2X service identifier to V2X E-UTRA frequency mapping rule contents' in bytes		
V2X service identifiers	See Table 4.7.5.5-14		
V2X E-UTRA frequencies with geographical areas list	See Table 4.7.5.5-26		

– *V2X E-UTRA frequencies with geographical areas list*

**Table 4.7.5.5-26: V2X E-UTRA frequencies with geographical areas list**

Derivation Path: TS 24.588 Figure 5.3.1.26			
Information Element	Value/remark	Comment	Condition
Length of V2X E-UTRA frequencies with geographical areas list contents	Set to the actual length of 'V2X E-UTRA frequencies with geographical areas list contents' in bytes		
V2X E-UTRA frequencies with geographical areas info 1	See Table 4.7.5.5-27		
V2X E-UTRA frequencies with geographical areas info 2	FFS		

– *V2X E-UTRA frequencies with geographical areas info*

**Table 4.7.5.5-27: V2X E-UTRA frequencies with geographical areas info**

Derivation Path: TS 24.588 Figure 5.3.1.27			
Information Element	Value/remark	Comment	Condition
Length of V2X E-UTRA frequencies with geographical areas info contents	Set to the actual length of 'V2X E-UTRA frequencies with geographical areas info contents' in bytes		
V2X E-UTRA frequencies	See Table 4.7.5.5-28		
Geographical areas	See Table 4.7.5.5-18		

– *V2X E-UTRA frequencies***Table 4.7.5.5-28: V2X E-UTRA frequencies**

Derivation Path: TS 24.588 Figure 5.3.1.28			
Information Element	Value/remark	Comment	Condition
Length of V2X E-UTRA frequencies contents	Set to the actual length of 'V2X E-UTRA frequencies contents' in bytes		
V2X E-UTRA frequency 1	Downlink E-UTRA ARFCN under test. f5 of Table 6.2.3.5-1 in TS 36.508 [2]		SIG
	Downlink E-UTRA ARFCN under test. Mid Range EARFCN value of Table 4.3.1.2.15-1 in TS 36.508 [2].		
V2X E-UTRA frequency 2	FFS		

– *V2X services authorized for PPPR***Table 4.7.5.5-29: V2X services authorized for PPPR**

Derivation Path: TS 24.588 Figure 5.3.1.29			
Information Element	Value/remark	Comment	Condition
Length of V2X services authorized for PPPR contents	Set to the actual length of 'V2X services authorized for PPPR contents' in bytes		
V2X service authorized for PPPR 1	See Table 4.7.5.5-30		
V2X service authorized for PPPR 2	FFS		

– *V2X service authorized for PPPR***Table 4.7.5.5-30: V2X service authorized for PPPR**

Derivation Path: TS 24.588 Figure 5.3.1.30			
Information Element	Value/remark	Comment	Condition
Length of V2X service authorized for PPPR contents	Set to the actual length of 'V2X service authorized for PPPR contents' in bytes		
V2X service identifiers	See Table 4.7.5.5-14		
PPPR	'000'B	PPPR value 1	

– *V2X communication over PC5 in NR-PC5***Table 4.7.5.5-31: V2X communication over PC5 in NR-PC5**

Derivation Path: TS 24.588 Figure 5.3.1.31			
Information Element	Value/remark	Comment	Condition
Length of V2X communication over PC5 in NR-PC5 contents	Set to the actual length of 'V2X communication over PC5 in NR-PC5 contents' in bytes		
VSINFMRI	'1'B	V2X service identifier to V2X NR frequency mapping rules field is present	
DDL2IBI	'1'B	Default destination layer-2 ID for broadcast field is present	
V2X service identifier to V2X NR frequency mapping rules	See Table 4.7.5.5-32		
V2X service identifier to destination layer-2 ID for broadcast mapping rules	See Table 4.7.5.5-37		
V2X service identifier to destination layer-2 ID for groupcast mapping rules	See Table 4.7.5.5-39		
V2X service identifier to destination layer-2 ID for unicast initial signalling mapping rules	See Table 4.7.5.5-41		
V2X service identifier to PC5 QoS parameters mapping rules	See Table 4.7.5.5-43		
AS configuration	See Table 4.7.5.5-45		
Default destination layer-2 ID for broadcast	'00 00 50'H		
NR-PC5 unicast security policies	See Table 4.7.5.5-49		
V2X service identifier to default mode of communication mapping rules	See Table 4.7.5.5-52		

– *V2X service identifier to V2X NR frequency mapping rules***Table 4.7.5.5-32: V2X service identifier to V2X NR frequency mapping rules**

Derivation Path: TS 24.588 Figure 5.3.1.32			
Information Element	Value/remark	Comment	Condition
Length of V2X service identifier to V2X NR frequency mapping rules contents	Set to the actual length of 'V2X service identifier to V2X NR frequency mapping rules contents' in bytes		
V2X service identifier to V2X NR frequency mapping rule 1	See Table 4.7.5.5-33		
V2X service identifier to V2X NR frequency mapping rule 2	FFS		

– *V2X service identifier to V2X NR frequency mapping rule*

**Table 4.7.5.5-33: V2X service identifier to V2X NR frequency mapping rule**

Derivation Path: TS 24.588 Figure 5.3.1.33			
Information Element	Value/remark	Comment	Condition
Length of V2X service identifier to V2X NR frequency mapping rule contents	Set to the actual length of 'V2X service identifier to V2X NR frequency mapping rule contents' in bytes		
V2X service identifiers	See Table 4.7.5.5-14		
V2X NR frequencies with geographical areas list	See Table 4.7.5.5-34		

– *V2X NR frequencies with geographical areas list*

**Table 4.7.5.5-34: V2X NR frequencies with geographical areas list**

Derivation Path: TS 24.588 Figure 5.3.1.34			
Information Element	Value/remark	Comment	Condition
Length of V2X NR frequencies with geographical areas list contents	Set to the actual length of 'V2X NR frequencies with geographical areas list contents' in bytes		
V2X NR frequencies with geographical areas info 1	See Table 4.7.5.5-35		
V2X NR frequencies with geographical areas info 2	FFS		

– *V2X NR frequencies with geographical areas info*

**Table 4.7.5.5-35: V2X NR frequencies with geographical areas info**

Derivation Path: TS 24.588 Figure 5.3.1.35			
Information Element	Value/remark	Comment	Condition
Length of V2X NR frequencies with geographical areas info contents	Set to the actual length of 'V2X NR frequencies with geographical areas info contents' in bytes		
V2X NR frequencies	See Table 4.7.5.5-36		
Geographical areas	See Table 4.7.5.5-18		

– *V2X NR frequencies*

**Table 4.7.5.5-36: V2X NR frequencies**

Derivation Path: TS 24.588 Figure 5.3.1.36			
Information Element	Value/remark	Comment	Condition
Length of V2X NR frequencies contents	Set to the actual length of 'V2X NR frequencies contents' in bytes		
V2X NR frequency 1	ARFCN-ValueNR with condition SL_SSB in Table 4.6.3-5		
V2X NR frequency 2	FFS		

– *V2X service identifier to destination layer-2 ID for broadcast mapping rules*

**Table 4.7.5.5-37: V2X service identifier to destination layer-2 ID for broadcast mapping rules**

Derivation Path: TS 24.588 Figure 5.3.1.37			
Information Element	Value/remark	Comment	Condition
Length of V2X service identifier to destination layer-2 ID for broadcast mapping rules contents	Set to the actual length of 'V2X service identifier to destination layer-2 ID for broadcast mapping rules contents' in bytes		
V2X service identifier to destination layer-2 ID for broadcast mapping rule 1	See Table 4.7.5.5-38		
V2X service identifier to destination layer-2 ID for broadcast mapping rule 2	FFS		

– *V2X service identifier to destination layer-2 ID for broadcast mapping rule*

**Table 4.7.5.5-38: V2X service identifier to destination layer-2 ID for broadcast mapping rule**

Derivation Path: TS 24.588 Figure 5.3.1.38			
Information Element	Value/remark	Comment	Condition
Length of V2X service identifier to destination layer-2 ID for broadcast mapping rule contents	Set to the actual length of 'V2X service identifier to destination layer-2 ID for broadcast mapping rule contents' in bytes		
V2X service identifiers	See Table 4.7.5.5-14		
Destination layer-2 ID for broadcast	'00 00 51'H		

– *V2X service identifier to destination layer-2 ID for groupcast mapping rules*

**Table 4.7.5.5-39: V2X service identifier to destination layer-2 ID for groupcast mapping rules**

Derivation Path: TS 24.588 Figure 5.3.1.39			
Information Element	Value/remark	Comment	Condition
Length of V2X service identifier to destination layer-2 ID for groupcast mapping rules contents	Set to the actual length of 'V2X service identifier to destination layer-2 ID for groupcast mapping rules contents' in bytes		
V2X service identifier to destination layer-2 ID for groupcast mapping rule 1	See Table 4.7.5.5-40		
V2X service identifier to destination layer-2 ID for groupcast mapping rule 2	FFS		

– *V2X service identifier to destination layer-2 ID for groupcast mapping rule*

**Table 4.7.5.5-40: V2X service identifier to destination layer-2 ID for groupcast mapping rule**

Derivation Path: TS 24.588 Figure 5.3.1.40			
Information Element	Value/remark	Comment	Condition
Length of V2X service identifier to destination layer-2 ID for groupcast mapping rule contents	Set to the actual length of 'V2X service identifier to destination layer-2 ID for groupcast mapping rule contents' in bytes		
V2X service identifiers	See Table 4.7.5.5-14		
Destination layer-2 ID for groupcast	'00 00 52'H		

- *V2X service identifier to destination layer-2 ID for unicast initial signalling mapping rules*

**Table 4.7.5.5-41: V2X service identifier to destination layer-2 ID for unicast initial signalling mapping rules**

Derivation Path: TS 24.588 Figure 5.3.1.41			
Information Element	Value/remark	Comment	Condition
Length of V2X service identifier to destination layer-2 ID for unicast initial signalling mapping rules contents	Set to the actual length of 'V2X service identifier to destination layer-2 ID for unicast initial signalling mapping rules contents' in bytes		
V2X service identifier to destination layer-2 ID for unicast initial signalling mapping rule 1	See Table 4.7.5.5-42		
V2X service identifier to destination layer-2 ID for unicast initial signalling mapping rule 2	FFS		

- *V2X service identifier to destination layer-2 ID for unicast initial signalling mapping rule*

**Table 4.7.5.5-42: V2X service identifier to destination layer-2 ID for unicast initial signalling mapping rule**

Derivation Path: TS 24.588 Figure 5.3.1.42			
Information Element	Value/remark	Comment	Condition
Length of V2X service identifier to destination layer-2 ID for unicast initial signalling mapping rule contents	Set to the actual length of 'V2X service identifier to destination layer-2 ID for unicast initial signalling mapping rule contents' in bytes		
V2X service identifiers	See Table 4.7.5.5-14		
Destination layer-2 ID for unicast initial signalling	'00 00 53'H		

- *V2X service identifier to PC5 QoS parameters mapping rules*

**Table 4.7.5.5-43: V2X service identifier to PC5 QoS parameters mapping rules**

Derivation Path: TS 24.588 Figure 5.3.1.43			
Information Element	Value/remark	Comment	Condition
Length of V2X service identifier to PC5 QoS parameters mapping rules contents	Set to the actual length of 'V2X service identifier to PC5 QoS parameters mapping rules contents' in bytes		
V2X service identifier to PC5 QoS parameters mapping rule 1	See Table 4.7.5.5-44		
V2X service identifier to PC5 QoS parameters mapping rule 2	FFS		

– *V2X service identifier to PC5 QoS parameters mapping rule***Table 4.7.5.5-44: V2X service identifier to PC5 QoS parameters mapping rule**

Derivation Path: TS 24.588 Figure 5.3.1.46			
Information Element	Value/remark	Comment	Condition
Length of V2X service identifier to PC5 QoS parameters mapping rule contents	Set to the actual length of 'V2X service identifier to PC5 QoS parameters mapping rule contents' in bytes		
V2X service identifiers	See Table 4.7.5.5-14		
RI	'1'B	Range field is present	
PLAMBRI	'1'B	Per-link aggregate maximum bit rate field is present	
MFBR1	'1'B	Maximum flow bit rate field is present	
GFBR1	'1'B	Guaranteed flow bit rate field is present	
PQI	22	See Table 5.4.4-1 in TS 23.287 [xx]	
Guaranteed flow bit rate	'0000 0110 0000 0000 0000 1010'B	10 * 1Mbps = 10Mbps.	
Maximum flow bit rate	'0000 0110 0000 0000 0001 0100'B	20 * 1Mbps = 20Mbps.	
Per-link aggregate maximum bit rate	'0000 0110 0000 0000 0000 0010'B	2 * 1Mbps = 2Mbps.	
Range	'0000 0001 1111 0100'B	500 meters	

– *AS configuration***Table 4.7.5.5-45: AS configuration**

Derivation Path: TS 24.588 Figure 5.3.1.46a			
Information Element	Value/remark	Comment	Condition
Length of AS configuration contents	Set to the actual length of 'AS configuration contents' in bytes		
SLRB mapping rules	See Table 4.7.5.5-46		

– *SLRB mapping rules***Table 4.7.5.5-46: SLRB mapping rules**

Derivation Path: TS 24.588 Figure 5.3.1.47			
Information Element	Value/remark	Comment	Condition
Length of SLRB mapping rules contents	Set to the actual length of 'SLRB mapping rules contents' in bytes		
SLRB mapping rule 1	See Table 4.7.5.5-47		
SLRB mapping rule 2	FFS		

– *SLRB mapping rule***Table 4.7.5.5-47: SLRB mapping rule**

Derivation Path: TS 24.588 Figure 5.3.1.48			
Information Element	Value/remark	Comment	Condition
Length of SLRB mapping rule contents	Set to the actual length of 'SLRB mapping rule contents' in bytes		
PC5 QoS profile	See Table 4.7.5.5-48		
Length of SLRB	Set to the actual length of 'SLRB' in bytes		
SLRB	See Table 4.10.1-1		

– *PC5 QoS profile***Table 4.7.5.5-48: PC5 QoS profile**

Derivation Path: TS 24.588 Figure 5.3.1.49			
Information Element	Value/remark	Comment	Condition
Length of PC5 QoS profile contents	Set to the actual length of 'PC5 QoS profile contents' in bytes		
MDBVI	'0'B	Maximum data burst volume field is absent	
AWI	'1'B	Averaging window field is present	
PLOI	'1'B	The octet of the priority level is present	
RI	'1'B	Range field is present	
PLAMBRI	'1'B	Per-link aggregate maximum bit rate field is present	
MFBRI	'1'B	Maximum flow bit rate field is present	
GFBR	'1'B	Guaranteed flow bit rate field is present	
PQI	22	See Table 5.4.4-1 in TS 23.287[xx]	
Guaranteed flow bit rate	'0000 0110 0000 0000 0000 1010'B	10 * 1Mbps = 10Mbps.	
Maximum flow bit rate	'0000 0110 0000 0000 0001 0100'B	20 * 1Mbps = 20Mbps.	
Per-link aggregate maximum bit rate	'0000 0110 0000 0000 0000 0010'B	2 * 1Mbps = 2Mbps.	
Range	'0000 0001 1111 0100'B	500 meters	
Priority level	4		
Averaging window	'0000 0111 1101 0000'B	2000ms	
Maximum data burst volume	Not Present		



– *NR-PC5 unicast security policies***Table 4.7.5.5-49: NR-PC5 unicast security policies**

Derivation Path: TS 24.588 Figure 5.3.1.50			
Information Element	Value/remark	Comment	Condition
Length of NR-PC5 unicast security policies contents	Set to the actual length of 'NR-PC5 unicast security policies contents' in bytes		
NR-PC5 unicast security policy 1	See Table 4.7.5.5-50		
NR-PC5 unicast security policy 2	FFS		

– *NR-PC5 unicast security policy***Table 4.7.5.5-50: NR-PC5 unicast security policy**

Derivation Path: TS 24.588 Figure 5.3.1.51			
Information Element	Value/remark	Comment	Condition
Length of NR-PC5 unicast security policy contents	Set to the actual length of 'NR-PC5 unicast security policy contents' in bytes		
V2X service identifiers	See Table 4.7.5.5-14		
Security policy	See Table 4.7.5.5-51		
Geographical areas	See Table 4.7.5.5-18		

– *Security policy***Table 4.7.5.5-51: Security policy**

Derivation Path: TS 24.588 Figure 5.3.1.52			
Information Element	Value/remark	Comment	Condition
Signalling integrity protection policy	'000'B	Signalling integrity protection not needed	
Spare	'0'B		
Signalling ciphering policy	'000'B	Signalling ciphering not needed	
Spare	'0'B		
User plane integrity protection policy	'000'B	User plane integrity protection not needed	
Spare	'0'B		
User plane ciphering policy	'000'B	User plane ciphering not needed	
Spare	'0'B		

– *V2X service identifier to default mode of communication mapping rules***Table 4.7.5.5-52: V2X service identifier to default mode of communication mapping rules**

Derivation Path: TS 24.588 Figure 5.3.1.53			
Information Element	Value/remark	Comment	Condition
Length of V2X service identifier to default mode of communication mapping rules contents	'Set to the actual length of 'V2X service identifier to default mode of communication mapping rules contents' in bytes		
V2X service identifier to default mode of communication mapping rule 1	See Table 4.7.5.5-53		
V2X service identifier to default mode of communication mapping rule 2	FFS		

– *V2X service identifier to default mode of communication mapping rule*

**Table 4.7.5.5-53: V2X service identifier to default mode of communication mapping rule**

Derivation Path: TS 24.588 Figure 5.3.1.54			
Information Element	Value/remark	Comment	Condition
Length of V2X service identifier to default mode of communication mapping rule contents	'Set to the actual length of 'V2X service identifier to default mode of communication mapping rule contents' in bytes		
V2X service identifiers	See Table 4.7.5.5-14		
DMC	'00'B	Default mode of communication is set to unicast	
Spare	'0000 00'B		

## 4.7.6 Contents of UE Policy Delivery messages

– *MANAGE UE POLICY COMMAND*

**Table 4.7.6-1: MANAGE UE POLICY COMMAND**

Derivation Path: TS 24.501 Table D.5.1.1.1			
Information Element	Value/remark	Comment	Condition
PTI	Any value from 1 to 254		
MANAGE UE POLICY COMMAND message identity	'0000 0001'B	MANAGE UE POLICY COMMAND message	
UE policy section management list			
Length of UE policy section management list contents	Set to the actual length of 'UE policy section management list contents' in bytes		
UE policy section management list contents	1 entry		
UE policy section management sublist (PLMN-1)			
Length of UE policy section management sublist	Set to the actual length of 'UE policy section management sublist' in bytes		
PLMN ID	Set to the PLMN value used in the test case		
UE policy section management sublist contents			
Instruction 1			
Instruction contents length	Set to the actual length of 'Instruction contents' in bytes		
UPSC	'00 01'H	2 bytes, value set by PCF	
UE policy section contents			
UE policy part 1			
UE policy part contents length	Set to the actual length of 'UE policy part contents' in bytes		
Spare	'0000'B		
UE policy part type	'0001'B		URSP
	'0010'B		ANDSP
	'0011'B		V2XP
UE policy part contents	See Table 4.8.5.1-1		URSP
	FFS		ANDSP
	See Table 4.7.5.4-1		V2XP

Condition	Explanation
URSP	UE Route Selection Policy (URSP)
ANDSP	UE Access Network Discovery and Selection Policy (ANDSP)
V2XP	UE policies for V2X (V2XP)

– *MANAGE UE POLICY COMPLETE*

**Table 4.7.6-2: MANAGE UE POLICY COMPLETE**

Derivation Path: TS 24.501 Table D.5.2.1.1			
Information Element	Value/remark	Comment	Condition
PTI	The same value as the value set in MANAGE UE POLICY COMMAND message.		
MANAGE UE POLICY COMPLETE message identity	'0000 0010'B	MANAGE UE POLICY COMPLETE message	

– *MANAGE UE POLICY COMMAND REJECT*

**Table 4.7.6-3: MANAGE UE POLICY COMMAND REJECT**

Derivation Path: TS 24.501 Table D.5.3.1.1			
Information Element	Value/remark	Comment	Condition
PTI	The same value as the value set in MANAGE UE POLICY COMMAND message.		
MANAGE UE POLICY COMMAND REJECT message identity	'0000 0011'B	MANAGE UE POLICY COMMAND REJECT message	
UE policy section management result			
Length of UE policy section management result contents	Set to the actual length of 'UE policy section management result contents' in bytes		
UE policy section management list contents	1 entry		
UE policy section management subresult (PLMN 1)			
Number of results	1		
PLMN ID	Set to the PLMN value used in the test case		
UE policy section management subresult contents	1 entry		
Result 1			
UPSC	'00 01'H		
Failed instruction order	Set according to specific message content.		
Cause	Set according to specific message content.		

– *UE STATE INDICATION***Table 4.7.6-4: UE STATE INDICATION**

Derivation Path: TS 24.501 Table D.5.4.1.1			
Information Element	Value/remark	Comment	Condition
PTI	Any value from 1 to 254		
UE STATE INDICATION message identity	'0000 0100'B		
UPSI list	1 entry		
Length of UPSI list contents	Set to the actual length of 'UPSI list contents' in bytes		
UPSI sublist (PLMN 1)	1 entry		
Length of UPSI sublist	Set to the actual length of 'UPSI sublist' in bytes		
PLMN ID	Set to the PLMN value used in the test case		
UPSC 1	Set according to specific message content.		
UE policy classmark	Not checked		
Length of Policy information contents	Set to the actual length of 'Policy information contents' in bytes		
Spare	'0000 000'B		
SupportANDSP	'1'B		ANDSP
	Not checked		
UE OS Id			
Length of OS Id information contents	Set to the actual length of 'OS Id information contents' in bytes		
OS Id_1	Set according to parameter given in test case		

Condition	Explanation
ANDSP	UE Access Network Discovery and Selection Policy (ANDSP)

– *UE POLICY PROVISIONING REQUEST***Table 4.7.6-5: UE POLICY PROVISIONING REQUEST**

Derivation Path: TS 24.587 Table 7.2.1.1.1			
Information Element	Value/remark	Comment	Condition
PTI	Any value from 1 to 254		
UE POLICY PROVISIONING REQUEST message identity	'0000 0101'B		
Requested UE policies			
Length of Requested UE policies contents	2		
Requested UE policies contents	'0000 0001 0000 0000'B	UE policies for V2X communication over PC5 requested	

– *UE POLICY PROVISIONING REJECT***Table 4.7.6-6: UE POLICY PROVISIONING REJECT**

Derivation Path: TS 24.587 Table 7.2.2.1.1			
Information Element	Value/remark	Comment	Condition
PTI	The same value as the value set in UE POLICY PROVISIONING REQUEST message.		
UE POLICY PROVISIONING REJECT message identity	'0000 0110'B		
UPDS cause	'0001 1111'B	Request rejected, unspecified	

## 4.7A Default TC message and information element contents

This clause contains the default values of common TC (Test Control, see [11]) messages and information elements, which apply to all test cases unless otherwise specified. All the messages and information elements are listed in alphabetical order.

### 4.7A.1 Test mode messages

- *ACTIVATE TEST MODE* with the following exception:

- The supported test modes for 5GS are limited to those specified in subclause 38.509 [11] 5.3.4.

Same as TS 36.508 [2], Table 4.7A-1.

- *ACTIVATE TEST MODE COMPLETE*

Same as TS 36.508 [2], Table 4.7A-2.

- *DEACTIVATE TEST MODE*

Same as TS 36.508 [2], Table 4.7A-5.

- *DEACTIVATE TEST MODE COMPLETE*

Same as TS 36.508 [2], Table 4.7A-6.

#### 4.7A.2 Test loop messages

- *CLOSE UE TEST LOOP*

Same as TS 36.508 [2], Table 4.7A-3 with the following exception:

- The supported test modes for 5GS are limited to those specified in subclause 38.509 [11] 5.3.4.

- *CLOSE UE TEST LOOP COMPLETE*

Same as TS 36.508 [2], Table 4.7A-4.

- *OPEN UE TEST LOOP*

Same as TS 36.508 [2], Table 4.7A-7.

- *OPEN UE TEST LOOP COMPLETE*

Same as TS 36.508 [2], Table 4.7A-8.

#### 4.7A.3 Beamlock messages

- *ACTIVATE BEAMLOCK*

This message is only sent in the direction SS to UE, embedded in a RRC *DLInformationTransfer* message.

**Table 4.7A.3-1: ACTIVATE BEAMLOCK**

Derivation Path: 38.509 clause 6.4.1			
Information Element	Value/remark	Comment	Condition
Protocol discriminator	1 1 1 1		
Skip indicator	0 0 0 0		
Message type	1 0 1 0 0 0 0 0		
UE Beamlock test Function	0 0 0 0 0 0 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

- *ACTIVATE BEAMLOCK COMPLETE*

This message is only sent in the direction UE to SS, embedded in a RRC *ULInformationTransfer* message.

**Table 4.7A.3-2: ACTIVATE BEAMLOCK COMPLETE**

Derivation Path: 38.509 clause 6.4.2			
Information Element	Value/remark	Comment	Condition
Protocol discriminator	1 1 1 1		
Skip indicator	0 0 0 0		
Message type	1 0 1 0 0 0 0 1		

- *DEACTIVATE BEAMLOCK*

This message is only sent in the direction SS to UE, embedded in a RRC *DLInformationTransfer* message.

**Table 4.7A.3-3: DEACTIVATE BEAMLOCK**

Derivation Path: 38.509 clause 6.4.3			
Information Element	Value/remark	Comment	Condition
Protocol discriminator	1 1 1 1		
Skip indicator	0 0 0 0		
Message type	1 0 1 0 0 0 1 0		

- *DEACTIVATE BEAMLOCK COMPLETE*

This message is only sent in the direction UE to SS, embedded in a RRC *ULInformationTransfer* message.

**Table 4.7A.3-4: DEACTIVATE BEAMLOCK COMPLETE**

Derivation Path: 38.509 clause 6.4.4			
Information Element	Value/remark	Comment	Condition
Protocol discriminator	1 1 1 1		
Skip indicator	0 0 0 0		
Message type	1 0 1 0 0 0 1 1		

#### 4.7A.4 UE SS-RSRP per receiver branch reporting messages

- *SS-RSRPB REPORT REQUEST*

FFS

- *SS-RSRPB REPORT RESPONSE*

FFS

#### 4.7A.5 UE Positioning messages

- *RESET UE POSITIONING STORED INFORMATION*

FFS

- *UPDATE UE LOCATION INFORMATION*

FFS

## 4.7A.6 NSSAI delete messages

### - NSSAI DELETE REQUEST

This message is only sent in the direction SS to UE, embedded in a RRC *DLInformationTransfer* message.

**Table 4.7A.6-1: NSSAI DELETE REQUEST**

Derivation Path: 38.509 clause 6.7.1			
Information Element	Value/remark	Comment	Condition
Protocol discriminator	1 1 1 1		
Skip indicator	0 0 0 0		
Message type	1 0 0 0 0 1 1 0		
Delete NSSAI type	Set according to specific message contents		
Configured NSSAI	Set according to specific message contents		
Allowed NSSAI	Set according to specific message contents		

### - NSSAI DELETE RESPONSE

This message is only sent in the direction UE to SS, embedded in a RRC *ULInformationTransfer* message.

**Table 4.7A.6-2: NSSAI DELETE RESPONSE**

Derivation Path: 38.509 clause 6.7.2			
Information Element	Value/remark	Comment	Condition
Protocol discriminator	1 1 1 1		
Skip indicator	0 0 0 0		
Message type	1 0 1 0 0 1 1 1		

## 4.7A.7 UE Power Limit Messages

**Editor's note:** The power limit request message values set by the UPLF test mode is currently applicable to equal PSD (equal channel bandwidths on all component carriers) only. Message values are pending for unequal channel bandwidths

### - ACTIVATE POWER LIMIT REQUEST

This Message is only sent in the direction SS to UE, embedded in a RRC *DLInformationTransfer* message.

**Table 4.7A.7-1: ACTIVATE POWER LIMIT REQUEST**

Derivation Path: 38.509 clause 6.11.1			
Information Element	Value/remark	Comment	Condition
Protocol discriminator	1 1 1 1		
Skip indicator	0 0 0 0		
Message type	1 0 1 0 0 1 1 1		
POWER LIMIT REQUEST	1 0 1 0 0 0 1 0		NR FR2 2CA
POWER LIMIT REQUEST	1 0 1 0 0 0 1 1		NR FR2 3CA
POWER LIMIT REQUEST	1 0 1 0 0 1 0 0		NR FR2 4CA
POWER LIMIT REQUEST	1 0 1 0 0 1 0 1		NR FR2 5CA
POWER LIMIT REQUEST	1 0 1 0 0 1 1 0		NR FR2 6CA
POWER LIMIT REQUEST	1 0 1 0 0 1 1 1		NR FR2 7CA
POWER LIMIT REQUEST	1 0 1 0 1 0 0 0		NR FR2 8CA



Condition	Explanation
NR FR2 2CA	Power Limit Request corresponding to NR FR2 2CA only
NR FR2 3CA	Power Limit Request corresponding to NR FR2 3CA only
NR FR2 4CA	Power Limit Request corresponding to NR FR2 4CA only
NR FR2 5CA	Power Limit Request corresponding to NR FR2 5CA only
NR FR2 6CA	Power Limit Request corresponding to NR FR2 6CA only
NR FR2 7CA	Power Limit Request corresponding to NR FR2 7CA only
NR FR2 8CA	Power Limit Request corresponding to NR FR2 8CA only

#### - ACTIVATE POWER LIMIT RESPONSE

This message is only sent in the direction UE to SS, embedded in a RRC *ULInformationTransfer* message.

**Table 4.7A.7-2: ACTIVATE POWER LIMIT RESPONSE**

Derivation Path: 38.509 clause 6.11.2			
Information Element	Value/remark	Comment	Condition
Protocol discriminator	1 1 1 1		
Skip indicator	0 0 0 0		
Message type	1 0 1 0 1 1 0 1		

#### - DEACTIVATE POWER LIMIT REQUEST

This message is only sent in the direction SS to UE, embedded in a RRC *DLInformationTransfer* message.

**Table 4.7A.7-3: DEACTIVATE POWER LIMIT REQUEST**

Derivation Path: 38.509 clause 6.11.3			
Information Element	Value/remark	Comment	Condition
Protocol discriminator	1 1 1 1		
Skip indicator	0 0 0 0		
Message type	1 0 1 0 1 1 1 0		

#### - DEACTIVATE POWER LIMIT RESPONSE

This message is only sent in the direction UE to SS, embedded in a RRC *ULInformationTransfer* message.

**- Table 4.7A.7-3: DEACTIVATE POWER LIMIT RESPONSE**

Derivation Path: 38.509 clause 6.11.4			
Information Element	Value/remark	Comment	Condition
Protocol discriminator	1 1 1 1		
Skip indicator	0 0 0 0		
Message type	1 0 1 0 1 1 1 1		

## 4.7B Default AT Command message and information element

#### - AT Command +CATM

Same as TS 36.508 [2], Table 4.7I-1.

#### - AT Command +CCUTLE

This AT Command is sent by the SS to the UE.

**Table 4.7B-1: +CCUTLE**

Derivation Path: 27.007 clause 15.3			
Field	Value/remark	Comment	Condition
+ CCUTLE =			
<status>	1		Open
<status>	0		Close
<direction>	1		Transmit
<sl_mimo>	0		Transmit
	1		Transmit AND SL_MIMO
<direction>	0		Receive
<format>	1		Receive
<length>	1		Receive
<monitor_list>	HEX '0000AA'		Receive

Condition	Explanation
Open	Open UE test loop back mode E.
Close	Close UE test loop back mode E
Transmit	UE is configured to transmit V2X communication packets
Receive	UE is configured to receive V2X communication packets
SL_MIMO	UE is configured to transmit PSSCH with 2 spatial layers, i.e. SL MIMO

- *AT Command +CUTCR*

Same as TS 36.508 [2], Table 4.7I-3.

- *AT Command +CUSPCREQ*

Same as TS 36.508 [2], Table 4.7I-4.

## 4.8 Reference configurations

### 4.8.1 Radio configurations

- *RRCReconfiguration-DRB(n, m)*

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

Derivation Path: Table 4.6.1-13 with condition NR.			
Information Element	Value/remark	Comment	Condition
RRCReconfiguration ::= SEQUENCE {			
criticalExtensions CHOICE {			
c1 CHOICE {			
rrcReconfiguration SEQUENCE {			
radioBearerConfig	RadioBearerConfig-DRB-NR(n,m)		
}			
nonCriticalExtension SEQUENCE {			
masterCellGroup	CellGroupConfig-DRB(n, m)	OCTET STRING (CONTAINING CellGroupConfig)	
}			
}			
}			
}			

– *RRCReconfiguration-HO*

**Table 4.8.1-1A: RRCReconfiguration-HO**

Derivation Path: Table 4.6.1-13.			
Information Element	Value/remark	Comment	Condition
RRCReconfiguration ::= SEQUENCE {			
criticalExtensions CHOICE {			
rrcReconfiguration SEQUENCE {			
radioBearerConfig	RadioBearerConfig with conditions SRB_NR_PDCP and DRBn and Re-establish_PDCP		RBConfig_KeyChange
	RadioBearerConfig with conditions DRBn and Recover_PDCP		RBConfig_NoKeyChange
secondaryCellGroup	Not present		
nonCriticalExtension SEQUENCE {			
masterCellGroup	CellGroupConfig with conditions PCell_change	OCTET STRING (CONTAINING CellGroupConfig)	
masterKeyUpdate	Not present		
masterKeyUpdate SEQUENCE {			RBConfig_KeyChange
keySetChangeIndicator	false	Horizontal key derivation	
nextHopChainingCount	NextHopChainingCount		
nas-Container	Not present		
}			
}			
}			
}			
}			

Condition	Explanation
RBConfig_KeyChange	RadioBearerConfig to perform Intra-NR handover with security key change
RBConfig_NoKeyChange	RadioBearerConfig to perform Intra-NR handover without security key change

– *RRCReconfiguration-SRB2-DRB(n, m)*

**Table 4.8.1-1B: RRCReconfiguration-SRB2-DRB(n, m)**

Derivation Path: Table 4.6.1-13 with condition NR.			
Information Element	Value/remark	Comment	Condition
RRCReconfiguration ::= SEQUENCE {			
criticalExtensions CHOICE {			
c1 CHOICE {			
rrcReconfiguration SEQUENCE {			
radioBearerConfig	RadioBearerConfig-SRB2-DRB(n,m)		
}			
nonCriticalExtension SEQUENCE {			
masterCellGroup	CellGroupConfig-SRB2-DRB(n, m)	OCTET STRING (CONTAINING CellGroupConfig)	
}			
}			
}			
}			

RRCReconfiguration-NR-DC-DRB

Table 4.8.1-1CA: RRCReconfiguration-NR-DC-DRB

Derivation Path: Table 4.6.1-13 with condition NR-DC.			
Information Element	Value/remark	Comment	Condition
RRCReconfiguration ::= SEQUENCE {			
criticalExtensions CHOICE {			
c1 CHOICE {			
rrcReconfiguration SEQUENCE {			
radioBearerConfig	Not present		
}			
nonCriticalExtension SEQUENCE {			
masterCellGroup	Not present		MCG(s) and SCG
	CellGroupConfig with condition DRB(n+m+1)	OCTET STRING (CONTAINING CellGroupConfig)	MCG(s) and split
nonCriticalExtension SEQUENCE {			
nonCriticalExtension SEQUENCE {			
radioBearerConfig2	RadioBearerConfig with conditions DRB(n+m+1) and SCG_DRB and SecondaryKeys	OCTET STRING (CONTAINING RadioBearerConfig) DRB(n,m) already configured on MCG	MCG(s) and SCG
	RadioBearerConfig with conditions DRB(n+m+1) and SCG_DRB and Split and SecondaryKeys	OCTET STRING (CONTAINING RadioBearerConfig) DRB(n,m) already configured on MCG	MCG(s) and split
}			
}			
}			
}			
}			
}			

*RRCReconfiguration-NE-DC-DRB*

**Table 4.8.1-1CB: RRCReconfiguration-NE-DC-DRB**

Derivation Path: Table 4.6.1-13 with condition NE-DC.			
Information Element	Value/remark	Comment	Condition
RRCReconfiguration ::= SEQUENCE {			
criticalExtensions CHOICE {			
c1 CHOICE {			
rrcReconfiguration SEQUENCE {			
radioBearerConfig	Not present		
}			
nonCriticalExtension SEQUENCE {			
masterCellGroup	Not present		MCG(s) and SCG
	CellGroupConfig with condition DRB(n+m+1)	OCTET STRING (CONTAINING CellGroupConfig)	MCG(s) and split
nonCriticalExtension SEQUENCE {			
nonCriticalExtension SEQUENCE {			
radioBearerConfig2	RadioBearerConfig with conditions DRB(n+m+1) and SCG_DRB and SecondaryKeys	OCTET STRING (CONTAINING RadioBearerConfig) DRB(n,m) already configured on MCG	MCG(s) and SCG
	RadioBearerConfig with conditions DRB(n+m+1) and SCG_DRB and Split and SecondaryKeys	OCTET STRING (CONTAINING RadioBearerConfig) DRB(n,m) already configured on MCG	MCG(s) and split
}			
}			
}			
}			
}			
}			

*RRCReconfiguration-Speech*

**Table 4.8.1-1C: RRCReconfiguration-Speech**

Derivation Path: Table 4.6.1-13 with condition NR.			
Information Element	Value/remark	Comment	Condition
RRCReconfiguration ::= SEQUENCE {			
criticalExtensions CHOICE {			
c1 CHOICE {			
rrcReconfiguration SEQUENCE {			
radioBearerConfig	RadioBearerConfig-Speech		
}			
nonCriticalExtension SEQUENCE {			
masterCellGroup	CellGroupConfig-DRB(0.1)	OCTET STRING (CONTAINING CellGroupConfig)	
}			
}			
}			
}			

– *RRCReconfiguration-Video*

**Table 4.8.1-1D: RRCReconfiguration-Video**

Derivation Path: Table 4.6.1-13 with condition NR.			
Information Element	Value/remark	Comment	Condition
RRCReconfiguration ::= SEQUENCE {			
criticalExtensions CHOICE {			
c1 CHOICE {			
rrcReconfiguration SEQUENCE {			
radioBearerConfig	RadioBearerConfig-Video		
}			
nonCriticalExtension SEQUENCE {			
masterCellGroup	CellGroupConfig-DRB(0,2)	OCTET STRING (CONTAINING CellGroupConfig)	
}			
}			
}			

– *CellGroupConfig-DRB(n, m)*

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

Derivation Path: Table 4.6.3-19: CellGroupConfig (the same conditions are applicable as for table 4.6.3-19).			
Information Element	Value/remark	Comment	Condition
CellGroupConfig ::= SEQUENCE {			
rlc-BearerToAddModList SEQUENCE (SIZE(1..maxLCH)) OF RLC-BearerConfig {	n+m entries	BID is the total number of established DRBs in the UE, before applying the contents of this IE	
RLC-BearerConfig[k, k=1..n]	RLC-BearerConfig with conditions AM and DRB <sub>j</sub> (with j=BID+k)	entry (1..n+1)	n>0
RLC-BearerConfig[k, k=n+1..n+m]	RLC-BearerConfig with conditions UM and DRB <sub>j</sub> (with j=BID+k)	entry (n+1..n+m)	m>0
}			
}			

Condition	Explanation
n>0	n is greater than zero
m>0	m is greater than zero

– *CellGroupConfig-SRB3*

**Table 4.8.1-2A: CellGroupConfig-SRB3**

Derivation Path: Table 4.6.3-19: CellGroupConfig with condition EN-DC.			
Information Element	Value/remark	Comment	Condition
CellGroupConfig ::= SEQUENCE {			
rlc-BearerToAddModList SEQUENCE (SIZE(1..maxLCH)) OF RLC-BearerConfig {	2 entries		
RLC-BearerConfig[1]	RLC-BearerConfig with conditions AM and DRB2	entry 1	
RLC-BearerConfig[2]	RLC-BearerConfig with condition SRB3	entry 2	
}			
}			

– *CellGroupConfig-SRB2-DRB(n, m)*

**Table 4.8.1-2B: CellGroupConfig-SRB2-DRB(n, m)**

Derivation Path: Table 4.6.3-19: CellGroupConfig			
Information Element	Value/remark	Comment	Condition
CellGroupConfig ::= SEQUENCE {			
rlc-BearerToAddModList SEQUENCE (SIZE(1..maxLCH)) OF RLC-BearerConfig {	1+n+m entries		
RLC-BearerConfig[1]	RLC-BearerConfig with condition SRB2	entry 1	
RLC-BearerConfig[k, k=2..n+1]	RLC-BearerConfig with conditions AM and DRB <sub>j</sub>	entry (2..n+1) j is allocated according to internal TTCN mapping	n>0
...		...	
RLC-BearerConfig[k, k=n+2..n+m+1]	RLC-BearerConfig with conditions UM and DRB <sub>j</sub>	entry (n+2..n+m+1) j is allocated according to internal TTCN mapping	m>0
}			
mac-CellGroupConfig	Not present		
physicalCellGroupConfig	Not present		
spCellConfig	Not present		
}			

*RadioBearerConfig-DRB (n, m)*

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

Derivation Path: Table 4.6.3-132 and condition EN-DC.			
Information Element	Value/remark	Comment	Condition
RadioBearerConfig ::= SEQUENCE {			
drb-ToAddModList SEQUENCE (SIZE (1..maxDRB))	n+m entries	BID is the total number of established DRBs in the UE, before applying the contents of this IE entry (1..n+m)	
OF DRB-ToAddMod {			
DRB-ToAddMod[k=1..n+m] SEQUENCE {			
cnAssociation CHOICE {			
eps-BearerIdentity	l, l=BID+5..BID+4+n+m		
}			
drb-Identity	l, l=BID+1..BID+n+m		
reestablishPDCP	Not present		
recoverPDCP	Not present		
pdcp-Config	PDCP-Config		k <= n
	PDCP-Config with condition UM		k > n
}			
}			
}			

*RadioBearerConfig-DRB-NR(n, m)*

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

Derivation Path: Table 4.6.3-132.			
Information Element	Value/remark	Comment	Condition
RadioBearerConfig ::= SEQUENCE {			
drb-ToAddModList SEQUENCE (SIZE (1..maxDRB))	n+m entries	BID is the total number of established DRBs in the UE, before applying the contents of this IE entry (1..n+m)	
OF DRB-ToAddMod {			
DRB-ToAddMod[k=1..n+m] SEQUENCE {			
cnAssociation CHOICE {			
sdap-Config	SDAP-Config		
}			
drb-Identity	BID+k	k=1..n+m	
reestablishPDCP	Not present		
recoverPDCP	Not present		
pdcp-Config	PDCP-Config		k <= n
	PDCP-Config with condition UM		k > n
}			
}			
}			



– *RadioBearerConfig-SRB2-DRB (n, m)*

**Table 4.8.1-4: RadioBearerConfig-SRB2-DRB (n, m)**

Derivation Path: Table 4.6.3-132 and condition SRB2.			
Information Element	Value/remark	Comment	Condition
RadioBearerConfig ::= SEQUENCE {			
drb-ToAddModList SEQUENCE (SIZE (1..maxDRB))	n+m entries		
OF DRB-ToAddMod {			
DRB-ToAddMod[k=1..n+m] := SEQUENCE {		entry (1..n+m)	
cnAssociation CHOICE {			
sdap-Config	SDAP-Config	SDAP-Config is configured according to internal TTCN mapping	
}			
drb-Identity	j	j is allocated according to internal TTCN mapping	
reestablishPDCP	Not present		
recoverPDCP	Not present		
pdcp-Config	PDCP-Config		(1<k <= n) OR (k=1 AND NOT NR_split)
	PDCP-Config with condition UM		k > n
	PDCP-Config with condition NR_split		k=1 AND NR_split
}			
}			
}			
}			
}			
}			

– *RadioBearerConfig-Speech*

**Table 4.8.1-5: RadioBearerConfig-Speech**

Derivation Path: Table 4.6.3-132 and condition SRB2.			
Information Element	Value/remark	Comment	Condition
RadioBearerConfig ::= SEQUENCE {			
drb-ToAddModList SEQUENCE (SIZE (1..maxDRB))	1 entry		
OF DRB-ToAddMod {			
DRB-ToAddMod[1] SEQUENCE {			
cnAssociation CHOICE {			
sdap-Config SEQUENCE {	SDAP-Config		
defaultDRB	false		
}			
}			
drb-Identity	j	j is allocated according to internal TTCN mapping	
reestablishPDCP	Not present		
recoverPDCP	Not present		
pdcp-Config	PDCP-Config with condition UM		
}			
}			
}			
}			

## RadioBearerConfig-Video

Table 4.8.1-6: RadioBearerConfig-Video

Derivation Path: Table 4.6.3-132 and condition SRB2.			
Information Element	Value/remark	Comment	Condition
RadioBearerConfig ::= SEQUENCE {			
drb-ToAddModList SEQUENCE (SIZE (1..maxDRB))	2 entries		
OF DRB-ToAddMod {			
DRB-ToAddMod [1] SEQUENCE {		entry 1	
cnAssociation CHOICE {			
sdap-Config SEQUENCE {	SDAP-Config		
defaultDRB	false		
}			
}			
drb-Identity	j	j is allocated according to internal TTCN mapping	
reestablishPDCP	Not present		
recoverPDCP	Not present		
pdcpc-Config	PDCP-Config with condition UM		
}			
DRB-ToAddMod [2] SEQUENCE {		entry 2	
cnAssociation CHOICE {			
sdap-Config SEQUENCE {	SDAP-Config		
defaultDRB	false		
}			
}			
drb-Identity	k	k is allocated according to internal TTCN mapping	
reestablishPDCP	Not present		
recoverPDCP	Not present		
pdcpc-Config	PDCP-Config with condition UM		
}			
}			

## 4.8.2 5GC configurations

### 4.8.2.1 Reference QoS rules

**Table 4.8.2.1-1: Reference QoS rule #1**

Derivation Path: TS 24.501, table 9.11.4.13			
Information Element	Value/remark	Comment	Condition
QoS rules			
QoS rule			
QoS rule identifier	'0000 0001'B	1 (unique per PDU session)	
Rule operation code	'001'B	Create new QoS rule	
DQR bit	'1'B	The QoS rule is the default QoS rule.	
Number of packet filters	'0001'B	1 packet filters	
Packet filter list	See table 4.8.2.2-1	Packet filter list #1	
QoS rule precedence	'1111 1111'B	255 (unique per PDU session; If the default QoS rule contains a match-all packet filter, then the highest precedence value shall be used for the default QoS rule.)	
Spare bit	'0'B		
Segregation	'0'B	Spare	
QoS flow identifier (QFI)	'00 0001'B	QFI 1 (Table 4.8.2.3-1)	

Table 4.8.2.1-2: Reference QoS rule #2

Derivation Path: TS 24.501, table 9.11.4.13			
Information Element	Value/remark	Comment	Condition
QoS rules			
QoS rule			
QoS rule identifier	'0000 0010'B	2 (unique per PDU session)	
Rule operation code	'001'B	Create new QoS rule	
DQR bit	'1'B	The QoS rule is the default QoS rule.	
Number of packet filters	'0001'B	1 packet filter	
Packet filter list	See table 4.8.2.2-1	Packet filter list #1	
QoS rule precedence	'1111 1111'B	255 (unique per PDU session; If the default QoS rule contains a match-all packet filter, then the highest precedence value shall be used for the default QoS rule.)	
Spare bit	'0'B		
Segregation	'0'B	Spare	
QoS flow identifier (QFI)	'00 0010'B	QFI 2 (Table 4.8.2.3-2)	

Table 4.8.2.1-3: Reference QoS rule #3

Derivation Path: TS 24.501, table 9.11.4.13			
Information Element	Value/remark	Comment	Condition
QoS rules			
QoS rule			
QoS rule identifier	'0000 0011'B	3 (unique per PDU session)	
Rule operation code	'001'B	Create new QoS rule	
DQR bit	'0'B	The QoS rule is the non-default QoS rule.	
Number of packet filters	'0001'B	1 packet filter	
Packet filter list	See table 4.8.2.2-2	Packet filter list #2	
QoS rule precedence	'0000 0011'B	3 (unique per PDU session)	
Spare bit	'0'B		
Segregation	'0'B	Spare	
QoS flow identifier (QFI)	'00 0001'B	QFI 1 (Table 4.8.2.3-1)	

Table 4.8.2.1-4: Reference QoS rule #4

Derivation Path: TS 24.501, table 9.11.4.13			
Information Element	Value/remark	Comment	Condition
QoS rules			
QoS rule			
QoS rule identifier	'0000 0100'B	4 (unique per PDU session)	
Rule operation code	'001'B	Create new QoS rule	
DQR bit	'1'B	The QoS rule is the default QoS rule.	
Number of packet filters	'0001'B	1 packet filter	
Packet filter list	See table 4.8.2.2-3	Packet filter list #3	
QoS rule precedence	'0000 00100'B	4 (unique per PDU session)	
Spare bit	'0'B		
Segregation	'0'B	Spare	
QoS flow identifier (QFI)	'00 0010'B	QFI 2 (Table 4.8.2.3-2)	

Table 4.8.2.1-4a: Reference QoS rule #4a

Derivation Path: TS 24.501, table 9.11.4.13			
Information Element	Value/remark	Comment	Condition
QoS rules			
QoS rule			
QoS rule identifier	'0000 1111'B	15 (unique per PDU session)	
Rule operation code	'001'B	Create new QoS rule	
DQR bit	'0'B	The QoS rule is the non-default QoS rule.	
Number of packet filters	'0001'B	1 packet filter	
Packet filter list	See table 4.8.2.2-3a	Packet filter list #3a	
QoS rule precedence	'0000 1111'B	15 (unique per PDU session)	
Spare bit	'0'B		
Segregation	'0'B	Spare	
QoS flow identifier (QFI)	'00 0100'B	QFI 4 (Table 4.8.2.3-2a)	

Table 4.8.2.1-5: Reference QoS rule #5

Derivation Path: TS 24.501, table 9.11.4.13			
Information Element	Value/remark	Comment	Condition
QoS rules			
QoS rule			
QoS rule identifier	'0000 0101'B	5 (unique per PDU session)	
Rule operation code	'001'B	Create new QoS rule	
DQR bit	'0'B	The QoS rule is the non-default QoS rule.	
Number of packet filters	'0001'B	1 packet filter	
Packet filter list	See table 4.8.2.2-4	Packet filter list #4	
QoS rule precedence	'0000 0101'B	5 (unique per PDU session)	
Spare bit	'0'B		
Segregation	'0'B	Spare	
QoS flow identifier (QFI)	'00 0101'B	QFI 5 (Table 4.8.2.3-3)	

Table 4.8.2.1-6: Reference QoS rule #6

Derivation Path: TS 24.501, table 9.11.4.13			
Information Element	Value/remark	Comment	Condition
QoS rules			
QoS rule			
QoS rule identifier	'0000 0110'B	6 (unique per PDU session)	
Rule operation code	'001'B	Create new QoS rule	
DQR bit	'0'B	The QoS rule is the non-default QoS rule.	
Number of packet filters	'0001'B	1 packet filter	
Packet filter list	See table 4.8.2.2-5	Packet filter list #5	
QoS rule precedence	'0000 0110'B	6 (unique per PDU session)	
Spare bit	'0'B		
Segregation	'0'B	Spare	
QoS flow identifier (QFI)	'00 0110'B	QFI 6 (Table 4.8.2.3-4)	

Table 4.8.2.1-7: Reference QoS rule #7

Derivation Path: TS 24.501, table 9.11.4.13			
Information Element	Value/remark	Comment	Condition
QoS rules			
QoS rule			IMS_VOICE
QoS rule identifier	'0000 0011'B	3 (unique per PDU session)	
Rule operation code	'001'B	Create new QoS rule	
DQR bit	'0'B	The QoS rule a non-default QoS rule.	
Number of packet filters	'0001'B	1 packet filter	
Packet filter list	See table 4.8.2.2-6	Packet filter list #6	
QoS rule precedence	'0000 0001'B	1 (unique per PDU session)	
Spare bit	'0'B		
Segregation	'0'B	Spare	
QoS flow identifier (QFI)	'00 0111'B	QFI 7 (Table 4.8.2.3-5)	
QoS rule			IMS_VIDEO
QoS rule identifier	'0000 0100'B	4 (unique per PDU session)	
Rule operation code	'001'B	Create new QoS rule	
DQR bit	'0'B	The QoS rule a non-default QoS rule.	
Number of packet filters	'0001'B	1 packet filter	
Packet filter list	See table 4.8.2.2-7	Packet filter list #7	
QoS rule precedence	'0000 0010'B	2 (unique per PDU session)	
Spare bit	'0'B		
Segregation	'0'B	Spare	
QoS flow identifier (QFI)	'00 1000'B	QFI 8 (Table 4.8.2.3-6)	

Condition	Explanation
IMS_VOICE	If this QoS rule is used to setup an IMS voice session
IMS_VIDEO	If this QoS rule is used to setup an IMS video session

Table 4.8.2.1-8: Reference QoS rule #8

Derivation Path: TS 24.501, table 9.11.4.13			
Information Element	Value/remark	Comment	Condition
QoS rules			
QoS rule			
QoS rule identifier	'0000 0111'B	7 (unique per PDU session)	
Rule operation code	'001'B	Create new QoS rule	
DQR bit	'1'B	The QoS rule is the default QoS rule.	
Number of packet filters	'0001'B	1 packet filter	
Packet filter list	See table 4.8.2.2-1	Packet filter list #1	
QoS rule precedence	'1111 1111'B	255 (unique per PDU session; If the default QoS rule contains a match-all packet filter, then the highest precedence value shall be used for the default QoS rule.)	
Spare bit	'0'B		
Segregation	'0'B	Spare	
QoS flow identifier (QFI)	'00 1001'B	QFI 9 (Table 4.8.2.3-7)	

#### 4.8.2.2 Reference packet filters

Table 4.8.2.2-1: Packet filter list #1

Derivation Path: TS 24.501, table 9.11.4.13			
Information Element	Value/remark	Comment	Condition
Packet filter list			
Packet filter direction	'11'B	bidirectional	
Packet filter identifier	'0001'B	Id 1	
Component type 1 ID	'0000 0001'B	Match-all type	

Table 4.8.2.2-2: Packet filter list #2

Derivation Path: TS 24.501, table 9.11.4.13			
Information Element	Value/remark	Comment	Condition
Packet filter list			
Packet filter direction	'11'B	bidirectional	
Packet filter identifier	'0010'B	Id 2	
Component type 1 ID	0 0 0 1 0 0 0 0	IPv4 remote address type	remotelIPv4
	0 0 1 0 0 0 0 1	IPv6 remote address type/prefix length type	remotelIPv6
Component type 1 Value	10.10.10.2 255.255.255.255	See Note 1	remotelIPv4
	C0C0:C0C0:C0C0:C002 C0C0:C0C0:C0C0:C0C0/ 64	See Note 1	remotelIPv6
Note 1: This IP address is also the address of an IP server able to send a flow of downlink IP packets to the UE. remotelIPv4 applies if the UE has acquired an IPv4 address only, remotelIPv6 applies if the UE has acquired an IPv6 address only, or both an IPv6 and an IPv4 address.			



Table 4.8.2.2-3: Packet filter list #3

Derivation Path: TS 24.501, table 9.11.4.13			
Information Element	Value/remark	Comment	Condition
Packet filter list			
Packet filter direction	'11'B	bidirectional	
Packet filter identifier	'0011'B	Id 3	
Component type 1 ID	0 0 0 1 0 0 0 0	IPv4 remote address type	remotelPv4
	0 0 1 0 0 0 0 1	IPv6 remote address type/prefix length type	remotelPv6
Component type 1 Value	10.10.10.3 255.255.255.255	See Note 1	remotelPv4
	C0C0:C0C0:C0C0:C003 C0C0:C0C0:C0C0:C0C0/ 64	See Note 1	remotelPv6
Note 1: This IP address is also the address of an IP server able to send a flow of downlink IP packets to the UE. remotelPv4 applies if the UE has acquired an IPv4 address only, remotelPv6 applies if the UE has acquired an IPv6 address only, or both an IPv6 and an IPv4 address.			

Table 4.8.2.2-3a: Packet filter list #3a

Derivation Path: TS 24.501, table 9.11.4.13			
Information Element	Value/remark	Comment	Condition
Packet filter list			
Packet filter direction	'11'B	bidirectional	
Packet filter identifier	'1111'B	Id 15	
Component type 1 ID	0 0 0 1 0 0 0 0	IPv4 remote address type	remotelPv4
	0 0 1 0 0 0 0 1	IPv6 remote address type/prefix length type	remotelPv6
Component type 1 Value	10.10.10.30 255.255.255.255	See Note 1	remotelPv4
	C0C0:C0C0:C0C0:C030 C0C0:C0C0:C0C0:C0C0/ 64	See Note 1	remotelPv6
Note 1: This IP address is also the address of an IP server able to send a flow of downlink IP packets to the UE. remotelPv4 applies if the UE has acquired an IPv4 address only, remotelPv6 applies if the UE has acquired an IPv6 address only, or both an IPv6 and an IPv4 address.			

Table 4.8.2.2-4: Packet filter list #4

Derivation Path: TS 24.501, table 9.11.4.13			
Information Element	Value/remark	Comment	Condition
Packet filter list			
Packet filter direction	'11'B	bidirectional	
Packet filter identifier	'0100'B	Id 4	
Component type 1 ID	0 0 0 1 0 0 0 0	IPv4 remote address type	remotelPv4
	0 0 1 0 0 0 0 1	IPv6 remote address type/prefix length type	remotelPv6
Component type 1 Value	10.10.10.4 255.255.255.255	See Note 1	remotelPv4
	C0C0:C0C0:C0C0:C004 C0C0:C0C0:C0C0:C0C0/ 64	See Note 1	remotelPv6
Note 1: This IP address is also the address of an IP server able to send a flow of downlink IP packets to the UE. remotelPv4 applies if the UE has acquired an IPv4 address only, remotelPv6 applies if the UE has acquired an IPv6 address only, or both an IPv6 and an IPv4 address.			

Table 4.8.2.2-5: Packet filter list #5

Derivation Path: TS 24.501, table 9.11.4.13			
Information Element	Value/remark	Comment	Condition
Packet filter list			
Packet filter direction	'11'B	bidirectional	
Packet filter identifier	'0101'B	Id 5	
Component type 1 ID	0 0 0 1 0 0 0 0	IPv4 remote address type	remotelPv4
	0 0 1 0 0 0 0 1	IPv6 remote address type/prefix length type	remotelPv6
Component type 1 Value	10.10.10.5 255.255.255.255	See Note 1	remotelPv4
	C0C0:C0C0:C0C0:C005 C0C0:C0C0:C0C0:C0C0/ 64	See Note 1	remotelPv6
Note 1: This IP address is also the address of an IP server able to send a flow of downlink IP packets to the UE. remotelPv4 applies if the UE has acquired an IPv4 address only, remotelPv6 applies if the UE has acquired an IPv6 address only, or both an IPv6 and an IPv4 address.			

Table 4.8.2.2-6: Packet filter list #6

Derivation Path: TS 24.501, table 9.11.4.13			
Information Element	Value/remark	Comment	Condition
Packet filter list			
Packet filter direction	'11'B	bidirectional	
Packet filter identifier	0110'B	Id 6	
Component type 1 ID	0 1 0 1 0 0 0 1	Remote port range type	
Component type 1 Value	media port	SS speech media port as used in the SDP negotiation (RTP remote port); see Note 1	
	media port + 1	RTCP remote port; see Note 1	
Component type 2 ID	0 0 1 1 0 0 0 0	Protocol identifier/Next header type	
Component type 2 Value	17	UDP	
Note 1: According to to TS 26.114 [45] and RFC 4566 [46] a "media port" can be understood as the transport port to which a media stream is sent.			

Table 4.8.2.2-7: Packet filter list #7

Derivation Path: TS 24.501, table 9.11.4.13			
Information Element	Value/remark	Comment	Condition
Packet filter list			
Packet filter direction	'11'B	bidirectional	
Packet filter identifier	0111'B	Id 7	
Component type 1 ID	0 1 0 1 0 0 0 1	Remote port range type	
Component type 1 Value	media port	SS video media port as used in the SDP negotiation (RTP remote port); see Note 1	
	media port + 1	RTCP remote port; see Note 1	
Component type 2 ID	0 0 1 1 0 0 0 0	Protocol identifier/Next header type	
Component type 2 Value	17	UDP	
Note 1: According to to TS 26.114 [45] and RFC 4566 [46] a "media port" can be understood as the transport port to which a media stream is sent.			

## 4.8.2.3 Reference QoS flow descriptions

Table 4.8.2.3-1: Reference QoS flow #1

Derivation Path: TS 24.501, table 9.11.4.12			
Information Element	Value/remark	Comment	Condition
QoS flow descriptions			
QoS flow description			
QFI	'00 0001'B	QFI 1	
Operation code	'001'B	Create new QoS flow description	
E bit	'1'B	Parameters list is included	
Number of parameters	'00 0001'B	1 parameter	
Number of parameters	'00 0010'B	2 parameters	Interworking with_EPS
5QI	'0000 1001'B	5QI 9	
EPS bearer identity	Any not yet assigned value different to '5'		Interworking with_EPS

Condition	Explanation
Interworking_with_EPS	If this flow is used in the Authorized QoS flow descriptions IE of a PDU SESSION ESTABLISHMENT ACCEPT message or PDU SESSION MODIFICATION COMMAND message also including the Mapped EPS bearer context IE.

Table 4.8.2.3-2: Reference QoS flow #2

Derivation Path: TS 24.501, table 9.11.4.12			
Information Element	Value/remark	Comment	Condition
QoS flow descriptions			
QoS flow description			
QFI	'00 0010'B	QFI 2	
Operation code	'001'B	Create new QoS flow description	
E bit	'1'B	Parameters list is included	
Number of parameters	'00 0001'B	1 parameter	
Number of parameters	'00 0010'B	2 parameters	Interworking with_EPS
5QI	'0000 0101'B	5QI 5	
EPS bearer identity	'0101 0000'B	EBI 5	Interworking with_EPS
EPS bearer identity	Any not yet assigned value different from '5'		Emergency Session AND Interworking with_EPS

Condition	Explanation
Interworking_with_EPS	If this flow is used in the Authorized QoS flow descriptions IE of a PDU SESSION ESTABLISHMENT ACCEPT message or PDU SESSION MODIFICATION COMMAND message also including the Mapped EPS bearer context IE.
EmergencySession	If this flow is used in the Authorized QoS flow descriptions IE of a PDU Session Establishment Accept message for an emergency PDU session

Table 4.8.2.3-2a: Reference QoS flow #2a

Derivation Path: TS 24.501, table 9.11.4.12			
Information Element	Value/remark	Comment	Condition
QoS flow descriptions			
QoS flow description			
QFI	'00 0100'B	QFI 4	
Operation code	'001'B	Create new QoS flow description	
E bit	'1'B	Parameters list is included	
Number of parameters	'00 0001'B	1 parameter	
5QI	'0000 0101'B	5QI 5	

Table 4.8.2.3-3: Reference QoS flow #3

Derivation Path: TS 24.501, table 9.11.4.12			
Information Element	Value/remark	Comment	Condition
QoS flow descriptions			
QoS flow description			
QFI	'00 0101'B	QFI 5	
Operation code	'001'B	Create new QoS flow description	
E bit	'1'B	Parameters list is included	
Number of parameters	'00 0001'B	1 parameter	
5QI	'0000 0101'B	5QI 5	

Table 4.8.2.3-4: Reference QoS flow #4

Derivation Path: TS 24.501, table 9.11.4.12			
Information Element	Value/remark	Comment	Condition
QoS flow descriptions			
QoS flow description			
QFI	'00 0110'B	QFI 6	
Operation code	'001'B	Create new QoS flow description	
E bit	'1'B	Parameters list is included	
Number of parameters	'00 0001'B	1 parameter	
5QI	'0000 0101'B	5QI 5	

Table 4.8.2.3-5: Reference QoS flow #5

Derivation Path: TS 24.501, table 9.11.4.12			
Information Element	Value/remark	Comment	Condition
QoS flow descriptions			
QoS flow description			
QFI	'00 0111'B	QFI 7	
Operation code	'001'B	Create new QoS flow description	
E bit	'1'B	Parameters list is included	
Number of parameters	'00 0101'B	5 parameter	
Number of parameters	'00 0110'B	6 parameters	Interworking _with_EPS
5QI	'0000 0001'B	5QI 1	
GFBR uplink	'040002'H	128 Kbps	
GFBR downlink	'040002'H	128 Kbps	
MFBR uplink	'040005'H	320 Kbps	
MFBR downlink	'040005'H	320 Kbps	
EPS bearer identity	Any not yet assigned value different to '5'	EBI 6	Interworking _with_EPS

Condition	Explanation
Interworking_with_EPS	If this flow is used in the Authorized QoS flow descriptions IE of a PDU SESSION ESTABLISHMENT ACCEPT message or PDU SESSION MODIFICATION COMMAND message also including the Mapped EPS bearer context IE.

Table 4.8.2.3-6: Reference QoS flow #6

Derivation Path: TS 24.501, table 9.11.4.12			
Information Element	Value/remark	Comment	Condition
QoS flow descriptions			
QoS flow description			
QFI	'00 1000'B	QFI 8	
Operation code	'001'B	Create new QoS flow description	
E bit	'1'B	Parameters list is included	
Number of parameters	'00 0101'B	5 parameter	
Number of parameters	'00 0110'B	6 parameters	Interworking _with_EPS
5QI	'0000 0010'B	5QI 2	
GFBR uplink	'020012'H	72 Kbps	
GFBR downlink	'020012'H	72 Kbps	
MFBR uplink	'030033'H	816 Kbps	
MFBR downlink	'030033'H	816 Kbps	
EPS bearer identity	Any not yet assigned value different to '5'	EBI 7	Interworking _with_EPS

Condition	Explanation
Interworking_with_EPS	If this flow is used in the Authorized QoS flow descriptions IE of a PDU SESSION ESTABLISHMENT ACCEPT message or PDU SESSION MODIFICATION COMMAND message also including the Mapped EPS bearer context IE.

Table 4.8.2.3-7: Reference QoS flow #7

Derivation Path: TS 24.501, table 9.11.4.12			
Information Element	Value/remark	Comment	Condition
QoS flow descriptions			
QoS flow description			
QFI	'00 1001'B	QFI 9	
Operation code	'001'B	Create new QoS flow description	
E bit	'1'B	Parameters list is included	
Number of parameters	'00 0001'B	1 parameter	
5QI	'0101 0010'B	5QI 82	

### 4.8.3 Common test UICC and USIM parameters

This clause defines default parameters for programming the elementary files of the test UICC when running conformance test cases defined in 3GPP TS 38.523-1[12].

#### 4.8.3.1 General

See clause 4.9.1 in 3GPP TS 36.508 [2] for the definition of test algorithm for

- authentication via EPC;
- authentication via 5GC using 5G AKA based primary authentication and key agreement procedure.
- authentication via 5GC using EAP-AKA' based primary authentication and key agreement procedure, further the Derivation of MSK, EMSK and other keys shall be as derived as clause 3.3 of IETF RFC 5448 [31], using Key derivation function HMAC-SHA-256 algorithm.

#### 4.8.3.2 Default parameters for the test USIM and ISIM

Same as clause 4.9.2 in 3GPP TS 36.508 [2] for

- authentication via EPC;
- authentication via 5GC using 5G AKA based primary authentication and key agreement procedure.
- authentication via 5GC using EAP-AKA' based primary authentication and key agreement procedure.

#### 4.8.3.3 Default settings for the Elementary Files (EFs)

Same as clause 4.9.3 in 3GPP TS 36.508 [2] for

- authentication via EPC;
- authentication via 5GC using 5G AKA based primary authentication and key agreement procedure
- authentication via 5GC using EAP-AKA' based primary authentication and key agreement procedure.

## 4.8.3.3.1 Modified contents of the USIM Elementary Files

**Table 4.8.3.3.1-1: EF<sub>UST</sub> (USIM Service Table)**

Services		Activated	Version	Condition
Service n°122	5GS Mobility Management Information	Optional		5GC
Service n°123	5GS Security Parameters	Optional		5GC
Service n°124	Subscription identifier privacy support	Optional		5GC
Service n°125	SUCI calculation by the USIM	Optional		5GC
Service n°126	UAC Access Identities Configuration	Optional		5GC
Service n°127	Control plane-based steering of UE in VPLMN	Optional		5GC
Service n°128	Call control on PDU Session by USIM	Optional		
Service n°129	5GS Operator PLMN List	Optional		
Note: Only 5GS related services indicated				

Condition	Explanation
5GC	Authentication via 5GC

4.8.3.3.2 Contents of Elementary Files at the DF<sub>5GS</sub> 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<sub>5GS3GPPLOC</sub> (5GS 3GPP location information)**

File size: 20 Bytes

Default values: Bytes 1 to 13 (HEX): FF FF FF FF FF FF FF FF FF FF FF FF FF (5G-GUTI)

Bytes 14 to 19 (HEX): 42 F6 18 FF FF FE (Last visited registered TAI in 5GS for 3GPP access)

Byte 20 (BIN): 00000001 (5GS update status for 3GPP access = "5U2 not updated")

Bytes 14 to 19: TAI-MCC = 246 (bytes 14 to 15) and TAI-MNC = 81 (byte 16) are frequently used. The TAC (bytes 17 to 19) is set to "FF FF FE" since this, in conjunction with byte 20 setting of "01", is used to ensure that the UE performs registration at the beginning of a test.

Bytes in this file (e.g. GUTI in bytes 1 to 13) may be updated as a result of a registration attempt by the UE.

**EF<sub>5GSN3GPPLOC</sub> (5GS non-3GPP location information)**

File size: 20 Bytes

Default values: Bytes 1 to 13 (HEX): FF FF FF FF FF FF FF FF FF FF FF FF FF (5G-GUTI)

Bytes 14 to 19 (HEX): 42 F6 18 FF FF FE (Last visited registered TAI in 5GS for non-3GPP access)

Byte 20 (BIN): 00000001 (5GS update status for non-3GPP access = "5U2 not updated")

Bytes 14 to 19: TAI-MCC = 246 (bytes 14 to 15) and TAI-MNC = 81 (byte 16) are frequently used. The TAC (bytes 17 to 19) is set to "FF FF FE" since this, in conjunction with byte 20 setting of "01", is used to ensure that the UE performs registration at the beginning of a test.

Bytes in this file (e.g. GUTI in bytes 1 to 13) may be updated as a result of a registration attempt by the UE.

**EF<sub>5GS3GPPNSC</sub> (5GS 3GPP Access NAS Security Context)**

The programming of this EF follows default parameter written in 3GPP TS 31.102 [33], annex E.

**EF<sub>5GSN3GPPNSC</sub> (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<sub>5GAUTHKEYS</sub> (5G authentication keys)**

The programming of this EF follows default parameter written in 3GPP TS 31.102 [33], annex E.

**EF<sub>UAC\_AIC</sub> (UAC Access Identities Configuration)**

The programming of this EF is a test house option.

**EF<sub>SUCI\_Calc\_Info</sub> (Subscription Concealed Identifier Calculation Information EF)**

The programming of this EF is a test house option.

**EF<sub>OPL5G</sub> (5GS Operator PLMN List)**

The programming of this EF follows default parameter written in 3GPP TS 31.102 [33], annex E.

**4.8.3.3.3 Default settings of UICC and USIM for V2X****EF<sub>UST</sub> (USIM Service Table):**

Same as clause 4.9.3.4 of TS 36.508 [2].

**EF<sub>VST</sub> (V2X Service Table)**

If service n°119 is "available" in the USIM Service Table, this file shall be present. This EF indicates the coding of the V2X management objects and which V2X services are available.

File size: 2 Bytes

Default values: Bytes 1 to 2 (HEX): 01 02

Coding of the V2X management objects is according to 3GPP TS 24.588 [113].

Service n°2 V2X policy configuration data over PC5 is supported.

**NOTE:** The default value for NR support of V2X services is different from that for LTE V2X in clause 4.9.3.4 of TS 36.508 [2].

**EF<sub>V2XP\_PC5</sub> (V2X data policy over PC5)**

If service n°2 is "available" in EF<sub>VST</sub>, this file shall be present. This EF contains V2X in 5GS UE policies over PC5. The format of the V2X in 5GS UE policies over PC5 are specified in 3GPP TS 24.588 [113].

The V2X in 5GS UE policies over PC5 contents:

Table 4.8.3.3.3-1: V2X data policy over PC5

Description	Value	M/O	Length (bytes)
V2X data policy over PC5 Tag	'A0'	M	1
Length	Note 1	M	Note 2
Validity timer	'FF FF FF FF FF FF FF FF FF FF'H	M	X1
Indicator bits	'1000 0000'B	M	1
Served by E-UTRA or served by NR Tag	'80'	M	1
Length	X2	M	Note 2
Served by E-UTRA or served by NR information	See Table 4.7.5.5-2	M	X2
Not served by E-UTRA and not served by NR Tag	'81'	O	1
Length	X3	O	Note 2
Not served by E-UTRA and not served by NR information	See Table 4.7.5.5-6	O	X3
V2X service identifier to Tx profiles mapping rules Tag	'82'	O	1
Length	X4	O	Note 2
V2X service identifier to Tx profiles mapping rules information	See Table 4.7.5.5-12		X4
Privacy config Tag	'83'	O	1
Length	X5	O	Note 2
Privacy config information	See Table 4.7.5.5-15		X5
V2X communication over PC5 in E-UTRA Tag	'84'	O	1
Length	X6	O	Note 2
V2X communication over PC5 in E-UTRA information	See Table 4.7.5.5-19	O	X6
V2X communication over PC5 in NR Tag	'85'	O	1
Length	X7	O	Note 2
V2X communication over PC5 in NR Information	See Table 4.7.5.5-31	O	X7
Note 1: This is the total size of the constructed TLV object.			
Note 2: The length is coded according to ISO/IEC 8825-1 [35].			

#### 4.8.4 DNN/APN configurations

The present subclause provides DNN/APN configurations required for flexible PDU/PDN handling. Table 4.8.4-1 provides configurations for the types on DNN/APN handled in the present version of the test specification. If in the future new PDU types need to be handled, then new DNN/APN configuration(s) may be added.

**Table 4.8.4-1: DNN/APN configurations, first set**

Configurations	Config #1	Config #2	Config #3
DNN/APN type	internet	ims	urllc
DNN/APN ID	pc_APN_ID_Internet	pc_APN_ID_IMS	pc_APN_ID_URLLC
5GC QoS rule	Reference QoS rule #1 as specified in subclause 4.8.2.1.	Reference QoS rule #2 as specified in subclause 4.8.2.1.	Reference QoS rule #8 as specified in subclause 4.8.2.1.
EPC default bearer context	Reference default EPS bearer context #1 as specified in TS 36.508 [10], Table 6.6.1-1.	Reference default EPS bearer context #2 as specified in TS 36.508 [10], Table 6.6.1-1.	N/A
EPC dedicated bearer context	Reference dedicated EPS bearer context #1 as specified in TS 36.508 [10], Table 6.6.2-1.	Reference dedicated EPS bearer context #4 as specified in TS 36.508 [10], Table 6.6.2-1.	N/A
IP address allocation	Yes	Yes	Yes
IMS registration	No	Yes NOTE 1	No
SST condition (NOTE 2)	SST_eMBB	SST_eMBB	SST_URLLC
NOTE 1: For PDN establishment the Procedure for IMS signalling according to TS 36.508 [2], subclause 4.5A.3 applies; for PDU establishment the Procedure for IMS signalling according to TS 34.229-5 [47], Annex A.2 applies.			
NOTE 2: The possible values of the SST condition are defined in Table 4.6.0.1-5.			

**Table 4.8.4-2: DNN/APN configurations, second set**

Configurations	Config #4	Config #5
DNN/APN type	miot	v2x
DNN/APN ID	pc_APN_ID_MIoT	pc_APN_ID_V2X
5GC QoS rule	FFS	FFS
EPC default bearer context	N/A	N/A
EPC dedicated bearer context	N/A	N/A
IP address allocation	Yes	Yes
IMS registration	No	No
SST condition (NOTE 1)	SST_MIoT	SST_V2X
NOTE 1: The possible values of the SST condition are defined in Table 4.6.0.1-5.		

## 4.8.5 URSP configurations

### 4.8.5.1 General

FFS

## 4.8.5.2 UE Route Selection Policy Rules

**Table 4.8.5.2-1: UE Route Selection Policy Rule #1**

Derivation Path: TS 24.526, Figure 5.2.1			
Information Element	Value/remark	Comment	Condition
URSP rules	1 entry		
URSP rule			
Rule Precedence	1		
Traffic descriptor			
Traffic descriptor component type identifier	'1000 1000'B	DNN type	
Traffic descriptor component			
Application descriptors	Not present		
IP descriptors	Not present		
Domain descriptors	Not present		
Non-IP descriptors	Not present		
DNN	FFS		
Connection Capabilities	Not present		
List of Route Selection Descriptors	Route Selection Descriptor #1	Table 4.8.5.3-1	

## 4.8.5.3 Route Selection Descriptors

**Table 4.8.5.3-1: Route Selection Descriptor #1**

Derivation Path: TS 24.526, Figure 5.2.4			
Information Element	Value/remark	Comment	Condition
Route Selection Descriptor Precedence	1		
Route selection descriptor contents			
Route selection descriptor component type identifier	'0000 0010'B		S-NSSAI type
	'0000 0100'B		DNN type
Route selection descriptor component			
SSC Mode Selection	Not present		
Network Slice Selection	FFS		S-NSSAI type
DNN Selection	FFS		DNN type
PDU Session Type Selection	Not present		
Non-Seamless Offload indication	Not present		
Access Type preference	Not present		

Condition	Explanation
S-NSSAI type	The Route selection descriptor component type is S-NSSAI
DNN type	The Route selection descriptor component type is DNN

## 4.9 Test procedures

### 4.9.1 Test procedure to check user plane connectivity on DRB#n

This procedure aims at checking whether the UE User Plane Access Stratum is capable of exchanging data on DRB#n (#n is the DRB Id specified in the test case when the present procedure is called). In case the UE supports IP, it is also checked that the UE IP stack is connected to the UE User Plane Access Stratum.

Table 4.9.1-1: Test procedure sequence

St	Procedure	Message Sequence		TP	Verdict
		U - S	Message/PDU/SDU		
-	EXCEPTION: Steps 1a1 to 1c2 describe behaviour that depends on the UE implementation; the "lower case letter" identifies a step sequence that take place depending on the UE implementation.	-	-	-	-
1a1	IF (pc_IP_Ping = TRUE AND pc_IPv4 = TRUE) THEN, the SS sends an ICMP Echo request to the IPv4 address assigned to the UE on DRB#n.	<--	ICMP ECHO REQUEST (NOTE 3)	-	-
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 (NOTE 3)	-	-
1b2	Check: Does the UE send an ICMPv6 Echo reply on DRB#n?	-->	ICMPv6 ECHO REPLY	-	P
1c1	ELSE, the SS transmits one IP Packet to verify data path on DRB#n. See NOTE 1, 2.	-	-	-	-
1c2	Check: Does UE send the IP Packet on DRB#n in the uplink?	-	-	-	P
<p>NOTE 1: A Test Loop is assumed to already have been closed.</p> <p>NOTE 2: When DRB#n is a dedicated bearer, the IP Packet shall match the packet filters as configured for DRB#n. When DRB#n is a default bearer, the IP Packet shall match none of the dedicated bearers associated to DRB#n (if any). (NOTE 4)</p> <p>NOTE 3: When DRB#n is a dedicated bearer, the source address of the ICMP/ICMPv6 ECHO REQUEST shall be the same as the remote address of the DL/UL packet filters. When DRB#n is a default bearer, the source address of the ICMP/ICMPv6 ECHO REQUEST shall be different than the remote address of the DL/UL packet filters for an associated dedicated bearer (if any). (NOTE 4)</p> <p>NOTE 4: For 5GC QoS rules and the associated packet filters are specified in clause 4.8.2. For EPC the TFTs and associated packet filters are specified in clause 6.6.2 of TS 36.508 [2] and the IP packet shall be as according to clause 7.14.2 of TS 36.523-3 [41].</p>					

**Table 4.9.1-1A: Test procedure sequence for Data path check for CA tests**

St	Procedure	Message Sequence		TP	Verdict
		U - S	Message/PDU/SDU		
-	EXCEPTION: Step 1 is only performed if SCell is not yet activated.	-	-	-	-
1	The SS transmits an Activation MAC control element to activate SCell.	<--	MAC PDU (Activation (C <sub>1</sub> =1))		
-	EXCEPTION: Steps 2a1 to 2c2 describe behaviour that depends on the UE implementation; the "lower case letter" identifies a step sequence that take place depending on the UE implementation.	-	-	-	-
2a1	IF (pc_IP_Ping = TRUE AND pc_IPv4 = TRUE) THEN, the SS sends an ICMP Echo request to the IPv4 address assigned to the UE on DRB#n on the SCell.	<--	ICMP ECHO REQUEST (NOTE 3)	-	-
2a2	Check: Does the UE send an ICMP Echo reply on DRB#n on the SpCell?	-->	ICMP ECHO REPLY	-	P
2b1	ELSE IF (pc_IP_Ping = TRUE AND (pc_IPv4 = FALSE AND pc_IPv6 = TRUE)) THEN, the SS sends an ICMPv6 Echo request to the IPv6 address assigned to the UE on DRB#n on the SCell.	<--	ICMPv6 ECHO REQUEST (NOTE 3)	-	-
2b2	Check: Does the UE send an ICMPv6 Echo reply on DRB#n on the SpCell?	-->	ICMPv6 ECHO REPLY	-	P
2c1	ELSE, the SS transmits one IP Packet to verify data path on DRB#n on the SCell. See NOTE 1, 2.	-	-	-	-
2c2	Check: Does UE send the IP Packet on DRB#n in the uplink on the SpCell?	-	-	-	P
NOTE 1: A Test Loop is assumed to already have been closed.					
NOTE 2: When DRB#n is a dedicated bearer, the IP Packet shall match the packet filters as configured for DRB#n. When DRB#n is a default bearer, the IP Packet shall match none of the dedicated bearers associated to DRB#n (if any). (NOTE 4)					
NOTE 3: When DRB#n is a dedicated bearer, the source address of the ICMP/ICMPv6 ECHO REQUEST shall be the same as the remote address of the DL/UL packet filters. When DRB#n is a default bearer, the source address of the ICMP/ICMPv6 ECHO REQUEST shall be different than the remote address of the DL/UL packet filters for an associated dedicated bearer (if any). (NOTE 4)					
NOTE 4: For 5GC QoS rules and the associated packet filters are specified in clause 4.8.2. For EPC the TFTs and associated packet filters are specified in clause 6.6.2 of TS 36.508 [2] and the IP packet shall be as according to clause 7.14.2 of TS 36.523-3 [41].					

## 4.9.2 Test procedure to activate UE Beamlock Test Function (UBF)

### 4.9.2.1 Initiation

UE is operating in FR2 in RRC\_CONNECTED state.

### 4.9.2.2 Procedure

**Table 4.9.2.2-1: Test procedure Sequence**

St	Procedure	Message Sequence		TP	Verdict
		U - S	Message/PDU/SDU		
1	SS request UE to activate UE beamlock function.	<--	ACTIVATE BEAMLOCK	-	-
2	UE confirms that UE beamlock function is activated	-->	ACTIVATE BEAMLOCK COMPLETE	-	-

## 4.9.2.3 Specific Message contents

Table 4.9.2.3-1: ACTIVATE BEAMLOCK

Derivation Path: 38.509 clause 6.4.1			
Information Element	Value/remark	Comment	Condition
Protocol discriminator	1 1 1 1		
Skip indicator	0 0 0 0		
Message type	1 0 1 0 0 0 0 0		
UE Beamlock test Function	0 0 0 0 0 0 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

Table 4.9.3.2-1: Test procedure Sequence

St	Procedure	Message Sequence		TP	Verdict
		U - S	Message/PDU/SDU		
1	SS request UE to deactivate UE beamlock function.	<--	DEACTIVATE BEAMLOCK	-	-
2	UE confirms that UE beamlock function is activated	-->	DEACTIVATE BEAMLOCK COMPLETE	-	-

## 4.9.3.3 Specific Message contents

Table 4.9.3.3-1: DEACTIVATE BEAMLOCK

Derivation Path: 38.509 clause 6.4.3			
Information Element	Value/remark	Comment	Condition
Protocol discriminator	1 1 1 1		
Skip indicator	0 0 0 0		
Message type	1 0 1 0 0 0 1 0		

Table 4.9.3.3-2: DEACTIVATE BEAMLOCK COMPLETE

Derivation Path: 38.509 clause 6.4.4			
Information Element	Value/remark	Comment	Condition
Protocol discriminator	1 1 1 1		
Skip indicator	0 0 0 0		
Message type	1 0 1 0 0 0 1 1		

#### 4.9.4 Test procedure to check that UE is in state 5GC RRC\_IDLE on a certain NR/NGC cell

##### 4.9.4.1 Scope

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

##### 4.9.4.2 Procedure description

###### 4.9.4.2.1 Initial conditions

As specified in the TC which calls the procedure in its entirety or refers to parts of it.

###### 4.9.4.2.2 Procedure

Table 4.9.4.2.2-1: Test procedure sequence

St	Procedure	Message Sequence		TP	Verdict
		U - S	Message/PDU/SDU		
1	Step 1 of Generic procedure for bringing the UE in RRC_CONNECTED state with connectivity NR as specified in Table 4.5.4.2-3 is performed.	-	-	-	-
2	Check: Does the UE transmit an <i>RRCSetupRequest</i> message on the cell specified in the test case?	-->	NR RRC: <i>RRCSetupRequest</i>	-	P
3-8	Steps 3-8 of Generic procedure for bringing the UE in RRC_CONNECTED state with connectivity NR as specified in Table 4.5.4.2-3 are performed.	-	-	-	-
-	EXCEPTION: Step 9a1 describes a step sequence depending on procedure parameters; the "lower case letter" identifies a step sequence that take place if a procedure parameter has a particular value	-	-	-	-
9a1	IF ' <i>connected without release</i> ' is not present THEN the SS transmits an <i>RRCRelease</i> message to release RRC connection and move the UE to RRC_IDLE.	<--	NR RRC: <i>RRCRelease</i>	-	-

###### 4.9.4.2.3 Specific Message content

As specified in the TC which calls the procedure in its entirety or refers to parts of it.



## 4.9.5 Test procedure to check that UE is camped on a new NR/NGC cell belonging to a new TA

### 4.9.5.1 Scope

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

### 4.9.5.2 Procedure description

#### 4.9.5.2.1 Initial conditions

As specified in the TC which calls the procedure in its entirety or refers to parts of it.

#### 4.9.5.2.2 Procedure sequence

**Table 4.9.5.2.2-1: Test procedure sequence mobility registration updating (TA update)**

St	Procedure	Message Sequence		TP	Verdict
		U - S	Message/PDU/SDU		
-	EXCEPTION: Unless otherwise stated all the messages below are transmitted on the cell specified in the test case.	-	-	-	-
1	The UE transmits an <i>RRCSetupRequest</i> message.	-->	NR RRC: <i>RRCSetupRequest</i>	-	-
2	SS transmit an <i>RRCSetup</i> message.	<--	NR RRC: <i>RRCSetup</i>	-	-
3	The UE transmits an <i>RRCSetupComplete</i> message to confirm the successful completion of the connection establishment and a REGISTRATION REQUEST message indicating "mobility registration updating" is sent to update the registration of the actual tracking area.	-->	NR RRC: <i>RRCSetupComplete</i> 5GMM: REGISTRATION REQUEST	-	-
4	SS sends a REGISTRATION ACCEPT message containing a 5G-GUTI. (NOTE 1, NOTE 2)	<--	NR RRC: <i>DLInformationTransfer</i> 5GMM: REGISTRATION ACCEPT	-	-
5	Check: Does the UE send a REGISTRATION COMPLETE?	-->	NR RRC: <i>ULInformationTransfer</i> 5GMM: REGISTRATION COMPLETE	-	P
-	EXCEPTION: Step 6a1 describes a step sequence depending on procedure parameters; the "lower case letter" identifies a step sequence that take place if a procedure parameter has a particular value	-	-	-	-
6a1	IF ' <i>connected without release</i> ' is not present THEN the SS transmits an <i>RRCRelease</i> message to release RRC connection and move the UE to RRC_IDLE.	<--	NR RRC: <i>RRCRelease</i>	-	-
NOTE 1: If a PDU session status IE was included in the REGISTRATION REQUEST message then the SS includes a PDU session status IE in the REGISTRATION ACCEPT message indicating that all the PDU sessions are active.					
NOTE 2: If the UE has indicated S1 mode supported then the SS shall indicate in the 5GS network feature support IE in the REGISTRATION ACCEPT message the IWK N26 bit set to "interworking without N26 not supported". The setting of the "interworking without N26 not supported" has been chosen to ensure that the UE is operating in the single-registration mode allowing for a clearly pre-determined UE behaviour.					

#### 4.9.5.2.3 Specific Message content

As specified in the TC which calls the procedure in its entirety or refers to parts of it.

## 4.9.6 Test procedures for Switch off / Power off UE

### 4.9.6.1 Switch off / Power off procedure in RRC\_IDLE

**Table 4.9.6.1-1: Switch off procedure in RRC\_IDLE**

Step	Procedure	Message Sequence	
		U - S	Message
-	EXCEPTION: Steps 1a1 to 1b1 describe behaviour that depends on the UE capability; the "lower case letter" identifies a step sequence that take place if [36] <i>pc_SwitchOnOff</i> or [37] <i>pc_USIM_Removal</i> is supported	-	-
1a1	IF <i>pc_SwitchOnOff</i> THEN switch off UE, IF <i>pc_USIM_Removal</i> THEN remove the USIM (Note 1)	-	-
1a2	UE transmits an <i>RRCSetupRequest</i> message.	-->	RRC: <i>RRCSetupRequest</i>
1a3	SS transmit an <i>RRCSetup</i> message.	<--	RRC: <i>RRCSetup</i>
-	EXCEPTION: Steps 1a4Aa1 to 1a4Aa5b1 specify optional behaviour if the UE has previously performed IMS registration	-	-
1a4Aa 1	The UE transmits an <i>RRCSetupComplete</i> message to confirm the successful completion of the connection establishment and to initiate the IMS signalling procedure by including the SERVICE REQUEST message.	-->	RRC: <i>RRCSetupComplete</i> 5GMM: SERVICE REQUEST
1a4Aa 2	The SS transmits a <i>SecurityModeCommand</i> message to activate AS security.	<--	RRC: <i>SecurityModeCommand</i>
1a4Aa 3	The UE transmits a <i>SecurityModeComplete</i> message and establishes the initial security configuration.	-->	RRC: <i>SecurityModeComplete</i>
1a4Aa 4	The SS transmits an <i>RRCReconfiguration</i> message and a SERVICE ACCEPT message to establish SRB2 and DRB.	<--	RRC: <i>RRCReconfiguration</i> 5GMM: SERVICE ACCEPT
-	EXCEPTION: In parallel to the event described in step 1a4Aa5 below, the generic test procedure in TS 34.229-5 [47] Annex A.11 may be performed.	-	-
1a4Aa 5	The UE transmits an <i>RRCReconfigurationComplete</i> message.	-->	RRC: <i>RRCReconfigurationComplete</i>
-	EXCEPTION: Steps 1a4Aa5a1 - 1a4Aa5b1 may be performed depending on UE implementation	-	-
1a4Aa 5a1	The UE transmits a PDU SESSION RELEASE REQUEST message.	-->	PDU SESSION RELEASE REQUEST
1a4Aa 5a2	PDU session release procedure defined in clause 4.9.21 of TS 38.508-1 [4] is performed	-	-
1a4Aa 5a3	The UE transmits a DEREGISTRATION REQUEST message.	-->	5GMM: DEREGISTRATION REQUEST
1a4Aa 5b1	The UE transmits a DEREGISTRATION REQUEST message	-	5GMM: DEREGISTRATION REQUEST
-	EXCEPTION: Step 1a4Ab1 below specifies the behaviour if the UE has not previously performed IMS registration	-	-
1a4Ab 1	The UE transmits an <i>RRCSetupComplete</i> message including the DEREGISTRATION REQUEST message.	-->	RRC: <i>RRCSetupComplete</i> 5GMM: DEREGISTRATION REQUEST
1a4	Void	-	-
1a5	The SS transmits an <i>RRCRelease</i> message	<--	RRC: <i>RRCRelease</i>
1b1	ELSE power off UE (Note 2)	-	-
Note 1: USIM removal is a feasible alternative to switch off UE.			
Note 2: Power off is used when UE don't support switch off or USIM removal, in which case no UE originated deregistration procedure is expected.			

## 4.9.6.2 Switch off / Power off procedure in RRC\_INACTIVE

## 4.9.6.2.1 Procedure

Table 4.9.6.2.1-1: Switch off procedure in RRC\_INACTIVE

Step	Procedure	Message Sequence	
		U - S	Message
-	EXCEPTION: Steps 1a1 to 1b1 describe behaviour that depends on the UE capability; the "lower case letter" identifies a step sequence that take place if [36] pc_SwitchOnOff or [37] pc_USIM_Removal is supported	-	-
1a1	IF pc_SwitchOnOff THEN switch off UE, IF pc_USIM_Removal THEN remove the USIM (Note 1)	-	-
1a2	UE transmits an <i>RRCResumeRequest</i> message.	-->	NR RRC: <i>RRCResumeRequest</i>
1a3	SS transmit an <i>RRCResume</i> message.	<--	NR RRC: <i>RRCResume</i>
-	EXCEPTION: Steps 1a4Aa1 to 1a4Aa5b1 specify optional behaviour if the UE has previously performed IMS registration	-	-
1a4Aa1	The UE transmits an <i>RRCResumeComplete</i> message to confirm the successful completion of the connection establishment and to initiate the IMS signalling procedure by including the SERVICE REQUEST message.	-->	RRC: <i>RRCResumeComplete</i> 5GMM: SERVICE REQUEST
1a4Aa2	The SS transmits a <i>SecurityModeCommand</i> message to activate AS security.	<--	RRC: <i>SecurityModeCommand</i>
1a4Aa3	The UE transmits a <i>SecurityModeComplete</i> message and establishes the initial security configuration.	-->	RRC: <i>SecurityModeComplete</i>
1a4Aa4	The SS transmits an <i>RRCReconfiguration</i> message and a SERVICE ACCEPT message to establish SRB2 and DRB.	<--	RRC: <i>RRCReconfiguration</i> 5GMM: SERVICE ACCEPT
-	EXCEPTION: In parallel to the event described in step 1a4Aa5 below, the generic test procedure in TS 34.229-5 [47] Annex A.11 may be performed.	-	-
1a4Aa5	The UE transmits an <i>RRCReconfigurationComplete</i> message.	-->	RRC: <i>RRCReconfigurationComplete</i>
-	EXCEPTION: Steps 1a4Aa5a1 - 1a4Aa5b1 may be performed depending on UE implementation	-	-
1a4Aa5a1	The UE transmits a PDU SESSION RELEASE REQUEST message.	-->	PDU SESSION RELEASE REQUEST
1a4Aa5a2	PDU session release procedure defined in clause 4.9.21 of TS 38.508-1 [4] is performed	-	-
1a4Aa5a3	The UE transmits a DEREGISTRATION REQUEST message.	-->	5GMM: DEREGISTRATION REQUEST
1a4Aa5b1	The UE transmits a DEREGISTRATION REQUEST message	-	5GMM: DEREGISTRATION REQUEST
-	EXCEPTION: Step 1a4Ab1 below specifies the behaviour if the UE has not previously performed IMS registration	-	-
1a4	Void	-	-
1a5	The SS transmits an <i>RRCRelease</i> message	<--	NR RRC: <i>RRCRelease</i>
1b1	ELSE power off UE (Note 2)	-	-
Note 1: USIM removal is a feasible alternative to switch off UE.			
Note 2: Power off is used when UE don't support switch off or USIM removal, in which case no UE originated deregistration procedure is expected.			

4.9.6.2.2 Specific Message contents

**Table 4.9.6.2.2-1: RRCResumeRequest**

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

4.9.6.3 Switch off / Power off procedure in RRC\_CONNECTED

**Table 4.9.6.3-1: Switch off procedure in RRC\_CONNECTED**

Step	Procedure	Message Sequence	
		U - S	Message
1a1-1a3	Void	-	-
2-4	Void	-	-
-	EXCEPTION: Steps 5a1 to 5b1 describe behaviour that depends on the UE implementation; the "lower case letter" identifies a step sequence that take place if a particular implementation is under test.	-	-
5a1	IF pc_SwitchOnOff THEN switch off UE, IF pc_USIM_Removal THEN remove the USIM (Note 1)		
-	EXCEPTION : Step 5a1Aa1 to 5a2Ab1 below specifies optional behaviour if the UE has previously performed IMS registration	-	-
5a1Aa1	The UE may perform the generic test procedure described in TS 34.229-5 [47] Annex A.11	-	-
-	EXCEPTION: Steps 5a2Aa1a1 – 5a2Ab1 may be performed depending on UE implementation	-	-
5a2Aa1a1	The UE transmits a PDU SESSION RELEASE REQUEST message.	-->	PDU SESSION RELEASE REQUEST
5a2Aa1a2	PDU session release procedure defined in clause 4.9.21 of TS 38.508-1 [4] is performed	-	-
5a2Aa1a3	The UE transmits a DEREGISTRATION REQUEST message.	-->	5GMM: DEREGISTRATION REQUEST
5a2Ab1	The UE transmits a DEREGISTRATION REQUEST message.	-->	5GMM: DEREGISTRATION REQUEST
5a3	The SS transmits an RRCRelease message.	<--	NR RRC: RRCRelease
5b1	ELSE power off UE (Note 2)	-	-
Note 1:	USIM removal is a feasible alternative to switch off UE.		
Note 2:	Power off is used when UE don't support switch off or USIM removal, in which case no UE originated deregistration procedure is expected.		

4.9.6.3A Switch off / Power off procedure in RRC\_CONNECTED with T3540 started

**Table 4.9.6.3A-1: Switch off procedure in RRC\_CONNECTED with T3540 started**

Step	Procedure	Message Sequence	
		U - S	Message

1	SS starts timer1 = T3540 (10 sec).	-	-
2	The SS locally releases the RRC connection.	-	-
3	SS waits for Timer1 expires. NOTE: On expiry of T3540 UE shall locally release the established N1 NAS signalling connection	-	-
4	The test procedure as described in Table 4.9.6.1-1: Switch off procedure in RRC_IDLE take place.	-	-

#### 4.9.6.4 Switch off / Power off procedure in State DEREGISTERED

**Table 4.9.6.4-1: Switch off procedure in State DEREGISTERED**

Step	Procedure	Message Sequence	
		U - S	Message
-	EXCEPTION: Steps 1a1 to 1b1 describe behaviour that depends on the UE capability; the "lower case letter" identifies a step sequence that take place if [36] pc_SwitchOnOff or [37] pc_USIM_Removal is supported	-	-
1a1	IF pc_SwitchOnOff THEN switch off UE (Note 1)	-	-
1b1	ELSE power off UE (Note 2)	-	-
Note 1: USIM removal is a feasible alternative to switch off UE.			
Note 2: Power off is used when UE don't support switch off or USIM removal.			

#### 4.9.6.5 Switch off / Power off procedure in WLAN Ipsec\_SA\_Established

**Table 4.9.6.5-1: Switch off procedure in Ipsec\_SA\_Established**

Step	Procedure	Message Sequence	
		U - S	Message
-	EXCEPTION: Steps 1a1 to 1b1 describe behaviour that depends on the UE capability; the "lower case letter" identifies a step sequence that take place if [30] pc_SwitchOnOff or [31] pc_USIM_Removal is supported	-	-
1a1	IF pc_SwitchOnOff THEN switch off UE (Note 1)	-	-
1a2	The UE transmits a DEREGISTRATION REQUEST message.	-->	5GMM: DEREGISTRATION REQUEST
1a3	The generic procedure for SS-requested IPsec Secure tunnel disconnection, specified in subclause 4.5A.5, takes place performing disconnection of security association	-	-
1b1	ELSE power off UE (Note 2)	-	-
Note 1: USIM removal is a feasible alternative to switch off UE.			
Note 2: Power off is used when UE don't support switch off or USIM removal, in which case no UE originated deregistration procedure is expected.			

### 4.9.7 Test procedure for UE for Tracking area updating / Inter-system change from N1 mode to S1 mode in 5GMM/EMM-IDLE mode

#### 4.9.7.1 Scope

This procedure aims at verifying that the UE performs a Tracking Area Update (TAU) procedure when it performs inter-system change from N1 mode to S1 mode in 5GMM/EMM-IDLE.

The procedure provides different security context handling options based on the condition parameters defined in Table 4.9.7.1-1.

**Table 4.9.7.1-1: Condition parameters**

<b>Condition</b>	<b>Explanation</b>
new security context	When this parameter is present the SS will establish and take into account a new security context.
existing EPS security context	When this parameter is present the SS will take into account an existing EPS security context. A prerequisite for using this condition is the existence of an EPS security context
NOTE 1: If none of the defined condition parameters is present when the procedure is referred to then the SS will apply mapped 5G security context. A prerequisite for using this condition is the existence of 5G security context.	

#### 4.9.7.2 Procedure description

##### 4.9.7.2.1 Initial conditions

###### System Simulator:

- 1 E-UTRA cell connected to EPC, default parameters, system information combination 31 as defined in TS 36.508 [2], subclause 4.4.3.1.1.

NOTE: Details about the NGC cell from which the UE will move to the E-UTRA cell are to be specified in the test.

###### User Equipment:

- The Test UICC shall be inserted. It shall provide relevant details on the EPC and 5GC.

All details required shall be explicitly specified in the TC which calls the procedure in its entirety or refers to parts of it.

4.9.7.2.2 Procedure sequence

**Table 4.9.7.2.2-1: Test procedure sequence UE Tracking area updating / inter-system change from N1 mode to S1 mode in EMM-IDLE mode**

St	Procedure	Message Sequence		TP	Verdict
		U - S	Message/PDU/SDU		
-	EXCEPTION: Unless otherwise stated all the messages below are transmitted on the cell specified in the test case.	-	-	-	-
1	The UE transmits an <i>RRCCoNNECTIONRequest</i> message on the cell specified in the test case.	-->	RRC: <i>RRCCoNNECTIONRequest</i>	-	-
2	SS transmits an <i>RRCCoNNECTIONSetup</i> message.	<--	RRC: <i>RRCCoNNECTIONSetup</i>	-	-
3	The UE transmits an <i>RRCCoNNECTIONSetupComplete</i> message to confirm the successful completion of the connection establishment and a TRACKING AREA UPDATE REQUEST message is sent to update the registration of the actual tracking area. For some consequences related to the content of the TRACKING AREA UPDATE REQUEST message see the Notes in Table 4.9.7.2.3-1.	-->	RRC: <i>RRCCoNNECTIONSetupComplete</i> NAS: TRACKING AREA UPDATE REQUEST	-	-
-	EXCEPTION: Steps 4a1-4b2 describe a step sequence depending on procedure parameters; the "lower case letter" identifies a step sequence that take place if a procedure parameter has a particular value	-	-	-	-
4a1	IF ' <i>new security context</i> ' THEN the SS transmits an AUTHENTICATION REQUEST message to initiate the EPS authentication and AKA procedure.	<--	RRC: <i>DLInformationTransfer</i> NAS: AUTHENTICATION REQUEST	-	-
4a2	The UE transmits an AUTHENTICATION RESPONSE message and establishes mutual authentication.	-->	RRC: <i>ULInformationTransfer</i> NAS: AUTHENTICATION RESPONSE	-	-
4a3	The SS transmits a NAS SECURITY MODE COMMAND message to activate NAS security.	<--	RRC: <i>DLInformationTransfer</i> NAS: SECURITY MODE COMMAND	-	-
4a4	The UE transmits a NAS SECURITY MODE COMPLETE message and establishes the initial security configuration.	-->	RRC: <i>ULInformationTransfer</i> NAS: SECURITY MODE COMPLETE	-	-
4b1	IF ' <i>existing EPS security context</i> ' THEN the SS transmits a NAS SECURITY MODE COMMAND message to activate NAS security.	<--	RRC: <i>DLInformationTransfer</i> NAS: SECURITY MODE COMMAND	-	-
4b2	The UE transmits a NAS SECURITY MODE COMPLETE message and establishes the initial security configuration.	-->	RRC: <i>ULInformationTransfer</i> NAS: SECURITY MODE COMPLETE	-	-
-	EXCEPTION: If none of the branches 4a or 4b takes place then the SS shall apply mapped 5G security context, otherwise the SS shall apply the security context depending on the branch.	-	-	-	-
5	SS responds with TRACKING AREA UPDATE ACCEPT message.	<--	RRC: <i>DLInformationTransfer</i> NAS: TRACKING AREA UPDATE ACCEPT	-	-
6	Check: Does the UE transmit TRACKING AREA UPDATE COMPLETE?	-->	RRC: <i>ULInformationTransfer</i> NAS: TRACKING AREA UPDATE COMPLETE	-	P
7a1	Void	-	-	-	-
-	EXCEPTION: Steps 8a1 to 8b2a8 describe a step sequence depending on test case scenario; the left-most "lower case letter" identifies a step sequence that take place if the test procedure is called in a particular scenario. (NOTE 1)	-	-	-	-



8a1	IF <i>Interworking without N26 interface supported</i> THEN  The generic procedure for UE-requested PDN connection establishment, specified in subclause 4.5A.2B, takes place performing establishment of UE-requested PDN connection(s) with ExpectedNumberOfNewPDNConnections = pc_noOf_PDNsSameConnection.	-	-	-	-
-	EXCEPTION: Steps 8a2a1 to 8a2b1 describe a step sequence depending on test case scenario; the right-most "lower case letter" identifies a step sequence that take place if the UE performs a specific action.	-	-	-	-
8a2a 1	IF pc_noOf_PDNsNewConnection>0 THEN the SS transmits an <i>RRCConnectionRelease</i> message to release RRC connection and moves the UE to RRC_IDLE.	<--	RRC: <i>RRCConnectionRelease</i>	-	-
8a2a 2	The procedure E-UTRA RRC_IDLE Unrestricted nr PDN Extension as specified in Table 4.5.2.2-6 takes place.	-	-	-	-
8a2b 1	ELSE IF <i>connected without release</i> is not present THEN, the SS transmits an <i>RRCConnectionRelease</i> message to release RRC connection and move to E-UTRA RRC_IDLE (State 2).	<--	RRC: <i>RRCConnectionRelease</i>	-	-
8b1	ELSE (i.e. 'Interworking without N26 interface not supported')  The generic procedure for UE-requested PDN connection establishment, specified in subclause 4.5A.2B, takes place performing establishment of UE-requested PDN connection(s) with ExpectedNumberOfNewPDNConnections = pc_noOf_PDNsSameConnection with the exception that IF step 2b1, Table 4.5A.2B.2.2-2 takes place THEN the SS shall not assign Fail but continue with the next step in the test sequence not expecting any additional connection establishment to take place (NOTE 2).	-	-	-	-
-	EXCEPTION: Steps 8b2a1 to 8b2b1 describe a step sequence depending on test case scenario; the right-most "lower case letter" identifies a step sequence that take place if the UE performs a specific action.	-	-	-	-
8b2a 1	IF pc_noOf_PDNsNewConnection>0 THEN the SS transmits an <i>RRCConnectionRelease</i> message to release RRC connection and moves the UE to RRC_IDLE.	<--	RRC: <i>RRCConnectionRelease</i>	-	-
8b2a 2	The procedure E-UTRA RRC_IDLE Unrestricted nr PDN Extension as specified in table 4.5.2.2-6 takes place.  For the referred in step 7, Table 4.5.2.2-6, generic procedure for UE-requested PDN connection establishment, specified in subclause 4.5A.2B, IF step 2b1, Table 4.5A.2B.2.2-2 takes place THEN the SS shall not assign Fail but continue with the next step in the test sequence not expecting any additional connection establishment to take place (NOTE 2).	-	-	-	-

8b2b 1	ELSE IF <i>connected without release</i> is not present THEN, the SS transmits an <i>RRCConnectionRelease</i> message to release RRC connection and move to E-UTRA RRC_IDLE (State 2).	<--	RRC: <i>RRCConnectionRelease</i>	-	-
<p>NOTE 1: The NWK will indicate whether Interworking without N26 interface is supported in the REGISTRATION ACCEPT message, IE '5GS network feature support', IWK N26 bit. Consequently which branch would the procedure sequence go through will depend on the content of the REGISTRATION ACCEPT message applicable to e.g. the test case which calls the present test procedure.</p> <p>NOTE 2: Depending on UE implementation and/or NWK behaviour, the UE may transfer some PDU sessions into PDN connections without re-establishing those utilising the relevant mapped QoS provided in the PDU SESSION ESTABLISHMENT ACCEPT message when the UE was on the NR cell. This will result in the number of established PDNs, if any, being lower than the <i>pc_noOf_PDNsSameConnection</i> or the <i>pc_noOf_PDNsNewConnection</i> which the UE will establish upon initial attach to the EPS.</p>					

#### 4.9.7.2.3 Specific Message content

Default message contents as specified in TS 36.508 [2] with the following exceptions.

**Table 4.9.7.2.3-1: TRACKING AREA UPDATE REQUEST (Step 3, Table 4.9.7.2.2-1)**

Derivation Path: TS 36.508 [2], Table 4.7.2-27, condition NR.			
Information Element	Value/remark	Comment	Condition
EPS update type			
EPS update type Value	'000'B or '001'B or '010'B	'TA updating' or 'combined TA/LA updating' or 'combined TA/LA updating with IMSI attach'	
"Active" flag	Any value		
NAS key set identifier	the eKSI indicating the 5G NAS security context value assigned at the initial registration when the UE entered N1		
Old GUTI	GUTI, mapped from the 5G-GUTI assigned at the initial registration when the UE entered N1		
Additional GUTI	Not present or any allowed value		
Last visited registered TAI	The TAI the last visited E-UTRA Cell belonged to, if any. Not included if the UE does not have last stored EPC TAI.		
UE radio capability information update needed	'1'B	UE radio capability information update needed	First-N1-to-S1
EPS bearer context status	Present, Content not checked	EBI corresponding to active PDN connections (transferred PDU Sessions) need to be set to 1 (NOTE 2)	
Old GUTI type	"Native GUTI"		
UE status	"UE is in 5GMM-REGISTERED state"		
NOTE 1: The message shall be integrity protected using the 5GS security context available in the UE.			
NOTE 2: There will be no PDN connection establishment nor explicit bearer configuration for the transferred PDU sessions. This means that the UE has created locally the default bearer context and the dedicated bearer context(s) based on the parameters of the mapped bearer contexts or the associations between QoS flow and mapped bearer in the PDU session. Although the contents of the IE is not required to be verified for PASS/FAIL purposes, the provided information shall be taken into account for building any subsequent RRC Reconfiguration message, and can be used e.g. for SS configuration purposes as well.			

Condition	Explanation
First-N1-to-S1	First N1 to S1 transition following UE registration in N1 mode

**Table 4.9.7.2.3-2: AUTHENTICATION REQUEST (Step 4a1, Table 4.9.7.2.2-1)**

Derivation Path: TS 36.508 [2], Table 4.7.2-7.			
Information Element	Value/remark	Comment	Condition
NAS key set identifier <sub>ASME</sub>			
NAS key set identifier	An arbitrarily selected value between '000'B and '110'B, different from the valid NAS key set identifier of the UE if such a value exists.	Value shall be different to the 5G NAS security context value if there is one assigned	

**Table 4.9.7.2.3-3: SECURITY MODE COMMAND (Step 4a3, Table 4.9.7.2.2-1)**

Derivation Path: TS 36.508 [2], Table 4.7.2-19.			
Information Element	Value/remark	Comment	Condition
NAS key set identifier <sub>ASME</sub>			
NAS key set identifier	The 4G NAS key set identifier assigned in step 4a1.		

**Table 4.9.7.2.3-4: SECURITY MODE COMMAND (Step 4b1, Table 4.9.7.2.2-1)**

Derivation Path: TS 36.508 [2], Table 4.7.2-19.			
Information Element	Value/remark	Comment	Condition
NAS key set identifier <sub>ASME</sub>			
NAS key set identifier	The 4G NAS key set identifier assigned in the latest Authentication procedure.		

**Table 4.9.7.2.3-5: TRACKING AREA UPDATE ACCEPT (Step 5, Table 4.9.7.2.2-1)**

Derivation Path: TS 36.508 [2], Table 4.7.2-24, condition NR.			
Information Element	Value/remark	Comment	Condition
EPS network feature support	The IWK N26 (octet 4, bit 7) set to '1'		<i>Interworking without N26 interface supported</i>

## 4.9.8 Test procedure for Registration Reject

### 4.9.8.1 Scope

The purpose of this procedure is to reject the registration request, with a specific cause value, which may allow fields to be cleared in the USIM.

### 4.9.8.2 Procedure description

#### 4.9.8.2.1 Initial conditions

As specified in the TC which calls the procedure in its entirety or refers to parts of it.

## 4.9.8.2.2 Procedure sequence

**Table 4.9.8.2.2-1: Procedure for Registration Reject**

St	Procedure	Message Sequence	
		U – S	Message
1	The UE transmits an <i>RRCSetupRequest</i> message.	-->	NR RRC: <i>RRCSetupRequest</i>
2	The SS transmits an <i>RRCSetup</i> message.	<--	NR RRC: <i>RRCSetup</i>
3	The UE transmits an <i>RRCSetupComplete</i> message and a REGISTRATION REQUEST message.	-->	NR RRC: <i>RRCSetupComplete</i> 5GMM: REGISTRATION REQUEST
4	The SS transmits an AUTHENTICATION REQUEST message including EAP-Request/AKA'-Challenge or 5G AKA Challenge.	<--	5GMM: AUTHENTICATION REQUEST
5	The UE transmits an AUTHENTICATION RESPONSE message including EAP-Response/AKA'-Challenge or 5G AKA Response.	-->	5GMM: AUTHENTICATION RESPONSE
6	The SS transmits a SECURITY MODE COMMAND message including EAP-Success if EAP-AKA' used.	<--	5GMM: SECURITY MODE COMMAND
7	The UE transmits a SECURITY MODE COMPLETE message.	-->	5GMM: SECURITY MODE COMPLETE
8	The SS transmits a REGISTRATION REJECT message with the cause value set to <i>Reject Cause</i> .	<--	5GMM: REGISTRATION REJECT
9	The SS transmits an <i>RRCRelease</i> message	<--	RRC: <i>RRCRelease</i>
10	Test procedure for Switch off / Power off in State DEREGISTERED as specified in subclause 4.9.6.4		

## 4.9.8.2.3 Specific message contents

**Table 4.9.8.2.3-1: REGISTRATION REJECT**

Derivation Path: table 4.7.1-9			
Information Element	Value/remark	Comment	Condition
5GMM cause	Set according to <i>Reject Cause</i>	<i>Reject Cause</i> set to #6 Illegal ME as default	

## 4.9.9 Test procedure for UE for Tracking area updating / Inter-system change from S1 mode to N1 mode in 5GMM/EMM-IDLE mode

## 4.9.9.1 Scope

This procedure aims at verifying that the UE performs a Mobility and periodic registration update procedure when it performs inter-system change from S1 mode to N1 mode in 5GMM/EMM-IDLE.

## 4.9.9.2 Procedure description

## 4.9.9.2.1 Initial conditions

## System Simulator:

- 1 NGC Cell connected to 5GC, default parameters, system information combination NR-6 as defined in subclause 4.4.3.1.2.

NOTE: Details about the E-UTRA cell from which the UE will move to the NGC cell are to be specified in the test.

## User Equipment:

- The Test UICC shall be inserted. It shall provide relevant details on the EPC and 5GC.

All details required shall be explicitly specified in the TC which calls the procedure in its entirety or refers to parts of it.

4.9.9.2.2 Procedure sequence

**Table 4.9.9.2.2-1: Test procedure sequence UE Tracking area updating / inter-system change from S1 mode to N1 mode in 5GMM/EMM-IDLE mode**

St	Procedure	Message Sequence		TP	Verdict
		U - S	Message/PDU/SDU		
-	EXCEPTION: Unless otherwise stated all the messages below are transmitted on the cell specified in the test case.	-	-	-	-
1-3	Steps 1-3 from the mobility and periodic registration update procedure as described in Table 4.9.5.2.2-1 are performed. For some consequences related to the content of the REGISTRATION REQUEST message sent in step 1 see the Notes in Table 4.9.9.2.3-1.	-	-	-	-
4	The SS transmits a DLInformationTransfer message and an AUTHENTICATION REQUEST message.	<--	NR RRC: DLInformationTransfer 5GMM: AUTHENTICATION REQUEST	-	-
5	The UE transmits an ULInformationTransfer message and an AUTHENTICATION RESPONSE message.	-->	NR RRC: ULInformationTransfer 5GMM: AUTHENTICATION RESPONSE	-	-
6	The SS transmits a DLInformationTransfer message and a SECURITY MODE COMMAND message.	<--	NR RRC: DLInformationTransfer 5GMM: SECURITY MODE COMMAND	-	-
7	The UE transmits an ULInformationTransfer message and a SECURITY MODE COMPLETE message.	-->	NR RRC: ULInformationTransfer 5GMM: SECURITY MODE COMPLETE	-	-
8	The SS transmits a SecurityModeCommand message.	<--	NR RRC: SecurityModeCommand	-	-
9	The UE transmits a SecurityModeComplete message.	-->	NR RRC: SecurityModeComplete	-	-
10-11	Steps 4-5 of Table 4.9.5.2.2-1 of the test procedure are performed.	-	-	-	-
12a1 - 13a1	Void	-	-	-	-
-	EXCEPTION: Steps 14a1 to 14b2b1 describe a step sequence depending on test case scenario; the "lower case letter" identifies a step sequence that take place if the test procedure is called in a particular scenario. (NOTE 1)	-	-	-	-
14a1	IF <i>Interworking without N26 interface supported</i> THEN  The generic procedure for UE-requested PDU session establishment, specified in subclause 4.5A.2, takes place performing establishment of UE-requested PDU session(s) with ExpectedNumberOfNewPDUSessions = pc_noOf_PDUsSameConnection. The UE may attempt to transfer some of the existing in S1 PDN connection(s) in which case in the PDU SESSION ESTABLISHMENT REQUEST message the request type shall be set to "existing PDU session" (NOTE 3).	-	-	-	-
-	EXCEPTION: Steps 14a2a1 to 14a2b1 describe a step sequence depending on test case scenario; the "lower case letter" identifies a step sequence that take place if the UE performs a specific action.	-	-	-	-
14a2 a1	IF pc_noOf_PDUsNewConnection > 0 THEN the SS transmits an <i>RRCRelease</i> message to release RRC connection and moves the UE to RRC_IDLE.	<--	NR RRC: <i>RRCRelease</i>	-	-
14a2 a2	The procedure NR RRC_IDLE Extension as specified in table 4.5.2.2-4 takes place.	-	-	-	-



14a2 b1	ELSE IF <i>connected without release</i> is not present THEN, the SS transmits an <i>RRCConnectionRelease</i> message to release RRC connection and move the UE to RRC_IDLE.	<--	NR RRC: <i>RRCRelease</i>	-	-
-	EXCEPTION: In parallel to the events described in step 14b1 below, the steps specified in Table 4.9.9.2.2-2 may take place.	-	-	-	-
14b1	ELSE (i.e. 'Interworking without N26 interface not supported') The generic procedure for UE-requested PDU session establishment, specified in subclause 4.5A.2, takes place performing establishment of UE-requested PDU session(s) with ExpectedNumberOfNewPDUSessions = pc_noOf_PDUsSameConnection with the exception that IF step 2b1, Table 4.5A.2.2.2-2 takes place THEN the SS shall not assign Fail but continue with the next step in the test sequence not expecting any additional session establishment to take place (NOTE 2).	-	-	-	-
-	EXCEPTION: Steps 14b2a1 to 14b2b1 describe a step sequence depending on test case scenario; the "lower case letter" identifies a step sequence that take place if the UE performs a specific action.	-	-	-	-
14b2 a1	IF pc_noOf_PDUsNewConnection > 0 THEN the SS transmits an <i>RRCRelease</i> message to release RRC connection and move the UE to RRC_IDLE.	<--	NR RRC: <i>RRCRelease</i>	-	-
14b2 a2	The procedure NR RRC_IDLE Extension as specified in Table 4.5.2.2-4 takes place.  For the referred in step 8, Table 4.5.2.2-4, generic procedure for UE-requested PDU session establishment, specified in subclause 4.5A.2, IF step 2b1, Table 4.5A.2.2.2-2 takes place THEN the SS shall not assign Fail but continue with the next step in the test sequence not expecting any additional session establishment to take place (NOTE 2).	-	-	-	-
14b2 b1	ELSE IF <i>connected without release</i> is not present THEN, the SS transmits an <i>RRCRelease</i> message to release RRC connection and move the UE to RRC_IDLE.	<--	NR RRC: <i>RRCRelease</i>	-	-
<p>NOTE 1: The NWK will indicated whether Interworking without N26 interface is supported in the REGISTRATION ACCEPT message, IE '5GS network feature support', IWK N26 bit. Consequently which branch would the procedure sequence go through will depend on the content of the REGISTRATION ACCEPT message applicable to e.g. the test case which calls the present test procedure.</p> <p>NOTE 2: Depending on UE implementation and/or NWK behaviour, the UE may transfer some PDN connections into PDU sessions without re-establishing them with the relevant mapping provided in the ACTIVATE DEFAULT EPS BEARER CONTEXT REQUEST message. This will result in the number of connection modifications, if any, being lower than the pc_noOf_PDUsSameConnection or the pc_noOf_PDUsNewConnection which the UE will establish upon initial attach to the 5GS.</p> <p>NOTE 3: Since the MME does not provide the UE with the mapped PDU session for a PDN connection, the UE does not know whether interworking to 5GS is supported for a PDN connection for which the UE assigned a PDU Session identity before attempting to transfer the PDN connection from S1 mode to N1 mode. It is up to UE implementation to decide which PDN connection(s) to be attempted to transfer from S1 mode to N1 mode, e.g. based on UE policy or UE local configuration. (see TS 24.501 [22], subclause 6.1.4.2)</p>					

**Table 4.9.9.2.2-2: Parallel behaviour**

St	Procedure	Message Sequence		TP	Verdict
		U - S	Message		
-	EXCEPTION: Step 1 describe a step sequence depending on test case scenario; the "lower case letter" identifies a step sequence that take place if the UE performs a specific action. NOTE 2, NOTE 3	-	-	-	-
1	IF this is the first time in a test case that the UE moves from S1 to N1 THEN  the generic procedure for Procedure for UE-requested PDU session modification after the first S1 to N1 mode change / Single-registration mode with N26, specified in subclause 4.5A.2C, takes place with ExpectedNumberOfPDUSessionModifications=(pc_noOf_PDUsSameConnection+pc_noOf_PDUsNewConnection), with the exception that IF step 2b1, Table 4.5A.2C.2.2-2 takes place THEN the SS shall not assign Fail but continue with the next step in the test sequence not expecting any additional session modifications to take place (NOTE 1).				
<p>NOTE 1: Depending on UE implementation and/or NWK behaviour, the UE may transfer with modification some PDN connections into PDU sessions without re-establishing them with the relevant mapping provided in the ACTIVATE DEFAULT EPS BEARER CONTEXT REQUEST message. This will result in the number of session modifications, if any, being lower than the pc_noOf_PDUsSameConnection+pc_noOf_PDUsNewConnection.</p> <p>NOTE 2: Whether this is the first time in a test case that the UE moves from S1 to N1 depends on the test scenario (including what happens in the preamble of the test).</p> <p>NOTE 3: It is assumed that the PDU session modification for all transferred PDUs will happen on the same connection with the mobility and periodic registration update procedure.</p> <p>NOTE 4: For PDN connections which will be transferred, tests calling the present procedure shall ensure that: - For each PDN connection established during the UE registration to the EPS, the ACTIVATE DEFAULT EPS BEARER CONTEXT REQUEST message which corresponds to the default EPS bearer of the PDN connectivity being activated, contains the Protocol configuration options IE or the Extended protocol configuration options IE with mapped 5GS PDU a session-AMBR and QoS rule(s).</p>					

4.9.9.2.3 Specific Message content

**Table 4.9.9.2.3-1: REGISTRATION REQUEST (step 1, Table 4.9.9.2.2-1; step 3, Table 4.9.5.2.2-1)**

Derivation Path: Table 4.7.1-6.			
Information Element	Value/remark	Comment	Condition
5GS registration type	'00xxx010'	mobility registration updating x - not checked	
ngKSI			
NAS key set identifier	KSI <sub>AMF</sub> that was created when the UE last registered to 5GCN		Registered_Previously_on_5GCN
	'111'B	No key	Not_Registered_Previously_on_5GCN
TSC	'0'B	native security context (for KSI <sub>AMF</sub> )	Registered_Previously_on_5GCN
	Not applicable	TSC does not apply for NAS key set identifier value "111"	Not_Registered_Previously_on_5GCN
5GS mobile identity	5G-GUTI mapped from the 4G-GUTI assigned when the UE last registered to EPC E-UTRA		
Non-current native NAS key set identifier	Not present		
5GMM capability	'1'	S1 mode supported	
Last visited registered TAI	The TAI the last visited NGC Cell belonged to, if any. Not included if the UE does not have last stored 5GC TAI.		
S1 UE network capability			
All octets with the exception of octet 8, bit 8 and octet 9, bit 6	Not checked		
Extended protocol configuration options (ePCO) (octet 8, bit 8)	'1'	Extended protocol configuration options IE supported	
N1 mode supported (N1mode) (octet 9, bit 6)	'1'	N1 mode supported	
PDU session status	Any allowed value	(NOTE 1)	
UE status	"UE is in EMM-REGISTERED state"		
Additional GUTI	5G-GUTI assigned when the UE last registered to 5GCN		Registered_Previously_on_5GCN
	Not present		Not_Registered_Previously_on_5GCN
EPS NAS message container	TRACKING AREA UPDATE REQUEST message	See Table 4.9.9.2.3-2	
EPS bearer context status	Not present	(NOTE 2)	

NOTE 1: The UE includes the PDU session status IE indicating the status of the PDU session(s) mapped during the inter-system change from S1 mode to N1 mode from the PDN connection(s) for which the EPS indicated that interworking to 5GS is supported, if any. This means that the UE has created locally the default bearer context and the dedicated bearer context(s) based on the parameters of the mapped bearer contexts or the associations between QoS flow and mapped bearer in the PDN connection. Although the contents of the IE is not required to be verified for PASS/FAIL purposes, the provided information shall be taken into account for building any subsequent RRC Reconfiguration message, and can be used e.g. for SS configuration purposes as well.
NOTE 2: The UE is assumed NOT to have locally deactivated EPS bearer context(s) for which interworking to 5GS is supported while the UE was in S1 mode without notifying the network.

Condition	Explanation
Not_Registered_Previously_on_5GCN	UE has not_registered_previously_on_5GCN. UE does not have valid 5G NAS security context and 5G-GUTI.
Registered_Previously_on_5GCN	UE has registered_previously_on_5GCN. UE have valid 5G NAS security context and 5G-GUTI

**Table 4.9.9.2.3-2: TRACKING AREA UPDATE REQUEST (Table 4.9.9.2.3-1)**

Derivation Path: TS 36.508 [2], Table 4.7.2-27.			
Information Element	Value/remark	Comment	Condition
EPS update type			
EPS update type Value	'000'B	TA updating	
"Active" flag	'0'B	No Bearer Establishment requested	
NAS key set identifier	the eKSI for the current EPS security context		
TSC	'0'B		
	'1'B		Mapped EPS security context
Old GUTI	4G-GUTI assigned when the UE last registered to EPC E-UTRA		
UE network capability	Not present		
Last visited registered TAI	Not present		
DRX parameter	Not present		
UE radio capability information update needed	Not present		
EPS bearer context status	Not present		
MS network capability	Not present		
Old location area identification	Not present		
TMSI status	Not present		
Mobile station classmark 2	Not present		
Mobile station classmark 3	Not present		
Supported Codecs	Not present		
Additional update type	Not present		
Voice domain preference and UE's usage setting	Not present		
Old GUTI type	Not present		
Device properties	Not present		
MS network feature support	Not present		
TMSI based NRI container	Not present		
T3324 value	Not present		
T3412 extended value	Not present		
Extended DRX parameters	Not present		
UE additional security capability	Not present		
UE status	Not present		
Additional information requested	Not present		
NOTE: The message shall be integrity protected using the current EPS security context.			

Condition	Explanation
Mapped EPS security context	When explicitly specified by the test case in which the message is used.

**Table 4.9.9.2.3-3: REGISTRATION ACCEPT (step 10, Table 4.9.9.2.2-1; step 4, Table 4.9.5.2.2-1)**

Derivation Path: Table 4.7.1-7.			
Information Element	Value/remark	Comment	Condition
5GS network feature support	The IWK N26 (octet 4, bit 7) set to '1'		<i>Interworking without N26 interface supported</i>

## 4.9.10 Test procedure to check that the UE is in RRC\_CONNECTED state

### 4.9.10.1 Scope

This procedure aims at checking whether the UE is in the RRC\_CONNECTED state.

### 4.9.10.2 Procedure description

#### 4.9.10.2.1 Initial conditions

As specified in the TC which calls the procedure in its entirety or refers to parts of it.

#### 4.9.10.2.2 Procedure

**Table 4.9.10.2.2-1: Test procedure sequence**

St	Procedure	Message Sequence		TP	Verdict
		U - S	Message/PDU/SDU		
1	The SS sends <i>UECapabilityEnquiry</i> message to the UE.	<--	NR RRC: <i>UECapabilityEnquiry</i>	-	-
2	Check: Does the UE send a <i>UECapabilityInformation</i> message?	-->	NR RRC: <i>UECapabilityInformation</i>		P

#### 4.9.10.2.3 Specific Message content

None.

## 4.9.11 Test procedure for IMS Emergency call or eCall over IMS establishment in 5GC with IMS emergency registration

### 4.9.11.1 Scope

This procedure aims at verifying the UE establishment of IMS Emergency call or an eCall in 5GC when the UE is in 5GMM-IDLE and when IMS emergency registration is required e.g. under Normal Service conditions.

The procedure provides different emergency or eCall establishment options based on the condition parameters defined in Table 4.9.11.1-1.

**Table 4.9.11.1-1: Condition parameters**

<b>Condition</b>	<b>Explanation</b>
emergency call	When this parameter is present the TC has triggered the UE to initiate an emergency call. (NOTE)
eCall	When this parameter is present the TC has triggered the UE to initiate an eCall.
NOTE:	If this generic procedure is referred in test case without any condition, emergency call shall be used as default.

The trigger to initiate MO call will be part of test case from where the generic procedure is called.

#### 4.9.11.2 Procedure description

##### 4.9.11.2.1 Initial conditions

#### System Simulator:

- 1 NR Cell connected to 5GC, default parameters.

#### User Equipment:

- The Test UICC shall be inserted. It shall provide Emergency Numbers.

The procedure assumes that the UE is in test state 1N-A, subclause 4.4A.2 on the NR Cell. All necessary details required shall be explicitly specified in the TC which calls the procedure in its entirety or refers to parts of it.

## 4.9.11.2.2 Procedure sequence

**Table 4.9.11.2.2-1: Test procedure sequence UE IMS Emergency call or eCall over IMS establishment in 5GC with IMS emergency registration**

St	Procedure	Message Sequence		TP	Verdict
		U - S	Message/PDU/SDU		
-	EXCEPTION: Unless otherwise stated all the messages below are transmitted on the cell specified in the test case.	-	-	-	-
1	The UE transmits an <i>RRCSetupRequest</i> message with 'establishmentCause' set to 'emergency'.	-->	NR RRC: <i>RRCSetupRequest</i>	-	P
2	The SS transmits an <i>RRCSetup</i> message.	<--	NR RRC: <i>RRCSetup</i>	-	-
3	The UE transmits an <i>RRCSetupComplete</i> message and a SERVICE REQUEST message with 'Service type' set to 'emergency services'.	-->	NR RRC: <i>RRCSetupComplete</i> 5GMM: SERVICE REQUEST	-	P
4	The SS transmits a <i>SecurityModeCommand</i> message.	<--	NR RRC: <i>SecurityModeCommand</i>	-	-
5	The UE transmits a <i>SecurityModeComplete</i> message.	-->	NR RRC: <i>SecurityModeComplete</i>	-	-
6	The SS transmits an <i>RRCReconfiguration</i> message and a SERVICE ACCEPT message to establish SRB2 and DRB.	<--	NR RRC: <i>RRCReconfiguration</i> 5GMM: SERVICE ACCEPT	-	-
-	EXCEPTION: Depending upon UE implementation, steps 7 and 8 can occur in any order	-	-	-	-
7	The UE transmits an <i>RRCReconfigurationComplete</i> message.	-->	NR RRC: <i>RRCReconfigurationComplete</i>	-	-
8	The UE transmits an UL NAS TRANSPORT message with 'Request type' set to 'initial emergency request', and, a PDU SESSION ESTABLISHMENT REQUEST.	-->	NR RRC: <i>ULInformationTransfer</i> 5GMM: UL NAS TRANSPORT 5GSM: PDU SESSION ESTABLISHMENT REQUEST	-	P
-	EXCEPTION: In parallel to the events described in steps 9-10 below the events specified in steps 1a1 to 2 of Table 4.9.11.2.2-2 take place.	-	-	-	-
9	The SS transmits an <i>RRCReconfiguration</i> message and an PDU SESSION ESTABLISHMENT ACCEPT	<--	NR RRC: <i>RRCReconfiguration</i> 5GMM: DL NAS TRANSPORT 5GSM: PDU SESSION ESTABLISHMENT ACCEPT	-	-
10	The UE transmits an <i>RRCReconfigurationComplete</i> message.	-->	NR RRC: <i>RRCReconfigurationComplete</i>	-	-
-	EXCEPTION: In parallel to the events described in steps 11-13 below the events specified in steps 3 of Table 4.9.11.2.2-2 take place.	-	-	-	-
11	The SS transmits an <i>RRCReconfiguration</i> message and an PDU SESSION MODIFICATION COMMAND.	<--	NR RRC: <i>RRCReconfiguration</i> 5GMM: DL NAS TRANSPORT 5GSM: PDU SESSION MODIFICATION COMMAND	-	-
-	EXCEPTION: Depending upon UE implementation, steps 12 and 13 can occur in any order.	-	-	-	-
12	The UE transmits an <i>RRCReconfigurationComplete</i> message.	-->	NR RRC: <i>RRCReconfigurationComplete</i>	-	-
13	The UE transmits an <i>ULInformationTransfer</i> message and an PDU SESSION MODIFICATION COMPLETE message.	-->	NR RRC: <i>ULInformationTransfer</i> 5GMM: UL NAS TRANSPORT 5GSM: PDU SESSION MODIFICATION COMPLETE	-	P



**Table 4.9.11.2.2-2: IMS signalling and Emergency call establishment**

St	Procedure	Message Sequence		TP	Verdict
		U - S	Message/PDU/SDU		
-	EXCEPTION: Step 1a1 describes behaviour depending UE implementation; the "lower case letter" identifies a step sequence that take place if the UE performs a specific action.	-	-	-	-
1a1	The generic procedure for IP address allocation in the user plane specified in subclause 4.5A.3 takes place.	-	-	-	-
2	Generic Test Procedure for IMS Emergency registration / 5GS as defined in TS 34.229-5 [47], annex A.3 is performed.	-	-	-	-
-	EXCEPTION: Steps 3a1-3b1 describe a step sequence depending on procedure parameters; the "lower case letter" identifies a step sequence that take place if a procedure parameter has a particular value	-	-	-	-
3a1	IF 'emergency call' THEN Generic test procedure for setting up IMS Emergency Voice Call / 5G as defined in TS 34.229-5 [47], annex A.6 is performed.	-	-	-	-
3b1	IF 'eCall' THEN Generic test procedure for NR eCall Setup and MSD Update, steps 1-3, as defined in Annex A.23 of TS 34.229-5 [47] is performed.	-	-	-	-

## 4.9.11.2.3 Specific Message content

All specific message contents shall be according subclause 4.6 and 4.7 with the exceptions below.

**Table 4.9.11.2.3-1: SIB1 (at any time prior and during the procedure, Table 4.9.11.2.2-1)**

Derivation Path: Table 4.6.1-28.			
Information Element	Value/remark	Comment	Condition
SIB1 ::= SEQUENCE {			
ims-EmergencySupport	Present	true	
}			

**Table 4.9.11.2.3-2: RRCSetupRequest (step 1, Table 4.9.11.2.2-1)**

Derivation Path: Table 4.6.1-23.			
Information Element	Value/remark	Comment	Condition
RRCSetupRequest ::= SEQUENCE {			
rrcSetupRequest SEQUENCE {			
establishmentCause	emergency		
}			
}			

**Table 4.9.11.2.3-3: SERVICE REQUEST (step 3, Table 4.9.11.2.2-1)**

Derivation Path: Table 4.7.1-16.			
Information Element	Value/remark	Comment	Condition
Service type	'0011'B	emergency services	

**Table 4.9.11.2.3-4: UL NAS TRANSPORT (step 8, Table 4.9.11.2.2-1)**

Derivation Path: Table 4.7.1-10, condition INITIAL_PDU_REQUEST.			
Information Element	Value/remark	Comment	Condition
Request type	'011'B	initial emergency request	
S-NSSAI	Not Present		
DNN	Not Present		

**Table 4.9.11.2.3-5: PDU SESSION ESTABLISHMENT REQUEST (step 8, Table 4.9.11.2.2-1)**

Derivation Path: Table 4.7.2-1.			
Information Element	Value/remark	Comment	Condition
PDU session ID	A value that is not currently being used by another PDU session		
PTI	A value currently not used		
SSC mode	'001'B	SSC mode 1	

**Table 4.9.11.2.3-6: DL NAS TRANSPORT (step 9, Table 4.9.11.2.2-1)**

Derivation Path: Table 4.7.1-11, condition 5GSM_MESSAGE.			
--	--	--	--

**Table 4.9.11.2.3-7: PDU SESSION ESTABLISHMENT ACCEPT (step 9, Table 4.9.11.2.2-1)**

Derivation Path: Table 4.7.2-2.			
Information Element	Value/remark	Comment	Condition
Selected SSC mode	'001'B	SSC mode 1	
Authorized QoS rules	Reference QoS rule #2 as defined in Table 4.8.2.1-2.		
Authorized QoS flow descriptions	Reference QoS flow #2 as defined in Table 4.8.2.3-2.		

**Table 4.9.11.2.3-8: RRCReconfiguration (step 9, Table 4.9.11.2.2-1)**

Derivation Path: Table 4.8.1-1: RRCReconfiguration-DRB (1, 0)			
---	--	--	--

**Table 4.9.11.2.3-9: PDU SESSION MODIFICATION COMMAND (step 11, Table 4.9.11.2.2-1)**

Derivation Path: Table 4.7.2-2.			
Information Element	Value/remark	Comment	Condition
PDU session ID	Same value as sent in PDU SESSION ESTABLISHMENT REQUEST message.		
Authorized QoS rules	Reference QoS rule #7 as defined in Table 4.8.2.1-7 using condition IMS_VOICE.		
Authorized QoS flow descriptions	Reference QoS flow #5 as defined in Table 4.8.2.3-5.		

**Table 4.9.11.2.3-10: RRCReconfiguration (step 11, Table 4.9.11.2.2-1)**

Derivation Path: 4.8.1-1C RRCReconfiguration-Speech
---

**Table 4.9.11.2.3-11: INVITE (step 3a1, Table 4.9.11.2.2-2)**

Derivation Path: TS 34.229-5 [47], Annex A.6, Step 1 with conditions A7 and A28
---

## 4.9.12 Test procedure for IMS Emergency call establishment in 5GC without IMS emergency registration

### 4.9.12.1 Scope

This procedure aims at verifying the UE establishment of IMS Emergency call in 5GC without the need for IMS emergency registration to take place beforehand e.g. under Limited Service or SIM/USIM not available, the SIM/USIM is considered invalid by the UE conditions.

### 4.9.12.2 Procedure description

#### 4.9.12.2.1 Initial conditions

#### System Simulator:

- 1 NR Cell connected to 5GC, default parameters unless specified otherwise. PLMN/TAI which the cell belongs to, shall be explicitly specified in the TC which calls the procedure in its entirety or refers to parts of it

#### User Equipment:

- Whether the Test UICC shall be inserted or not, and, its settings e.g. in regard to the provision of Emergency Numbers, shall be explicitly specified in the TC which calls the procedure in its entirety or refers to parts of it.

4.9.12.2.2 Procedure sequence

**Table 4.9.12.2.2-1: Test procedure sequence UE IMS Emergency call establishment in 5GC without IMS emergency registration**

St	Procedure	Message Sequence		TP	Verdict
		U - S	Message/PDU/SDU		
-	EXCEPTION: Unless otherwise stated all the messages below are transmitted on the cell specified in the test case.	-	-	-	-
1	Check: Does the UE transmits an <i>RRCSetupRequest</i> message with 'establishmentCause' set to 'emergency'?	-->	NR RRC: <i>RRCSetupRequest</i>	-	P
2	The SS transmits an <i>RRCSetup</i> message.	<--	NR RRC: <i>RRCSetup</i>	-	-
3	Check: Does the UE transmits an <i>RRCSetupComplete</i> message and a REGISTRATION REQUEST message with 'Service type' set to 'emergency services'?	-->	NR RRC: <i>RRCSetupComplete</i> 5GMM: REGISTRATION REQUEST	-	P
4	The SS transmits a <i>DLInformationTransfer</i> message and a SECURITY MODE COMMAND message with 'Selected NAS security algorithms' set to "null integrity protection algorithm" (5G-IA0), "null ciphering algorithm" (5G-EA0).	<--	NR RRC: <i>DLInformationTransfer</i> 5GMM: SECURITY MODE COMMAND	-	-
5	The UE transmits an <i>ULInformationTransfer</i> message and a SECURITY MODE COMPLETE message.	-->	NR RRC: <i>ULInformationTransfer</i> 5GMM: SECURITY MODE COMPLETE	-	P
6	The SS transmits a <i>SecurityModeCommand</i> message with cipheringAlgorithm set to 'NULL' ciphering algorithm (nea0) and integrityProtAlgorithm set to 'NULL' integrity protection algorithm (nia0).	<--	NR RRC: <i>SecurityModeCommand</i>	-	-
7	The UE transmits a <i>SecurityModeComplete</i> message.	-->	NR RRC: <i>SecurityModeComplete</i>	-	P
8	The SS transmits a <i>UECapabilityEnquiry</i> message.	<--	NR RRC: <i>UECapabilityEnquiry</i>	-	-
9	The UE transmits a <i>UECapabilityInformation</i> message.	-->	NR RRC: <i>UECapabilityInformation</i>	-	-
10	The SS transmits a <i>DLInformationTransfer</i> message and a REGISTRATION ACCEPT message.	<--	NR RRC: <i>DLInformationTransfer</i> 5GMM: REGISTRATION ACCEPT	-	-
11	The UE transmits an <i>ULInformationTransfer</i> message and a REGISTRATION COMPLETE message.	-->	NR RRC: <i>ULInformationTransfer</i> 5GMM: REGISTRATION COMPLETE	-	-
12	Void	-	-	-	-
13	Check: Does the UE transmits an UL NAS TRANSPORT message with 'Request type' set to 'initial emergency request', and, a PDU SESSION ESTABLISHMENT REQUEST?	-->	NR RRC: <i>ULInformationTransfer</i> 5GMM: UL NAS TRANSPORT 5GSM: PDU SESSION ESTABLISHMENT REQUEST	-	P
-	EXCEPTION: In parallel to the events described in steps 14-15 below the events specified in steps 1a1 of Table 4.9.12.2.2-2 take place.	-	-	-	-
14	The SS transmits an <i>RRCReconfiguration</i> message and an PDU SESSION ESTABLISHMENT ACCEPT to establish SRB2 and DRB.	<--	NR RRC: <i>RRCReconfiguration</i> 5GMM: DL NAS TRANSPORT 5GSM: PDU SESSION ESTABLISHMENT ACCEPT	-	-
15	The UE transmits an <i>RRCReconfigurationComplete</i> message.	-->	NR RRC: <i>RRCReconfigurationComplete</i>	-	-
-	EXCEPTION: In parallel to the events described in steps 16-18 below the events specified in steps 2 of Table 4.9.12.2.2-2 take place.	-	-	-	-
16	The SS transmits an <i>RRCReconfiguration</i> message and an PDU SESSION MODIFICATION COMMAND.	<--	NR RRC: <i>RRCReconfiguration</i> 5GMM: DL NAS TRANSPORT 5GSM: PDU SESSION MODIFICATION COMMAND	-	-
-	EXCEPTION: Depending upon UE implementation, steps 17 and 18 can occur in any order.	-	-	-	-
17	The UE transmits an <i>RRCReconfigurationComplete</i> message.	-->	NR RRC: <i>RRCReconfigurationComplete</i>	-	-

18	Check: Does the UE transmits an ULInformationTransfer message and an PDU SESSION MODIFICATION COMPLETE message?	-->	NR RRC: ULInformationTransfer 5GMM: UL NAS TRANSPORT 5GSM: PDU SESSION MODIFICATION COMPLETE	-	P
----	---	-----	--	---	---

**Table 4.9.12.2.2-2: IMS signalling and Emergency call establishment**

St	Procedure	Message Sequence		TP	Verdict
		U - S	Message/PDU/SDU		
-	EXCEPTION: Step 1a1 describes behaviour depending UE implementation; the "lower case letter" identifies a step sequence that take place if the UE performs a specific action.	-	-	-	-
1a1	The generic procedure for IP address allocation in the user plane specified in subclause 4.5A.3 takes place.	-	-	-	-
2	Generic test procedure for setting up IMS Emergency Voice Call as defined in TS 34.229-5 [47] annex A.6 is performed.	-	-	-	-

4.9.12.2.3 Specific Message content

All specific message contents shall be according subclause 4.6 and 4.7 with the exceptions below.

NOTE: Some of the specific message contents provided below assume that the UE is in the state 5GMM-DEREGISTERED.LIMITED-SERVICE or 5GMM-REGISTERED.LIMITED-SERVICE (e.g. the selected cell over 3GPP access is in a forbidden PLMN or is in a forbidden tracking area respectively), or, in 5GMM-DEREGISTERED.NO-SUPI as defined in TS 24.501 [28], subclauses 5.1.3.2.1.3.3 and 5.1.3.2.1.3.6 respectively. All necessary details required shall be explicitly specified in the TC which calls the procedure in its entirety or refers to parts of it.

**Table 4.9.12.2.3-1: SIB1 (at any time prior and during the procedure, Table 4.9.12.2.2-1)**

Derivation Path: Table 4.6.1-28.			
Information Element	Value/remark	Comment	Condition
SIB1 ::= SEQUENCE {			
ims-EmergencySupport	Present	true	
}			

**Table 4.9.12.2.3-2: RRCSetupRequest (step 1, Table 4.9.12.2.2-1)**

Derivation Path: Table 4.6.1-23.			
Information Element	Value/remark	Comment	Condition
RRCSetupRequest ::= SEQUENCE {			
rrcSetupRequest SEQUENCE {			
establishmentCause	emergency		
}			
}			

**Table 4.9.12.2.3-3: REGISTRATION REQUEST (step 3, Table 4.9.12.2.2-1)**

Derivation Path: Table 4.7.1-6, condition EMERGENCY.
--

**Table 4.9.12.2.3-4: SECURITY MODE COMMAND (step 4, Table 4.9.12.2.2-1)**

Derivation Path: Table 4.7.1-25.			
Information Element	Value/remark	Comment	Condition
Selected NAS security algorithms			
Type of ciphering algorithm	5G-EA0	null ciphering algorithm	
Type of integrity protection algorithm	5G-IA0	null integrity protection algorithm	
ngKSI			
NAS key set identifier	'000'B		

**Table 4.9.12.2.3-5: SecurityModeCommand (step 6, Table 4.9.12.2.2-1)**

Derivation Path: Table 4.6.1-25.			
Information Element	Value/remark	Comment	Condition
SecurityModeCommand ::= SEQUENCE {			
criticalExtensions CHOICE {			
securityModeCommand SEQUENCE {			
securityConfigSMC SEQUENCE {			
securityAlgorithmConfig SEQUENCE {			
cipheringAlgorithm	nea0	'NULL' ciphering algorithm	
integrityProtAlgorithm	nia0	'NULL' integrity protection algorithm	
}			
}			
}			
}			

**Table 4.9.12.2.3-6: REGISTRATION ACCEPT (step 10, Table 4.9.12.2.2-1)**

Derivation Path: Table 4.7.1-7, condition EMERGENCY.			

**Table 4.9.12.2.3-7: UL NAS TRANSPORT (step 13, Table 4.9.12.2.2-1)**

Derivation Path: Table 4.7.1-10, condition INITIAL_PDU_REQUEST.			
Information Element	Value/remark	Comment	Condition
Request type	'011'B	initial emergency request	
S-NSSAI	Not Present		
DNN	Not Present		

**Table 4.9.12.2.3-8: PDU SESSION ESTABLISHMENT REQUEST (step 13, Table 4.9.12.2.2-1)**

Derivation Path: Table 4.7.2-1.			
Information Element	Value/remark	Comment	Condition
PDU session ID	A value that is not currently being used by another PDU session		
PTI	A value currently not used		
SSC mode	'001'B	SSC mode 1	

**Table 4.9.12.2.3-9: DL NAS TRANSPORT (step 14, Table 4.9.12.2.2-1)**

Derivation Path: Table 4.7.1-11, condition 5GSM_MESSAGE.
--

**Table 4.9.12.2.3-10: PDU SESSION ESTABLISHMENT ACCEPT (step 14, Table 4.9.12.2.2-1)**

Derivation Path: Table 4.7.2-2.			
Information Element	Value/remark	Comment	Condition
Selected SSC mode	'001'B	SSC mode 1	
Authorized QoS rules	Reference QoS rule #2 as defined in Table 4.8.2.1-2.		
Authorized QoS flow descriptions	Reference QoS flow #2 as defined in Table 4.8.2.3-2.		

**Table 4.9.12.2.3-11: RRCReconfiguration (step 14, Table 4.9.12.2.2-1)**

Derivation Path: Table 4.8.1-1: RRCReconfiguration-SRB2-DRB (1, 0)
--

**Table 4.9.12.2.3-12: PDU SESSION MODIFICATION COMMAND (step 16, Table 4.9.12.2.2-1)**

Derivation Path: Table 4.7.2-2.			
Information Element	Value/remark	Comment	Condition
PDU session ID	Same value as sent in PDU SESSION ESTABLISHMENT REQUEST message.		
Authorized QoS rules	Reference QoS rule #7 as defined in Table 4.8.2.1-7 using condition IMS_VOICE.		
Authorized QoS flow descriptions	Reference QoS flow #5 as defined in Table 4.8.2.3-5.		

**Table 4.9.12.2.3-13: RRCReconfiguration (step 16, Table 4.9.12.2.2-1)**

Derivation Path: 4.8.1-1C RRCReconfiguration-Speech
---

**Table 4.9.12.2.3-14: INVITE (step 2, Table 4.9.12.2.2-2)**

Derivation Path: TS 34.229-5 [47], Annex A.6, Step 1 with conditions A6 and A28
---

## 4.9.12A Test procedure for IMS MO Emergency call release

### 4.9.12A.1 Scope

This procedure aims at verifying the UE initiated release of an ongoing IMS Emergency call in 5GC

### 4.9.12A.2 Procedure description

#### 4.9.12A.2.1 Initial conditions

System Simulator:

- 1 NR Cell connected to 5GC, default parameters.



User Equipment:

- The Test UICC shall be inserted. It shall provide Emergency Numbers.

The procedure assumes that the UE is in test state 3N-A, subclause 4.4A.2 on the NR Cell with an active IMS emergency call. All necessary details required shall be explicitly specified in the TC which calls the procedure in its entirety or refers to parts of it.

#### 4.9.12A.2.2 Procedure sequence

**Table 4.9.12A.2.2-1: Test procedure sequence IMS MO Emergency call release**

St	Procedure	Message Sequence		TP	Verdict
		U - S	Message/PDU/SDU		
1-2	Generic test procedure for MO Release of Voice Call / 5GS, as defined in Annex A.7 of TS 34.229-5 [47], is performed.	-	-	-	-
3	Void	-	-	-	-
4	The SS transmits a <i>RRCReconfiguration</i> message and a PDU SESSION RELEASE COMMAND message.	<--	NR RRC: <i>RRCReconfiguration</i> NR NAS: PDU SESSION RELEASE COMMAND	-	-
4A	The UE transmits a <i>RRCReconfigurationComplete</i>	-	NR RRC: <i>RRCReconfigurationComplete</i>	-	-
5	Check: Does the UE transmit a PDU SESSION RELEASE COMPLETE message?	-->	NR RRC: <i>ULInformationTransfer</i> 5GMM: UL NAS TRANSPORT 5GSM: PDU SESSION RELEASE COMPLETE	-	P

#### 4.9.12A.2.3 Specific Message content

All specific message contents shall be according subclause 4.6 and 4.7 with the exceptions below.

**Table 4.9.12A.2.3-1: RRCReconfiguration (step 4, Table 4.9.12A.2.2-1)**

Derivation Path: Table 4.6.1-13.			
Information Element	Value/remark	Comment	Condition
RRCReconfiguration ::= SEQUENCE {			
criticalExtensions CHOICE {			
rrcReconfiguration SEQUENCE {			
radioBearerConfig SEQUENCE {			
drb-ToReleaseList SEQUENCE (SIZE (1..maxDRB)) OF DRB-Identity {	2 entries		
DRB-Identity[1]	DRB-Identity linked to the IMS emergency signalling bearer	entry 1	
DRB-Identity[2]	DRB-Identity linked to the IMS emergency speech bearer	entry 2	
}			
}			
nonCriticalExtension SEQUENCE {			
masterCellGroup SEQUENCE {			
rlc-BearerToReleaseList SEQUENCE (SIZE (1..maxLC-ID)) OF LogicalChannelIdentity {	2 entries		
logicalChannelIdentity[1]	Same value as drb-Identity[1] above	entry 1	
logicalChannelIdentity[2]	Same value as drb-Identity[2] above	entry 2	
}			
}			
}			
}			
}			

**Table 4.9.12A.2.3-2: PDU SESSION RELEASE COMMAND (step 4, Table 4.9.12A.2.2-1)**

Derivation Path: Table 4.7.1-14.			
Information Element	Value/remark	Comment	Condition
PDU session ID	Set according to the Emergency session ID.		
5GSM cause	'0010 0100'B	Regular deactivation	

**Table 4.9.12A.2.3-3: PDU SESSION RELEASE REQUEST (step 3a, Table 4.9.12A.2.2-1)**

Derivation Path: Table 4.7.1-14.			
Information Element	Value/remark	Comment	Condition
PDU session ID	Set according to the Emergency session ID.		
PTI	Any value from 1 to 254		

## 4.9.12B Test procedure for IMS MT Emergency call release

### 4.9.12B.1 Scope

This procedure aims at verifying the network initiated release of an ongoing IMS Emergency call in 5GC

### 4.9.12B.2 Procedure description

#### 4.9.12B.2.1 Initial conditions

System Simulator:

- 1 NR Cell connected to 5GC, default parameters.

User Equipment:

- The Test UICC shall be inserted. It shall provide Emergency Numbers.

The procedure assumes that the UE is in test state 3N-A, subclause 4.4A.2 on the NR Cell with an active IMS emergency call. All necessary details required shall be explicitly specified in the TC which calls the procedure in its entirety or refers to parts of it.

#### 4.9.12B.2.2 Procedure sequence

**Table 4.9.12B.2.2-1: Test procedure sequence IMS MT Emergency call release**

St	Procedure	Message Sequence		TP	Verdict
		U - S	Message/PDU/SDU		
1-2	Generic test procedure for MT release of speech call, steps 1-2, as defined in Annex A.8 of TS 34.229-5 [47] is performed.	-	-	-	-
3	The SS transmits a <i>RRCReconfiguration</i> message and a PDU SESSION RELEASE COMMAND message.	<--	NR RRC: <i>RRCReconfiguration</i> NR NAS: PDU SESSION RELEASE COMMAND	-	-
3A	The UE transmits a <i>RRCReconfigurationComplete</i>	-	NR RRC: <i>RRCReconfigurationComplete</i>	-	-
4	Check: Does the UE transmit a PDU SESSION RELEASE COMPLETE message?	-->	NR RRC: <i>ULInformationTransfer</i> 5GMM: UL NAS TRANSPORT 5GSM: PDU SESSION RELEASE COMPLETE	-	P

#### 4.9.12B.2.3 Specific Message content

All specific message contents shall be according subclause 4.6 and 4.7 with the exceptions below.

**Table 4.9.12B.2.3-1: RRCReconfiguration (step 3, Table 4.9.12B.2.2-1)**

Derivation Path: Table 4.6.1-13.			
Information Element	Value/remark	Comment	Condition
RRCReconfiguration ::= SEQUENCE {			
criticalExtensions CHOICE {			
rrcReconfiguration SEQUENCE {			
radioBearerConfig SEQUENCE {			
drb-ToReleaseList SEQUENCE (SIZE (1..maxDRB)) OF DRB-Identity {	2 entries		
DRB-Identity[1]	DRB-Identity linked to the IMS emergency signalling bearer	entry 1	
DRB-Identity[2]	DRB-Identity linked to the IMS emergency speech bearer	entry 2	
}			
}			
nonCriticalExtension SEQUENCE {			
masterCellGroup SEQUENCE {			
rlc-BearerToReleaseList SEQUENCE (SIZE (1..maxLC-ID)) OF LogicalChannelIdentity {	2 entries		
LogicalChannelIdentity[1]	Same value as drb-Identity[1] above	entry 1	
LogicalChannelIdentity[2]	Same value as drb-Identity[2] above	entry 2	
}			
}			
}			
}			
}			

**Table 4.9.12B.2.3-2: PDU SESSION RELEASE COMMAND (step 3, Table 4.9.12B.2.2-1)**

Derivation Path: Table 4.7.1-14.			
Information Element	Value/remark	Comment	Condition
PDU session ID	Set according to the Emergency session ID.		
5GSM cause	'0010 0100'B	Regular deactivation	

## 4.9.13 Test procedure for no response to paging

### 4.9.13.1 Scope

This procedure aims at checking that the UE ignores paging messages with a specified identity.

### 4.9.13.2 Procedure description

#### 4.9.13.2.1 Initial conditions

As specified in the TC which calls the procedure in its entirety or refers to parts of it.

## 4.9.13.2.2 Procedure sequence

**Table 4.9.13.2.2-1: Test procedure sequence**

St	Procedure	Message Sequence		TP	Verdict
		U - S	Message		
1	The SS transmits a paging message using the NG-5G-S-TMSI which is specified in the referring test step, and on the cell which is specified in the referring test step.	<--	<i>Paging</i>	-	-
2	Check: Does the UE send an <i>RRCSetupRequest</i> message on the cell where the paging was transmitted within the next 3s?	-->	<i>RRCSetupRequest</i>	-	F

## 4.9.13.3 Specific Message content

None.

## 4.9.14 Void

## 4.9.15 Test procedure for IMS MO speech call establishment in 5GC

## 4.9.15.1 Scope

The purpose of this procedure is to establish an IMS MO speech call.

## 4.9.15.2 Procedure description

## 4.9.15.2.1 Initial conditions

System Simulator:

- 1 NR Cell connected to 5GC, default parameters.

User Equipment:

- The UE is in state 1N-A and registered to the IMS.

## 4.9.15.2.2 Procedure sequence

Table 4.9.15.2.2-1: IMS MO speech call establishment in 5GC

St	Procedure	Message Sequence		TP	Verdict
		U – S	Message		
1	Make the UE attempt an IMS speech call.	-	-	-	-
2	Check: Does the UE transmit an <i>RRCSetupRequest</i> message with 'establishmentCause' set to 'mo-VoiceCall'?	-->	NR RRC: <i>RRCSetupRequest</i>	-	P
3	SS transmit an <i>RRCSetup</i> message.	<--	NR RRC: <i>RRCSetup</i>	-	-
4	Check: Does the UE transmit an <i>RRCSetupComplete</i> message to confirm the successful completion of the connection establishment and to initiate the session management procedure by including the SERVICE REQUEST message?	-->	NR RRC: <i>RRCSetupComplete</i> 5GMM: SERVICE REQUEST	-	P
5	The SS transmits a <i>SecurityModeCommand</i> message to activate AS security.	<--	NR RRC: <i>SecurityModeCommand</i>	-	-
6	Check: Does the UE transmit a <i>SecurityModeComplete</i> message and establish the initial security configuration?	-->	NR RRC: <i>SecurityModeComplete</i>	-	P
7	The SS transmits an <i>RRCReconfiguration</i> message and a SERVICE ACCEPT message to establish SRB2 and DRB(s).	<--	NR RRC: <i>RRCReconfiguration</i> 5GMM: SERVICE ACCEPT	-	-
-	EXCEPTION: In parallel to step 8 below, the steps specified in Table 4.9.15.2.2-2 take place.	-	-	-	-
8	The UE transmits an <i>RRCReconfigurationComplete</i> message.	-->	NR RRC: <i>RRCReconfigurationComplete</i>	-	-
-	EXCEPTION: Steps 9a1 to 9b4 describe behaviour that depends on UE configuration; the "lower case letter" identifies a step sequence that takes place if such configuration was conducted.	-	-	-	-
9a1-9a4	IF the UE is configured to use preconditions THEN steps 2-5 of Annex A.4.1 of TS 34.229-5 [47] take place.	-	-	-	-
9b1-9b4	ELSE steps 2-5 of Annex A.4.2 of TS 34.229-5 [47] take place.	-	-	-	-
10	The SS transmits an <i>RRCReconfiguration</i> message and a PDU SESSION MODIFICATION COMMAND message.	<--	NR RRC: <i>RRCReconfiguration</i> 5GMM: DL NAS TRANSPORT 5GSM: PDU SESSION MODIFICATION COMMAND	-	-
-	EXCEPTION: In parallel to steps 11 and 12 below, step 13a1 or 13b1 occur.	-	-	-	-
11	The UE transmits an <i>RRCReconfigurationComplete</i> message.	-->	NR RRC: <i>RRCReconfigurationComplete</i>	-	-
12	Check: Does the UE transmit an <i>ULInformationTransfer</i> message, an UL NAS TRANSPORT message and a PDU SESSION MODIFICATION COMPLETE message?	-->	NR RRC: <i>ULInformationTransfer</i> 5GMM: UL NAS TRANSPORT 5GSM: PDU SESSION MODIFICATION COMPLETE	-	P
-	EXCEPTION: Steps 13a1 to 13b3 describe behaviour that depends on UE configuration; the "lower case letter" identifies a step sequence that takes place if such configuration was conducted.	-	-	-	-
13a1-13a7	IF the UE is configured to use preconditions THEN steps 6-12 of Annex A.4.1 of TS 34.229-5 [47] take place.	-	-	-	-
13b1-13b3	ELSE steps 6-8 of Annex A.4.2 of TS 34.229-5 [47] take place.	-	-	-	-

Table 4.9.15.2.2-2: Parallel Behaviour

St	Procedure	Message Sequence		TP	Verdict
		U - S	Message		
-	EXCEPTION: Steps 1a1 to 1b1 describe behaviour that depends on UE configuration; the "lower case letter" identifies a step sequence that takes place if such configuration was conducted.	-	-	-	-
1a1	IF the UE is configured to use preconditions THEN step 1 of Annex A.4.1 of TS 34.229-5 [47] takes place.	-	-	-	-
1b1	ELSE step 1 of Annex A.4.2 of TS 34.229-5 [47] takes place.	-	-	-	-

## 4.9.15.3 Specific message contents

Table 4.9.15.3-1: *RRCSetupRequest* (step 2, Table 4.9.15.2.2-1)

Derivation Path: Table 4.6.1-23			
Information Element	Value/remark	Comment	Condition
RRCSetupRequest ::= SEQUENCE {			
rrcSetupRequest SEQUENCE {			
establishmentCause	mo-VoiceCall		
}			
}			

Table 4.9.15.3-2: SERVICE REQUEST (step 4, Table 4.9.15.2.2-1)

Derivation Path: Table 4.7.1-16			
Information Element	Value/remark	Comment	Condition
Service type			
Service type value	'0001'B	data	

Table 4.9.15.3-3: PDU SESSION MODIFICATION COMMAND (step 10, Table 4.9.15.2.2-1)

Derivation Path: Table 4.7.2-9			
Information Element	Value/remark	Comment	Condition
PDU session ID	Same value as sent in PDU SESSION ESTABLISHMENT REQUEST message.		
Authorized QoS rules	Reference QoS rule #7 as defined in Table 4.8.2.1-7 using condition IMS_VOICE.		
Authorized QoS flow descriptions	Reference QoS flow #5 as defined in Table 4.8.2.3-5.		

Table 4.9.15.3-4: *RRCReconfiguration* (step 10, Table 4.9.15.2.2-1)

Derivation Path: Table 4.8.1-1C			
---------------------------------	--	--	--

## 4.9.16 Test procedure for IMS MT speech call establishment in 5GC

## 4.9.16.1 Scope

The purpose of this procedure is to establish an IMS MT speech call.

4.9.16.2 Procedure description

4.9.16.2.1 Initial conditions

System Simulator:

- 1 NR Cell connected to 5GC, default parameters.

User Equipment:

- The UE is in state 1N-A and registered to the IMS.



## 4.9.16.2.2 Procedure sequence

Table 4.9.16.2.2-1: IMS MT speech call establishment in 5GC

St	Procedure	Message Sequence		TP	Verdict
		U – S	Message		
1	The SS transmits a <i>Paging</i> message.	<--	NR RRC: <i>Paging</i>	-	-
2	Check: Does the UE transmit an <i>RRCSetupRequest</i> message with 'establishmentCause' set to 'mt-Access'?	-->	NR RRC: <i>RRCSetupRequest</i>	-	P
3	The SS transmits an <i>RRCSetup</i> message.	<--	NR RRC: <i>RRCSetup</i>	-	-
4	Check: Does the UE transmit an <i>RRCSetupComplete</i> message and a SERVICE REQUEST message?	-->	NR RRC: <i>RRCSetupComplete</i> 5GMM: SERVICE REQUEST	-	P
5	The SS transmits a <i>SecurityModeCommand</i> message.	<--	NR RRC: <i>SecurityModeCommand</i>	-	-
6	The UE transmits a <i>SecurityModeComplete</i> message.	-->	NR RRC: <i>SecurityModeComplete</i>	-	-
7	The SS transmits an <i>RRCReconfiguration</i> message and a SERVICE ACCEPT message to establish SRB2 and DRB(s). The <i>RRCReconfiguration</i> message is configured using <i>RRCReconfiguration-SRB2-DRB(n, m)</i> where n and m are the number of DRB(s) configured with RLC-AM and RLC-UM respectively.	<--	NR RRC: <i>RRCReconfiguration</i> 5GMM: SERVICE ACCEPT	-	-
8	Check: Does the UE transmit an <i>RRCReconfigurationComplete</i> message?	-->	NR RRC: <i>RRCReconfigurationComplete</i>	-	P
-	EXCEPTION: Steps 9a1 to 9b5 describe behaviour that depends on UE configuration; the "lower case letter" identifies a step sequence that takes place if such configuration was conducted.	-	-	-	-
9a1-9a5	IF the UE is configured to use preconditions THEN steps 1-5 of Annex A.5.1 of TS 34.229-5 [47] take place.	-	-	-	-
9b1-9b5	ELSE steps 1-5 of Annex A.5.2 of TS 34.229-5 [47] take place.	-	-	-	-
10	The SS transmits an <i>RRCReconfiguration</i> message and a PDU SESSION MODIFICATION COMMAND message.	<--	NR RRC: <i>RRCReconfiguration</i> 5GMM: DL NAS TRANSPORT 5GSM: PDU SESSION MODIFICATION COMMAND	-	-
11	The UE transmits an <i>RRCReconfigurationComplete</i> message	-->	NR RRC: <i>RRCReconfigurationComplete</i>	-	-
12	Check: Does the UE transmit a <i>ULInformationTransfer</i> message, an UL NAS TRANSPORT message and an PDU SESSION MODIFICATION COMPLETE message?	-->	NR RRC: <i>ULInformationTransfer</i> 5GMM: UL NAS TRANSPORT 5GSM: PDU SESSION MODIFICATION COMPLETE	-	P
-	EXCEPTION: Steps 13a1 to 13b7 describe behaviour that depends on UE configuration; the "lower case letter" identifies a step sequence that takes place if such configuration was conducted.	-	-	-	-
13a1-13a7	IF the UE is configured to use preconditions THEN steps 6-12 of Annex A.5.1 of TS 34.229-5 [47] take place.	-	-	-	-
13b1-13b5	ELSE steps 6-10 of Annex A.5.2 of TS 34.229-5 [47] take place.	-	-	-	-

## 4.9.16.3 Specific message contents

**Table 4.9.16.3-1: RRCSetupRequest (step 2, Table 4.9.16.2.2-1)**

Derivation Path: Table 4.6.1-23			
Information Element	Value/remark	Comment	Condition
RRCSetupRequest ::= SEQUENCE {			
rrcSetupRequest SEQUENCE {			
establishmentCause	mt-Access		
}			
}			

**Table 4.9.16.3-2: SERVICE REQUEST (step 4, Table 4.9.16.2.2-1)**

Derivation Path: Table 4.7.1-16			
Information Element	Value/remark	Comment	Condition
Service type			
Service type value	'0010'B	Mobile Terminated Services	

**Table 4.9.16.3-3: PDU SESSION MODIFICATION COMMAND (step 10, Table 4.9.16.2.2-1)**

Derivation Path: Table 4.7.2-2			
Information Element	Value/remark	Comment	Condition
PDU session ID	Same value as sent in PDU SESSION ESTABLISHMENT REQUEST message.		
Authorized QoS rules	Reference QoS rule #7 as defined in Table 4.8.2.1-7 using condition IMS_VOICE.		
Authorized QoS flow descriptions	Reference QoS flow #5 as defined in Table 4.8.2.3-5.		

**Table 4.9.16.3-4: RRCReconfiguration (step 10, Table 4.9.16.2.2-1)**

Derivation Path: Table 4.8.1-1C			
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## 4.9.17 Test procedure for IMS MO call release in 5GC

### 4.9.17.1 Scope

The purpose of this procedure is to make a UE initiated release of an ongoing IMS call.

### 4.9.17.2 Procedure description

#### 4.9.17.2.1 Initial conditions

System Simulator:

- 1 NR Cell connected to 5GC, default parameters.

User Equipment:

- The UE is in state 3N-A on the NR Cell with an active IMS call.

## 4.9.17.2.2 Procedure sequence

Table 4.9.17.2.2-1: IMS MO call release in 5GC

St	Procedure	Message Sequence		TP	Verdict
		U – S	Message		
1-2	Generic test procedure for MO release of speech call, steps 1-2, as defined in annex A.7 of TS 34.229-5 [47] are performed.	-	-	-	-
3	The SS transmits an <i>RRCReconfiguration</i> message and an PDU SESSION MODIFICATION COMMAND	<--	NR RRC: <i>RRCReconfiguration</i> 5GMM: DL NAS TRANSPORT 5GSM: PDU SESSION MODIFICATION COMMAND	-	-
-	EXCEPTION: Steps 4 and 5 can occur in any order.	-	-	-	-
4	The UE transmits an <i>RRCReconfigurationComplete</i> message	-->	NR RRC: <i>RRCReconfigurationComplete</i>	-	-
5	Check: Does the UE transmit a <i>ULInformationTransfer</i> message, an UL NAS TRANSPORT message and an PDU SESSION MODIFICATION COMPLETE message?	-->	NR RRC: <i>ULInformationTransfer</i> 5GMM: UL NAS TRANSPORT 5GSM: PDU SESSION MODIFICATION COMPLETE	-	P

4.9.17.2.3 Specific message contents

**Table 4.9.17.2.3-1: RRCReconfiguration (step 3, Table 4.9.17.2.2-1)**

Derivation Path: Table 4.6.1-13.			
Information Element	Value/remark	Comment	Condition
RRCReconfiguration ::= SEQUENCE {			
criticalExtensions CHOICE {			
rrcReconfiguration SEQUENCE {			
radioBearerConfig SEQUENCE {			
drb-ToReleaseList SEQUENCE (SIZE (1..maxDRB)) OF DRB-Identity {	1 entry		IMS_VOICE
DRB-Identity[1]	DRB-Identity linked to the IMS speech bearer	entry 1	
}			
drb-ToReleaseList SEQUENCE (SIZE (1..maxDRB)) OF DRB-Identity {	2 entries		IMS_VIDEO
DRB-Identity[1]	DRB-Identity linked to the IMS video bearer	entry 1	
DRB-Identity[2]	DRB-Identity linked to the IMS video bearer	entry 2	
}			
}			
nonCriticalExtension SEQUENCE {			
masterCellGroup SEQUENCE {			
rlc-BearerToReleaseList SEQUENCE (SIZE (1..maxLC-ID)) OF LogicalChannelIdentity {	1 entry		IMS_VOICE
LogicalChannelIdentity[1]	Same value as drb-Identity[1] above	entry 1	
}			
rlc-BearerToReleaseList SEQUENCE (SIZE (1..maxLC-ID)) OF LogicalChannelIdentity {	2 entries		IMS_VIDEO
LogicalChannelIdentity[1]	Same value as drb-Identity[1] above	entry 1	
LogicalChannelIdentity[2]	Same value as drb-Identity[2] above	entry 2	
}			
}			
}			
}			
}			

Condition	Explanation
IMS_VOICE	If this QoS rule is used to setup an IMS voice session
IMS_VIDEO	If this QoS rule is used to setup an IMS video session

**Table 4.9.17.2.3-2: PDU SESSION MODIFICATION COMMAND (step 3, Table 4.9.17.2.2-1)**

Derivation Path: Table 4.7.2-9.			
Information Element	Value/remark	Comment	Condition
PDU session ID	Same value as sent in PDU SESSION ESTABLISHMENT REQUEST message.		
Authorized QoS rules			
QoS rule[1]			IMS_VOICE, IMS_VIDEO
QoS rule identifier	'00000011'B	QoS rule 3	
Rule operation code	'010'B	Delete existing QoS rule	
QoS rule[2]			IMS_VIDEO
QoS rule identifier	'00000100'B	QoS rule 4	
Rule operation code	'010'B	Delete existing QoS rule	
Authorized QoS flow descriptions			
QoS flow descriptions[1]			IMS_VOICE, IMS_VIDEO
QFI	'00000111'B	QFI 7	
Operation code	'010'B	Delete existing QoS flow	
QoS flow descriptions[2]			IMS_VIDEO
QFI	'00001000'B	QFI 8	
Operation code	'010'B	Delete existing QoS flow	

Condition	Explanation
IMS_VOICE	If this QoS rule is used to setup an IMS voice session
IMS_VIDEO	If this QoS rule is used to setup an IMS video session

## 4.9.18 Test procedure for IMS MT call release in 5GC

### 4.9.18.1 Scope

The purpose of this procedure is to make the network release an ongoing IMS call.

### 4.9.18.2 Procedure description

#### 4.9.18.2.1 Initial conditions

System Simulator:

- 1 NR Cell connected to 5GC, default parameters.

User Equipment:

- The UE is in state 3N-A on the NR Cell with an active IMS call.

## 4.9.18.2.2 Procedure sequence

Table 4.9.18.2.2-1: IMS MT call release in 5GC

St	Procedure	Message Sequence		TP	Verdict
		U – S	Message		
1-2	Generic test procedure for MT release of speech call, steps 1-2, as defined in annex A.8 of TS 34.229-5 [47] are performed.	-	-	-	-
3	The SS transmits an <i>RRCReconfiguration</i> message and an PDU SESSION MODIFICATION COMMAND	<--	NR RRC: <i>RRCReconfiguration</i> 5GMM: DL NAS TRANSPORT 5GSM: PDU SESSION MODIFICATION COMMAND	-	-
-	EXCEPTION: Steps 4 and 5 can occur in any order.	-	-	-	-
4	The UE transmits an <i>RRCReconfigurationComplete</i> message	-->	NR RRC: <i>RRCReconfigurationComplete</i>	-	-
5	Check: Does the UE transmit a <i>ULInformationTransfer</i> message, an UL NAS TRANSPORT message and an PDU SESSION MODIFICATION COMPLETE message?	-->	NR RRC: <i>ULInformationTransfer</i> 5GMM: UL NAS TRANSPORT 5GSM: PDU SESSION MODIFICATION COMPLETE	-	P

## 4.9.18.2.3 Specific message contents

**Table 4.9.18.2.3-1: RRCReconfiguration (step 3, Table 4.9.18.2.2-1)**

Derivation Path: Table 4.6.1-13.			
Information Element	Value/remark	Comment	Condition
RRCReconfiguration ::= SEQUENCE {			
criticalExtensions CHOICE {			
rrcReconfiguration SEQUENCE {			
radioBearerConfig SEQUENCE {			
drb-ToReleaseList SEQUENCE (SIZE (1..maxDRB)) OF DRB-Identity {	1 entry		IMS_VOICE
DRB-Identity[1]	DRB-Identity linked to the IMS speech bearer	entry 1	
}			
drb-ToReleaseList SEQUENCE (SIZE (1..maxDRB)) OF DRB-Identity {	2 entries		IMS_VIDEO
DRB-Identity[1]	DRB-Identity linked to the IMS video bearer	entry 1	
DRB-Identity[2]	DRB-Identity linked to the IMS video bearer	entry 2	
}			
}			
nonCriticalExtension SEQUENCE {			
masterCellGroup SEQUENCE {			
rlc-BearerToReleaseList SEQUENCE (SIZE (1..maxLC-ID)) OF LogicalChannelIdentity {	1 entry	entry 1	IMS_VOICE
LogicalChannelIdentity[1]	Same value as drb-Identity[1] above		
}			
rlc-BearerToReleaseList SEQUENCE (SIZE (1..maxLC-ID)) OF LogicalChannelIdentity {	2 entries		IMS_VIDEO
LogicalChannelIdentity[1]	Same value as drb-Identity[1] above	entry 1	
LogicalChannelIdentity[2]	Same value as drb-Identity[2] above	entry 2	
}			
}			
}			
}			
}			

Condition	Explanation
IMS_VOICE	If this QoS rule is used to setup an IMS voice session
IMS_VIDEO	If this QoS rule is used to setup an IMS video session

**Table 4.9.18.2.3-2: PDU SESSION MODIFICATION COMMAND (step 3, Table 4.9.18.2.2-1)**

Derivation Path: Table 4.7.2-9			
Information Element	Value/remark	Comment	Condition
PDU session ID	Same value as sent in PDU SESSION ESTABLISHMENT REQUEST message.		
Authorized QoS rules			
QoS rule			
QoS rule identifier	'00000011'B	QoS rule 3	IMS_VOICE, IMS_VIDEO
Rule operation code	'010'B	Delete existing QoS rule	
QoS rule[2]			IMS_VIDEO
QoS rule identifier	'00000100'B	QoS rule 4	
Rule operation code	'010'B	Delete existing QoS rule	
Authorized QoS flow descriptions			
QoS flow descriptions			
QFI	'00000111'B	QFI 7	IMS_VOICE, IMS_VIDEO
Operation code	'010'B	Delete existing QoS flow	
QoS flow descriptions[2]			IMS_VIDEO
QFI	'00001000'B	QFI 8	
Operation code	'010'B	Delete existing QoS flow	

Condition	Explanation
IMS_VOICE	If this QoS rule is used to setup an IMS voice session
IMS_VIDEO	If this QoS rule is used to setup an IMS video session

## 4.9.19 Test procedure for IMS MO SMS in 5GC

### 4.9.19.1 Scope

The purpose of this procedure is to transmit an IMS MO SMS.

### 4.9.19.2 Procedure description

#### 4.9.19.2.1 Initial conditions

System Simulator:

- 1 NR Cell connected to 5GC, default parameters.

User Equipment:

- The UE is in state 1N-A and registered to the IMS.



## 4.9.19.2.2 Procedure sequence

Table 4.9.19.2.2-1: IMS MO SMS in 5GS

St	Procedure	Message Sequence		TP	Verdict
		U – S	Message		
1	Make the UE attempt an IMS MO SMS	-	-	-	-
2	The UE transmits an <i>RRCSetupRequest</i> message with 'establishmentCause' set to 'mo-SMS'.	-->	NR RRC: <i>RRCSetupRequest</i>	-	P
3	The SS transmits an <i>RRCSetup</i> message.	<--	NR RRC: <i>RRCSetup</i>	-	-
4	The UE transmits an <i>RRCSetupComplete</i> message to confirm the successful completion of the connection establishment and to initiate the session management procedure by including the SERVICE REQUEST message.	-->	NR RRC: <i>RRCSetupComplete</i> 5GMM: SERVICE REQUEST	-	P
5	The SS transmits a <i>SecurityModeCommand</i> message to activate AS security.	<--	NR RRC: <i>SecurityModeCommand</i>	-	-
6	The UE transmits a <i>SecurityModeComplete</i> message and establish the initial security configuration.	-->	NR RRC: <i>SecurityModeComplete</i>	-	P
7	The SS transmits an <i>RRCReconfiguration</i> message and a SERVICE ACCEPT message to establish SRB2 and DRB(s).	<--	NR RRC: <i>RRCReconfiguration</i> 5GMM: SERVICE ACCEPT	-	-
8	The UE transmits an <i>RRCReconfigurationComplete</i> message.	-->	NR RRC: <i>RRCReconfigurationComplete</i>	-	P
9-16	The steps 1-8 from the expected sequence defined in Annex A.13 of TS 34.229-5 [47] of IMS MO SMS / 5GS take place.	-	-	-	-

## 4.9.19.3 Specific message contents

Table 4.9.19.3-1: *RRCSetupRequest* (step 2, Table 4.9.19.2.2-1)

Derivation Path: 38.508-1 [4], Table 4.6.1-23			
Information Element	Value/remark	Comment	Condition
<i>RRCSetupRequest</i> ::= SEQUENCE {			
<i>rrcSetupRequest</i> SEQUENCE {			
<i>establishmentCause</i>	mo-SMS		
}			
}			

Table 4.9.19.3-2: SERVICE REQUEST (step 4, Table 4.9.19.2.2-1)

Derivation Path: 38.508-1 [4], Table 4.7.1-16			
Information Element	Value/remark	Comment	Condition
Service type			
Service type value	'0001'B	data	

## 4.9.20 Test procedure for IMS MT SMS in 5GC

## 4.9.20.1 Scope

The purpose of this procedure is to receive an IMS MT SMS.

## 4.9.20.2 Procedure description

## 4.9.20.2.1 Initial conditions

## System Simulator:

- 1 NR Cell connected to 5GC, default parameters.

## User Equipment:

- The UE is in state 1N-A and registered to the IMS.

## 4.9.20.2.2 Procedure sequence

Table 4.9.20.2.2-1: IMS MT SMS in 5GS

St	Procedure	Message Sequence		TP	Verdict
		U – S	Message		
1	The SS transmits a <i>Paging</i> message.	<--	NR RRC: <i>Paging</i>	-	-
2	The UE transmits an <i>RRCSetupRequest</i> message with 'establishmentCause' set to 'mt-Access'.	-->	NR RRC: <i>RRCSetupRequest</i>	-	P
3	The SS transmits an <i>RRCSetup</i> message.	<--	NR RRC: <i>RRCSetup</i>	-	-
4	The UE transmits an <i>RRCSetupComplete</i> message and a SERVICE REQUEST message.	-->	NR RRC: <i>RRCSetupComplete</i> 5GMM: SERVICE REQUEST	-	P
5	The SS transmits a <i>SecurityModeCommand</i> message.	<--	NR RRC: <i>SecurityModeCommand</i>	-	-
6	The UE transmits a <i>SecurityModeComplete</i> message.	-->	NR RRC: <i>SecurityModeComplete</i>	-	-
7	The SS transmits an <i>RRCReconfiguration</i> message and a SERVICE ACCEPT message to establish SRB2 and DRB(s). The <i>RRCReconfiguration</i> message is configured using <i>RRCReconfiguration-SRB2-DRB(n, m)</i> where n and m are the number of DRB(s) configured with RLC-AM and RLC-UM respectively.	<--	NR RRC: <i>RRCReconfiguration</i> 5GMM: SERVICE ACCEPT	-	-
8	The UE transmits an <i>RRCReconfigurationComplete</i> message.	-->	NR RRC: <i>RRCReconfigurationComplete</i>	-	P
9-12	The steps 1-4 from the expected sequence defined in Annex A.14 of TS 34.229-5 [47] IMS MT SMS / 5GS take place.	-	-	-	-

## 4.9.20.3 Specific message contents

Table 4.9.20.3-1: *RRCSetupRequest* (step 2, Table 4.9.20.2.2-1)

Derivation Path: 38.508-1 [4], Table 4.6.1-23			
Information Element	Value/remark	Comment	Condition
<i>RRCSetupRequest</i> ::= SEQUENCE {			
<i>rrcSetupRequest</i> SEQUENCE {			
establishmentCause	mt-Access		
}			
}			

Table 4.9.20.3-2: SERVICE REQUEST (step 4, Table 4.9.20.2.2-1)

Derivation Path: 38.508-1 [4], Table 4.7.1-16			
Information Element	Value/remark	Comment	Condition
Service type			
Service type value	'0010'B	Mobile Terminated Services	

## 4.9.21 Test procedure for PDU Session Release

### 4.9.21.1 Scope

The purpose of this procedure is to release both the PDU session and the user plane resources.

### 4.9.21.2 Procedure description

#### 4.9.21.2.1 Initial conditions

The UE is in state 3N-A with PDU SESSION ACTIVE as per Table 4.4A.2-3. If this is a UE triggered PDU Session Release, this will be specified in the test case together with the sending of a PDU SESSION RELEASE REQUEST by the UE.

#### 4.9.21.2.2 Procedure sequence

Table 4.9.21.2.2-1: Procedure for PDU Session Release

St	Procedure	Message Sequence	
		U – S	Message
1	The SS transmits an <i>RRCReconfiguration</i> message and a PDU SESSION RELEASE COMMAND	<--	NR RRC: <i>RRCReconfiguration</i> 5GMM: DL NAS TRANSPORT 5GSM: PDU SESSION RELEASE COMMAND
-	EXCEPTION: Depending upon UE implementation, step 1A and 2 can occur in any order	-	-
1A	The UE transmits a <i>RRCReconfigurationComplete</i>	-	NR RRC: <i>RRCReconfigurationComplete</i>
2	The UE transmits a PDU SESSION RELEASE COMPLETE message	-->	NR RRC: <i>ULInformationTransfer</i> 5GMM: UL NAS TRANSPORT 5GSM: PDU SESSION RELEASE COMPLETE

### 4.9.21.3 Specific message contents

The NAS message contents will be as specified in the test case.

**Table 4.9.21.3-1: RRCReconfiguration (step 1, Table 4.9.21.2.2-1)**

Derivation Path: Table 4.6.1-13.			
Information Element	Value/remark	Comment	Condition
RRCReconfiguration ::= SEQUENCE {			
criticalExtensions CHOICE {			
rrcReconfiguration SEQUENCE {			
radioBearerConfig SEQUENCE {			
drb-ToReleaseList SEQUENCE (SIZE (1..maxDRB)) OF DRB-Identity {	1 entry		
DRB-Identity[1]	DRB-Identity linked to the PDU Session to be released		
}			
}			
nonCriticalExtension SEQUENCE {			
masterCellGroup SEQUENCE {			
rlc-BearerToReleaseList SEQUENCE (SIZE (1..maxLC-ID)) OF LogicalChannelIdentity {	1 entry		
logicalChannelIdentity[1]	Same value as drb-Identity[1] above		
}			
}			
}			
}			
}			

## 4.9.22 Test procedure for establishing unicast mode NR sidelink communication / Initiating UE side

### 4.9.22.1 Scope

The purpose of this procedure is to establish unicast mode sidelink communication.

### 4.9.22.2 Procedure description

#### 4.9.22.2.1 Initial conditions

The UE is in state 1N-B, 3N-B or 4-A.

## 4.9.22.2.2 Procedure sequence

**Table 4.9.22.2-1: Procedure for establishing unicast mode sidelink communication (Initiating UE side)**

St	Procedure	Message Sequence	
		U – S	Message
1	Void	-	-
-	EXCEPTION: Steps 1a1 to 1b2 describe behaviour which depends on procedure parameters; the "lower case letter" identifies a step sequence that takes place if a procedure parameter has a particular value.	-	-
1a1	IF the UE is in state 1N-B or 4-A, the UE is configured by upper layer to establish unicast mode link. NOTE: This can be done by sending AT COMMAND +CCUTLE to close test loop function.	-	-
1b1	ELSE IF the UE is in state 3N-B, the SS transmits a CLOSE UE TEST LOOP message.	<--	TC: CLOSE UE TEST LOOP
1b2	The UE transmits a CLOSE UE TEST LOOP COMPLETE message.	-->	TC: CLOSE UE TEST LOOP COMPLETE
2	The UE sends a DIRECT LINK ESTABLISHMENT REQUEST message.	-->	PC5-S: DIRECT LINK ESTABLISHMENT REQUEST
3	The NR-SS-UE sends a DIRECT LINK SECURITY MODE COMMAND message.	<--	PC5-S: DIRECT LINK SECURITY MODE COMMAND
4	The UE sends a DIRECT LINK SECURITY MODE COMPLETE message.	-->	PC5-S: DIRECT LINK SECURITY MODE COMPLETE
5	The NR-SS-UE sends a DIRECT LINK ESTABLISHMENT ACCEPT message.	<--	PC5-S: DIRECT LINK ESTABLISHMENT ACCEPT
6	The UE sends an RRCReconfigurationSidelink message to establish a unicast mode SL-DRB. NOTE: Unless specifically specified in the test case prose, the UE shall select the DRB parameters as specified in the pre-configured parameters.	-->	PC5-RRC: RRCReconfigurationSidelink
7	The NR-SS-UE sends an RRCReconfigurationCompleteSidelink message.	<--	PC5-RRC: RRCReconfigurationCompleteSidelink
8	Void	-	-
-	EXCEPTION: Steps 8a1 to 8b2 describe behaviour which depends on procedure parameters; the "lower case letter" identifies a step sequence that takes place if a procedure parameter has a particular value.	-	-
8a1	IF the UE is in state 1N-B or 4-A, the SS sends AT COMMAND +CCUTLE to open test loop function	-	-
8b1	ELSE IF the UE is in state 3N-B, the SS transmits an OPEN UE TEST LOOP message.	<--	TC: OPEN UE TEST LOOP
8b2	The UE transmits an OPEN UE TEST LOOP COMPLETE message.	-->	TC: OPEN UE TEST LOOP COMPLETE

## 4.9.22.3 Specific message contents

All specific message contents shall be according subclause 4.6 and 4.7B with the exceptions below.

**Table 4.9.22.3-1: +CCUTLE (Table 4.9.22.2-1, Step 1)**

Derivation Path: Table 4.7B-1 with condition Close and Transmit
---

**Table 4.9.22.3-2: CLOSE UE TEST LOOP (Table 4.9.22.2.2-1, Step 1b1)**

Derivation Path: 36.508 [2] Table 4.7A-3 with condition UE TEST LOOP MODE E(V2X Transmission)			
Information Element	Value/remark	Comment	Condition
UE test loop mode E LB setup			
Communication Transmit or Receive	0 0 0 0 0 0 0 1	'01' indicates V2X UE triggered to transmit NR sidelink communication with single spatial layer.	

**Table 4.9.22.3-3: DIRECT LINK ESTABLISHMENT REQUEST (Table 4.9.22.2.2-1, Step 2)**

Derivation Path: Table 4.7.4-7 with condition Tx
--

**Table 4.9.22.3-4: DIRECT LINK SECURITY MODE COMMAND (Table 4.9.22.2.2-1, Step 3)**

Derivation Path: Table 4.7.4-18 with condition Rx
---

**Table 4.9.22.3-5: DIRECT LINK SECURITY MODE COMPLETE (Table 4.9.22.2.2-1, Step 4)**

Derivation Path: Table 4.7.4-19 with condition Tx
---

**Table 4.9.22.3-6: DIRECT LINK ESTABLISHMENT ACCEPT (Table 4.9.22.2.2-1, Step 5)**

Derivation Path: Table 4.7.4-8 with condition Rx
--

**Table 4.9.22.3-7: RRCReconfigurationSidelink (Table 4.9.22.2.2-1, Step 6)**

Derivation Path: Table 4.6.1A-3 with condition TX and SL_DRB			
Information Element	Value/remark	Comment	Condition
RRCReconfigurationSidelink ::= SEQUENCE {			
criticalExtensions CHOICE {			
rrcReconfigurationSidelink-r16 SEQUENCE {			
slrb-ConfigToAddModList-r16 SEQUENCE (SIZE (1..maxNrofSLRB-r16)) OF SLRB-Config-r16 {	1 entry		
SLRB-Config-r16[1] SEQUENCE {		entry 1	
sl-SDAP-ConfigPC5-r16 SEQUENCE {			
sl-MappedQoS-FlowsToAddList-r16 SEQUENCE (SIZE (1.. maxNrofSL-QFIsPerDest-r16)) OF SL-PQFI-r16 {	1 entry		
SL-PQFI-r16[1]	(1..63)	entry 1	
}			
sl-MappedQoS-FlowsToReleaseList-r16	Not present		
sl-SDAP-Header-r16	present		
}			
sl-PDCP-ConfigPC5-r16 SEQUENCE {			
sl-PDCP-SN-Size-r16	len12bits		
sl-OutOfOrderDelivery-r16	Not present		
}			
sl-RLC-ConfigPC5-r16 CHOICE {			
sl-AM-RLC-r16 SEQUENCE {			
sl-SN-FieldLengthAM-r16	size12		
}			
}			
sl-MAC-LogicalChannelConfigPC5-r16 SEQUENCE {			
sl-LogicalChannelIdentity-r16	(4..32)		
}			
}			
}			
}			
}			
}			

**Table 4.9.22.3-8: RRCReconfigurationCompleteSidelink (Table 4.9.22.2.2-1, Step 7)**

Derivation Path: Table 4.6.1A-4 with condition RX
---

**Table 4.9.22.3-9: +CCUTLE (Table 4.9.22.2.2-1, Step 8a1)**

Derivation Path: Table 4.7B-1 with condition Open
---

## 4.9.23 Test procedure for establishing unicast mode NR sidelink communication / Peer UE side

### 4.9.23.1 Scope

The purpose of this procedure is to establish unicast mode sidelink communication.

### 4.9.23.2 Procedure description

#### 4.9.23.2.1 Initial conditions

The UE is in state 1N-B, 3N-B or 4-A.

## 4.9.23.2.2 Procedure sequence

**Table 4.9.23.2.2-1: Procedure for establishing unicast mode sidelink communication (Peer UE side)**

St	Procedure	Message Sequence	
		U – S	Message
1	The NR-SS-UE sends a DIRECT LINK ESTABLISHMENT REQUEST message.	<--	PC5-S: DIRECT LINK ESTABLISHMENT REQUEST
2	The UE sends a DIRECT LINK SECURITY MODE COMMAND message.	-->	PC5-S: DIRECT LINK SECURITY MODE COMMAND
3	The NR-SS-UE sends a DIRECT LINK SECURITY MODE COMPLETE message.	<--	PC5-S: DIRECT LINK SECURITY MODE COMPLETE
4	The UE sends a DIRECT LINK ESTABLISHMENT ACCEPT message.	-->	PC5-S: DIRECT LINK ESTABLISHMENT ACCEPT
5	The NR-SS-UE sends an RRCReconfigurationSidelink message to establish a unicast mode SL-DRB.	<--	PC5-RRC: RRCReconfigurationSidelink
6	The UE sends an RRCReconfigurationCompleteSidelink message.	-->	PC5-RRC: RRCReconfigurationCompleteSidelink

## 4.9.23.3 Specific message contents

All specific message contents shall be according subclause 4.6 and 4.7B.

**Table 4.9.23.3-1: DIRECT LINK ESTABLISHMENT REQUEST (Table 4.9.23.2.2-1, Step 1)**

Derivation Path: Table 4.7.4-7 with condition Rx
--

**Table 4.9.23.3-2: DIRECT LINK SECURITY MODE COMMAND (Table 4.9.23.2.2-1, Step 2)**

Derivation Path: Table 4.7.4-18 with condition Tx
---

**Table 4.9.23.3-3: DIRECT LINK SECURITY MODE COMPLETE (Table 4.9.23.2.2-1, Step 3)**

Derivation Path: Table 4.7.4-19 with condition Rx
---

**Table 4.9.23.3-4: DIRECT LINK ESTABLISHMENT ACCEPT (Table 4.9.23.2.2-1, Step 4)**

Derivation Path: Table 4.7.4-8 with condition Tx
--

**Table 4.9.23.3-5: RRCReconfigurationSidelink (Table 4.9.23.2.2-1, Step 5)**

Derivation Path: Table 4.6.1A-3 with condition RX and SL_DRB
--

**Table 4.9.23.3-5: RRCReconfigurationCompleteSidelink (Table 4.9.23.2.2-1, Step 6)**

Derivation Path: Table 4.6.1A-4 with condition TX
---

## 4.9.24 Test procedure for IMS MO Video call establishment in 5GC

## 4.9.24.1 Scope

The purpose of this procedure is to establish an IMS MO Video call.



4.9.24.2 Procedure description

4.9.24.2.1 Initial conditions

System Simulator:

- 1 NR Cell connected to 5GC, default parameters.

User Equipment:

- The UE is in state 1N-A and registered to the IMS.

## 4.9.24.2.2 Procedure sequence

Table 4.9.24.2.2-1: IMS MO video call establishment in 5GC

St	Procedure	Message Sequence		TP	Verdict
		U – S	Message		
1	Make the UE attempt an IMS Video call	-	-	-	-
2	Check: Does the UE transmit an <i>RRCSetupRequest</i> message with 'establishmentCause' set to 'mo-VideoCall'?	-->	NR RRC: <i>RRCSetupRequest</i>	-	P
3	SS transmit an <i>RRCSetup</i> message.	<--	NR RRC: <i>RRCSetup</i>	-	-
4	Check: Does the UE transmit an <i>RRCSetupComplete</i> message to confirm the successful completion of the connection establishment and to initiate the session management procedure by including the SERVICE REQUEST message?	-->	NR RRC: <i>RRCSetupComplete</i> 5GMM: SERVICE REQUEST	-	P
5	The SS transmits a <i>SecurityModeCommand</i> message to activate AS security.	<--	NR RRC: <i>SecurityModeCommand</i>	-	-
6	Check: Does the UE transmit a <i>SecurityModeComplete</i> message and establish the initial security configuration?	-->	NR RRC: <i>SecurityModeComplete</i>	-	P
7	The SS transmits a <i>RRCReconfiguration</i> message and a SERVICE ACCEPT message to establish SRB2 and DRB(s).	<--	NR RRC: <i>RRCReconfiguration</i> 5GMM: SERVICE ACCEPT	-	-
-	EXCEPTION: In parallel to step 8 below, the steps specified in Table 4.9.24.2.2-2 take place.	-	-	-	-
8	The UE transmits an <i>RRCReconfigurationComplete</i> message.	-->	NR RRC: <i>RRCReconfigurationComplete</i>	-	-
-	EXCEPTION: Steps 9a1 to 9b4 describe behaviour that depends on UE configuration; the "lower case letter" identifies a step sequence that takes place if such configuration was conducted.	-	-	-	-
9a1-9a4	IF the UE is configured to use preconditions, THEN steps 2-5 of Annex A.15.1 of TS 34.229-5 [47] take place.	-	-	-	-
9b1-9b4	ELSE steps 2-5 of Annex A.15.2 of TS 34.229-5 [47] take place.	-	-	-	-
10	The SS transmits a <i>RRCReconfiguration</i> message and a PDU SESSION MODIFICATION COMMAND.	<--	NR RRC: <i>RRCReconfiguration</i> 5GMM: DL NAS TRANSPORT 5GSM: PDU SESSION MODIFICATION COMMAND	-	-
11	The UE transmits an <i>RRCReconfigurationComplete</i> message	-->	NR RRC: <i>RRCReconfigurationComplete</i>	-	-
12	Check: Does the UE transmit a <i>ULInformationTransfer</i> message, an UL NAS TRANSPORT message and an PDU SESSION MODIFICATION COMPLETE message?	-->	NR RRC: <i>ULInformationTransfer</i> 5GMM: UL NAS TRANSPORT 5GSM: PDU SESSION MODIFICATION COMPLETE	-	P
-	EXCEPTION: Steps 13a1 to 13b8 describe behaviour that depends on UE configuration; the "lower case letter" identifies a step sequence that takes place if such configuration was conducted.	-	-	-	-
13a1-13a7	IF the UE is configured to use preconditions, THEN steps 6-12 of Annex A.15.1 of TS 34.229-5 [47] take place.	-	-	-	-
13b1-13b3	ELSE steps 6-10 of Annex A.15.2 of TS 34.229-5 [47] take place.	-	-	-	-

Table 4.9.24.2.2-2: Parallel Behaviour

St	Procedure	Message Sequence		TP	Verdict
		U - S	Message		
-	EXCEPTION: Steps 1a1 to 1b1 describe behaviour that depends on UE configuration; the "lower case letter" identifies a step sequence that takes place if such configuration was conducted.	-	-	-	-
1a1	IF the UE is configured to use preconditions, THEN step 1 of Annex A.15.1 of TS 34.229-5 [47] takes place.	-	-	-	-
1b1	ELSE step 1 of Annex A.15.2 of TS 34.229-5 [47] takes place	-	-	-	-

## 4.9.24.3 Specific message contents

Table 4.9.24.3-1: *RRCSetupRequest* (step 2, Table 4.9.24.2.2-1)

Derivation Path: TS 38.508-1 [21], Table 4.6.1-23.			
Information Element	Value/remark	Comment	Condition
RRCSetupRequest ::= SEQUENCE {			
rrcSetupRequest SEQUENCE {			
establishmentCause	mo-VideoCall		
}			
}			

Table 4.9.24.3-2: SERVICE REQUEST (step 4, Table 4.9.24.2.2-1)

Derivation Path: TS 38.508-1 [21], Table 4.7.1-16			
Information Element	Value/remark	Comment	Condition
Service type			
Service type value	'0001'B	data	

**Table 4.9.24.3-3: PDU SESSION MODIFICATION COMMAND (step 10, Table 4.9.24.2.2-1)**

Derivation Path: TS 38.508-1 [21], Table 4.7.2-9.			
Information Element	Value/remark	Comment	Condition
PDU session ID	Same value as sent in PDU SESSION ESTABLISHMENT REQUEST message.		
Authorized QoS rules	Reference QoS rule #7 as defined in TS 38.508-1, Table 4.8.2.1-7 using conditions IMS_VOICE and IMS_VIDEO.		
Authorized QoS flow descriptions	Reference QoS flow #5 and QoS flow #6 as defined in TS 38.508-1, Table 4.8.2.3-5 & Table 4.8.2.3-6 respectively.		
Mapped EPS bearer contexts	Not Present		
Mapped EPS bearer contexts			Interworking _with_EPS
Mapped EPS bearer context EPS bearer identity	The same value as the one specified in the Reference QoS flow referred to from the Reference QoS rule indicated in the IE Authorized QoS rules		
Operation code	'001'B	Create new EPS bearer	
E bit	'1'B	Parameters list is included	
Number of EPS parameters	'0010'B	2 parameters	
Mapped EPS QoS parameters	See reference dedicated EPS bearer context #3 and #4 in TS 36.508 table 6.6.2-1		
Traffic Flow Template	See reference dedicated EPS bearer context #3 and #4 in TS 36.508 table 6.6.2-1		

Condition	Explanation
Interworking_with_EPS	If the UE has indicated support of S1, then the SS shall include this IE to provide details for the interworking with EPS being supported for a PDU session. This requirement is set up for the purpose of facilitating the test description. It is not mandatory for the Network to support Mapped EPS bearer contexts.

**Table 4.9.24.3-4: RRCReconfiguration (step 10, Table 4.9.24.2.2-1)**

Derivation Path: TS 38.508-1 [21], Table 4.8.1-1D
---

## 4.9.25 Test procedure for UE Configuration Update for transparent UE Policy delivery

### 4.9.25.1 Scope

The purpose of this procedure is to transfer UE policy data to the UE.

4.9.25.2 Procedure description

4.9.25.2.1 Initial conditions

N/A

4.9.25.2.2 Procedure sequence

**Table 4.9.25.2.2-1: Test procedure for UE Configuration Update for transparent UE Policy delivery**

St	Procedure	Message Sequence	
		U – S	Message
1	The SS transmits a DL NAS TRANSPORT message.	<--	5GMM: DL NAS TRANSPORT
2	The UE transmits a UL NAS TRANSPORT message.	-->	5GMM: UL NAS TRANSPORT

4.9.25.3 Specific message contents

**Table 4.9.25.3-1: DL NAS TRANSPORT (step 1, Table 4.9.25.2.2-1)**

Derivation Path: 38.508-1 [4], Table 4.7.1-11			
Information Element	Value/remark	Comment	Condition
Payload container type	'0101'B	UE policy container	
Payload container	Set according toTable 4.7.6-1 using condition URSP		

**Table 4.9.25.3-2: UL NAS TRANSPORT (step 2, Table 4.9.25.2.2-1)**

Derivation Path: 38.508-1 [4], Table 4.7.1-12			
Information Element	Value/remark	Comment	Condition
Payload container type	'0101'B	UE policy container	
Payload container	Set according toTable 4.7.6-2		

## 4.9.26 Test procedure for IMS MT video call establishment in 5GC

4.9.26.1 Scope

The purpose of this procedure is to establish an IMS MT video call.

4.9.26.2 Procedure description

4.9.26.2.1 Initial conditions

System Simulator:

- 1 NR Cell connected to 5GC, default parameters.

User Equipment:

- The UE is in state 1N-A and registered to the IMS.

4.9.26.2.2 Procedure sequence

**Table 4.9.26.2.2-1: IMS MT video call establishment in 5GC**

St	Procedure	Message Sequence		TP	Verdict
		U – S	Message		
1	The SS transmits a <i>Paging</i> message.	<--	NR RRC: <i>Paging</i>	-	-
2	Check: Does the UE transmit an <i>RRCSetupRequest</i> message with 'establishmentCause' set to 'mt-Access'?	-->	NR RRC: <i>RRCSetupRequest</i>	-	P
3	The SS transmits an <i>RRCSetup</i> message.	<--	NR RRC: <i>RRCSetup</i>	-	-
4	Check: Does the UE transmit an <i>RRCSetupComplete</i> message and a SERVICE REQUEST message?	-->	NR RRC: <i>RRCSetupComplete</i> 5GMM: SERVICE REQUEST	-	P
5	The SS transmits a <i>SecurityModeCommand</i> message.	<--	NR RRC: <i>SecurityModeCommand</i>	-	-
6	The UE transmits a <i>SecurityModeComplete</i> message.	-->	NR RRC: <i>SecurityModeComplete</i>	-	-
7	The SS transmits an <i>RRCReconfiguration</i> message and a SERVICE ACCEPT message to establish SRB2 and DRB(s). The <i>RRCReconfiguration</i> message is configured using <i>RRCReconfiguration-SRB2-DRB(n, m)</i> where n and m are the number of DRB(s) configured with RLC-AM and RLC-UM respectively.	<--	NR RRC: <i>RRCReconfiguration</i> 5GMM: SERVICE ACCEPT	-	-
8	Check: Does the UE transmit an <i>RRCReconfigurationComplete</i> message?	-->	NR RRC: <i>RRCReconfigurationComplete</i>	-	P
-	EXCEPTION: Steps 9a1 to 9b5 describe behaviour that depends on UE configuration; the "lower case letter" identifies a step sequence that takes place if such configuration was conducted.	-	-	-	-
9a1-9a5	IF the UE is configured to use preconditions THEN steps 1-5 of Annex A.16.1 of TS 34.229-5 [47] take place.	-	-	-	-
9b1-9b5	ELSE steps 1-5 of Annex A.16.2 of TS 34.229-5 [47] take place.	-	-	-	-
10	The SS transmits an <i>RRCReconfiguration</i> message and a PDU SESSION MODIFICATION COMMAND message.	<--	NR RRC: <i>RRCReconfiguration</i> 5GMM: DL NAS TRANSPORT 5GSM: PDU SESSION MODIFICATION COMMAND	-	-
11	The UE transmits an <i>RRCReconfigurationComplete</i> message	-->	NR RRC: <i>RRCReconfigurationComplete</i>	-	-
12	Check: Does the UE transmit a <i>ULInformationTransfer</i> message, an UL NAS TRANSPORT message and an PDU SESSION MODIFICATION COMPLETE message?	-->	NR RRC: <i>ULInformationTransfer</i> 5GMM: UL NAS TRANSPORT 5GSM: PDU SESSION MODIFICATION COMPLETE	-	P
-	EXCEPTION: Steps 13a1 to 13b7 describe behaviour that depends on UE configuration; the "lower case letter" identifies a step sequence that takes place if such configuration was conducted.	-	-	-	-
13a1-13a7	IF the UE is configured to use preconditions THEN steps 6-12 of Annex A.16.1 of TS 34.229-5 [47] take place.	-	-	-	-
13b1-13b5	ELSE steps 6-10 of Annex A.16.2 of TS 34.229-5 [47] take place.	-	-	-	-

## 4.9.26.3 Specific message contents

Table 4.9.26.3-1: *RRCSetupRequest* (step 2, Table 4.9.26.2.2-1)

Derivation Path: Table 4.6.1-23			
Information Element	Value/remark	Comment	Condition
<i>RRCSetupRequest</i> ::= SEQUENCE {			
<i>rrcSetupRequest</i> SEQUENCE {			
<i>establishmentCause</i>	mt-Access		

}			
}			

**Table 4.9.26.3-2: SERVICE REQUEST (step 4, Table 4.9.26.2.2-1)**

Derivation Path: Table 4.7.1-26			
Information Element	Value/remark	Comment	Condition
Service type			
Service type value	'0010'B	Mobile Terminated Services	

**Table 4.9.26.3-3: PDU SESSION MODIFICATION COMMAND (step 10, Table 4.9.26.2.2-1)**

Derivation Path: TS 38.508-1 [21], Table 4.7.2-9.			
Information Element	Value/remark	Comment	Condition
PDU session ID	Same value as sent in PDU SESSION ESTABLISHMENT REQUEST message.		
Authorized QoS rules	Reference QoS rule #7 as defined in TS 38.508-1, Table 4.8.2.1-7 using conditions IMS_VOICE and IMS_VIDEO.		
Authorized QoS flow descriptions	Reference QoS flow #5 and QoS flow #6 as defined in TS 38.508-1, Table 4.8.2.3-5 & Table 4.8.2.3-6 respectively.		
Mapped EPS bearer contexts	Not Present		
Mapped EPS bearer contexts			Interworking with_EPS
Mapped EPS bearer context			
EPS bearer identity	The same value as the one specified in the Reference QoS flow referred to from the Reference QoS rule indicated in the IE Authorized QoS rules		
Operation code	'001'B	Create new EPS bearer	
E bit	'1'B	Parameters list is included	
Number of EPS parameters	'0001'B	1 parameter	
Mapped EPS QoS parameters	See reference dedicated EPS bearer context #3 and EPS bearer context #4 in TS 36.508 table 6.6.2-1		
Traffic flow Template	See reference dedicated EPS bearer context #3 and EPS bearer context #4 in TS 36.508 table 6.6.2-1		

Condition	Explanation
Interworking_with_EPS	If the UE has indicated support of S1, then the SS shall include this IE to provide details for the interworking with EPS being supported for a PDU session. This requirement is set up for the purpose of facilitating the test description. It is not mandatory for the Network to support Mapped EPS bearer contexts.

**Table 4.9.26.3-4: RRCReconfiguration (step 10, Table 4.9.26.2.2-1)**

Derivation Path: TS 38.508-1 [21], Table 4.8.1-1D
---

## 4.9.27 Test procedure for adding video to a speech call in 5GC

### 4.9.27.1 Scope

The purpose of this procedure is to add video to an established speech call.

### 4.9.27.2 Procedure description

#### 4.9.27.2.1 Initial conditions

System Simulator:

- 1 NR Cell connected to 5GC, default parameters.

User Equipment:

- The UE is in state 3N-A and registered to the IMS.

#### 4.9.27.2.2 Procedure sequence

**Table 4.9.27.2.2-1: IMS video call addition in 5GC**

St	Procedure	Message Sequence		TP	Verdict
		U – S	Message		
1	The SS transmits an <i>RRCReconfiguration</i> message and a PDU SESSION MODIFICATION COMMAND message.	<--	NR RRC: <i>RRCReconfiguration</i> 5GMM: DL NAS TRANSPORT 5GSM: PDU SESSION MODIFICATION COMMAND	-	-
-	EXCEPTION: Steps 2 and 3 can occur in any order.	-	-	-	-
2	The UE transmits an <i>RRCReconfigurationComplete</i> message	-->	NR RRC: <i>RRCReconfigurationComplete</i>	-	-
3	Check: Does the UE transmit a <i>ULInformationTransfer</i> message, an UL NAS TRANSPORT message and an PDU SESSION MODIFICATION COMPLETE message?	-->	NR RRC: <i>ULInformationTransfer</i> 5GMM: UL NAS TRANSPORT 5GSM: PDU SESSION MODIFICATION COMPLETE	-	-

### 4.9.27.3 Specific message contents

**Table 4.9.27.3-1: PDU SESSION MODIFICATION COMMAND (step 1, Table 4.9.27.2.2-1)**

Derivation Path: TS 38.508-1 [21], Table 4.7.2-9.			
Information Element	Value/remark	Comment	Condition
PDU session ID	Same value as sent in PDU SESSION ESTABLISHMENT REQUEST message.		
Authorized QoS rules	Reference QoS rule #7 as defined in Table 4.8.2.1-7 using condition IMS_VIDEO and Rule operation code 011.		
Authorized QoS flow descriptions	Reference QoS flow #6 as defined in Table 4.8.2.3-6 respectively.		
Mapped EPS bearer contexts	Not Present		



Mapped EPS bearer contexts			Interworking _with_EPS
Mapped EPS bearer context			
EPS bearer identity	The same value as the one specified in the Reference QoS flow referred to from the Reference QoS rule indicated in the IE Authorized QoS rules		
Operation code	'001'B	Create new EPS bearer	
E bit	'1'B	Parameters list is included	
Number of EPS parameters	'0001'B	1 parameter	
Mapped EPS QoS parameters	See reference dedicated EPS bearer context #3 in TS 36.508 table 6.6.2-1		
Traffic flow Template	See reference dedicated EPS bearer context#3 in TS 36.508 table 6.6.2-1		

Condition	Explanation
Interworking_with_EPS	If the UE has indicated support of S1, then the SS shall include this IE to provide details for the interworking with EPS being supported for a PDU session. This requirement is set up for the purpose of facilitating the test description. It is not mandatory for the Network to support Mapped EPS bearer contexts.

Table 4.9.27.3-2: RRCReconfiguration (step 1, Table 4.9.27.2.2-1)

Derivation Path: Table 4.6.1-13 with condition NR.			
Information Element	Value/remark	Comment	Condition
RRCReconfiguration ::= SEQUENCE {			
criticalExtensions CHOICE {			
c1 CHOICE {			
rrcReconfiguration SEQUENCE {			
radioBearerConfig	RadioBearerConfig-AddVideo		
}			
nonCriticalExtension SEQUENCE {			
masterCellGroup	CellGroupConfig-DRB(0,1)	OCTET STRING (CONTAINING CellGroupConfig)	
}			
}			
}			
}			

Table 4.9.27.3-3 : RadioBearerConfig-AddVideo (Table 4.9.27.3-2)

Derivation Path: Table 4.6.3-132 and condition SRB2.			
Information Element	Value/remark	Comment	Condition
RadioBearerConfig ::= SEQUENCE {			
drb-ToAddModList SEQUENCE (SIZE (1..maxDRB)) OF DRB-ToAddMod {	1 entry		
DRB-ToAddMod [1] SEQUENCE {		entry 1	
cnAssociation CHOICE {			
sdap-Config SEQUENCE {	SDAP-Config		
defaultDRB	false		
}			
}			
drb-Identity	j	j is allocated	

		according to internal TTCN mapping	
reestablishPDCP	Not present		
recoverPDCP	Not present		
pdcp-Config	PDCP-Config with condition UM		
}			

## 4.9.28 Test procedure for removing video from an ongoing call in 5GC

### 4.9.28.1 Scope

The purpose of this procedure is to remove video from an established speech call.

### 4.9.28.2 Procedure description

#### 4.9.28.2.1 Initial conditions

System Simulator:

- 1 NR Cell connected to 5GC, default parameters.

User Equipment:

- The UE is in state 3N-A and registered to the IMS.

#### 4.9.28.2.2 Procedure sequence

**Table 4.9.28.2.2-1: IMS video removal from established call in 5GC**

St	Procedure	Message Sequence		TP	Verdict
		U – S	Message		
1	The SS transmits an <i>RRCReconfiguration</i> message and a PDU SESSION MODIFICATION COMMAND message.	<--	NR RRC: <i>RRCReconfiguration</i> 5GMM: DL NAS TRANSPORT 5GSM: PDU SESSION MODIFICATION COMMAND	-	-
-	EXCEPTION: Steps 2 and 3 can occur in any order.	-	-	-	-
2	The UE transmits an <i>RRCReconfigurationComplete</i> message	-->	NR RRC: <i>RRCReconfigurationComplete</i>	-	-
3	Check: Does the UE transmit a <i>ULInformationTransfer</i> message, an UL NAS TRANSPORT message and an PDU SESSION MODIFICATION COMPLETE message?	-->	NR RRC: <i>ULInformationTransfer</i> 5GMM: UL NAS TRANSPORT 5GSM: PDU SESSION MODIFICATION COMPLETE	-	-

### 4.9.28.3 Specific message contents

**Table 4.9.28.2.3-1: *RRCReconfiguration* (step 1, Table 4.9.28.2.2-1)**

Derivation Path: Table 4.6.1-13.			
Information Element	Value/remark	Comment	Condition
<i>RRCReconfiguration</i> ::= SEQUENCE {			
criticalExtensions CHOICE {			
rrcReconfiguration SEQUENCE {			
radioBearerConfig SEQUENCE {			
drb-ToReleaseList SEQUENCE (SIZE (1..maxDRB)) OF DRB-Identity {	1 entry		
DRB-Identity[1]	DRB-Identity linked to the IMS video bearer	entry 1	

}			
}			
nonCriticalExtension SEQUENCE {			
masterCellGroup SEQUENCE {			
rlc-BearerToReleaseList SEQUENCE (SIZE (1..maxLC-ID)) OF LogicalChannelIdentity {	1 entry		
LogicalChannelIdentity[1]	Same value as drb-Identity[1] above	entry 1	
}			
}			
}			
}			
}			
}			
}			

**Table 4.9.28.2.3-2: PDU SESSION MODIFICATION COMMAND (step 1, Table 4.9.28.2.2-1)**

Derivation Path: Table 4.7.2-9.			
Information Element	Value/remark	Comment	Condition
PDU session ID	Same value as sent in PDU SESSION ESTABLISHMENT REQUEST message.		
Authorized QoS rules			
QoS rule[1]			
QoS rule identifier	'00000100'B	QoS rule 7	
Rule operation code	'010'B	Delete existing QoS rule	
Authorized QoS flow descriptions			
QoS flow descriptions[1]			
QFI	'00001000'B	QFI 8	
Operation code	'010'B	Delete existing QoS flow	

## 4.9.29 Test Procedure for eCall over IMS establishment in 5GS: eCall Only Support

### 4.9.29.1 Scope

The purpose of this test procedure is to allow successful completion of eCall over IMS in 5GS when UE is in 5GMM-DEREGISTERED.eCALL-INACTIVE.

The test procedure is applicable for UEs with eCall over IMS support.

Note: The trigger to initiate MO call will be part of test case from where the generic procedure is called.

### 4.9.29.2 Procedure description

#### 4.9.29.2.1 Initial conditions

System Simulator:

- 1 NR Cell connected to 5GC, default parameters.

User Equipment:

- The Test UICC shall be inserted. It shall provide Emergency Numbers.

The test procedure assumes that the UE is in test state 0-A, subclause 4.4A.2 on the NR Cell. All necessary details required shall be explicitly specified in the TC which calls the procedure in its entirety or refers to parts of it.

4.9.29.2.2 Procedure sequence

The establishment of eCall over IMS in 5GS is assumed to always be mobile originated.

**Table 4.9.29.2.2-1: Test procedure sequence for eCall over IMS Emergency establishment in 5GS (eCall Only Support)**

St	Procedure	Message Sequence		TP	Verdict
		U - S	Message/PDU/SDU		
-	EXCEPTION: Unless otherwise stated all the messages below are transmitted on the cell specified in the test case.	-	-	-	-
1	The UE is switched on and SS waits 15 sec to allow the UE to camp on the serving cell and enter and remain in substate 5GMM-DEREGISTERED.eCALL-INACTIVE	-	-	-	-
2	Make the UE attempt an eCall (Note)	-	-	-	-
3-20	Steps 2 to 19 of generic procedure 4.5.2.2-2 takes place.	-	-	-	-
21-26	Steps 8 to 13 of test procedure 4.9.11 takes place with condition 'eCall'.	-	-	-	-
Note: The request to originate a manual or Automatic eCall may be performed by MMI or AT command					

4.9.29.2.3 Specific Message content

All specific message contents shall be according to subclause 4.6 and 4.7 with the exceptions below.

**Table 4.9.29.2.3-1: SIB1 (at any time prior and during the procedure, Table 4.9.29.2.2-1)**

Derivation Path: Table 4.6.1-28.			
Information Element	Value/remark	Comment	Condition
SIB1 ::= SEQUENCE {			
ims-EmergencySupport	Present	true	
}			

4.9.30 Test procedure for releasing unicast mode NR sidelink communication

4.9.30.1 Scope

The purpose of this procedure is to release unicast mode sidelink communication.

4.9.30.2 Procedure description

4.9.30.2.1 Initial conditions

The UE is in state 1N-B, 3N-B or 4-A with a PC5 unicast mode sidelink communication established.

4.9.30.2.2 Procedure sequence

**Table 4.9.30.2.2-1: Procedure for releasing unicast mode NR sidelink communication**

St	Procedure	Message Sequence	
		U - S	Message
1	The NR-SS-UE sends a DIRECT LINK RELEASE REQUEST message.	<--	PC5-S: DIRECT LINK RELEASE REQUEST
2	The UE sends a DIRECT LINK RELEASE ACCEPT message.	-->	PC5-S: DIRECT LINK RELEASE ACCEPT

## 4.9.30.3 Specific message contents

**Table 4.9.30.3-1: DIRECT LINK RELEASE REQUEST (Step 1, Table 4.9.30.2.2-1)**

Derivation Path: Table 4.7.4-11 with condition Rx
---

**Table 4.9.30.3-2: DIRECT LINK RELEASE ACCEPT (Step 2, Table 4.9.30.2.2-1)**

Derivation Path: Table 4.7.4-12 with condition Tx
---

## 4.9.31 Test procedure to check user plane connectivity on PC5 unicast link

### 4.9.31.1 Scope

The purpose of this procedure is to check user plane connectivity on established PC5 unicast link.

### 4.9.31.2 Procedure description

#### 4.9.31.2.1 Initial conditions

The UE is in state 1N-B, 3N-B or 4-A. The PC5 unicast link between the UE and the NR-SS-UE and corresponding AS layer connection (PC5-RRC, sidelink DRB) have been established.

## 4.9.31.2.2 Procedure sequence

**Table 4.9.31.2.2-1: Procedure to check user plane connectivity on PC5 unicast link**

St	Procedure	Message Sequence		TP	Verdict
		U – S	Message		
1	The SS triggers UE to close UE test loop mode E (Receive Mode).  NOTE: Closing of UE test loop mode E may be performed by MMI or AT command (+CCUTLE).	-	-	-	-
2	The NR-SS-UE transmits one SDAP SDU on SL DRB#n  NOTE: SL DRB#n is the SL DRB associated with the PC5 unicast link to be verified.	-	-	-	-
3	The SS requests the UE to report the counter of successful reception of SDAP SDU packets.  NOTE: Requesting the UE to report the counter of successful reception of SDAP packets may be performed by MMI or AT command (+CUSPCREQ).	-	-	-	-
4	Check: Does the reported counter of successful reception of SDAP SDU packets equal to 1?	-	-	-	P
5	The SS triggers UE to open UE test loop mode E.  NOTE: Opening of UE test loop mode E may be performed by MMI or AT command (+CCUTLE).	-	-	-	-
6	The SS triggers UE to close UE test loop mode E (Transmit Mode).  NOTE: Closing of UE test loop mode E may be performed by MMI or AT command (+CCUTLE).	-	-	-	-
7	Check: Does UE continuously send SDAP SDUs on SL DRB#n in every PSSCH duration?	-	-	-	P
8	The SS triggers UE to open UE test loop mode E.  NOTE: Opening of UE test loop mode E may be performed by MMI or AT command (+CCUTLE).	-	-	-	-

## 4.9.31.3 Specific message contents

FFS

**4.9.32 Test procedure to activate UE Power Limit Function (UPLF)**

**Editor's note:** The power limit request message values set by the UPLF test mode is currently applicable to equal PSD (equal channel bandwidths on all component carriers) only. Message values are pending for unequal channel bandwidths

## 4.9.32.1 Initiation

UE is operating in FR2 in RRC\_CONNECTED state with UE power limit test function activated.

## 4.9.32.2 Procedure

Table 4.9.32.2-1: Test procedure Sequence

St	Procedure	Message Sequence		TP	Verdict
		U - S	Message/PDU/SDU		
1	SS request UE to activate UE Power Limit Function	<--	ACTIVATE POWER LIMIT REQUEST	-	-
2	UE confirms that UE Power Limit Function is activated	-->	ACTIVATE POWER LIMIT RESPONSE	-	-

## 4.9.32.3 Specific Message contents

Table 4.9.32.3-1: ACTIVATE POWER LIMIT REQUEST

Derivation Path: 38.509 clause 6.11.1			
Information Element	Value/remark	Comment	Condition
Protocol discriminator	1 1 1 1		
Skip indicator	0 0 0 0		
Message type	1 0 1 0 0 0 0 0		
POWER LIMIT REQUEST	1 0 1 0 0 0 0 0		NR FR2 2CA
POWER LIMIT REQUEST	1 0 1 0 0 0 0 1		NR FR2 3CA
POWER LIMIT REQUEST	1 0 1 0 0 0 1 0		NR FR2 4CA
POWER LIMIT REQUEST	1 0 1 0 0 0 1 1		NR FR2 5CA
POWER LIMIT REQUEST	1 0 1 0 0 1 0 0		NR FR2 6CA
POWER LIMIT REQUEST	1 0 1 0 0 1 0 1		NR FR2 7CA
POWER LIMIT REQUEST	1 0 1 0 0 1 1 0		NR FR2 8CA

Condition	Explanation
NR FR2 2CA	Power Limit Request corresponding to NR FR2 2CA only
NR FR2 3CA	Power Limit Request corresponding to NR FR2 3CA only
NR FR2 4CA	Power Limit Request corresponding to NR FR2 4CA only
NR FR2 5CA	Power Limit Request corresponding to NR FR2 5CA only
NR FR2 6CA	Power Limit Request corresponding to NR FR2 6CA only
NR FR2 7CA	Power Limit Request corresponding to NR FR2 7CA only
NR FR2 8CA	Power Limit Request corresponding to NR FR2 8CA only

Table 4.9.32.3-2: ACTIVATE POWER LIMIT RESPONSE

Derivation Path: 38.509 clause 6.11.2			
Information Element	Value/remark	Comment	Condition
Protocol discriminator	1 1 1 1		
Skip indicator	0 0 0 0		
Message type	1 0 1 0 1 1 0 1		

## 4.9.33 Test procedure to deactivate UE Power Limit Function (UPLF)

**Editor's note:** The power limit request message values set by the UPLF test mode is currently applicable to equal PSD (equal channel bandwidths on all component carriers) only. Message values are pending for unequal channel bandwidths

## 4.9.33.1 Initiation

UE is operating in FR2 in RRC\_CONNECTED state.

## 4.9.33.2 Procedure

**Table 4.9.33.2-1: Test procedure Sequence**

St	Procedure	Message Sequence		TP	Verdict
		U - S	Message/PDU/SDU		
1	SS request UE to deactivate UE Power Limit Function	<--	DEACTIVATE POWER LIMIT REQUEST	-	-
2	UE confirms that UE Power Limit Function is deactivated	-->	DEACTIVATE POWER LIMIT RESPONSE	-	-

## 4.9.33.3 Specific Message contents

**Table 4.9.33.3-1: DEACTIVATE POWER LIMIT REQUEST**

Derivation Path: 38.509 clause 6.11.3			
Information Element	Value/remark	Comment	Condition
Protocol discriminator	1 1 1 1		
Skip indicator	0 0 0 0		
Message type	1 0 1 0 1 1 1 0		

**Table 4.9.33.3-2: DEACTIVATE POWER LIMIT RESPONSE**

Derivation Path: 38.509 clause 6.11.4			
Information Element	Value/remark	Comment	Condition
Protocol discriminator	1 1 1 1		
Skip indicator	0 0 0 0		
Message type	1 0 1 0 1 1 1 1		



## 4.10 Reference configuration for V2X

### 4.10.1 Pre-configuration for V2X

– SL-PreconfigurationNR

**Table 4.10.1-1: SL-PreconfigurationNR**

Derivation Path: TS 38.331 [6], clause 9.3			
Information Element	Value/remark	Comment	Condition
SL-PreconfigurationNR-r16 ::= SEQUENCE {			
sidelinkPreconfigNR-r16 SEQUENCE {			
sl-PreconfigFreqInfoList-r16 SEQUENCE (SIZE (1..maxNrofFreqSL-r16)) OF {	1 entry		
SL-FreqConfigCommon-r16[1]	SL-FreqConfigCommon-r16	entry 1	
}			
sl-PreconfigNR-AnchorCarrierFreqList-r16	Not present		
sl-PreconfigEUTRA-AnchorCarrierFreqList-r16	Not present		
sl-RadioBearerPreConfigList-r16 SEQUENCE (SIZE (1..maxNrofSLRB-r16)) OF {	1 entry		
SL-RadioBearerConfig-r16[1]	SL-RadioBearerConfig-r16	entry 1	
}			
sl-RLC-BearerPreConfigList-r16 SEQUENCE (SIZE (1..maxSL-LCID-r16)) OF {	1 entry		
SL-RLC-BearerConfig-r16[1]	SL-RLC-BearerConfig-r16	entry 1	
}			
sl-MeasPreConfig-r16	Not present		
sl-OffsetDFN-r16	Not present		
t400-r16	ms1000		
sl-MaxNumConsecutiveDTX-r16	n32		
sl-SSB-PriorityNR-r16	1		
sl-PreconfigGeneral-r16 SEQUENCE {			
sl-TDD-Configuration-r16	Not present		
reservedBits-r16	00		
}			
sl-UE-SelectedPreConfig-r16 SEQUENCE {			
sl-PSSCH-TxConfigList-r16	SL-PSSCH-TxConfigList-r16 for Preconfiguration		
sl-ProbResourceKeep-r16	v0		
sl-ReselectAfter-r16	n9		
sl-CBR-CommonTxConfigList-r16	Not present		
ul-PrioritizationThres-r16	Not present		
sl-PrioritizationThres-r16	Not present		
}			
sl-CSI-Acquisition-r16	Not present		
sl-RoHC-Profiles-r16	Not present		
sl-MaxCID-r16	Not present	default value 15 is used	
}			
}			

**Table 4.10.1-2: SL-PSSCH-TxConfigList-r16 for Preconfiguration (Table 4.10.1-1)**

Derivation Path: TS 38.331 [6], clause 6.3.5			
Information Element	Value/remark	Comment	Condition
SL-PSSCH-TxConfigList-r16 ::= SEQUENCE (SIZE (1..maxPSSCH-TxConfig-r16)) OF SL-PSSCH-TxConfig-r16 {	1 entry		
sl-TypeTxSync-r16	Not present	Applicable for all synchronization reference types	
sl-ThresUE-Speed-r16	kmph60		
sl-ParametersAboveThres-r16 SEQUENCE {			
sl-MinMCS-PSSCH-r16	0		
sl-MaxMCS-PSSCH-r16	26		
sl-MinSubChannelNumPSSCH-r16	1		
sl-MaxSubchannelNumPSSCH-r16	27		
sl-MaxTxTransNumPSSCH-r16	4		
sl-MaxTxPower-r16	Not present		
}			
sl-ParametersBelowThres-r16 SEQUENCE {			
sl-MinMCS-PSSCH-r16	0		
sl-MaxMCS-PSSCH-r16	26		
sl-MinSubChannelNumPSSCH-r16	1		
sl-MaxSubchannelNumPSSCH-r16	27		
sl-MaxTxTransNumPSSCH-r16	4		
sl-MaxTxPower-r16	Not present		
}			
}			

## 4.11 GNSS Requirements for NR sidelink

### 4.11.1 General

This clause defines the GNSS scenarios and requirements which apply for all NR sidelink test cases that require simulated GNSS signals, unless otherwise specified.

The term SV ID used in this clause is defined as the satellite PRN for GPS and Modernized GPS, as Code Number for Galileo, as the satellite Slot Number for GLONASS and as the Ranging Code Number for BDS.

### 4.11.2 GNSS Scenarios

The following GNSS scenarios shall be used.

- Rinex navigation data: the required navigation data file(s) available in the GNSS orbital data sig zip file specified in TS 37.571-5 [49] Annex B are given in Table 4.11.2-1.

**Table 4.11.2-1: Rinex navigation data files for NR sidelink testing**

GNSS supported by UE	Rinex navigation file(s) <sup>(1)</sup>
GPS	Sig GNSS GPS 2020_9_17 Rinex.txt
GLONASS	Sig GNSS GLONASS 2020_9_17 Rinex.txt
Galileo	Sig GNSS Galileo 2020_9_17 Rinex.txt
BDS	Sig GNSS BDS 2020_9_17 Rinex.txt
Note 1: Where the UE supports more than one GNSS then all the relevant Rinex navigation data files are used	

- UE location(s) and motion:

Latitude: the simulated latitude(s) are given in Table 4.11.2-3

Longitude: the simulated longitude(s) are given in Table 4.11.2-3

Height: the simulated height is 30m

Motion: the simulated motion(s) are given in Table 4.11.2-2

**Table 4.11.2-2: UE location(s) and motion(s) for NR sidelink testing**

Scenario number and description	Step #	Action (Location details given in Table 4.11.2-3)	Notes
Scenario #1: static in Geographical area #1 Note 1	1	Static at location #1	
Scenario #2: move from inside Geographical area #1 to outside Geographical area #1 Note 1	1	Static at location #1	Simulation leaves Geographical area #1 after 905 m, 60s after the trigger. An additional 1s is added to allow for UE position accuracy of +/- 15m. An additional 10s is added to allow for UE position update. Total time 71s
	2	Trigger from test case to move in a straight line at 15m/s from current location to next location	
	3	Static at location #2	
Note 1: Geographical area #1 is defined in clause 4.7.5.5-9 and is defined by three points with the following coordinates: Point 1: latitude: 35.753056, longitude: 139.689167 Point 2: latitude: 35.735278, longitude: 139.689167 Point 3: latitude: 35.744167, longitude: 139.709167			

**Table 4.11.2-3: Location descriptions for NR sidelink testing**

Location number	Description for information only	Latitude (degrees)	Longitude (degrees)
#1	Approximate centre of Geographical area #1	35.74428	139.69916
#2	Approximately 1720m due west of location #1, outside Geographical area #1	35.74428	139.68017

**Table 4.11.2-4: Zone id calculations for NR sidelink testing**

Description	Latitude (degrees)	Longitude (degrees)	Long distance from 0,0 in m (x) Note 1	Lat distance from 0,0 in m (y) Note 1	Values for zone_id calculation (Note 2, Note 3)
Centre of zone	35.74478	139.70333	11061850	3957225	Zone_id = 2613 x <sub>1</sub> = 53, y <sub>1</sub> = 40
Note 1: all distances are +/- 1m Note 2: <i>sl-ZoneLength</i> is set to 50m in accordance with Table 4.6.6-36, this allows for the accuracy with which a UE can define its position which is assumed to be +/- 15m. Note 3: zone id is calculated according to TS 38.331 [6] clause 5.8.11.					

- Nominal start time:  
17<sup>th</sup> September 2020 23:40:00 (GPS time) (UTC time: 17<sup>th</sup> September 2020 23:39:42).
- Visible satellites to be simulated are given in Table 4.11.2-5 and are above 15 degrees elevation with respect to the UE. These satellites have been selected to give a reasonable HDOP for the duration of the test.

**Table 4.11.2-5: Satellites to be simulated for NR sidelink testing**

GNSS supported by UE	SV IDs of Satellites to be simulated <sup>(1)</sup>
GPS	3, 4, 6, 17, 19, 28
GLONASS	3, 4, 5, 10, 18, 19
Galileo	3, 5, 13, 15, 21, 27
BDS	38, 40, 42, 43, 59, 60 <sup>(2)</sup>
Note 1: Where the UE supports more than one GNSS then all the relevant satellites are simulated. Note 2: For BDS, the satellite types are as follows: GEO: 59, 60, IGSO: 38, 40, MEO: 42, 43.	

- The levels of the simulated satellites are given in Table 4.11.2-6 and shall be generated with an accuracy of +/- 3dB. These conditions are defined for when there is no GNSS assistance data available at the UE and are specified in TS 38.133 [13] clause B.4.

**Table 4.11.2-6: GNSS Reference Signal Power Requirements**

System	Parameters	Unit	Value
	Number of generated satellites per system	-	6
GPS <sup>(1)</sup>	Reference signal power level for all satellites	dBm	-128.5
Galileo	Reference signal power level for all satellites	dBm	-127
GLONASS	Reference signal power level for all satellites	dBm	-131
BDS	Reference signal power level for all satellites	dBm	-133

NOTE 1: "GPS" here means GPS L1 C/A, Modernized GPS, or both, dependent on UE capabilities.  
NOTE 2: The DUT UE does not need to support all systems. The DUT UE shall support at least one system and will be tested for the supported system(s).

- Ionospheric model: simulated values are given in Tables 4.11.2-7 and 4.11.2-8.

**Table 4.11.2-7: Klobuchar ionospheric model for GPS or GLONASS or BDS if supported by the UE**

Model element	Units	Value/remark
alfa0	seconds	4.6566129 10E-9
alfa1	sec/semi-circle	1.4901161 10E-8
alfa2	sec/(semi-circle) <sup>2</sup>	-5.96046 10E-8
alfa3	sec/(semi-circle) <sup>3</sup>	-5.96046 10E-8
beta0	seconds	79872
beta1	sec/semi-circle	65536
beta2	sec/(semi-circle) <sup>2</sup>	-65536
beta3	sec/(semi-circle) <sup>3</sup>	-393216

**Table 4.11.2-8: neQuick ionospheric model for Galileo if supported by the UE**

Model Element	Units	Value/remark
ai0	solar flux unit	64.4
ai1	solar flux unit/degree	0
ai2	solar flux unit/degree <sup>2</sup>	0

- Tropospheric model: STANAG with SRI equal to 324.8, as defined in STANAG 4294 [50].

## 5 Test environments for RF test

### 5.0 General

#### 5.0.1 Single PDU configuration for RF testing

For RF and performance test case execution on 5G SA UE's defined in TS 38.521-1 [14], TS 38.521-2 [15], TS 38.521-4 [17], IMS shall not be considered and UE's shall be able use RRC (IDLE, CONNECTED) preambles defined in TS 38.508-1 clause 4.5. Before entering RRC\_CONNECTED or RRC\_IDLE state during initial conditions or test procedure, it is recommended that UE is pre-configured with 0 or 1 PDU (non-IMS).

For EN-DC settings the corresponding requirement holds that IMS shall not be considered and it is recommended that UE is pre-configured with 0PDU/0PDN or 1PDU/1 PDN.

### 5.1 Requirements of test equipment

#### 5.1.1 Requirements for transmission and reception tests

##### 5.1.1.1 Requirements common for conducted and OTA tests

No common RF test environment requirements are specified in addition to the common requirements described in clause 4.2.

##### 5.1.1.2 Requirements for conducted tests

No common RF test environment requirements are specified in addition to the common requirements described in clause 4.2.

##### 5.1.1.3 Requirements for OTA tests

###### Editor's Note:

- The UE pre-configuration mentioned below to disable UL Tx diversity schemes shall be voided once a test methodology solution to minimize spectral flatness artefacts between TE and UE over all test points is defined.
- The permitted test methods for transmission and reception test are DFF, DFF with simplification for centre of beam measurements, IFF and NFTF and are described in TR 38.810[24]. The minimum requirements for each test setup are described in the following clauses.
- For conformance testing using the OTA test environment, the UE under test shall be pre-configured with UL Tx diversity schemes disabled to account for single polarization System Simulator (SS) in the test environment. The UE under test may transmit with dual polarization.

##### 5.1.1.3.1 DFF and DFF with simplification for centre of beam measurements

- Far-field measurement system in an anechoic chamber.
- The minimum far-field distance R for a traditional far field anechoic chamber can be calculated based on the following equation:  $R > \frac{2D^2}{\lambda}$ , where D is the diameter of the smallest sphere that encloses the radiating parts of the DUT.
- A positioning system such that the angle between the dual-polarized measurement antenna and the DUT has at least two axes of freedom and maintains a polarization reference.

- For DFF(without simplification), a positioning system such that the angle between the link antenna and the DUT has at least two axes of freedom and maintains a polarization reference; this positioning system for the link antenna is in addition to the positioning system for the measurement antenna and provides for an angular relationship independently controllable from the measurement antenna.
- For setups intended for measurements of UE RF characteristics in non-standalone (NSA) mode with 1 UL configuration, an LTE link antenna is used to provide the LTE link to the DUT. The LTE link antenna provides a stable LTE signal without precise path loss or polarization control.
- For setups intended for measurements in NR CA mode with FR1 and FR2 inter-band NR CA, test setup provides NR FR1 link to the DUT. The NR FR1 link has a stable and noise-free signal without precise path loss or polarization control.
- Maximum permitted test system uncertainty is specified in Annex F in 38.521-2[15].

#### 5.1.1.3.2 IFF

- Indirect Far field of Compact Antenna Test Range(CATR) with quiet zone diameter at least D.
- The CATR system does not require a measurement distance of  $R > \frac{2D^2}{\lambda}$  to achieve a plane wave as in a standard far field range.
- A positioning system such that the angle between the dual-polarized measurement antenna and the DUT has at least two axes of freedom and maintains a polarization reference.
- For setups intended for measurements of UE RF characteristics in non-standalone (NSA) mode with 1UL configuration, an LTE link antenna is used to provide the LTE link to the DUT. The LTE link antenna provides a stable LTE signal without precise path loss or polarization control.
- For setups intended for measurements in NR CA mode with FR1 and FR2 inter-band NR CA, test setup provides NR FR1 link to the DUT. The NR FR1 link has a stable and noise-free signal without precise path loss or polarization control.
- Maximum permitted test system uncertainty is specified in Annex F in 38.521-2[15].

#### 5.1.1.3.3 NFTF

- Radiated Near Field UE beam pattern are measured and based on the NFTF mathematical transform, the final metric such as EIRP is the same as the metric for the DFF setup
- A positioning system such as the angle between the dual-polarized measurement/link antenna and the DUT has at least two axes of freedom and maintains a polarization reference
- For setups intended for measurements of UE RF characteristics in non-standalone (NSA) mode with 1UL configuration, an LTE link antenna is used to provide the LTE link to the DUT. The LTE link antenna provides a stable LTE signal without precise path loss or polarization control.
- For setups intended for measurements in NR CA mode with FR1 and FR2 inter-band NR CA, test setup provides NR FR1 link to the DUT. The NR FR1 link has a stable and noise-free signal without precise path loss or polarization control.
- Maximum permitted test system uncertainty is specified in Annex F in 38.521-2[15].

## 5.1.2 Requirements for performance tests

5.1.2.1 Void

5.1.2.2 Void

5.1.2.3 Requirements for OTA test method

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

- *The UE pre-configuration mentioned below to disable UL Tx diversity schemes shall be voided once a test methodology solution to minimize spectral flatness artefacts between TE and UE over all test points is defined.*
- *For conformance testing using the OTA test environment, the UE under test shall be pre-configured with UL Tx diversity schemes disabled to account for single polarization System Simulator (SS) in the test environment. The UE under test may transmit with dual polarization.*

## 5.2 Reference test conditions

### 5.2.1 Signal levels

#### 5.2.1.1 Signal Levels for conducted testing

For NR FR1 cell, the downlink power settings are specified in TS 38.521-1[14] and TS 38.521-3[16].

The uncertainty value is specified in TS 38.521-1 [14] Annex F or in TS 38.521-3 [16] Annex F.

#### 5.2.1.2 Signal Levels for OTA testing

##### 5.2.1.2.1 Downlink Signal Levels

For E-UTRA cell in EN-DC with FR2 NR, the downlink power settings are specified in clause 4.7 of TS 38.521-3[16].

For FR2 NR cell, the downlink power settings are specified in Annex C.0 of TS 38.521-2[15] and Annex C.0 of TS 38.521-3[16].

The uncertainty value is specified in TS 38.521-2 [15] Annex F or in TS 38.521-3 [16] Annex F.

### 5.2.2 Test Frequencies

As defined in clause 4.3.1.1 with the following exceptions for Demodulation test cases

#### 5.2.2.1 NR operating bands in FR1

##### 5.2.2.1.1 Reference test frequencies for NR operating band n1

**Table 5.2.2.1-1: Void**

**Table 5.2.2.1.1-1: Test frequencies for NR operating band n1 and SCS 15 kHz**

CBW [MHz]	carrier Band width	Range	Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequencyPointA	offsetToCarrier [Carrier	SS block SCS [kHz]	GSC N	absoluteFrequencySSB	$k_{SSB}$	Offset to Carrier
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	[PRBs]					[ARFCN]	PRBs]			[ARFCN]		E [F N]
10	52	Downlink	Mid	2140	428000	2135.32	427064	0	15	5344	427490	10
		Uplink	Mid	1950	390000	1945.32	389064	0	-	-	-	-

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

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

5.2.2.1.2 Reference test frequencies for NR operating band n2

Table 5.2.2.1.2-1: Test frequencies for NR operating band n2 and SCS 15 kHz

CBW [MHz]	carrierBand width [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequencyPointA [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS [kHz]	GSCN	absoluteFrequencySubcarrierBlock [ARFCN]	k <sub>SSB</sub>
10	52	Downlink	Mid	1960	392000	1955.32	391064	0	15	4894	391490	10
		Uplink	Mid	1880	376000	1875.32	375064	0	-	-	-	-

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

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

5.2.2.1.3 Reference test frequencies for NR operating band n3

Table 5.2.2.1.3-1: Test frequencies for NR operating band n3 and SCS 15 kHz

CBW [MHz]	carrierBand width [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequencyPointA [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS [kHz]	GSCN	absoluteFrequencySubcarrierBlock [ARFCN]	k <sub>SSB</sub>
10	52	Downlink	Mid	1842.5	368500	1837.82	367564	0	15	4598	367930	2
		Uplink	Mid	1747.5	349500	1742.82	348564	0	-	-	-	-

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

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



5.2.2.1.4 FFS

5.2.2.1.5 Reference test frequencies for NR operating band n5

**Table 5.2.2.1.5-1: Test frequencies for NR operating band n5 and SCS 15 kHz**

CBW [MHz]	carrier Bandwidth [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absolute Frequency Point A [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS [kHz]	GSCN	absolute Frequency Subcarrier [ARFCN]	$k_{SSB}$	C
		Downlink	Mid										
10	52	Downlink	Mid	881.5	176300	876.82	175364	0	15	2197	175730	2	
		Uplink	Mid	836.5	167300	831.82	166364	0	-	-	-	-	
<p>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 <math>C_{CORESET}</math> signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.</p> <p>Note 2: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter <math>\Delta F_{OffsetCORESET-0-Carrier}</math> in Annex C expressed in number of common RBs.</p> <p>Note 3: This UE channel bandwidth is applicable only to downlink.</p>													

5.2.2.1.6 FFS

5.2.2.1.7 Reference test frequencies for NR operating band n7

**Table 5.2.2.1.7-1: Test frequencies for NR operating band n7 and SCS 15 kHz**

CBW [MHz]	carrier Bandwidth [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absolute Frequency Point A [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS [kHz]	GSCN	absolute Frequency Subcarrier [ARFCN]	$k_{SSB}$	C
		Downlink	Mid										
10	52	Downlink	Mid	2655	531000	2650.32	530064	0	15	6630	530430	2	
		Uplink	Mid	2535	507000	2530.32	506064	0	-	-	-	-	
<p>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 <math>C_{CORESET}</math> signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.</p> <p>Note 2: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter <math>\Delta F_{OffsetCORESET-0-Carrier}</math> in Annex C expressed in number of common RBs.</p>													

5.2.2.1.8 Reference test frequencies for NR operating band n8

**Table 5.2.2.1.8-1: Test frequencies for NR operating band n8 and SCS 15 kHz**

CBW [MHz]	carrierBandwidth [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequencyPointA [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS [kHz]	GSCN	absoluteFrequencyStart [ARFCN]	$k_{SSB}$
		Downlink	Mid									
10	52	Downlink	Mid	942.5	188500	937.82	187564	0	15	2348	187930	2
		Uplink	Mid	897.5	179500	892.82	178564	0	-	-	-	-
Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-1 in TS 38.213 [22]. The value of $C_{CORESET#0}$ signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks for FR1 and 60 kHz subcarrier spacing for FR2. Note 2: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{OffsetCORESET-0-Carrier}$ in Annex C expressed in number of common RBs.												

5.2.2.1.9 – 5.2.2.1.11 FFS

5.2.2.1.12 Reference test frequencies for NR operating band n12

Table 5.2.2.1.12-1: Test frequencies for NR operating band n12 and SCS 15 kHz

CBW [MHz]	carrierBandwidth [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequencyPointA [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS [kHz]	GSCN	absoluteFrequencyStart [ARFCN]	$k_{SSB}$
		Downlink	Mid									
10	52	Downlink	Mid	737.5	147500	732.82	146564	0	15	1837	146930	2
		Uplink	Mid	707.5	141500	702.82	140564	0	-	-	-	-
Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-1 in TS 38.213 [22]. The value of $C_{CORESET#0}$ signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks for FR1 and 60 kHz subcarrier spacing for FR2. Note 2: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{OffsetCORESET-0-Carrier}$ in Annex C expressed in number of common RBs.												

5.2.2.1.13 FFS

5.2.2.1.14 Reference test frequencies for NR operating band n14

Table 5.2.2.1.14-1: Test frequencies for NR operating band n14 and SCS 15 kHz

CBW [MHz]	carrier Bandwidth [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absolute Frequency Point A [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS [kHz]	GSCN	absolute Frequency Subcarrier [ARFCN]	$k_{SSB}$
		Downlink	Mid									
10	52	Downlink	Mid	763	152600	758.32	151664	0	15	1903	152210	2
		Uplink	Mid	793	158600	788.32	157664	0	-	-	-	-
<p>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 is signalled in controlResourceSetZero (pdccch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks for FR1 and 60 kHz subcarrier spacing for FR2.</p> <p>Note 2: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter <math>\Delta F_{OffsetCORESET0Carrier}</math> in Annex C expressed in number of common RBs.</p> <p>Note 3: 10 MHz test channel bandwidth is tested with Low range test frequency only. Low range test frequency shall be used in all test cases. High range test frequencies shall be used in all test cases.</p>												

5.2.2.1.15 – 5.2.2.1.19 FFS

5.2.2.1.20 Reference test frequencies for NR operating band n20

**Table 5.2.2.1.20-1: Test frequencies for NR operating band n20 and SCS 15 kHz**

CBW [MHz]	carrier Bandwidth [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absolute Frequency Point A [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS [kHz]	GSCN	absolute Frequency Subcarrier [ARFCN]	$k_{SSB}$
		Downlink	Mid									
10	52	Downlink	Mid	806	161200	801.32	160264	0	15	2009	160810	2
		Uplink	Mid	847	169400	842.32	168464	0	-	-	-	-
<p>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 is signalled in controlResourceSetZero (pdccch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks for FR1 and 60 kHz subcarrier spacing for FR2.</p> <p>Note 2: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter <math>\Delta F_{OffsetCORESET0Carrier}</math> in Annex C expressed in number of common RBs.</p>												

5.2.2.1.21 – 5.2.2.1.23 FFS

5.2.2.1.24 Reference test frequencies for NR operating band n24

**Table 5.2.2.1.24-1: Test frequencies for NR operating band n24 and SCS 15 kHz**

UL/DL CBW [MHz]	carrierBand width [PRBs]	Range		Carrier centre [MHz] Note 3	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequencyPointA [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS [kHz]	GSCN	absoluteFrequencySB [ARFCN]	k <sub>SSB</sub>	C
		Downlink	Mid										
10/10	52	Downlink	Mid	1531.0	306200	1526.32	305264	0	15	3823	305810	2	
		Uplink	Mid	1632.5	326500	1627.82	325564	0	-	-	-	-	
<p>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 C<sub>0</sub> signalled in controlResourceSetZero (pdccch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks for FR1 and 60 kHz subcarrier spacing for FR2.</p> <p>Note 2: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of the CORESET#0. It corresponds to the parameter <math>\Delta F_{\text{OffsetCORESET-0-Carrier}}</math> in Annex C expressed in number of common RBs.</p> <p>Note 3: For symmetric CBW combinations, Low and Mid test frequencies are specified using Tx-Rx spacing of -101.5 MHz and specified using Tx-Rx spacing of -120.5 MHz</p> <p>Note 4: For asymmetric CBW combination UL=10MHz and DL=5MHz, Low and Mid test frequencies are specified using Tx-Rx spacing of -118 MHz. High test frequency is specified using Tx-Rx spacing of -118 MHz.</p>													

5.2.2.1.25 Reference test frequencies for NR operating band n25

Table 5.2.2.1.25-1: Test frequencies for NR operating band n25 and SCS 15 kHz

CBW [MHz]	carrierBand width [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequencyPointA [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS [kHz]	GSCN	absoluteFrequencySB [ARFCN]	k <sub>SSB</sub>	C
		Downlink	Mid										
10	52	Downlink	Mid	1962.5	392500	1957.82	391564	0	15	4898	391930	2	
		Uplink	Mid	1882.5	376500	1877.82	375564	0	-	-	-	-	
<p>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 C<sub>0</sub> signalled in controlResourceSetZero (pdccch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks for FR1 and 60 kHz subcarrier spacing for FR2.</p> <p>Note 2: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of the CORESET#0. It corresponds to the parameter <math>\Delta F_{\text{OffsetCORESET-0-Carrier}}</math> in Annex C expressed in number of common RBs.</p>													

5.2.2.1.26 Reference test frequencies for NR operating band n26

Table 5.2.2.1.26-1: Test frequencies for NR operating band n26 and SCS 15 kHz

CBW [MHz]	carrier Bandwidth [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequencyPointA [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS [kHz]	GSCN	absoluteFrequencySB [ARFCN]	$k_{SSB}$
		Downlink	Mid									
10	52	Downlink	Mid	876.5	175300	871.82	174364	0	15	2183	174730	2
		Uplink	Mid	831.5	166300	826.82	165364	0	-	-	-	-
<p>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 signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks for FR1 and 60 kHz subcarrier spacing for FR2.</p> <p>Note 2: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter <math>\Delta F_{OffsetCORESET-0-Carrier}</math> in Annex C expressed in number of common RBs.</p>												

5.2.2.1.27 FFS

5.2.2.1.28 Reference test frequencies for NR operating band n28

Table 5.2.2.1.28-1: Test frequencies for NR operating band n28 and SCS 15 kHz

CBW [MHz]	carrier Bandwidth [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequencyPointA [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS [kHz]	GSCN	absoluteFrequencySB [ARFCN]	$k_{SSB}$
		Downlink	Mid									
10	52	Downlink	Mid	780.5	156100	775.82	155164	0	15	1943	155530	2
		Uplink	Mid	725.5	145100	720.82	144164	0	-	-	-	-
<p>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 signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks for FR1 and 60 kHz subcarrier spacing for FR2.</p> <p>Note 2: Carrier centre frequency moved for Mid Range and CBW=20 MHz due to Note 7 in TS 38.101-1 [7], Table 5.3.5-1.</p> <p>Note 3: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter <math>\Delta F_{OffsetCORESET-0-Carrier}</math> in Annex C expressed in number of common RBs.</p> <p>Note 4: No carrier centre frequency specified for Mid Range and CBW=30 MHz due to Note 7 in TS 38.101-1 [7], Table 5.3.5-1. Mid range and CBW=30 MHz to be tested, use Low range and CBW=30 MHz instead.</p>												

5.2.2.1.29 FFS

5.2.2.1.30 Reference test frequencies for NR operating band n30

Table 5.2.2.1.30-1: Test frequencies for NR operating band n30 and SCS 15 kHz

CBW [MHz]	carrierBandwidth [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequencyPointA [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS [kHz]	GSCN	absoluteFrequencySB [ARFCN]	k <sub>SSB</sub>
		Downlink	Mid									
10	52	Downlink	Mid	2355	471000	2350.32	470064	0	15	5880	470430	2
		Uplink	Mid	2310	462000	2396.04	479208	0	-	-	-	-
<p>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 C<sub>0</sub> signalled in controlResourceSetZero (pdccch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks for FR1 and 60 kHz subcarrier spacing for FR2.</p> <p>Note 2: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of the CORESET#0. It corresponds to the parameter ΔF<sub>OffsetCORESET-0-Carrier</sub> in Annex C expressed in number of common RBs.</p>												

5.2.2.1.31 – 5.2.2.1.37 FFS

5.2.2.1.38 Reference test frequencies for NR operating band n38

**Table 5.2.2.1.38-1: Test frequencies for NR operating band n38 and SCS 15 kHz**

FFS

**Table 5.2.2.1.38-2: Test frequencies for NR operating band n38 and SCS 30 kHz**

CBW [MHz]	carrierBandwidth [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequencyPointA [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS [kHz]	GSCN	absoluteFrequencySB [ARFCN]	k <sub>SSB</sub>
		Downlink & Uplink	Mid									
40	106	Downlink & Uplink	Mid	2595	519000	2575.92	515184	0	30	6450	516030	18
<p>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 C<sub>0</sub> signalled in controlResourceSetZero (pdccch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks for FR1 and 60 kHz subcarrier spacing for FR2.</p> <p>Note 2: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of the CORESET#0. It corresponds to the parameter ΔF<sub>OffsetCORESET-0-Carrier</sub> in Annex C expressed in number of common RBs.</p>												

5.2.2.1.39 Reference test frequencies for NR operating band n39

**Table 5.2.2.1.39-1: Test frequencies for NR operating band n39 and SCS 15 kHz**

FFS

**Table 5.2.2.1.39-2: Test frequencies for NR operating band n39 and SCS 30 kHz**

CBW [MHz]	carrier Bandwidth [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absolute Frequency Point A [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS [kHz]	GSCN	absolute Frequency Subcarrier [ARFCN]	$k_{SSB}$
40	106	Downlink & Uplink	Mid	1900	380000	1880.92	376184	0	30	4714	377090	14
<p>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 <math>C_{CORESET#0}</math> signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks for FR1 and 60 kHz subcarrier spacing for FR2.</p> <p>Note 2: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of the CORESET#0. It corresponds to the parameter <math>\Delta F_{OffsetCORESET-0-Carrier}</math> in Annex C expressed in number of common RBs.</p>												

5.2.2.1.40 Reference test frequencies for NR operating band n40

Table 5.2.2.1.40-1: Test frequencies for NR operating band n40 and SCS 15 kHz

FFS

Table 5.2.2.1.40-2: Test frequencies for NR operating band n40 and SCS 30 kHz

CBW [MHz]	carrier Bandwidth [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absolute Frequency Point A [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS [kHz]	GSCN	absolute Frequency Subcarrier [ARFCN]	$k_{SSB}$
40	106	Downlink & Uplink	Mid	2350	470000	2330.92	466184	0	30	5839	467090	14
<p>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 <math>C_{CORESET#0}</math> signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks for FR1 and 60 kHz subcarrier spacing for FR2.</p> <p>Note 2: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of the CORESET#0. It corresponds to the parameter <math>\Delta F_{OffsetCORESET-0-Carrier}</math> in Annex C expressed in number of common RBs.</p>												

5.2.2.1.41 Reference test frequencies for NR operating band n41

Table 5.2.2.1.41-1: Test frequencies for NR operating band n41, SCS 15 kHz and  $\Delta F_{Raster}$  15 kHz

FFS

Table 5.2.2.1.41-2: Test frequencies for NR operating band n41, SCS 30 kHz and  $\Delta F_{Raster}$  30 kHz

CBW [MHz]	carrier Bandwidth [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absolute Frequency Point A [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS [kHz]	GSCN	absolute Frequency Subcarrier [ARFCN]	$k_{SSB}$
40	106	Downlink & Uplink	Mid	2592.99	518598	2573.91	514782	0	30	6444	515550	16
<p>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 <math>C_{CORESET#0}</math> is signalled in controlResourceSetZero (pdccch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.</p> <p>Note 2: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of the CORESET#0. It corresponds to the parameter <math>\Delta F_{OffsetCORESET-0-Carrier}</math> in Annex C expressed in number of common RBs.</p>												

5.2.2.1.42 – 5.2.2.1.47 FFS

5.2.2.1.48 Reference test frequencies for NR operating band n48

**Table 5.2.2.1.48-1: Test frequencies for NR operating band n48 and SCS 15 kHz**

FFS

**Table 5.2.2.1.48-2: Test frequencies for NR operating band n48 and SCS 30 kHz**

CBW [MHz]	carrier Bandwidth [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absolute Frequency Point A [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS [kHz]	GSCN	absolute Frequency Subcarrier [ARFCN]	$k_{SSB}$
40	106	Downlink & Uplink	Mid	3624.99	641666	3605.91	640394	0	30	7923	640704	22
<p>Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-4 in TS 38.213 [22]. The Index is signalled in controlResourceSetZero (pdccch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.</p> <p>Note 2: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of the CORESET#0. It corresponds to the parameter <math>\Delta F_{OffsetCORESET-0-Carrier}</math> in Annex C expressed in number of common RBs.</p> <p>Note 3: For this bandwidth, the minimum requirements are restricted to operation when carrier is configured as a component carrier of a CA configuration. As the bandwidth is limited to SCell then absence of CORESET#0 is indicated in the <math>offsetToCarrier = -31</math>, <math>controlResourceSetZero = 0</math> and <math>searchSpaceZero = 0</math> (TS 38.213 [22], clause 13).</p>												

5.2.2.1.49 FFS

5.2.2.1.50 Reference test frequencies for NR operating band n50

**Table 5.2.2.1.50-1: Test frequencies for NR operating band n50 and SCS 15 kHz**



FFS

**Table 5.2.2.1.50-2: Test frequencies for NR operating band n50 and SCS 30 kHz**

CBW [MHz]	carrierBandwidth [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequencyPointA [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS [kHz]	GSCN	absoluteFrequencySB [ARFCN]	$k_{SSE}$
		Downlink & Uplink	Mid									
40	106	Downlink & Uplink	Mid	1474.5	294900	1455.42	291084	0	30	3648	291870	22

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  $C_{\text{offsetToPointA}}$  signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 30 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.

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

Note 3: This UE channel bandwidth is applicable only to downlink (TS 38.101-1 table 5.3.5-1).

5.2.2.1.51 – 5.2.2.1.64 FFS

5.2.2.1.65 Reference test frequencies for NR operating band n65

**Table 5.2.2.1.65-1: Test frequencies for NR operating band n65 and SCS 15 kHz**

CBW [MHz]	carrierBandwidth [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequencyPointA [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS [kHz]	GSCN	absoluteFrequencySB [ARFCN]	$k_{SSB}$
		Downlink	Mid									
10	52	Downlink	Mid	2155	431000	2150.32	430064	0	15	5383	430610	2
		Uplink	Mid	1965	393000	1960.32	392064	0	-	-	-	-

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

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

5.2.2.1.66 Reference test frequencies for NR operating band n66

**Table 5.2.2.1.66-1: Test frequencies for NR operating band n66, uplink and downlink channel bandwidth combinations and SCS 15 kHz**

UL/D LCB W Combination (Asymmetric BCS) Note 3	CBW [MHz]	carrierBandwidth [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequencyPointA [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS [kHz]	GSC N	absoluteFrequencySSB [ARFCN]	$k_{SSB}$
			Downlink	Mid									
10/10	10	52	Downlink	Mid	2145	42900	2140.32	428064	0	15	5355	428430	2
	10	52	Uplink	Mid	1745	34900	1740.32	348064	0	-	-	-	-

Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-1 in TS 38.213 [22]. The value of C<sub>0</sub> signalled in controlResourceSetZero (pdccch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of res<sub>0</sub> kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.

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

Note 3: Asymmetric CBW BCS refers to applicable asymmetric UL and DL channel bandwidth combination set as specified in T 5.3.6-1 for NR band n66.

5.2.2.1.67 – 5.2.2.1.69 FFS

5.2.2.1.70 Reference test frequencies for NR operating band n70

**Table 5.2.2.1.70-1: Test frequencies for NR operating band n70, default Tx-RX frequency separation 300MHz, uplink and downlink channel bandwidth combinations and SCS 15 kHz**

UL/D LBandwidth combination	CBW [MHz]	carrierBandwidth [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequencyPointA [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS [kHz]	GSC N	absoluteFrequencySSB [ARFCN]	$k_{SSB}$
			Downlink	Mid									
10/10	10	52	Downlink	Mid	2002.5	40050	1997.82	399564	0	15	5001	400110	2
	10	52	Uplink	Mid	1702.5	34050	1697.82	339564	0	-	-	-	-

Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-1 in TS 38.213 [22]. The value of C<sub>0</sub> signalled in controlResourceSetZero (pdccch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of res<sub>0</sub> kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.

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

5.2.2.1.71 Reference test frequencies for NR operating band n71

**Table 5.2.2.1.71-1: Test frequencies for NR operating band n71 and SCS 15 kHz**

CBW [MHz]	carrier Bandwidth [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absolute Frequency Point A [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS [kHz]	GSCN	absolute Frequency Subcarrier [ARFCN]	$k_{SSB}$
		Downlink	Mid									
10	52	Downlink	Mid	634.5	126900	629.82	125964	0	15	1581	126510	2
		Uplink	Mid	680.5	136100	675.82	135164	0	-	-	-	-
<p>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 <math>C_{CORESET#0}</math> signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks for FR1 and 60 kHz subcarrier spacing for FR2.</p> <p>Note 2: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of the CORESET#0. It corresponds to the parameter <math>\Delta F_{OffsetCORESET-0-Carrier}</math> in Annex C expressed in number of common RBs.</p>												

5.2.2.1.72 – 5.2.2.1.73 FFS

5.2.2.1.74 Reference test frequencies for NR operating band n74

Table 5.2.2.1.74-1: Test frequencies for NR operating band n74 and SCS 15 kHz

CBW [MHz]	carrier Bandwidth [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absolute Frequency Point A [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS [kHz]	GSCN	absolute Frequency Subcarrier [ARFCN]	$k_{SSE}$
		Downlink	Mid									
10	52	Downlink	Mid	1496.5	299300	1491.82	298364	0	15	3736	298850	6
		Uplink	Mid	1448.5	289700	1443.82	288764	0	-	-	-	-
<p>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 <math>C_{CORESET#0}</math> signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks for FR1 and 60 kHz subcarrier spacing for FR2.</p> <p>Note 2: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of the CORESET#0. It corresponds to the parameter <math>\Delta F_{OffsetCORESET-0-Carrier}</math> in Annex C expressed in number of common RBs.</p>												

5.2.2.1.75 – 5.2.2.1.76 FFS

5.2.2.1.77 Reference test frequencies for NR operating band n77

Table 5.2.2.1.77-1: Test frequencies for NR operating band n77, SCS 15 kHz and  $\Delta FRaster$  15 kHz

FFS

Table 5.2.2.1.77-2: Test frequencies for NR operating band n77, SCS 30 kHz and  $\Delta FRaster$  30 kHz

CBW [MHz]	carrierBandwidth [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequencyPointA [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS [kHz]	GSCN	absoluteFrequencySB [ARFCN]	$k_{SSB}$
40	106	Downlink & Uplink	Mid	3750	650000	3730.92	648728	0	30	8010	649056	16
<p>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 C<sub>0</sub> signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks for FR1 and 60 kHz subcarrier spacing for FR2.</p> <p>Note 2: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of the CORESET#0. It corresponds to the parameter <math>\Delta F_{\text{OffsetCORESET-0-Carrier}}</math> in Annex C expressed in number of common RBs.</p>												

5.2.2.1.78 Reference test frequencies for NR operating band n78

Table 5.2.2.1.78-1: Test frequencies for NR operating band n78, SCS 15 kHz and  $\Delta F_{\text{Raster}}$  15 kHz

FFS

Table 5.2.2.1.78-2: Test frequencies for NR operating band n78, SCS 30 kHz and  $\Delta F_{\text{Raster}}$  30 kHz

CBW [MHz]	carrierBandwidth [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequencyPointA [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS [kHz]	GSCN	absoluteFrequencySB [ARFCN]	$k_{SSB}$
40	106	Downlink & Uplink	Mid	3549.99	636666	3530.91	635394	0	30	7871	635712	6
<p>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 C<sub>0</sub> signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks for FR1 and 60 kHz subcarrier spacing for FR2.</p> <p>Note 2: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of the CORESET#0. It corresponds to the parameter <math>\Delta F_{\text{OffsetCORESET-0-Carrier}}</math> in Annex C expressed in number of common RBs.</p>												

5.2.2.1.79 Reference test frequencies for NR operating band n79

Table 5.2.2.1.79-1: Test frequencies for NR operating band n79, SCS 15 kHz and  $\Delta F_{\text{Raster}}$  15 kHz

FFS

Table 5.2.2.1.79-2: Test frequencies for NR operating band n79, SCS 30 kHz and  $\Delta F_{\text{Raster}}$  30 kHz

CBW [MHz]	carrierBandwidth [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequencyPointA [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS [kHz]	GSCN	absoluteFrequencySB [ARFCN]	$k_{SSB}$
40	106	Downlink & Uplink	Mid	4700.01	713334	4680.93	712062	0	30	8672	712608	18
<p>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 C<sub>0</sub> signalled in controlResourceSetZero (pdccch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource block spacing for FR1 and 60 kHz subcarrier spacing for FR2.</p> <p>Note 2: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of the CORESET#0. It corresponds to the parameter <math>\Delta F_{OffsetCORESET-0-Carrier}</math> in Annex C expressed in number of common RBs.</p>												

5.2.2.2 NR operating bands in FR2

5.2.2.2.1 Reference test frequencies for NR operating band n257

Table 5.2.2.2.1-1: Test frequencies for NR operating band n257, SCS 60 kHz and  $\Delta F_{Raster}$  60 kHz

FFS

Table 5.2.2.2.1-2: Test frequencies for NR operating band n257, SCS 120 kHz and  $\Delta F_{Raster}$  120 kHz

CBW [MHz]	carrierBandwidth [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequencyPointA [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS [kHz]	GSCN	absoluteFrequencySB [ARFCN]	$k_{SSB}$
100	66	Downlink & Uplink	Mid	27999.96	2079165	27952.44	2078373	0	120	22472	2078875	11
<p>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 C<sub>0</sub> signalled in controlResourceSetZero (pdccch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource block spacing for FR1 and 60 kHz subcarrier spacing for FR2.</p> <p>Note 2: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of the CORESET#0. It corresponds to the parameter <math>\Delta F_{OffsetCORESET-0-Carrier}</math> in Annex C expressed in number of common RBs.</p>												

5.2.2.2.2 Reference test frequencies for NR operating band n258

Table 5.2.2.2.2-1: Test frequencies for NR operating band n258, SCS 60 kHz and  $\Delta F_{Raster}$  60 kHz

FFS

Table 5.2.2.2.2-2: Test frequencies for NR operating band n258, SCS 120 kHz and  $\Delta F_{Raster}$  120 kHz

CBW [MHz]	carrierBandwidth [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequencyPointA [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS [kHz]	GSCN	absoluteFrequencySB [ARFCN]	$k_{SSB}$
100	66	Downlink & Uplink	Mid	25875	2043749	25827.48	2042957	0	120	22349	2043451	7
<p>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 C<sub>0</sub> signalled in controlResourceSetZero (pdccch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource block spacing for FR1 and 60 kHz subcarrier spacing for FR2.</p> <p>Note 2: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of the CORESET#0. It corresponds to the parameter <math>\Delta F_{\text{OffsetCORESET-0-Carrier}}</math> in Annex C expressed in number of common RBs.</p>												

5.2.2.2.3 Reference test frequencies for NR operating band n259

Table 5.2.2.2.3-1: Test frequencies for NR operating band n260, SCS 60 kHz and  $\Delta F_{\text{Raster}}$  60 kHz

FFS

Table 5.2.2.2.3-2: Test frequencies for NR operating band n260, SCS 120 kHz and  $\Delta F_{\text{Raster}}$  120 kHz

CBW [MHz]	carrierBandwidth [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequencyPointA [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS [kHz]	GSCN	absoluteFrequencySB [ARFCN]	$k_{SSB}$
100	66	Downlink & Uplink	Mid	41499.96	2304165	41452.44	2303373	102	120	23253	2303803	11
<p>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 C<sub>0</sub> signalled in controlResourceSetZero (pdccch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource block spacing for FR1 and 60 kHz subcarrier spacing for FR2.</p> <p>Note 2: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of the CORESET#0. It corresponds to the parameter <math>\Delta F_{\text{OffsetCORESET-0-Carrier}}</math> in Annex C expressed in number of common RBs.</p>												

5.2.2.2.4 Reference test frequencies for NR operating band n260

Table 5.2.2.2.4-1: Test frequencies for NR operating band n260, SCS 60 kHz and  $\Delta F_{\text{Raster}}$  60 kHz

FFS

Table 5.2.2.2.4-2: Test frequencies for NR operating band n260, SCS 120 kHz and  $\Delta F_{\text{Raster}}$  120 kHz

CBW [MHz]	carrierBandwidth [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequencyPointA [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS [kHz]	GSCN	absoluteFrequencySSB [ARFCN]	$k_{SSB}$
100	66	Downlink & Uplink	Mid	38499.96	2254165	38452.44	2253373	0	120	23079	2253691	3

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 C<sub>0</sub> signalled in controlResourceSetZero (pdccch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks for FR1 and 60 kHz subcarrier spacing for FR2.

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

5.2.2.2.5 Reference test frequencies for NR operating band n261

Table 5.2.2.2.5-1: Test frequencies for NR operating band n261, SCS 60 kHz and  $\Delta F_{\text{Raster}}$  60 kHz

FFS

Table 5.2.2.2.5-2: Test frequencies for NR operating band n261, SCS 120 kHz and  $\Delta F_{\text{Raster}}$  120 kHz

CBW [MHz]	carrierBandwidth [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequencyPointA [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS [kHz]	GSCN	absoluteFrequencySSB [ARFCN]	$k_{SSB}$
100	66	Downlink & Uplink	Mid	27924.96	2077915	27877.44	2077123	0	120	22467	2077435	0

Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-8 in TS 38.213 [22]. The value of C<sub>0</sub> signalled in controlResourceSetZero (pdccch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks for FR1 and 60 kHz subcarrier spacing for FR2.

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

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

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

Derivation Path: Table 4.6.3-89			
Information Element	Value/remark	Comment	Condition
P-Max	Not present		SA
	23		EN-DC

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

Derivation Path: Table 4.6.3-89			
Information Element	Value/remark	Comment	Condition
P-Max	Not present		SA
	26		EN-DC

Condition	Explanation
SA	NR standalone RF tests cases
EN-DC	EN-DC RF tests cases specified in 38.521-3

**Table 5.4.1-3: Void**

**Table 5.4.1-4: PUSCH-Config**

Derivation Path: Clause 4.6.3 Table 4.6.3-118			
Information Element	Value/remark	Comment	Condition
PUSCH-Config ::= SEQUENCE {			
maxRank	2		2TX_UL_MIMO
	1		ULFPTx_Mode1 or ULFPTx_Mode2 or ULFPTx_ModeFull
ul-FullPowerTransmission-r16	Not present		2TX_UL_MIMO
	fullpowerMode 1		ULFPTx_Mode1
	fullpowerMode 2		ULFPTx_Mode2
	fullpower		ULFPTx_ModeFull
}			

Condition	Explanation
2TX_UL_MIMO	UL-MIMO test cases with 2 Tx antenna ports
ULFPTx_Mode1	UL-MIMO test cases with UEs supporting UL full power transmission Mode-1
ULFPTx_Mode2	UL-MIMO test cases with UEs supporting UL full power transmission Mode-2
ULFPTx_ModeFull	UL-MIMO test cases with UEs supporting UL full power transmission Mode-full power



CSI-RS for Tracking

**Table 5.4.1-5: CSI-RS-ResourceMapping for TRS**

Derivation Path: Table 4.6.3-45			
Information Element	Value/remark	Comment	Condition
CSI-RS-ResourceMapping ::= SEQUENCE {			
frequencyDomainAllocation CHOICE {			
row1	0001		TRS
}			
firstOFDMsymbolInTimeDomain	6	l <sub>0</sub> = 6 for CSI-RS resource 1 and 3	TRS AND FR1
	10	l <sub>0</sub> = 10 for CSI-RS resource 2 and 4	TRS AND FR1
	8	l <sub>0</sub> = 8 for CSI-RS resource 1	TRS AND FR2
	12	l <sub>0</sub> = 12 for CSI-RS resource 2	TRS AND FR2
nrofPorts	p1		TRS
Cdm-Type	noCDM		TRS
Density CHOICE{			
three	Null		TRS
}			
freqBand	CSI-FrequencyOccupation for TRS		TRS
}			

Condition	Explanation
TRS	Tracking-Reference Signal

**Table 5.4.1-6: CSI-ResourcePeriodicityAndOffset for TRS**

Derivation Path: Table 4.6.3-43			
Information Element	Value/remark	Comment	Condition
CSI-ResourcePeriodicityAndOffset ::= CHOICE {			
slots20	0	SCS 15kHz, CSI-RS resource 1 and 2	TRS AND FR1_15kHz
	1	SCS 15kHz, CSI-RS resource 3 and 4	TRS AND FR1_15kHz
Slots40	1	SCS 30kHz, CSI-RS resource 1 and 2	TRS AND FR1_30kHz
	2	SCS 30kHz, CSI-RS resource 3 and 4	TRS AND FR1_30kHz
Slots80	2	SCS 60kHz, FR1, CSI-RS resource 1 and 2	TRS AND FR1_60kHz
	3	SCS 60kHz, FR1, CSI-RS resource 3 and 4	TRS AND FR1_60kHz
	40	SCS 60kHz, FR2, CSI-RS resource 1 and 2	TRS AND FR2_60kHz
Slots160	80	SCS 120kHz, CSI-RS resource 1 and 2	TRS AND FR2_120kHz
}			

Condition	Explanation
FR1_15kHz	FR1 is used under the test. SCS is set to 15kHz.
FR1_30kHz	FR1 is used under the test. SCS is set to 30kHz.
FR1_60kHz	FR1 is used under the test. SCS is set to 60kHz.
FR2_60kHz	FR2 is used under the test. SCS is set to 60kHz.
FR2_120kHz	FR2 is used under the test. SCS is set to 120kHz.
TRS	Tracking-Reference Signal

Table 5.4.1-7: CSI-MeasConfig for TRS

Derivation Path: TS 38.508-1 Table 4.6.3-38			
Information Element	Value/remark	Comment	Condition
CSI-MeasConfig ::= SEQUENCE {			
nzp-CSI-RS-ResourceToAddModList SEQUENCE (SIZE (1..maxNrofNZP-CSI-RS-Resources)) OF NZP-CSI-RS-Resource {	2 entries in case of FR2 4 entries in case of FR1	2 entries in case of FR2 4 entries in case of FR1	
NZP-CSI-RS-Resource[1]	NZP-CSI-RS-Resource for TRS (1)	entry 1 CSI-RS resource 1	
NZP-CSI-RS-Resource[2]	NZP-CSI-RS-Resource for TRS (2)	entry 2 CSI-RS resource 2	
NZP-CSI-RS-Resource[3]	NZP-CSI-RS-Resource for TRS (3)	entry 3 CSI-RS resource 3	FR1
NZP-CSI-RS-Resource[4]	NZP-CSI-RS-Resource for TRS (4)	entry 4 CSI-RS resource 4	FR1
}			
nzp-CSI-RS-ResourceSetToAddModList SEQUENCE (SIZE (1..maxNrofNZP-CSI-RS-ResourceSets)) OF NZP-CSI-RS-ResourceSet {	1 entry		
NZP-CSI-RS-ResourceSet[1]	NZP-CSI-RS-ResourceSet for TRS	entry 1	
}			
csi-IM-ResourceToAddModList	Not present		
csi-IM-ResourceSetToAddModList	Not present		
csi-SSB-ResourceSetToAddModList	Not present		
csi-ResourceConfigToAddModList SEQUENCE (SIZE (1..maxNrofCSI-ResourceConfigurations)) OF CSI-ResourceConfig {	1 entry		
CSI-ResourceConfig[1]	CSI-ResourceConfig for TRS	entry 1	
}			
reportTriggerSize	Not present		
aperiodicTriggerStateList SetupRelease	Not present		
}			

Table 5.4.1-8: NZP-CSI-RS-Resource for TRS

Derivation Path: 38.508-1 Table 4.6.3-85			
Information Element	Value/remark	Comment	Condition
NZP-CSI-RS-Resource ::= SEQUENCE {			
NZP-CSI-RS-ResourceId	0	CSI-RS resource 1	
	1	CSI-RS resource 2	
	2	CSI-RS resource 3	
	3	CSI-RS resource 4	
CSI-RS-ResourceMapping	CSI-RS-ResourceMapping for TRS		Content conditioned by the CSI-RS resource #
powerControlOffset	0		
powerControlOffsetSS	db0		
scramblingID	ScramblingId		
periodicityAndOffset	CSI-ResourcePeriodicityAndOffset for TRS		Content conditioned by the CSI-RS resource #
qcl-InfoPeriodicCSI-RS	TCI-StateId		
}			

Table 5.4.1-9: NZP-CSI-RS-ResourceSet for TRS

Derivation Path: Table 4.6.3-87			
Information Element	Value/remark	Comment	Condition
NZP-CSI-RS-ResourceSet ::= SEQUENCE {			
nzp_CSI_ResourceSetId	0		
nzp-CSI-RS-Resources SEQUENCE (SIZE (1..maxNrofNZP-CSI-RS-ResourcesPerSet)) OF NZP-CSI-RS-ResourceId {	2 entries in case of FR2 4 entries in case of FR1		
NZP-CSI-RS-ResourceId[1]	0	entry 1 CSI-RS resource 1	
NZP-CSI-RS-ResourceId[2]	1	entry 2 CSI-RS resource 2	
NZP-CSI-RS-ResourceId[3]	2	entry 3 CSI-RS resource 3	FR1
NZP-CSI-RS-ResourceId[4]	3	entry 4 CSI-RS resource 4	FR1
}			
repetition	off		
aperiodicTriggeringOffset	Not present		
trs_Info	true		
}			

**Table 5.4.1-10: CSI-ResourceConfig for TRS**

Derivation Path: TS 38.508-1 Table 4.6.3-41			
Information Element	Value/remark	Comment	Condition
CSI-ResourceConfig ::= SEQUENCE {			
csi-ResourceConfigId	CSI-ResourceConfigId		
csi-RS-ResourceSetList CHOICE {			
nzp-CSI-RS-SSB SEQUENCE {			
nzp-CSI-RS-ResourceSetList SEQUENCE (SIZE (1..maxNrofNZP-CSI-RS-ResourceSetsPerConfig)) OF NZP-CSI-RS-ResourceSetId {	1 entry		
NZP-CSI-RS-ResourceSetId[1]	0	entry 1	
}			
csi-SSB-ResourceSetList	Not present		
}			
bwp-Id	BWP-Id		
resourceType	periodic		
}			

**Table 5.4.1-11: CSI-FrequencyOccupation for TRS**

Derivation Path: TS 38.508-1 Table 4.6.3-33			
Information Element	Value/remark	Comment	Condition
CSI-FrequencyOccupation ::= SEQUENCE {			
startingRB	0		
nrofRBs	max(4*ceil(m/4),24)	m is the bandwidth of active BWP	
}			

**Table 5.4.1-12: ServingCellConfig**

Derivation Path: Table 4.6.3-167			
Information Element	Value/remark	Comment	Condition
ServingCellConfig ::= SEQUENCE {			
csi-MeasConfig CHOICE {			
setup	csi-MeasConfig for TRS		TRS
}			

PDCCH Configuration

PDCCH-config

**Table 5.4.1-16: PDCCH ControlResourceSet**

Derivation Path: Table 4.6.3-28			
Information Element	Value/remark	Comment	Condition
frequencyDomainResources	11111111 00000000 00000000 00000000 00000000 000000	CORESET to use the least significant 48 RBs of the BWP	RFACS AND AL8
	11111111 11111111 00000000 00000000 00000000 000000	CORESET to use the least significant 96 RBs of the BWP	RFACS AND AL16

Condition	Explanation
RFACS	Used in RF Adjacent Channel Selectivity testing
AL8	PDCCH aggregationLevel 8 is configured
AL16	PDCCH aggregationLevel 16 is configured

Table 5.4.1-17: PDCCH Search Space

Derivation Path: Table 4.6.3-162			
Information Element	Value/remark	Comment	Condition
nrofCandidates SEQUENCE {			
aggregationLevel1	n2		RFACS
aggregationLevel8	n2		RFACS
aggregationLevel16	n2		RFACS
}			
}			

Condition	Explanation
RFACS	Used in RF Adjacent Channel Selectivity testing

## 5.4.2 Radio resource control information elements for Demodulation Performance and CSI reporting tests

As defined in clause 4.6.3 with the following exceptions: -

Table 5.4.2-1 to 5.4.2.20: Void

### 5.4.2.0 Parameters common to all Demod and CSI tests

Physical layer parameters

Table 5.4.2.0-1: Physical layer parameters for DCI format 1\_1 and DCI format 1\_0

Derivation Path: Table 4.3.6.1.2.2-1			
Parameter	Value	Value in binary	Condition
PUCCH resource indicator	$PUCCH-ResourceID[1] = 0$ in $pucch-ResourceSetID[1]$ or $PUCCH-ResourceID[1] = 8$ in $pucch-ResourceSetID[2]$ as defined in Table 4.6.3-112 (Mapping as per Table 9.2.3-2 in TS 38.213)	'000'B	FR1
	$PUCCH-ResourceID[5] = 12$ in $pucch-ResourceSetID[2]$ as defined in Table 4.6.3-112 (Mapping as per Table 9.2.3-2 in TS 38.213)	'100'B	FR2_SCS60kHz
	$PUCCH-ResourceID[7] = 14$ in $pucch-ResourceSetID[2]$ as defined in Table 4.6.3-112 (Mapping as per Table 9.2.3-2 in TS 38.213)	'110'B	FR2_SCS120kHz
PDSCH-to-HARQ_feedback timing indicator	$K_1$ slots as defined in 9.2.3 in TS 38.213. $K_1$ value used for the test is specified in the test description of each test case in TS 38.521-4.		

Common Serving Parameters

ServingCellConfigCommon

**Table 5.4.2.0-2: ServingCellConfigCommon**

Derivation Path: Table 4.6.3-168			
Information Element	Value/remark	Comment	Condition
ServingCellConfigCommon ::= SEQUENCE {			
physCellId	PhysCellId		
downlinkConfigCommon	DownlinkConfigCommon		
ssb-PositionsInBurst CHOICE {			
shortBitmap	1000		FR1 AND SSB#0 AND (2.4GHz<FREQ<=3GHz AND (FDD OR (TDD AND SCS15)) OR FREQ<=2.4GHz)
mediumBitmap	10000000		FR1 AND SSB#0 AND (2.4GHz<FREQ<=3GHz AND (TDD AND SCS30) OR FREQ>3GHz)
}			
ssb-periodicityServingCell	ms20		
dmrs-TypeA-Position	pos2		
subcarrierSpacing	SubcarrierSpacing according to test case id		
tdd-UL-DL-ConfigurationCommon	TDD-UL-DL-ConfigCommon		
	Not present		FR1.30-1A FR2.120-1A FR1.FDD
ss-PBCH-BlockPower	0		
}			

Condition	Explanation
FREQ<=2.4GHz	Frequency range <= 2.4GHz
2.4GHz<FREQ<=3GHz	Frequency range > 2.4GHz and <= 3GHz
FREQ>3GHz	Frequency range > 3GHz
FR1.30-1A	TDD UL-DL pattern FR1.30-1A is used. Ref Annex A.1.2 of TS 38.521-4
FR2.120-1A	TDD UL-DL pattern FR2.120-1A is used. Ref Annex A.1.3 of TS 38.521-4
SSB#N	Cell configured with SSB-Index set to N as defined in Table 4.4.2-2

TDD-UL-DL-Config

**Table 5.4.2.0-3: TDD-UL-DL-Config**

Derivation Path: Table 4.6.3-192			
Information Element	Value/remark	Comment	Condition
TDD-UL-DL-ConfigCommon ::= SEQUENCE {			
referenceSubcarrierSpacing	SubcarrierSpacing		
pattern1 SEQUENCE {			
dl-UL-TransmissionPeriodicity	ms5		FR1.15-1, FR1.30-1
	ms2p5		FR1.30-2, FR1.30-3
	ms3		FR1.30-4
	ms2		FR1.30-5
	ms1		FR1.30-6
	ms0p625		FR2.60-1 FR2.120.1
	ms0p5		FR2.120.2
nrofDownlinkSlots	7		FR1.30-1
	3		FR1.15-1 FR1.30-2 FR1.30-3 FR1.30-4 FR2.120.1
	1		FR1.30-5 FR1.30-6
	2		FR2.60-1 FR2.120.2
nrofDownlinkSymbols	6		FR1.30-1 FR1.30-4
	10		FR1.15-1 FR1.30-2 FR1.30-3 FR1.30-6 FR2.120.1
	12		FR1.30-5
	11		FR2.60-1 FR2.120.2
nrofUplinkSlots	2		FR1.30-1 FR1.30-4 FR1.30-5
	1		FR1.15-1 FR1.30-2 FR1.30-3 FR2.60-1 FR2.120.1 FR2.120.2
	0		FR1.30-6
nrofUplinkSymbols	4		FR1.30-1 FR1.30-4 FR1.30-5
	0		FR1.30-6 FR2.60-1 FR2.120.2
	2		FR1.15-1 FR1.30-2 FR1.30-3 FR2.60-1 FR2.120.1 FR2.120.2
}			



pattern2	Not present		FR1.15-1, FR1.30-1 FR1.30-2 FR1.30-5 FR2.60-1 FR2.120.1 FR2.120.2
pattern2 SEQUENCE {			
dl-UL-TransmissionPeriodicity	ms2p5		FR1.30-3
	ms2		FR1.30-4
	ms1		FR1.30-6
nrofDownlinkSlots	2		FR1.30-3
	4		FR1.30-4
	0		FR1.30-6
nrofDownlinkSymbols	10		FR1.30-3
	0		FR1.30-4
	12		FR1.30-6
nrofUplinkSlots	2		FR1.30-3
	0		FR1.30-4
	1		FR1.30-6
nrofUplinkSymbols	2		FR1.30-3
	0		FR1.30-4 FR1.30-6
}			
}			

Condition	Explanation
FR1.15-1	TDD UL-DL pattern FR1.15-1 is used. Ref Annex A.1.2 of TS 38.521-4
FR1.30-1	TDD UL-DL pattern FR1.30-1 is used. Ref Annex A.1.2 of TS 38.521-4
FR1.30-2	TDD UL-DL pattern FR1.30-2 is used. Ref Annex A.1.2 of TS 38.521-4
FR1.30-3	TDD UL-DL pattern FR1.30-3 is used. Ref Annex A.1.2 of TS 38.521-4
FR1.30-4	TDD UL-DL pattern FR1.30-4 is used. Ref Annex A.1.2 of TS 38.521-4
FR1.30-5	TDD UL-DL pattern FR1.30-5 is used. Ref Annex A.1.2 of TS 38.521-4
FR1.30-6	TDD UL-DL pattern FR1.30-6 is used. Ref Annex A.1.2 of TS 38.521-4
FR2.60-1	TDD UL-DL pattern FR2.60-1 is used. Ref Annex A.1.3 of TS 38.521-4
FR2.120-1	TDD UL-DL pattern FR2.120-1 is used. Ref Annex A.1.3 of TS 38.521-4
FR2.120-2	TDD UL-DL pattern FR2.120-2 is used. Ref Annex A.1.3 of TS 38.521-4

PDCCH Configuration

PDCCH-ConfigCommon

**Table 5.4.2.0-4: PDCCH-ConfigCommon**

Derivation Path: Table 4.6.3-96			
Information Element	Value/remark	Comment	Condition
PDCCH-ConfigCommon ::= SEQUENCE {			
searchSpaceZero	4		FDD FR1.30-1 FR1.30-2 FR1.30-3 FR1.30-4
	2		FR1.30-5 FR1.30-6
commonSearchSpaceList SEQUENCE (SIZE (1..4)) OF SearchSpace {	1 entry	1 search space for both SA and NSA	
SearchSpace [1]	SearchSpace with condition CSS	entry 1	
}			
searchSpaceOtherSystemInformation	Not present		
}			

Condition	Explanation
CSS	Common SearchSpace

ServingCellConfig

**Table 5.4.2.0-5: ServingCellConfig**

Derivation Path: Table 4.6.3-167			
Information Element	Value/remark	Comment	Condition
ServingCellConfig ::= SEQUENCE {			
csi-MeasConfig CHOICE {			
setup	csi-MeasConfig		
}			

PDCCH-config

**Table 5.4.2.0-6: PDCCH-ControlResourceSet**

Derivation Path: Table 4.6.3-28			
Information Element	Value/remark	Comment	Condition
ControlResourceSet ::= SEQUENCE {			
controlResourceSetId	ControlResourceSetId		
frequencyDomainResources	Table 5.2-2 for tested channel bandwidth and subcarrier spacing		FR1
frequencyDomainResources	Table 7.2-2 for tested channel bandwidth and subcarrier spacing		FR2
Duration	2	SearchSpace duration of 2 symbols	DEMOD_FR 1, CSI_FR1, CSI_FR2
	1	SearchSpace duration of 1 symbols	DEMOD_FR 2, PDCCH_FR 1, PDCCH_FR 2
cce-REG-MappingType CHOICE {			
nonInterleaved	Null		
}			
precoderGranularity	sameAsREG-bundle		
tci-StatesPDCCH-ToAddList SEQUENCE(SIZE (1..maxNrofTCI-StatesPDCCH)) OF TCI-StateId {	1 entry		
TCI-StateId[1]	0	entry 1 TCI State #0	
	1	TCI State #1	
}			
}			

Condition	Explanation
DEMOD_FR1	DEMOD testing in FR1.
DEMOD_FR2	DEMOD testing in FR2.
PDCCH_FR1	PDCCH testing in FR1
PDCCH_FR2	PDCCH testing in FR2
CSI_FR1	CSI testing in FR1
CSI_FR2	CSI testing in FR2

**Table 5.4.2.0-7: PDCCH Search Space**

Derivation Path: Table 4.6.3-162			
Information Element	Value/remark	Comment	Condition
SearchSpace ::= SEQUENCE {			
monitoringSlotPeriodicityAndOffset CHOICE {			
sl1	NULL		
}			
monitoringSymbolsWithinSlot	10000000000000	Starting symbol 0	
nrofCandidates SEQUENCE {			
aggregationLevel1	n0		
aggregationLevel2	n0		
aggregationLevel4	n0		
aggregationLevel8	n1	AL8	
aggregationLevel16	n0		
}			
searchSpaceType CHOICE {			
common SEQUENCE {			
ue-Specific SEQUENCE {			
dci-Formats	formats0-1-And-1-1	DCI Format 1_1	
}			
}			
}			
}			

**Table 5.4.2.0-7a: PDCCH Search Space Ext**

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
SearchSpaceExt-r16 ::= SEQUENCE {			
controlResourceSetId-r16	ControlResourceSetId		
searchSpaceType-r16	Not present		
searchSpaceGroupIdList-r16	Not present		
freqMonitorLocations-r16	Not present		
}			

NZP-CSI-RS for Tracking

NZP-CSI-RS-Resource

**Table 5.4.2.0-8: NZP-CSI-RS-Resource for TRS**

Derivation Path: Table 4.6.3-85			
Information Element	Value/remark	Comment	Condition
NZP-CSI-RS-Resource ::= SEQUENCE {			
nzp-CSI-RS-ResourceId	0 1 2 3	CSI-RS resource 1 CSI-RS resource 2 CSI-RS resource 3 CSI-RS resource 4	
resourceMapping	CSI-RS-ResourceMapping for TRS		
powerControlOffset	0		
periodicityAndOffset	CSI-ResourcePeriodicityAndOffset for TRS		
qcl-InfoPeriodicCSI-RS	TCI-StateId 0		
}			

## CSI-RS-ResourceMapping

Table 5.4.2.0-9: CSI-RS-ResourceMapping for TRS

Derivation Path: Table 4.6.3-45			
Information Element	Value/remark	Comment	Condition
CSI-RS-ResourceMapping ::= SEQUENCE {			
frequencyDomainAllocation CHOICE {			
row1	0001	$k_0=0$ for CSI-RS resource 1,2,3,4	TRS
}			
firstOFDMSymbolInTimeDomain	6	$l_0 = 6$ for CSI-RS resource 1 and 3	TRS
	10	$l_0 = 10$ for CSI-RS resource 2 and 4	TRS
nrofPorts	p1	1 for CSI-RS resource 1,2,3,4	TRS
Cdm-Type	noCDM		TRS
Density CHOICE{			
three	Null		TRS
}			
freqBand	CSI-FrequencyOccupation		TRS
}			

## CSI-ResourcePeriodicityAndOffset

Table 5.4.2.0-10: CSI-ResourcePeriodicityAndOffset for TRS

Derivation Path: Table 4.6.3-43			
Information Element	Value/remark	Comment	Condition
CSI-ResourcePeriodicityAndOffset ::= CHOICE {			
slots20	10	Periodicity 20 slots and offset 10 for CSI-RS resource 1 and 2	SCS 15KHz
slots20	11	Periodicity 20 slots and offset 11 for CSI-RS resource 3 and 4	SCS 15 kHz
Slots40	20	Periodicity 40 slots and offset 20 for CSI-RS resource 1 and 2	SCS 30 kHz
Slots40	21	Periodicity 40 slots and offset 21 for CSI-RS resource 3 and 4	SCS 30 kHz
Slots80	40	Periodicity 80 slots and offset 40 for CSI-RS resource 1 and 2	SCS 60 kHz
Slots80	41	Periodicity 80 slots and offset 41 for CSI-RS resource 3 and 4	SCS 60 kHz
Slots160	80	Periodicity 160 slots and offset 80 for CSI-RS resource 1 and 2	SCS 120 kHz
Slots160	81	Periodicity 160 slots and offset 81 for CSI-RS resource 3 and 4	SCS 120 kHz
}			

## CSI-FrequencyOccupation

Table 5.4.2.0-11: CSI-FrequencyOccupation for TRS

Derivation Path: Table 4.6.3-33			
Information Element	Value/remark	Comment	Condition
CSI-FrequencyOccupation ::= SEQUENCE {			
nrofRBs	52	BW 10 MHz SCS 15kHz	TRS
	52	BW 20 MHz SCS 30kHz	TRS
	108	BW 40 MHz SCS 30kHz	TRS
	68	BW 100 MHz SCS 120 kHz	TRS
}			

## NQP-CSI-RS-ResourceSet

Table 5.4.2.0-12: NQP-CSI-RS-ResourceSet for TRS

Derivation Path: Table 4.6.3-87			
Information Element	Value/remark	Comment	Condition
NQP-CSI-RS-ResourceSet ::= SEQUENCE {			
nqp_CSI_ResourceSetId	0		
nqp-CSI-RS-Resources SEQUENCE (SIZE (1..maxNrofNQP-CSI-RS-ResourcesPerSet)) OF NQP-CSI-RS-ResourceId {	4 entries		FR1, FR2
NQP-CSI-RS-ResourceId[1]	0	entry 1 CSI-RS resource 1	
NQP-CSI-RS-ResourceId[2]	1	entry 2 CSI-RS resource 2	
NQP-CSI-RS-ResourceId[3]	2	entry 3 CSI-RS resource 3	
NQP-CSI-RS-ResourceId[4]	3	entry 4 CSI-RS resource 4	
}			
repetition	off		
aperiodicTriggeringOffset	Not present		
trs_Info	true		
}			

## CSI-ResourceConfig

Table 5.4.2.0-13: CSI-ResourceConfig for TRS

Derivation Path: Table 4.6.3-41			
Information Element	Value/remark	Comment	Condition
CSI-ResourceConfig ::= SEQUENCE {			
csi-ResourceConfigId	CSI-ResourceConfigId		
csi-RS-ResourceSetList CHOICE {			
nqp-CSI-RS-SSB SEQUENCE {			
nqp-CSI-RS-ResourceSetList SEQUENCE (SIZE (1..maxNrofNQP-CSI-RS-ResourceSetsPerConfig)) OF NQP-CSI-RS-ResourceSetId {	1 entry		
NQP-CSI-RS-ResourceSetId[1]	0	entry 1	
}			
csi-SSB-ResourceSetList	Not present		
}			
bwp-Id	BWP-Id		
resourceType	periodic		
}			

NZIP CSI-RS for CSI Acquisition

NZP-CSI-RS-Resource

**Table 5.4.2.0-14: NZP-CSI-RS-Resource**

Derivation Path: Table 4.6.3-85			
Information Element	Value/remark	Comment	Condition
NZIP-CSI-RS-Resource ::= SEQUENCE {			DEMOD_FR 1 DEMOD_FR 2
nzp-CSI-RS-ResourceId	4	CSI-RS resource 5	
resourceMapping	CSI-RS- ResourceMapping		
powerControlOffset	0		
periodicityAndOffset	CSI- ResourcePeriodicityAnd Offset		
qcl-InfoPeriodicCSI-RS	TCI-State #1		
}			

CSI-RS-ResourceMapping

**Table 5.4.2.0-15: CSI-RS-ResourceMapping**

Derivation Path: Table 4.6.3-45			
Information Element	Value/remark	Comment	Condition
CSI-RS-ResourceMapping ::= SEQUENCE {			
frequencyDomainAllocation CHOICE {			
row2	000000000001	K0 = 0, 1Tx test cases	
other	000001	K0 = 0, row3, 2Tx test cases	
row4	001	K0 = 0, 4Tx test cases	
}			
nrofPorts	P2	2Tx test cases	
	P4	4Tx test cases	
	P1	1Tx test cases	
firstOFDMSymbolInTimeDomain	12	I0 = 12	
cdm-Type	fd-CDM2	2Tx and 4Tx test cases	
	noCDM	1Tx test cases	
density CHOICE {			
one	NULL		
}			
freqBand	CSI- FrequencyOccupation		
}			



CSI-ResourcePeriodicityAndOffset

**Table 5.4.2.0-16: CSI-ResourcePeriodicityAndOffset**

Derivation Path: Table 4.6.3-43			
Information Element	Value/remark	Comment	Condition
CSI-ResourcePeriodicityAndOffset ::= CHOICE {			
Slots20	0		SCS 15kHz
Slots40	0		SCS 30kHz
Slots80	0		SCS 60kHz
Slots160	0		SCS 120kHz
}			

CSI-FrequencyOccupation

**Table 5.4.2.0-17: CSI-FrequencyOccupation for CSI Acquisition**

Derivation Path: Table 4.6.3-33			
Information Element	Value/remark	Comment	Condition
CSI-FrequencyOccupation ::= SEQUENCE {			
nrofRBs	52		BW 10 MHz SCS 15kHz
	52		BW 20 MHz SCS 30kHz
	108		BW 40 MHz SCS 30kHz
	68		BW 100MHz SCS 120kHz
}			

NZP-CSI-RS-ResourceSet

**Table 5.4.2.0-18: NZP-CSI-RS-ResourceSet for CSI Acquisition**

Derivation Path: Table 4.6.3-87			
Information Element	Value/remark	Comment	Condition
NZP-CSI-RS-ResourceSet ::= SEQUENCE {			
nzp_CSI_ResourceSetId	1		
nzp-CSI-RS-Resources SEQUENCE (SIZE (1..maxNrofNZP-CSI-RS-ResourcesPerSet)) OF NZP-CSI-RS-ResourceId {	1 entry		FR1, FR2
NZP-CSI-RS-ResourceId[1]	4	entry 1 CSI-RS resource 5	
}			
repetition	off		
aperiodicTriggeringOffset	Not present		
trs_Info	Not present		
}			

## CSI-ResourceConfig

Table 5.4.2.0-19: CSI-ResourceConfig for CSI Acquisition

Derivation Path: Table 4.6.3-41			
Information Element	Value/remark	Comment	Condition
CSI-ResourceConfig ::= SEQUENCE {			
csi-ResourceConfigId	1		
csi-RS-ResourceSetList CHOICE {			
nzp-CSI-RS-SSB SEQUENCE {			
nzp-CSI-RS-ResourceSetList SEQUENCE (SIZE (1..maxNrofNzp-CSI-RS-ResourceSetsPerConfig))	1 entry		
OF Nzp-CSI-RS-ResourceSetId {			
Nzp-CSI-RS-ResourceSetId[1]	1	entry 1	
}			
csi-SSB-ResourceSetList	Not present		
}			
bwp-Id	BWP-Id		
resourceType	periodic		
}			

## ZP CSI-RS for CSI Acquisition

## ZP-CSI-RS-Resource

Table 5.4.2.0-20: ZP-CSI-RS-Resource

Derivation Path: Table 4.6.3-204			
Information Element	Value/remark	Comment	Condition
ZP-CSI-RS-Resource ::= SEQUENCE {			DEMOD_FR 1 DEMOD_FR 2
zp-CSI-RS-ResourceId	ZP-CSI-RS-ResourceId		
resourceMapping	ZP CSI-RS-ResourceMapping		
periodicityAndOffset	ZP CSI-ResourcePeriodicityAndOffset		
qcl-InfoPeriodicCSI-RS	TCI-State #1		
}			

## CSI-RS-ResourceMapping

Table 5.4.2.0-21: ZP CSI-RS-ResourceMapping

Derivation Path: Table 4.6.3-45			
Information Element	Value/remark	Comment	Condition
CSI-RS-ResourceMapping ::= SEQUENCE {			
frequencyDomainAllocation CHOICE {			
other	000100	K0 = 4	
}			
nrofPorts	p4		
firstOFDMSymbolInTimeDomain	12	I0 = 12	
cdm-Type	fd-CDM2		
density CHOICE {			
one	NULL		
}			
freqBand	ZP CSI-FrequencyOccupation		
}			

## CSI-ResourcePeriodicityAndOffset

Table 5.4.2.0-22: ZP CSI-ResourcePeriodicityAndOffset

Derivation Path: Table 4.6.3-43			
Information Element	Value/remark	Comment	Condition
CSI-ResourcePeriodicityAndOffset ::= CHOICE {			
Slots20	0		SCS 15kHz
Slots40	0		SCS 30kHz
Slots80	0		SCS 60kHz
Slots160	0		SCS 120kHz
}			

## CSI-FrequencyOccupation

Table 5.4.2.0-23: ZP CSI-FrequencyOccupation

Derivation Path: Table 4.6.3-33			
Information Element	Value/remark	Comment	Condition
CSI-FrequencyOccupation ::= SEQUENCE {			
nrofRBs	52		BW 10 MHz SCS 15kHz
	52		BW 20 MHz SCS 30kHz
	108		BW 40 MHz SCS 30kHz
	68		BW 100 MHz SCS 120kHz
}			

## PDSCH DMRS Configuration

## DMRS-DownlinkConfig

Table 5.4.2.0-24: DMRS-DownlinkConfig

Derivation Path: Table 4.6.3-50			
Information Element	Value/remark	Comment	Condition
DMRS-DownlinkConfig ::= SEQUENCE {			
dmrs-AdditionalPosition	pos1		
phaseTrackingRS	Not present		DEMOD_FR 1
phaseTrackingRS SEQUENCE {			DEMOD_FR 2
epre-Ratio	0		
resourceElementOffset	Offset10		
}			
}			

## PDSCH Configuration

## PDSCH-ServingCellConfig

Table 5.4.2.0-25: PDSCH-ServingCellConfig

Derivation Path: Table 4.6.3-102			
Information Element	Value/remark	Comment	Condition
PDSCH-ServingCellConfig ::= SEQUENCE {			
codeBlockGroupTransmission	Not present		
xOverhead	Not present		
xOverhead	xOh6		DEMOD_FR 2
nrofHARQ-ProcessesForPDSCH	Set according to the test id	Typically n4 for FDD, n8 for TDD	
pucch-Cell	Not present		
}			

PDSCH-Config

**Table 5.4.2.0-26: *PDSCH-Config***

Derivation Path: Table 4.6.3-100			
Information Element	Value/remark	Comment	Condition
PDSCH-Config ::= SEQUENCE {			
dataScramblingIdentityPDSCH	0		
dmrs-DownlinkForPDSCH-MappingTypeA CHOICE {			
Setup	DMRS-DownlinkConfig		
}			
tci-StatesToAddModList SEQUENCE(SIZE (1..maxNrofTCI-States)) OF TCI-State {	2 entries		
TCI-State[1] SEQUENCE {		entry 1	
tci-StateId	TCI-StateId 0		
qcl-type1 SEQUENCE {	QCL Type is Type1		
Cell	not present		
Bwp-id	Not present	BWP ID	
referenceSignal	Ssb : 0	SSB # 0	
Qcl-Type	Type C		
}			
qcl-type2 SEQUENCE {	QCL Type is Type2		DEMOD_FR 2
Cell	not present		
Bwp-id	Not present	BWP ID	
referenceSignal	Ssb : 0	SSB # 0	
Qcl-Type	Type D		
}			
}			
TCI-State[2] SEQUENCE {		entry 2	
tci-StateId	TCI-StateId 1		
qcl-type1 {	QCL Type is Type1		
Cell	Not present		
Bwp-id	0	BWP ID	
referenceSignal	csi-rs : 0	CSI-RS # 0	
Qcl-Type	Type A		
}			
qcl-type2 SEQUENCE {	QCL Type is Type2		DEMOD_FR 2
Cell	Not present		
Bwp-id	0	BWP ID	
referenceSignal	csi-rs : 0	CSI-RS # 0	
Qcl-Type	Type D		
}			
}			
vrb-ToPRB-Interleaver	Not present		
resourceAllocation	resourceAllocationType0		
pdsch-AggregationFactor	Not present		
rbg-Size	config2	The UE ignores this field if <i>resourceAllocation</i> is set to <i>resourceAllocationType1</i> (see TS 38.214 [21], clause 5.1.2.2.1).	
prb-BundlingType CHOICE {			
staticBundling SEQUENCE {			
bundleSize	Not present	PRB Bundling size of 2	
}			
}			
ZP-CSI-RS-ResourceToAddModList SEQUENCE (SIZE (1..maxNrofNzp-CSI-RS-Resources)) OF Nzp-CSI-RS-Resource {	1 entry		
ZP-CSI-RS-Resource[1]	ZP-CSI-RS-Resource	entry 1	
}			

p-ZP-CSI-RS-ResourceSet	p-ZP-CSI-RS-ResourceSet		
}			

PDSCH-TimeDomainResourceAllocationList

**Table 5.4.2.0-27: PDSCH-TimeDomainResourceAllocationList**

Derivation Path: Table 4.6.3-103			
Information Element	Value/remark	Comment	Condition
PDSCH-TimeDomainResourceAllocationList ::= SEQUENCE(SIZE(1..maxNrofDL-Allocations)) OF PDSCH-TimeDomainResourceAllocation {	2 entries		FR1
PDSCH-TimeDomainResourceAllocation[1]		entry 1	
SEQUENCE {			
K0	Not present		
mappingType	typeA		
startSymbolAndLength	44	Start symbol(S)=2, Length(L)=4	For Slot i, if mod(i, 10) = 7 for i from {0,...,39}
}			
PDSCH-TimeDomainResourceAllocation[2]		entry 2	
SEQUENCE {			
K0	Not present		
mappingType	typeA		
startSymbolAndLength	53	Start symbol(S)=2, Length(L)=12	For Slot i, if mod(i, 10) = {0,1,2,3,4,5,} ) for i from {1,...,39}
}			
}			
PDSCH-TimeDomainResourceAllocationList ::= SEQUENCE(SIZE(1..maxNrofDL-Allocations)) OF PDSCH-TimeDomainResourceAllocation {	3 entries		FR2
PDSCH-TimeDomainResourceAllocation[1]		entry 1	
SEQUENCE {			
K0	Not present		
mappingType	typeA		
startSymbolAndLength	53	Start symbol(S)=2, Length(L)=12	
}			
PDSCH-TimeDomainResourceAllocation[2]		entry 2	
SEQUENCE {			
K0	Not present		
mappingType	typeA		
startSymbolAndLength	96	Start symbol(S)=1, Length(L)=9	
}			
PDSCH-TimeDomainResourceAllocation[3]		entry 3	
SEQUENCE {			
K0	Not present		
mappingType	typeA		
startSymbolAndLength	40	Start symbol(S)=1, Length(L)=13	
}			
}			

CRS for Rate Matching

RateMatchPatternLTE-CRS

**Table 5.4.2.0-28: RateMatchPatternLTE-CRS**

Derivation Path: Table 4.6.3-138			
Information Element	Value/remark	Comment	Condition
RateMatchPatternLTE-CRS ::= SEQUENCE {			TC 5.2.2.1.4-2 and TC 5.2.3.1.4-2 of TS 38.521-4
carrierFreqDL	LTE EARFCN		
carrierBandwidthDL	n50	10MHz	
nrofCRS-Ports	n4		
v-Shift	n0		
}			

CSI-RS for beam refinement

NZIP-CRS-Resource

**Table 5.4.2.0-29: NZP-CSI-RS-Resource**

Derivation Path: Table 4.6.3-85			
Information Element	Value/remark	Comment	Condition
NZIP-CSI-RS-Resource ::= SEQUENCE {			DEMOD_FR 2
nzp-CSI-RS-ResourceId	5	CSI-RS resource 6	Beam refinement
	6	CSI-RS resource 7	Beam refinement
resourceMapping	CSI-RS- ResourceMapping		
powerControlOffset	0		
periodicityAndOffset	CSI- ResourcePeriodicityAnd Offset		
qcl-InfoPeriodicCSI-RS	TCI-State #1		
}			



## CSI-RS-ResourceMapping

Table 5.4.2.0-30: CSI-RS-ResourceMapping

Derivation Path: Table 4.6.3-45			
Information Element	Value/remark	Comment	Condition
CSI-RS-ResourceMapping ::= SEQUENCE {			DEMOD_FR2
frequencyDomainAllocation CHOICE {			
row1	0001	K0 = 0, row1 for resource 1 and 2	
}			
nrofPorts	p1		
firstOFDMsymbolInTimeDomain	8	l0 = 8 for resource 1	
	9	l0 = 9 for resource 2	
cdm-Type	noCDM		
density CHOICE {			
three	NULL		
}			
freqBand	CSI-FrequencyOccupation		
}			

## CSI-ResourcePeriodicityAndOffset

Table 5.4.2.0-31: CSI-ResourcePeriodicityAndOffset

Derivation Path: Table 4.6.3-43			
Information Element	Value/remark	Comment	Condition
CSI-ResourcePeriodicityAndOffset ::= CHOICE {			DEMOD_FR2
Slots80	0		SCS 60kHz
Slots160	0		SCS 120kHz
}			

## CSI-FrequencyOccupation

Table 5.4.2.0-32: CSI-FrequencyOccupation for beam refinement

Derivation Path: Table 4.6.3-33			
Information Element	Value/remark	Comment	Condition
CSI-FrequencyOccupation ::= SEQUENCE {			DEMOD_FR2
nrofRBs	68		BW 100MHz SCS 120kHz
}			

## NQP-CSI-RS-ResourceSet

Table 5.4.2.0-33: NQP-CSI-RS-ResourceSet for beam refinement

Derivation Path: Table 4.6.3-87			
Information Element	Value/remark	Comment	Condition
NQP-CSI-RS-ResourceSet ::= SEQUENCE {			DEMOD_FR 2
nqp_CSI_ResourceSetId	2		
nqp-CSI-RS-Resources SEQUENCE (SIZE (1..maxNrofNQP-CSI-RS-ResourcesPerSet)) OF NQP-CSI-RS-ResourceId {	2 entries		
NQP-CSI-RS-ResourceId[1]	5	entry 1 CSI-RS resource 6	
NQP-CSI-RS-ResourceId[2]	6	entry 1 CSI-RS resource 7	
}			
repetition	off		
aperiodicTriggeringOffset	Not present		
trs_Info	Not present		
}			

## CSI-ResourceConfig

Table 5.4.2.0-34: CSI-ResourceConfig for beam refinement

Derivation Path: Table 4.6.3-41			
Information Element	Value/remark	Comment	Condition
CSI-ResourceConfig ::= SEQUENCE {			
csi-ResourceConfigId	2		
csi-RS-ResourceSetList CHOICE {			
nqp-CSI-RS-SSB SEQUENCE {			
nqp-CSI-RS-ResourceSetList SEQUENCE (SIZE (1..maxNrofNQP-CSI-RS-ResourceSetsPerConfig)) OF NQP-CSI-RS-ResourceSetId {	1 entry		
NQP-CSI-RS-ResourceSetId[1]	2	entry 1	
}			
csi-SSB-ResourceSetList	Not present		
}			
}			
bwp-Id	BWP-Id		
resourceType	periodic		
}			

CSI-RS for beam management

NZIP-CSI-RS-Resource

**Table 5.4.2.0-35: NZP-CSI-RS-Resource for beam management**

Derivation Path: Table 4.6.3-85			
Information Element	Value/remark	Comment	Condition
NZIP-CSI-RS-Resource ::= SEQUENCE {			PDCCH_FR2
nzip-CSI-RS-ResourceID	4	CSI-RS resource 5	
	5	CSI-RS resource 6	
resourceMapping	CSI-RS-ResourceMapping for beam management		
powerControlOffset	0		
periodicityAndOffset	CSI-ResourcePeriodicityAndOffset for beam management		
qcl-InfoPeriodicCSI-RS	TCI-State #1		
}			

CSI-RS-ResourceMapping

**Table 5.4.2.0-36: CSI-RS-ResourceMapping for beam management**

Derivation Path: Table 4.6.3-45			
Information Element	Value/remark	Comment	Condition
CSI-RS-ResourceMapping ::= SEQUENCE {			PDCCH_FR2
frequencyDomainAllocation CHOICE {			
row1	0001	K0 = 0, row1 for resource 1 and 2	
}			
nrofPorts	p1		
firstOFDMsymbolInTimeDomain	8	I0 = 8 for resource 1	
	9	I0 = 9 for resource 2	
cdm-Type	noCDM		
density CHOICE {			
three	NULL		
}			
freqBand	CSI-FrequencyOccupation for beam management		
}			

CSI-ResourcePeriodicityAndOffset

**Table 5.4.2.0-37: CSI-ResourcePeriodicityAndOffset for beam management**

Derivation Path: Table 4.6.3-43			
Information Element	Value/remark	Comment	Condition
CSI-ResourcePeriodicityAndOffset ::= CHOICE {			PDCCH_FR2
Slots80	0		SCS 60kHz
Slots160	0		SCS 120kHz
}			

## CSI-FrequencyOccupation

**Table 5.4.2.0-38: CSI-FrequencyOccupation for beam management**

Derivation Path: Table 4.6.3-33			
Information Element	Value/remark	Comment	Condition
CSI-FrequencyOccupation ::= SEQUENCE {			PDCCH_FR2
nrofRBs	68		BW 100MHz SCS 120kHz
}			

## Nzp-Csi-Rs-ResourceSet

**Table 5.4.2.0-39: Nzp-Csi-Rs-ResourceSet for beam management**

Derivation Path: Table 4.6.3-87			
Information Element	Value/remark	Comment	Condition
Nzp-Csi-Rs-ResourceSet ::= SEQUENCE {			PDCCH_FR2
nzp_Csi_ResourceSetId	1		
nzp-Csi-Rs-Resources SEQUENCE (SIZE (1..maxNrofNzp-Csi-Rs-ResourcesPerSet)) OF Nzp-Csi-Rs-ResourceId {	2 entries		
Nzp-Csi-Rs-ResourceId[1]	4	entry 1 CSI-RS resource 5	
Nzp-Csi-Rs-ResourceId[2]	5	entry 1 CSI-RS resource 6	
}			
repetition	off		
aperiodicTriggeringOffset	Not present		
trs_Info	Not present		
}			

## CSI-ResourceConfig

**Table 5.4.2.0-40: CSI-ResourceConfig for beam management**

Derivation Path: Table 4.6.3-41			
Information Element	Value/remark	Comment	Condition
CSI-ResourceConfig ::= SEQUENCE {			
csi-ResourceConfigId	1		
csi-Rs-ResourceSetList CHOICE {			
nzp-Csi-Rs-SSB SEQUENCE {			
nzp-Csi-Rs-ResourceSetList SEQUENCE (SIZE (1..maxNrofNzp-Csi-Rs-ResourceSetsPerConfig)) OF Nzp-Csi-Rs-ResourceSetId {	1 entry		
Nzp-Csi-Rs-ResourceSetId[1]	1	entry 1	
}			
csi-SSB-ResourceSetList	Not present		
}			
}			
bwp-Id	BWP-Id		
resourceType	periodic		
}			

PUCCH-Config

Table 5.4.2.0-41: PUCCH-Config

Derivation Path: Table 4.6.3-112			
Information Element	Value/remark	Comment	Condition
PUCCH-Config ::= SEQUENCE {			
dl-DataToUL-ACK SEQUENCE (SIZE (1..8)) OF INTEGER {	4 entries		FR1.15-1 FR1.30-2 FR2.120-1 FR2.120-1A
INTEGER[1]	2	entry 1	
INTEGER[2]	3	entry 2	
INTEGER[3]	4	entry 3	
INTEGER[4]	6	entry 4	
}			
}			
dl-DataToUL-ACK SEQUENCE (SIZE (1..8)) OF INTEGER {	7 entries		FR1.30-1 FR1.30-1A FR1.30-4
INTEGER[1]	2	entry 1	
INTEGER[2]	3	entry 2	
INTEGER[3]	4	entry 3	
INTEGER[4]	5	entry 4	
INTEGER[5]	6	entry 5	
INTEGER[6]	7	entry 6	
INTEGER[7]	8	entry 7	
}			
}			
dl-DataToUL-ACK SEQUENCE (SIZE (1..8)) OF INTEGER {	4 entries		FR1.30-3
INTEGER[1]	2	entry 1	
INTEGER[2]	3	entry 2	
INTEGER[3]	4	entry 3	
INTEGER[4]	5	entry 4	
}			
}			
dl-DataToUL-ACK SEQUENCE (SIZE (1..8)) OF INTEGER {	2 entries		FR1.30-5 FR1.30-6
INTEGER[1]	2	entry 1	
INTEGER[2]	3	entry 2	
}			
}			
dl-DataToUL-ACK SEQUENCE (SIZE (1..8)) OF INTEGER {	3 entries		FR2.60-1 FR2.120-2
INTEGER[1]	2	entry 1	
INTEGER[2]	3	entry 2	
INTEGER[3]	5	entry 3	
}			
}			
dl-DataToUL-ACK SEQUENCE (SIZE (1..8)) OF INTEGER {	2 entries		FR2.120-1_CSI
INTEGER[1]	3	entry 1	
INTEGER[2]	6	entry 2	
}			
}			
dl-DataToUL-ACK SEQUENCE (SIZE (1..8)) OF INTEGER {	3 entries		FR2.120-2_CSI
INTEGER[1]	6	entry 1	
INTEGER[2]	7	entry 2	
INTEGER[3]	11	entry 3	
}			
}			

Condition	Explanation
FR1.15-1	TDD UL-DL pattern FR1.15-1 is used. Ref Annex A.1.2 of TS 38.521-4
FR1.30-1	TDD UL-DL pattern FR1.30-1 is used. Ref Annex A.1.2 of TS 38.521-4
FR1.30-2	TDD UL-DL pattern FR1.30-2 is used. Ref Annex A.1.2 of TS 38.521-4
FR1.30-3	TDD UL-DL pattern FR1.30-3 is used. Ref Annex A.1.2 of TS 38.521-4
FR1.30-4	TDD UL-DL pattern FR1.30-4 is used. Ref Annex A.1.2 of TS 38.521-4
FR1.30-5	TDD UL-DL pattern FR1.30-5 is used. Ref Annex A.1.2 of TS 38.521-4
FR1.30-6	TDD UL-DL pattern FR1.30-6 is used. Ref Annex A.1.2 of TS 38.521-4
FR2.60-1	TDD UL-DL pattern FR2.60-1 is used. Ref Annex A.1.3 of TS 38.521-4
FR2.120-1	TDD UL-DL pattern FR2.120-1 is used. Ref Annex A.1.3 of TS 38.521-4
FR2.120-2	TDD UL-DL pattern FR2.120-2 is used. Ref Annex A.1.3 of TS 38.521-4
FR2.120-1_CSI	TDD UL-DL pattern FR2.120-1 is used for CSI reporting test cases. Ref Table 8.1.2-1 of TS 38.521-4
FR2.120-2_CSI	TDD UL-DL pattern FR2.120-2 is used for CSI reporting test cases. Ref Table 8.1.2-1 of TS 38.521-4

#### 5.4.2.1 Message contents for PDSCH Demodulation requirements

ZP CSI-RS for CSI Acquisition

p-ZP-CSI-RS-ResourceSet

**Table 5.4.2.1-0: p-ZP-CSI-RS-ResourceSet**

Derivation Path: TS 38.331 [6], clause 6.3.2.			
Information Element	Value/remark	Comment	Condition
p-ZP-CSI-RS-ResourceSet CHOICE {			
setup	ZP-CSI-RS-ResourceSet		
}			

**Table 5.4.2.1-1: ZP-CSI-RS-ResourceSet**

Derivation Path: Table 4.6.3-87			
Information Element	Value/remark	Comment	Condition
p-ZP-CSI-RS-ResourceSet ::= SEQUENCE {			
zp_CSI-RS_ResourceSetId	0		
zp-CSI-RS-ResourceIdList SEQUENCE (SIZE (1..maxNrofZP-CSI-RS-ResourcesPerSet)) OF ZP-CSI-RS-ResourceId {		1 entry	
ZP-CSI-RS-ResourceId[1]	0	entry 1 ZP CSI-RS resource 1	
}			
}			

## CSI-MeasConfig

Table 5.4.2.1-2: CSI-MeasConfig

Derivation Path: Table 4.6.3-38			
Information Element	Value/remark	Comment	Condition
CSI-MeasConfig ::= SEQUENCE {			
nzp-CSI-RS-ResourceToAddModList SEQUENCE (SIZE (1..maxNrofNZP-CSI-RS-Resources)) OF NZP-CSI-RS-Resource {	n entries	dependent on test condition	
NZP-CSI-RS-Resource[1]	NZP-CSI-RS-Resource for TRS (1)	entry 1 CSI-RS resource 1	
NZP-CSI-RS-Resource[2]	NZP-CSI-RS-Resource for TRS (2)	entry 2 CSI-RS resource 2	
NZP-CSI-RS-Resource[3]	NZP-CSI-RS-Resource for TRS (3)	entry 3 CSI-RS resource 3	
NZP-CSI-RS-Resource[4]	NZP-CSI-RS-Resource for TRS (4)	entry 4 CSI-RS resource 4	
NZP-CSI-RS-Resource[5]	NZP-CSI-RS-Resource for CSI Acquisition	entry 5 CSI-RS resource 5	
NZP-CSI-RS-Resource[6]	CSI-RS-Resource for beam refinement	entry 5 CSI-RS resource 6	DEMOD_FR 2
NZP-CSI-RS-Resource[7]	CSI-RS-Resource for beam refinement	entry 5 CSI-RS resource 7	DEMOD_FR 2
}			
nzp-CSI-RS-ResourceSetToAddModList SEQUENCE (SIZE (1..maxNrofNZP-CSI-RS-ResourceSets)) OF NZP-CSI-RS-ResourceSetId {	n entries	dependent on test condition	
NZP-CSI-RS-ResourceSet[1]	NZP-CSI-RS-ResourceSet for TRS	entry 1	
NZP-CSI-RS-ResourceSet[2]	NZP-CSI-RS-ResourceSet for CSI Acquisition	entry 2	
NZP-CSI-RS-ResourceSet[3]	CSI-RS-ResourceSet for beam refinement	entry 3	DEMOD_FR 2
}			
csi-IM-ResourceToAddModList	Not present		
csi-IM-ResourceSetToAddModList	Not present		
csi-SSB-ResourceSetToAddModList	Not present		
csi-ResourceConfigToAddModList SEQUENCE (SIZE (1..maxNrofCSI-ResourceConfigurations)) OF CSI-ResourceConfig {	n entries	dependent on test condition	
CSI-ResourceConfig[1]	CSI-ResourceConfig for TRS	entry 1	
CSI-ResourceConfig[2]	CSI-ResourceConfig for CSI Acquisition	entry 2	
CSI-ResourceConfig[2]	CSI-ResourceConfig for beam refinement	entry 3	DEMOD_FR 2
}			
}			

## 5.4.2.2 Message contents for PDCCH Demodulation requirements

NRP-CSI-RS for Tracking

CSI-RS-ResourceMapping

Table 5.4.2.2-1: CSI-RS-ResourceMapping for TRS

Derivation Path: Table 4.6.3-45			
Information Element	Value/remark	Comment	Condition
CSI-RS-ResourceMapping ::= SEQUENCE {			
frequencyDomainAllocation CHOICE {			
row1	0001	$k_0=0$ for CSI-RS resource 1,2,3,4	TRS
}			
firstOFDMSymbolInTimeDomain	4	$l_0 = 4$ for CSI-RS resource 1 and 3	TRS
	8	$l_0 = 8$ for CSI-RS resource 2 and 4	TRS
nrofPorts	p1	1 for CSI-RS resource 1,2,3,4	TRS
Cdm-Type	noCDM		TRS
Density CHOICE{			
three	Null		TRS
}			
freqBand	CSI-FrequencyOccupation		TRS
}			



## CSI-MeasConfig

Table 5.4.2.2-2: CSI-MeasConfig

Derivation Path: Table 4.6.3-38			
Information Element	Value/remark	Comment	Condition
CSI-MeasConfig ::= SEQUENCE {			
nzp-CSI-RS-ResourceToAddModList SEQUENCE (SIZE (1..maxNrofNZP-CSI-RS-Resources)) OF NZP-CSI-RS-Resource {	n entries	Dependent on test condition	
NZP-CSI-RS-Resource[1]	NZP-CSI-RS-Resource for TRS (1)	entry 1 CSI-RS resource 1	
NZP-CSI-RS-Resource[2]	NZP-CSI-RS-Resource for TRS (2)	entry 2 CSI-RS resource 2	
NZP-CSI-RS-Resource[3]	NZP-CSI-RS-Resource for TRS (3)	entry 3 CSI-RS resource 3	
NZP-CSI-RS-Resource[4]	NZP-CSI-RS-Resource for TRS (4)	entry 4 CSI-RS resource 4	
NZP-CSI-RS-Resource[5]	NZP-CSI-RS-Resource for beam management (5)	entry 4 CSI-RS resource 5	PDCCH_FR 2
NZP-CSI-RS-Resource[6]	NZP-CSI-RS-Resource for beam management (6)	entry 4 CSI-RS resource 6	PDCCH_FR 2
}			
nzp-CSI-RS-ResourceSetToAddModList SEQUENCE (SIZE (1..maxNrofNZP-CSI-RS-ResourceSets)) OF NZP-CSI-RS-ResourceSetId {	1 entry		
NZP-CSI-RS-ResourceSet[1]	NZP-CSI-RS-ResourceSet for TRS	entry 1	
NZP-CSI-RS-ResourceSet[2]	NZP-CSI-RS-ResourceSet for beam management	entry 1	PDCCH_FR 2
}			
csi-IM-ResourceToAddModList	Not present		
csi-IM-ResourceSetToAddModList	Not present		
csi-SSB-ResourceSetToAddModList	Not present		
csi-ResourceConfigToAddModList SEQUENCE (SIZE (1..maxNrofCSI-ResourceConfigurations)) OF CSI-ResourceConfig {	1 entry		
CSI-ResourceConfig[1]	CSI-ResourceConfig	entry 1	
CSI-ResourceConfig[2]	CSI-ResourceConfig for beam management	entry 1	PDCCH_FR 2
}			
}			

PDSCH Configuration

PDSCH-Config

**Table 5.4.2.2-3: PDSCH-Config**

Derivation Path: Table 4.6.3-100			
Information Element	Value/remark	Comment	Condition
PDSCH-Config ::= SEQUENCE {			
dataScramblingIdentityPDSCH	0		
dmrs-DownlinkForPDSCH-MappingTypeA CHOICE			
{			
Setup	DMRS-DownlinkConfig		
}			
tci-StatesToAddModList SEQUENCE(SIZE (1..maxNrofTCI-States)) OF TCI-State {	2 entries		
TCI-State[1] SEQUENCE {		entry 1	
tci-StateId	TCI-StateId 0		
qcl-type1 SEQUENCE {	QCL Type is Type1		
Cell	Not Present		
Bwp-id	Not present	BWP ID	
referenceSignal	Ssb : 0	SSB # 0	
Qcl-Type	Type C		
}			
qcl-type2 SEQUENCE {	QCL Type is Type2		
Cell	Not Present		
Bwp-id	Not present	BWP ID	
referenceSignal	Ssb : 0	SSB # 0	
Qcl-Type	Type D		
}			
}			
TCI-State[2] SEQUENCE {		entry 2	
tci-StateId	TCI-StateId 1		
qcl-type1 SEQUENCE {	QCL Type is Type1		
Cell	Not Present		
Bwp-id	0	BWP ID	
referenceSignal	csi-rs : 0	CSI-RS # 0	
Qcl-Type	Type A		
}			
qcl-type2 SEQUENCE {	QCL Type is Type2		
Cell	Not Present		
Bwp-id	0	BWP ID	
referenceSignal	csi-rs : 0	CSI-RS # 0	
Qcl-Type	Type D		
}			
}			
vrb-ToPRB-Interleaver	Not present		
resourceAllocation	resourceAllocationType0		
pdsch-AggregationFactor	Not present		
prb-BundlingType CHOICE {			
staticBundling SEQUENCE {			
bundleSize	Not present	PRB Bundling size of 2	
}			
}			
}			
}			

### 5.4.2.3 Message contents for Sustained downlink data rate requirements

Physical layer parameters

**Table 5.4.2.3-1: Physical layer parameters for DCI format 1\_1**

Derivation Path: Table 5.4.2.0-1

Common Serving Parameters

ServingCellConfigCommon

**Table 5.4.2.3-2: ServingCellConfigCommon**

Derivation Path: Table 5.4.2.0-2

TDD-UL-DL-Config

**Table 5.4.2.3-3: TDD-UL-DL-Config**

Derivation Path: Table 5.4.2.0-3

PDCCH Configuration

PDCCH-ConfigCommon

**Table 5.4.2.3-4: PDCCH-ConfigCommon**

Derivation Path: Table 5.4.2.0-4

ServingCellConfig

**Table 5.4.2.3-5: ServingCellConfig**

Derivation Path: Table 5.4.2.0-5

PDCCH-config

**Table 5.4.2.3-6: PDCCH-ControlResourceSet**

Derivation Path: Table 5.4.2.0-6			
Information Element	Value/remark	Comment	Condition
ControlResourceSet ::= SEQUENCE {			
controlResourceSetId	ControlResourceSetId		
frequencyDomainResources	xxxxxxx xxxxxxxx xxxxxxx xxxxxxxx xxxxxxx xxxxx	TS 38.521-4 Table 5.2-2 for tested channel bandwidth and subcarrier spacing	SDR_FR1
frequencyDomainResources	xxxxxxx xxxxxxxx xxxxxxx xxxxxxxx xxxxxxx xxxxx	TS 38.521-4 Table 7.2-2 for tested channel bandwidth and subcarrier spacing	SDR_FR2
duration	1	SearchSpace duration of 1 symbol	SDR_FR1, SDR_FR2
cce-REG-MappingType CHOICE {			
nonInterleaved	NULL		
}			
precoderGranularity	sameAsREG-bundle		
tci-StatesPDCCH-ToAddList	Not present	SearchSpace seen from all TCI states	
tci-StatesPDCCH-ToAddList SEQUENCE(SIZE (1..maxNrofTCI-StatesPDCCH)) OF TCI-StateId {	1 entry		MBWP
TCI-StateId[1]	0	QCL ssb 0	
	1	QCL csi-rs 0	
}			
}			

Condition	Explanation
SDR_FR1	SDR testing in FR1.
SDR_FR2	SDR testing in FR2.

**Table 5.4.2.3-7: PDCCH Search Space**

Derivation Path: Table 5.4.2.0-7			
Information Element	Value/remark	Comment	Condition
SearchSpace ::= SEQUENCE {			
monitoringSlotPeriodicityAndOffset CHOICE {			
sl1	NULL		
}			
duration	Not present	1 slot per default	
monitoringSymbolsWithinSlot	10000000000000	Starting symbol 0	
nrofCandidates SEQUENCE {			
aggregationLevel1	n0		
aggregationLevel2	n2	1 for UL, 1 for DL	CORESET_ge_24_RBs
	n0		
aggregationLevel4	n2	1 for UL, 1 for DL	CORESET_ge_48_RBs
	n0		
aggregationLevel8	n2	1 for UL, 1 for DL	CORESET_ge_96_RBs
	n0		
aggregationLevel16	n0		
}			
searchSpaceType CHOICE {			
ue-Specific SEQUENCE {			USS
dci-Formats	formats0-1-And-1-1	DCI Format 1_1	
}			
}			
}			

Condition	Explanation
CORESET_ge_24_RBs	5MHz in scs15; 10MHz, 15MHz in scs30.
CORESET_ge_48_RBs	10MHz in scs15; 20MHz in scs30.
CORESET_ge_96_RBs	15MHz and above in scs15; 25MHz and above in scs30.

NZP-CSI-RS for Tracking

NZP-CSI-RS-Resource

**Table 5.4.2.3-8: NZP-CSI-RS-Resource for TRS**

Derivation Path: Table 5.4.2.0-8			
Information Element	Value/remark	Comment	Condition
NZP-CSI-RS-Resource ::= SEQUENCE {			
nzp-CSI-RS-ResourceId	0	CSI-RS resource 1	
	1	CSI-RS resource 2	
	2	CSI-RS resource 3	
	3	CSI-RS resource 4	
resourceMapping	CSI-RS-ResourceMapping for TRS		
powerControlOffset	0		
periodicityAndOffset	CSI-ResourcePeriodicityAndOffset		
qcl-InfoPeriodicCSI-RS	TCI-StateId 0	QCL ssb 0	
}			

## CSI-RS-ResourceMapping

**Table 5.4.2.3-9: CSI-RS-ResourceMapping for TRS**

Derivation Path: Table 5.4.2.0-9			
Information Element	Value/remark	Comment	Condition
CSI-RS-ResourceMapping ::= SEQUENCE {			
frequencyDomainAllocation CHOICE {			
row1	1000	$k_0=3$ , row1	2TX, 4TX
}			
firstOFDMSymbolInTimeDomain	6	$l_0=6$ for CSI-RS resource 1 and 3	
	10	$l_0=10$ for CSI-RS resource 2 and 4	
nrofPorts	p1	1 for CSI-RS resource 1,2,3,4	2TX, 4TX
cdm-Type	noCDM		
density CHOICE{			
three	Null		
}			
freqBand	CSI-FrequencyOccupation for TRS		
}			

## CSI-ResourcePeriodicityAndOffset

**Table 5.4.2.3-10: CSI-ResourcePeriodicityAndOffset for TRS**

Derivation Path: Table 5.4.2.0-10
-----------------------------------

## CSI-FrequencyOccupation

**Table 5.4.2.3-11: CSI-FrequencyOccupation for TRS**

Derivation Path: Table 5.4.2.0-11			
Information Element	Value/remark	Comment	Condition
CSI-FrequencyOccupation ::= SEQUENCE {			
nrofRBs	52	BW 10MHz SCS 15kHz, BW 20MHz SCS 30kHz	
	108	BW 20MHz SCS 15kHz	
	276	BW 100MHz SCS 30kHz	
}			

## NZF-CSI-RS-ResourceSet

**Table 5.4.2.3-12: NZF-CSI-RS-ResourceSet for TRS**

Derivation Path: Table 5.4.2.0-12
-----------------------------------

## CSI-ResourceConfig

**Table 5.4.2.3-13: CSI-ResourceConfig for TRS**

Derivation Path: Table 5.4.2.0-13
-----------------------------------

NZP CSI-RS for CSI Acquisition

NZP-CSI-RS-Resource

**Table 5.4.2.3-14: NZP-CSI-RS-Resource for CSI Acquisition**

Derivation Path: Table 5.4.2.0-14			
Information Element	Value/remark	Comment	Condition
NZP-CSI-RS-Resource ::= SEQUENCE {			
nzp-CSI-RS-ResourceId	4	CSI-RS resource 5	
resourceMapping	CSI-RS-ResourceMapping		
powerControlOffset	0		
periodicityAndOffset	CSI-ResourcePeriodicityAndOffset		
qcl-InfoPeriodicCSI-RS	TCI-StateId 1	QCL csi-rs 0	
}			

CSI-RS-ResourceMapping

**Table 5.4.2.3-15: CSI-RS-ResourceMapping for CSI Acquisition**

Derivation Path: Table 5.4.2.0-15			
Information Element	Value/remark	Comment	Condition
CSI-RS-ResourceMapping ::= SEQUENCE {			
frequencyDomainAllocation CHOICE {			
other	000100	k <sub>0</sub> =4, row3	2TX
row4	010	k <sub>0</sub> =4, row4	4TX
}			
nrofPorts	p2		2TX
	p4		4TX
firstOFDMSymbolInTimeDomain	12	l <sub>0</sub> =12	
cdm-Type	fd-CDM2		
density CHOICE {			
one	NULL		
}			
freqBand	CSI-FrequencyOccupation for CSI Acquisition		
}			

CSI-ResourcePeriodicityAndOffset

**Table 5.4.2.3-16: CSI-ResourcePeriodicityAndOffset**

Derivation Path: Table 5.4.2.0-16
-----------------------------------

CSI-FrequencyOccupation

**Table 5.4.2.3-17: CSI-FrequencyOccupation for CSI Acquisition**

Derivation Path: Table 5.4.2.0-17			
Information Element	Value/remark	Comment	Condition
CSI-FrequencyOccupation ::= SEQUENCE {			
nrofRBs	52		BW 10MHz SCS 15kHz, BW 20MHz SCS 30kHz
	108		BW 20MHz SCS 15kHz
	276		BW 100MHz SCS 30kHz
}			

NWP-CSI-RS-ResourceSet

**Table 5.4.2.3-18: NWP-CSI-RS-ResourceSet for CSI Acquisition**

Derivation Path: Table 5.4.2.0-18
-----------------------------------

CSI-ResourceConfig

**Table 5.4.2.3-19: CSI-ResourceConfig for CSI Acquisition**

Derivation Path: Table 5.4.2.0-19
-----------------------------------

ZP CSI-RS for CSI Acquisition

ZP-CSI-RS-Resource

**Table 5.4.2.3-20: ZP-CSI-RS-Resource**

Derivation Path: Table 5.4.2.0-20			
Information Element	Value/remark	Comment	Condition
ZP-CSI-RS-Resource ::= SEQUENCE {			
zp-CSI-RS-ResourceId	ZP-CSI-RS-ResourceId		
resourceMapping	ZP CSI-RS-ResourceMapping		
periodicityAndOffset	ZP CSI-ResourcePeriodicityAndOffset		
qcl-InfoPeriodicCSI-RS	TCI-StateId 1	QCL csi-rs 0	
}			



## CSI-RS-ResourceMapping

**Table 5.4.2.3-21: ZP CSI-RS-ResourceMapping**

Derivation Path: Table 5.4.2.0-21			
Information Element	Value/remark	Comment	Condition
CSI-RS-ResourceMapping ::= SEQUENCE {			
frequencyDomainAllocation CHOICE {			
row4	001	k <sub>0</sub> =0, row4	2TX, 4TX
}			
nrofPorts	p4		2TX, 4TX
firstOFDMSymbolInTimeDomain	12	l <sub>0</sub> =12	
cdm-Type	fd-CDM2		
density CHOICE {			
one	NULL		
}			
freqBand	ZP CSI-FrequencyOccupation		
}			

## CSI-ResourcePeriodicityAndOffset

**Table 5.4.2.3-22: ZP CSI-ResourcePeriodicityAndOffset**

Derivation Path: Table 5.4.2.0-22
-----------------------------------

## CSI-FrequencyOccupation

**Table 5.4.2.3-23: ZP CSI-FrequencyOccupation**

Derivation Path: Table 5.4.2.0-23			
Information Element	Value/remark	Comment	Condition
CSI-FrequencyOccupation ::= SEQUENCE {			
nrofRBs	52		BW 10MHz SCS 15kHz, BW 20MHz SCS 30kHz
	108		BW 20MHz SCS 15kHz
	276		BW 100MHz SCS 30kHz
}			

## PDSCH DMRS Configuration

## DMRS-DownlinkConfig

**Table 5.4.2.3-24: DMRS-DownlinkConfig**

Derivation Path: Table 5.4.2.0-24
-----------------------------------

## PDSCH Configuration

## PDSCH-ServingCellConfig

**Table 5.4.2.3-25: PDSCH-ServingCellConfig**

Derivation Path: Table 5.4.2.0-25
-----------------------------------

PDSCH-Config

**Table 5.4.2.3-26: *PDSCH-Config***

Derivation Path: Table 5.4.2.0-26			
Information Element	Value/remark	Comment	Condition
PDSCH-Config ::= SEQUENCE {			
dataScramblingIdentityPDSCH	0		
dmrs-DownlinkForPDSCH-MappingTypeA CHOICE {			
setup	DMRS-DownlinkConfig		
}			
tci-StatesToAddModList SEQUENCE(SIZE (1..maxNrofTCI-States)) OF TCI-State {	2 entries		
TCI-State[1] SEQUENCE {		entry 1	
tci-StateId	0	TCI-StateId 0	
qcl-type1 SEQUENCE {			
cell	0		
bwp-id	Not present	BWP_ID	
referenceSignal	ssb		
ssb	0		
qcl-Type	typeC		
}			
qcl-type2 SEQUENCE {			SDR_FR2
cell	0		
bwp-id	Not present	BWP_ID	
referenceSignal	ssb		
ssb	0		
qcl-Type	typeD		
}			
}			
TCI-State[2] SEQUENCE {		entry 2	
tci-StateId	1	TCI-StateId 1	
qcl-type1 {			
cell	0		
bwp-id	0	BWP ID	
referenceSignal	csi-rs		
csi-rs	0		
qcl-Type	typeA		
}			
qcl-type2 SEQUENCE {			SDR_FR2
cell	0		
bwp-id	0	BWP ID	
referenceSignal	csi-rs		
csi-rs	0		
qcl-Type	typeD		
}			
}			
vrb-ToPRB-Interleaver	Not present		
resourceAllocation	resourceAllocationType0		
pdsch-AggregationFactor	Not present		
rbg-Size	config1	The UE ignores this field if <i>resourceAllocation</i> is set to <i>resourceAllocationType1</i> (see TS 38.214 [21], clause 5.1.2.2.1).	
prb-BundlingType CHOICE {			
staticBundling SEQUENCE {			
bundleSize	wideband		SDR_FR1, SDR_FR2
}			
}			
ZP-CSI-RS-ResourceToAddModList SEQUENCE (SIZE (1..maxNrofZP-CSI-RS-Resources)) OF NZP-CSI-RS-Resource {	1 entry		
ZP-CSI-RS-Resource[1]	ZP-CSI-RS-Resource	entry 1	

}			
p-ZP-CSI-RS-ResourceSet	p-ZP-CSI-RS-ResourceSet		
}			

PDSCH-TimeDomainResourceAllocationList

**Table 5.4.2.3-27: PDSCH-TimeDomainResourceAllocationList**

Derivation Path: Table 5.4.2.0-27			
Information Element	Value/remark	Comment	Condition
PDSCH-TimeDomainResourceAllocationList ::= SEQUENCE(SIZE(1..maxNrofDL-Allocations)) OF PDSCH-TimeDomainResourceAllocation {	2 entries		
PDSCH-TimeDomainResourceAllocation[1]		entry 1	
SEQUENCE {			
k0	Not present		
mappingType	typeA		
startSymbolAndLength	44	Start symbol(S)=2, Length(L)=4	SDR_FR1
	96	Start symbol(S)=1, Length(L)=9	SDR_FR2
}			
PDSCH-TimeDomainResourceAllocation[2]		entry 2	
SEQUENCE {			
k0	Not present		
mappingType	typeA		
	40	Start symbol(S)=1, Length(L)=13	SDR_FR1, SDR_FR2
}			
}			

– SecurityAlgorithmConfig

**Table 5.4.2.3-A1: SecurityAlgorithmConfig**

Derivation Path: Table 4.6.3-165			
Information Element	Value/remark	Comment	Condition
SecurityAlgorithmConfig ::= SEQUENCE {			
cipheringAlgorithm	nea0		SDR_FR1, SDR_FR2
integrityProtAlgorithm	nia2		
}			

## Security mode command

Table 5.4.2.3-A2: SECURITY MODE COMMAND

Derivation Path: Table 4.7.1-25			
Information Element	Value/remark	Comment	Condition
Selected NAS security algorithms			
Type of ciphering algorithm	'0000'B	5G encryption algorithm 5G EA0 (null ciphering algorithm)	SDR_FR1, SDR_FR2
Type of integrity protection algorithm	Set according to PIXIT px_NAS_5GC_IntegrityProtAlgorithm for default integrity protection algorithm	This value should not be equal to the null integrity algorithm.	
Selected EPS NAS security algorithms			
Not Present			
Selected EPS NAS security algorithms			
Type of ciphering algorithm	'0000'B	EPS encryption algorithm EEA0 (null ciphering algorithm)	UE_S1_SUPORTED, SDR_FR1, SDR_FR2
Type of integrity protection algorithm	Set according to PIXIT px_NAS_IntegrityProtAlgorithm for default integrity protection algorithm		

## 5.4.2.4 Message contents for CQI reporting requirements

NRP-CSI-RS for Tracking

CSI-RS-ResourceMapping

Table 5.4.2.4-1: CSI-RS-ResourceMapping for TRS

Derivation Path: Table 4.6.3-45			
Information Element	Value/remark	Comment	Condition
CSI-RS-ResourceMapping ::= SEQUENCE {			
frequencyDomainAllocation CHOICE {			
row1	0001	$k_0=0$ for CSI-RS resource 1,2,3,4	TRS
}			
firstOFDMSymbolInTimeDomain	4	$l_0 = 4$ for CSI-RS resource 1 and 3	TRS
	8	$l_0 = 8$ for CSI-RS resource 2 and 4	TRS
nrofPorts	p1	1 for CSI-RS resource 1,2,3,4	TRS
Cdm-Type	noCDM		TRS
Density CHOICE{			
three	Null		TRS
}			
freqBand	CSI-FrequencyOccupation		TRS
}			

NXP CSI-RS for CSI Acquisition

CSI-RS-ResourceMapping

**Table 5.4.2.4-2: CSI-RS-ResourceMapping**

Derivation Path: Table 4.6.3-45			
Information Element	Value/remark	Comment	Condition
CSI-RS-ResourceMapping ::= SEQUENCE {			
frequencyDomainAllocation CHOICE {			
other	001000	K0 = 6, row3,	NOT 1Tx test cases
row1	0001	K0 = 0, row1	1Tx test cases
}			
nrofPorts	P2		NOT 1Tx test cases
	P1		1Tx test cases
firstOFDMSymbolInTimeDomain	13	I0 = 13	
cdm-Type	fd-CDM2		NOT 1Tx test cases
	noCDM		1Tx test cases
density CHOICE {			
one	NULL		NOT 1Tx test cases
three	NULL		1Tx test cases
}			
freqBand	CSI-FrequencyOccupation		
}			

CSI-ResourcePeriodicityAndOffset

**Table 5.4.2.4-2a: NXP CSI-ResourcePeriodicityAndOffset**

Derivation Path: Table 4.6.3-43			
Information Element	Value/remark	Comment	Condition
CSI-ResourcePeriodicityAndOffset ::= CHOICE {			
slots5	1		FR1_FDD
slot10	1		FR1_TDD
slot8	1		FR2
}			

ZP CSI-RS for CSI Acquisition

CSI-RS-ResourceMapping

**Table 5.4.2.4-3: ZP CSI-RS-ResourceMapping**

Derivation Path: Table 4.6.3-45			
Information Element	Value/remark	Comment	Condition
CSI-RS-ResourceMapping ::= SEQUENCE {			
frequencyDomainAllocation CHOICE {			
other	000100	K0 = 4	FR1
row4	100	K0=8	FR2
}			
nrofPorts	P4		
firstOFDMSymbolInTimeDomain	9	I0 = 9	FR1
	13	I0 = 13	FR2
cdm-Type	fd-CDM2		
density CHOICE {			
one	NULL		
}			
freqBand	ZP CSI-FrequencyOccupation		
}			

CSI-ResourcePeriodicityAndOffset

**Table 5.4.2.4-4: ZP CSI-ResourcePeriodicityAndOffset**

Derivation Path: Table 4.6.3-43			
Information Element	Value/remark	Comment	Condition
CSI-ResourcePeriodicityAndOffset ::= CHOICE {			
slots5	1		FR1_FDD
slot10	1		FR1_TDD
slot8	1		FR2
}			

p-ZP-CSI-RS-ResourceSet

**Table 5.4.2.4-5: p-ZP-CSI-RS-ResourceSet**

Derivation Path: Table 4.6.3-87			
Information Element	Value/remark	Comment	Condition
p-ZP-CSI-RS-ResourceSet ::= SEQUENCE {			
zp_CSI-RS_ResourceSetId	0		
zp-CSI-RS-ResourceIdList SEQUENCE (SIZE (1..maxNrofZP-CSI-RS-ResourcesPerSet)) OF ZP-CSI-RS-ResourceId{	1 entry		
ZP-CSI-RS-ResourceId[1]	0	entry 1 ZP CSI-RS resource 1	
}			
}			

CSI-IM Configuration

CSI-IM-Resource

**Table 5.4.2.4-6: CSI-IM-Resource**

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
CSI-IM-Resource ::= SEQUENCE {			
csi-IM-ResourceId	CSI-IM-ResourceId		
csi-IM-ResourceElementPattern CHOICE {			
pattern0 SEQUENCE {			FR1
subcarrierLocation-p0	s4		
symbolLocation-p0	9		
}			
pattern1 SEQUENCE {			FR2
subcarrierLocation-p1	s8		
symbolLocation-p1	13		
}			
}			
freqBand	CSI-FrequencyOccupation		
periodicityAndOffset	CSI-ResourcePeriodicityAndOffset		
}			

CSI-IM-ResourceId

**Table 5.4.2.4-7: CSI-IM-ResourceId**

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

CSI-IM-ResourceSet

**Table 5.4.2.4-8: CSI-IM-ResourceSet**

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
CSI-IM-ResourceSet ::= SEQUENCE {			
csi-IM-ResourceSetId	CSI-IM-ResourceSetId		
csi-IM-Resources SEQUENCE (SIZE(1..maxNrofCSI-IM-ResourcesPerSet)) {	1 entry		
CSI-IM-ResourceId[1]	CSI-IM-ResourceId	entry 1	
}			
}			

CSI-IM-ResourceSetId

**Table 5.4.2.4-9: CSI-IM-ResourceSetId**

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



## CSI-IM-ResourceConfig

Table 5.4.2.4-10: CSI-IM-ResourceConfig

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
CSI-ResourceConfig ::= SEQUENCE {			
csi-ResourceConfigId	2		
csi-RS-ResourceSetList CHOICE {			
csi-IM-ResourceSetList SEQUENCE (SIZE (1..maxNrofCSI-IM-ResourceSetsPerConfig)) OF CSI-IM-ResourceSetId {	1 entry		
csi-IM-ResourceSetId[0]	0	entry 1	
}			
}			
bwp-Id	BWP-Id		
resourceType	periodic		
}			

## CSI-MeasConfig

Table 5.4.2.4-11: CSI-MeasConfig

Derivation Path: Table 4.6.3-38			
Information Element	Value/remark	Comment	Condition
CSI-MeasConfig ::= SEQUENCE {			
nzp-CSI-RS-ResourceToAddModList SEQUENCE (SIZE (1..maxNrofNZP-CSI-RS-Resources)) OF NZP-CSI-RS-Resource {	n entries	n=5 for FR1 n=7 for FR2	
NZP-CSI-RS-Resource[1]	NZP-CSI-RS-Resource for TRS (1)	entry 1 CSI-RS resource 1	
NZP-CSI-RS-Resource[2]	NZP-CSI-RS-Resource for TRS (2)	entry 2 CSI-RS resource 2	
NZP-CSI-RS-Resource[3]	NZP-CSI-RS-Resource for TRS (3)	entry 3 CSI-RS resource 3	
NZP-CSI-RS-Resource[4]	NZP-CSI-RS-Resource for TRS (4)	entry 4 CSI-RS resource 4	
NZP-CSI-RS-Resource[5]	NZP-CSI-RS-Resource for CSI Acquisition	entry 5 CSI-RS resource 5	
NZP-CSI-RS-Resource[6]	CSI-RS-Resource for beam refinement	entry 6 CSI-RS resource 6	FR2
NZP-CSI-RS-Resource[7]	CSI-RS-Resource for beam refinement	entry 7 CSI-RS resource 7	FR2
}			
nzp-CSI-RS-ResourceSetToAddModList SEQUENCE (SIZE (1..maxNrofNZP-CSI-RS-ResourceSets)) OF NZP-CSI-RS-ResourceSet {	n entries	n=2 for FR1 n=3 for FR2	
NZP-CSI-RS-ResourceSet[1]	NZP-CSI-RS-ResourceSet for TRS	entry 1	
NZP-CSI-RS-ResourceSet[2]	NZP-CSI-RS-ResourceSet for CSI Acquisition	entry 2	
NZP-CSI-RS-ResourceSet[3]	NZP-CSI-RS-ResourceSet for beam refinement	entry 3	FR2
}			
csi-IM-ResourceToAddModList SEQUENCE (SIZE (1..maxNrofCSI-IM-Resources)) OF CSI-IM-Resource {	1 entry		
CSI-IM-Resource[1]	CSI-IM-Resource		
}			
csi-IM-ResourceSetToAddModList SEQUENCE (SIZE (1..maxNrofCSI-IM-ResourceSets)) OF CSI-IM-ResourceSet {	1 entry		
CSI-IM-ResourceSet[1]	CSI-IM-ResourceSet	entry 1	
}			
csi-SSB-ResourceSetToAddModList	Not present		
csi-ResourceConfigToAddModList SEQUENCE (SIZE (1..maxNrofCSI-ResourceConfigurations)) OF CSI-ResourceConfig {	n entries	n=3 for FR1 n=4 for FR2	
CSI-ResourceConfig[1]	CSI-ResourceConfig for TRS	entry 1	
CSI-ResourceConfig[2]	CSI-ResourceConfig for CSI Acquisition	entry 2	
CSI-ResourceConfig[3]	CSI-IM-ResourceConfig	entry 3	
CSI-ResourceConfig[4]	CSI-ResourceConfig for beam refinement	entry 4	FR2
}			
}			

## CSI-ReportConfig

Table 5.4.2.4-12: CSI-ReportConfig

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
CSI-ReportConfig ::= SEQUENCE {			
reportConfigId	CSI-ReportConfigId		
carrier	ServCellIndex		
resourcesForChannelMeasurement	CSI-ResourceConfigId for CSI Acquisition		
csi-IM-ResourcesForInterference	CSI-ResourceConfigId for CSI-IM		
nzp-CSI-RS-ResourcesForInterference	not present		
reportConfigType CHOICE {			
periodic SEQUENCE {			
reportSlotConfig	CSI-ReportPeriodicityAndOffset		
pucch-CSI-ResourceList SEQUENCE (SIZE (1..maxNrofBWPs)) OF PUCCH-CSI-Resource {	2 entry		
PUCCH-CSI-Resource [1]	PUCCH-CSI-Resource	entry 1	
}			
}			
reportQuantity CHOICE {			
cri-RI-PMI-CQI	NULL		FR1, FR2
}			
reportFreqConfiguration SEQUENCE {			
cqi-FormatIndicator	widebandCQI		
pmi-FormatIndicator	widebandPMI		
csi-ReportingBand CHOICE {			
subbands7	'1111111'B		FR1
subbands9	'111111111'B		FR2
}			
}			
timeRestrictionForChannelMeasurements	notConfigured		
timeRestrictionForInterferenceMeasurements	notConfigured		
codebookConfig	CodebookConfig		
dummy	Not present		
groupBasedBeamReporting CHOICE {			
disabled SEQUENCE {			
nrofReportedRS	not present		
}			
}			
cqi-Table	table2		FR1
	table1		FR2
subbandSize	value2		
non-PMI-PortIndication	Not present		
}			

CSI-ReportPeriodicityAndOffset

**Table 5.4.2.4-13: CSI-ReportPeriodicityAndOffset**

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
CSI-ReportPeriodicityAndOffset ::= CHOICE {			
slots10	9		FR1_TDD
slots5	0		FR1_FDD
slot8	3		FR2
}			

PUCCH-CSI-Resource

**Table 5.4.2.4-14: PUCCH-CSI-Resource**

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
PUCCH-CSI-Resource ::= SEQUENCE {			
uplinkBandwidthPartId	BWP-id		FR1, FR2
pucch-Resource	8		FR1
	14		FR2
}			

CodebookConfig

**Table 5.4.2.4-15: CodebookConfig**

Derivation Path: Table 4.6.3-25			
Information Element	Value/remark	Comment	Condition
CodebookConfig ::= SEQUENCE {			
codebookType CHOICE {			
type1 SEQUENCE {			
subType CHOICE {			
type1-SinglePanel SEQUENCE {			
nrOfAntennaPorts CHOICE {			
two SEQUENCE {			
twoTX-CodebookSubsetRestriction	'010000'B		
}			
}			
type1-SinglePanel-ri-Restriction	'11111111'B		
}			
}			
codebookMode	1		
}			

Physical layer parameters

**Table 5.4.2.4-16: Physical layer parameters for DCI format 1\_1**

Derivation Path: Table 4.3.6.1.2.2-1			
Parameter	Value	Value in binary	Condition
PUCCH resource indicator	<i>PUCCH-ResourceId</i> [1] = 8 in <i>pucch-ResourceSetID</i> [2] as defined in Table 4.6.3-112 (Mapping as per Table 9.2.3-2 in TS 38.213)	'110'B	SUBBAND_CQI

PUSCH-TimeDomainResourceAllocationList

**Table 5.4.2.4-17: PUSCH-TimeDomainResourceAllocationList**

Derivation Path: Table 5.4.2.0-27			
Information Element	Value/remark	Comment	Condition
PUSCH-TimeDomainResourceAllocationList ::= SEQUENCE (SIZE(1..maxNrofUL-Allocations)) OF PUSCH-TimeDomainResourceAllocation {	2 entries		SUBBAND_CQI
PUSCH-TimeDomainResourceAllocation[1] SEQUENCE {		entry 1	
startSymbolAndLength	55	Start symbol(S)=0, Length(L)=12	
}			
PUSCH-TimeDomainResourceAllocation[2] SEQUENCE {		entry 2	
startSymbolAndLength	55	Start symbol(S)=0, Length(L)=12	
}			
}			

Condition	Explanation
SUBBAND_CQI	For aperiodic subband CQI reporting under fading condition test cases

CSI-ResourceConfig

**Table 5.4.2.4-18: CSI-ResourceConfig for CSI Acquisition**

Derivation Path: Table 5.4.2.0-19			
Information Element	Value/remark	Comment	Condition
CSI-ResourceConfig ::= SEQUENCE {			
csi-ResourceConfigId	1		
csi-RS-ResourceSetList CHOICE {			
nzp-CSI-RS-SSB SEQUENCE {			
nzp-CSI-RS-ResourceSetList SEQUENCE (SIZE (1..maxNrofNzp-CSI-RS-ResourceSetsPerConfig)) OF NZP-CSI-RS-ResourceSetId {	1 entry		
NZP-CSI-RS-ResourceSetId[1]	1	entry 1	
}			
csi-SSB-ResourceSetList	Not present		
}			
bwp-Id	BWP-Id		
resourceType	periodic		
}			

## 5.4.2.5 Message contents for PMI reporting requirements

NXP-CSI-RS for Tracking

CSI-RS-ResourceMapping

Table 5.4.2.5-1: CSI-RS-ResourceMapping for TRS

Derivation Path: Table 4.6.3-45			
Information Element	Value/remark	Comment	Condition
CSI-RS-ResourceMapping ::= SEQUENCE {			
frequencyDomainAllocation CHOICE {			
row1	0001	$k_0=0$ for CSI-RS resource 1,2,3,4	TRS
}			
firstOFDMSymbolInTimeDomain	4	$l_0 = 4$ for CSI-RS resource 1 and 3	TRS
	8	$l_0 = 8$ for CSI-RS resource 2 and 4	TRS
nrofPorts	p1	1 for CSI-RS resource 1,2,3,4	TRS
cdm-Type	noCDM		TRS
density CHOICE{			
three	Null		TRS
}			
freqBand	CSI-FrequencyOccupation		TRS
}			

NXP CSI-RS for CSI Acquisition

CSI-RS-ResourceMapping

Table 5.4.2.5-2: CSI-RS-ResourceMapping

Derivation Path: Table 4.6.3-45			
Information Element	Value/remark	Comment	Condition
CSI-RS-ResourceMapping ::= SEQUENCE {			
frequencyDomainAllocation CHOICE {			
row3	001000	$K_0 = 6$ , row3	2Tx
row4	001	$K_0 = 0$ , row4	4Tx
other	001100	$K_0 = 4$ , $K_1 = 6$ , row8	8Tx
	011110	$K_0=2$ , row 12	16Tx
}			
nrofPorts	p2		2Tx
	p4		4Tx
	p8		8Tx
	p16		16Tx
firstOFDMSymbolInTimeDomain	13	$l_0 = 13$	2Tx, 4Tx
	5	$l_0 = 5$	8Tx, 16Tx
cdm-Type	fd-CDM2		2Tx, 4Tx
	cdm4-FD2-TD2		8Tx, 16Tx
density CHOICE {			
one	NULL		
}			
freqBand	CSI-FrequencyOccupation		
}			

Condition	Explanation
2Tx	For test cases using 2 CSI-RS ports for NZP-CSI-RS for CSI acquisition.
4Tx	For test cases using 4 CSI-RS ports for NZP-CSI-RS for CSI acquisition.
8Tx	For test cases using 8 CSI-RS ports for NZP-CSI-RS for CSI acquisition.
16Tx	For test cases using 16 CSI-RS ports for NZP-CSI-RS for CSI acquisition.

ZP CSI-RS for CSI Acquisition

CSI-RS-ResourceMapping

**Table 5.4.2.5-3: ZP CSI-RS-ResourceMapping**

Derivation Path: Table 4.6.3-45			
Information Element	Value/remark	Comment	Condition
CSI-RS-ResourceMapping ::= SEQUENCE {			
frequencyDomainAllocation CHOICE {			
other	000100	K0 = 4	FR1
row4	100	K0 = 8	FR2
}			
nrofPorts	p4		
firstOFDMsymbolInTimeDomain	9	I0 = 9	FR1
	13	I0 = 13	FR2
cdm-Type	fd-CDM2		
density CHOICE {			
one	NULL		
}			
freqBand	ZP CSI-FrequencyOccupation		
}			

**Table 5.4.2.5-4: Void**

CSI-ResourcePeriodicityAndOffset

**Table 5.4.2.5-4A: ZP CSI-ResourcePeriodicityAndOffset**

Derivation Path: Table 4.6.3-43			
Information Element	Value/remark	Comment	Condition
CSI-ResourcePeriodicityAndOffset ::= CHOICE {			
slots5	1		FR1_FDD
slot10	1		FR1_TDD
slot8	1		FR2
}			

**Table 5.4.2.5-5: Void**

p-ZP-CSI-RS-ResourceSet

Table 5.4.2.5-5A: p-ZP-CSI-RS-ResourceSet

Derivation Path: Table 4.6.3-87			
Information Element	Value/remark	Comment	Condition
p-ZP-CSI-RS-ResourceSet ::= SEQUENCE {			
zp_CSI-RS_ResourceSetId	0		
zp-CSI-RS-ResourceIdList SEQUENCE (SIZE (1..maxNrofZP-CSI-RS-ResourcesPerSet)) OF ZP-CSI-RS-ResourceId{	1 entry		
ZP-CSI-RS-ResourceId[1]	0	entry 1 ZP CSI-RS resource 1	
}			
}			

CSI-ResourceConfig

Table 5.4.2.5-6: CSI-ResourceConfig for CSI Acquisition

Derivation Path: Table 4.6.3-41			
Information Element	Value/remark	Comment	Condition
CSI-ResourceConfig ::= SEQUENCE {			
csi-ResourceConfigId	1		
csi-RS-ResourceSetList CHOICE {			
nzp-CSI-RS-SSB SEQUENCE {			
nzp-CSI-RS-ResourceSetList SEQUENCE (SIZE (1..maxNrofNzp-CSI-RS-ResourceSetsPerConfig)) OF NZP-CSI-RS-ResourceSetId {	1 entry		
NZP-CSI-RS-ResourceSetId[1]	1	entry 1	
}			
csi-SSB-ResourceSetList	Not present		
}			
}			
bwp-Id	BWP-Id		
resourceType	aperiodic		
}			



## CSI-IM Configuration

## CSI-IM-Resource

Table 5.4.2.5-7: CSI-IM-Resource

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
CSI-IM-Resource ::= SEQUENCE {			
csi-IM-ResourceId	CSI-IM-ResourceId		
csi-IM-ResourceElementPattern CHOICE {			
pattern0 SEQUENCE {			FR1
subcarrierLocation-p0	s4		
symbolLocation-p0	9		
}			
pattern1 SEQUENCE {			FR2
subcarrierLocation-p1	s8		
symbolLocation-p1	13		
}			
}			
freqBand	CSI-FrequencyOccupation		
periodicityAndOffset	Not present		
}			

## CSI-IM-ResourceId

Table 5.4.2.5-8: CSI-IM-ResourceId

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

## CSI-IM-ResourceSet

Table 5.4.2.5-9: CSI-IM-ResourceSet

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
CSI-IM-ResourceSet ::= SEQUENCE {			
csi-IM-ResourceSetId	CSI-IM-ResourceSetId		
csi-IM-Resources SEQUENCE (SIZE(1..maxNrofCSI-IM-ResourcesPerSet)) {	1 entry		
CSI-IM-ResourceId[1]	CSI-IM-ResourceId	entry 1	
}			
}			

## CSI-IM-ResourceSetId

Table 5.4.2.5-10: CSI-IM-ResourceSetId

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

## CSI-IM-ResourceConfig

**Table 5.4.2.5-11: CSI-IM-ResourceConfig**

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
CSI-ResourceConfig ::= SEQUENCE {			
csi-ResourceConfigId	2		
csi-RS-ResourceSetList CHOICE {			
csi-IM-ResourceSetList SEQUENCE (SIZE (1..maxNrofCSI-IM-ResourceSetsPerConfig)) OF CSI-IM-ResourceSetId {	1 entry		
csi-IM-ResourceSetId[0]	0	entry 1	
}			
}			
bwp-Id	BWP-Id		
resourceType	aperiodic		
}			

## CSI-MeasConfig

Table 5.4.2.5-12: CSI-MeasConfig

Derivation Path: Table 4.6.3-38			
Information Element	Value/remark	Comment	Condition
CSI-MeasConfig ::= SEQUENCE {			
nzp-CSI-RS-ResourceToAddModList SEQUENCE (SIZE (1..maxNrofNZP-CSI-RS-Resources)) OF NZP-CSI-RS-Resource {	n entries	n=5 for FR1 n=7 for FR2	
NZP-CSI-RS-Resource[1]	NZP-CSI-RS-Resource for TRS (1)	entry 1 CSI-RS resource 1	
NZP-CSI-RS-Resource[2]	NZP-CSI-RS-Resource for TRS (2)	entry 2 CSI-RS resource 2	
NZP-CSI-RS-Resource[3]	NZP-CSI-RS-Resource for TRS (3)	entry 3 CSI-RS resource 3	
NZP-CSI-RS-Resource[4]	NZP-CSI-RS-Resource for TRS (4)	entry 4 CSI-RS resource 4	
NZP-CSI-RS-Resource[5]	NZP-CSI-RS-Resource for CSI Acquisition	entry 5 CSI-RS resource 5	
NZP-CSI-RS-Resource[6]	CSI-RS-Resource for beam refinement	entry 6 CSI-RS resource 6	FR2
NZP-CSI-RS-Resource[7]	CSI-RS-Resource for beam refinement	entry 7 CSI-RS resource 7	FR2
}			
nzp-CSI-RS-ResourceSetToAddModList SEQUENCE (SIZE (1..maxNrofNZP-CSI-RS-ResourceSets)) OF NZP-CSI-RS-ResourceSet {	n entries	n=2 for FR1 n=3 for FR2	
NZP-CSI-RS-ResourceSet[1]	NZP-CSI-RS-ResourceSet for TRS	entry 1	
NZP-CSI-RS-ResourceSet[2]	NZP-CSI-RS-ResourceSet for CSI Acquisition	entry 2	
NZP-CSI-RS-ResourceSet[3]	NZP-CSI-RS-ResourceSet for beam refinement	entry 3	FR2
}			
csi-IM-ResourceToAddModList SEQUENCE (SIZE (1..maxNrofCSI-IM-Resources)) OF CSI-IM-Resource {	1 entry		
CSI-IM-Resource[1]	CSI-IM-Resource		
}			
csi-IM-ResourceSetToAddModList SEQUENCE (SIZE (1..maxNrofCSI-IM-ResourceSets)) OF CSI-IM-ResourceSet {	1 entry		
CSI-IM-ResourceSet[1]	CSI-IM-ResourceSet		
}			
csi-SSB-ResourceSetToAddModList	Not present		
csi-ResourceConfigToAddModList SEQUENCE (SIZE (1..maxNrofCSI-ResourceConfigurations)) OF CSI-ResourceConfig {	n entries	n=3 for FR1 n=4 for FR2	
CSI-ResourceConfig[1]	CSI-ResourceConfig for TRS	entry 1	
CSI-ResourceConfig[2]	CSI-ResourceConfig for CSI Acquisition	entry 2	
CSI-ResourceConfig[3]	CSI-IM-ResourceConfig	entry 3	
CSI-ResourceConfig[4]	CSI-ResourceConfig for beam refinement	entry 4	FR2
}			
}			

## CSI-ReportConfig

Table 5.4.2.5-13: CSI-ReportConfig

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
CSI-ReportConfig ::= SEQUENCE {			
reportConfigId	CSI-ReportConfigId		
carrier	ServCellIndex		
resourcesForChannelMeasurement	CSI-ResourceConfigId for CSI Acquisition		
csi-IM-ResourcesForInterference	CSI-ResourceConfigId for CSI-IM		
nzp-CSI-RS-ResourcesForInterference	not present		
reportConfigType CHOICE {			
aperiodic SEQUENCE {			
reportSlotOffsetList SEQUENCE {	2 entries		
reportSlotOffsetList[1]	4	entry 1	FR1_FDD_4 Tx, FR1_FDD_1 6Tx
	5		FR1_FDD_8 Tx
	8		FR1_TDD
	6		FR2
reportSlotOffsetList[2]	4	entry 2	FR1_FDD_4 Tx, FR1_FDD_1 6Tx
	5		FR1_FDD_8 Tx
	8		FR1_TDD
	6		FR2
}			
}			
reportQuantity CHOICE {			
cri-RI-PMI-CQI	NULL		
}			
reportFreqConfiguration SEQUENCE {			
cqi-FormatIndicator	widebandCQI		
pmi-FormatIndicator	widebandPMI		
csi-ReportingBand CHOICE {			FR1
subbands7	'1111111'B		
}			
csi-ReportingBand CHOICE {			FR2
subbands9	'111111111'B		
}			
}			
timeRestrictionForChannelMeasurements	notConfigured		
timeRestrictionForInterferenceMeasurements	notConfigured		
codebookConfig	CodebookConfig		
dummy	Not present		
groupBasedBeamReporting CHOICE {			
disabled SEQUENCE {			
nrofReportedRS	not present		
}			
}			
cqi-Table	table1		
subbandSize	value2		
non-PMI-PortIndication	Not present		
}			

CodebookConfig

**Table 5.4.2.5-14: CodebookConfig**

Derivation Path: Table 4.6.3-25			
Information Element	Value/remark	Comment	Condition
CodebookConfig ::= SEQUENCE {			
codebookType CHOICE {			
type1 SEQUENCE {			
subType CHOICE {			
type1-SinglePanel SEQUENCE {			
nrOfAntennaPorts CHOICE {			
two SEQUENCE {			2Tx
twoTX-CodebookSubsetRestriction	'001111'B		
}			
moreThanTwo SEQUENCE {			4Tx, 8Tx
n1-n2 CHOICE {			
two-one-Type1-SinglePanel-Restriction	'11111111'B		
}			
type1-SinglePanel- codebookSubsetRestriction-i2	Not present		
}			
type1-SinglePanel-ri-Restriction	'11111111'B		2Tx
	'00000001'B		4Tx
	'00000010'B		8Tx
}			
codebookMode	1		
}			
}			
}			
}			

CSI-AperiodicTriggerStateList

**Table 5.4.2.5-15: CSI-AperiodicTriggerStateList**

Derivation Path: Table 4.6.3-32			
Information Element	Value/remark	Comment	Condition
CSI-AperiodicTriggerStateList ::= SEQUENCE (SIZE (1..maxNrOfCSI-AperiodicTriggers)) OF CSI-AperiodicTriggerState {	1 entry		
CSI-AperiodicTriggerState[1] SEQUENCE {		entry 1	
associatedReportConfigInfoList SEQUENCE (SIZE(1..maxNrofReportConfigPerAperiodicTrigger)) OF CSI-AssociatedReportConfigInfo {	1 entry		
CSI-AssociatedReportConfigInfo[1] SEQUENCE {		entry 1	
reportConfigId	0		
resourcesForChannel CHOICE {			
nzp-CSI-RS SEQUENCE {			
resourceSet	1		
qcl-info SEQUENCE (SIZE(1..maxNrofAP-CSI-RS-ResourcesPerSet)) OF TCI-StateId {	1 entry		
TCI-StateId[1]	1	entry 1	
}			
}			
}			
}			
csi-IM-ResourcesforInteference	1		
nzp-CSI-RS-ResourcesforInterference	Not present		
}			
}			
}			
}			

Physical layer parameters

**Table 5.4.2.5-16: Physical layer parameters for DCI format 1\_1**

Derivation Path: Table 5.4.2.0-1			
Parameter	Value	Value in binary	Condition
PUCCH resource indicator	<i>PUCCH-ResourceID</i> [7] = 6 in <i>pucch-ResourceSetID</i> [1] or <i>PUCCH-ResourceID</i> [7] = 14 in <i>pucch-ResourceSetID</i> [2] as defined in Table 4.6.3-112 (Mapping as per Table 9.2.3-2 in TS 38.213)	'110'B	

PUSCH-TimeDomainResourceAllocationList

**Table 5.4.2.5-17: PUSCH-TimeDomainResourceAllocationList**

Derivation Path: Table 5.4.2.0-27			
Information Element	Value/remark	Comment	Condition
PUSCH-TimeDomainResourceAllocationList ::= SEQUENCE (SIZE(1..maxNrofUL-Allocations)) OF PUSCH-TimeDomainResourceAllocation {	2 entries		
PUSCH-TimeDomainResourceAllocation[1] SEQUENCE {		entry 1	
startSymbolAndLength	55	Start symbol(S)=0, Length(L)=12	
}			
PUSCH-TimeDomainResourceAllocation[2] SEQUENCE {		entry 2	
startSymbolAndLength	55	Start symbol(S)=0, Length(L)=12	
}			
}			

5.4.2.6 Message contents for RI reporting requirements

NZP-CSI-RS for Tracking

CSI-RS-ResourceMapping

**Table 5.4.2.6-1: CSI-RS-ResourceMapping for TRS**

Derivation Path: Table 4.6.3-45			
Information Element	Value/remark	Comment	Condition
CSI-RS-ResourceMapping ::= SEQUENCE {			
frequencyDomainAllocation CHOICE {			
row1	0001	$k_0=0$ for CSI-RS resource 1,2,3,4	TRS
}			
firstOFDMSymbolInTimeDomain	4	$l_0 = 4$ for CSI-RS resource 1 and 3	TRS
	8	$l_0 = 8$ for CSI-RS resource 2 and 4	TRS
nrofPorts	p1	1 for CSI-RS resource 1,2,3,4	TRS
cdm-Type	noCDM		TRS
density CHOICE{			
three	Null		TRS
}			
freqBand	CSI-FrequencyOccupation		TRS
}			

NZP CSI-RS for CSI Acquisition

CSI-RS-ResourceMapping

**Table 5.4.2.6-2: CSI-RS-ResourceMapping**

Derivation Path: Table 4.6.3-45			
Information Element	Value/remark	Comment	Condition
CSI-RS-ResourceMapping ::= SEQUENCE {			
frequencyDomainAllocation CHOICE {			
row4	001	$K_0 = 0$ , row4	4Tx
other	001000	$K_0 = 6$ , row3	2Tx
}			
nrofPorts	p4		4Tx
	p2		2Tx
firstOFDMSymbolInTimeDomain	13	$l_0 = 13$	2Tx, 4Tx
cdm-Type	fd-CDM2		2Tx, 4Tx
density CHOICE {			
one	NULL		
}			
freqBand	CSI-FrequencyOccupation		
}			

Condition	Explanation
2Tx	For test cases using 2 CSI-RS ports for NZP-CSI-RS for CSI acquisition.
4Tx	For test cases using 4 CSI-RS ports for NZP-CSI-RS for CSI acquisition.

**Table 5.4.2.6-3: CSI-ResourcePeriodicityAndOffset for CSI Acquisition**

Derivation Path: Table 4.6.3-43			
Information Element	Value/remark	Comment	Condition
CSI-ResourcePeriodicityAndOffset ::= CHOICE {			
Slots5	1		FR1_FDD
Slots10	1		FR1_TDD
}			

ZP CSI-RS for CSI Acquisition

CSI-RS-ResourceMapping

**Table 5.4.2.6-4: ZP CSI-RS-ResourceMapping**

Derivation Path: Table 4.6.3-45			
Information Element	Value/remark	Comment	Condition
CSI-RS-ResourceMapping ::= SEQUENCE {			
frequencyDomainAllocation CHOICE {			
other	000100	K0 = 4, row5	FR1
row4	100	K0 = 8, row4	FR2
}			
nrofPorts	p4		
firstOFDMSymbolInTimeDomain	9	I0 = 9	FR1
	13	I0 = 13	FR2
cdm-Type	fd-CDM2		
density CHOICE {			
one	NULL		
}			
freqBand	ZP CSI-FrequencyOccupation		
}			

CSI-ResourcePeriodicityAndOffset

**Table 5.4.2.6-5: ZP CSI-ResourcePeriodicityAndOffset**

Derivation Path: Table 4.6.3-43			
Information Element	Value/remark	Comment	Condition
CSI-ResourcePeriodicityAndOffset ::= CHOICE {			
Slots5	1		FR1 FDD
Slots10	1		FR1 TDD
Slots8	1		FR2
}			

PDSCH-Config

**Table 5.4.2.6-6: PDSCH-Config**

Derivation Path: Table 4.6.3-100			
Information Element	Value/remark	Comment	Condition
PDSCH-Config ::= SEQUENCE {			
p-ZP-CSI-RS-ResourceSetsToAddModList	p-ZP-CSI-RS-ResourceSet		
}			



p-ZP-CSI-RS-ResourceSet

Table 5.4.2.6-7: p-ZP-CSI-RS-ResourceSet

Derivation Path: Table 4.6.3-87			
Information Element	Value/remark	Comment	Condition
p-ZP-CSI-RS-ResourceSetsToAddModList ::= SEQUENCE {			
zp_CSI-RS_ResourceSetId	0		
zp-CSI-RS-ResourceSetList SEQUENCE (SIZE (1..maxNrofZP-CSI-RS-ResourcesPerSet)) OF ZP-CSI-RS-ResourceSet {	1 entry		
ZP-CSI-RS-ResourceSetId[1]	0	entry 1 ZP CSI-RS resource 1	
}			
}			

CSI-ResourceConfig

Table 5.4.2.6-8: CSI-ResourceConfig for CSI Acquisition

Derivation Path: Table 4.6.3-41			
Information Element	Value/remark	Comment	Condition
CSI-ResourceConfig ::= SEQUENCE {			
csi-ResourceConfigId	1		
csi-RS-ResourceSetList CHOICE {			
nzp-CSI-RS-SSB SEQUENCE {			
nzp-CSI-RS-ResourceSetList SEQUENCE (SIZE (1..maxNrofNzp-CSI-RS-ResourceSetsPerConfig)) OF NZP-CSI-RS-ResourceSetId {	1 entry		
NZP-CSI-RS-ResourceSetId[1]	1	entry 1	
}			
csi-SSB-ResourceSetList	Not present		
}			
bwp-Id	BWP-Id		
resourceType	periodic		FR1
	aperiodic		FR2
}			

Table 5.4.2.6-8A: CSI-ResourceConfig for beam refinement

Derivation Path: Table 4.6.3-41			
Information Element	Value/remark	Comment	Condition
CSI-ResourceConfig ::= SEQUENCE {			FR2
csi-ResourceConfigId	3		
csi-RS-ResourceSetList CHOICE {			
nzp-CSI-RS-SSB SEQUENCE {			
nzp-CSI-RS-ResourceSetList SEQUENCE (SIZE (1..maxNrofNzp-CSI-RS-ResourceSetsPerConfig)) OF NZP-CSI-RS-ResourceSetId {	1 entry		
NZP-CSI-RS-ResourceSetId[1]	2	entry 1	
}			
csi-SSB-ResourceSetList	Not present		
}			
bwp-Id	BWP-Id		
resourceType	periodic		
}			

CSI-IM Configuration

CSI-IM-Resource

**Table 5.4.2.6-9: CSI-IM-Resource**

Derivation Path: Table 4.6.3-34			
Information Element	Value/remark	Comment	Condition
CSI-IM-Resource ::= SEQUENCE {			
csi-IM-ResourceId	CSI-IM-ResourceId		
csi-IM-ResourceElementPattern CHOICE {			
Pattern0 SEQUENCE {			
subcarrierLocation-p0	s4		FR1
	s8		FR2
symbolLocation-p0	9		FR1
	13		FR2
}			
}			
freqBand	CSI-FrequencyOccupation		
periodicityAndOffset	CSI-ResourcePeriodicityAndOffset		FR1
	Not present		FR2
}			

**Table 5.4.2.6-10: CSI-ResourcePeriodicityAndOffset**

Derivation Path: Table 4.6.3-43			
Information Element	Value/remark	Comment	Condition
CSI-ResourcePeriodicityAndOffset ::= CHOICE {			
Slots5	1		FR1_FDD
Slots10	1		FR1_TDD
}			

CSI-IM-ResourceId

**Table 5.4.2.6-11: CSI-IM-ResourceId**

Derivation Path: Table 4.6.3-35			
Information Element	Value/remark	Comment	Condition
CSI-IM-ResourceId	0		

CSI-IM-ResourceSet

**Table 5.4.2.6-12: CSI-IM-ResourceSet**

Derivation Path: Table 4.6.3-36			
Information Element	Value/remark	Comment	Condition
CSI-IM-ResourceSet ::= SEQUENCE {			
csi-IM-ResourceSetId	CSI-IM-ResourceSetId		
csi-IM-Resources SEQUENCE (SIZE(1..maxNrofCSI-IM-ResourcesPerSet)) {	1 entry		
CSI-IM-ResourceId[1]	CSI-IM-ResourceId	entry 1	
}			
}			

CSI-IM-ResourceSetId

**Table 5.4.2.6-13: CSI-IM-ResourceSetId**

Derivation Path: Table 4.6.3-37			
Information Element	Value/remark	Comment	Condition
CSI-IM-ResourceSetId	0		

CSI-IM-ResourceConfig

**Table 5.4.2.6-14: CSI-IM-ResourceConfig**

Derivation Path: Table 4.6.3-41			
Information Element	Value/remark	Comment	Condition
CSI-ResourceConfig ::= SEQUENCE {			
csi-ResourceConfigId	2		
csi-RS-ResourceSetList CHOICE {			
csi-IM-ResourceSetList SEQUENCE (SIZE (1..maxNrofCSI-IM-ResourceSetsPerConfig)) OF CSI-IM-ResourceSetId {	1 entry		
csi-IM-ResourceSetId[0]	0		
}			
}			
bwp-Id	BWP-Id		
resourceType	periodic		FR1
	aperiodic		FR2
}			

## CSI-MeasConfig

Table 5.4.2.6-15: CSI-MeasConfig

Derivation Path: Table 4.6.3-38			
Information Element	Value/remark	Comment	Condition
CSI-MeasConfig ::= SEQUENCE {			
nzp-CSI-RS-ResourceToAddModList SEQUENCE (SIZE (1..maxNrofNZP-CSI-RS-Resources)) OF NZP-CSI-RS-Resource {	n entries	n=5 for FR1 n=7 for FR2	
NZP-CSI-RS-Resource[1]	NZP-CSI-RS-Resource for TRS (1)	entry 1 CSI-RS resource 1	
NZP-CSI-RS-Resource[2]	NZP-CSI-RS-Resource for TRS (2)	entry 2 CSI-RS resource 2	
NZP-CSI-RS-Resource[3]	NZP-CSI-RS-Resource for TRS (3)	entry 3 CSI-RS resource 3	
NZP-CSI-RS-Resource[4]	NZP-CSI-RS-Resource for TRS (4)	entry 4 CSI-RS resource 4	
NZP-CSI-RS-Resource[5]	NZP-CSI-RS-Resource for CSI Acquisition	entry 5 CSI-RS resource 5	
NZP-CSI-RS-Resource[6]	NZP-CSI-RS-Resource for beam refinement	entry 6 CSI-RS resource 6	FR2
NZP-CSI-RS-Resource[7]	NZP-CSI-RS-Resource for beam refinement	entry 7 CSI-RS resource 7	FR2
}			
nzp-CSI-RS-ResourceSetToAddModList SEQUENCE (SIZE (1..maxNrofNZP-CSI-RS-ResourceSets)) OF NZP-CSI-RS-ResourceSet {	n entries	n=2 for FR1 n=3 for FR2	
NZP-CSI-RS-ResourceSet[1]	NZP-CSI-RS-ResourceSet for TRS	entry 1	
NZP-CSI-RS-ResourceSet[2]	NZP-CSI-RS-ResourceSet for CSI Acquisition	entry 2	
NZP-CSI-RS-ResourceSet[3]	NZP-CSI-RS-ResourceSet for beam refinement	entry 3	FR2
}			
csi-IM-ResourceToAddModList SEQUENCE (SIZE (1..maxNrofCSI-IM-Resources)) OF CSI-IM-Resource {	1 entry		
CSI-IM-Resource[1]	CSI-IM-Resource		
}			
csi-IM-ResourceSetToAddModList SEQUENCE (SIZE (1..maxNrofCSI-IM-ResourceSets)) OF CSI-IM-ResourceSet {	1 entry		
CSI-IM-ResourceSet[1]	CSI-IM-ResourceSet		
}			
csi-SSB-ResourceSetToAddModList	Not present		
csi-ResourceConfigToAddModList SEQUENCE (SIZE (1..maxNrofCSI-ResourceConfigurations)) OF CSI-ResourceConfig {	n entries	n=3 for FR1 n=4 for FR2	
CSI-ResourceConfig[1]	CSI-ResourceConfig for TRS	entry 1	
CSI-ResourceConfig[2]	CSI-ResourceConfig for CSI Acquisition	entry 2	
CSI-ResourceConfig[3]	CSI-IM-ResourceConfig	entry 3	
CSI-ResourceConfig[4]	CSI-ResourceConfig for beam refinement	entry 4	FR2
}			
}			

CSI-ReportConfig

Table 5.4.2.6-16: CSI-ReportConfig

Derivation Path: Table 4.6.3-39			
Information Element	Value/remark	Comment	Condition
CSI-ReportConfig ::= SEQUENCE {			
reportConfigId	CSI-ReportConfigId		
carrier	ServCellIndex		
resourcesForChannelMeasurement	CSI-ResourceConfigId for CSI Acquisition		
csi-IM-ResourcesForInterference	CSI-ResourceConfigId for CSI-IM		
nzp-CSI-RS-ResourcesForInterference	not present		
reportConfigType CHOICE {			
periodic SEQUENCE {			FR1
reportSlotConfig	CSI-ReportPeriodicityAndOffset		
pucch-CSI-ResourceList SEQUENCE (SIZE (1..maxNrofBWPs)) OF PUCCH-CSI-Resource {			
PUCCH-CSI-Resource [1]	PUCCH-CSI-Resource		
} SEQUENCE {			FR2
reportSlotOffsetList SEQUENCE {			
reportSlotOffsetList[1]	6		
reportSlotOffsetList[2]	6		
} SEQUENCE {			
} CHOICE {			
cri-RI-PMI-CQI	NULL,		
} SEQUENCE {			
reportFreqConfiguration SEQUENCE {			
cqi-FormatIndicator	widebandCQI		
pmi-FormatIndicator	widebandPMI		
csi-ReportingBand CHOICE {			FR1
subbands7	'1111111'B		
} CHOICE {			FR2
subbands9	'111111111'B		
} SEQUENCE {			
timeRestrictionForChannelMeasurements	notConfigured		
timeRestrictionForInterferenceMeasurements	notConfigured		
codebookConfig	CodebookConfig		
dummy	Not present		
groupBasedBeamReporting CHOICE {			
disabled SEQUENCE {			
nrofReportedRS	not present		
} CHOICE {			
cqi-Table	table2		FR1
	table1		FR2
subbandSize	value2		
non-PMI-PortIndication	Not present		
} SEQUENCE {			
} CHOICE {			
} SEQUENCE {			
} SEQUENCE {			

## CodebookConfig

Table 5.4.2.6-17: CodebookConfig

Derivation Path: Table 4.6.3-25			
Information Element	Value/remark	Comment	Condition
CodebookConfig ::= SEQUENCE {			
codebookType CHOICE {			
type1 SEQUENCE {			
subType CHOICE {			
type1-SinglePanel SEQUENCE {			
nrOfAntennaPorts CHOICE {			
two SEQUENCE {			2Tx
twoTX-CodebookSubsetRestriction	'010000'B		Fixed rank2, 2x2, 2x4
	'010011'B		Follow rank, 2x2, 2x4
	'000011'B		Fixed rank1, 2x2, 2x4
moreThanTwo SEQUENCE {			4Tx
n1-n2 CHOICE {			
two-one-Type1-SinglePanel-Restriction	'11111111'B		4x4
}			
}			
type1-SinglePanel-ri-Restriction	'11111111'B		2x2, 2x4
	'00000010'B		Fixed rank2, 4x4
	'00001111'B		Follow RI, 4x4
}			
}			
codebookMode	1		
}			
}			
}			
}			

## CSI-ReportPeriodicityAndOffset

Table 5.4.2.4-18: CSI-ReportPeriodicityAndOffset

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
CSI-ReportPeriodicityAndOffset ::= CHOICE {			
slots10	9		FR1_TDD
slots5	0		FR1_FDD
}			

## PUCCH-CSI-Resource

Table 5.4.2.4-19: PUCCH-CSI-Resource

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
PUCCH-CSI-Resource ::= SEQUENCE {			
uplinkBandwidthPartId	BWP-id		FR1
pucch-Resource	8		FR1
}			

## 5.4.3 Sidelink information elements for Demodulation Performance tests

As defined in clause 4.6.3 with the following exceptions:

SL-ResourcePool

**Table 5.4.3-1: SL-ResourcePool**

Derivation Path: Table 4.6.6-25 with condition SL_HARQ			
Information Element	Value/remark	Comment	Condition
SL-ResourcePool-r16 ::= SEQUENCE {			
sl-PSFCH-Config-r16 CHOICE {			
setup SEQUENCE {			
sl-PSFCH-RB-Set-r16	ones(1,50)	All "1" sequence with a length of 50 bits	BW = 20MHz
	ones(1,100)	All "1" sequence with a length of 100 bits	BW = 40MHz
sl-NumMuxCS-Pair-r16	n1		
sl-MinTimeGapPSFCH-r16	sl3		
sl-PSFCH-CandidateResourceType-r16	allocSubCH		
}			
}			
sl-NumSubchannel-r16	5		BW = 20MHz
	10		BW = 40MHz
sl-RB-Number-r16	50		BW = 20MHz
	100		BW = 40MHz
sl-TimeResource-r16	one(1,160)	All "1" sequence with a length of 160 bits	
}			

SL-Thres-RSRP-List

**Table 5.4.3-2: SL-Thres-RSRP-List**

Derivation Path: Table 4.6.6-32			
Information Element	Value/remark	Comment	Condition
SL-Thres-RSRP-List-r16 ::= SEQUENCE (SIZE (64)) OF INTEGER {	64 entries		
INTEGER[k, k=1..64]	66	entry k corresponds to infinity dBm	
}			

## 5.5 Common procedures for RF testing

### 5.5.1 Procedure to configure SCC for NR RF CA testing

#### 5.5.1.1 Scope

The purpose of this procedure is to establish one or more SCC for NR CA testing.

5.5.1.2 Procedure description

5.5.1.2.1 Initial conditions

UE is operating in NR RRC\_CONNECTED state on NR Cell 1 without any SCell configured.

System Simulator:

- SS configures the number of SCells used by the test case using NR parameters for NR Cell 2 for SCC1, NR Cell 3 for SCC2, NR Cell 4 for SCC3 etc. as specified in Table 4.4.2-2.
- System information combination NR-2 as defined in clause 4.4.3.1.2 is used in all NR cells.

5.5.1.2.2 Procedure sequence

**Table 5.5.1.2.2-1: Procedure to configure SCC**

St	Procedure	Message Sequence		TP	Verdict
		U - S	Message		
1	The SS transmits an RRCReconfiguration message including sCellToAddModList with SCell addition for the SCC under test.	<--	NR RRC: RRCReconfiguration	-	-
2	The UE transmits an RRCReconfigurationComplete message.	-->	NR RRC: RRCReconfigurationComplete	-	-

5.5.1.2.3 Specific message contents

**Table 5.5.1.2.3-1: RRCReconfiguration-SCell(n)**

Derivation Path: Table 4.6.1-13 with condition SCell_add			
Information Element	Value/remark	Comment	Condition
RRCReconfiguration ::= SEQUENCE {			
criticalExtensions CHOICE {			
rrcReconfiguration ::= SEQUENCE {			
nonCriticalExtension SEQUENCE {			
masterCellGroup	CellGroupConfig-SCell(n)	n is number of SCC to be added.	
}			
}			
}			
}			

**Table 5.5.1.2.3-2: CellGroupConfig-SCell(n) (Table 5.5.1.2.3-1)**

Derivation Path: Table 4.6.3-19 with condition SCell_add			
Information Element	Value/remark	Comment	Condition
CellGroupConfig ::= SEQUENCE {			
sCellToAddModList SEQUENCE (SIZE (1..maxNrofSCells)) OF SCellConfig {	n entries	n the number of SCC to be added	
SCellConfig[k, k=1..n] SEQUENCE {		entry (1..n)	
sCellIndex			
sCellConfigCommon	ServingCellConfigCommon with condition SCell_add		
}			
}			



## 5.5.2 Procedure to configure SCC for EN-DC RF CA testing

### 5.5.2.1 Scope

The purpose of this procedure is to establish one or more SCC for EN-DC CA testing.

### 5.5.2.2 Procedure description

#### 5.5.2.2.1 Initial conditions

The UE is in RRC\_CONNECTED state.

#### 5.5.2.2.2 Procedure sequence

**Table 5.5.2.2.2-1: Procedure to configure SCC**

St	Procedure	Message Sequence		TP	Verdict
		U - S	Message		
1	The SS transmits an <i>RRCConnectionReconfiguration</i> message using n.	<--	RRC: <i>RRCConnectionReconfiguration</i>	-	-
2	The UE transmits an <i>RRCConnectionReconfigurationComplete</i> message.	-->	RRC: <i>RRCConnectionReconfigurationComplete</i>	-	-
-	EXCEPTION: Steps 3a1 to 3a3 describe the SS sequence depending on procedure parameters; the "lower case letter" identifies a step sequence that take place if a procedure parameter has a particular value	-	-	-	-
3a1-3a3	IF E-UTRA SCC > 0, same as TS 36.508 [2] table 5.2A.4-1, steps 1-3.	-	-	-	-
Note 1: n > 0 in step 1.					

#### 5.5.2.2.3 Specific message contents

**Table 5.5.2.2.3-1: RRCReconfiguration (step 1, Table 5.5.2.2.2-1)**

Derivation Path: Table 4.6.1-13 with condition EN-DC_SCell_add			
Information Element	Value/remark	Comment	Condition
RRCReconfiguration ::= SEQUENCE {			
criticalExtensions CHOICE {			
rrcReconfiguration ::= SEQUENCE {			
secondaryCellGroup	CellGroupConfig (n)	n is number of SCC to be added.	
}			
}			
}			

Table 5.5.2.2.3-2: CellGroupConfig (n) (Table 5.5.2.2.3-1)

Derivation Path: Table 4.6.1-13 with condition SCell_add			
Information Element	Value/remark	Comment	Condition
CellGroupConfig ::= SEQUENCE {			
sCellToAddModList SEQUENCE (SIZE (1..maxNrofSCells)) OF SCellConfig {	n entries	n is equal to the number of SCCs to be added	
SCellConfig[ k, k=1..n]		entry (1..n)	
sCellIndex			
sCellConfigCommon	ServingCellConfigCommon with condition SCell_add		
sCellConfigDedicated	ServingCellConfig		
}			
}			

## 6 Test environments for Signalling test

### 6.1 Requirements of test equipment

#### 6.1.1 Requirements common for conducted and OTA tests

The requirements of test equipment specified in this subclause apply to Signalling test cases defined in TS 38.523-1 [12], in addition to the common requirements of test equipment specified in clause 4.2 of this specification.

Test equipment shall be able to simulate cells of Radio Access Technologies NR, E-UTRA, and UTRA. The number of cells to be simulated simultaneously by the test equipment shall not exceed the resources specified in Table 6.1-1

**Table 6.1-1: Maximum resources in terms of number / configuration of cells to be simulated simultaneously in a test setup**

Simulation of	Max. number of cells (NR)			Max. number of cells (E-UTRA)		Max. number of cells (UTRA)	
	Conducted	OTA(FR1 +FR2)	OTA(FR2)	Conducted	OTA	Conducted	OTA
NR single-mode networks (FDD or TDD)	4 cells	4 cells	4 cells	n/a	n/a	n/a	n/a
NR dual-mode networks (FDD and TDD)	4 cells	4 cells	4 cells	n/a	n/a	n/a	n/a
NR networks involving Carrier Aggregation	4 cells	4 cells	4 cells	n/a	n/a	n/a	n/a
NR dual connectivity (NR-DC)	4 cells	4 cells	4 cells	n/a	n/a	n/a	n/a
NR dual connectivity (EN-DC)	4 cells	4 cells	4 cells	2 cells	2 cells	n/a	n/a
NR dual connectivity (EN-DC) involving Carrier Aggregation	4 cells	4 cells	4 cells	2 cells	2 cells	n/a	n/a
Mixed E-UTRA / NR networks	4 cells	4 cells	4 cells	2 cells	2 cells	n/a	n/a
Mixed UTRA / NR networks	4 cells	4 cells	4 cells	n/a	n/a	2 cells	2 cells

Note 1: No differentiation between cell configuration types (as defined in clause 6.3.1) here, because these types are only relevant to specific test cases and their TTCN-3 implementation.

Note 2: Only network scenarios specified in clauses 4.4.1 and 6.3.2.1 have been covered.

Note 3: In case of Carrier Aggregation, each cell can act as a SpCell, an SCell, or a standalone cell (not used as a CA component carrier).

Note 4: In order to support test case requirements for conducted and OTA test methods, the number of active cells at any given time should be minimised in order to ensure maximum re use of SS Tx/Rx resources.

Exceptions to the requirements outlined above are possible but need special evidence to be provided explicitly in the test case prose and should be allowed only if the test case purpose cannot be met otherwise.

Due to limited power level range for FR2 OTA test methods, when defining test cases requirements, care shall be taken to ensure that the number of active cells is minimised as this has an impact to have distinguishable power level

difference. Cells that are used in initial parts of test cases and are no longer required for the rest of the procedure shall be clearly defined as Non-suitable "Off" cell to facilitate re use of SS Tx/Rx resources.

NR FR2 signal levels are defined along with a calibration procedure as well as uncertainty. Therefore, maximum 4 FR2 OTA Cells can be configured and activated including the test cases involving idle or connected mode measurements.

NR FR1+FR2 OTA calibration procedure is undefined which does not restrict to configure maximum 4 FR1+FR2 OTA cells. However, caution must be taken as specified in clause 6.2.2.2.3.

E-UTRA OTA calibration procedure is undefined which does not restrict to configure maximum 2 E-UTRA OTA cells. However, caution must be taken as specified in clause 6.2.2.2.4.

UTRA OTA calibration procedure is undefined which does not restrict to configure maximum 2 UTRA OTA cells. However, caution must be taken as specified in clause 6.2.2.2.5.

## 6.1.2 Requirements for conducted test method

No requirements are specified in addition to the common requirements described in clause 4.2 and clause 6.1.1.

## 6.1.3 Requirements for OTA test method

### 6.1.3.1 General

**Editor's Note:** The UE pre-configuration mentioned below to disable UL Tx diversity schemes shall be voided once a test methodology solution to minimize spectral flatness artefacts between TE and UE over all test points is defined.

The DFF or IFF based OTA test methodologies, defined in Annex B.1 should be used for Signalling test.

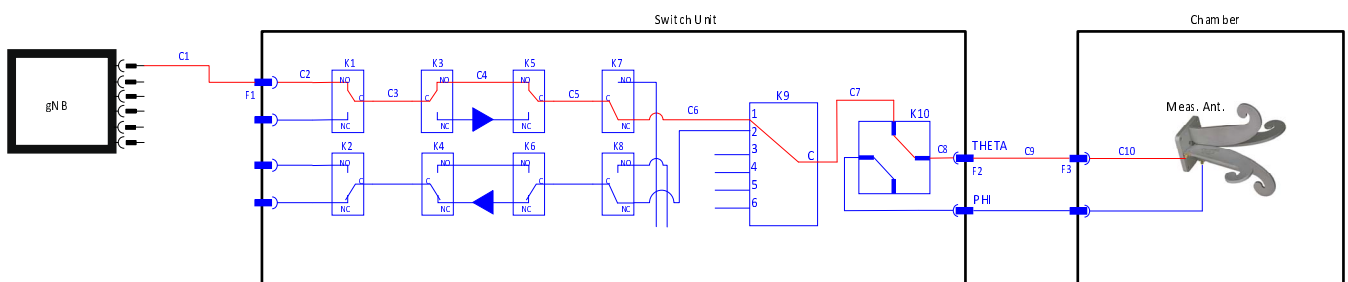
**NOTE:** For single cell test cases, usage of NF test methodology is not precluded.

Clause 6.1.3.2 describes a sample OTA measurement test setup and clause 6.1.3.3 describes approaches to select a UE orientation.

For conformance testing using the OTA test environment, the UE under test shall be pre-configured with UL Tx diversity schemes disabled to account for single polarization System Simulator (SS) in the test environment. The UE under test may transmit with dual polarization. This approach also applies to calibration stage..

### 6.1.3.2 Sample OTA Measurement Test Setup

Please refer to Figure 6.1.3.2-1 for a sample OTA measurement test setup.



**Figure 6.1.3.2-1: Sample OTA measurement setup**

**NOTE:** Figure 6.1.3.2-1 is for illustrative purposes only.

For 5G NR signalling test cases, depending on the dynamic range of measurements the system complexity can be reduced. In the switch unit, as shown in Figure 6.1.3.2-1, the switches K7, K8, K9, K10 can be removed. The amplifier (PA/LNA) is optional. For the "single cell" and "multiple cell" test cases, the gNB emulator can be directly connected to the feed horn.

### 6.1.3.3 Procedure for selecting UE Orientation and for calibration

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

Before starting the test, the UE orientation with which the test system can provide a wide enough dynamic range to perform the test scenarios needs to be identified in order to obtain sufficient link budget.

The UE orientation can be determined by either of the approaches below:

- Approach 1: UE vendor declares the direction in which the measurement has to be made. In this case, the declaration confirms that the Rx Beam peak conditions in FR2 specified in TS 38.133 [13] Annex B are met
- Approach 2: Perform an Rx-beam peak search

For Approach 2 an Rx beam peak search needs to be performed as per the procedure in TS 38.521-2 [15] Annex K, which finds the direction in which Rx Beam peak conditions in FR2 specified in TS 38.133 [13] Annex B are met.

RSRP measurements can be configured by SS in X2NR meas configurations using FFS preambles in NSA (Ex - RRC\_Connected with connectivity parameter E-UTRA with MCG Only bearer established and meas config enabled for event B1 (Ex-per TC 8.2.3.1.1 of TS 38.523-1)) and FFS preambles in SA modes.

When signal level calibrated with a reference antenna (only applicable to single-cell test cases without thresholds):

- The RSRP reported from the DUT is within [ $\pm$ FFSdB] of expected RSRP mentioned in Table 6.2.2.2-1.

When signal level calibrated with the RSRP-based calibration:

- Before starting the tests, Rx-beam peak directions need to be determined using Approach 1 or Approach 2 above. Rx beam peak direction may depend on the operating band under test. If Rx-beam peak directions for all the operating bands required for test scenarios are identical, three different levels in Table 6.2.2.2-2 can be used in the test scenarios.
- Rx-beam peak directions are decided to be 'identical', if the detected beam peak positions are direct neighbours on the measurement grid.

If Rx-beam peak directions are identical:

1. Position the UE so that the Rx beam peak direction is aligned towards the measurement antenna.
2. Make the UE report SS-RSRP at each frequency used in the test scenarios, while setting the downlink SS power at the centre of the quiet zone to -82dBm/SCS. Here, the SS-RSRP reported levels are denoted as  $P_{\text{RSRP}}(f)$ .
3. Calculate 'Delta(NRf)' for each carrier frequency used in the test case, using the equation:  $\text{Delta}(\text{NRf}) = P_{\text{RSRP}}(f) + 82$ .

### 6.1.3.4 Handling of Thresholds

Where a threshold value is specified in the test case (value identified as  $\text{TH}_{\text{test case}}$ ) it is signalled to the UE with a value  $\text{TH}_{\text{sig}}$  according to table 6.1.3.4-1.

**Table 6.1.3.4-1: Handling of signalled threshold values**

Type of Threshold	Signalled value	Comment
Absolute	$TH_{sig}(f) = TH_{test\ case} + \Delta(NRf)$	$\Delta(NRf)$ value according to the frequency of the cell being compared to the threshold
Relative, intra-frequency	$TH_{sig}(f) = TH_{test\ case}$	
Relative, inter-frequency	$a3-Offset_{sig} = a3-Offset_{test\ case} + \Delta(NRf_n) - \Delta(NRf_p)$	$\Delta(NRf_p)$ is the Delta value for the SpCell frequency $\Delta(NRf_n)$ is the Delta value for the neighbour cell frequency
Relative, inter-frequency, Event A6	$a6-Offset_{sig} = a6-Offset_{test\ case} + \Delta(NRf_n) - \Delta(NRf_s)$	$\Delta(NRf_s)$ is the Delta value for the SCell frequency $\Delta(NRf_n)$ is the Delta value for the neighbour cell frequency

## 6.1.4 Requirements for timer tolerances

The timer tolerances specified for the test environment in this subclause apply to all Signalling test cases defined in TS 38.523-1 [12] unless otherwise specified.

All the timers used during testing are within a tolerance margin given by the equation below. If for a specific test a different tolerance value is required, then this should be specified in the relevant test document (i.e. the document where the test is described).

Timer tolerance = 10%.

## 6.2 Reference test conditions

### 6.2.1 Physical Channel Allocations

#### 6.2.1.1 Antennas

If the UE has two or more Rx antennas, the same downlink signal is applied to each one, except if MIMO is tested. All UE Rx antennas shall be connected.

If the UE has one Rx antenna, the downlink signal is applied to it.

#### 6.2.1.2 Downlink physical channels and physical signals

In general for signalling test cases the power allocation for downlink physical channels and signals is specified in relation to a reference cell power.

Unless specifically specified otherwise in a signalling test case prose, all cells use only one beam.

In case of only one beam per cell this reference cell power is the EPRE of the secondary synchronization signal (SSS) and referred to as "SS/PBCH SSS EPRE".

In case of more than one beam per cell the power levels of the different SS/PBCH blocks may be different what makes it difficult to specify the EPREs of other physical channels and signals relative to the EPRE of any SSS. Therefore for multiple beams test cases the power levels are specified relative to the reference cell power.

For single beam per cell test cases the power allocation of downlink physical channels for signalling test cases is specified in table 6.2.1.2-1, for multiple beams per cell test cases the power allocation is specified in table 6.2.1.2-2.

**Table 6.2.1.2-1: Power allocation for OFDM symbols and reference signals for signalling test cases (single beam)**

Parameter	Unit	Value	Comment
SSS transmit power	dBm/SCS	Test specific (Note 1)	referred to as "SS/PBCH SSS EPRE"
EPRE ratio of PSS to SSS	dB	0	
EPRE ratio of PBCH DMRS to SSS	dB	0	
EPRE ratio of PBCH to PBCH DMRS	dB	0	
EPRE ratio of PDCCH DMRS to SSS	dB	0	
EPRE ratio of PDCCH to PDCCH DMRS	dB	0	
EPRE ratio of PDSCH DMRS to SSS	dB	0	
EPRE ratio of PDSCH to PDSCH DMRS	dB	-3	To reduce interference from PDSCH of intra-frequency neighbour cells.
EPRE ratio of PTRS to PDSCH	dB	3	i.e. the EPRE ratio of PTRS to SSS is 0dB
Note 1: Power level chosen to align with cell power level as specified in clause 6.2.2.			

**Table 6.2.1.2-2: Power allocation for OFDM symbols and reference signals for signalling test cases (multiple beam)**

Parameter	Unit	Value	Comment
Reference cell power $EPRE_{CellRef}$	dBm/SCS	Test specific (Note 1)	
EPRE ratio of $SSS_{SSB\#N}$ to $EPRE_{CellRef}$	dB	Test specific (Note 2)	power of SSS within SSB with index N
EPRE ratio of $PSS_{SSB\#N}$ to $SSS_{SSB\#N}$	dB	0	power of PSS within SSB with index N
EPRE ratio of $PBCH\ DMRS_{SSB\#N}$ to $SSS_{SSB\#N}$	dB	0	power of PBCH DMRS within SSB with index N
EPRE ratio of $PBCH_{SSB\#N}$ to $PBCH\ DMRS_{SSB\#N}$	dB	0	power of PBCH within SSB with index N
EPRE ratio of PDCCH DMRS to $EPRE_{CellRef}$	dB	0	(Note 3)
EPRE ratio of PDCCH to PDCCH DMRS	dB	0	
EPRE ratio of PDSCH DMRS to $EPRE_{CellRef}$	dB	0	(Note 3)
EPRE ratio of PDSCH to PDSCH DMRS	dB	-3	To reduce interference from PDSCH of intra-frequency neighbour cells.
EPRE ratio of PTRS to PDSCH	dB	3	i.e. the EPRE ratio of PTRS to $EPRE_{CellRef}$ is 0dB
EPRE ratio of $CSI-RS_N$ to $EPRE_{CellRef}$	dB	Test specific (Note 2)	power of CSI-RS with index N; CSI-RS configured if required by a test case in TS 38.523-1 [12]
Note 1: Power level chosen to align with cell power level as specified in clause 6.2.2.			
Note 2: Test cases may specify "OFF" in which case the attenuation shall result in an absolute EPRE value being equal or less than the power level specified for a non-suitable "Off" cell in clause 6.2.2.			
Note 3: In general the UE cannot distinguish from which beam DL data is sent $\Rightarrow$ PDCCH and PDSCH are considered as cell specific rather than beam specific.			

### 6.2.1.3 Sidelink physical channels and physical signals

In general for signalling test cases the power allocation for sidelink physical channels and signals is specified in relation to a reference NR-SS-UE power.

The power allocation of sidelink physical channels for signalling test cases is specified in table 6.2.1.3-1.

**Table 6.2.1.3-1: Power allocation for OFDM symbols and reference signals for signalling test cases**

Parameter	Unit	Value	Comment
Reference NR-SS-UE power $EPRE_{NRSSUERef}$	dBm/SCS	Test specific (Note 1)	
EPRE ratio of S-SSS to $EPRE_{NRSSUERef}$	dB	Test specific (Note 2)	Power of S-SSS within S-SSB S-SSB configured if required by a test case in TS 38.523-1 [12]
EPRE ratio of S-PSS to S-SSS	dB	0	Power of S-PSS within S-SSB S-SSB configured if required by a test case in TS 38.523-1 [12]
EPRE ratio of PSBCH DMRS to S-SSS	dB	0	Power of PSBCH DMRS within S-SSB S-SSB configured if required by a test case in TS 38.523-1 [12]
EPRE ratio of PSBCH to PSBCH DMRS	dB	0	Power of PSBCH within S-SSB S-SSB configured if required by a test case in TS 38.523-1 [12]
EPRE ratio of PSCCH DMRS to $EPRE_{NRSSUERef}$	dB	0	
EPRE ratio of PSCCH to PSCCH DMRS	dB	0	
EPRE ratio of PSSCH DMRS to $EPRE_{NRSSUERef}$	dB	0	
EPRE ratio of PSSCH to PSSCH DMRS	dB	0	
EPRE ratio of PSFCH to PSSCH	dB	0	
EPRE ratio of SL CSI-RS to $EPRE_{NRSSUERef}$	dB	Test specific (Note 2)	Power of SL CSI-RS; SL CSI-RS configured if required by a test case in TS 38.523-1 [12]
EPRE ratio of SL PT-RS to PSSCH	dB	0	
Note 1: Power level chosen to align with NR-SS-UE power level as specified in clause 6.2.2.			
Note 2: Test cases may specify "OFF" in which case the attenuation shall result in an absolute EPRE value being equal or less than the power level specified for a "Off" NR-SS-UE in clause 6.2.2.			

## 6.2.2 Signal levels

### 6.2.2.1 Signal Levels for conducted testing

This section applies to the test cases, which use conducted testing for each configured cell or each configured NR-SS-UE.

For NR FR1 cell, the downlink power settings in Table 6.2.2.1-1 and 6.2.2.1-2 are used unless otherwise specified in a test case.

**Table 6.2.2.1-1: Default Downlink power levels for FR1 NR cell (5MHz – 25MHz)**

	SCS(kHz)	Unit	Channel bandwidth				
			5MHz	10MHz	15MHz	20MHz	25MHz
Channel BW Power	15	dBm	-63	-60	-58	-57	-56
	30	dBm	-67	-63	-61	-60	-59
	60	dBm	N/A	-67	-65	-63	-62
SS/PBCH SSS EPRE	All	dBm/SCS (Note 3)	-88	-88	-88	-88	-88
Note 1: The channel bandwidth powers are informative, based on -88 dBm/ SCS(SubCarrier Spacing) SS/PBCH SSS EPRE, then scaled according to the number of RBs and rounded to the nearest integer dBm value. Full RE allocation with no boost or deboost is assumed. Note 2: The power level is specified at each UE Rx antenna. Note 3: DL level is applied for any of the Subcarrier Spacing configuration ( $\mu$ ) 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
<p>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.</p> <p>Note 2: The power level is specified at each UE Rx antenna.</p> <p>Note 3: DL level is applied for any of the Subcarrier Spacing configuration (<math>\mu</math>) with a power spectrum density of -88dBm/SCS(SubCarrier Spacing).</p>									

With simultaneous transmission of 24 RBs, a maximum of -78dBm/SCS SS/PBCH SSS EPRE can be allocated as cell power level.

The default settings of suitable cells and non-suitable cells for NR are specified in table 6.2.2.1-3.

Cells which are expected to be undetectable for UE under test shall fulfil the condition of non-suitable "Off" cell in table 6.2.2.1-3.

**Table 6.2.2.1-3: Default settings of suitable / non-suitable cells**

Power level type	NR (Note 1-3)		E-UTRAN	UTRAN
	Unit	Power level		
Serving cell	dBm/SCS	-88	Table 6.2.2.1-1 [2]	Table 6.1.1 (FDD) [52]
Suitable neighbour intra-frequency cell	dBm/SCS	-94	Table 6.2.2.1-1 [2]	Table 6.1.2 (FDD) [52]
Suitable neighbour inter-frequency cell	dBm/SCS	-99	Table 6.2.2.1-1 [2]	Table 6.1.2 (FDD) [52]
Non-suitable cell	dBm/SCS	-115	Table 6.2.2.1-1 [2]	Table 6.1.3 (FDD) [52]
Non-suitable "Off" cell	dBm/SCS	$\leq -145$	Table 6.2.2.1-1 [2]	Table 6.1.4 (FDD) [52]
<p>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.</p> <p>Note 2: The power level is specified at each UE Rx antenna.</p> <p>Note 3: DL level is applied for any of the Subcarrier Spacing configuration (<math>\mu</math>) with the same power spectrum density of -88dBm/SCS.</p> <p>Note 4: The default settings assume that the UE is making relative measurements of neighbour cells compared to the serving cell.</p>				

The default signal level uncertainty is specified in table 6.2.2.1-4 for any level specified, unless a tighter uncertainty is specified by a test case in TS 38.523-1 [12].



**Table 6.2.2.1-4: SS signal level uncertainty**

	Absolute signal level uncertainty for each cell	Relative signal level uncertainty between multiple cells
Intra-frequency	+/-3 dB at each test port	+/-3 dB
Inter-frequency	+/-3 dB at each test port	See Note 1
Note 1: For Inter-frequency cells the relative signal level uncertainty between multiple cells is determined by the absolute uncertainty of each cell, and does not have any additional constraint.		

SS/PBCH SSS EPRE setting should be equal to or higher than -115 dBm except for Non-suitable "Off" cell. The figure is chosen to ensure that for all bands the DL signal is within the RSRP measurement range specified in TS 38.133 [13], taking into account the SS default absolute signal level uncertainty.

NOTE: (The power spectral density of a white noise source; specified in TS 38.133 [13]) can be assumed to be -Infinity [dBm/SCS] for all intra and inter frequency test cases. It is applicable to both idle mode and connected mode in TS 38.523-1 [12], unless otherwise specified in specific test cases.

For NR-SS-UE, the sidelink power settings in Table 6.2.2.1-5 is used unless otherwise specified in a test case.

**Table 6.2.2.1-5: Default settings of NR-SS-UE power and signal level uncertainty**

Power level type	NR-SS-UE (Note 1)		Absolute signal level uncertainty for each NR-SS-UE
	Unit	Power level	
NR-SS-UE (default value)	dBm/15kHz	-85	+/-3 dB
NR-SS-UE ("Off")	dBm/15kHz	$\leq -145$	+/-3 dB
Note 1: The power level is specified at each Rx antenna of the UE under test.			

### 6.2.2.1.1 Measurement accuracy and side conditions

RSRP measurement accuracy in RRC\_CONNECTED state is specified in table 6.2.2.1.1-1, derived from TS 38.133 [13] clauses 10.1.2 and 10.1.4 selecting Normal condition with maximum  $I_o$  less than -50 dBm/BW<sub>Channel</sub>. The ranges and side conditions in TS 38.133 [13] clauses 10.1.2 and 10.1.4 apply. This measurement accuracy is applicable to connected mode test cases specified in TS 38.523-1 [12]. For the serving cell and suitable neighbour cells, the following side conditions shall be satisfied including the effect of signal level uncertainty.

- RSRP  $\geq -124$  dBm
- RSRP  $\hat{E}_s/I_{ot} > -6$  dB
- $I_o$ : 117.5 dBm/SCS for 15kHz SCS and -114.5 dBm/SCS for 15kHz SCS dBm/SCS ... -50 dBm/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

6.2.2.2.1 General

This section applies to the test cases, which require at least one of the configured cells to be a FR2 NR cell.

The following assumption is made for OTA testing:

- AWGN is not configured in the test case

6.2.2.2.2 Signal Levels for FR2 OTA NR cells

For NR FR2 cell, the downlink power settings in Table 6.2.2.2.2-1 are used unless otherwise specified in a test case.

**Table 6.2.2.2.2-1: Default Downlink power levels for FR2 NR cell (50MHz - 400MHz)**

	SCS(kHz)	Unit	Channel bandwidth			
			50MHz	100MHz	200MHz	400MHz
Channel BW Power	60	dBm	FFS	FFS	FFS	FFS
	120	dBm	-57	-57	-57	-57
SS/PBCH SSS EPRE	All	dBm/SCS	-82	-82	-82	-82
Note 1: The channel bandwidth powers are informative, based on -82 dBm/SCS SS/PBCH SSS EPRE, then scaled according to the number of RBs and rounded to the nearest integer dBm value. A maximum RE allocation of 24 simultaneously transmitted RBs with no boost or deboost is assumed.						
Note 2: The power level is specified at the centre of quiet zone.						

The default settings of suitable cells and non-suitable cells for NR FR2 are specified in table 6.2.2.2.2-2.

NR FR2 cells which are expected to be undetectable for UE under test shall fulfil the condition of non-suitable "Off" cell in table 6.2.2.2.2-2.

**Table 6.2.2.2.2-2: Default settings of suitable / non-suitable FR2 NR cells**

Power level type	NR (Note 1-3)	
	Unit	Power level
Serving cell	dBm/SCS	-82
Suitable neighbour intra-frequency cell	dBm/SCS	-91
Suitable neighbour inter-frequency cell	dBm/SCS	-91
Non-suitable cell	dBm/SCS	-100
Non-suitable "Off" cell	dBm/SCS	≤-139
Note 1: The power level is specified in terms of SS/PBCH SSS EPRE instead of RSRP as RSRP is a measured value and cannot be directly controlled by the SS.		
Note 2: The power level is specified at the centre of quiet zone.		
Note 3: DL level is applied for any of the Subcarrier Spacing configuration ( $\mu$ ) with the same power spectrum density in dBm/SCS (SubCarrier Spacing).		

The test system default signal level uncertainty is specified in tables 6.2.2.2.2-3 and 6.2.2.2.2-4 for any level specified, unless a tighter uncertainty is specified by a test case in TS 38.523-1 [12].

**Table 6.2.2.2.2-3: SS Absolute FR2 NR signal level uncertainty**

	Absolute signal level uncertainty
At each frequency	+/-6 dB at centre of the quiet zone

**Table 6.2.2.2-4: SS Relative FR2 NR signal level uncertainty**

	<b>Relative signal level uncertainty between any two SS EPRE levels at the same frequency</b>
At each frequency	+/-2.0 dB

### 6.2.2.2.3 Signal Levels for FR1 OTA NR cell(s) with FR2 OTA NR cell(s)

For NR cell in FR1 with FR2 NR, since the NR FR1 OTA link is uncalibrated in the signalling test setup, -88dBm/SCS should be applied as defined in the table 6.2.2.1-1 and table 6.2.2.1-2. -88dBm/SCS is suggested value and it is left to the TE vendor to ensure that NR cell power level fulfils the cell selection criteria.

The default settings of suitable cells and non-suitable cells for NR in FR1 with FR2 NR are specified in table 6.2.2.2-7.

NR Cells in FR1 with FR2 NR which are expected to be undetectable for UE under test shall fulfil the condition of non-suitable "Off" cell in table 6.2.2.2.3-1.

**Table 6.2.2.2.3-1: Default settings of suitable / non-suitable NR cells in FR1 with NR FR2**

Power level type	NR (Note 1-2)	
	Unit	Power level
Serving cell	dBm/SCS	-88
Non-suitable "Off" cell	dBm/SCS	≤-156
Note 1: The power level is specified in terms of SS/PBCH SSS EPRE instead of RSRP as RSRP is a measured value and cannot be directly controlled by the SS.		
Note 2: The power level is specified at the centre of quiet zone.		

The following assumptions are considered for the test cases configuring at least one FR1 OTA NR cell:

- Multiple inter-frequency FR1 OTA NR cells can be configured.
- Only two power levels are allowed: Serving cell power level or Non-suitable "Off" cell power level (as defined in Table 6.2.2.2.3-1)
- If FR1 OTA NR cell does not require:
  - Cell Reselection measurements and
  - Connected Mode measurements and
  - Cell Selection between two active cells and
  - Multiple Signal Levels
    - Multiple FR1 OTA NR cells can be activated.
- Else
  - No more than one FR1 OTA NR cell is activated.

### 6.2.2.2.4 Signal Levels for OTA E-UTRA cell(s) with FR2 OTA NR cell(s)

For E-UTRA cell with FR2 NR, since the LTE OTA link is uncalibrated in the signalling test setup, the table 6.2.2.2.4-1 provides only suggestive value. It is left to the TE vendor to ensure that LTE cell power level fulfils the cell selection criteria.

**Table 6.2.2.4-1: Default Downlink power levels for E-UTRA cells with NR FR2**

	Unit	Channel bandwidth					
		1.4 MHz	3 MHz	5 MHz	10 MHz	15 MHz	20 MHz
Number of RBs		6	15	25	50	75	100
Channel BW Power	dBm	-77	-73	-71	-68	-66	-65
RS EPRE	dBm/15kHz	-96	-96	-96	-96	-96	-96
Note 1: The channel bandwidth powers are informative, based on -96 dBm/15kHz RS_EPRES, then scaled according to the number of RBs and rounded to the nearest integer dBm value. Full RE allocation with no boost or deboost is assumed.							
Note 2: The power level is specified at the centre of quiet zone.							

The default setting of suitable cells for E-UTRA with FR2 NR are specified in table 6.2.2.4-2.

E-UTRA Cells with FR2 NR which are expected to be undetectable for UE under test shall fulfil the condition of non-suitable "Off" cell in table 6.2.2.4-2.

**Table 6.2.2.4-2: Default settings of suitable / non-suitable E-UTRA cells with NR FR2**

Power level type	E-UTRAN (Note 1-2)	
	Unit	Power level
Serving cell	dBm/15KHz	-96
Non-suitable "Off" cell	dBm/15KHz	≤-156
Note 1: The power level is specified in terms of cell-specific RS EPRES instead of RSRP as RSRP is a measured value and cannot be directly controlled by the SS.		
Note 2: The power level is specified at the centre of quiet zone.		

The following assumptions are considered for the test cases configuring at least one OTA E-UTRA cell:

- Multiple inter-frequency OTA E-UTRA cells can be configured.
- Only two power levels are allowed: Serving cell power level or Non-suitable "Off" cell power level (as defined in Table 6.2.2.4-2)
- If OTA E-UTRA cell does not require:
  - Cell Reselection measurements and
  - Connected Mode measurements and
  - Cell Selection between two active cells and
  - Multiple Signal Levels,
    - Multiple OTA E-UTRA cells can be activated.
- Else
  - No more than one OTA E-UTRA cell is activated.

#### 6.2.2.2.5 Signal Levels for OTA UTRA cell(s) with FR2 OTA NR cell(s)

For UTRA OTA cell with FR2 NR, the UTRA OTA link is uncalibrated in the signalling test setup.

UTRA Cells with FR2 NR which are expected to be undetectable for UE under test shall fulfil the condition of non-suitable "Off" cell in table 6.2.2.5-1.

**Table 6.2.2.2.5-1: Default settings of suitable / non-suitable UTRA cells with NR FR2**

Power level type	UTRAN (Note 1-2)	
	Unit	Power level
Serving cell	dBm/3.84 MHz	-60
Non-suitable "Off" cell	dBm/3.84 MHz	≤-132
Note 1: The power level is specified in terms of CPICH_Ec instead of CPICH_RSCP as RSCP is a receiver measurement and only CPICH_Ec can be directly controlled by the SS.		
Note 2: The power level is specified at the centre of quiet zone.		

The following assumptions are considered for the test cases configuring at least one OTA UTRA cell:

- Multiple inter-frequency OTA UTRA cells can be configured.
- Only two power levels are allowed: Serving cell power level or Non-suitable "Off" cell power level (as defined in Table 6.2.2.2.5-1)
- If OTA UTRA cell does not require:
  - Cell Reselection measurements and
  - Connected Mode measurements and
  - Cell Selection between two active cells and
  - Multiple Signal Levels,
    - Multiple OTA UTRA cells can be activated.
- Else
  - No more than one OTA UTRA cell is activated.

## 6.2.3 Default test frequencies

**Editor's note: For FR2 test frequencies using 100 MHz default channel bandwidth it is FFS if 100MHz channel bandwidth can be used for FR2 multicell protocol testing.**

### 6.2.3.1 Test frequencies for NR standalone signalling testing

The default channel bandwidth for signalling test is specified per NR band. The test frequencies are defined so that no frequency overlapping takes place, in order to avoid unnecessary inter-frequency interference.

For signalling test cases, the mapping of frequency ranges to NR test frequencies are as follows:

- for band with only one test frequency (e.g. n51): Low Range (NRf1);
- for band with up to two test frequencies: Low Range (NRf1) and High Range (NRf2);
- for band with up to three test frequencies: Low Range (NRf1), Mid Range (NRf2) and High Range (NRf3);
- for band with up to four test frequencies: Low Range (NRf1), Mid Low Range (NRf2), Mid High Range (NRf3) and High Range (NRf4);

The signalling test frequencies NRf5, NRf6, NRf7 are mapped respectively as NRf1, NRf2, NRf3 on the operating band for inter-band.

The test frequencies, subcarrier spacing, default channel bandwidth, SS/PBCH block and CORESET#0 parameters for signalling is specified in Table 6.2.3.1-1 (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), Table 6.2.3.1-6 (TDD FR2 BW 100MHz) and Table 6.2.3.1-7 (NR FDD FR1 SUL bands).

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

NR Band	SCS [kHz]	CBW [MHz]	carrierBandwidth [PRBs]	Range	Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequencyPointA [ARFCN]	offsetTo Carrier [Carrier PRBs]	SS block SCS [kHz]	GS CN	absoluteFrequencySSB [ARFCN]	$k_{SSB}$	Offset Carrier CORES ET#0 [RBs]	CORES ET#0 Index (Offset [RBs]) Note 1	offsetToPointA (SIB1) [PRBs] Note 1	
n5	15	5	25	Downlink	Low, High	Same values as for Low and High range in clause 4.3.1.1.15 for bandwidth=5 MHz and SCS=15 kHz.											
					Mid-Low	878.2	175640	873.79	174758	12	15	2197	175730	0	1	2 (4)	17
					Mid-High	884.8	176960	878.23	175646	24		2212	176930	8	1	0 (0)	25
				Uplink	Low, High	Same values as for Low and High range in clause 4.3.1.1.5 for bandwidth=5 MHz and SCS=15 kHz.											
					Mid-Low	833.2	166640	824.47	164894	36	-	-	-	-	-	-	-
					Mid-High	839.8	167960	817.03	163406	114	-	-	-	-	-	-	-
n8	15	5	25	Downlink	Low, High	Same values as for Low and High range in clause 4.3.1.1.8 for bandwidth=5 MHz and SCS=15 kHz.											
					Mid-Low	937.5	187500	933.09	186618	12	15	2343	187470	8	1	0 (0)	13
					Mid-High	947.5	189500	940.93	188186	24		2368	189410	0	0	0 (0)	24

				Uplink	Low, High	Same values as for Low and High range in clause 4.3.1.8 for bandwidth=5 MHz and SCS=15 kHz.											
					Mid-Low	892.5	178500	883.77	176754	36	-	-	-	-	-	-	
					Mid-High	902.5	180500	879.73	175946	114	-	-	-	-	-	-	
n12	15	5	25	Downlink	Low, Mid, High	Same values as for Low, Mid and High range in clause 4.3.1.1.1.12 for bandwidth=5 MHz and SCS=15 kHz.											
				Uplink	Low, Mid, High	Same values as for Low, Mid and High range in clause 4.3.1.1.1.12 for bandwidth=5 MHz and SCS=15 kHz.											
n14	15	5	25	Downlink	Low, High	Same values as for Low and High range in clause 4.3.1.1.1.14 for bandwidth=5 MHz and SCS=15 kHz.											
				Uplink	Low, High	Same values as for Low and High range in clause 4.3.1.1.1.14 for bandwidth=5 MHz and SCS=15 kHz.											
n20	15	5	25	Downlink	Low, High	Same values as for Low and High range in clause 4.3.1.1.1.20 for bandwidth=5 MHz and SCS=15 kHz.											
					Mid-Low	801.8	160360	797.39	159478	12	15	2003	160330	8	1	0 (0)	13
					Mid-High	810.2	162040	803.63	160726	24		2024	162010	8	1	0 (0)	25



				Uplink	Low, High	Same values as for Low and High range in clause 4.3.1.1.1.20 for bandwidth=5 MHz and SCS=15 kHz.											
					Mid-Low	842.8	168560	834.07	166814	36	-	-	-	-	-	-	
					Mid-High	851.2	170240	828.43	165686	114	-	-	-	-	-	-	
n24	15	5	25	Downlink	Low, High	Same values as for Low and High range in clause 4.3.1.1.1.24 for DL bandwidth=5 MHz, UL bandwidth=5 MHz and SCS=15 kHz											
				Uplink	Low, High	Same values as for Low and High range in clause 4.3.1.1.1.24 for DL bandwidth=5 MHz, UL bandwidth=5 MHz and SCS=15 kHz											
n26	15	5	25	Downlink	Low, High	Same values as for Low and High range in clause 4.3.1.1.1.26 for bandwidth=5 MHz and SCS=15 kHz.											
					Mid-Low	871.5	174300	867.09	173418	12	15	2178	174270	8	1	0 (0)	13
					Mid-High	881.5	176300	874.93	174986	24		2203	176210	0	0	0 (0)	24
				Uplink	Low, High	Same values as for Low and High range in clause 4.3.1.1.1.26 for bandwidth=5 MHz and SCS=15 kHz.											
					Mid-Low	826.5	165300	817.77	163554	36	-	-	-	-	-	-	
					Mid-High	836.5	167300	813.73	162746	114		-	-	-	-	-	

n29	15	5	25	Downlink (SDL)	Low, High	Same values as for Low and High range in clause 4.3.1.1.1.29 for bandwidth=5 MHz and SCS=15 kHz.												
n30	15	5	25	Downlink	Low, High	Same values as for Low and High range in clause 4.3.1.1.1.30 for bandwidth=5 MHz and SCS=15 kHz.												
				Uplink	Low, High	Same values as for Low and High range in clause 4.3.1.1.1.30 for bandwidth=5 MHz and SCS=15 kHz.												
n70	15	5	25	Downlink	Low, Mid, High	Same values as for Low, Mid and High range in clause 4.3.1.1.1.70 for DL bandwidth=5 MHz, UL bandwidth=5 MHz and SCS=15 kHz.												
				Uplink	Low, Mid, High	Same values as for Low, Mid and High range in clause 4.3.1.1.1.70 for DL bandwidth=5 MHz, UL bandwidth=5 MHz and SCS=15 kHz.												
n71	15	5	25	Downlink	Low, High	Same values as for Low and High range in clause 4.3.1.1.1.71 for bandwidth=5 MHz and SCS=15 kHz.												
					Mid-Low	629.5	125900	625.09	125018	12	15	1573	125810	0	0	0 (0)	12	
					Mid-High	639.5	127900	632.93	126586	24		1598	127930	4	1	1 (2)	27	
				Uplink	Low, High	Same values as for Low and High range in clause 4.3.1.1.1.71 for bandwidth=5 MHz and SCS=15 kHz.												
					Mid-Low	675.5	135100	666.77	133354	36	-	-	-	-	-	-	-	

					Mid-High	685.5	137100	662.73	132546	114	-	-	-	-	-	-
n76	15	5	25	Downlink (SDL)	Low	Same values as for Low range in clause 4.3.1.1.1.76 for bandwidth=5 MHz and SCS=15 kHz.										
<p>Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-1 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.</p>																

Table 6.2.3.1-2: Test frequencies for NR FDD FR1 bands using 10 MHz channel bandwidth

NR Band	SCS [kHz]	CBW [MHz]	carrierBandwidth [PRBs]	Range	Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequencyPointA [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS [kHz]	GS CN	absoluteFrequencySSB [ARFCN]	$k_{SSB}$	Offset Carrier CORE SET#0 [RBs]	CORE SET#0 Index (Offset [RBs]) Note 1	offsetToPointA (SIB1) [PRBs] Note 1	
n1	15	10	52	Downlink	Low, High	Same values as for Low and High range in clause 4.3.1.1.1.1 for bandwidth=10 MHz and SCS=15 kHz.											
					Mid-Low	2131.7	426340	2124.86	424972	12	15	5321	425770	2	0	0 (0)	12
					Mid-High	2148.3	429660	2139.3	427860	24		5364	429150	10	1	0 (0)	25
				Uplink	Low, High	Same values as for Low and High range in clause 4.3.1.1.1.1 for bandwidth=10 MHz and SCS=15 kHz.											
					Mid-Low	1941.7	388340	1930.54	386108	36	-	-	-	-	-	-	-
					Mid-High	1958.3	391660	1933.1	386620	114	-	-	-	-	-	-	-

				Hi gh														
n2	15	10	52	Downlink	Lo w, Hi gh	Same values as for Low and High range in clause 4.3.1.1.1.2 for bandwidth=10 MHz and SCS=15 kHz.												
					Mid-Lo w	195 1.7	39034 0	1944. 86	388972	12	15	487 1	389770	2	0	0 (0)	12	
					Mid-Hi gh	196 8.3	39366 0	1959. 3	391860	24		491 4	393150	10	1	0 (0)	25	
				Uplink	Lo w, Hi gh	Same values as for Low and High range in clause 4.3.1.1.1.2 for bandwidth=10 MHz and SCS=15 kHz.												
					Mid-Lo w	187 1.7	37434 0	1860. 54	372108	36	-	-	-	-	-	-	-	-
					Mid-Hi gh	188 8.3	37766 0	1863. 1	372620	114	-	-	-	-	-	-	-	-
n3	15	10	52	Downlink	Lo w, Hi gh	Same values as for Low and High range in clause 4.3.1.1.1.3 for bandwidth=10 MHz and SCS=15 kHz.												
					Mid-Lo w	183 1.7	36634 0	1824. 86	364972	12	15	457 1	365770	2	0	0 (0)	12	
					Mid-Hi gh	185 3.3	37066 0	1844. 3	368860	24		462 5	370090	2	0	0 (0)	24	
				Uplink	Lo w, Hi gh	Same values as for Low and High range in clause 4.3.1.1.1.3 for bandwidth=10 MHz and SCS=15 kHz.												
					Mid-	173 6.7	34734 0	1725. 54	345108	36	-	-	-	-	-	-	-	-

					Lo w														
					Mid- High	175 8.3	35166 0	1733. 1	346620	114	-	-	-	-	-	-	-	-	-
n7	15	10	52	Downlink	Lo w, Hi gh	Same values as for Low and High range in clause 4.3.1.1.1.7 for bandwidth=10 MHz and SCS=15 kHz.													
					Mid- Lo w	264 5	52900 0	2638. 16	527632	12	15	660 5	528490	10	1	0 (0)	13		
					Mid- High	266 5	53300 0	2656	531200	24		665 8	532610	2	1	2 (4)	29		
				Uplink	Lo w, Hi gh	Same values as for Low and High range in clause 4.3.1.1.1.7 for bandwidth=10 MHz and SCS=15 kHz.													
					Mid- Lo w	252 5	50500 0	2513. 84	502768	36	-	-	-	-	-	-	-	-	
					Mid- High	254 5	50900 0	2519. 8	503960	114	-	-	-	-	-	-	-	-	
n2 5	15	10	52	Downlink	Lo w, Hi gh	Same values as for Low and High range in clause 4.3.1.25 for bandwidth=10 MHz and SCS=15 kHz.													
					Mid- Lo w	195 3.3	39066 0	1946. 46	389292	12	15	487 8	390270	2	1	2 (4)	17		
					Mid- High	197 1.7	39434 0	1962. 7	392540	24		492 4	393890	6	1	1 (2)	27		
				Uplink	Lo w,	Same values as for Low and High range in clause 4.3.1.1.1.25 for bandwidth=10 MHz and SCS=15 kHz.													

					Hi gh												
					Mid-Lo w	187 3.3	37466 0	1862. 14	372428	36	-	-	-	-	-	-	
					Mid-Hi gh	189 1.7	37834 0	1866. 5	373300	114	-	-	-	-	-	-	
n2 8	15	10	52	Dow nlink	Lo w, Hi gh	Same values as for Low and High range in clause 4.3.1.1.28 for bandwidth=10 MHz and SCS=15 kHz.											
					Mid-Lo w	774 .7	15494 0	767.8 6	153572	12	15	193 0	154370	2	0	0 (0)	12
					Mid-Hi gh	786 .3	15726 0	777.3	155460	24		195 9	156750	10	1	0 (0)	25
				Uplin k	Lo w, Hi gh	Same values as for Low and High range in clause 4.3.1.1.28 for bandwidth=10 MHz and SCS=15 kHz.											
					Mid-Lo w	719 .7	14394 0	708.5 4	141708	36	-	-	-	-	-	-	-
					Mid-Hi gh	731 .3	14626 0	706.1	141220	114	-	-	-	-	-	-	-
n6 5	15	10	52	Dow nlink	Lo w, Hi gh	Same values as for Low and High range in clause 4.3.1.65 for bandwidth=10 MHz and SCS=15 kHz.											
					Mid-Lo w	214 1.7	42834 0	2134. 86	426972	12	15	534 9	427950	2	1	2 (4)	17
					Mid- d-	216 8.3	43366 0	2159. 3	431860	24		541 4	433210	6	1	1 (2)	27

					Hi gh														
					Uplink	Lo w, Hi gh	Same values as for Low and High range in clause 4.3.1.65 for bandwidth=10 MHz and SCS=15 kHz.												
						Mi d- Lo w	195 1.7	39034 0	1940. 54	388108	36	-	-	-	-	-	-	-	-
						Mi d- Hi gh	197 8.3	39566 0	1953. 1	390620	114	-	-	-	-	-	-	-	-
n6 6	15	10	52	Dow nlink	Lo w, Hi gh	Same values as for Low and High range in clause 4.3.1.1.1.66 for DL bandwidth=10 MHz, UL bandwidth=10 MHz and SCS=15 kHz.													
						Mi d- Lo w	214 1.7	42834 0	2134. 86	426972	12	15	534 9	427950	2	1	2 (4)	17	
						Mi d- Hi gh	216 8.3	43366 0	2159. 3	431860	24		541 4	433210	6	1	1 (2)	27	
					Uplink	Lo w, Hi gh	Same values as for Low and High range in clause 4.3.1.1.1.66 for DL bandwidth=10 MHz, UL bandwidth=10 MHz and SCS=15 kHz.												
						Mi d- Lo w	174 1.7	34834 0	1730. 54	346108	36	-	-	-	-	-	-	-	-
						Mi d- Hi gh	176 8.3	35366 0	1743. 1	348620	114	-	-	-	-	-	-	-	-
n7 4	15	10	52	Dow nlink	Lo w, Hi gh	Same values as for Low and High range in clause 4.3.1.1.1.74 for bandwidth=5 MHz and SCS=15 kHz.													
						Mi d- Lo w	149 1	298 200	1484. 16	296832	12	15	372 0	297630	2	0	0 (0)	12	

				Low													
				Mid-High	150 2	300 400	1493	298600	24		374 9	300010	2	1	2 (4)	29	
				Uplink	Low, High	Same values as for Low and High range in clause 4.3.1.1.1.74 for bandwidth=5 MHz and SCS=15 kHz.											
					Mid-Low	144 3	288 600	1431. 84	286368	36	-	-	-	-	-	-	-
					Mid-High	145 4	290 800	1428. 8	285760	114	-	-	-	-	-	-	-
n7 5	15	10	52	Downlink  (SDL)  Note 2	Low, High	Same values as for Low and High range in clause 4.3.1.1.1.75 for bandwidth=10 MHz and SCS=15 kHz.											
					Mid-Low	146 2	29240 0	1455. 16	291032	12	15	-	291824	31	-	0	-
					Mid-High	148 7	29740 0	1478	295600	24		-	296824	31	-	0	-
<p>Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-1 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.</p> <p>Note 2: FR1 carrier without any coreset is indicated in the MIB by setting <math>k_{SSB} = 31</math>, <i>controlResourceSetZero</i>=0 and <i>searchSpaceZero</i> = 0 (TS 38.213 [22], clause 13).</p>																	



Table 6.2.3.1-3: Test frequencies for NR TDD FR1 bands using 5 MHz channel bandwidth

NR Band	SCS [kHz]	CBW [MHz]	carrier Bandwidth [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absolute Frequency PointA [ARFCN]	offsetTo Carrier [Carrier PRBs]	SS block SCS [kHz]	GSCN	absolute FrequencySSB [ARFCN]	$k_{SSB}$	Offset Carrier CORE SET#0 [RBs]	CORE SET#0 Index (Offset [RBs]) Note 1	offsetTo PointA (SIB1) [PRBs] Note 1
n34	15	5	25	Downlink & Uplink	Low, Mid, High	Same values as for Low, Mid and High range in clause 4.3.1.1.1.34 for bandwidth=5 MHz and SCS=15 kHz.											
n51	15	5	25	Downlink & Uplink	Low	Same values as for Low range in clause 4.3.1.1.1.51 for bandwidth=5 MHz and SCS=15 kHz.											
n53	15	5	25	Downlink & Uplink	Low, High	Same values as for Low and High range in clause 4.3.1.1.1.53 for bandwidth=5 MHz and SCS=15 kHz.											
Note 1: For TDD FR1 bands typically the default SCS=30kHz is chosen. For n34 and n53 where SCS=30kHz would limit test coverage to one cell scenarios, SCS=15kHz and 5MHz CBW have been chosen to enable testing of scenarios with up to two cells.																	

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

NR Band	SCS [kHz]	CBW [MHz]	carrier Bandwidth [PRBs]	Range	Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absolute Frequency PointA [ARFCN]	offsetTo Carrier [Carrier PRBs]	SS block SCS [kHz]	GSCN	absolute FrequencySSB [ARFCN]	$k_{SSB}$	Offset Carrier CORE SET#0 [RBs]	CORE SET#0 Index (Offset [RBs]) Note 1	offsetTo PointA (SIB1) [PRBs] Note 1	
n38	30	10	24	Downlink	Low, High	Same values as for Low and High range in clause 4.3.1.1.1.38 for bandwidth=10 MHz and SCS=30 kHz.											
				Uplink	Mid-Low	2588.3	517660	2579.66	515932	12	30	6470	517690	10	0	2 (2)	28
					Mid-High	2601.7	520340	2588.74	517748	24		6505	520370	10	0	2 (2)	52
n39	30	10	24	Downlink	Low, High	Same values as for Low and High range in clause 4.3.1.1.1.39 for bandwidth=10 MHz and SCS=30 kHz.											
				Uplink	Mid-Low	1895	379000	1886.36	377272	12	30	4736	378970	14	0	1 (1)	26
					Mid-High	1905	381000	1892.04	378408	24		4761	380910	18	0	0 (0)	48
n40	30	10	24	Downlink	Low, High	Same values as for Low and High range in clause 4.3.1.1.1.40 for bandwidth=10 MHz and SCS=30 kHz.											
				Uplink	Mid-Low	2335	467000	2326.36	465272	12	30	5839	467090	6	0	3 (3)	30
					Mid-High	2365	473000	2352.04	470408	24		5914	473090	6	0	3 (3)	54
n48	30	10	24	Downlink	Low, High	Same values as for Low and High range in clause 4.3.1.48 for bandwidth=10 MHz and SCS=30 kHz.											
				Uplink	Mid-Low	3601.65	640110	3593.01	639534	12	30	7917	640128	18	0	2 (2)	28
					Mid-High	3648.33	643222	3635.37	642358	24		7949	643200	2	0	1 (1)	50
n50	30	10	24	Downlink	Low, High	Same values as for Low and High range in clause 4.3.1.1.1.50 for bandwidth=10 MHz and SCS=30 kHz.											
				Uplink	Mid-Low	1462	292400	1453.36	290672	12	30	3655	292370	14	0	1 (1)	26
					Mid-High	1487	297400	1474.04	294808	24		3716	297370	14	0	1 (1)	50
Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-4 in TS 38.213 [22] for all bands in the table. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.																	

**Table 6.2.3.1-4A: Test frequencies for NR TDD FR1 bands using 60 MHz channel bandwidth**

NR Band	SCS [kHz]	CBW [MHz]	carrier Bandwidth [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absolute Frequency PointA [ARFCN]	offsetTo Carrier [Carrier PRBs]	SS block SCS [kHz]	GSCN	absolute FrequencySSB [ARFCN]	$k_{SSB}$	Offset Carrier CORE SET#0 [RBs]	CORE SET#0 Index (Offset [RBs]) Note 1	offsetTo PointA (SIB1) [PRBs] Note 1
n41	30	60	162	Downlink & Uplink	Low, Mid, High	Same values as for Low, Mid and High range in clause 4.3.1.1.1.41 for bandwidth=60 MHz and SCS=30 kHz.											

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

NR Band	SCS [kHz]	CBW [MHz]	carrier Bandwidth [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absolute Frequency PointA [ARFCN]	offsetTo Carrier [Carrier PRBs]	SS block SCS [kHz]	GSCN	absolute FrequencySSB [ARFCN]	$k_{SSB}$	Offset Carrier CORE SET#0 [RBs]	CORE SET#0 Index (Offset [RBs]) Note 1	offsetTo PointA (SIB1) [PRBs] Note 1
n77	30	100	273	Downlink & Uplink	Low, High	Same values as for Low and High range in clause 4.3.1.1.1.77 for bandwidth=100 MHz and SCS=30 kHz.											
					Mid-Low	3616.68	641112	3563.22	637548	12	30	7896	638112	12	0	1 (1)	26
					Mid-High	3883.32	658888	3825.54	655036	24		8081	655872	20	0	0 (0)	48
n78	30	100	273	Downlink & Uplink	Low, High	Same values as for Low and High range in clause 4.3.1.1.1.78 for bandwidth=100 MHz and SCS=30 kHz.											
					Mid-Low	3483.33	632222	3429.87	628658	12	30	7804	629280	22	0	3 (3)	30
					Mid-High	3616.68	641112	3558.9	637260	24		7896	638112	12	0	1 (1)	50
n79	30	100	273	Downlink & Uplink	Low, High	Same values as for Low and High range in clause 4.3.1.1.1.79 for bandwidth=100 MHz and SCS=30 kHz.											
					Mid-Low	4616.67	707778	4563.21	704214	12	30	8592	704928	18	6	1 (4)	38
					Mid-High	4783.35	718890	4725.57	715038	24		8720	717216	18	54	1 (4)	160
Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-4 in TS 38.213 [22] for all bands in the table except for band n79 where Table 13-6 apply. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.																	

Table 6.2.3.1-6: Test frequencies for NR TDD FR2 bands using 100 MHz channel bandwidth

NR Band	SCS [kHz]	CBW [MHz]	carrier Bandwidth [PRBs]	Range	Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absolute Frequency Point A [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS [kHz]	GSCN	absolute Frequency SSB [ARFCN]	$k_{SSB}$	Offset Carrier CORE SET#0 [RBs]	CORE SET#0 Index (Offset [RBs]) Note 1	offsetToPointA (SIB1) [PRBs] Note 1	
n257	120	100	66	Downlink & Uplink	Low, High	Same values as for Low and High range in clause 4.3.1.2.1.1 for bandwidth=100 MHz and SCS=120 kHz.											
					Mid-Low	27516.6	2071109	27451.8	2070029	12	120	22444	2070811	7	6	1 (4)	44
					Mid-High	28483.32	2087221	28401.24	2085853	24		22500	2086939	3	7	1 (4)	70
n258	120	100	66	Downlink & Uplink	Low, High	Same values as for Low and High range in clause 4.3.1.2.1.2 for bandwidth=100 MHz and SCS=120 kHz.											
					Mid-Low	25350	2034999	25285.2	2033919	12	120	22318	2034523	2	3	0 (0)	30
					Mid-High	26400	2052499	26317.92	2051131	24		22379	2052091	0	2	1 (4)	60
n259	120	100	66	Downlink & Uplink	Low, High	Same values as for Low and High range in clause 4.3.1.2.1.3 for bandwidth=100 MHz and SCS=120 kHz.											
					Mid-Low	40850.04	2293333	40785.24	2292253	12	120	23215	2292859	3	3	0 (0)	30
					Mid-High	42150	2314999	42067.92	2313631	24		23290	2314459	6	0	0 (0)	48
n260	120	100	66	Downlink & Uplink	Low, High	Same values as for Low and High range in clause 4.3.1.2.1.4 for bandwidth=100 MHz and SCS=120 kHz.											
					Mid-Low	38016.6	2246109	37951.8	2245029	12	120	23051	2245627	11	2	0 (0)	28
					Mid-High	38983.32	2262221	38901.24	2260853	24		23107	2261755	7	3	0 (0)	54
n261	120	100	66	Downlink & Uplink	Low, High	Same values as for Low and High range in clause 4.3.1.2.1.5 for bandwidth=100 MHz and SCS=120 kHz.											
					Mid-Low	27800.04	2075833	27735.24	2074753	12	120	22460	2075419	9	1	1 (4)	34
					Mid-High	28050	2079999	27967.92	2078631	24		22474	2079451	2	0	0 (0)	48
Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-8 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.																	

Table 6.2.3.1-7: Test frequencies for NR FDD FR1 SUL bands

NR Band	SCS [kHz]	CBW [MHz]	carrierBandwidth [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	AbsoluteFrequencyPointA [ARFCN]	offsetToCarrier [Carrier PRBs]
n80	15	10	52	Uplink	Low, Mid, High	Same values as for Low, Mid and High range in table 4.3.1.1.1.80-1 for bandwidth=10 MHz and SCS=15 kHz.				
n81	15	10	52	Uplink	Low, Mid, High	Same values as for Low, Mid and High range in table 4.3.1.1.1.81-1 for bandwidth=10 MHz and SCS=15 kHz.				
n82	15	10	52	Uplink	Low, Mid, High	Same values as for Low, Mid and High range in table 4.3.1.1.1.82-1 for bandwidth=10 MHz and SCS=15 kHz.				
n83	15	10	52	Uplink	Low, Mid, High	Same values as for Low, Mid and High range in table 4.3.1.1.1.83-1 for bandwidth=10 MHz and SCS=15 kHz.				
n84	15	10	52	Uplink	Low, Mid, High	Same values as for Low, Mid and High range in table 4.3.1.1.1.84-1 for bandwidth=10 MHz and SCS=15 kHz.				
n86	15	10	52	Uplink	Low, Mid, High	Same values as for Low, Mid and High range in table 4.3.1.1.1.86-1 for bandwidth=10 MHz and SCS=15 kHz.				
n97	15	10	52	Uplink	Low, Mid, High	Same values as for Low, Mid and High range in table 4.3.1.1.1.97-1 for bandwidth=10 MHz and SCS=15 kHz.				
n99	15	10	52	Uplink	Low, High	Same values as for Low and High range in clause 4.3.1.1.1.99-1 for bandwidth=10 MHz and SCS=15 kHz.				

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

### 6.2.3.2.1 General

The default channel bandwidths for EN-DC signalling test are specified per NR and E-UTRA band. The test frequencies are defined so that no frequency overlapping takes place, in order to avoid unnecessary inter-frequency interference.

### 6.2.3.2.2 E-UTRA 1CC and NR 1CC

For EN-DC Inter-band case with E-UTRA 1CC and NR 1CC (one E-UTRA band and one NR band) the EN-DC configurations are specified in clause 4.3.1.4.1.2 for EN-DC with NR FR1 and 4.3.1.5.1.2 for EN-DC with NR FR2.

The E-UTRA and NR test frequencies are specified in TS 36.508 [2], clause 6.2.3.1 for the E-UTRA band (E-UTRA f1, f2, f3 and f4); and in clause 6.2.3.1 for the NR band (NRf1, NRf2, NRf3, NRf4) and for the secondary NR band (NRf5, NRf6, NRf7) of the secondary EN-DC inter-band configuration.

For EN-DC Intra-band Contiguous case with E-UTRA 1CC and NR 1CC the EN-DC configurations and the test frequencies are specified in Table 6.2.3.2-1.

For EN-DC Intra-band Non-Contiguous with E-UTRA 1CC and NR 1CC case the EN-DC configurations and test frequencies are specified in Table 6.2.3.2-2.

For EN-DC Intra-Band Contiguous and EN-DC Intra-Band Non-Contiguous cases with E-UTRA 1CC and NR 1CC the mapping of frequency ranges to NR test frequencies NRf1, NRf2, NRf3, and NRf4 to PSCell; and to E-UTRA test frequencies f1, f2, f3, and f4 for PCell are as follows:

- for band combinations with only one test frequency: Low Range (NRf1, f1);
- for band combinations with up to two frequencies: Low Range (NRf1, f1), High Range (NRf2, f2);
- for band combinations with up to three frequencies: Mid Range (NRf3, f3), Low Range (NRf1, f1) and High Range (NRf2, f2);
- for band combinations with up to four frequencies: Mid-Low Range (NRf3, f3), High Range (NRf2, f2), Low Range (NRf1, f1) and Mid-High Range (NRf4, f4).

Table 6.2.3.2.2-1: Test frequencies for EN-DC Intra-band Contiguous configurations with E-UTRA 1CC and NR 1CC

EN-DC channel bandwidth combination	CC	Bandwidth [MHz]	carrierBandwidth [PRBs]	Range		Carrier centre [MHz] Note 2	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequencyPointA [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS [kHz]	GS CN	absoluteFrequencySSB [ARFCN]	$k_{SSB}$	Offset Carrier CORESET#0 [RBs]	CORESET#0 Index (Offset [RBs])	offsetToPointA (SIB1) [PRBs]
DC_(n) 41AA	E-UTRA CC 1	20	100	Downlink & Uplink	Low, High	Same values as for Low and High range values in Table 4.3.1.4.2.41.1-2 (SCS 30 kHz, 30 kHz NR raster and NR CC at the band edges) and EN-DC channel bandwidth combination "E-UTRA: 20MHz + NR: 60MHz".											
	NR CC 1	60	162	Downlink & Uplink	Low, High												
DC_(n) 71AA	E-UTRA CC 1	5	25	Downlink	Low, Mid, High	Same values as for Low, Mid and High range values in Table 4.3.1.4.2.71.1-1 (SCS 15 kHz, 100 kHz NR raster and NR CC at the band edges) and EN-DC channel bandwidth combination "E-UTRA: 5MHz + NR: 5MHz".											
				Uplink	Low, Mid, High												
	NR CC 1	Downlink	Low, Mid, High														
		Uplink	Low, Mid, High														

Table 6.2.3.2-2: Test frequencies for EN-DC Intra-Band Non-Contiguous configurations with E-UTRA 1CC and NR 1CC

EN-DC channel bandwidth combination	CC	Bandwidth [MHz]	carrierBandwidth [PRBs]	Range		Carrier centre [MHz] Note 2	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequencyPointA [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS [kHz]	GS CN	absoluteFrequencySSB [ARFCN]	$k_{SSB}$	Offset Carrier CORE SET#0 [RBs]	CORE SET#0 Index (Offset [RBs])	offsetToPointA (SIB1) [PRBs]
DC_41A_n41A	E-UTRA CC 1	20	100	Downlink & Uplink	Low	Same values as for Test Frequency ID = "Low with maxWgap (NR – E-UTRA)" in Table 4.3.1.4.41.1-1 with NR SCS=30 kHz and CBW=60MHz; and E-UTRA CBW=20 MHz.											
	NR CC 1	60	162	Downlink & Uplink	Low												

### 6.2.3.2.3 E-UTRA 1CC and NR CA 2CC

For EN-DC Inter-band case with E-UTRA 1CC and NR CA 2CC the EN-DC configurations are specified in clauses 4.3.1.4.1.2 (two bands) and 4.3.1.4.1.3 (three bands) for EN-DC and NR CA 2CC with FR1 bands, 4.3.1.5.1.2 (two bands) and 4.3.1.5.1.3 (three bands) for EN-DC with NR CA 2CC with FR2 bands and 4.3.1.6.1.2 for EN-DC and NR CA 2CC with FR1 and FR2 bands.

For EN-DC Inter-band case (3 bands), the E-UTRA test frequencies are specified in TS 36.508 [2], clause 6.2.3.1 for the E-UTRA band (E-UTRA f1) and the NR test frequencies are specified in clause 6.2.3.1 for the NR band used as PSCell (NRf1, NRf2, NRf3, NRf4) and for the NR band used as SCell (NRf5, NRf6, NRf7).

For EN-DC Inter-band case (2 bands) with NR Intra-band contiguous CA 2CC and NR Intra-band non-contiguous CA 2CC, the E-UTRA test frequencies are specified in TS 36.508 [2], clause 6.2.3.1 for the E-UTRA band (E-UTRA f1) and the NR test frequencies are specified in clause 6.2.3.4 for the NR CA CC1 used as PSCell (NRf1, NRf3) and for the NR CA CC2 used as SCell (NRf2, NRf4).

For EN-DC Intra-band Contiguous case with E-UTRA 1CC and NR CA 2CC the EN-DC configurations and the test frequencies are specified in Table 6.2.3.2.3-1.

For EN-DC Intra-band Non-Contiguous case with E-UTRA 1CC and NR 2CC the EN-DC configurations and test frequencies are specified in Table 6.2.3.2.3-2.

For EN-DC Intra-Band Contiguous and EN-DC Intra-Band Non-Contiguous cases with E-UTRA 1CC and NR CA 2CC the mapping of frequency ranges to NR test frequencies NRf1 for PSCell (CC1) and NRf2 for SCell (CC2); and to E-UTRA test frequency f1 for PCell is:

- for band combinations with only one test frequency: Low Range (NRf1=CC1, NRf2=CC2, f1); and
- for band combinations with up to two frequencies: Low Range (NRf1=CC1, NRf2=CC2, f1), High Range (NRf3=CC1, NRf4=CC2, f2).



Editor's note: No EN-DC Intra-band Contiguous configurations with NR CA 2CC have yet been introduced in TS 38.101-3.

**Table 6.2.3.2.3-1: Test frequencies for EN-DC Intra-band Contiguous configurations with E-UTRA 1CC and NR CA 2CC**

FFS

Editor's note: No EN-DC Intra-band Non-Contiguous configurations with NR CA 2CC have yet been introduced in TS 38.101-3.

**Table 6.2.3.2.3-2: Test frequencies for EN-DC Intra-Band Non-Contiguous configurations with E-UTRA 1CC and NR CA 2CC**

FFS

**6.2.3.2a Test frequencies for NE-DC band combinations for signalling testing**

**6.2.3.2a.1 General**

The default channel bandwidths for NE-DC signalling test are specified per NR and E-UTRA band. The test frequencies are defined so that no frequency overlapping takes place, in order to avoid unnecessary inter-frequency interference.

**6.2.3.2a.2 NR 1CC and E-UTRA 1CC**

For NE-DC Inter-band case with NR 1CC and E-UTRA 1CC (one NR band and one E-UTRA band) the NE-DC configurations are specified in clause 4.3.1.4a.1.2 for NE-DC with NR FR1.

The NR and E-UTRA test frequencies are specified in clause 6.2.3.1 for the NR band (NRf1, NRf2, NRf3, NRf4) and for the secondary NR band (NRf5, NRf6, NRf7) of the secondary NE-DC inter-band configuration; and in TS 36.508 [2], clause 6.2.3.1 for the E-UTRA band (E-UTRA f1, f2, f3 and f4).

### 6.2.3.3 Test frequencies for NR and E-UTRA Inter-RAT signalling testing

For NR and E-UTRA Inter-RAT testing, it is assumed that the NR and E-UTRA bands under test are different in order to avoid unnecessary interferences:

- for NR bands, the frequencies NRf1, NRf2, NRf3 and NRf4 are mapped as per clause 6.2.3.1
- for E-UTRA bands, the signalling test frequencies E-UTRA f1, E-UTRA f2, E-UTRA f3 and E-UTRA f4 are mapped respectively on f1, f2, f3 and f4 as per TS 36.508 [2] clause 6.2.3.1.

### 6.2.3.4 Test frequencies for NR CA configurations for signalling testing

The default channel bandwidths for NR CA signalling test are specified per NR band. The test frequencies are defined so that no frequency overlapping takes place, in order to avoid unnecessary inter-frequency interference.

For NR CA Inter-band case (2 bands) the NR CA configurations are specified in clause 4.3.1.1.2 for NR CA within FR1, in clause 4.3.1.2.2 for NR CA within FR2 and in clause 4.3.1.3.1 for NR CA between FR1 and FR2. NR test frequencies are specified in clause 6.2.3.1 for the NR band used as PCell (NRf1, NRf2, NRf3, NRf4) and for the NR band used as SCell (NRf5, NRf6, NRf7).

For NR CA Intra-band Contiguous case (2 CCs) the NR CA configurations and the test frequencies are specified in Table 6.2.3.4-1 for FR1 and in Table 6.2.3.4-2 for FR2. For NR CA Intra-band Non-Contiguous (2 CCs) case the NR CA configurations and test frequencies are specified in Table 6.2.3.4-3 for FR1 and in Table 6.2.3.4-4 for FR2.

For NR CA Intra-Band Contiguous case (2 CCs) and NR CA Intra-Band Non-Contiguous case (2 CCs) the mapping of frequency ranges to NR test frequencies NRf1, NRf2, NRf3, and NRf4 and PCell (CC1) and SCell (CC2) are as follows:

- for Intra-band configurations with only one test frequency: Low Range (NRf1=CC1 and NRf2=CC2); and
- for Intra-band configurations with up to two frequencies: Low Range (NRf1=CC1 and NRf2=CC2), High Range (NRf3=CC1 and NRf4=CC2).

Table 6.2.3.4-1: Test frequencies for NR CA Intra-band Contiguous configurations with FR1

NR CA configuration	C C	CB W [M Hz]	carrierBandwidth [PRBs]	Range		Carrier centre [MHz] Note 2	Carrier centre [ARFCN]	point A [M Hz]	absoluteFrequencyPointA [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS [k Hz]	GS CN	absoluteFrequencySSB [ARFCN]	$k_{SSE}$	Offset Carrier CORESET#0 [RBs]	CORESET#0 Index (Offset [RBs])	offsetToPointA (SIB1) [PRBs]
CA_n41 C	C C 1	60	162+162	Downlink	Low	Same values as for Low range in Table 4.3.1.1.3.41.1-1 for CBW combination 60+60 and SCS=30 kHz.											
	C C 2	60	162	& Uplink													
CA_n48 B	C C 1	10	24	Downlink	Low	Same values as for Low and High ranges in Table 4.3.1.1.3.48.1-2 for CBW combination 10+10 and SCS=30 kHz.											
	C C 2	10	24	& Uplink	High												
CA_n66 B	C C 1	10	52	Downlink	Low	Same values as for Low and High ranges in Table 4.3.1.1.3.66.1-1 for CBW combination 10+15 and SCS=15 kHz.											
	C C 2	15	79	& Uplink	High												
CA_n77 C	C C 1	100	273	Downlink	Low	Same values as for Low and High ranges in Table 4.3.1.1.3.77.1-1 for CBW combination 100+100 and SCS=30 kHz.											
	C C 2	100	273	& Uplink	High												
CA_n78 C	C C 1	100	273	Downlink	Low	Same values as for Low and High ranges in Table 4.3.1.1.3.78.1-1 for CBW combination 100+100 and SCS=30 kHz.											
	C C 2	100	273	& Uplink	High												

Table 6.2.3.4-2: Test frequencies for NR CA Intra-band Contiguous configurations with FR2

NR CA configuration	C C	CB W [MHz]	carrierBandwidth [PRBs]	Range		Carrier centre [MHz] Note 2	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequencyPointA [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS [kHz]	GS CN	absoluteFrequencySSB [ARFCN]	$k_{SSB}$	Offset Carrier CORESET#0 [RBs]	CORESET#0 Index (Offset [RBs])	offsetToPointA (SIB1) [PRBs]
CA_n25 7G	C C1, C C2	100+100	66+66	Downlink	Low	Same values as for Low and High ranges in Table 4.3.1.2.3.1.6-4 for CBW combination 100+100 and SCS=120 kHz.											
				& Uplink	High												
CA_n25 8G	C C1, C C2	100+100	66+66	Downlink	Low	Same values as for Low and High ranges in Table 4.3.1.2.3.2.6-2 for CBW combination 100+100 and SCS=120 kHz.											
				& Uplink	High												
CA_n26 0G	C C1, C C2	100+100	66+66	Downlink	Low	Same values as for Low and High ranges in Table 4.3.1.2.3.4.6-2 for CBW combination 100+100 and SCS=120 kHz.											
				& Uplink	High												
CA_n26 1G	C C1, C C2	100+100	66+66	Downlink	Low	Same values as for Low and High ranges in Table 4.3.1.2.3.5.6-2 for CBW combination 100+100 and SCS=120 kHz.											
				& Uplink	High												

Table 6.2.3.4-3: Test frequencies for NR CA Intra-Band Non-Contiguous configurations with FR1

NR CA configuration	S B	CB W [MHz]	carrierBandwidth [PRBs]	Range		Carrier centre [MHz] Note 2	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequencyPointA [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS [kHz]	GS CN	absoluteFrequencySSB [ARFCN]	$k_{SSE}$	Offset Carrier CORESET#0 [RBs]	CORESET#0 Index (Offset [RBs])	offsetToPointA (SIB1) [PRBs]
CA_n48 (2A)	S B1 S B2	10+10	24+24	Downlink & Uplink	Low High	Same values as for Low and High ranges in Table 4.3.1.1.5.48-2 for CBW combination 10+10 and SCS=30 kHz.											
CA_n66 (2A)	S B1 S B2	10+10	52+52	Downlink & Uplink	Low High	Same values as for Low and High ranges in Table 4.3.1.1.5.66-1 for CBW combination 10+10 and SCS=15 kHz.											
CA_n71 (2A)	S B1 S B2	10+10	52+52	Downlink & Uplink	Low High	Same values as for Low and High ranges in Table 4.3.1.1.5.71-1 for CBW combination 10+10 and SCS=15 kHz.											
CA_n78 (2A)	S B1 S B2	50+50	133+ 133	Downlink & Uplink	Low High	Same values as for Low and High ranges in Table 4.3.1.1.5.78-2 for CBW combination 50+50 and SCS=30 kHz.											

Table 6.2.3.4-4: Test frequencies for NR CA Intra-Band Non-Contiguous configurations with FR2

NR CA configuration	C C	CB W [MHz]	carrierBandwidth [PRBs]	Range		Carrier centre [MHz] Note 2	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequencyPointA [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS [kHz]	GS CN	absoluteFrequencySSB [ARFCN]	$k_{SSE}$	Offset Carrier CORES ET#0 [RBs]	CORES ET#0 Index (Offset [RBs])	offsetToPointA (SIB1) [PRBs]
CA_n261(2A)	C C 1 C C 2	100 100	66 66	Downlink & Uplink	Low High	Same values as for Low and High ranges in Table 4.3.1.2.4.5.1-1 for CBW combination 100+100 and SCS=120 kHz.											

## 6.2.3.5 Test frequencies for MFBI signalling testing

For signalling test cases, the mapping of MFBI frequency ranges to NR test frequencies are as follows: Low Range (NRf1), Mid Range (NRf2) and High Range (NRf3).

The test frequencies, subcarrier spacing, default channel bandwidth, SS/PBCH block and CORESET#0 parameters for signalling are specified in Table 6.2.3.5-1.

Table 6.2.3.5-1: Test frequencies for MFBI NR bands in FR1

NR Band	MFBI overlapping NR Band	SCS [kHz]	Bandwidth [MHz]	carrierBandwidth [PRBs]	Range	Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequencyPointA[ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS [kHz]	GS CN	absoluteFrequencySSB [ARFCN]	$k_{SSB}$	Offset Carrier CORESET#0 [RBs]	CORESET#0 Index (Offset [RBs])	offsetToPointA (SIB1) [PRBs]
n2	n25	15	10	52	Downlink	Low, Mid, High	Same values as for Low, Mid and High range in clause 4.3.1.1.1.2 for bandwidth=10 MHz and SCS=15 kHz.										
					Uplink	Low, Mid, High	Same values as for Low, Mid and High range in clause 4.3.1.1.1.2 for bandwidth=10 MHz and SCS=15 kHz.										
n25	n2	15	10	52	Downlink	Low, Mid, High	Same values as for Low, Mid and High range in clause 4.3.1.1.1.2 for bandwidth=10 MHz and SCS=15 kHz.										
					Uplink	Low, Mid, High	Same values as for Low, Mid and High range in clause 4.3.1.1.1.2 for bandwidth=10 MHz and SCS=15 kHz.										
n38	n41	15	10	52	Downlink &	Low, Mid,	Same values as for Low, Mid and High range in clause 4.3.1.1.1.38 for bandwidth=10 MHz and SCS=15 kHz.										

					Uplink	High	
n41	n38	15	10	52	Downlink & Uplink	Low, Mid, High	Same values as for Low, Mid and High range in clause 4.3.1.1.1.38 for bandwidth=10 MHz and SCS=15 kHz.
n77	n78	30	100	273	Downlink & Uplink	Low, Mid, High	Same values as for Low, Mid and High range in clause 4.3.1.1.1.78 for bandwidth=100 MHz and SCS=30 kHz.
n78	n77	30	100	273	Downlink & Uplink	Low, Mid, High	Same values as for Low, Mid and High range in clause 4.3.1.1.1.78 for bandwidth=100 MHz and SCS=30 kHz.

Table 6.2.3.5-2: Test frequencies for MFBI NR bands in FR2

NR Band	MFBI overlapping NR Band	SCS [kHz]	Bandwidth [MHz]	carrierBandwidth [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequencyPointA[ARFCN]	offsetToCarrier [Carrier PRBs]	SSB block SCS [kHz]	GS CN	absoluteFrequencySSB [ARFCN]	k <sub>SSB</sub>	Offset Carrier CORE SET# 0 [RBs] Note 2	CORE SET# 0 Index (Offset [RBs]) Note 1	offsetToPoint A (SIB1) [PRBs] Note 1
					Downlink & Uplink	Low												
n257	n258	120	100	66	Downlink & Uplink	Low	26557.08	2055117	26509.56	2054325	0	120	22388	2054683	0	1 (4)	1	8
						Mid	27006.36	2062605	26811.96	2059365	102		22414	2062171	0	1 (4)	1	212
						High	27438.36	2069805	26665.08	2056917	504		22439	2069371	0	1 (4)	1	1016



n257	n261	120	100	66	Downlink & Uplink	Low, Mid, High	Same values as for Low, Mid and High range in clause 4.3.1.2.1.5 for bandwidth=100 MHz and SCS=120 kHz.											
n258	n257	120	100	66	Downlink & Uplink	Low	26557.08	2055117	26509.56	2054325	0	120	22388	2054683	11	0	1 (4)	8
						Mid	27006.36	2062605	26811.96	2059365	102		22414	2062171	11	0	1 (4)	212
						High	27438.36	2069805	26665.08	2056917	504		22439	2069371	11	0	1 (4)	1016
n261	n257	120	100	66	Downlink & Uplink	Low, Mid, High	Same values as for Low, Mid and High range in clause 4.3.1.2.1.5 for bandwidth=100 MHz and SCS=120 kHz.											
<p>Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-1 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.</p> <p>Note 2: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter <math>\Delta F_{\text{OffsetCORESET-0-Carrier}}</math> in Annex C expressed in number of common RBs.</p>																		

### 6.2.3.6 Test frequencies for NR DC configurations for signalling testing

The default channel bandwidths for NR DC signalling test are specified per NR band. The test frequencies are defined so that no frequency overlapping takes place, in order to avoid unnecessary inter-frequency interference.

For NR DC (2 bands, 2CC) the NR DC configurations are specified in clause 4.3.1.3.2.1 for 1CC FR1 and 1CC FR2. NR test frequencies are specified in clause 6.2.3.1 for the NR band used as PCell (NRf1, NRf2, NRf3, NRf4) and for the NR band used as PSCell (NRf5, NRf6, NRf7).

For NR DC with NR intra-band contiguous CA (2 bands, 3CC) the NR DC configurations are specified in clause 4.3.1.3.2.1 for 1CC FR1 and 2CC FR2. NR test frequencies are specified in clause 6.2.3.1 for the NR FR1 band used as PCell (NRf1) and in Table 6.2.3.4-2 for NR intra-band contiguous CA as PSCell (CC1, NRf5) and SCell (CC2, NRf6).

### 6.2.3.7 Test frequencies for NR sidelink configurations for signalling testing

The default channel bandwidths for NR sidelink signalling test are specified per NR sidelink operation band. The test frequencies are defined so that no frequency overlapping takes place, in order to avoid unnecessary inter-frequency interference.

For signalling test cases, the mapping of frequency ranges to NR sidelink test frequencies are as follows:

- for band with only one test frequency: Low Range (NRf1);
- for band with up to two test frequencies: Low Range (NRf1) and High Range (NRf2);
- for band with up to three test frequencies: Low Range (NRf1), Mid Range (NRf2) and High Range (NRf3);

The test frequencies, subcarrier spacing, default channel bandwidth and S-SSB parameters for signalling is specified in Table 6.2.3.7-1 for PC5-only operations.

For concurrent operation case the operation configurations are specified in clause 4.3.1.8.2.1 for inter-band concurrent cases. The test frequencies for signalling are specified in Table 6.2.3.7-1 for PC5 carrier and in clause 6.2.3.1 for Uu carrier.

For tests which need NR PC5 carrier and NR Uu carrier but not concurrent operation case, the test frequencies for signalling are specified in Table 6.2.3.7-1 for PC5 carrier in clause 6.2.3.1 for Uu carrier.

**Table 6.2.3.7-1: Test frequencies for NR Sidelink operating bands using 10 MHz channel bandwidth**

NR Band	SCS [kHz]	CBW [MHz]	carrier Bandwidth [PRBs]	Range	Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	sl-absoluteFrequencyPointA [ARFCN]	offsetToCarrier [Carrier PRBs]	sl-absoluteFrequencySSB [ARFCN]
n47	15	10	52	Low, Mid, High	Same values as for Low, Mid and High range in clause 4.3.1.8.1.2 for bandwidth=10 MHz and SCS=15 kHz. For <i>sl-absoluteFrequencySSB</i> , same value as for S-SSB Low in clause 4.3.1.8.1.2 for bandwidth=10 MHz and SCS=15 kHz is used.					

## 6.3 Reference system configurations

### 6.3.1 Default System Information configurations

#### 6.3.1.1 Intra-frequency neighbouring cell list in SIB3 for NR cells

Intra-frequency neighbouring cell list for signalling test cases is defined in table 6.3.1.1-1. This table is referred to in the default contents of IE *intraFreqNeighCellList* in *SIB3* defined in table 4.6.2-2.

**Table 6.3.1.1-1: Intra-frequency neighbouring cell lists for NR cells**

cell ID	Test Frequency	intra-frequency neighbouring cell list			
		number of entries	physCellId[n]		
			1	1	3
NR Cell 1	NRf1	3	NR Cell 2	NR Cell 4	NR Cell 11
NR Cell 2	NRf1	3	NR Cell 1	NR Cell 4	NR Cell 11
NR Cell 4	NRf1	3	NR Cell 1	NR Cell 2	NR Cell 11
NR Cell 11	NRf1	3	NR Cell 1	NR Cell 2	NR Cell 4
NR Cell 3	NRf2	1	NR Cell 23	-	-
NR Cell 23	NRf2	1	NR Cell 3	-	-

**Editor's Note:** The intra-frequency NR neighbouring cell list for signalling NAS test cases when cells are on same PLMN is FFS.

### 6.3.1.2 Inter-frequency carrier frequency list in SIB4 for NR cells

Inter-frequency NR carrier frequency list for signalling test cases is defined in table 6.3.1.2-1. This table is referred to in the default contents of IE *interFreqCarrierFreqList* in *SIB4* defined in table 4.6.2-3.

**Table 6.3.1.2-1: Inter-frequency carrier frequency lists for NR cells**

cell ID	Test Frequency	interFreqCarrierFreqList			
		number of entries	dl-CarrierFreq[n]		
			1	2	3
NR Cell 1 NR Cell 2 NR Cell 4 NR Cell 11	NRf1 (Note 2)	3	NRf2	NRf3	NRf5
NR Cell 3 NR Cell 23	NRf2 (Note 2)	3	NRf1	NRf3	NRf5
NR Cell 6	NRf3 (Note 2)	3	NRf1	NRf2	NRf5
NR Cell 10	NRf5 (Note 3)	3	NRf1	NRf2	NRf3
Note 1: Depending on the Band under test, NRf3 may not be applicable. Note 2: In case of Test frequency NRf1, NRf2 and NRf3, dl-CarrierFreq NRf5 as part of inter-frequency list is applicable only in case of multi-band scenarios. Note 3: Test frequency NRf5 is applicable only in case of multi-band scenarios.					

**Editor's Note:** The inter-frequency NR carrier frequency list for signalling NAS test cases when cells are on same PLMN is FFS.

### 6.3.1.3 E-UTRA carrier frequency list in SIB5 for NR cells

The frequency mapping of E-UTRA cells are defined as per TS 36.508 [2] clause 4.4.2 and TS 36.508 [2] clause 6.3.2 for NGC NAS test cases, E-UTRA frequency mapping is according to clause 6.2.3.3. E-UTRA carrier frequency list for signalling test cases is defined in table 6.3.1.3-1. This table is referred to in the default contents of IE *carrierFreqListEUTRA* in *SIB5* defined in table 4.6.2-4.

**Table 6.3.1.3-1: E-UTRA carrier frequency lists for NR cells**

interFreqCarrierFreqList	
number of entries	carrierFreq[n]
	1

1	E-UTRA f1
2	E-UTRA f2
3	E-UTRA f3
4	E-UTRA f4
<p>Note 1: E-UTRAf1, E-UTRAf2, E-UTRAf3, E-UTRAf4 are according to clause 6.2.3.3</p> <p>Note 2: Depending on the Band under test, E-UTRA f2 or E-UTRA f3 or E-UTRA f4 may not be applicable.</p>	

**Table 6.3.1.3-2: Void**

## 6.3.2 Default configurations for NAS test cases

The default configurations specified in this subclause apply only to NAS test cases. They apply to all NAS test cases unless otherwise specified.

### 6.3.2.1 Simulated network scenarios for NAS test cases

Simulated network scenarios for NAS test cases to be tested are specified in the pre-test conditions of each individual test case.

Any combination is allowed with the following restrictions:

- a maximum 3 cells on the same frequency can be used, i.e. only 3 cells out of NGC Cell A, NGC Cell B, NGC Cell C and NGC Cell D may be used simultaneously in each individual test case when cells in the test case are in different PLMNs (refer to Table 6.3.2.2-3).

### 6.3.2.2 Simulated NAS cells

Simulated NAS cells and default NAS parameters are specified in Table 6.3.2.2-1. Unless otherwise specified in a test case, default radio parameters of the NAS cells are specified as per Table 6.3.2.2-2.

Unless otherwise specified, the default parameters specified in clause 4.4.2 will also apply to all NAS cells.

Table 6.3.2.2-1: Default NAS parameters for simulated NAS cells

NAS cell ID	Tracking Area			TA# list (Note 1)	5G-GUTI (Note 2)			5G-TMSI	
	TA#	PLMN			TAC	AMF Identifier			
		MCC	MNC			AMF Region ID	AMF Set ID		AMF Pointer
NGC Cell A	TAI-1	(Note 3)		1	TAI-1	254	1	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	
<p>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.</p> <p>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.</p> <p>Note 3: Set to the same Mobile Country Code and Mobile Network Code stored in EF<sub>IMSI</sub> on the test USIM card (subclause 4.8.3).</p> <p>Note 4: Set to the same Mobile Country Code stored in EF<sub>IMSI</sub> on the test USIM card (subclause 4.8.3).</p>									

Table 6.3.2.2-2: Default radio parameters for simulated NAS cells when cells are in same PLMN and access stratum is NR

NAS cell ID	Frequency	NR cell ID (Note 1)
NGC Cell A	NRf1	NR Cell 1
NGC Cell B	NRf1	NR Cell 2
NGC Cell C	NRf1	NR Cell 4
NGC Cell D	NRf1	NR Cell 11
NGC Cell E	NA	NA
NGC Cell F	NRf2	NR Cell 3
NGC Cell G	NA	NA
NGC Cell H	NA	NA
NGC Cell I	NA	NA
NGC Cell J	NRf2	NR Cell 12
<p>Note 1: Default NR parameters for simulated NR cells are as specified in Table 4.4.2-2.</p> <p>Note 2: Simultaneous co-existence of active NGC cells defined on the same frequency and same SSB-Index is not recommended (in line with Table 4.4.2-2 Note 3).</p>		

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

NAS cell ID	PLMN	Frequency	NR cell ID (Note 1)
NGC Cell A	MCC/MNC=MCC/MNC in USIM	NRf1	NR Cell 1
NGC Cell B	MCC/MNC=MCC/MNC in USIM	NRf1	NR Cell 2
NGC Cell C	MCC/MNC=MCC/MNC in USIM	NRf1	NR Cell 4
NGC Cell D	MCC/MNC=MCC/MNC in USIM	NRf1	NR Cell 11
NGC Cell E	MCC=002 MNC=101	NRf2	NR Cell 3
NGC Cell F	MCC=003 MNC=101	NRf4	NR Cell 14
NGC Cell G	MCC = MCC in USIM MNC=02	NRf2	NR Cell 12
NGC Cell H	MCC = MCC in USIM MNC=02	NRf2	NR Cell 23
NGC Cell I	MCC=002 MNC=101	NRf3	NR Cell 6
NGC Cell J	MCC=002 MNC=101	NRf3	NR Cell 13
Note 1: Default NR parameters for simulated NR cells are as specified in Table 4.4.2-2			
Note 2: Simultaneous co-existence of active NGC cells defined on the same frequency and same SSB-Index is not recommended (in line with Table 4.4.2-2 Note 3).			

## 6.3.3 Cell configuration types

### 6.3.3.1 Introduction

For the purpose of test equipment resource management, different types of cell configurations are defined with different capabilities.

For E-UTRA cells, please refer to TS 36.508 [2] clauses 6.3.3 and 6.3.4.

The default NR cell configuration type is Full Cell: this NR cell configuration has, in minimum, all DL and UL physical channels and physical signals configured, as defined in subclause 4.2.2.

When not mentioned explicitly in a test case prose, an NR cell is of type Full Cell. The following subclauses define different NR cell types with lower capabilities than the Full Cell.

### 6.3.3.2 SCell types

When testing NR CA, the following NR SCell types may be specifically mentioned in the test case prose:

- Active SCell: An NR cell that may become an SCell at any point of time during the test case and which, while being an SCell, may be activated.
- Inactive SCell: An NR cell that may become an SCell at any point of time during the test case but is never activated while being an SCell.

SCell activation is defined as SS sending an SCell Activation/Deactivation MAC CE to the UE to activate the SCell.

Note that an Active SCell will not become an Inactive SCell if the SCell is deactivated via an SCell Activation/Deactivation MAC CE or after the *sCellDeactivationTimer* timer expires.

## 6.4 Signalling Test Case specific USIM Configurations

### 6.4.1 General

The default USIM fields are specified in section 4.8.3. Specific USIM fields are set according to the USIM configuration specified in the tables below. PLMN settings are defined in TS 36.523-1 [42] Table 6.0.1-1.

Note: Changes to any existing USIM configuration can be done only if the change WILL NOT HAVE IMPACT on any of the tests which are referring to the configuration! To establish whether this might be the case, the test case author needs to review all tests in all RAN5 test specifications, which refer to the particular USIM configuration e.g. all test cases in TS 38.523-1 [12].

**Table 6.4.1-1: USIM Configuration 1**

USIM field	Priority	Value	Access Technology Identifier
EF <sub>IMSI</sub>		The HPLMN (MCC+MNC) of the IMSI is set to PLMN1.	
EF <sub>PLMNwAcT</sub>	1 2 3	Default PLMN17 PLMN16 Remaining mandatory entries use default values	Default All specified NG-RAN
EF <sub>OPLMNwAcT</sub>	1	PLMN15 Remaining defined entries use default values	All specified
EF <sub>HPLMNwAcT</sub>	1	PLMN1	NG-RAN
EF <sub>UST</sub>		Services 20, 42, 43 and 74 are supported. Service 71 is not supported (there is no EHPLMN list).	
EF <sub>HPPLMN</sub>		1 (6 minutes)	

**Table 6.4.1-2: USIM Configuration 2**

USIM field	Priority	Value	Access Technology Identifier
EF <sub>5GS3GPPLOCI</sub>		PLMN4	
EF <sub>PLMNwAcT</sub>		Empty	
EF <sub>IMSI</sub>		The HPLMN (MCC+MNC) of the IMSI is set to PLMN1.	
EF <sub>UST</sub>		Service n°71 and n°74 are "available"	
EF <sub>EHPLMN</sub>	1 2	PLMN15 PLMN1	
EF <sub>LRPLMNSI</sub>		01	

**Table 6.4.1-3: USIM Configuration 3**

USIM field	Priority	Value	Access Technology Identifier
EF <sub>5GS3GPPLOCI</sub>		PLMN4	
EF <sub>PLMNwAcT</sub>		Empty	
EF <sub>IMSI</sub>		The HPLMN (MCC+MNC) of the IMSI is set to PLMN1.	
EF <sub>UST</sub>		Service n°74 is "available"	
EF <sub>EHPLMN</sub>		Empty	
EF <sub>LRPLMNSI</sub>		01	

**Table 6.4.1-4: USIM configuration 4**

USIM field	Priority	Value	Access Technology Identifier
EF <sub>EHPLMN</sub>	1	PLMN1 Remaining mandatory entries use default values	
EF <sub>PLMNwAcT</sub>	1	PLMN2 Remaining mandatory entries use default values	NG-RAN
EF <sub>OPLMNwACT</sub>	1	PLMN3 Remaining mandatory entries use default values	NG-RAN
EF <sub>UST</sub>		Services 20, 42 and 71 are supported.	
EF <sub>5GS3GPPLOCI</sub>		FF FF...FF FE 01 (20 Bytes)	
EF <sub>EPSLOCI</sub>		FF FF...FF FE 01 (18 Bytes)	
EF <sub>PSLOCI</sub>		FF FF...FE FF 01 (14 Bytes)	
EF <sub>LOCI</sub>		FF FF...FE FF 01 (11 Bytes)	
Note:	LOCI fields of this USIM configuration may get overwritten upon execution of test cases using a UICC loaded with this USIM configuration. The test operator shall ensure that USIM contents are as per this table before each execution of a test case that requires this USIM configuration.		

**Table 6.4.1-5: USIM configuration 5**

USIM field	Priority	Value	Access Technology Identifier
EF <sub>5GS3GPPLOCI</sub>		PLMN4 (See preamble)	
EF <sub>PLMNwAcT</sub>		Empty	
EF <sub>IMSI</sub>		The HPLMN (MCC+MNC) of the IMSI is set to PLMN1.	
EF <sub>UST</sub>		Service 71 is not supported Service 74 is supported.	
EF <sub>LRPLMNSI</sub>		00	
EF <sub>EHPLMN</sub>		0xFF..FF	

**Table 6.4.1-6: USIM configuration 6**

USIM field	Priority	Value	Access Technology Identifier
EF <sub>5GS3GPPLOCI</sub>		PLMN1 (See preamble)	
EF <sub>IMSI</sub>		The HPLMN (MCC+MNC) of the IMSI is set to PLMN3.	
EF <sub>PLMNwAcT</sub>	1	PLMN1 Remaining mandatory entries use default values	NG-RAN
EF <sub>OPLMNwACT</sub>	1 2	PLMN2 PLMN4 Remaining defined entries use default values	NG-RAN NG-RAN
EF <sub>UST</sub>		Service 71 is not supported	



Table 6.4.1-7: USIM configuration 7

USIM field	Priority	Value	Access technology	Comment
E.F <sub>PLMNwAcT</sub>	1	PLMN13	NG-RAN	
	2	PLMN13	E-UTRAN	
E.F <sub>OPLMNwAcT</sub>	1	PLMN2	All	
	2	PLMN14	E-UTRAN	
	3	PLMN13	NG-RAN	
E.F <sub>5GS3GPPLoCI</sub>		FF FF...FF FE 01 (20 Bytes)		
E.F <sub>EPSLoCI</sub>		FF FF...FF FE 01 (18 Bytes)		
E.F <sub>PSLoCI</sub>		FF FF...FE FF 01 (14 Bytes)		
E.F <sub>LoCI</sub>		FF FF...FE FF 01 (11 Bytes)		
Note:	LoCI fields of this USIM configuration may get overwritten upon execution of test cases using a UICC loaded with this USIM configuration. The test operator shall ensure that USIM contents are as per this table before each execution of a test case that requires this USIM configuration.			

Table 6.4.1-8: USIM configuration 8

USIM field	Priority	Value	Access technology	Comment
E.F <sub>OPLMNwAcT</sub>	1	PLMN15	NG-RAN	
	2	PLMN15	E-UTRAN	
	3	PLMN17	E-UTRAN	
	4	PLMN16	NG-RAN	
E.F <sub>5GS3GPPLoCI</sub>		FF FF...FF FE 01 (20 Bytes)		
E.F <sub>EPSLoCI</sub>		FF FF...FF FE 01 (18 Bytes)		
E.F <sub>PSLoCI</sub>		FF FF...FE FF 01 (14 Bytes)		
E.F <sub>LoCI</sub>		FF FF...FE FF 01 (11 Bytes)		
E.F <sub>UST</sub>		Service n°127 is not"available"		
Note:	LoCI fields of this USIM configuration may get overwritten upon execution of test cases using a UICC loaded with this USIM configuration. The test operator shall ensure that USIM contents are as per this table before each execution of a test case that requires this USIM configuration.			

Table 6.4.1-9: USIM configuration 9

USIM field	Priority	Value	Access technology	Comment
E.F <sub>PLMNwAcT</sub>	1	PLMN1	NG-RAN	
	2	PLMN15	E-UTRAN	
E.F <sub>HPPLMN</sub>		1(=6 min)		The HPLMN Search Period on the USIM shall be set to 6 minutes.

Table 6.4.1-10: USIM configuration 10

USIM field	Priority	Value	Access Technology Identifier
EF <sub>OPLMNwACT</sub>	1	PLMN14	NG-RAN
	2	PLMN13	NG-RAN
	3	PLMN2	NG-RAN
		Remaining defined entries use default values	
EF <sub>UST</sub>		Service n°127 is "available"	
EF <sub>HPPLMN</sub>		1(=6 min)	
EF <sub>5GS3GPPLOCI</sub>		FF FF...FF FE 01 (20 Bytes)	
EF <sub>EPSLOCI</sub>		FF FF...FF FE 01 (18 Bytes)	
EF <sub>PSLOCI</sub>		FF FF...FE FF 01 (14 Bytes)	
EF <sub>LOCI</sub>		FF FF...FE FF 01 (11 Bytes)	
Note: LOCI fields of this USIM configuration may get overwritten upon execution of test cases using a UICC loaded with this USIM configuration. The test operator shall ensure that USIM contents are as per this table before each execution of a test case that requires this USIM configuration.			

Table 6.4.1-11: USIM configuration 11

USIM field	Priority	Value	Access Technology Identifier
EF <sub>5GS3GPPLOCI</sub>		PLMN15 (See preamble)	
EF <sub>IMSI</sub>		The HPLMN (MCC+MNC) of the IMSI is set to PLMN1	
EF <sub>PLMNwACT</sub>	1	Default	Default
	2	PLMN16	NG-RAN
		Remaining defined entries use default values	Default
EF <sub>OPLMNwACT</sub>	1	PLMN15	NG-RAN
		Remaining defined entries use default values	Default
EF <sub>HPLMNwACT</sub>	1	PLMN1	NG-RAN
EF <sub>UST</sub>		Services 20, 42, 43, 74 and 96 are supported. Service 71 is not supported (there is no EHPLMN list)	
EF <sub>HPPLMN</sub>		1 (6 minutes)	
EF <sub>NASCONFIG</sub>		MinimumPeriodicSearchTimer set to 7 minutes	

Table 6.4.1-12: USIM configuration 12

USIM field	Priority	Value	Access technology	Comment
EF <sub>PLMNwACT</sub>		3GPP TS 31.102, Annex E		The EF is empty.
EF <sub>OPLMNwACT</sub>	1	PLMN2	NG-RAN	
	2	PLMN13	E-UTRAN	
	3	PLMN13	NG-RAN	
EF <sub>UST</sub>		Service n°127 is not "available"		
EF <sub>5GS3GPPLOCI</sub>		FF FF...FF FE 01 (20 Bytes)		
EF <sub>EPSLOCI</sub>		FF FF...FF FE 01 (18 Bytes)		
EF <sub>PSLOCI</sub>		FF FF...FE FF 01 (14 Bytes)		
EF <sub>LOCI</sub>		FF FF...FE FF 01 (11 Bytes)		
Note: LOCI fields of this USIM configuration may get overwritten upon execution of test cases using a UICC loaded with this USIM configuration. The test operator shall ensure that USIM contents are as per this table before each execution of a test case that requires this USIM configuration.				

Table 6.4.1-13: USIM configuration 13

USIM field	Priority	Value	Access technology	Comment
EF <sub>OPLMNwAcT</sub>	1	PLMN2	NG-RAN	
	2	PLMN2	E-UTRAN	
	3	PLMN13	NG-RAN	

Table 6.4.1-14: Void

Table 6.4.1-15: USIM Configuration 15

USIM field	Priority	Value	Access Technology Identifier
EF <sub>IMSI</sub>		The HPLMN (MCC+MNC) of the IMSI is set to PLMN1.	
EF <sub>FPLMN</sub>		PLMN2	

Table 6.4.1-16: Void

Table 6.4.1-17: USIM Configuration 17

USIM field	Priority	Value	Access Technology Identifier
EF <sub>IMSI</sub>		The HPLMN (MCC+MNC) of the IMSI is set to PLMN1.	
EF <sub>PLMNwAcT</sub>	1	PLMN1	NG-RAN
EF <sub>UST</sub>		Service n°126 is "available".	
EF <sub>EHPLMN</sub>		PLMN1	
EF <sub>UAC_AIC</sub> and EF <sub>ACC</sub>		For Bits b4 and b8 in byte 1 of EF <sub>ACC</sub> (defined in TS 31.102 clause 4.2.15), only single bit is set to 1. Bits b1 and b2 in byte 1 of EF <sub>UAC_AIC</sub> (defined in TS 31.102 clause 4.4.11.7), and all remaining bits of EF <sub>ACC</sub> and EF <sub>UAC_AIC</sub> are set to 0.	

Table 6.4.1-18: USIM Configuration 18

USIM field	Priority	Value	Access Technology Identifier
EF <sub>IMSI</sub>		The HPLMN (MCC+MNC) of the IMSI is set to PLMN1.	
EF <sub>PLMNwAcT</sub>	1	PLMN2	NG-RAN
EF <sub>HPLMNwAcT</sub>	1	PLMN1	NG-RAN
EF <sub>UST</sub>		Service n°126 (for UAC Access Identities Configuration) defined in TS 31.102 clause 4.2.8 is declared "available"	
EF <sub>UAC_AIC</sub>		Bit b1 in byte 1 defined in TS 31.102 clause 4.4.11.7 is set to 1 and bit b2 in byte 1 is set to 0.	

Table 6.4.1-19: USIM Configuration 19

USIM field	Priority	Value	Access Technology Identifier
EF <sub>IMSI</sub>		The HPLMN (MCC+MNC) of the IMSI is set to PLMN1.	
EF <sub>PLMNwAcT</sub>	1	PLMN2	NG-RAN
EF <sub>HPLMNwAcT</sub>	1	PLMN1	NG-RAN
EF <sub>UST</sub>		Service n°126 (for UAC Access Identities Configuration) defined in TS 31.102 clause 4.2.8 is declared "available"	
EF <sub>UAC_AIC</sub>		Bit b2 in byte 1 defined in TS 31.102 clause 4.4.11.7 is set to 1 and bit b1 in byte 1 is set to 0.	

Table 6.4.1-20: USIM Configuration 20

USIM field	Priority	Value	Access Technology Identifier
EF <sub>ECC</sub>		144, 117	

Table 6.4.1-21: USIM configuration 21

USIM field	Priority	Value	Access Technology Identifier
EF <sub>OPLMNwACT</sub>	1	PLMN14	NG-RAN
	2	PLMN13	NG-RAN
	3	PLMN2	NG-RAN
		Remaining defined entries use default values	
EF <sub>UST</sub>		Service n°127 is not "available"	
EF <sub>HPPLMN</sub>		1(=6 min)	
EF <sub>5GS3GPPLOCI</sub>		FF FF...FF FE 01 (20 Bytes)	
EF <sub>EPSLOCI</sub>		FF FF...FF FE 01 (18 Bytes)	
EF <sub>PSLOCI</sub>		FF FF...FE FF 01 (14 Bytes)	
EF <sub>LOCI</sub>		FF FF...FE FF 01 (11 Bytes)	
Note:	LOCI fields of this USIM configuration may get overwritten upon execution of test cases using a UICC loaded with this USIM configuration. The test operator shall ensure that USIM contents are as per this table before each execution of a test case that requires this USIM configuration.		

Table 6.4.1-22: USIM Configuration 22

USIM field	Priority	Value	Access Technology Identifier
EF <sub>UST</sub>		Service n°19 and n°51 defined in TS 31.102 clause 4.2.8 is declared "service not available"	

Table 6.4.1-23: USIM Configuration 23

USIM field	Priority	Value	Access Technology Identifier
EF <sub>UST</sub>		Service n°4 Service Dialling Numbers (SDN), Service n°99 URI support by UICC, Service n°89 eCall Data and Service n°112 eCall Data over IMS are available	
EF <sub>EST</sub>		Services n°1 Fixed Dialling Numbers (FDN) is disabled	
EF <sub>SDN</sub>		Two entries of SDNs, eCall Test Number (123456) and eCall reconfiguration number (345678)	
EF <sub>SDNURI</sub>		Two entries of SDNs, eCall Test Number (tel:123456) and eCall reconfiguration number (tel:345678)	

Table 6.4.1-24: USIM Configuration 24

USIM field	Priority	Value	Access Technology Identifier
EF <sub>UST</sub>		Service n°2 Fixed Dialling Numbers (FDN), Service n°99 URI support by UICC, Service n°89 eCall Data and Service n°112 eCall Data over IMS are available	
EF <sub>EST</sub>		Service n°1 Fixed Dialling Numbers (FDN) is enabled	
EF <sub>FDN</sub>		Two entries of FDNs, eCall Test Number (123456) and eCall reconfiguration number (345678)	
EF <sub>FDNURI</sub>		Two entries of FDNs, eCall Test Number (tel:123456) and eCall reconfiguration number (tel:345678)	

**Table 6.4.1-25: USIM Configuration 25**

USIM field	Priority	Value	Access Technology Identifier
EF <sub>IMSI</sub>		The HPLMN (MCC+MNC) of the IMSI is set to PLMN15.	

**Table 6.4.1-26: USIM Configuration 26**

USIM field	Priority	Value	Access Technology Identifier
EF <sub>UST</sub>		Service n°2 Fixed Dialling Numbers (FDN), Service n°99 URI support by UICC, Service n°89 eCall Data and Service n°112 eCall Data over IMS are available	
EF <sub>EST</sub>		Service n°1 Fixed Dialling Numbers (FDN) is enabled	
EF <sub>FDN</sub>		Two entries of FDNs, eCall Test Number (123456) and eCall reconfiguration number (345678)	
EF <sub>FDNURI</sub>		Two entries of FDNs, eCall Test Number (tel:123456) and eCall reconfiguration number (tel:345678)	
EF <sub>FPLMN</sub>		The HPLMN (MCC+MNC) of the IMSI is set to PLMN4.	

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## 7 Test environments for RRM tests

### 7.0 General

#### 7.0.1 Single PDU configuration for RRM testing

For RRM test case execution on 5G SA UEs defined in TS 38.533 [18] 7.1 Requirements, IMS shall not be considered and UE's shall be able use RRC (IDLE, CONNECTED) preambles defined in TS 38.508-1 Section 4.5. Before entering RRC\_CONNECTED or RRC\_IDLE state during initial conditions or test procedure, it is recommended that UE is pre-configured with 0 or 1 PDU (non-IMS).

For EN-DC settings the corresponding requirement holds that IMS shall not be considered and it is recommended that UE is pre-configured with 0PDU/0PDN or 1PDU/1 PDN.

### 7.1 Test equipment requirements

#### 7.1.1 Void

#### 7.1.2 Void

#### 7.1.3 Requirements for OTA test method

##### 7.1.3.1 General

**Editor's Note:**

- The UE pre-configuration mentioned below to disable UL Tx diversity schemes shall be voided once a test methodology solution to minimize spectral flatness artefacts between TE and UE over all test points is defined.

For conformance testing using the OTA test environment, the UE under test shall be pre-configured with UL Tx diversity schemes disabled to account for single polarization System Simulator (SS) in the test environment. The UE under test may transmit with dual polarization.

##### 7.1.3.2 RRM baseline setup

The RRM baseline setup shall fulfil the capabilities detailed in this section.

The following permitted test setups are considered for OTA RRM testing:

- DFF test setup as described in Clause B.2.2.
- Simplified DFF test setup as described in Clause B.2.3.
- IFF test setup as described in Clause B.2.4.
- Enhanced IFF test setup based in the IFF test setup described in Clause B.2.6, with the enhancements described in this clause.
- IFF+DFF Hybrid test setup as described in Clause B.7.2, with the enhancements described in this clause.

##### 7.1.3.2.1 General description

TRxPs and Cells:

- Up to 2 NR transmission reception points TRxPs are emulated.

Support of interworking scenarios

- For test scenarios involving both, LTE and NR FR2 carriers, the test setup shall be capable to provide LTE link to the DUT. The emulated LTE cell provides a stable LTE signal without precise propagation modelling or path loss control between it and the DUT. No performance verification for and relative to LTE carriers is supported.
- For test scenarios involving both, NR FR1 and NR FR2 carriers, the test setup shall be capable to provide NR FR1 link to the DUT. The NR FR1 link has a stable and noise-free signal without precise path loss or polarization control. No performance verification for and relative to NR FR1 carriers is supported.

Antennas, polarization, simultaneously active AoAs:

- $N$  dual-polarized antennas transmitting the signals from the emulated gNB sources to the DUT.
- The antennas transmit into the test zone in such a way that signal polarization does not prevent the DUT receiving a consistent, predictable power level.
- $N \geq N_{\text{MAX\_AoAs}}$ , where  $N_{\text{MAX\_AoAs}}$  is the maximum number of simultaneously active (emulating signal) angles of arrival AoAs. The  $N_{\text{MAX\_AoAs}}$  for the different permitted test methods is:
  - For UE RRM baseline measurement setup based on DFF, the supported  $N_{\text{MAX\_AoAs}} = 2$ .
  - For UE RRM baseline measurement setup based on simplified DFF, the supported  $N_{\text{MAX\_AoAs}} = 1$ .
  - For UE RRM baseline measurement setup based on IFF, the supported  $N_{\text{MAX\_AoAs}} = 1$ .
  - For UE RRM baseline measurement setup based on enhanced IFF, the supported  $N_{\text{MAX\_AoAs}} = 2$ .
  - For UE RRM baseline measurement setup based on IFF+DFF, the supported  $N_{\text{MAX\_AoAs}} = 2$ .

Angular Relationship:

- A positioning system such that an angular relationship with two axes of freedom is provided between the DUT and the test system antennas (or the setup should provide equivalent functionality).
- For  $N_{\text{MAX\_AoAs}} = 2$  the setup shall enable following relative angular relationships between the  $N_{\text{MAX\_AoAs}}$  simultaneously active AoAs: 30°, 60°, 90°, 120° and 150°.
- For single active probe scenarios, in case that step change of AoA is required, the setup shall enable following relative angular change between initial and target AoA: 30°, 60°, 90°, 120° and 150°.

Wanted and noise (AWGN) signals can be transmitted from one or both active probes. Test description will define the exact signal/noise/SNR/SINR level per TRxP at the reference point.

Multiple DL transmission antenna ports:

- In case of multiple DL transmission antenna ports are required for RRM testing, the different antenna ports are mapped to different polarizations.

Measurement Uncertainty:

- The threshold MU for the equivalence framework for RRM will be based on direct far field (DFF) test method for  $D \leq 5$  cm and on indirect far field (IFF) test method for  $D > 5$  cm. If the MTSU for the IFF test method for  $D \leq 5$  cm is finalized before DFF, the IFF MTSU shall be used as provisional threshold MU until DFF is completed.

#### 7.1.3.2.2 Applicability criteria

The applicability criteria for the RRM measurement setup based on DFF is described in B.2.2.1.

The applicability criteria for the RRM measurement setup based on simplified DFF is described in B.2.3.1.

The applicability criteria for the RRM measurement setup based on IFF is described in B.2.4.1.

The applicability criteria for the RRM measurement setup based on enhanced IFF is described in B.2.6.1:

The applicability criteria for the RRM measurement setup based on IFF+DFF follows DFF as described in B.2.7.1:

### 7.1.3.2.3 Measurement distance and quiet zone

For RRM baseline measurement setup based on DFF:

- The measurement distance defined for the DFF UE RF test method described in B.2.2.4 applies.
- A DFF measurement setup has the centre of the Quiet Zone (QZ) located at the centre of the rotational axes (of DUT and measurement antenna). For the RRM measurement baseline setup based on DFF, the vertices of the N probes have to be aligned to the resulting centre of the QZ. The centre of the QZ is taken as the reference point for MU definition for each probe. The same QZ size as for DFF UE RF test method described in B.2.2.2 applies.

For RRM baseline measurement setup based on simplified DFF:

- The measurement distance defined for the simplified DFF UE RF test method described in B.2.3.4 applies.
- The same QZ size and definition as for simplified DFF UE RF test method described in B.2.3.2 applies.

For RRM baseline measurement setup based on IFF:

- The measurement distance defined for the IFF UE RF test method described in B.2.4.4 applies.
- The Quiet Zone definition for the IFF UE RF test method described in B.2.4.2 applies.

For RRM baseline measurement setup based on enhanced IFF:

- The measurement distance defined for the IFF UE RF test method described in B.2.6.4 applies.
- An IFF measurement setup has the centre of the Quiet Zone (QZ) located at the centre of the rotational axes (of DUT). For the RRM measurement baseline setup based on IFF, the reflectors have to be aligned to transmit a plane wave to the resulting centre of the QZ. The centre of the QZ is taken as the reference point for MU definition for each reflector. The QZ is a sphere of radius R. The size of the QZ defined in B.2.6.2 applies.

For RRM baseline measurement setup based on IFF+DFF:

- For IFF TRxPs, the measurement distance defined for the IFF UE RF test method described in B.2.4.4 applies.
- For DFF TRxPs, the measurement distance defined for the DFF UE RF test method described in B.2.2.4 applies.
- An IFF+DFF measurement setup has the centre of the Quiet Zone (QZ) located at the centre of the rotational axes (of DUT). For the RRM measurement baseline setup based on IFF+DFF, IFF reflectors have to be aligned to transmit a plane wave to the resulting centre of the QZ, and the vertices of the DFF probes have to be aligned to the resulting centre of the QZ. The centre of the QZ is taken as the reference point for MU definition for each reflector or probe. The QZ is a sphere of radius R. The size of the QZ is defined in B.2.7.2.

### 7.1.3.2.4 Quality of the quiet zone

For RRM, the quality of the quiet zone validation defined in Annex O of TS 38.521-2 [15] needs to assess only the single-directional EIRP and EIS metrics. For measurement setups with multiple probes, the QoQZ procedure needs to be performed with all probes present and in the conditions used for RRM testing.

The quality of the quiet zone for the RRM measurement setup based on DFF is described in B.2.2.3. The QoQZ validation needs to be performed only with the reference probe P0.

The quality of the quiet zone for the RRM measurement setup based on simplified DFF is described in B.2.3.3.

The quality of the quiet zone for the RRM measurement setup based on IFF is described in B.2.4.3.

The quality of the quiet zone for the RRM measurement setup based on enhanced IFF is described in B.2.6.3. The QoQZ validation needs to be performed only with the reference reflector, P0, if same sized IFF reflectors are used..

The quality of the quiet zone for the RRM measurement setup based on IFF+DFF is described in B.2.7.3. The QoQZ validation needs to be performed only with the one probe among all DFF probes and one probe among all IFF probes.



## 7.2 Reference test conditions

### 7.2.1 Signal levels

7.2.1.1 Void

7.2.1.2 Void

### 7.2.2 Physical layer parameters

#### 7.2.2.1 Downlink physical layer parameters

As defined in clause 4.3.6 with the following exceptions:

**Table 7.2.2.1-1: Physical layer parameters for DCI format 1\_1**

Derivation Path: Table 4.3.6.1.2.2-1			
Parameter	Value	Value in binary	Condition
PUCCH resource indicator	$PUCCH-ResourceId[1] = 0$ in $pucch-ResourceSetID[1]$ as defined in Table 4.6.3-112 (Mapping as per Table 9.2.3-2 in TS 38.213 [22])	"000"	
PDSCH-to-HARQ_feedback timing indicator	corresponding to K1 slots as per Table 9.2.3-1 in TS 38.213 [22] and dl-DataToUL-ACK in Table 4.6.3-112  For 120KHz SCS K1 = 4 if $\text{mod}(i,5) = 0$ K1 = 3 if $\text{mod}(i,5) = 1$ K1 = 7 if $\text{mod}(i,5) = 2$ where i is slot index per frame; $i = \{0, \dots, 79\}$	-	FR2
PDSCH-to-HARQ_feedback timing indicator	corresponding to K1 slots as per Table 9.2.3-1 in TS 38.213 [22] and dl-DataToUL-ACK in Table 4.6.3-112 K1 = 6 if $\text{mod}(i,10) = 8$ K1 = 5 if $\text{mod}(i,10) = 0$ K1 = 5 if $\text{mod}(i,10) = 1$ K1 = 5 if $\text{mod}(i,10) = 2$ K1 = 5 if $\text{mod}(i,10) = 9$ where i is slot index per frame; $i = \{0, \dots, 19\}$		TDDConf.2.1

Condition	Explanation
TDDConf.2.1	TDD UL/DL configuration for SCS=30kHz

### 7.2.3 Default test frequencies

#### 7.2.3.1 Default test frequencies FR1 NR operating bands

For FR1 NR operating bands the test frequencies for RRM testing are specified in clause 4.3.1.1.

#### 7.2.3.2 Default test frequencies FR2 operating bands

7.2.3.2.1 Reference test frequencies for NR operating band n257

**Table 7.2.3.2.1-1: Test frequencies for NR operating band n257 (SCS 120 kHz,  $\Delta F_{\text{Raster}}$  120 kHz, SSB SCS=120kHz, kSSB=0 and Offset(RBs)=0)**

CBW [MHz]	carrierBandwidth [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequencyPointA [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS [kHz]	GS CN	absoluteFrequencySSB [ARFCN]	$k_{\text{SSB}}$	Offset Carrier CORESET#0 [RBs] Note 2	CORESET#0 Index (Offset [RBs]) Note 1	offsetToPointA (SIB1) [PRBs] Note 1
100	66	Down link & Uplink	Mid	28015.68	20794.27	27968.16	2078635	0	120	224.72	2078875	0	0	0 (0)	0
100	66	Down link & Uplink	Adjacent inter-frequency cell	28119.36	20811.55	28071.84	2080363	0	120	224.78	2080603	0	0	0 (0)	0

Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-8 in TS 38.213 [22]. The value of CORESET#0 Index is signalled controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.

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

Table 7.2.3.2.1-2: Test frequencies for NR operating band n257 (SCS 120 kHz,  $\Delta F_{\text{Raster}}$  120 kHz, SSB SCS=240kHz,  $k_{\text{SSB}}=0$  and Offset(RBs)=0)

CBW [MHz]	carrierBandwidth [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absoluteFrequencyPointA [ARFCN]	offsetToCarrier [Carrier PRBs]	SS block SCS [kHz]	GS CN	absoluteFrequencySSB [ARFCN]	$k_{\text{SSB}}$	Offset Carrier CORESET#0 [RBs] Note 2	CORESET#0 Index (Offset [RBs]) Note 1	offsetToPointA (SIB1) [PRBs] Note 1
100	66	Down link & Uplink	Mid	28001.28	2079187	27953.76	2078395	0	240	22472	2078875	0	0	2 (0)	0
100	66	Down link & Uplink	Adjacent inter-frequency cell	28104.96	2080915	28057.44	2080123	0	240	22478	2080603	0	0	0 (0)	0

Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-10 in TS 38.213 [22]. The value of CORESET#0 Index is signalled controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.

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

## 7.2.3.2.2 Reference test frequencies for NR operating band n258

Table 7.2.3.2.2-1: Test frequencies for NR operating band n258 (SCS 120 kHz,  $\Delta F_{\text{Raster}}$  120 kHz SSB SCS=120kHz, kSSB=0 and Offset(RBs)=0)

CBW [MHz]	carrier Bandwidth [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absolute FrequencyPoint A [ARFCN]	offsetTo Carrier [Carrier PRBs]	SS block SCS [kHz]	GSCN	absolute FrequencySSB [ARFCN]	$k_{\text{SSB}}$	Offset Carrier CORESET#0 [RBs] Note 2	CORESET#0 Index (Offset [RBs]) Note 1	offsetTo PointA (SIB1) [PRBs] Note 1
100	66	Downlink & Uplink	Mid	25890.24	2044003	25842.72	2043211	0	120	22349	2043451	0	0	0 (0)	0
100	66	Downlink & Uplink	Adjacent inter-frequency cell	25993.92	2045731	25946.4	2044939	0	120	22355	2045179	0	0	0 (0)	0

Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-8 in TS 38.213 [22]. The value of CORESET#0 Index is signalled controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.

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

Table 7.2.3.2.2-2: Test frequencies for NR operating band n258 (SCS 120 kHz,  $\Delta F_{\text{Raster}}$  120 kHz, SSB SCS=240kHz,  $k_{\text{SSB}}=0$  and Offset(RBs)=0)

CBW [MHz]	carrier Bandwidth [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absolute FrequencyPoint A [ARFCN]	offsetTo Carrier [Carrier PRBs]	SS block SCS [kHz]	GSCN	absolute FrequencySSB [ARFCN]	$k_{\text{SSB}}$	Offset Carrier CORESET#0 [RBs] Note 2	CORESET#0 Index (Offset [RBs]) Note 1	offsetTo PointA (SIB1) [PRBs] Note 1
100	66	Downlink & Uplink	Mid	25893.12	2044051	25845.6	2043259	0	240	22350	2043739	0	0	2 (0)	0
100	66	Downlink & Uplink	Adjacent inter-frequency cell	25996.8	2045779	25949.28	2044987	0	240	22356	2045467	0	0	0 (0)	0
<p>Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-10 in TS 38.213 [22]. The value of CORESET#0 Index is signalled controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.</p> <p>Note 2: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter <math>\Delta F_{\text{OffsetCORESET-0-Carrier}}</math> in Annex C expressed in number of common RBs.</p>															

## 7.2.3.2.3 Reference test frequencies for NR operating band n259

Table 7.2.3.2.3-1: Test frequencies for NR operating band n259 (SCS 120 kHz,  $\Delta F_{\text{Raster}}$  120 kHz SSB SCS=120kHz, kSSB=0 and Offset(RBs)=0)

CBW [MHz]	carrier Bandwidth [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absolute FrequencyPoint A [ARFCN]	offsetTo Carrier [Carrier PRBs]	SS block SCS [kHz]	GSCN	absolute FrequencySSB [ARFCN]	$k_{\text{SSB}}$	Offset Carrier CORESET#0 [RBs] Note 2	CORE SET#0 Index (Offset [RBs]) Note 1	offsetTo PointA (SIB1) [PRBs] Note 1
100	66	Downlink & Uplink	Mid	41511.36	2304355	41463.84	2303563	0	120	23253	2303803	0	0	0 (0)	0
100	66	Downlink & Uplink	Adjacent inter-frequency cell	41615.04	2306083	41567.52	2305291	0	120	23259	2305531	0	0	0 (0)	0

Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-8 in TS 38.213 [22]. The value of CORESET#0 Index is signalled controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.

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

Table 7.2.3.2.3-2: Test frequencies for NR operating band n259 (SCS 120 kHz,  $\Delta F_{\text{Raster}}$  120 kHz, SSB SCS=240kHz,  $k_{\text{SSB}}=0$  and Offset(RBs)=0)

CBW [MHz]	carrier Bandwidth [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absolute FrequencyPoint A [ARFCN]	offsetTo Carrier [Carrier PRBs]	SS block SCS [kHz]	GSCN	absolute FrequencySSB [ARFCN]	$k_{\text{SSB}}$	Offset Carrier CORESET#0 [RBs] Note 2	CORESET#0 Index (Offset [RBs]) Note 1	offsetTo PointA (SIB1) [PRBs] Note 1
100	66	Downlink & Uplink	Mid	41514.24	2304403	41466.72	2303611	0	240	23254	2304091	0	0	2 (0)	0
100	66	Downlink & Uplink	Adjacent inter-frequency cell	41617.92	2306131	41570.4	2305339	0	240	23260	2305819	0	0	0 (0)	0
<p>Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-10 in TS 38.213 [22]. The value of CORESET#0 Index is signalled controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.</p> <p>Note 2: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter <math>\Delta F_{\text{OffsetCORESET-0-Carrier}}</math> in Annex C expressed in number of common RBs.</p>															

## 7.2.3.2.4 Reference test frequencies for NR operating band n260

Table 7.2.3.2.4-1: Test frequencies for NR operating band n260 (SCS 120 kHz,  $\Delta F_{\text{Raster}}$  120 kHz SSB SCS=120kHz, kSSB=0 and Offset(RBs)=0)

CBW [MHz]	carrier Bandwidth [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absolute FrequencyPoint A [ARFCN]	offsetTo Carrier [Carrier PRBs]	SS block SCS [kHz]	GSCN	absolute FrequencySSB [ARFCN]	$k_{\text{SSB}}$	Offset Carrier CORESET#0 [RBs] Note 2	CORESET#0 Index (Offset [RBs]) Note 1	offsetTo PointA (SIB1) [PRBs] Note 1
100	66	Downlink & Uplink	Mid	38504.64	2254243	38457.12	2253451	0	120	23079	2253691	0	0	0 (0)	0
100	66	Downlink & Uplink	Adjacent inter-frequency cell	38608.32	2255971	38560.8	2255179	0	120	23085	2255419	0	0	0 (0)	0

Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-8 in TS 38.213 [22]. The value of CORESET#0 Index is signalled controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.

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



Table 7.2.3.2.4-2: Test frequencies for NR operating band n260 (SCS 120 kHz,  $\Delta F_{\text{Raster}}$  120 kHz, SSB SCS=240kHz,  $k_{\text{SSB}}=0$  and Offset(RBs)=0)

CBW [MHz]	carrier Bandwidth [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absolute FrequencyPoint A [ARFCN]	offsetTo Carrier [Carrier PRBs]	SS block SCS [kHz]	GSCN	absolute FrequencySSB [ARFCN]	$k_{\text{SSB}}$	Offset Carrier CORE SET#0 [RBs] Note 2	CORE SET#0 Index (Offset [RBs]) Note 1	offsetTo PointA (SIB1) [PRBs] Note 1
100	66	Downlink & Uplink	Mid	38507.52	2254291	38460	2253499	0	240	23080	2253979	0	0	2 (0)	0
100	66	Downlink & Uplink	Adjacent inter-frequency cell	38611.2	2256019	38563.68	2255227	0	240	23086	2255707	0	0	0 (0)	0
<p>Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-10 in TS 38.213 [22]. The value of CORESET#0 Index is signalled controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.</p> <p>Note 2: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter <math>\Delta F_{\text{OffsetCORESET-0-Carrier}}</math> in Annex C expressed in number of common RBs.</p>															

## 7.2.3.2.5 Reference test frequencies for NR operating band n261

Table 7.2.3.2.5-1: Test frequencies for NR operating band n261 (SCS 120 kHz,  $\Delta F_{\text{Raster}}$  120 kHz SSB SCS=120kHz, kSSB=0 and Offset(RBs)=0)

CBW [MHz]	carrier Bandwidth [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absolute FrequencyPoint A [ARFCN]	offsetTo Carrier [Carrier PRBs]	SS block SCS [kHz]	GSCN	absolute FrequencySSB [ARFCN]	$k_{\text{SSB}}$	Offset Carrier CORESET#0 [RBs] Note 2	CORE SET#0 Index (Offset [RBs]) Note 1	offsetTo PointA (SIB1) [PRBs] Note 1
100	66	Downlink & Uplink	Mid	27929.28	2077987	27881.76	2077195	0	120	22467	2077435	0	0	0 (0)	0
100	66	Downlink & Uplink	Adjacent inter-frequency cell	28032.96	2079715	27985.44	2078923	0	120	22473	2079163	0	0	0 (0)	0

Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-8 in TS 38.213 [22]. The value of CORESET#0 Index is signalled controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.

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

Table 7.2.3.2.5-2: Test frequencies for NR operating band n261 (SCS 120 kHz,  $\Delta F_{\text{Raster}}$  120 kHz, SSB SCS=240kHz,  $k_{\text{SSB}}=0$  and Offset(RBs)=0)

CBW [MHz]	carrier Bandwidth [PRBs]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	point A [MHz]	absolute FrequencyPoint A [ARFCN]	offsetTo Carrier [Carrier PRBs]	SS block SCS [kHz]	GSCN	absolute FrequencySSB [ARFCN]	$k_{\text{SSB}}$	Offset Carrier CORE SET#0 [RBs] Note 2	CORE SET#0 Index (Offset [RBs]) Note 1	offsetTo PointA (SIB1) [PRBs] Note 1
100	66	Downlink & Uplink	Mid	27932.16	2078035	27884.64	2077243	0	240	22468	2077723	0	0	2 (0)	0
100	66	Downlink & Uplink	Adjacent inter-frequency cell	28035.84	2079763	27988.32	2078971	0	240	22474	2079451	0	0	0 (0)	0
<p>Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-10 in TS 38.213 [22]. The value of CORESET#0 Index is signalled controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.</p> <p>Note 2: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter <math>\Delta F_{\text{OffsetCORESET-0-Carrier}}</math> in Annex C expressed in number of common RBs.</p>															

## 7.3 Default NG-RAN RRC message and information elements contents for RRM

### 7.3.0 General definitions

This section defines general concepts and conditions used in the RRM message contents in clause 7.3:

- CSI-RS for Tracking, CSI reporting and beam management

**Table 7.3.0-1: Definitions of CSI-RS for Tracking, CSI reporting and beam management**

Type	Short version	Explanation
CSI-RS for tracking	TRS	Corresponds to TRS.X.Y FDD/TDD RMCs in TS 38.533 [18]
CSI-RS for BM	BM	Corresponds to CSI-RS.X.2 FDD/TDD RMCs in TS 38.533 [18]
CSI-RS for CSI reporting	CSI	Corresponds to CSI-RS.X.1 FDD/TDD RMCs in TS 38.533 [18]
CSI-RS for IM	CSI-IM	CSI-IM resources for CSI reporting. Needed when CSI-RS.X.1 FDD/TDD RMCs are configured.

*Editor's Note: The message contents for CSI-RS.X.3/4 FDD/TDD RMCs in TS 38.533 [18] are not yet defined.*

### 7.3.1 Radio resource control information elements for RRM

As defined in clause 4.6.3 with the following exceptions:

*TDD-UL-DL-ConfigCommon*

**Table 7.3.1-1: TDD-UL-DL-ConfigCommon**

Derivation Path: Table 4.6.3-192			
Information Element	Value/remark	Comment	Condition
TDD-UL-DL-ConfigCommon ::= SEQUENCE {			
referenceSubcarrierSpacing	SubcarrierSpacing		
pattern1 SEQUENCE {			
dl-UL-TransmissionPeriodicity	ms0p625		TDDConf.3.1
nrofDownlinkSlots	3		TDDConf.2.1, TDDConf.3.1
	1		TDDConf.1.1
nrofDownlinkSymbols	10		TDDConf.1.1, TDDConf.3.1
	6		TDDConf.2.1
nrofUplinkSlots	2		TDDConf.1.1
	1		TDDConf.3.1
	4		TDDConf.2.1
nrofUplinkSymbols	4		TDDConf.2.1
	2		TDDConf.1.1, TDDConf.3.1
dl-UL-TransmissionPeriodicity-v1530	Not present ms4		TDDConf.1.1, TDDConf.2.1
}			
pattern2	Not present		
pattern2 SEQUENCE {			TDDConf.1.1, TDDConf.2.1
dl-UL-TransmissionPeriodicity	ms1		TDDConf.1.1, TDDConf.2.1
nrofDownlinkSlots	1		TDDConf.1.1
	2		TDDConf.2.1
nrofDownlinkSymbols	0		TDDConf.1.1, TDDConf.2.1
nrofUplinkSlots	0		TDDConf.1.1, TDDConf.2.1
nrofUplinkSymbols	0		TDDConf.1.1, TDDConf.2.1
}			
}			

Condition	Explanation
TDDConf.1.1	TDD UL/DL configuration for SCS=15kHz
TDDConf.2.1	TDD UL/DL configuration for SCS=30kHz
TDDConf.3.1	TDD UL/DL configuration for SCS=120kHz

*FilterCoefficient*

**Table 7.3.1-2: FilterCoefficient**

Derivation Path: Table 4.6.3-57			
Information Element	Value/remark	Comment	Condition
FilterCoefficient	fc0	L3 filtering is not used	

SSB-MTC

Table 7.3.1-3: SSB-MTC

Derivation Path: Table 4.6.3-185			
Information Element	Value/remark	Comment	Condition
SSB-MTC ::= SEQUENCE {			
periodicityAndOffset CHOICE {			
sf20	0		SMTC.1, SMTC.2
	10		SMTC.4, SMTC.5
	17		SMTC.6
sf160	0		SMTC.3
}			
duration	sf1		SMTC.1, SMTC.3, SMTC.4
	sf5		SMTC.2, SMTC.5 SMTC.6
}			

Condition	Explanation
SMTC.n	SMTC pattern n as defined in 38.533 Annex A.4

SubcarrierSpacing

Table 7.3.1-3a: SubcarrierSpacing

Derivation Path: Table 4.6.3-188			
Information Element	Value/remark	Comment	Condition
ssbSubcarrierSpacing	kHz15		SSB.1 FR1, SSB.3 FR1 or SSB.5 FR1
	kHz30		SSB.2 FR1, SSB.4 FR1 or SSB.6 FR1
	kHz120		SSB.1 FR2, SSB.3 FR2, SSB.5 FR2 or SSB.7 FR2
	kHz240		SSB.2 FR2, SSB.4 FR2, SSB.6 FR2 or SSB.8 FR2

Condition	Explanation
SSB.n FR1	SSB RMC n for FR1 as defined in 38.533 Annex A.3.1
SSB.n FR2	SSB RMC n for FR2 as defined in 38.533 Annex A.3.2

ServingCellConfigCommon

Table 7.3.1-4: ServingCellConfigCommon

Derivation Path: Table 4.6.3-168			
Information Element	Value/remark	Comment	Condition
ServingCellConfigCommon ::= SEQUENCE {			
ssb-PositionsInBurst CHOICE {			
shortBitmap	1000	1 SS Block in low FR1 frequencies	LOW_FREQ
	1100	2 SS Blocks in low FR1 frequencies	2SSB AND LOW_FREQ
mediumBitmap	10000000	1 SS Block in high FR1 frequencies	HIGH_FREQ
	11000000	2 SS Blocks in high FR1 frequencies	2SSB AND HIGH_FREQ
longBitmap	10000000000000000000000000000000	1 SS Block in FR2	FR2
	11000000000000000000000000000000	2 SS Blocks in FR2	2SSB AND FR2
}			
ssb-periodicityServingCell	ms20		
ssbSubcarrierSpacing	kHz15		
	kHz30		SCS30kHz
	kHz120		FR2
}	kHz240		FR2 AND SCS240kHz

Condition	Explanation
LOW_FREQ	Frequency <= 2.4 GHz for TDD or Frequency <= 3 GHz for FDD
HIGH_FREQ	FR1 and (Frequency > 2.4 GHz for TDD or Frequency > 3 GHz for FDD or CASE_C)
2SSB	The SSB pattern as defined in TS 38.533 [18] Annex A.3.1 contain 2 SSBs within a burst
SCS30kHz	The SSB pattern as defined in TS 38.533 [18] Annex A.3.1 is for 30 kHz SCS
SCS240kHz	The SSB pattern as defined in TS 38.533 [18] Annex A.3.1 is for 240 kHz SCS

ServingCellConfigCommonSIB

Table 7.3.1-5: ServingCellConfigCommonSIB-RRM

Derivation Path: Table 4.6.3-169			
Information Element	Value/remark	Comment	Condition
ServingCellConfigCommonSIB ::= SEQUENCE {			
ssb-PositionsInBurst SEQUENCE {			
inOneGroup	'1000 0000'B	When carrier frequency <= 3 GHz for FDD or <= 2.4 GHz for TDD, only the 4 leftmost bits are valid;	2SSB
	'1100 0000'B		
groupPresence	Not present		
	'1000 0000'B		FR2
}			
}			

Condition	Explanation
FR2	Frequency range 2
2SSB	For configuration with 2 SS Blocks

CSI-MeasConfig

Table 7.3.1-6: CSI-MeasConfig for RRM

Derivation Path: Table 4.6.3-38			
Information Element	Value/remark	Comment	Condition
CSI-MeasConfig ::= SEQUENCE {			
nzp-CSI-RS-ResourceToAddModList SEQUENCE (SIZE (1..maxNrofNzp-CSI-RS-Resources)) OF Nzp-CSI-RS-Resource {	$n_1+n_2+n_3+n_4+n_5$ entries	<p><math>n_1=1</math> if CSI-RS for CSI is configured in test case, <math>n_1=0</math> otherwise;</p> <p><math>n_2=0</math> if CSI-RS for BM is not configured in the test case. If CSI-RS for BM is configured in the test case, <math>n_2 = 2</math> if 2SSB, <math>n_2 = 1</math> otherwise</p> <p><math>n_3=4</math> if TRS is configured in test case, <math>n_3=0</math> otherwise;</p> <p><math>n_4=4</math> if second resource set of TRS is configured in test case, <math>n_4=0</math> otherwise;</p> <p><math>n_5=2</math> if aperiodic CSI-RS for BM is configured in test case, <math>n_5=0</math> otherwise;</p>	
Nzp-CSI-RS-Resource[k, k=1.. $n_1$ ]	Nzp-CSI-RS-Resource for CSI	entry 1	$n_1>0$
Nzp-CSI-RS-Resource[k, k= $n_1+1$ .. $n_1+n_2$ ]	Nzp-CSI-RS-Resource for BM (k- $n_1-1$ )	entry ...	$n_2>0$
Nzp-CSI-RS-Resource[k, k= $n_1+n_2+1$ .. $n_1+n_2+n_3$ ]	Nzp-CSI-RS-Resource for TRS (k- $n_1-n_2$ )	entry ...	$n_3>0$
Nzp-CSI-RS-Resource[k, k= $n_1+n_2+n_3+1$ .. $n_1+n_2+n_3+n_4$ ]	Nzp-CSI-RS-Resource for TRS (k- $n_1-n_2-n_3$ ) with condition SECOND_SET	entry ...	$n_4>0$
Nzp-CSI-RS-Resource[k, k= $n_1+n_2+n_3+n_4+1$ .. $n_1+n_2+n_3+n_4+n_5$ ]	Nzp-CSI-RS-Resource for BM (k- $n_1-n_2-n_3-n_4$ ) with condition APERIODIC	entry ...	$n_5>0$
}			
nzp-CSI-RS-ResourceSetToAddModList SEQUENCE (SIZE (1..maxNrofNzp-CSI-RS-ResourceSets)) OF Nzp-CSI-RS-ResourceSet {	$m_1+m_2+m_3+m_4+m_5$ entries	$m_i=1$ if $n_i>0$ , $m_i=0$ otherwise	
Nzp-CSI-RS-ResourceSet[k, k=1.. $m_1$ ]	Nzp-CSI-RS-ResourceSet for CSI	entry 1	$n_1>0$
Nzp-CSI-RS-ResourceSet[k, k= $m_1+1$ .. $m_1+m_2$ ]	Nzp-CSI-RS-ResourceSet for BM	entry ...	$n_2>0$
Nzp-CSI-RS-ResourceSet[k, k= $m_1+m_2+1$ .. $m_1+m_2+m_3$ ]	Nzp-CSI-RS-ResourceSet for TRS	entry ...	$n_3>0$



NZP-CSI-RS-ResourceSet[k, k= m <sub>1</sub> +m <sub>2</sub> +m <sub>3</sub> +1.. m <sub>1</sub> +m <sub>2</sub> +m <sub>3</sub> +m <sub>4</sub> ]	NZP-CSI-RS-ResourceSet for TRS with condition SECOND_SET	entry ...	n <sub>4</sub> >0
NZP-CSI-RS-ResourceSet[k, k= m <sub>1</sub> +m <sub>2</sub> +m <sub>3</sub> +m <sub>4</sub> +1.. m <sub>1</sub> +m <sub>2</sub> +m <sub>3</sub> +m <sub>4</sub> +m <sub>5</sub> ]	NZP-CSI-RS-ResourceSet for BM with condition APERIODIC	entry ...	n <sub>5</sub> >0
}			
csi-IM-ResourceToAddModList SEQUENCE (SIZE (1..maxNrofCSI-IM-Resources)) OF CSI-IM-Resource {	1 entry		n <sub>1</sub> >0
CSI-IM-Resource[1]	CSI-IM-Resource-RRM	entry 1	
}			
csi-IM-ResourceToAddModList	Not present		n <sub>1</sub> =0
csi-IM-ResourceSetToAddModList SEQUENCE (SIZE (1..maxNrofCSI-IM-ResourceSets)) OF CSI-IM-ResourceSet {	1 entry		n <sub>1</sub> >0
CSI-IM-ResourceSet[1]	CSI-IM-ResourceSet-RRM	entry 1	
}			
csi-IM-ResourceSetToAddModList	Not present		n <sub>1</sub> =0
csi-SSB-ResourceSetToAddModList SEQUENCE (SIZE (1..maxNrofCSI-SSB-ResourceSets)) OF CSI-SSB-ResourceSet {			
CSI-SSB-ResourceSet[1]	CSI-SSB-ResourceSet-RRM	entry 1	
}			
csi-ResourceConfigToAddModList SEQUENCE (SIZE (1..maxNrofCSI-ResourceConfigurations)) OF CSI-ResourceConfig {	p <sub>1</sub> +m <sub>2</sub> +m <sub>3</sub> +m <sub>5</sub> entries	p <sub>1</sub> =m <sub>1</sub> +1 if n <sub>1</sub> >0, p <sub>1</sub> =0 otherwise.	
CSI-ResourceConfig[k, k=1..m <sub>1</sub> ]	CSI-ResourceConfig for CSI	entry 1	n <sub>1</sub> >0
CSI-ResourceConfig[k, k=p <sub>1</sub> ]	CSI-ResourceConfig for CSI-IM	entry ...	n <sub>1</sub> >0
CSI-ResourceConfig[k, k=p <sub>1</sub> +1.. p <sub>1</sub> +m <sub>2</sub> ]	CSI-ResourceConfig for BM	entry ...	n <sub>2</sub> >0
CSI-ResourceConfig[k, k= p <sub>1</sub> +m <sub>2</sub> +1.. p <sub>1</sub> +m <sub>2</sub> +m <sub>3</sub> ]	CSI-ResourceConfig for TRS	entry ...	n <sub>3</sub> >0 and n <sub>4</sub> =0
	CSI-ResourceConfig for TRS with condition SECOND_SET		n <sub>4</sub> >0
CSI-ResourceConfig[k, k= p <sub>1</sub> +m <sub>2</sub> +m <sub>3</sub> +1.. p <sub>1</sub> +m <sub>2</sub> +m <sub>3</sub> +m <sub>5</sub> ]	CSI-ResourceConfig for BM with condition APERIODIC	entry ...	n <sub>5</sub> >0
}			
csi-ReportConfigToAddModList SEQUENCE (SIZE (1..maxNrofCSI-ReportConfigurations)) OF CSI-ReportConfig {	m <sub>1</sub> +m <sub>2</sub> +m <sub>5</sub> +s <sub>1</sub> entries	s <sub>1</sub> = 1 if: - this CSI-MeasConfig is configured on NR SpCell, and, - CSI-RS for CSI is configured on SCell in TC, and, - SCell is not a PUCCH-SCell  Otherwise s <sub>1</sub> = 0.	
CSI-ReportConfig[k, k=1..m <sub>1</sub> ]	CSI-ReportConfig for CSI	entry 1	n <sub>1</sub> >0
CSI-ReportConfig[k, k=m <sub>1</sub> +1.. m <sub>1</sub> +m <sub>2</sub> ]	CSI-ReportConfig for BM	entry ...	n <sub>2</sub> >0
CSI-ReportConfig[k, k=m <sub>1</sub> +m <sub>2</sub> +1.. m <sub>1</sub> +m <sub>2</sub> +m <sub>5</sub> ]	CSI-ReportConfig for BM with condition APERIODIC	entry ...	n <sub>5</sub> >0
CSI-ReportConfig[k, k=m <sub>1</sub> +m <sub>2</sub> +m <sub>5</sub> +1.. m <sub>1</sub> +m <sub>2</sub> +m <sub>5</sub> +s <sub>1</sub> +1]	CSI-ReportConfig for CSI with condition SCELL_CSI_ON_SPCELL	entry ...	s <sub>1</sub> >0
}			

reportTriggerSize	Not present		
	1		n <sub>5</sub> >0
aperiodicTriggerStateList CHOICE {	Not present		
setup	CSI- AperiodicTriggerStateList		n <sub>5</sub> >0
}			
}			

Condition	Explanation
2SSB	For configuration with 2 SS Blocks

– *NZP-CSI-RS-Resource for TRS*

**Table 7.3.1-7: NZP-CSI-RS-Resource for TRS(l<sub>d</sub>)**

Derivation Path: Table 4.6.3-45			
Information Element	Value/remark	Comment	Condition
NZP-CSI-RS-Resource ::= SEQUENCE {			
NZP-CSI-RS-ResourceId	NZP-CSI-RS-ResourceId for TRS(l <sub>d</sub> )		
	NZP-CSI-RS-ResourceId for TRS(l <sub>d</sub> ) with Condition SECOND_SET		SECOND_S ET
CSI-RS-ResourceMapping	CSI-RS- ResourceMapping for TRS(l <sub>d</sub> )		
	CSI-RS- ResourceMapping for TRS(l <sub>d</sub> ) with condition SECOND_SET		SECOND_S ET
powerControlOffset	0		
powerControlOffsetSS	db0		
scramblingID	PhysCellId	PCI of the cell sending the TRS	
periodicityAndOffset	CSI- ResourcePeriodicityAnd Offset for TRS(l <sub>d</sub> )		
qcl-InfoPeriodicCSI-RS	TCI-StateId-RRM(0)		
	TCI-StateId-RRM(1)		SECOND_S ET
}			

Condition	Explanation
SECOND_SET	For resource belong to the second resource set for TRS, only applies to FR2 test

– *NZP-CSI-RS-Resource for CSI*

**Table 7.3.1-7A: NZP-CSI-RS-Resource for CSI**

Derivation Path: Table 4.6.3-45			
Information Element	Value/remark	Comment	Condition
NZP-CSI-RS-Resource ::= SEQUENCE {			
nzp-CSI-RS-ResourceId	NZP-CSI-RS-ResourceId for CSI		
resourceMapping	CSI-RS-ResourceMapping for CSI		
powerControlOffset	0		
powerControlOffsetSS	db0		
scramblingID	0		
periodicityAndOffset	CSI-ResourcePeriodicityAndOffset for CSI		
qcl-InfoPeriodicCSI-RS	TCI-StateId-RRM(0)		
}			

– *NZP-CSI-RS-Resource for BM*

**Table 7.3.1-7B: NZP-CSI-RS-Resource for BM(Id)**

Derivation Path: Table 4.6.3-45			
Information Element	Value/remark	Comment	Condition
NZP-CSI-RS-Resource ::= SEQUENCE {			
nzp-CSI-RS-ResourceId	NZP-CSI-RS-ResourceId for BM (Id)		
	NZP-CSI-RS-ResourceId for BM (Id) with condition APERIODIC		APERIODIC
resourceMapping	CSI-RS-ResourceMapping for BM (Id)		
powerControlOffset	0		
powerControlOffsetSS	db0		
scramblingID	0		
periodicityAndOffset	CSI-ResourcePeriodicityAndOffset for BM		
	Not present		APERIODIC
qcl-InfoPeriodicCSI-RS	TCI-StateId-RRM(Id)		
	Not present		APERIODIC
}			

Condition	Explanation
APERIODIC	For aperiodic CSI-RS resources

– *NZP-CSI-RS-Resource for TRS***Table 7.3.1-7C: NZP-CSI-RS-ResourceId for TRS(Id)**

Derivation Path: Table 4.6.3-86			
Information Element	Value/remark	Comment	Condition
NZP-CSI-RS-ResourceId	n+Id-1	n is the first NZP-CSI-RS-ResourceId allocated for TRS resource set.  Value of n is left to internal implementation  Id = 1,2,3,4	
	n+Id+3		SECOND_SET

Condition	Explanation
SECOND_SET	For the second TRS resource set configured in test, only applies to FR2 test

– *NZP-CSI-RS-ResourceId for CSI***Table 7.3.1-7D: NZP-CSI-RS-ResourceId for CSI**

Derivation Path: Table 4.6.3-86			
Information Element	Value/remark	Comment	Condition
NZP-CSI-RS-ResourceId	n	n is the NZP-CSI-RS-ResourceId allocated for CSI-RS for CSI report.  Value of n is left to internal implementation	

– NZP-CSI-RS-ResourceId for BM

**Table 7.3.1-7E: NZP-CSI-RS-ResourceId for BM(Id)**

Derivation Path: Table 4.6.3-86			
Information Element	Value/remark	Comment	Condition
NZP-CSI-RS-ResourceId	n+Id	n is the first NZP-CSI-RS-ResourceId allocated for CSI-RS for BM.  Value of n is left to internal implementation  Id = 0,1	
	m+Id	m is the first NZP-CSI-RS-ResourceId allocated for aperiodic CSI-RS for BM.  Value of m is left to internal implementation  Id = 0,1	APERIODIC

Condition	Explanation
APERIODIC	For aperiodic CSI-RS resources

– *CSI-RS-ResourceMapping for TRS*

**Table 7.3.1-8: CSI-RS-ResourceMapping for TRS(Id)**

Derivation Path: Table 4.6.3-45 with condition TRS			
Information Element	Value/remark	Comment	Condition
CSI-RS-ResourceMapping ::= SEQUENCE {			
frequencyDomainAllocation CHOICE {			
row1	0001	k <sub>0</sub> =0 for CSI-RS resource 1,2,3,4	
}			
firstOFDMSymbolInTimeDomain	5	l <sub>0</sub> = 5 for CSI-RS resource 1 and 3	(Id = 1 or 3) AND FR1
	9	l <sub>0</sub> = 9 for CSI-RS resource 2 and 4	(Id = 2 or 4) AND FR1
	1		(Id = 1 or 3) AND FR2
	2		(Id = 1 or 3) AND FR2 AND SECOND_SET
	5		(Id = 2 or 4) AND FR2
	6		(Id = 1 or 3) AND FR2 AND SECOND_SET
nrofPorts	p1	1 for CSI-RS resource 1,2,3,4	
freqBand	CSI-FrequencyOccupation-RRM		
}			

Condition	Explanation
SECOND_SET	For the second resource set for TRS configured in test, only applies to FR2 test

– *CSI-RS-ResourceMapping for CSI*

**Table 7.3.1-8A: CSI-RS-ResourceMapping for CSI**

Derivation Path: Table 4.6.3-45			
Information Element	Value/remark	Comment	Condition
CSI-RS-ResourceMapping ::= SEQUENCE {			
frequencyDomainAllocation CHOICE {			
other	000001		
}			
nrofPorts	p2		
firstOFDMSymbolInTimeDomain	5		NOT SCS15
	4		SCS15
freqBand	CSI-FrequencyOccupation-RRM		
}			

– *CSI-RS-ResourceMapping for BM***Table 7.3.1-8B: CSI-RS-ResourceMapping for BM (Id)**

Derivation Path: Table 4.6.3-45			
Information Element	Value/remark	Comment	Condition
CSI-RS-ResourceMapping ::= SEQUENCE {			
frequencyDomainAllocation CHOICE {			
row1	0001		
}			
nrofPorts	p1		
firstOFDMSymbolInTimeDomain	6		Id = 0
	10		Id = 1
cdm-Type	noCDM		
density CHOICE {			
three	NULL		
}			
freqBand	CSI-FrequencyOccupation-RRM		
}			

– *CSI-RS-ResourceMapping for ZP-CSI-RS***Table 7.3.1-8C: CSI-RS-ResourceMapping-ZP-CSI-RS**

Derivation Path: Table 4.6.3-45			
Information Element	Value/remark	Comment	Condition
CSI-RS-ResourceMapping ::= SEQUENCE {			
frequencyDomainAllocation CHOICE {			
row4	100	$k_0 = 8$	
}			
nrofPorts	p4		
firstOFDMSymbolInTimeDomain	4		
cdm-Type	fd-CDM2		
density CHOICE {			
one	NULL		
}			
freqBand	CSI-FrequencyOccupation-RRM		
}			

– *CSI-ResourcePeriodicityAndOffset for TRS*

**Table 7.3.1-9: CSI-ResourcePeriodicityAndOffset for TRS(Id)**

Derivation Path: Table 4.6.3-43			
Information Element	Value/remark	Comment	Condition
CSI-ResourcePeriodicityAndOffset ::= CHOICE {			
slots80	40		(Id = 1 or 2) AND SCS120
	41		(Id = 3 or 4) AND SCS120
slots40	20	Periodicity 40 slots and offset 20 for CSI-RS resource 1 and 2	(Id = 1 or 2) AND SCS30
	21	Periodicity 40 slots and offset 21 for CSI-RS resource 3 and 4	(Id = 3 or 4) AND SCS30
slots20	10	Periodicity 20 slots and offset 10 for CSI-RS resource 1 and 2	(Id = 1 or 2) AND SCS15
	11	Periodicity 20 slots and offset 11 for CSI-RS resource 3 and 4	(Id = 3 or 4) AND SCS15
}			

– *CSI-ResourcePeriodicityAndOffset for CSI*

**Table 7.3.1-9A: CSI-ResourcePeriodicityAndOffset for CSI**

Derivation Path: Table 4.6.3-43			
Information Element	Value/remark	Comment	Condition
CSI-ResourcePeriodicityAndOffset ::= CHOICE {			
slots5	1		SCS15
slots10	2		SCS30
slots40	8		SCS120
}			

– *CSI-ResourcePeriodicityAndOffset for BM*

**Table 7.3.1-9B: CSI-ResourcePeriodicityAndOffset for BM**

Derivation Path: Table 4.6.3-43			
Information Element	Value/remark	Comment	Condition
CSI-ResourcePeriodicityAndOffset ::= CHOICE {			
slots10	1		SCS15
slots20	2		SCS30
slots80	8		SCS120
}			



– *CSI-FrequencyOccupation***Table 7.3.1-10: CSI-FrequencyOccupation-RRM**

Derivation Path: Table 4.6.3-33			
Information Element	Value/remark	Comment	Condition
CSI-FrequencyOccupation ::= SEQUENCE { startingRB	$4 \cdot \text{floor}(n/4)$	n is the start RB of active BWP  floor() means rounding down to the nearest integer  startingRB can only be multiple of 4	
nrofRBs	$\max(4 \cdot \text{ceil}(n/4 - \text{floor}(n/4) + m/4), 24)$	m is the bandwidth of active BWP  ceil() means rounding up to the nearest integer  Bandwidth of CSI-RS used in RRM test is required to be same as active BWP according to 38.133.  nrofRBs shall be no less than 24 and shall be multiple of 4	
}			

NZP-CSI-RS-ResourceSet for TRS

Table 7.3.1-11: NZP-CSI-RS-ResourceSet for TRS

Derivation Path: Table 4.6.3-87 with Condition TRS			
Information Element	Value/remark	Comment	Condition
NZP-CSI-RS-Resource ::= SEQUENCE {			
nzp_CSI_ResourceSetId	NZP-CSI-RS-ResourceSetId-TRS		
	NZP-CSI-RS-ResourceSetId-TRS with condition SECOND_SET		SECOND_SET
nzp-CSI-RS-Resources SEQUENCE (SIZE (1..maxNrofNZP-CSI-RS-ResourcesPerSet)) OF NZP-CSI-RS-ResourceId {	4 entries		
NZP-CSI-RS-ResourceId[1]	NZP-CSI-RS-ResourceId for TRS(1)	entry 1	
NZP-CSI-RS-ResourceId[2]	NZP-CSI-RS-ResourceId for TRS(2)	entry 2	
NZP-CSI-RS-ResourceId[3]	NZP-CSI-RS-ResourceId for TRS(3)	entry 3	
NZP-CSI-RS-ResourceId[4]	NZP-CSI-RS-ResourceId for TRS(4)	entry 4	
}			
nzp-CSI-RS-Resources SEQUENCE (SIZE (1..maxNrofNZP-CSI-RS-ResourcesPerSet)) OF NZP-CSI-RS-ResourceId {	4 entries		SECOND_SET
NZP-CSI-RS-ResourceId[1]	NZP-CSI-RS-ResourceId for TRS(1) with condition SECOND_SET	entry 1	
NZP-CSI-RS-ResourceId[2]	NZP-CSI-RS-ResourceId for TRS(2) with condition SECOND_SET	entry 2	
NZP-CSI-RS-ResourceId[3]	NZP-CSI-RS-ResourceId for TRS(3) with condition SECOND_SET	entry 3	
NZP-CSI-RS-ResourceId[4]	NZP-CSI-RS-ResourceId for TRS(4) with condition SECOND_SET	entry 4	
}			
}			

Condition	Explanation
SECOND_SET	For the second TRS resource set configured in test, only applies to FR2 test

NZP-CSI-RS-ResourceSet for CSI

Table 7.3.1-11A: NZP-CSI-RS-ResourceSet for CSI

Derivation Path: Table 4.6.3-87			
Information Element	Value/remark	Comment	Condition
NZP-CSI-RS-Resource ::= SEQUENCE {			
nzp_CSI_ResourceSetId	NZP-CSI-RS-ResourceSetId-CSI		
nzp-CSI-RS-Resources SEQUENCE (SIZE (1..maxNrofNZP-CSI-RS-ResourcesPerSet)) OF NZP-CSI-RS-ResourceId {	1 entry		
NZP-CSI-RS-ResourceId[1]	NZP-CSI-RS-ResourceId for CSI	entry 1	
}			
repetition	Not present		
}			

– *NZP-CSI-RS-ResourceSet for BM*

**Table 7.3.1-11B: NZP-CSI-RS-ResourceSet for BM**

Derivation Path: Table 4.6.3-87			
Information Element	Value/remark	Comment	Condition
NZP-CSI-RS-ResourceSet ::= SEQUENCE {			
nzp-CSI-ResourceSetId	NZP-CSI-RS-ResourceSetId-BM		
	NZP-CSI-RS-ResourceSetId-BM with condition APERIODIC		APERIODIC
nzp-CSI-RS-Resources SEQUENCE (SIZE (1..maxNrofNZP-CSI-RS-ResourcesPerSet)) OF NZP-CSI-RS-ResourceId {	2 entries		
NZP-CSI-RS-ResourceId[1]	NZP-CSI-RS-ResourceId for BM (0)	entry 1	
	NZP-CSI-RS-ResourceId for BM (0) with condition APERIODIC		APERIODIC
NZP-CSI-RS-ResourceId[2]	NZP-CSI-RS-ResourceId for BM (1)	entry 2	
	NZP-CSI-RS-ResourceId for BM (1) with condition APERIODIC		APERIODIC
}			
aperiodicTriggeringOffset	4		APERIODIC
}			

Condition	Explanation
APERIODIC	For aperiodic CSI-RS resources

– *NZP-CSI-RS-ResourceSetId for TRS*

**Table 7.3.1-11C: NZP-CSI-RS-ResourceSetId-TRS**

Derivation Path: Table 4.6.3-88			
Information Element	Value/remark	Comment	Condition
NZP-CSI-RS-ResourceSetId	n	n is the first NZP-CSI-RS-ResourceSetId allocated for TRS resource set.  Value of n is left to internal implementation	
	n+1		SECOND_SET

Condition	Explanation
SECOND_SET	For the second TRS resource set configured in test, only applies to FR2 test

– *NZP-CSI-RS-ResourceSetId for CSI*

**Table 7.3.1-11D: NZP-CSI-RS-ResourceSetId-CSI**

Derivation Path: Table 4.6.3-88			
Information Element	Value/remark	Comment	Condition
NZP-CSI-RS-ResourceSetId	n	n is the NZP-CSI-RS-ResourceSetId allocated for resource set of CSI-RS for CSI reporting.  Value of n is left to internal implementation	

– *NZP-CSI-RS-ResourceSetId for BM*

**Table 7.3.1-11E: NZP-CSI-RS-ResourceSetId-BM**

Derivation Path: Table 4.6.3-88			
Information Element	Value/remark	Comment	Condition
NZP-CSI-RS-ResourceSetId	n	n is the NZP-CSI-RS-ResourceSetId allocated for resource set of CSI-RS for BM.  Value of n is left to internal implementation	
	m	m is the NZP-CSI-RS-ResourceSetId allocated for resource set of aperiodic CSI-RS for BM.  Value of m is left to internal implementation	APERIODIC

Condition	Explanation
APERIODIC	For aperiodic CSI-RS resources

– *CSI-ResourceConfig for TRS*

**Table 7.3.1-12: CSI-ResourceConfig for TRS**

Derivation Path: TS 38.508-1 Table 4.6.3-41			
Information Element	Value/remark	Comment	Condition
CSI-ResourceConfig ::= SEQUENCE {			
csi-ResourceConfigId	CSI-ResourceConfigId-TRS		
csi-RS-ResourceSetList CHOICE {			
nzp-CSI-RS-SSB SEQUENCE {			
nzp-CSI-RS-ResourceSetList SEQUENCE (SIZE (1..maxNrofNzp-CSI-RS-ResourceSetsPerConfig))	1 entry		
OF Nzp-CSI-RS-ResourceSetId {			
Nzp-CSI-RS-ResourceSetId[1]	Nzp-CSI-RS-ResourceSetId-TRS		
}			
nzp-CSI-RS-ResourceSetList SEQUENCE (SIZE (1..maxNrofNzp-CSI-RS-ResourceSetsPerConfig))	2 entries		SECOND_SET
OF Nzp-CSI-RS-ResourceSetId {			
Nzp-CSI-RS-ResourceSetId[1]	Nzp-CSI-RS-ResourceSetId-TRS	entry 1	
Nzp-CSI-RS-ResourceSetId[2]	Nzp-CSI-RS-ResourceSetId-TRS with condition SECOND_SET	entry 2	
}			
}			
}			
bwp-Id	BWP-Id of active BWP		
}			
}			

Condition	Explanation
SECOND_SET	For the second resource set for TRS configured in test, only applies to FR2 test

– *CSI-ResourceConfig for CSI*

**Table 7.3.1-12A: CSI-ResourceConfig for CSI**

Derivation Path: TS 38.508-1 Table 4.6.3-41			
Information Element	Value/remark	Comment	Condition
CSI-ResourceConfig ::= SEQUENCE {			
csi-ResourceConfigId	CSI-ResourceConfigId-CSI		
csi-RS-ResourceSetList CHOICE {			
nzp-CSI-RS-SSB SEQUENCE {			
nzp-CSI-RS-ResourceSetList SEQUENCE (SIZE (1..maxNrofNzp-CSI-RS-ResourceSetsPerConfig))	1 entry		
OF Nzp-CSI-RS-ResourceSetId {			
Nzp-CSI-RS-ResourceSetId[1]	Nzp-CSI-RS-ResourceSetId-CSI	entry 1	
}			
}			
}			
bwp-Id	BWP-Id of active BWP		
}			
}			

– *CSI-ResourceConfig for BM*

**Table 7.3.1-12B: CSI-ResourceConfig for BM**

Derivation Path: Table 4.6.3-41			
Information Element	Value/remark	Comment	Condition
CSI-ResourceConfig ::= SEQUENCE {			
csi-ResourceConfigId	CSI-ResourceConfigId-BM		
	CSI-ResourceConfigId-BM with condition APERIODIC		APERIODIC
csi-RS-ResourceSetList CHOICE {			
nzp-CSI-RS-SSB SEQUENCE {			
nzp-CSI-RS-ResourceSetList SEQUENCE (SIZE (1..maxNrofNZP-CSI-RS-ResourceSetsPerConfig)) OF NZP-CSI-RS-ResourceSetId {	1 entry		
NZP-CSI-RS-ResourceSetId[1]	NZP-CSI-RS-ResourceSetId-BM		
	NZP-CSI-RS-ResourceSetId-BM with condition APERIODIC		APERIODIC
}			
}			
}			
bwp-Id	BWP-Id of active BWP		
resourceType	aperiodic		APERIODIC
	periodic		PERIODIC
}			

Condition	Explanation
APERIODIC	For aperiodic CSI-RS resources
PERIODIC	For periodic CSI-RS resources

– *CSI-ResourceConfig for CSI-IM*

**Table 7.3.1-12BA: CSI-ResourceConfig for CSI-IM**

Derivation Path: Table 4.6.3-41			
Information Element	Value/remark	Comment	Condition
CSI-ResourceConfig ::= SEQUENCE {			
csi-ResourceConfigId	CSI-ResourceConfigId-CSI-IM		
csi-RS-ResourceSetList CHOICE {			
csi-IM-ResourceSetList SEQUENCE (SIZE (1..maxNrofCSI-IM-ResourceSetsPerConfig)) OF CSI-IM-ResourceSetId {	1 entry		
CSI-IM-ResourceSetId[1]	CSI-IM-ResourceSetId-RRM	entry 1	
}			
}			
bwp-Id	BWP-Id		
resourceType	periodic		
}			

– *CSI-ResourceConfigId for TRS*

**Table 7.3.1-12C: CSI-ResourceConfigId-TRS**

Derivation Path: Table 4.6.3-42			
Information Element	Value/remark	Comment	Condition
CSI-ResourceConfigId	n	n is the CSI-ResourceConfigId allocated for resource config of TRS.  Value of n is left to internal implementation	

– *CSI-ResourceConfigId for CSI*

**Table 7.3.1-12D: CSI-ResourceConfigId-CSI**

Derivation Path: Table 4.6.3-42			
Information Element	Value/remark	Comment	Condition
CSI-ResourceConfigId	n	n is the CSI-ResourceConfigId allocated for resource config of CSI-RS for CSI reporting.  Value of n is left to internal implementation	

– *CSI-ResourceConfigId for BM*

**Table 7.3.1-12E: CSI-ResourceConfigId-BM**

Derivation Path: Table 4.6.3-42			
Information Element	Value/remark	Comment	Condition
CSI-ResourceConfigId	n	n is the CSI-ResourceConfigId allocated for resource config of CSI-RS for BM.  Value of n is left to internal implementation	
	m	m is the CSI-ResourceConfigId allocated for resource config of aperiodic CSI-RS for BM.  Value of m is left to internal implementation	APERIODIC

Condition	Explanation
APERIODIC	For aperiodic CSI-RS resources

– *CSI-ResourceConfigId-CSI-IM*

**Table 7.3.1-12EA: CSI-ResourceConfigId-CSI-IM**

Derivation Path: Table 4.6.3-42			
Information Element	Value/remark	Comment	Condition
CSI-ResourceConfigId	n	n is the first CSI-ResourceConfigId allocated for CSI-IM resource configuration  Value of n is left to internal implementation	



CSI-ReportConfig for CSI

Table 7.3.1-12F: CSI-ReportConfig for CSI

Derivation Path: Table 4.6.3-39			
Information Element	Value/remark	Comment	Condition
CSI-ReportConfig ::= SEQUENCE {			
reportConfigId	CSI-ReportConfigId-CSI		
	CSI-ReportConfigId-CSI with condition SCELL_CSI_ON_SPCELL		SCELL_CSI_ON_SPCELL
carrier	Not present	indicates the same serving cell as this report configuration	
	ServCellIndex of the SCell		SCELL_CSI_ON_SPCELL
resourcesForChannelMeasurement	CSI-ResourceConfigId-CSI		
csi-IM-ResourcesForInterference	CSI-ResourceConfigId-CSI-IM		
nzp-CSI-RS-ResourcesForInterference	Not present		
reportConfigType CHOICE {			
periodic SEQUENCE {			
reportSlotConfig CHOICE {			
slots5	2		SCS15
slots10	4		SCS30
slots40	4		SCS120
}			
pucch-CSI-ResourceList SEQUENCE (SIZE (1..maxNrofBWPs)) OF PUCCH-CSI-Resource {	1 entry		
PUCCH-CSI-Resource [1] SEQUENCE {		entry 1	
uplinkBandwidthPartId	BWP-Id of active UL BWP		
pucch-Resource	8	The first format 2 PUCCH resource configured in Table 4.6.3-112 is used	
	8	The first format 2 PUCCH resource configured in Table 4.6.3-112 is used	SCELL_CSI_ON_SPCELL
}			
}			
}			
reportQuantity CHOICE {			
cri-RI-PMI-CQI	null		
}			
codebookConfig	CodebookConfig-CSI		
}			

Condition	Explanation
SCELL_CSI_ON_SPCELL	For SCell CSI reporting on NR SpCell

CSI-ReportConfig for BM

Table 7.3.1-12G: CSI-ReportConfig for BM

Derivation Path: Table 4.6.3-39			
Information Element	Value/remark	Comment	Condition
CSI-ReportConfig ::= SEQUENCE {			
reportConfigId	CSI-ReportConfigId-BM		
	CSI-ReportConfigId-BM with condition APERIODIC		APERIODIC
carrier	Not present		
resourcesForChannelMeasurement	CSI-ResourceConfigId-BM		
	CSI-ResourceConfigId-BM with condition APERIODIC		APERIODIC
csi-IM-ResourcesForInterference	Not present		
nzp-CSI-RS-ResourcesForInterference	Not present		
reportConfigType CHOICE {			
periodic			
reportSlotConfig ::= CHOICE {			
slots80	2		SCS15
slots80	4		SCS30 OR SCS120
}			
pucch-CSI-ResourceList SEQUENCE (SIZE (1..maxNrofBWPs)) OF {			
PUCCH_CSI_Resource[0] SEQUENCE {			
uplinkBandwidthPartId	BWP-Id		
pucch_Resource	9		
}			
}			
aperiodic SEQUENCE {			APERIODIC
reportSlotOffsetList SEQUENCE (SIZE (1..maxNrofUL-Allocations)) OF {	1 entry		
INTEGER[1]	8		
}			
}			
reportQuantity CHOICE {			
cri-RSRP	NULL		
}			
}			

Condition	Explanation
APERIODIC	For aperiodic CSI-RS resources

– *CSI-ReportConfigId for CSI*

**Table 7.3.1-12H: CSI-ReportConfigId-CSI**

Derivation Path: Table 4.6.3-40			
Information Element	Value/remark	Comment	Condition
CSI-ReportConfigId	n	n is the CSI-ReportConfigId allocated for report config of CSI-RS for CSI.  Value of n is left to internal implementation	
	m	m is the CSI-ReportConfigId allocated for report config of SCell CSI on SpCell.  Value of m is left to internal implementation	SCELL_CSI_ON_SPCCELL

Condition	Explanation
SCELL_CSI_ON_SPCCELL	For SCell CSI reporting on NR SpCell

– *CSI-ReportConfigId for BM*

**Table 7.3.1-12I: CSI-ReportConfigId-BM**

Derivation Path: Table 4.6.3-40			
Information Element	Value/remark	Comment	Condition
CSI-ReportConfigId	n	n is the CSI-ReportConfigId allocated for report config of CSI-RS for BM.  Value of n is left to internal implementation	
	m	m is the CSI-ReportConfigId allocated for report config of aperiodic CSI-RS for BM.  Value of m is left to internal implementation	APERIODIC

Condition	Explanation
APERIODIC	For aperiodic CSI-RS resources

## – CSI-AperiodicTriggerStateList

**Table 7.3.1-12J: CSI-AperiodicTriggerStateList**

Derivation Path: Table 4.6.3-32			
Information Element	Value/remark	Comment	Condition
CSI-AperiodicTriggerStateList ::= SEQUENCE (SIZE (1..maxNrOfCSI-AperiodicTriggers)) OF SEQUENCE {	1 entry		
associatedReportConfigInfoList[1] SEQUENCE (SIZE(1..maxNrofReportConfigPerAperiodicTrigger)) OF SEQUENCE {	1 entry		
reportConfigId[1]	CSI-ReportConfigId-BM with condition APERIODIC		
resourcesForChannel[1] CHOICE {			
nzp-CSI-RS SEQUENCE {			
resourceSet	NZP-CSI-RS-ResourceSetId-BM with condition APERIODIC		
qcl-info SEQUENCE (SIZE(1..maxNrofAP-CSI-RS-ResourcesPerSet)) OF {	2 entries		
TCI-StateId[1]	TCI-StateId-RRM(0)	QCL Type C+D to SSB #0	
TCI-StateId[2]	TCI-StateId-RRM(1)	QCL Type C+D to SSB #1	
}			
}			
}			
csi-IM-ResourcesForInterference[1]	Not present		
nzp-CSI-RS-ResourcesForInterference[1]	Not present		
}			
}			

RACH-ConfigCommon

Table 7.3.1-13: RACH-ConfigCommon

Derivation Path: TS 38.508-1 Table 4.6.3-128			
Information Element	Value/remark	Comment	Condition
RACH-ConfigCommon ::= SEQUENCE {			
rach-ConfigGeneric	RACH-ConfigGeneric		
totalNumberOfRA-Preambles	48		
ssb-perRACH-OccasionAndCB-PreamblesPerSSB CHOICE {			
oneFourth	n48		
}			
groupBconfigured	Not present		
ra-ContentionResolutionTimer	sf48		
rsrp-ThresholdSSB	51		
rsrp-ThresholdSSB-SUL	Not present		
prach-RootSequenceIndex CHOICE {			
l139	0		
}			
msg1-SubcarrierSpacing	SubcarrierSpacing		
restrictedSetConfig	unrestrictedSet		
msg3-transformPrecoder	Not present	transform precoding is disabled for Msg3 PUSCH transmission and any PUSCH transmission scheduled with DCI format 0_0	
}			

RACH-ConfigGeneric

Table 7.3.1-14: RACH-ConfigGeneric

Derivation Path: TS 38.508-1 Table 4.6.3-130			
Information Element	Value/remark	Comment	Condition
RACH-ConfigGeneric ::= SEQUENCE {			
prach-ConfigurationIndex	102		FR1
	190		FR2
msg1-FDM	one		
msg1-FrequencyStart	0		
zeroCorrelationZoneConfig	11		
preambleReceivedTargetPower	-120		
preambleTransMax	n6		
	n200		PRACH.4 FR1 or PRACH.4 FR2
powerRampingStep	dB2		
ra-ResponseWindow	sl10		
	sl1		PRACH.4 FR1 or
	sl40		PRACH.4 FR2
}			

Condition	Explanation
PRACH.4 FR1	When PRACH reference configuration PRACH.4 FR1 is used in test case
PRACH.4 FR2	When PRACH reference configuration PRACH.4 FR2 is used in test case

ControlResourceSet

**Table 7.3.1-15: ControlResourceSet**

Derivation Path: Table 4.6.3-28			
Information Element	Value/remark	Comment	Condition
ControlResourceSet ::= SEQUENCE {			
controlResourceSetId	ControlResourceSetId		
frequencyDomainResources	11111111 00000000 00000000 00000000 00000000 000000		CCR.3.7 OR SCS240
duration	1		CCR.3.x
cce-REG-MappingType CHOICE {			
interleaved ::= SEQUENCE {			CCR.X.Y
reg-BundleSize	n6		
interleaverSize	n2		
shiftIndex	0		
}			
tci-StatesPDCCH-ToAddList	Not present		
tci-StatesPDCCH-ToAddList SEQUENCE(SIZE (1..maxNrofTCI-StatesPDCCH)) OF TCI-StateId {	1 entry		
TCI-StateId[1]	TCI-StateId-RRM(2)	TCI State #2, QCLed to TRS resource #4 in the first resource set entry 1	TRS
}			
}			

Condition	Explanation
CCR.x.y	Refers to CCR.x.y as defined in A.1.3 of TS 38.533 [18]
TRS	When at least one TRS resource set is configured.

SchedulingRequestResourceConfig

**Table 7.3.1-16: SchedulingRequestResourceConfig**

Derivation Path: Table 4.6.3-157			
Information Element	Value/remark	Comment	Condition
SchedulingRequestResourceConfig ::= SEQUENCE {			
periodicityAndOffset CHOICE {			
sl10	7	With SCS = kHz15 results in repetition every 10 ms	SCS_15kHz
sl20	7	With SCS = kHz30 results in repetition every 10 ms	SCS_30kHz
}			
}			

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

SearchSpace

Table 7.3.1-17: SearchSpace

Derivation Path: Table 4.6.3-162			
Information Element	Value/remark	Comment	Condition
SearchSpace ::= SEQUENCE {			
monitoringSlotPeriodicityAndOffset CHOICE {			
sl10	1		SISS
sl160	0		(CCR.3.1 OR CCR.3.2 OR CCR.3.4 OR CCR.3.5 OR CCR.3.7) AND NOT_CONT_PDCCH
	80		(CCR.3.3 OR CCR.3.6) AND NOT_CONT_PDCCH
}			
monitoringSymbolsWithinSlot	11000000000000		(CCR.3.1 OR CCR.3.3 OR CCR.3.4 OR CCR.3.6 OR CCR.3.7) AND NOT_CONT_PDCCH
	00110000000000		(CCR.3.2 OR CCR.3.5) AND NOT_CONT_PDCCH
}			

Condition	Explanation
SISS	SearchSpace for SI
CCR.x.y	Refers to CCR.x.y as defined in A.1.3 of TS 38.533 [18]
NOT_CONT_PDCCH	The cell shall be configured with the default CCR.3.x settings and not transmit PDCCH continuously

PDSCH-Config

Table 7.3.1-18: PDSCH-Config

Derivation Path: Table 4.6.3-100			
Information Element	Value/remark	Comment	Condition
PDSCH-Config ::= SEQUENCE {			
tci-StatesToAddModList SEQUENCE(SIZE (1..maxNrofTCI-States)) OF TCI-State {	1+n <sub>1</sub> +n <sub>2</sub> +n <sub>3</sub> entries	n <sub>1</sub> = 1 if SSB configuration used in test case contains two SSBs in a burst, n <sub>1</sub> = 0 otherwise  n <sub>2</sub> = 1 if TRS is configured in test case, n <sub>1</sub> = 0 otherwise  n <sub>3</sub> = 1 if two resource sets of TRS are configured in test case, n <sub>3</sub> = 0 otherwise	
TCI-State[1]	TCI-State(0)	entry 1 QCLed to SSB index #0	
TCI-State[k, k=2..1+n <sub>1</sub> ]	TCI-State(1)	entry ... QCLed to SSB index #1	SECOND_SSB
TCI-State[k, k=2+n <sub>1</sub> ..1+n <sub>1</sub> +n <sub>2</sub> ]	TCI-State(2)	entry ... QCLed to TRS resource #4 in the first resource set	TRS
TCI-State[k, k=2+n <sub>1</sub> +n <sub>2</sub> ..1+n <sub>1</sub> +n <sub>2</sub> +n <sub>3</sub> ]	TCI-State(3)	entry ... QCLed to TRS resource #4 in the second resource set	SECOND_SET
}			
zp-CSI-RS-ResourceToAddModList SEQUENCE(SIZE (1..maxNrofZP-CSI-RS-Resources)) OF ZP-CSI-RS-Resource {	1 entry		
ZP-CSI-RS-Resource[1]	ZP-CSI-RS-Resource-RRM	entry 1	
}			
p-ZP-CSI-RS-ResourceSet CHOICE {			CSI
setup	ZP-CSI-RS-ResourceSet-RRM		
}			
}			

Condition	Explanation
SECOND_SSB	SSB configuration used in test case contain two SSBs in a burst
TRS	One resource set for TRS is configured in test case
SECOND_SET	Two resource sets for TRS are configured in test case, only applies to FR2.
CSI	CSI-RS for CSI reporting are configured in test case



TCI-State

Table 7.3.1-19: TCI-State(l*d*)

Derivation Path: Table 4.6.3-190			
Information Element	Value/remark	Comment	Condition
TCI-State ::= SEQUENCE {			
tci-StateId	TCI-StateId-RRM(l <i>d</i> )		
qcl-Type1 SEQUENCE {			
bwp-Id	BWP-Id of the active BWP		Id = 2 or 3
referenceSignal CHOICE {			
ssb	SSB-Index of SSB #0		Id = 0
	SSB-Index of SSB #1		Id = 1
csi-rs	NZP-CSI-RS-ResourceId for TRS (4)		Id = 2
	NZP-CSI-RS-ResourceId for TRS (4) with condition SECOND SET		Id = 3
}			
qcl-Type	typeC		Id = 0 or 1
	typeA		Id = 2 or 3
}			
qcl-Type2	Not present		
qcl-Type2 SEQUENCE {			FR2
cell	Not present		
bwp-Id	Not present		Id = 0 or 1
	BWP-Id of the active BWP		Id = 2 or 3
referenceSignal CHOICE {			
ssb	SSB-Index of SSB #0		Id = 0
	SSB-Index of SSB #1		Id = 1
csi-rs	NZP-CSI-RS-ResourceId for TRS (4)		Id = 2
	NZP-CSI-RS-ResourceId for TRS (4) with condition SECOND SET		Id = 3
}			
qcl-Type	typeD		
}			
}			

TCI-StateId

Table 7.3.1-20: TCI-StateId(l*d*)

Derivation Path: Table 4.6.3-191			
Information Element	Value/remark	Comment	Condition
TCI-StateId	n+Id	n is the first TCI-StateId allocated for TCI-State configured in RRM test. Value of n is left to internal implementation Id = 0,1,2,3	

– PUSCH-Config

**Table 7.3.1-21: PUSCH-Config**

Derivation Path: Table 4.6.3-118			
Information Element	Value/remark	Comment	Condition
PUSCH-Config ::= SEQUENCE {			
pusch-TimeDomainAllocationList CHOICE {			APERIODIC
setup	PUSCH-TimeDomainResourceAllocationList-BM		
}			
}			
}			

Condition	Explanation
APERIODIC	For aperiodic CSI-RS resources

– PUSCH-TimeDomainResourceAllocationList

**Table 7.3.1-22: PUSCH-TimeDomainResourceAllocationList-BM**

Derivation Path: Table 4.6.3-122			
Information Element	Value/remark	Comment	Condition
PUSCH-TimeDomainResourceAllocationList ::= SEQUENCE (SIZE(1..maxNrofUL-Allocations)) OF PUSCH-TimeDomainResourceAllocation {	1 entry	same number of entries as reportSlotOffsetList in Table 7.3.1-12G	
PUSCH-TimeDomainResourceAllocation[1] SEQUENCE {		entry 1	
k2	4	Same with k2 configured in reportSlotOffsetList in Table 7.3.1-12G	
mappingType	typeA		
startSymbolAndLength	27	Start symbol(S)=0, Length(L)=14	
}			
}			

– ServingCellConfig

**Table 7.3.1-23: ServingCellConfig**

Derivation Path: Table 4.6.3-167			
Information Element	Value/remark	Comment	Condition
ServingCellConfig ::= SEQUENCE {			
csi-MeasConfig CHOICE {			
setup	csi-MeasConfig		
}			

– *CSI-IM-Resource-RRM***Table 7.3.1-24: CSI-IM-Resource-RRM**

Derivation Path: Table 4.6.3-34			
Information Element	Value/remark	Comment	Condition
CSI-IM-Resource ::= SEQUENCE {			
csi-IM-ResourceId	CSI-IM-ResourceId-RRM		
csi-IM-ResourceElementPattern CHOICE {			
pattern1 SEQUENCE {			
subcarrierLocation-p1	s8		
symbolLocation-p1	4		
}			
}			
freqBand	CSI-FrequencyOccupation-RRM		
periodicityAndOffset	CSI-ResourcePeriodicityAndOffset for CSI		
}			

– *CSI-IM-ResourceId-RRM***Table 7.3.1-25: CSI-IM-ResourceId-RRM**

Derivation Path: Table 4.6.3-35			
Information Element	Value/remark	Comment	Condition
CSI-IM-ResourceId	n	n is the first CSI-IM-ResourceId allocated for CSI-IM resource.  Value of n is left to internal implementation	

– *CSI-IM-ResourceSet-RRM***Table 7.3.1-26: CSI-IM-ResourceSet-RRM**

Derivation Path: Table 4.6.3-36			
Information Element	Value/remark	Comment	Condition
CSI-IM-ResourceSet ::= SEQUENCE {			
csi-IM-ResourceSetId	CSI-IM-ResourceSetId-RRM		
csi-IM-Resources SEQUENCE (SIZE (1..maxNrofCSI-IM-ResourcesPerSet)) OF CSI-IM-ResourceId {	1 entry		
CSI-IM-ResourceId[1]	CSI-IM-ResourceId-RRM	entry 1	
}			
}			

– *CSI-IM-ResourceSetId-RRM*

**Table 7.3.1-27: CSI-IM-ResourceSetId-RRM**

Derivation Path: Table 4.6.3-37			
Information Element	Value/remark	Comment	Condition
CSI-IM-ResourceSetId	n	n is the first CSI-IM-ResourceSetId allocated for CSI-IM resource set.  Value of n is left to internal implementation	

– *SSB-Index*

**Table 7.3.1-28: SSB-Index**

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
SSB-Index	0		
	1		SECOND_SSB

Condition	Explanation
SECOND_SSB	SSB configuration used in test case contain two SSBs in a burst

– *CSI-SSB-ResourceSet*

**Table 7.3.1-29: CSI-SSB-ResourceSet**

Derivation Path: Table 4.6.3-47			
Information Element	Value/remark	Comment	Condition
CSI-SSB-ResourceSet ::= SEQUENCE {			
csi-SSB-ResourceSetId	CSI-SSB-ResourceSetId		
csi-SSB-Resource SEQUENCE (SIZE (1..maxNrofCSI-SSB-ResourcePerSet)) OF SSB-Index {	1 entry		
SSB-Index[1]	SSB-Index	entry 1	
}			
csi-SSB-Resource SEQUENCE (SIZE (1..maxNrofCSI-SSB-ResourcePerSet)) OF SSB-Index {	2 entries		SECOND_SSB
SSB-Index[1]	SSB-Index	entry 1	
SSB-Index[2]	SSB-Index with condition SECOND_SSB	entry 2	
}			
}			

Condition	Explanation
SECOND_SSB	SSB configuration used in test case contain two SSBs in a burst

## SCS-SpecificCarrier

Table 7.3.1-30: SCS-SpecificCarrier

Derivation Path: Table 4.6.3-160			
Information Element	Value/remark	Comment	Condition
SCS-SpecificCarrier ::= SEQUENCE {			
offsetToCarrier	offsetToCarrier as defined for the DL frequency of the cell	See 7.2.3.2	FR2 and DL_PointA
	offsetToCarrier as defined for the UL frequency of the cell	See 7.2.3.2	FR2 and UL_PointA
	offsetToCarrier as defined for the SL frequency	See 7.2.3.2	FR2 and SL_PointA
subcarrierSpacing	SubcarrierSpacing		
carrierBandwidth	carrierBandwidth as defined for the frequency of the cell	See 7.2.3.2	FR2
	24		Reduced_BW and SCS120 (for SSB)
	48		Reduced_BW and SCS240 (for SSB)
}			

Condition	Explanation
DL_PointA	IE absoluteFrequencyPointA for downlink
UL_PointA	IE absoluteFrequencyPointA for uplink
SL_PointA	IE absoluteFrequencyPointA for sidelink
Reduced_BW	Reduced RB allocation

SSB-ToMeasure

Table 7.3.1-31: SSB-ToMeasure

Derivation Path: TS 38.331 [6], clause 6.3.2			
Information Element	Value/remark	Comment	Condition
SSB-ToMeasure ::= CHOICE {			
shortBitmap	1000		2.3GHz<FRE EQ<=3GHz AND (FDD OR (TDD AND SCS15)) OR FREQ<=2.3 GHZ
	1100		SECOND_S SB AND (2.3GHz<FRE EQ<=3GHz AND (FDD OR (TDD AND SCS15)) OR FREQ<=2.3 GHZ)
mediumBitmap	10000000 11000000		SECOND_S SB
longBitmap	10000000 00000000 00000000 00000000 00000000 00000000 00000000 00000000		FR2
	11000000 00000000 00000000 00000000 00000000 00000000 00000000 00000000		FR2 AND SECOND_S SB
}			

Condition	Explanation
FREQ<=2.3GHz	Frequency range <= 2.4GHz
2.3GHz<FREQ<=3GHz	Frequency range > 2.3GHz and <= 3GHz
FREQ>3GHz	Frequency range > 3GHz
SECOND_SSB	SSB configuration used in test case contain two SSBs in a burst

CodebookConfig-CSI

Table 7.3.1-32: CodebookConfig-CSI

Derivation Path: Table 4.6.3-25			
Information Element	Value/remark	Comment	Condition
CodebookConfig ::= SEQUENCE {			
codebookType CHOICE {			
type1 SEQUENCE {			
subType CHOICE {			
type1-SinglePanel SEQUENCE {			
nrOfAntennaPorts CHOICE {			
two SEQUENCE {			
twoTX-CodebookSubsetRestriction	111111		
}			
}			
}			
}			
}			
}			

PRB-Id

Table 7.3.1-33: 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 <i>L<sub>RBs</sub></i> - <i>nrofPRBs</i> where <i>L<sub>RBs</sub></i> is the Bandwidth of the UL BWP specified in the test, and <i>nrofPRBs</i> is defined for the corresponding <i>PUCCH-Resource</i> (1 otherwise).	UL BWP configurations are defined in TS 38.533 Annex A.8.2	secondHop PRB

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

ZP-CSI-RS-Resource-RRM

Table 7.3.1-34: ZP-CSI-RS-Resource-RRM

Derivation Path: Table 4.6.3-204			
Information Element	Value/remark	Comment	Condition
ZP-CSI-RS-Resource ::= SEQUENCE {			
zp-CSI-RS-ResourceId	ZP-CSI-RS-ResourceId-RRM		
resourceMapping	CSI-RS-ResourceMapping-ZP-CSI-RS		
periodicityAndOffset	CSI-ResourcePeriodicityAndOffset for CSI		
}			

Table 7.3.1-35: ZP-CSI-RS-ResourceId-RRM

Derivation Path: Table 4.6.3-35			
Information Element	Value/remark	Comment	Condition
ZP-CSI-RS-ResourceId	n	n is the first ZP-CSI-RS-ResourceId allocated for ZP CSI-RS resource.  Value of n is left to internal implementation	

– *ZP-CSI-RS-ResourceSet-RRM*

Table 7.3.1-36: ZP-CSI-RS-ResourceSet-RRM

Derivation Path: Table 4.6.3-205			
Information Element	Value/remark	Comment	Condition
ZP-CSI-RS-ResourceSet ::= SEQUENCE {			
zp-CSI-RS-ResourceSetId	ZP-CSI-RS-ResourceSetId-RRM		
zp-CSI-RS-ResourceIdList SEQUENCE (SIZE(1..maxNrofZP-CSI-RS-ResourcesPerSet)) OF ZP-CSI-RS-ResourceId {	1 entry		
ZP-CSI-RS-ResourceId[1]	ZP-CSI-RS-ResourceId-RRM	entry 1	
}			
}			

– *ZP-CSI-RS-ResourceSetId-RRM*

Table 7.3.1-37: ZP-CSI-RS-ResourceSetId-RRM

Derivation Path: Table 4.6.3-206			
Information Element	Value/remark	Comment	Condition
ZP-CSI-RS-ResourceSetId	n	n is the first ZP-CSI-RS-ResourceSetId allocated for ZP-CSI-RS resource set.  Value of n is left to internal implementation	

## 7.3.2 Sidelink information elements for RRM

As defined in clause 4.6.6 with the following exceptions:



– *SL-BWP-ConfigCommon***Table 7.3.2-1: SL-BWP-ConfigCommon**

Derivation Path: Table 4.6.6-2			
Information Element	Value/remark	Comment	Condition
SL-BWP-ConfigCommon-r16 ::= SEQUENCE {			
sl-BWP-PoolConfigCommon-r16	SL-BWP-PoolConfigCommon-r16	Table 7.3.2-2	
}			

– *SL-BWP-PoolConfigCommon***Table 7.3.2-2: SL-BWP-PoolConfigCommon**

Derivation Path: Table 4.6.6-4 with condition RXPOOL and SELECTED			
Information Element	Value/remark	Comment	Condition
SL-BWP-PoolConfigCommon-r16 ::= SEQUENCE {			
sl-RxPool-r16 SEQUENCE (SIZE (1..maxNrofRXPool-r16)) OF SL-ResourcePool-r16 {	1 entry		
SL-ResourcePool-r16[1]	SL-ResourcePool-r16	entry 1 Table 7.3.2-3	
}			
sl-TxPoolSelectedNormal-r16 SEQUENCE (SIZE (1..maxNrofTXPool-r16)) OF SL-ResourcePoolConfig-r16 {	1 entry		
SL-ResourcePoolConfig-r16[1] SEQUENCE {		entry 1	
sl-ResourcePool-r16	SL-ResourcePool-r16	Table 7.3.2-3	
}			
}			
}			

– *SL-ResourcePool*

**Table 7.3.2-3: SL-ResourcePool**

Derivation Path: Table 4.6.6-25			
Information Element	Value/remark	Comment	Condition
SL-ResourcePool-r16 ::= SEQUENCE {			
sl-NumSubchannel-r16	1		
sl-UE-SelectedConfigRP-r16 SEQUENCE {			
sl-ThresPSSCH-RSRP-List-r16	Set according to the configuration in specific test cases		
sl-SelectionWindowList-r16 SEQUENCE (SIZE (8)) OF SL-SelectionWindowConfig-r16 {	8 entries		
SL-SelectionWindowConfig-r16[k, k=1..8] SEQUENCE {		entry k	
sl-Priority-r16	k		
sl-SelectionWindow-r16	n20		
}			
}			
sl-PreemptionEnable-r16	enabled		
sl-MinMaxMCS-List-r16 SEQUENCE (SIZE (1..3)) OF SL-MinMaxMCS-Config-r16 {	1 entry		
SL-MinMaxMCS-Config-r16[1] SEQUENCE {		entry 1	
sl-MCS-Table-r16	qam64		
sl-MinMCS-PSSCH-r16	0		
sl-MaxMCS-PSSCH-r16	28		
}			
sl-TimeResource-r16	11111111111111111111		
}			

– *SL-PSSCH-TxConfigList*

**Table 7.3.2-4: SL-PSSCH-TxConfigList**

Derivation Path: Table 4.6.6-19			
Information Element	Value/remark	Comment	Condition
SL-PSSCH-TxConfigList-r16 ::= SEQUENCE (SIZE (1..maxPSSCH-TxConfig-r16)) OF SL-PSSCH-TxConfig-r16 {	1 entry		
sl-ThresUE-Speed-r16	kmph200		
sl-ParametersAboveThres-r16 SEQUENCE {			
sl-MaxSubchannelNumPSSCH-r16	1		
sl-MaxTxTransNumPSSCH-r16	1		
}			
sl-ParametersBelowThres-r16 SEQUENCE {			
sl-MinMCS-PSSCH-r16	4		
sl-MaxMCS-PSSCH-r16	25		
sl-MaxSubchannelNumPSSCH-r16	1		
sl-MaxTxTransNumPSSCH-r16	1		
}			
}			

– *SL-UE-SelectedConfig*

**Table 7.3.2-5: *SL-UE-SelectedConfig***

Derivation Path: Table 4.6.6-35			
Information Element	Value/remark	Comment	Condition
SL-UE-SelectedConfig-r16 ::= SEQUENCE {			
sl-PSSCH-TxConfigList-r16	SL-PSSCH-TxConfigList-r16	Table 7.3.2-4	
sl-ProbResourceKeep-r16	v0dot8		
sl-ReselectAfter-r16	n1		
}			

## 7.4 FFS

Void.

## 7.5 Common procedures for RRM testing

### 7.5.1 Procedure to configure SCC(s) for NR RRM CA testing

Same procedure as described in clause 5.5.1.

### 7.5.2 Procedure to configure SCC(s) for EN-DC RRM CA testing

Same procedure as described in clause 5.5.1.

---

# Annex A (informative): Connection Diagrams

## A.1 Definition of Terms

**System Simulator or SS** – A device or system, that is capable of generating simulated Node B signalling and analysing UE signalling responses on one or more RF channels, in order to create the required test environment for the UE under test. It will also include the following capabilities:

1. Measurement and control of the UE Tx output power through TPC commands
2. Measurement of Throughput
3. Measurement of signalling timing and delays
4. Ability to simulate UTRAN and/or E-UTRAN and/or GERAN signalling

**Test System** – A combination of devices brought together into a system for the purpose of making one or more measurements on a UE in accordance with the test case requirements. A test system may include one or more System Simulators if additional signalling is required for the test case. The following diagrams are all examples of Test Systems.

NOTE 1: The above terms are logical definitions to be used to describe the test methods used in the documents TS 38.521-1, TS 38.521-2, TS 38.521-3, TS 38.523-1 and TS 38.533 in practice, real devices called 'System Simulators' may also include additional measurement capabilities or may only support those features required for the test cases they are designed to perform.

NOTE 2: Components in the connection diagrams:

The components in the connection diagrams represent ideal components. They are intended to display the wanted signal flow. They don't mandate real implementations.

**Connection:** Each connection is displayed as a one or two sided arrow, showing the intended signal flow. In some cases, for some tests, some connections shown may not be necessary (for example UL RX connection for a second cell).

**Circulator:** The signal, entering one port, is conducted to the adjacent port, indicated by the arrow. The attenuation among the above mentioned ports is ideally 0 and the isolation among the other ports is ideally  $\infty$ .

**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  $\infty$ .

**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  $\infty$ .

**Switch:** contacts a sink (or source) alternatively to two or more sources (or sinks).

**Fader:** The fader has one input and one output. The MIMO fading channel is represented by several single faders (e.g. 8 in case of a MIMO antenna configuration 4x2) The correlation among the faders is described in TS 36.521-1 clause B.2.2. In some cases, for some tests, diagrams with fader(s) are referenced when no fading is required; in this case the fader(s) is omitted.

**Attenuator:** TBD

**Test Equipment Part (TE):** is the section of the connection diagram focused including a combination of devices to perform one or several measurements on a UE depending on the test requirements specified in 3GPP TS 38.101-1 [7], 3GPP TS 38.101-2 [8] and 3GPP TS 38.101-3 [9]. The basic TE is the system simulator to enable the connection between the gNB (and the eNB, if NSA mode) and the DUT. The number of cells, the number of streams per cell and how to combine them, channel and propagations conditions, etc. are also part of the TE. Other instruments as external spectrum analyser, interferer generators, external faders or external AWGN generators can be also considered part of the TE, as these instruments allow to measure a test requirement or to set the UE under certain conditions.

**DUT Part (UE):** for conducted measurement this section is focused on the number of physical antenna connectors and how to combine in the DUT. For radiated measurement this section shows the connections needed to translate the UL/DL streams to the radiated part.

**GNSS System Simulator or GSS:** A device or system, that is capable of generating simulated GNSS satellite transmissions in order to create the required test environment for the UE under test. It will also include the following capabilities:

1. Control of the output power of individual satellites and the simulation of atmospheric delays.
2. Ability to synchronize with NR timing in the SS.

---

## A.2 General Considerations on Connections Diagram

In order to improve the maintainability and the readability of this section and to make easy to identify the whole connection diagram to use per each test case, several considerations have been used for this section:

- The whole connection diagram to use for a specific test has been split in Test Equipment (TE) and User Equipment (UE) parts.
- The same connection diagram will be used for SA and NSA, where the LTE link is specified in each connection diagram (TE and UE) with a dashed line (and this part will be only used for NSA).
- To obtain the whole connection diagram required per each test case is necessary to specify the TE part required for each measurement and the UE part will depend on the UE antenna implementation.

## A.3 Setup Diagrams

### A.3.1 Test Equipment Parts for Conducted Measurements

#### A.3.1.1 Basic Transmitter/Receiver tests

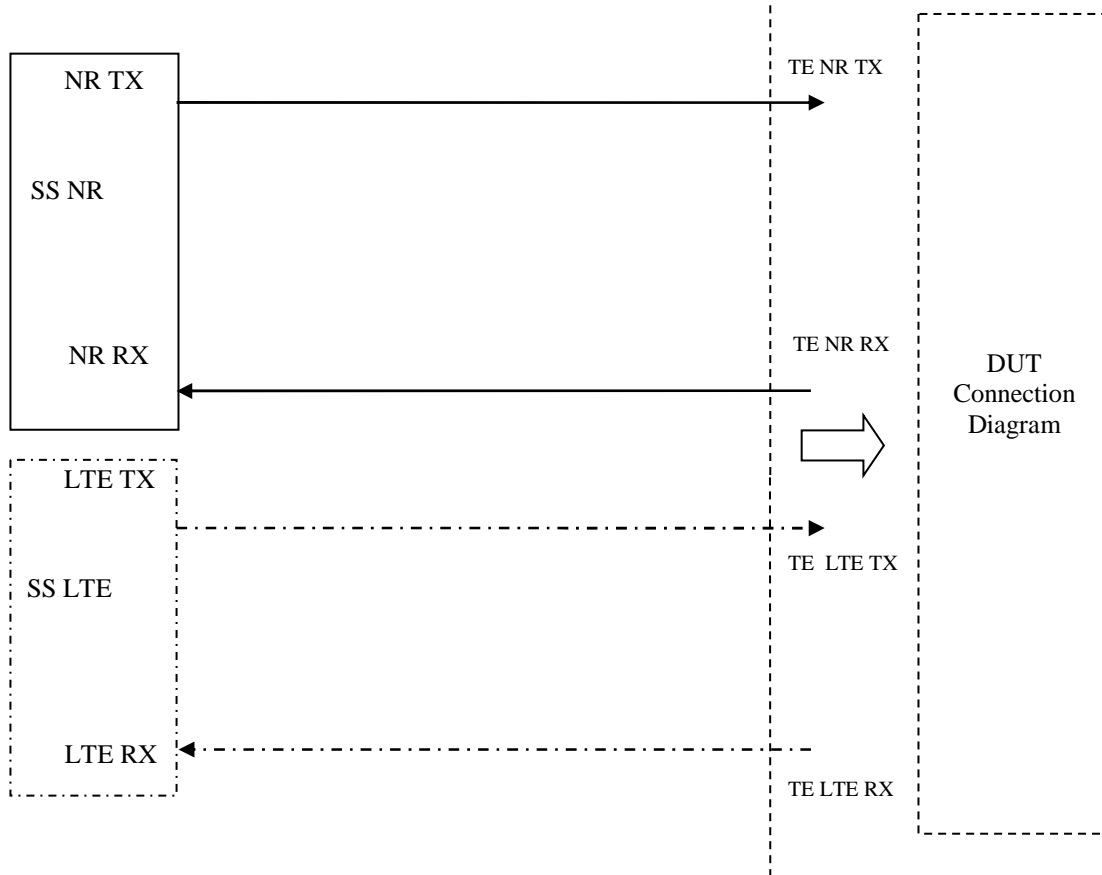


Figure A.3.1.1.1: Test Equipment connection for basic single cell, RX and TX tests

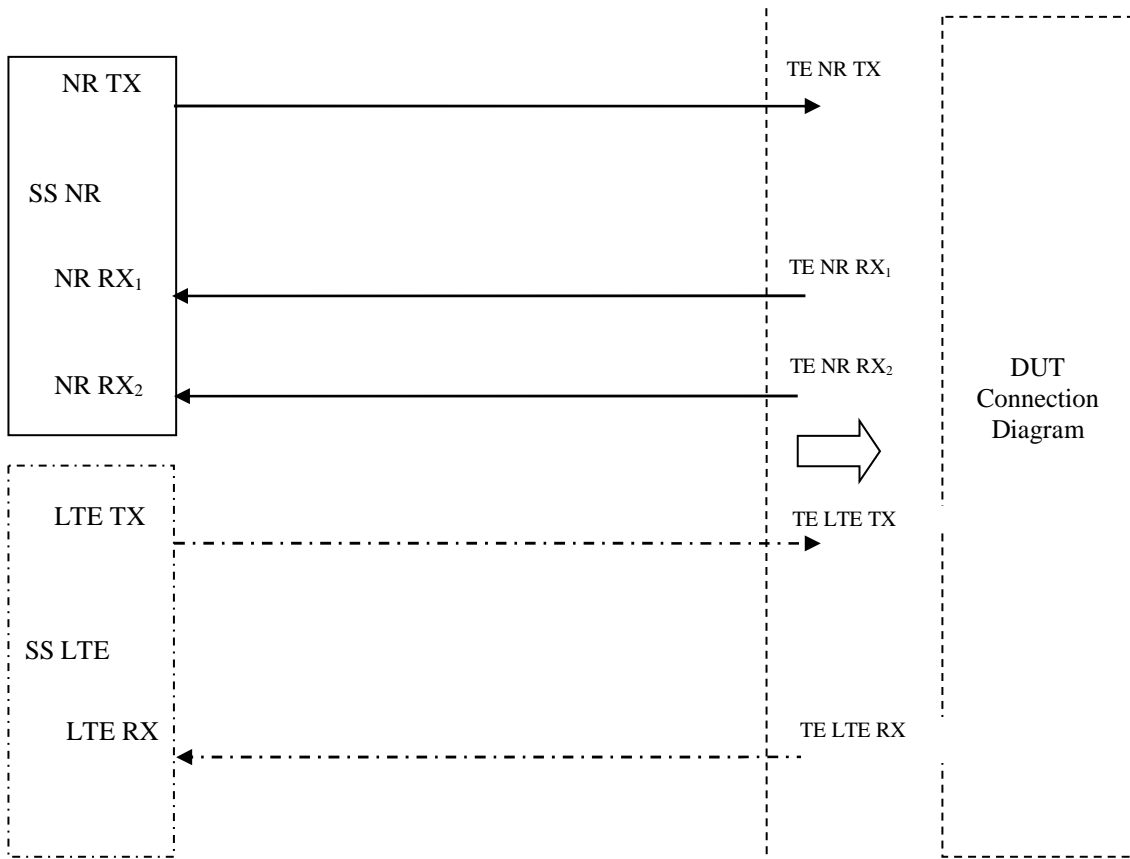


Figure A.3.1.1.2: Test Equipment connection for single cell, RX and TX tests for NR UL MIMO or NR Tx diversity

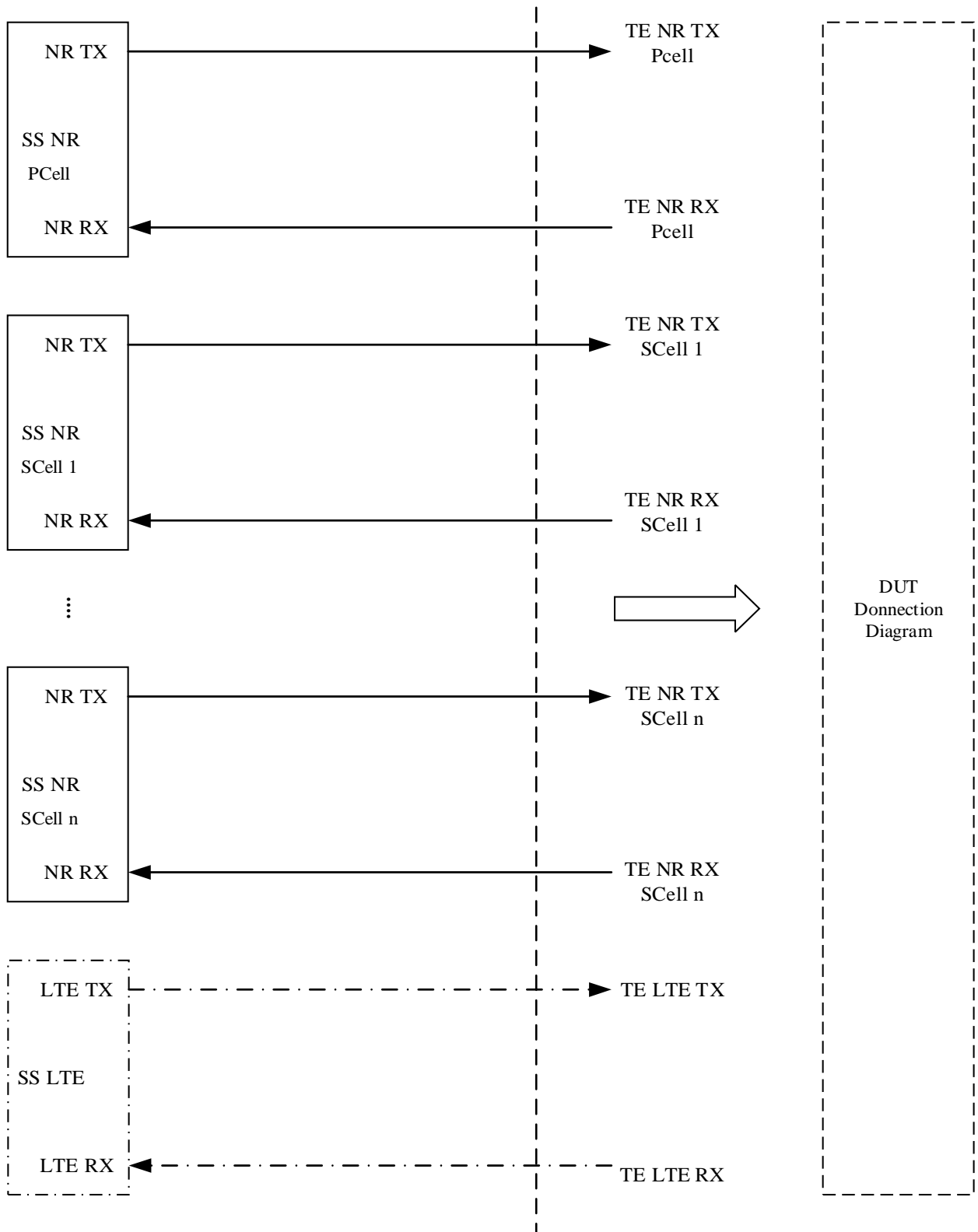


Figure A.3.1.1.3: Test Equipment connection for NR CA and NR-DC, basic RX and TX tests



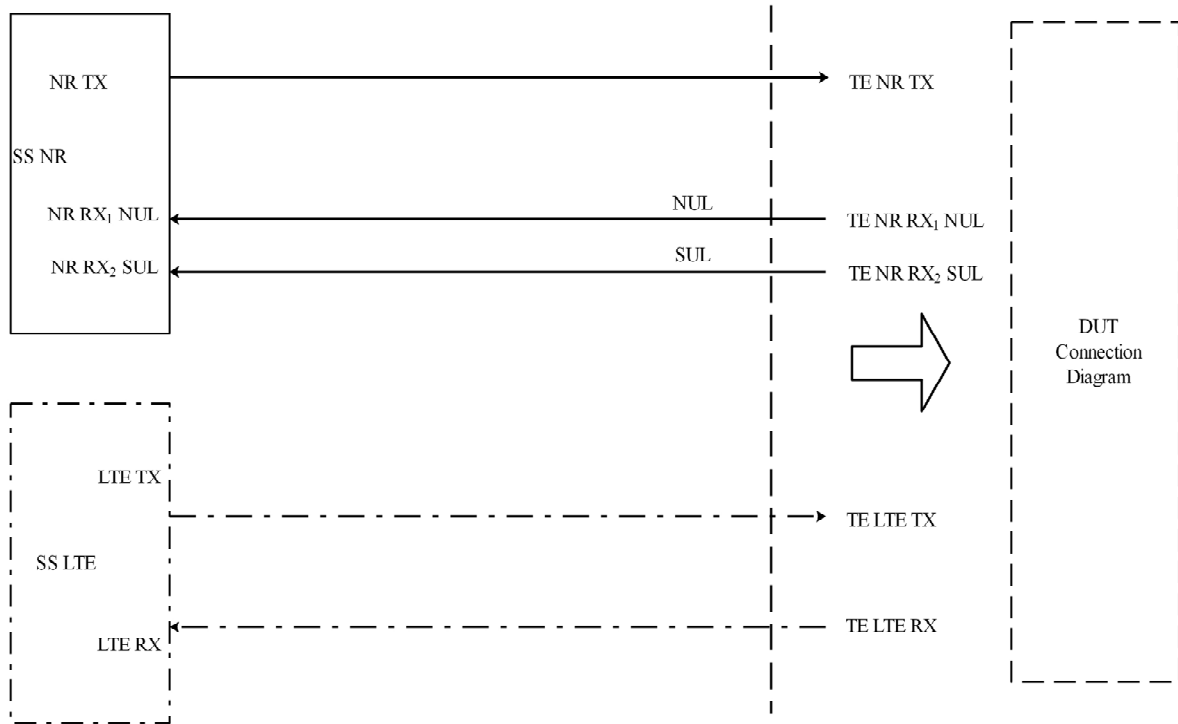


Figure A.3.1.1.4: Test Equipment connection for NR SUL, basic RX and TX tests

### A.3.1.2 Transmitter tests using Spectrum Analyser

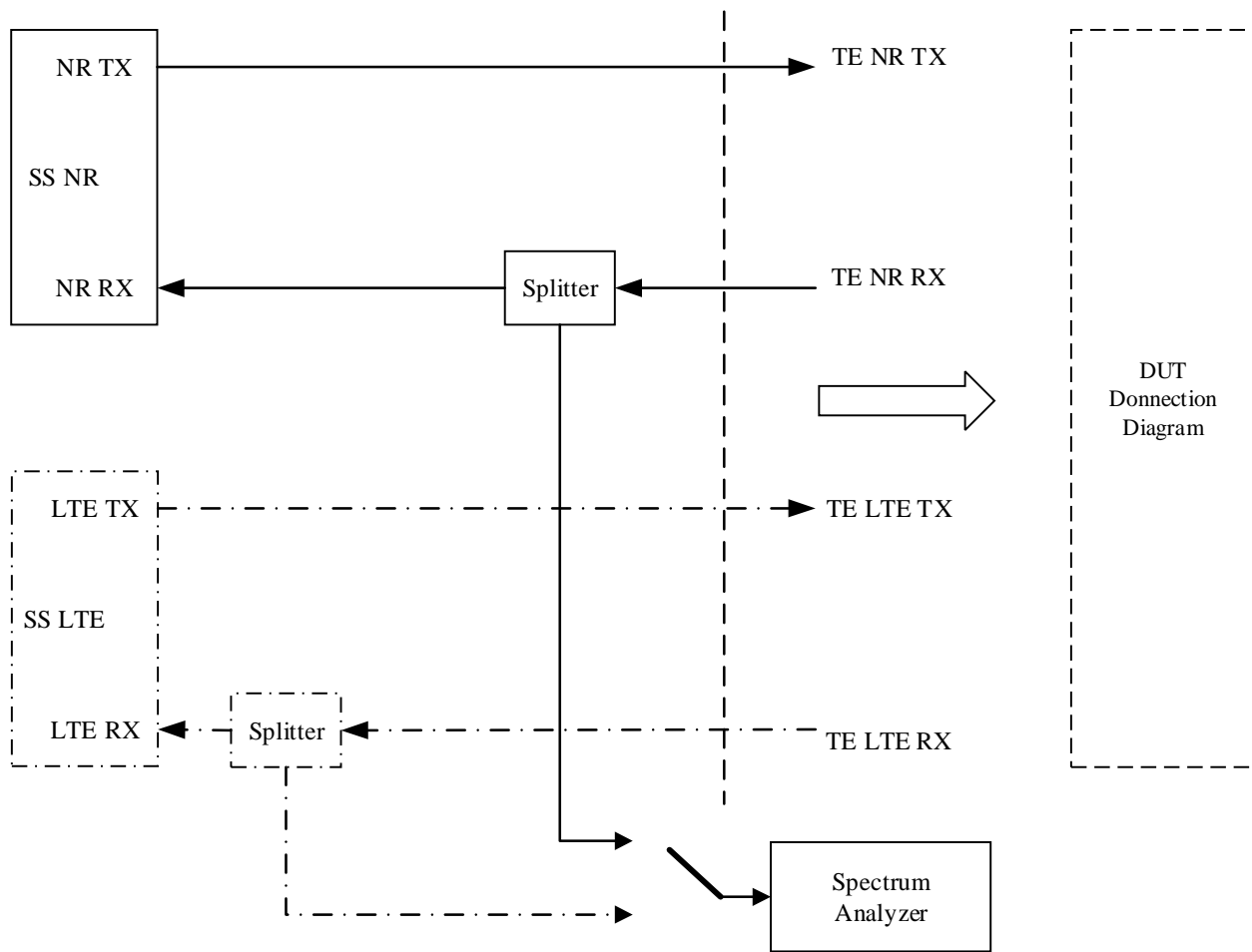


Figure A.3.1.2.1: Test Equipment connection for TX-tests with additional Spectrum Analyzer

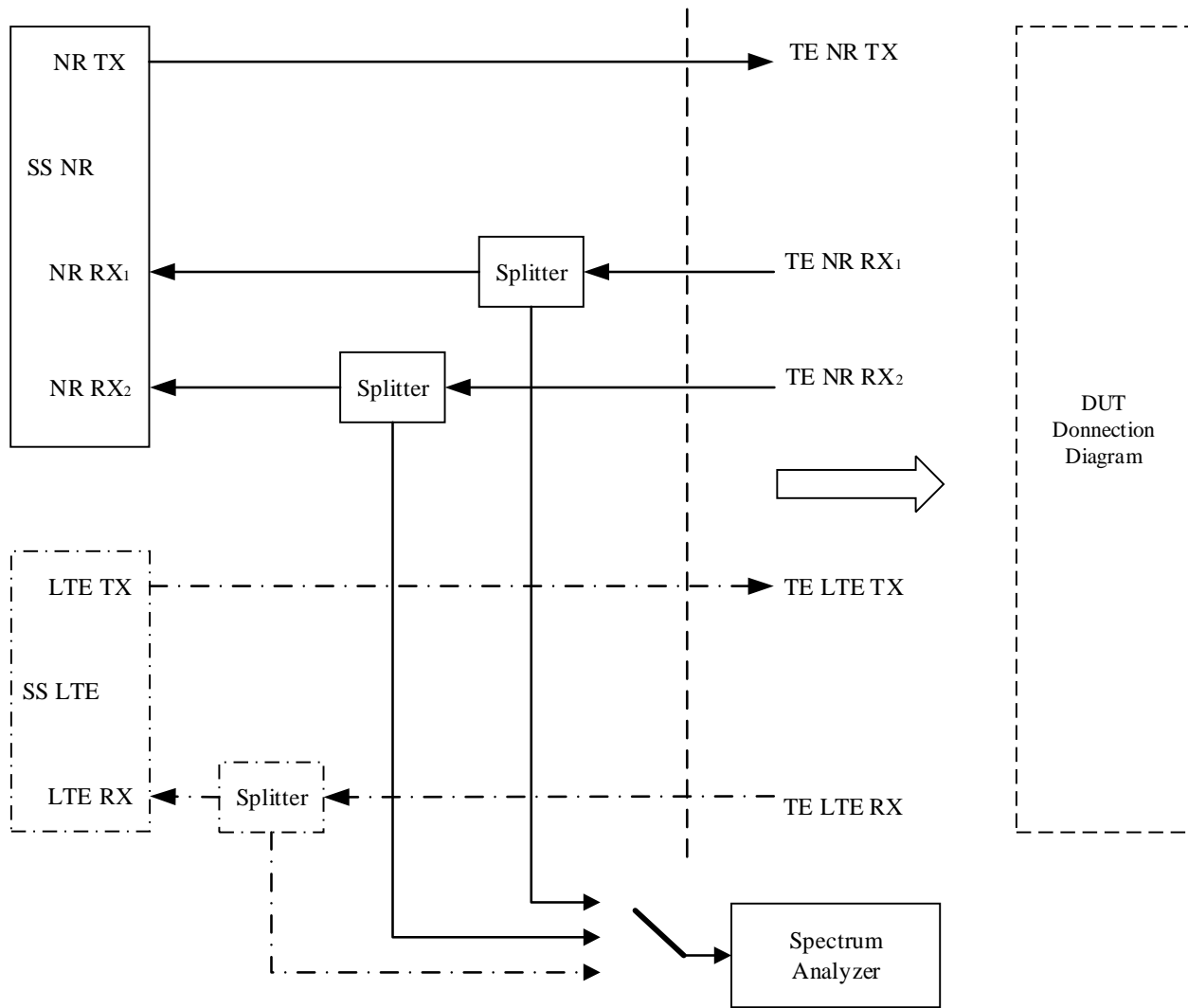


Figure A.3.1.2.2: Test Equipment connection for TX-tests for UL MIMO with additional Spectrum Analyser

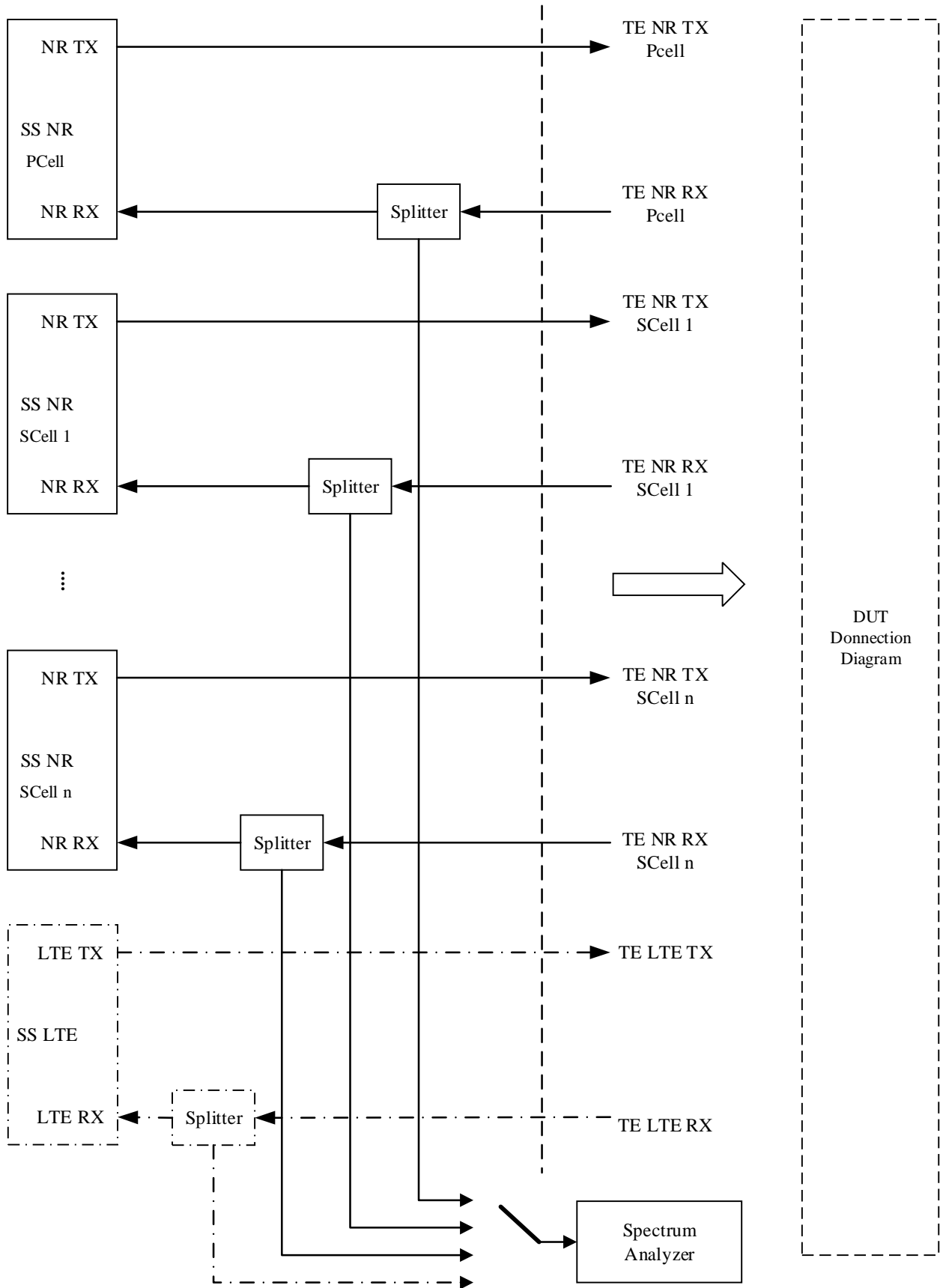


Figure A.3.1.2.3: Test Equipment connection for NR CA TX-tests with additional Spectrum Analyzer

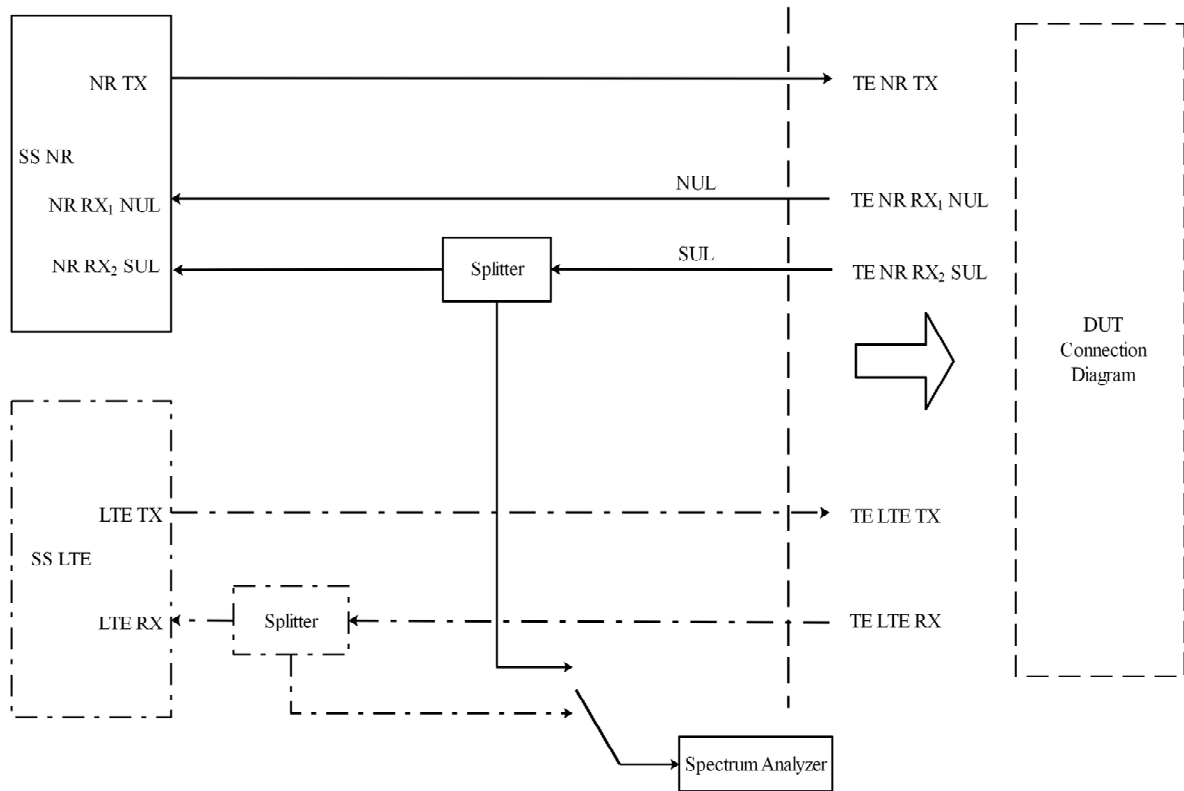


Figure A.3.1.2.4: Test Equipment connection for NR SUL TX-tests with additional Spectrum Analyzer

### A.3.1.3 Transmitter tests using Spectrum Analyser and Signal Generator

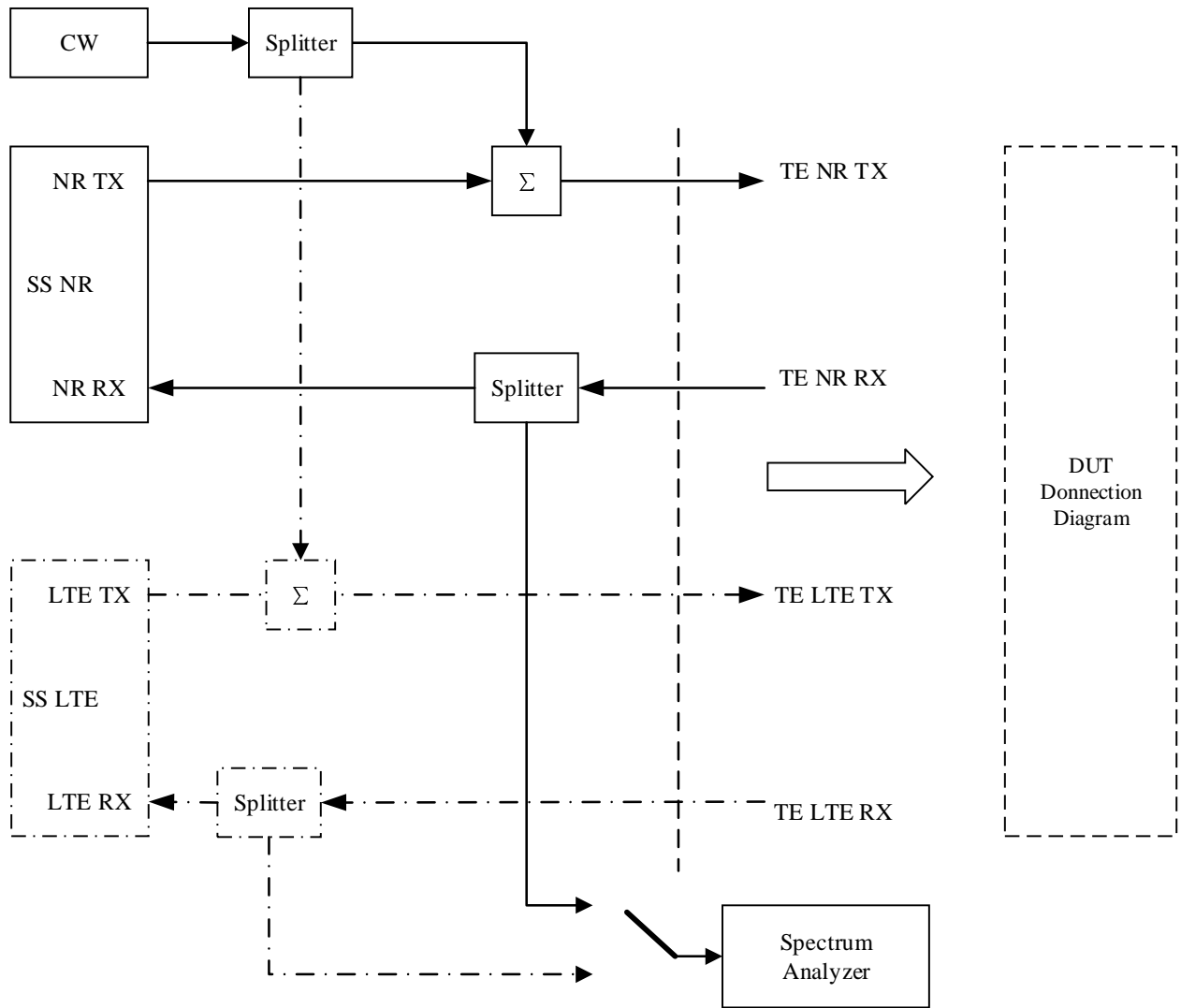


Figure A.3.1.3.1: Test Equipment connection for Transmitter tests with CW Interference and spectrum analyser

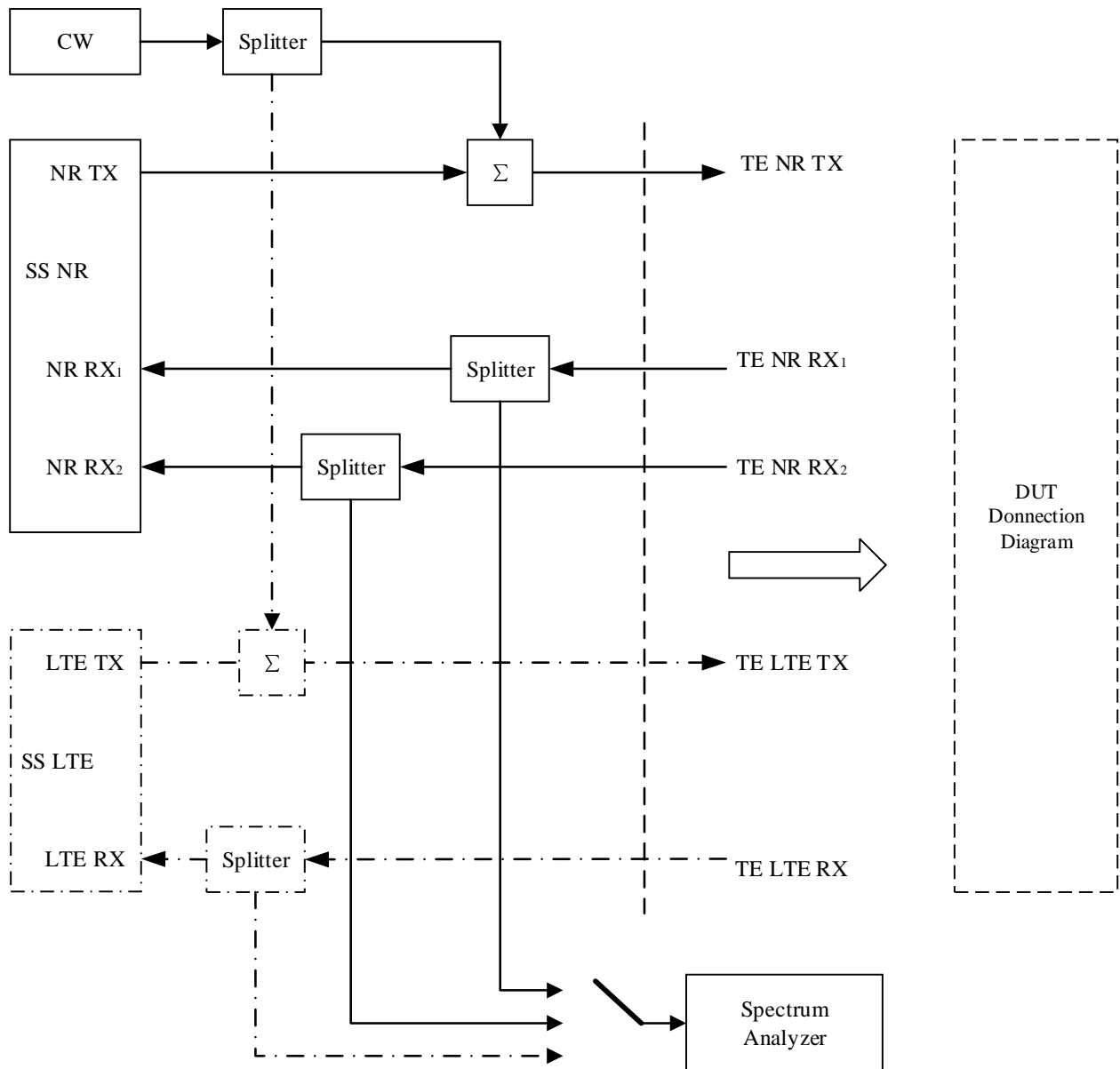


Figure A.3.1.3.2: Test Equipment connection for Transmitter tests for UL MIMO with CW Interference and spectrum analyser

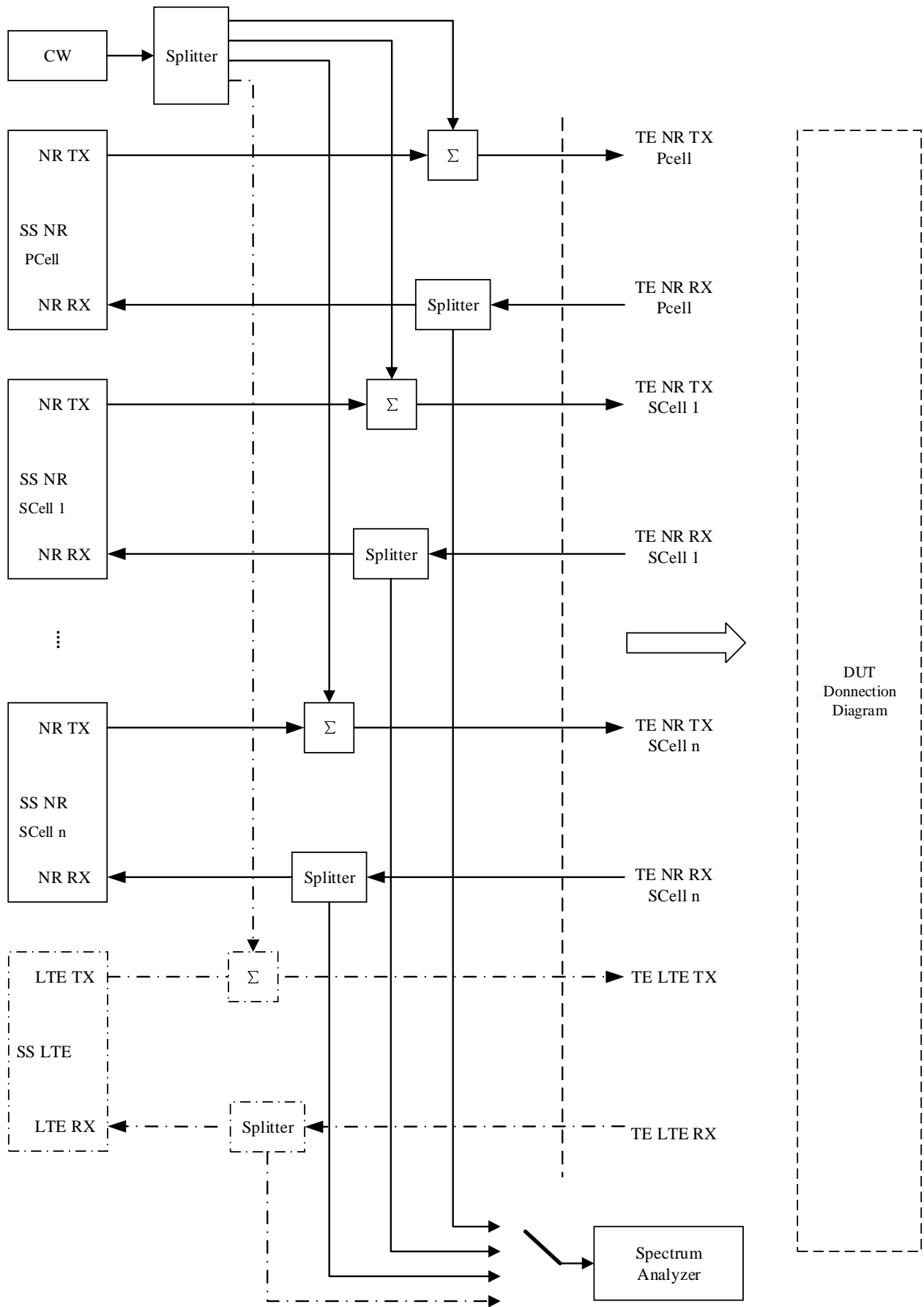
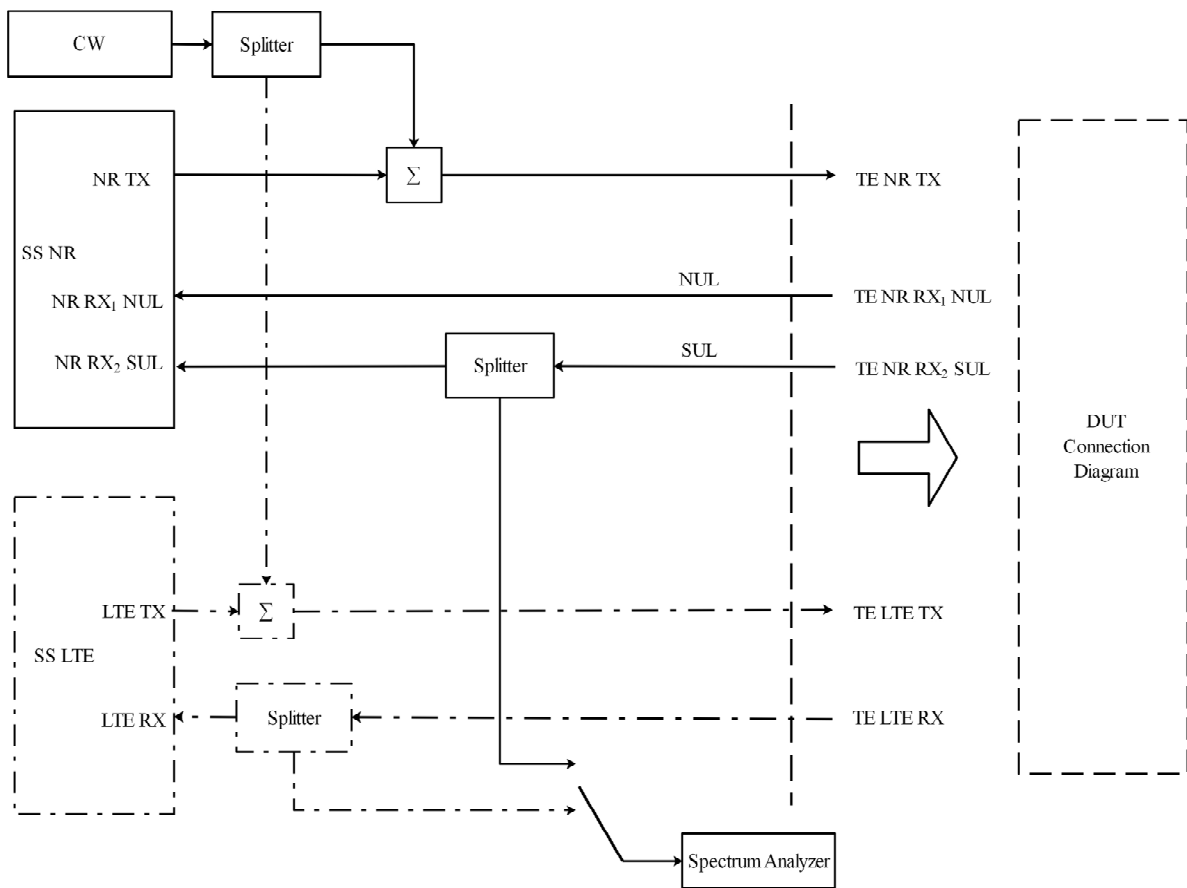


Figure A.3.1.3.3: Test Equipment connection for NR CA Transmitter tests with CW Interference and spectrum analyser





**Figure A.3.1.3.4: Test Equipment connection for Transmitter tests for SUL with CW Interference and spectrum analyzer**

### A.3.1.4 Receiver tests using Signal Generator

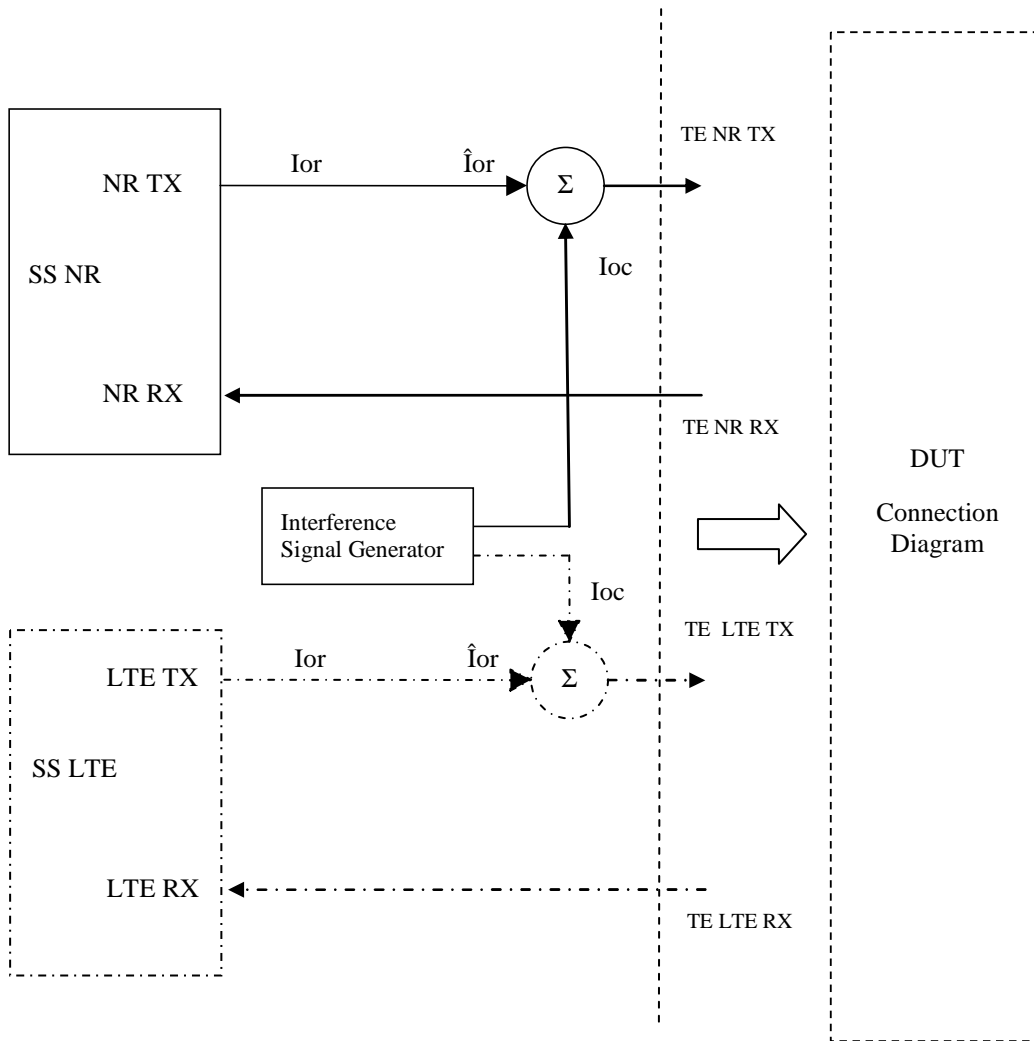


Figure A.3.1.4.1: Test Equipment connection for Receiver tests with Modulated Interference

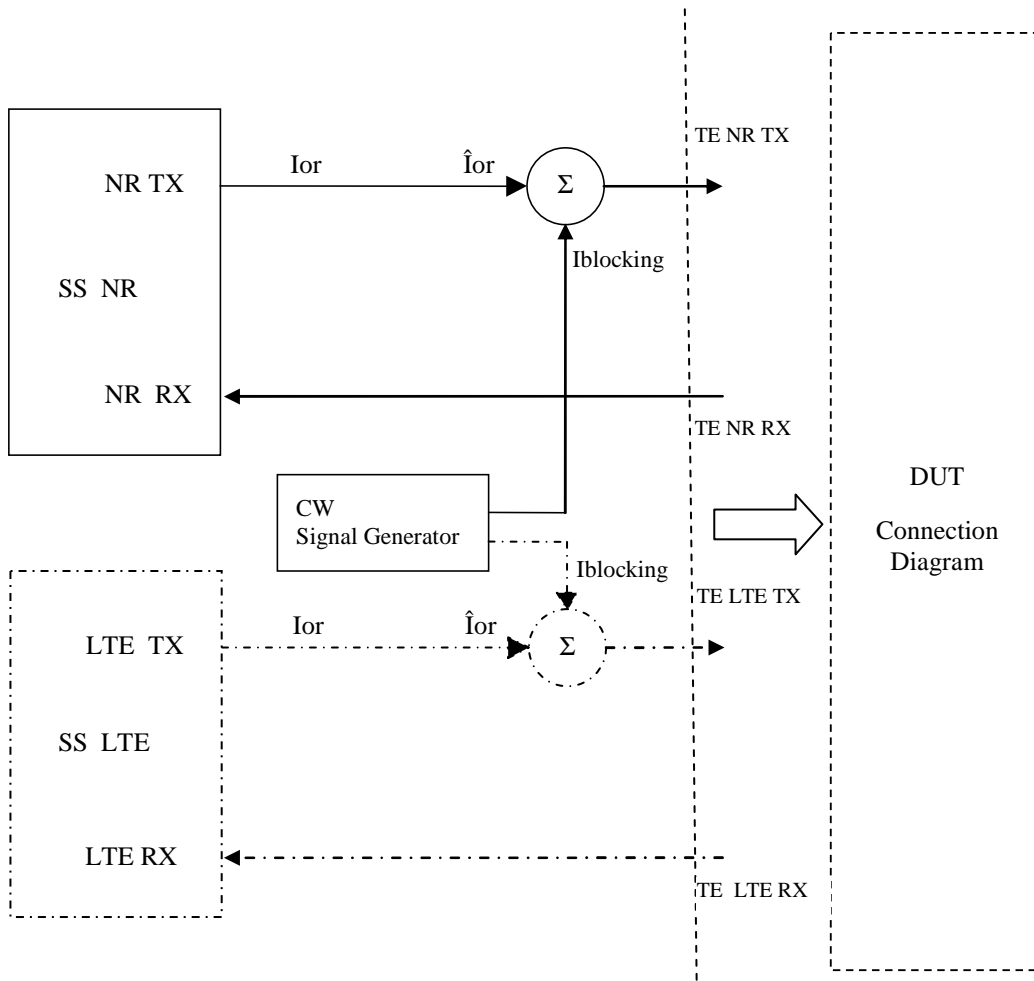
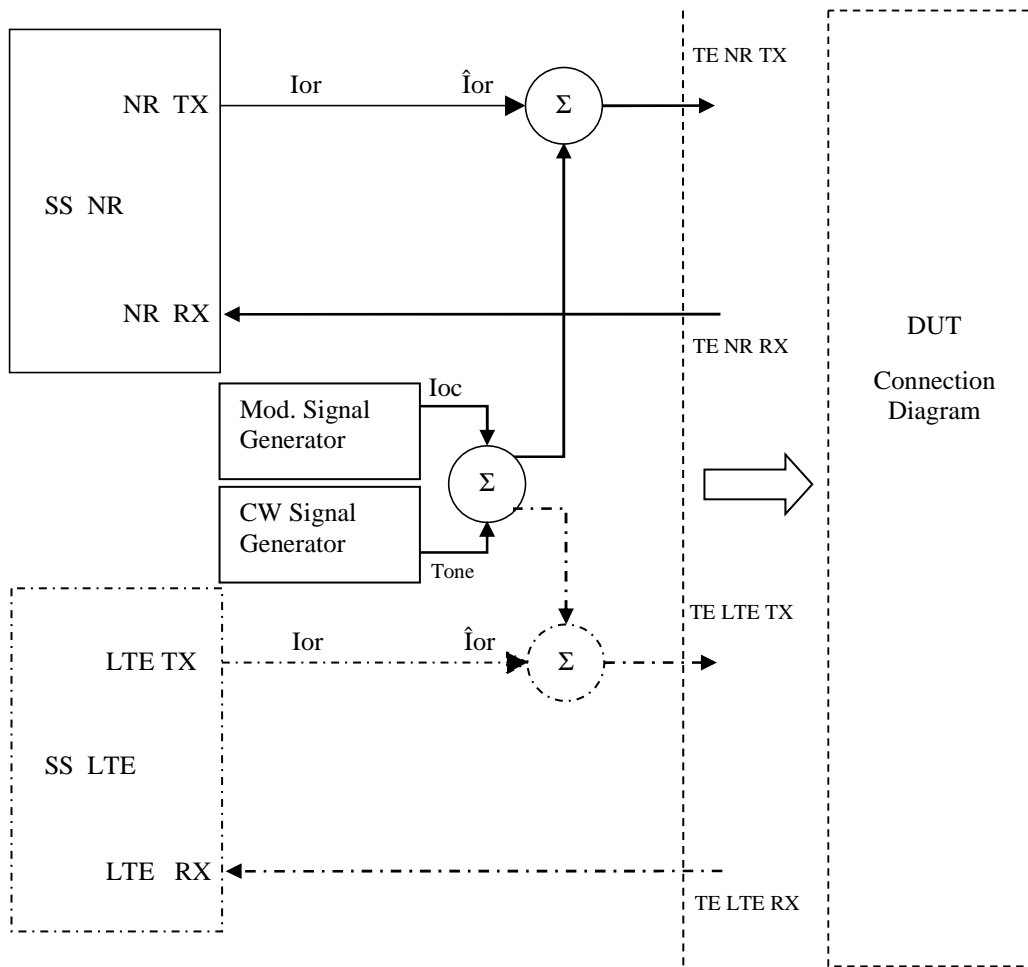


Figure A.3.1.4.2: Test Equipment connection for Receiver tests with CW Interference



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

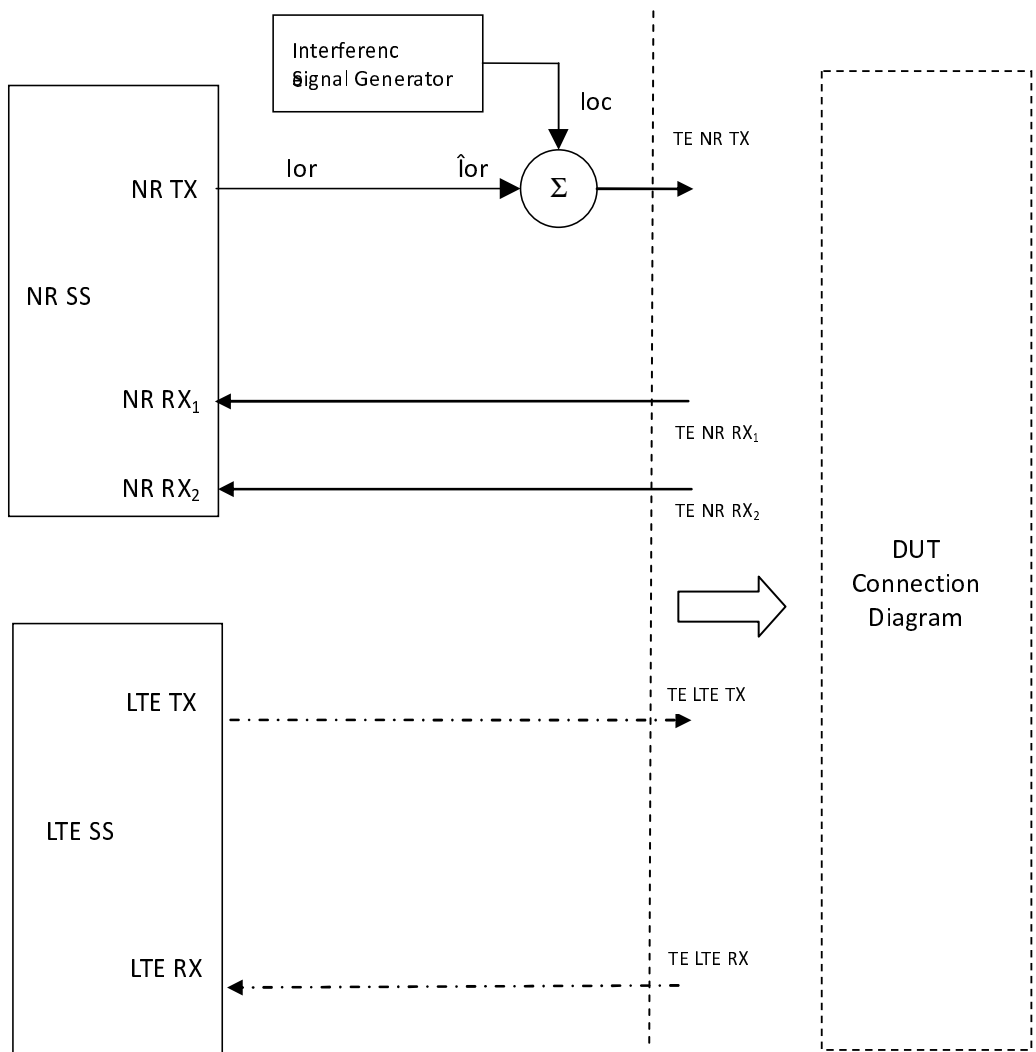


Figure A.3.1.4.4: Test Equipment connection for Receiver tests for UL MIMO with Modulated Interference

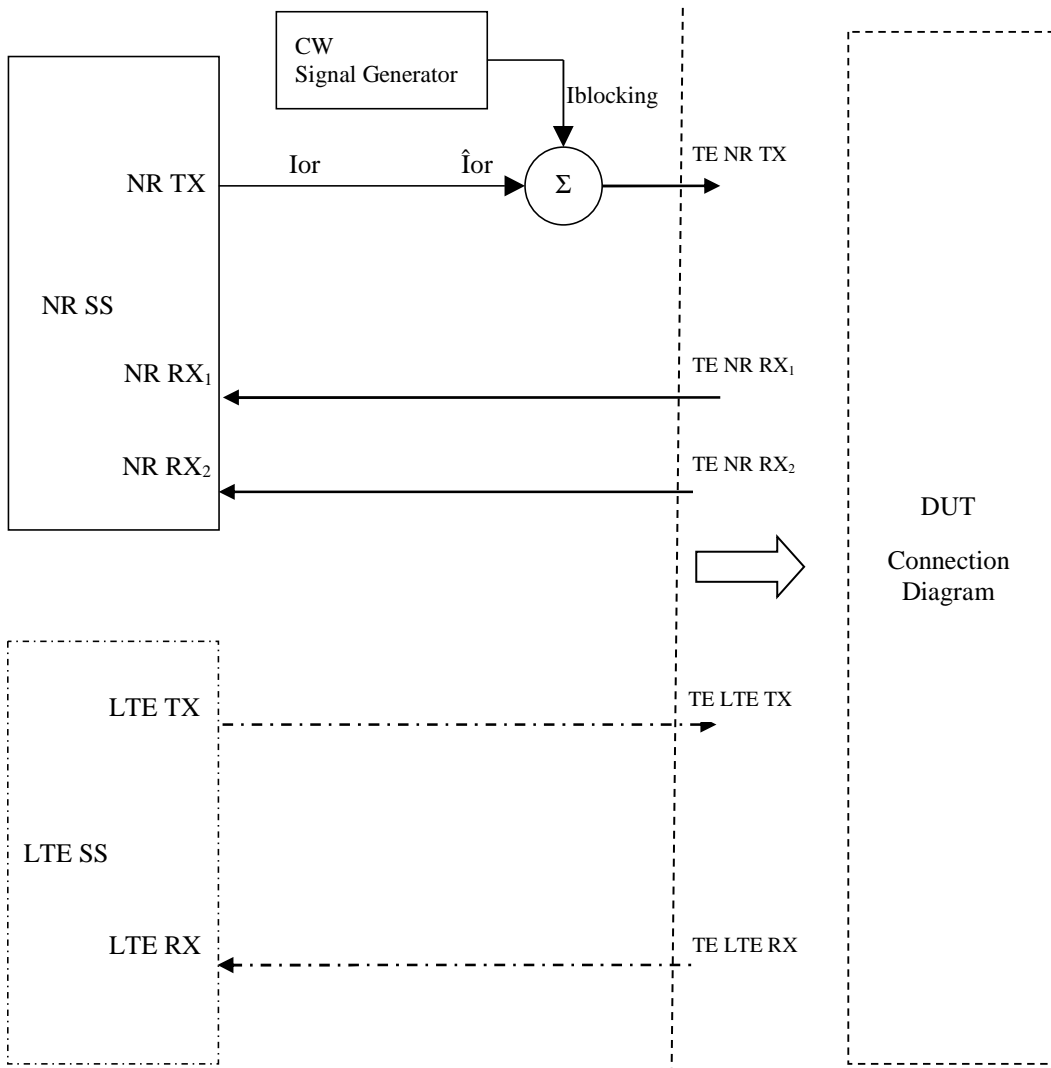


Figure A.3.1.4.5: Test Equipment connection for Receiver tests for UL MIMO with CW Interference

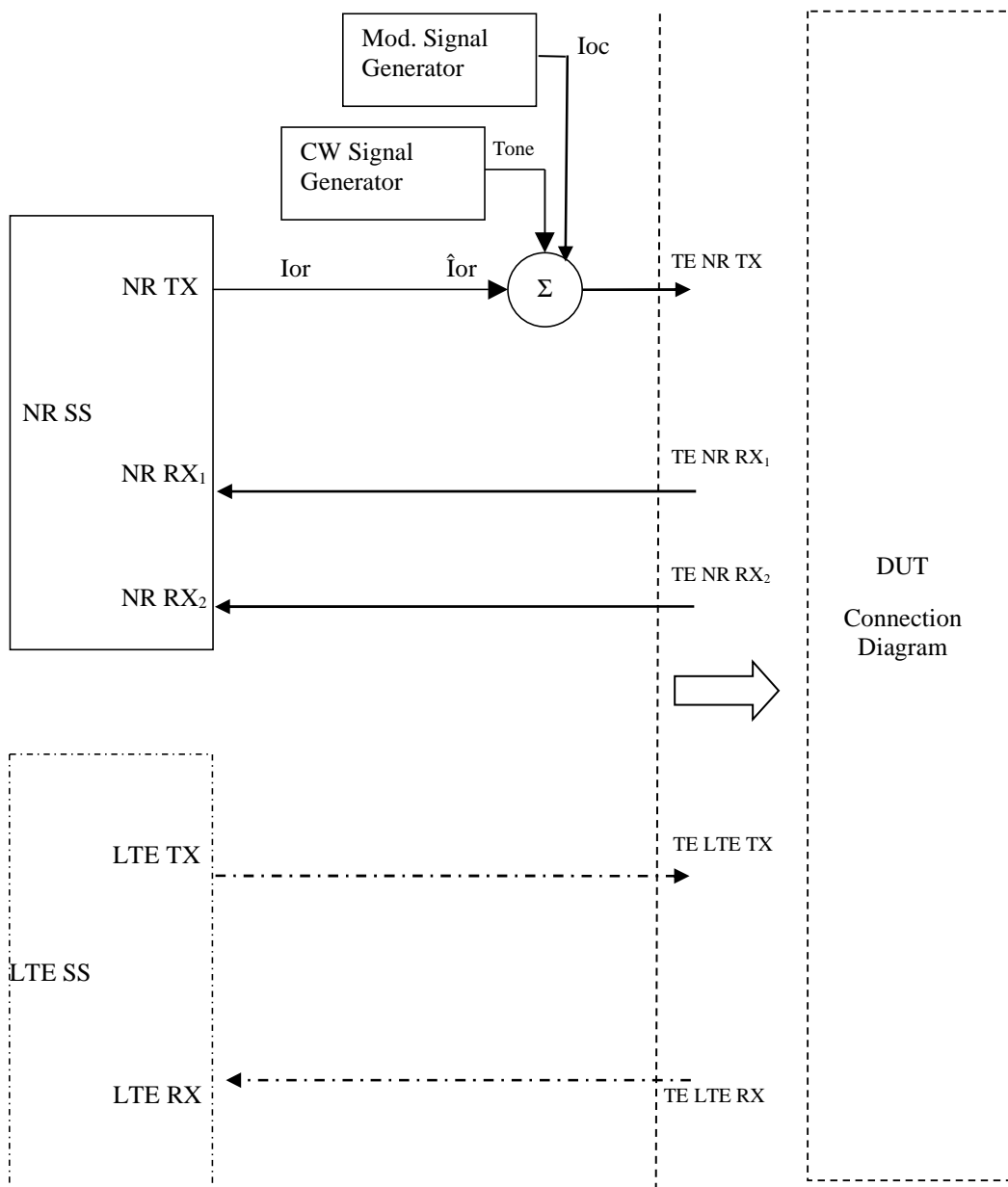
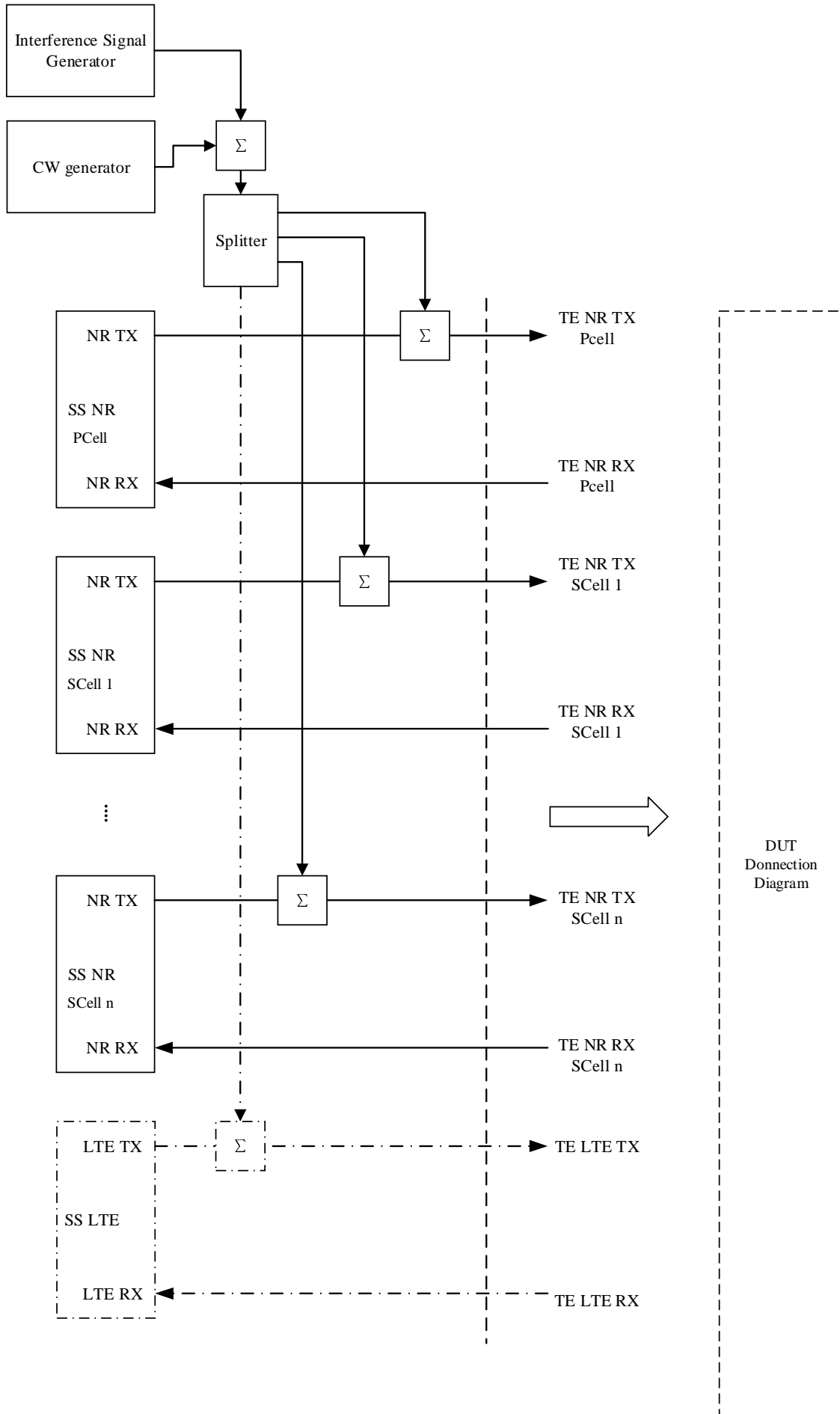
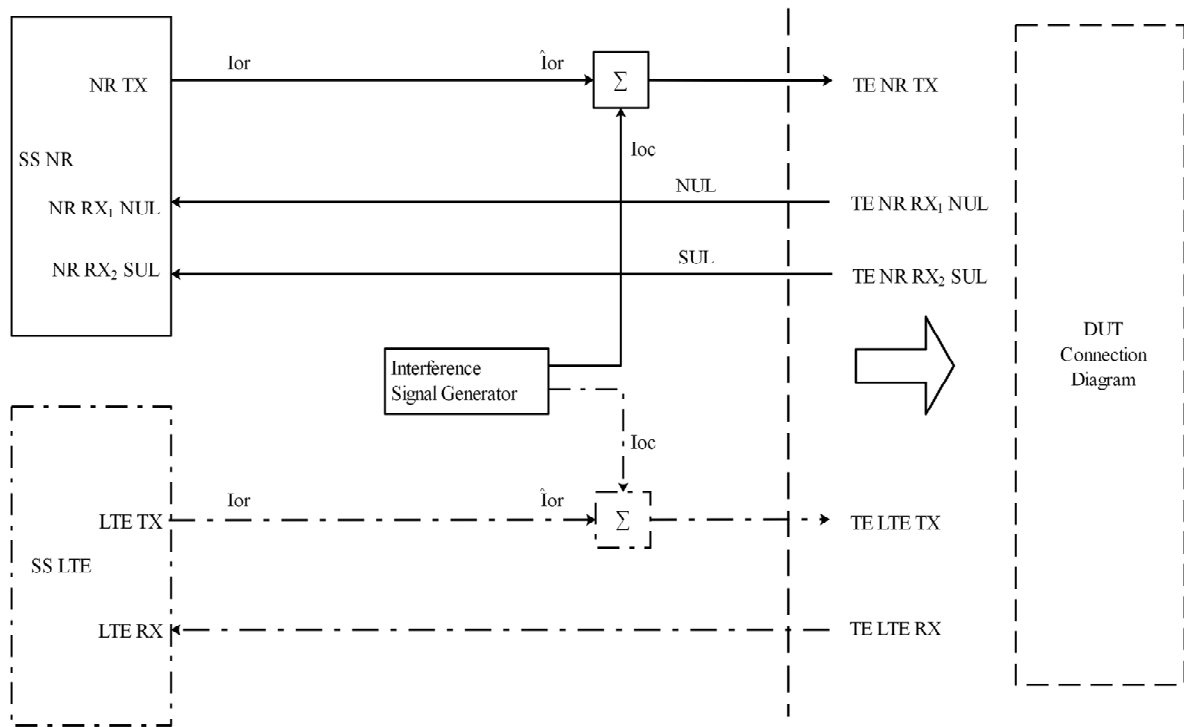


Figure A.3.1.4.6: Test Equipment connection for Receiver tests for UL MIMO with both Modulated and additional CW Interference signal

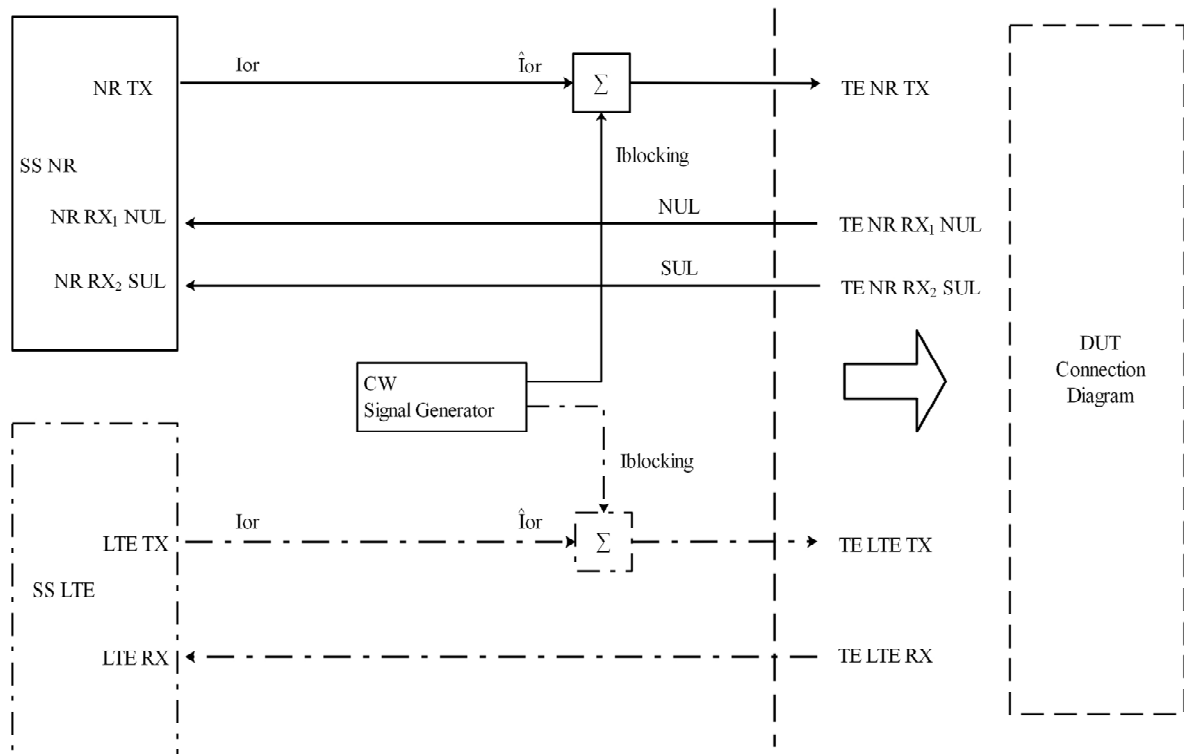




**Figure A.3.1.4.7: Test Equipment connection for NR CA Receiver tests with additional Modulated Interference signal and/or CW Interference signal**



**Figure A.3.1.4.8: Test Equipment connection for NR SUL Receiver tests with Modulated Interference**



**Figure A.3.1.4.9: Test Equipment connection for NR SUL Receiver tests with CW Interference**

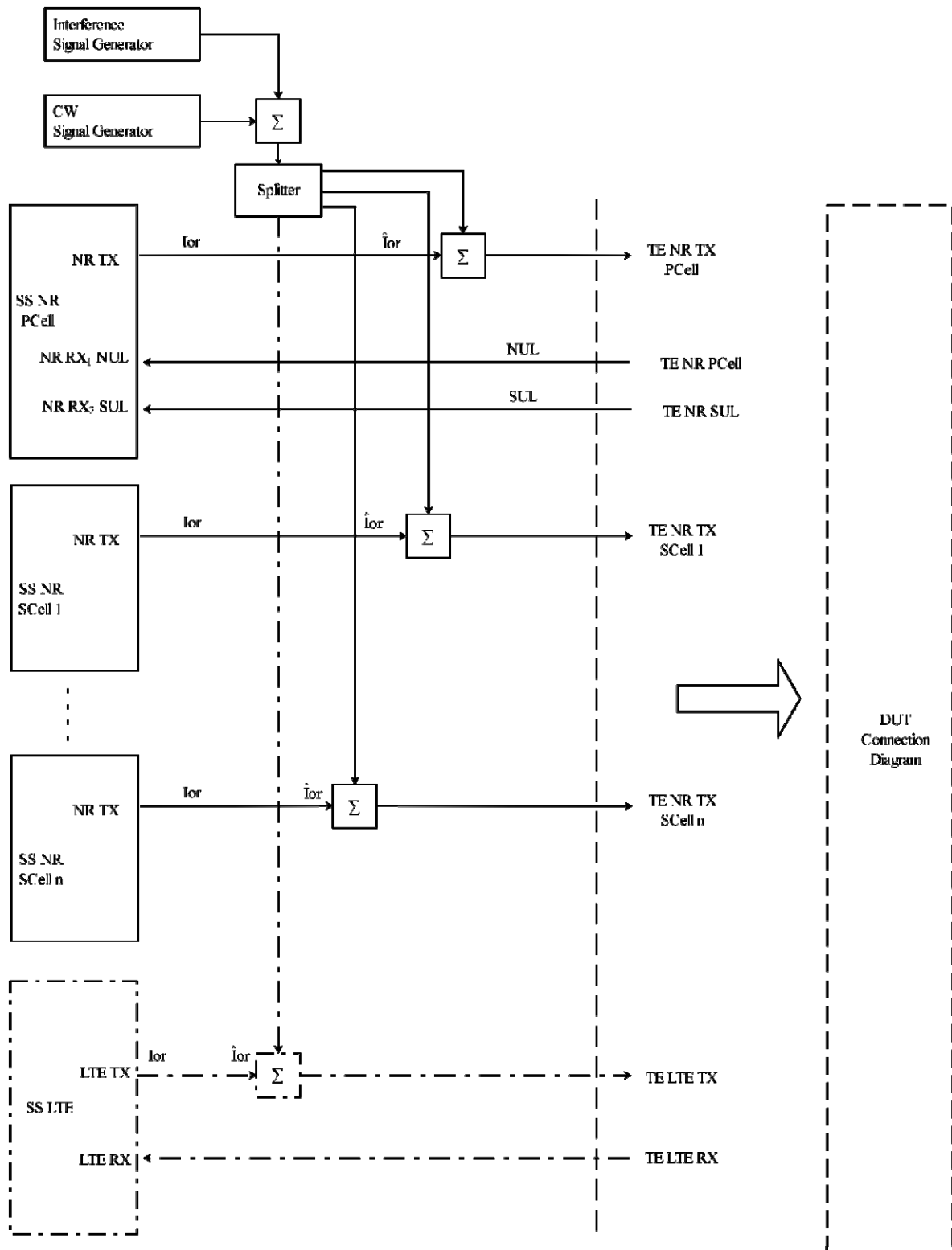


Figure A.3.1.4.10: Test Equipment connection for NR SUL with DL CA Receiver tests with additional Modulated Interference and/or CW Interference signal

### A.3.1.5 Receiver tests using Spectrum Analyser

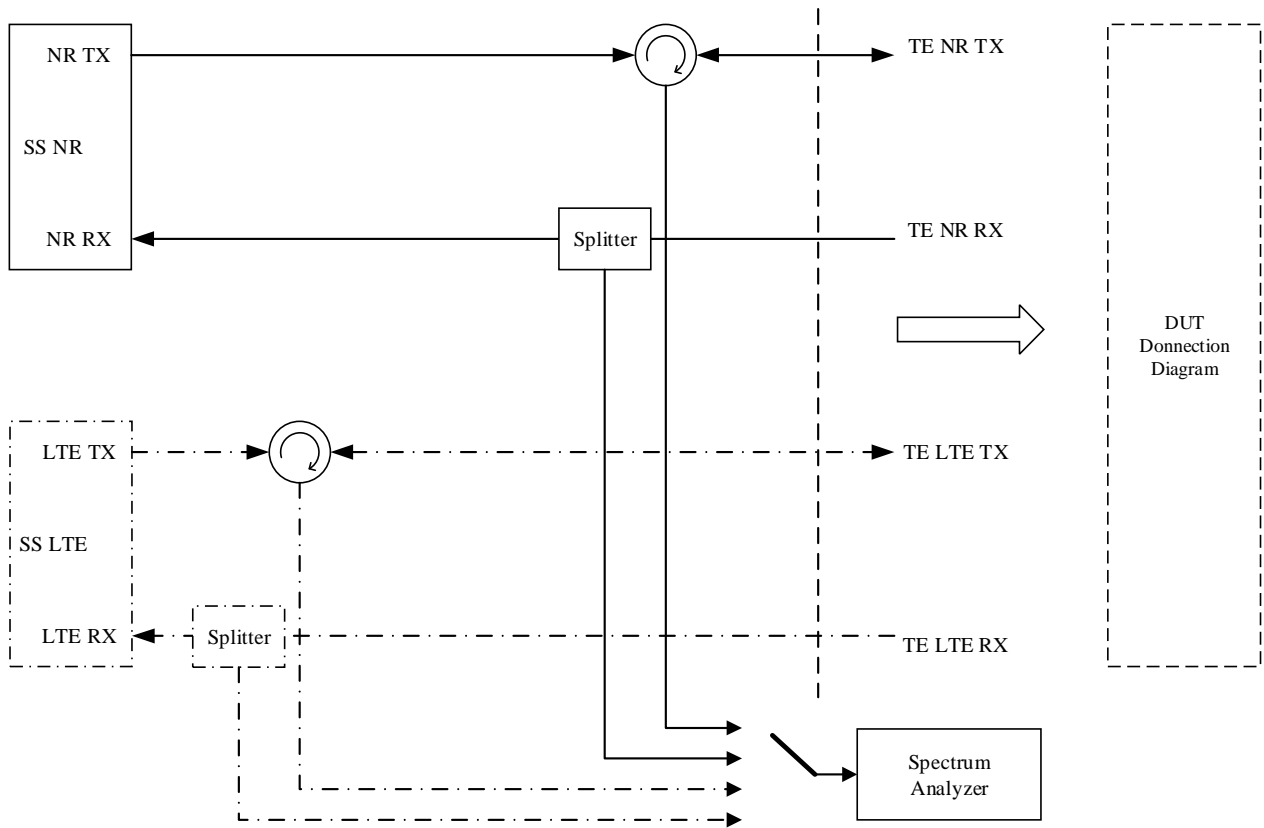


Figure A.3.1.5.1: Test Equipment connection for RX-tests with additional Spectrum Analyser

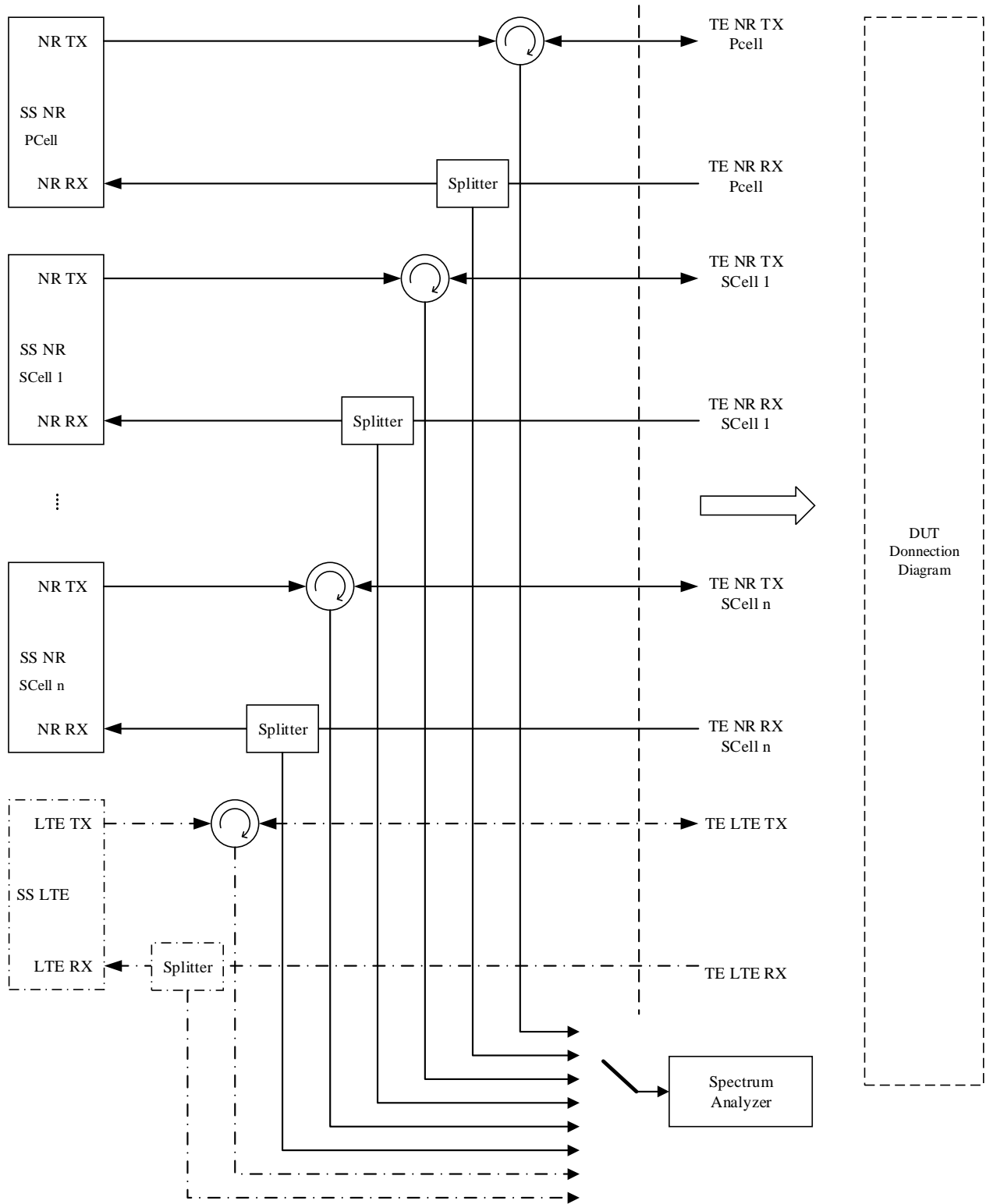


Figure A.3.1.5.2: Test Equipment connection for NR CA RX-tests with additional Spectrum Analyzer

### A.3.1.6 Receiver Performance tests

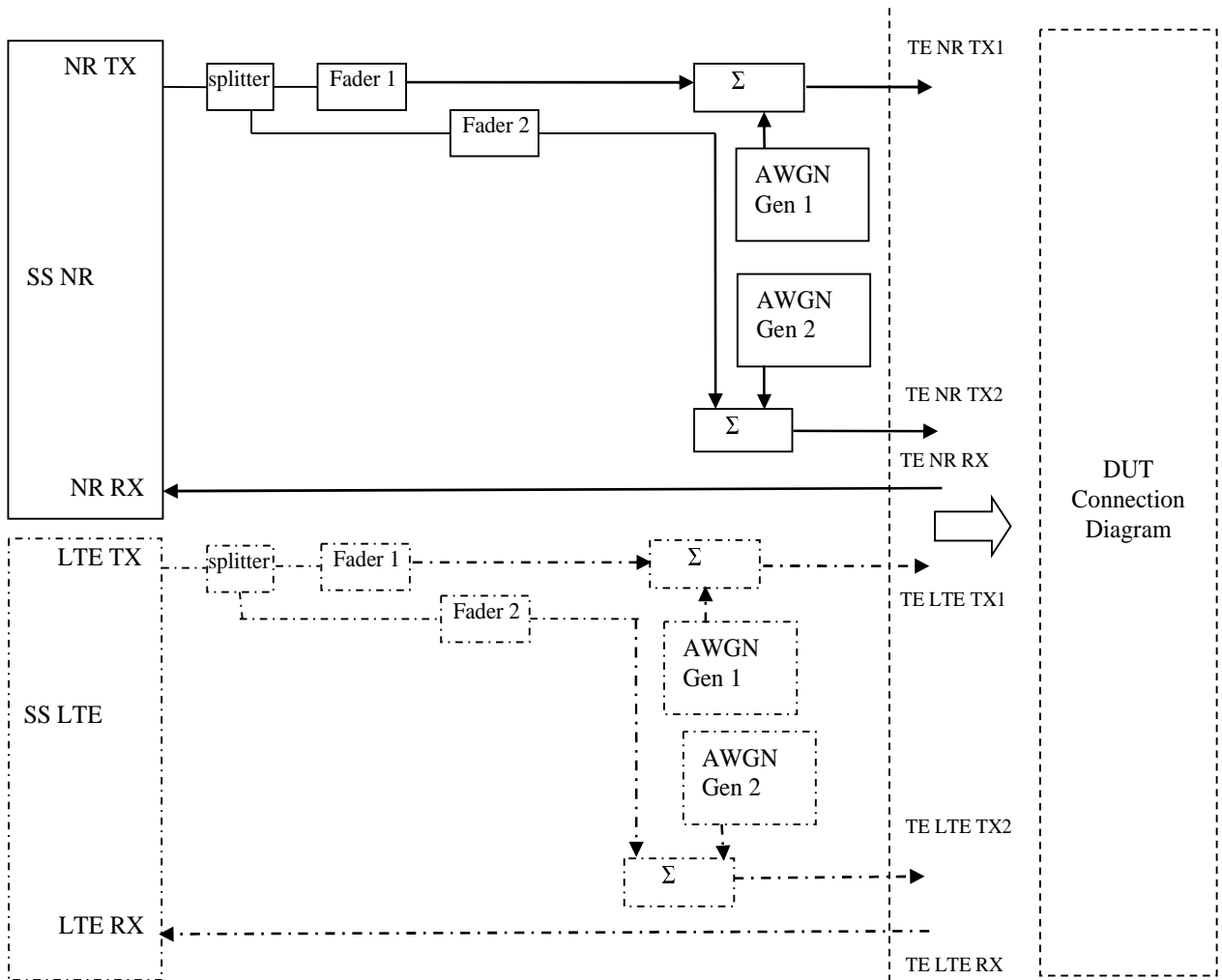
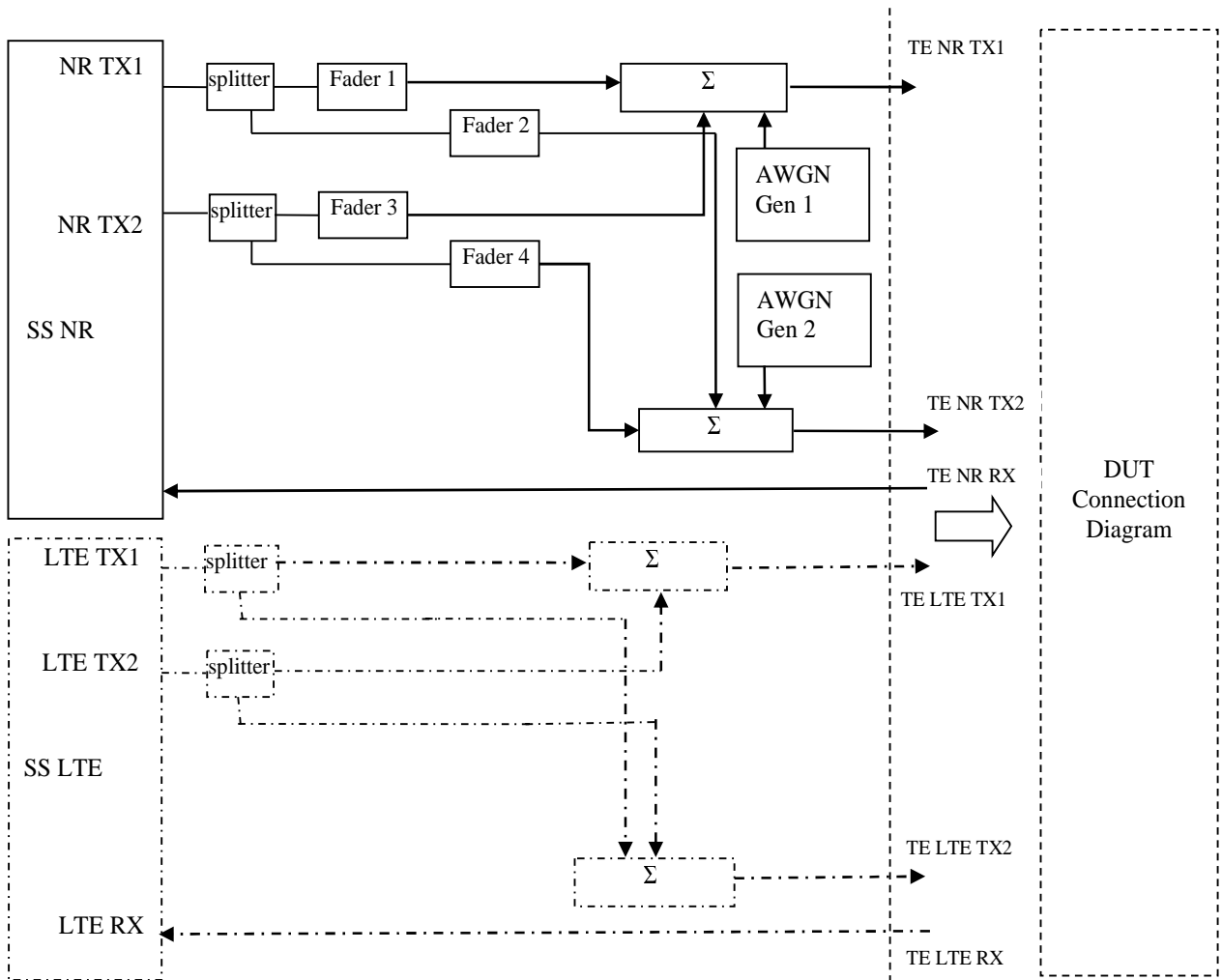
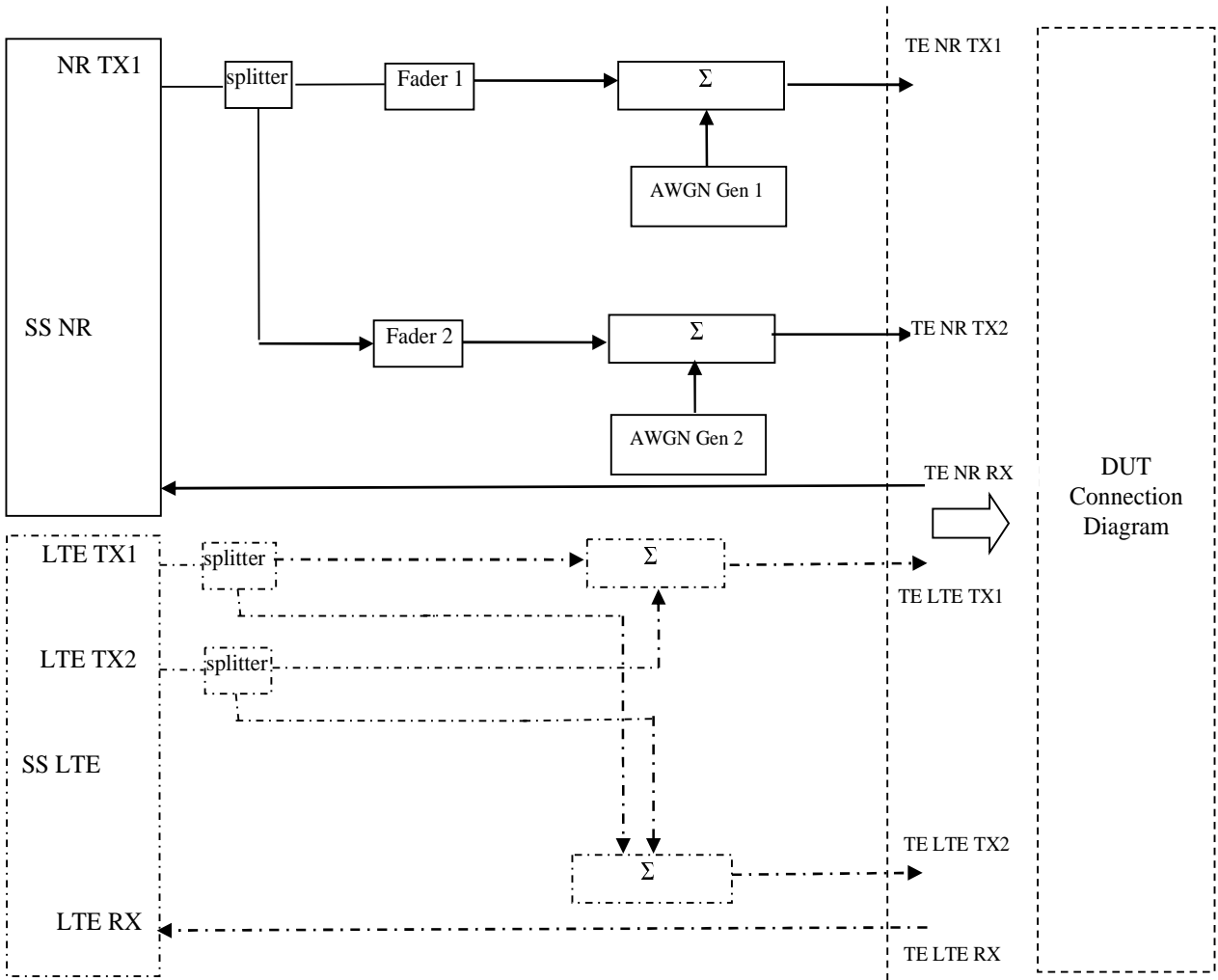


Figure A.3.1.6.1: Test Equipment connection for Receiver Performance tests with antenna configuration 1x2

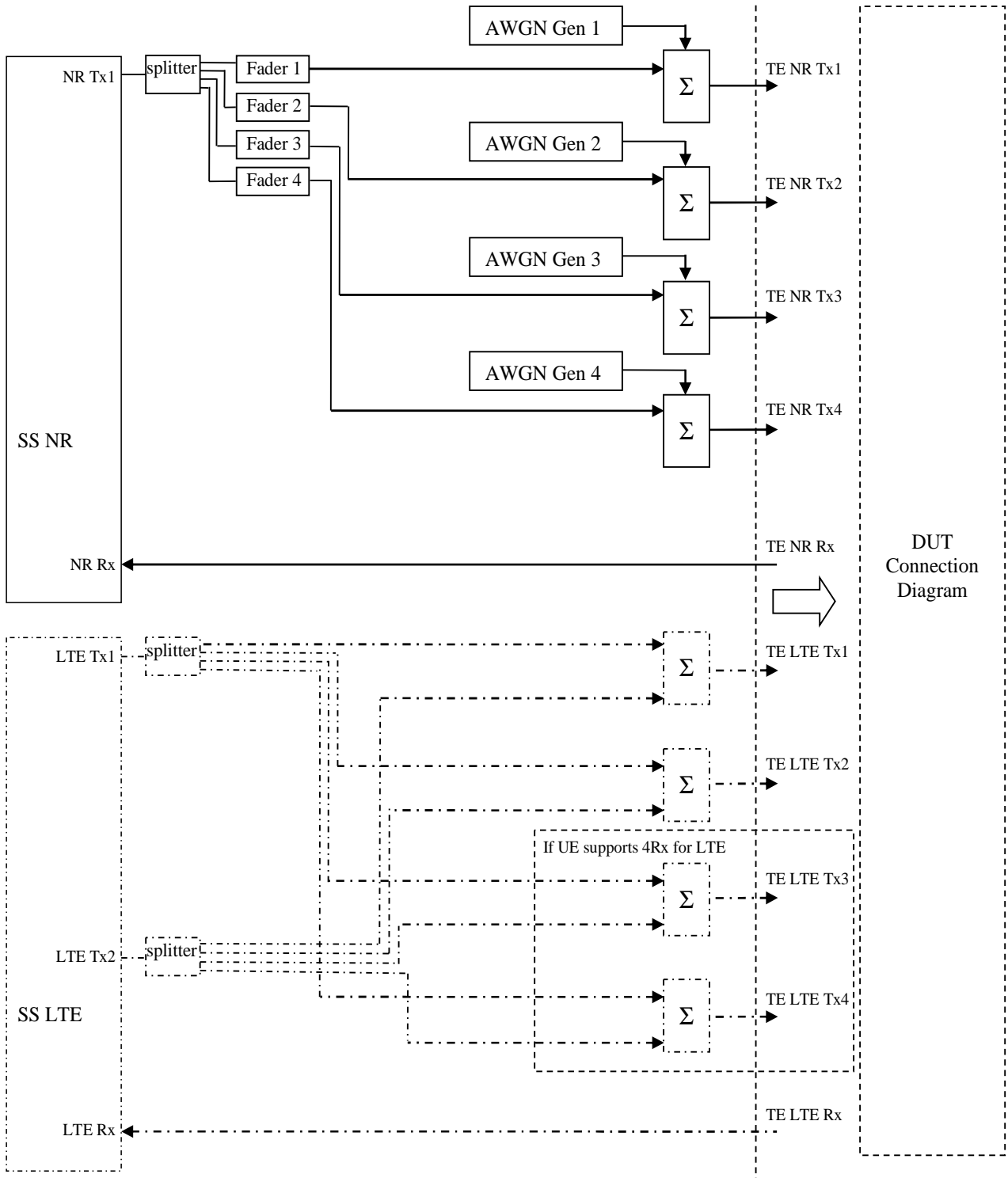
### A.3.1.7 Demodulation Performance and CSI reporting tests



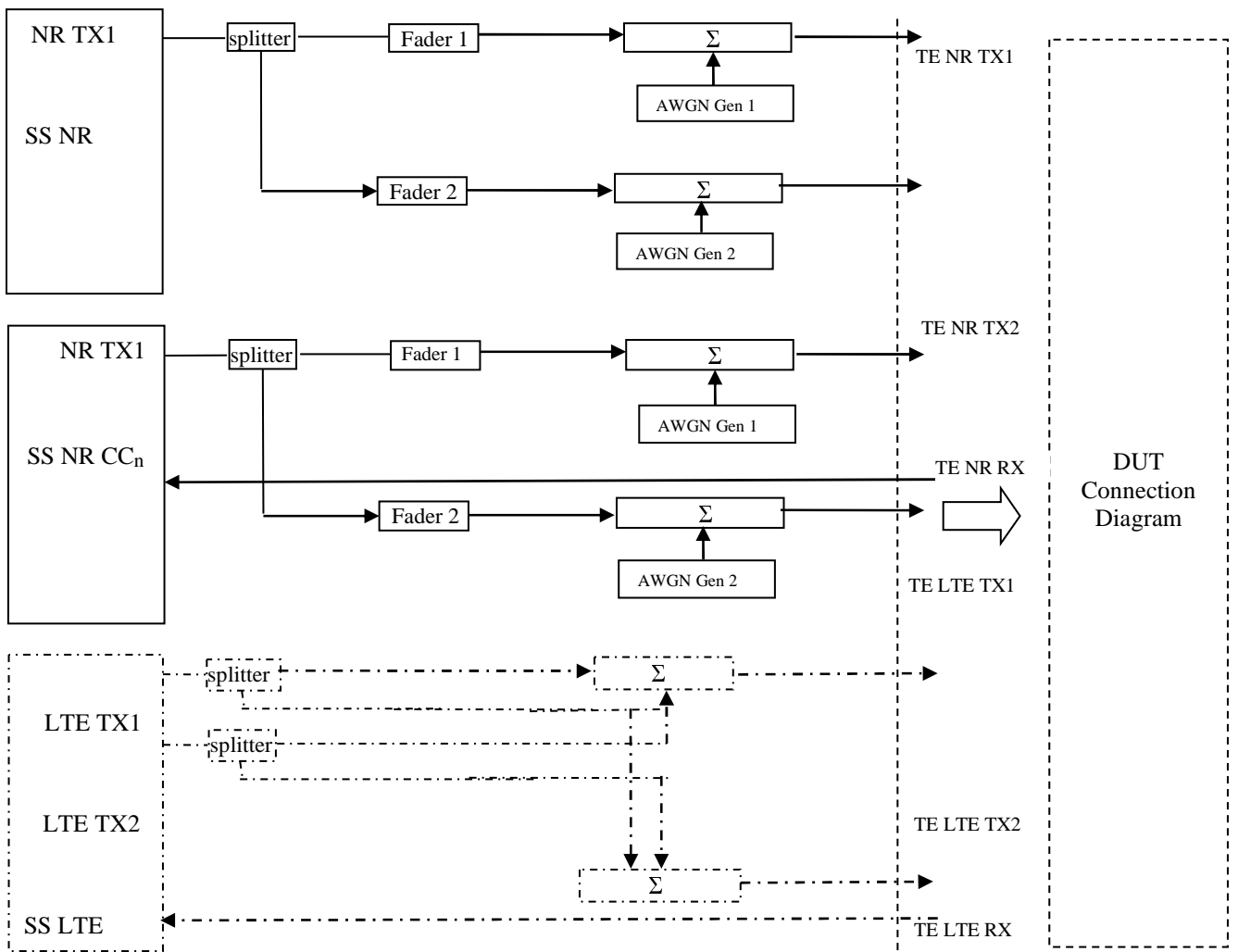
**Figure A.3.1.7.1: Test Equipment connection for Demodulation Performance and CSI reporting tests with antenna configuration 2x2**



**Figure A.3.1.7.2: Test Equipment connection for Demodulation Performance and CSI reporting tests with antenna configuration 1x2**



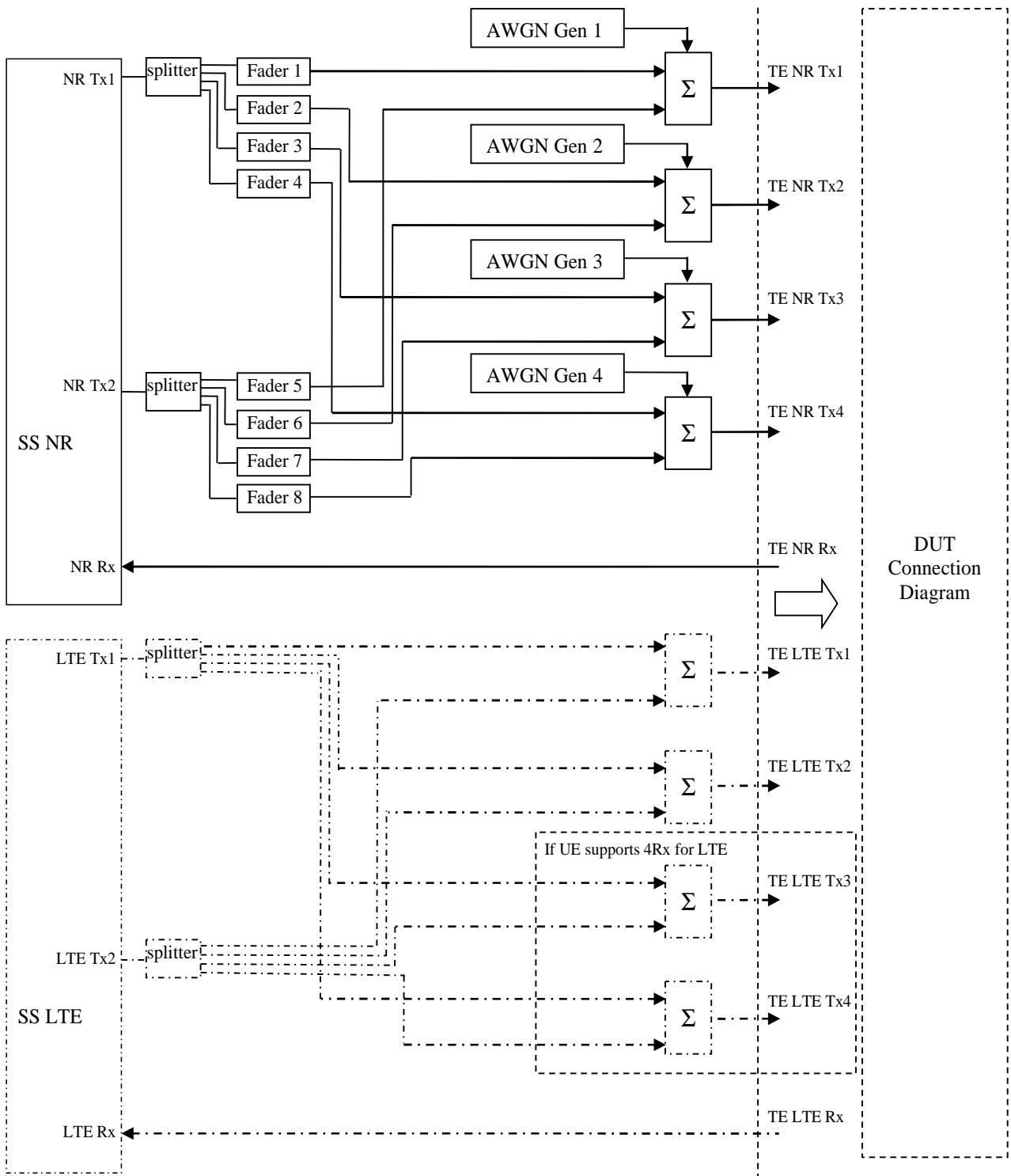




**Figure A.3.1.7.2A: Test Equipment connection for Demodulation Performance and CSI reporting tests with antenna configuration 1x2 for nDLCA**

**Figure A.3.1.7.3: Test Equipment connection for Demodulation Performance and CSI reporting tests with antenna configuration 1x4**

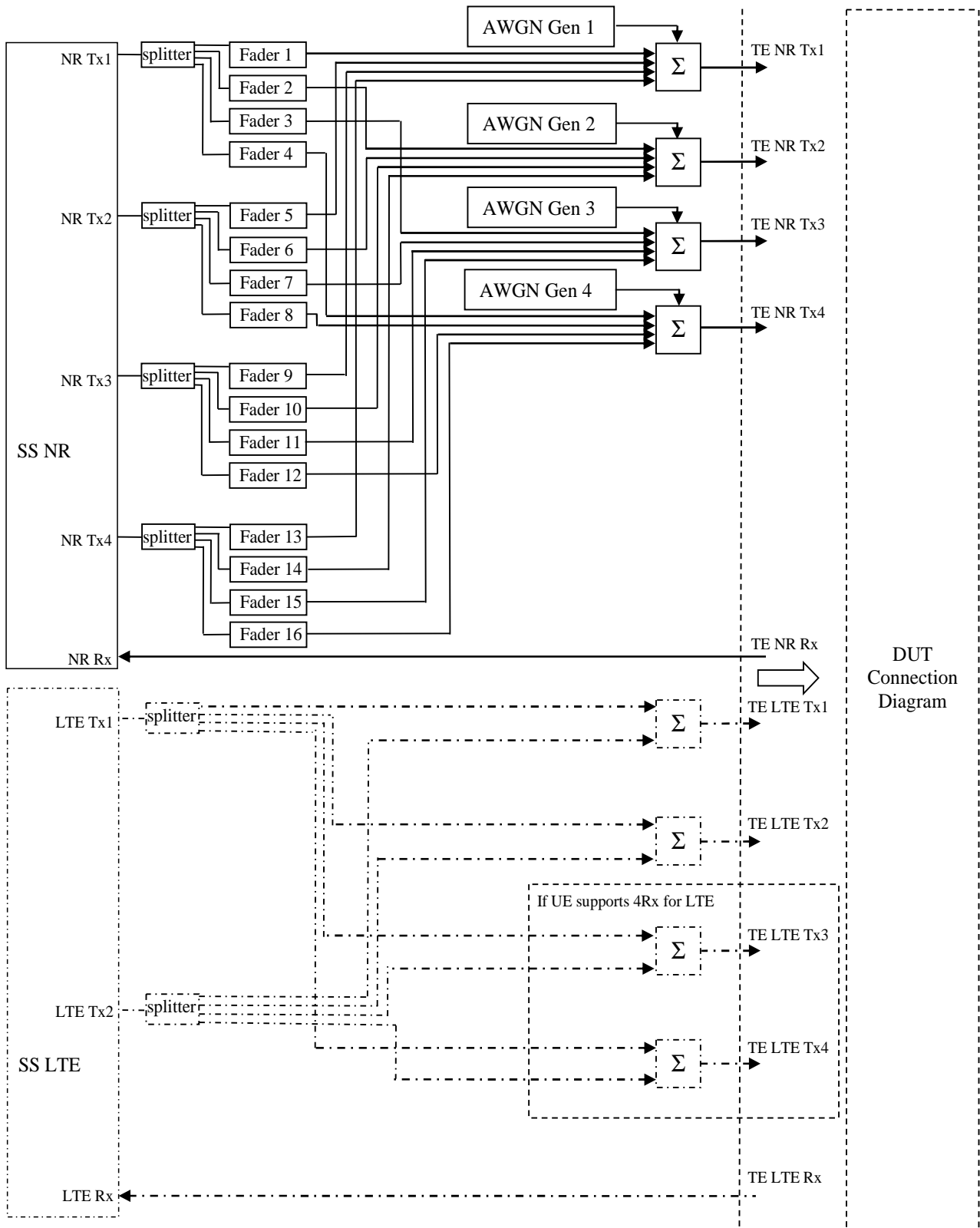
Note: LTE can be 2Rx or 4Rx and not dependent on NR #Rx



**Figure A.3.1.7.4: Test Equipment connection for Demodulation Performance and CSI reporting tests with antenna configuration 2x4**

Note 1: LTE can be 2Rx or 4Rx and not dependent on NR #Rx

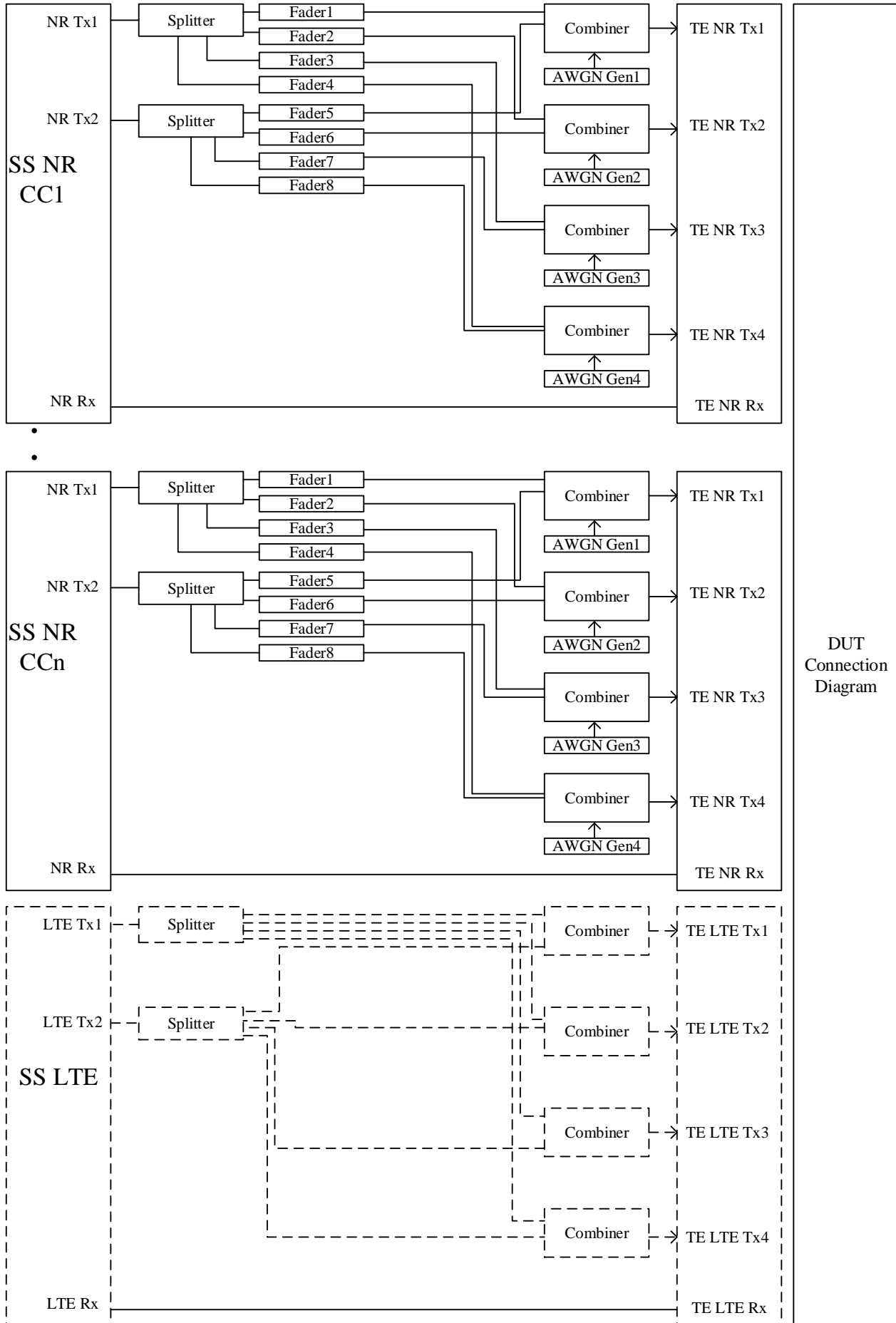
Note 2: NR may be 2Rx on some of the CCs, in that case TE NR TX3 and TE NR TRX4 are not used



**Figure A.3.1.7.5: Test Equipment connection for Demodulation Performance and CSI reporting tests with antenna configuration 4x4**

Note 1: LTE can be 2Rx or 4Rx and not dependent on NR #Rx

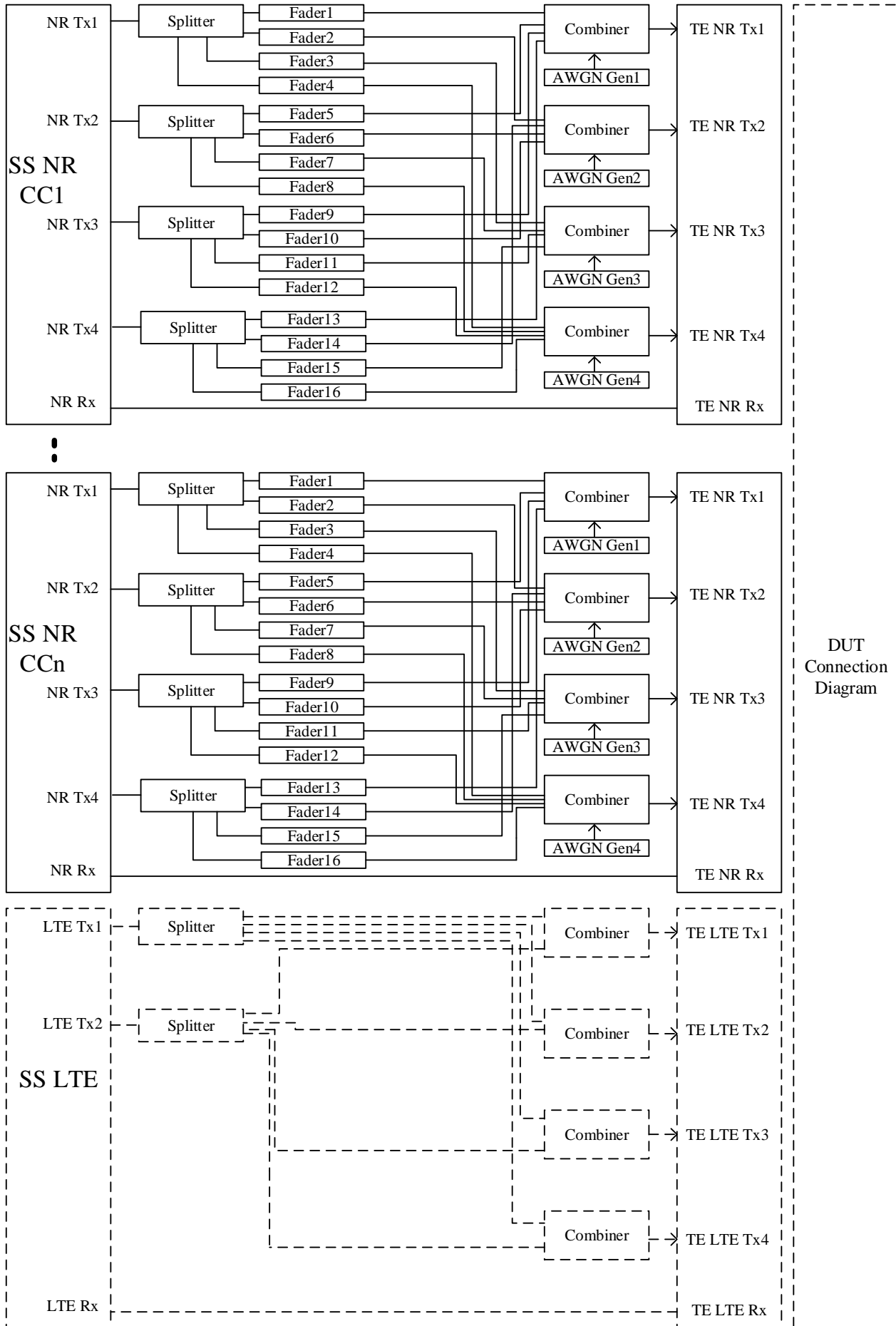
Note: 2 NR may be 2Rx on some of the CCs, in that case TE NR TX3 and TE NR TX4 are not used



**Figure A.3.1.7.6: Test Equipment connection for Demodulation Performance and CSI reporting tests with antenna configuration 2x4**

Note 1: LTE can be 2Rx or 4Rx and not dependent on NR #Rx

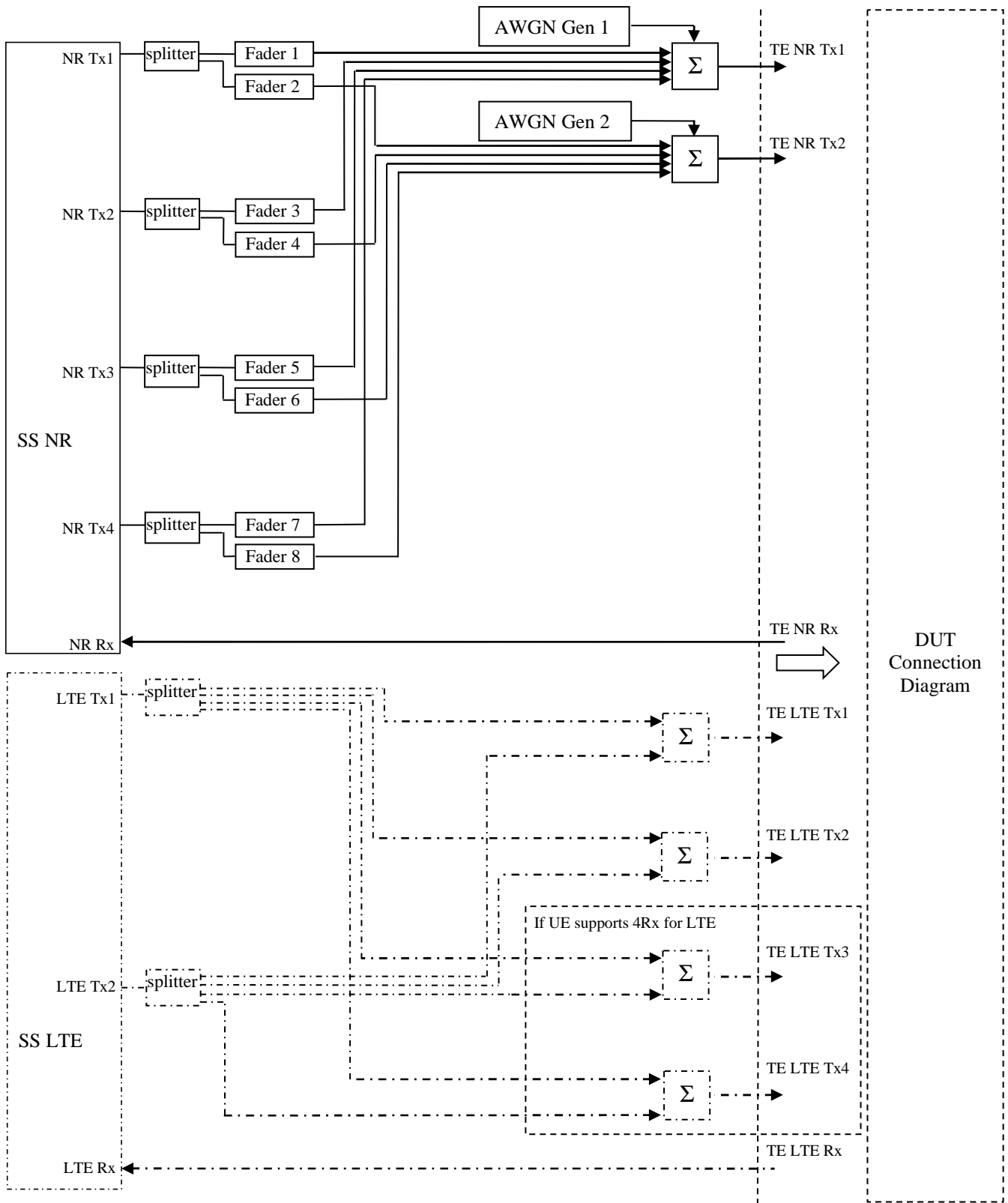
Note 2: NR may be 2Rx on some of the CCs, in that case TE NR TX3 and TE NR TX4 are not used



**Figure A.3.1.7.7: Test Equipment connection for Demodulation Performance and CSI reporting tests with antenna configuration 4x4 for CA**

Note 1: LTE can be 2Rx or 4Rx and not dependent on NR #Rx

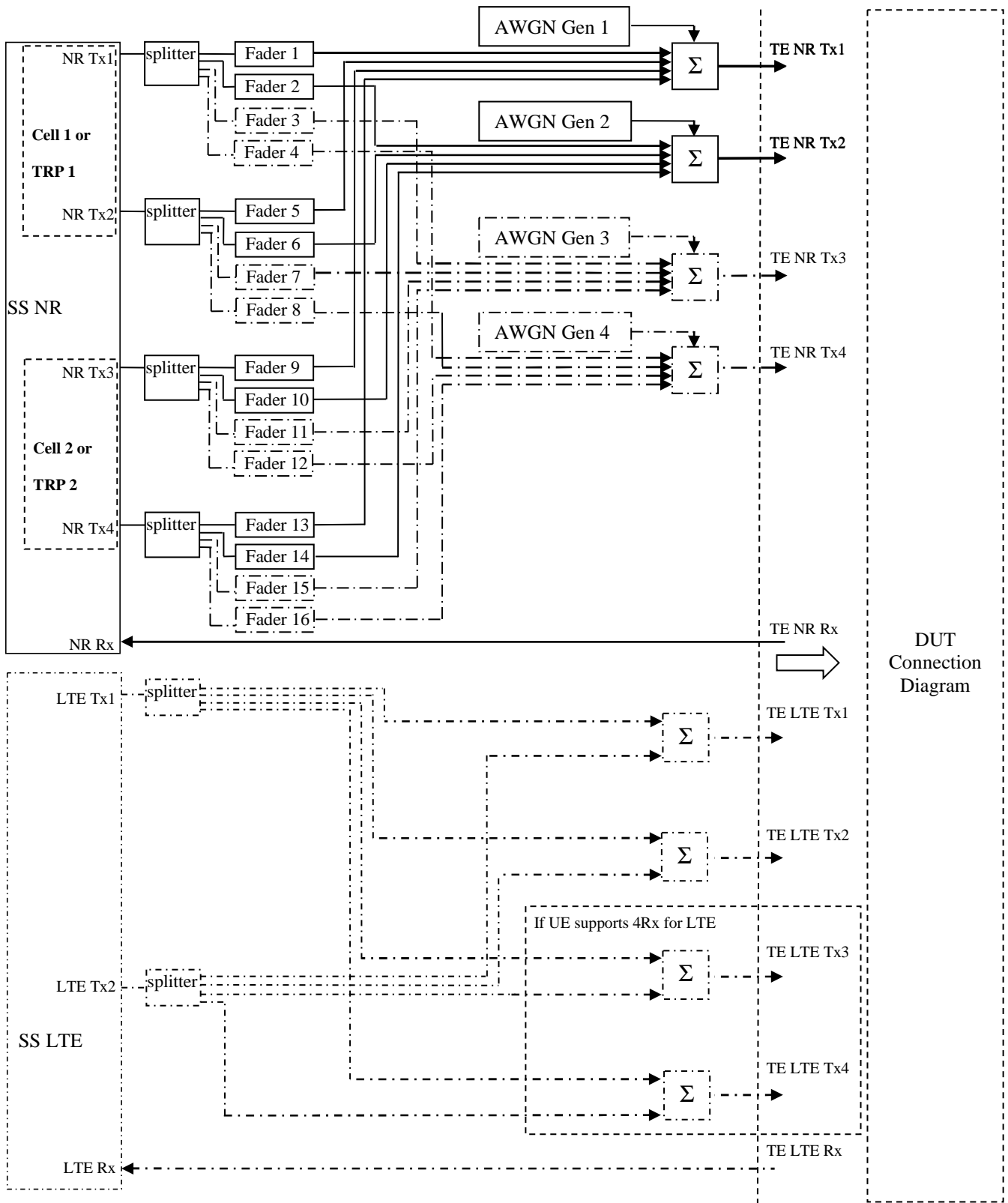
Note 2: NR may be 2Rx on some of the CCs, in that case TE NR TX3 and TE NR TX4 are not used



**Figure A.3.1.7.8: Test Equipment connection for Demodulation Performance and CSI reporting tests with antenna configuration 4x2**

Note: LTE can be 2Rx or 4Rx and not dependent on NR #Rx

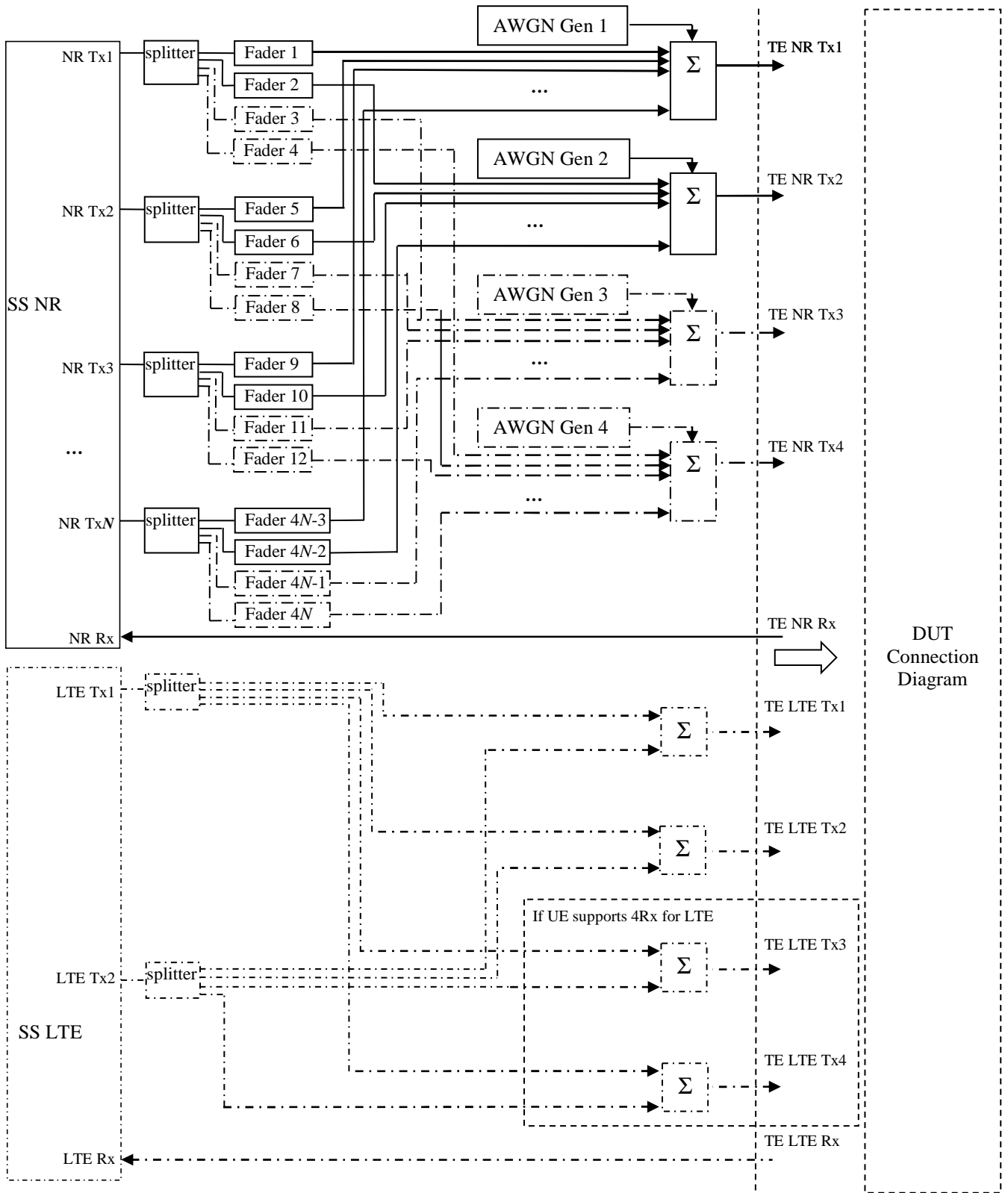




**Figure A.3.1.7.9: Test Equipment connection for Demodulation Performance and CSI reporting tests with 2 carriers or 2 TRPs (2x2 or 2x4)**

Note 1: LTE can be 2Rx or 4Rx and not dependent on NR #Rx

Note 2: NR may be 2Rx on some of the CCs, in that case TE NR TX3 and TE NR TX4 are not used



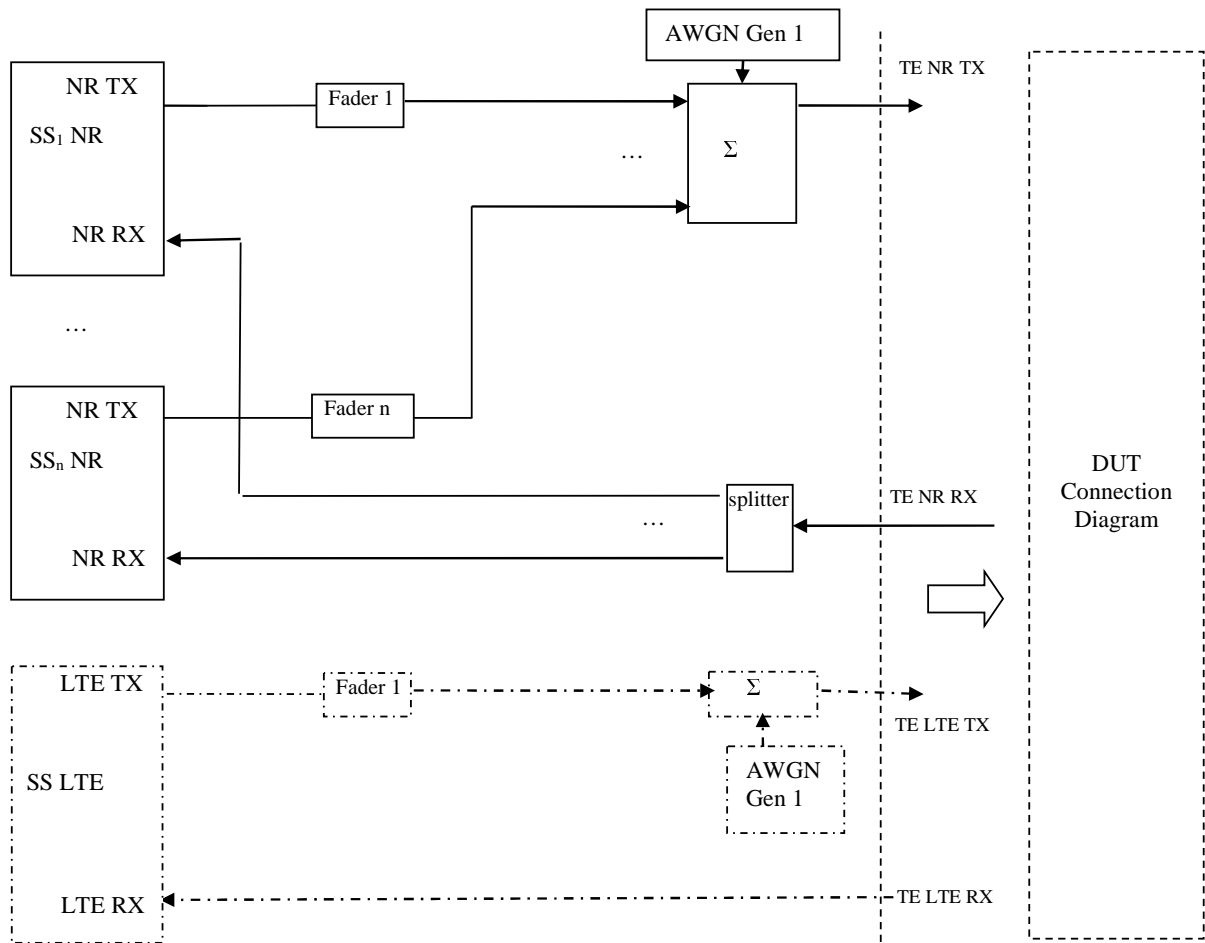
**Figure A.3.1.7.10: Test Equipment connection for Demodulation Performance and CSI reporting tests with antenna configuration Nx2 and Nx4, N=16 or N=32**

Note 1: LTE can be 2Rx or 4Rx and not dependent on NR #Rx

Note 2: NR may be 2Rx on some of the CCs, in that case TE NR TX3 and TE NR TX4 are not used

### A.3.1.8 RRM tests with more than one NR cell

The figures in this section represent connection diagrams for test cases with more than one NR cell. The parameters in the connection diagram, e.g. the number of cells  $n$  or the value of the phase rotator  $\varphi_i$  shall be defined by the test cases.



**Figure A.3.1.8.1: Test Equipment connection for tests with more than one NR cell and antenna configuration 1x1**

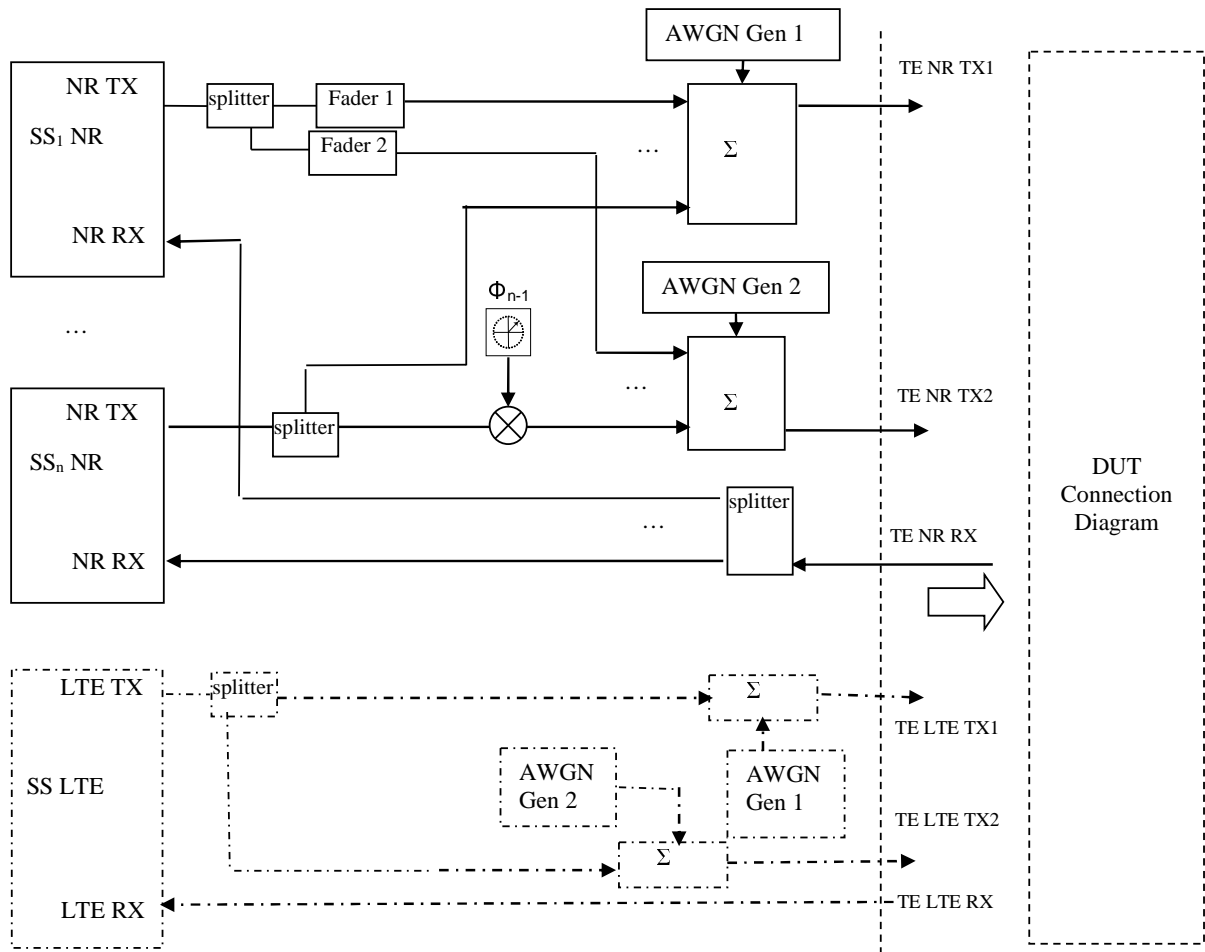


Figure A.3.1.8.2: Test Equipment connection for tests with more than one NR cell and antenna configuration 1x2

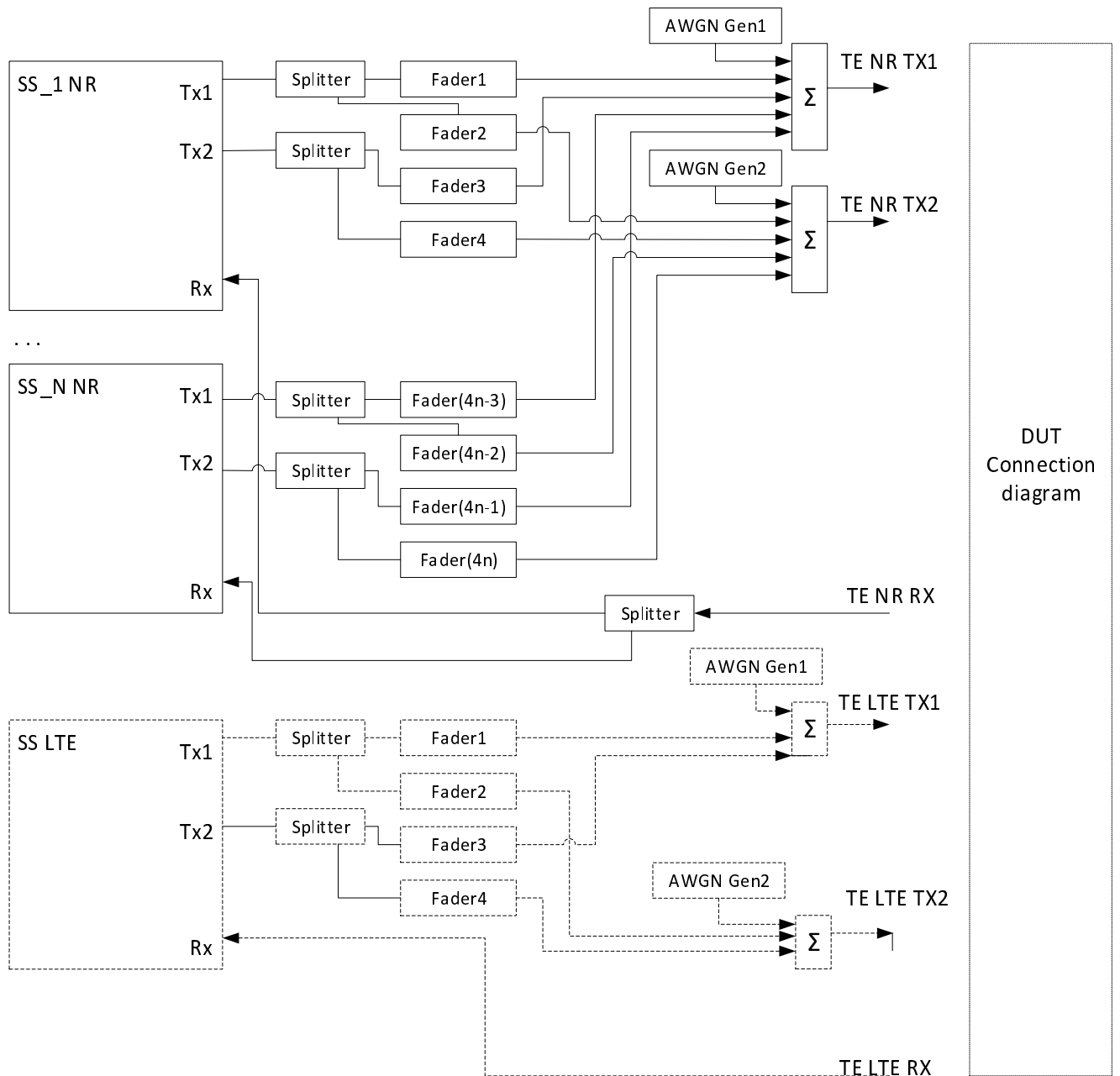


Figure A.3.1.8.2a: Test Equipment connection for tests with more than one NR cell and antenna configuration 2x2

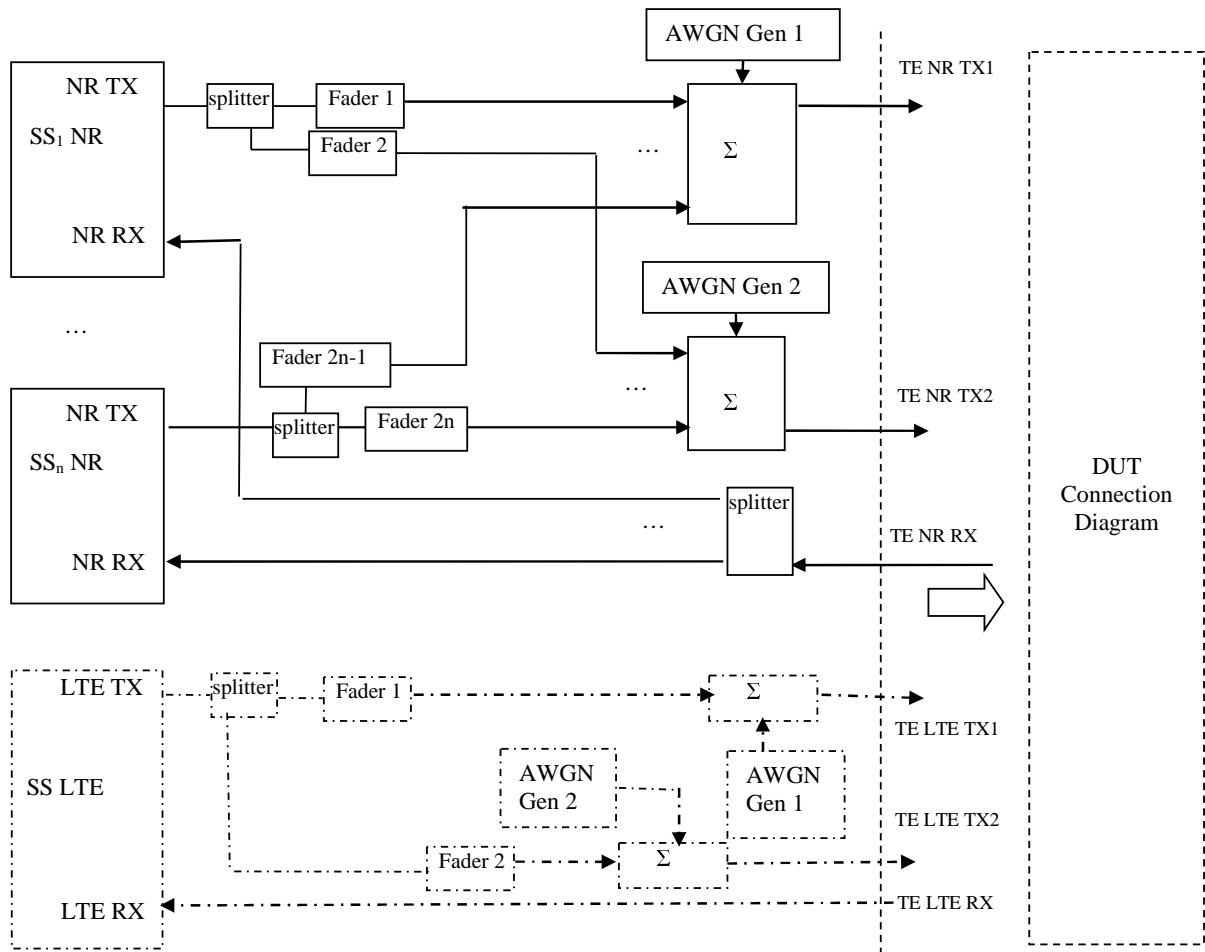


Figure A.3.1.8.3: Test Equipment connection for tests with more than one NR cell and antenna configuration 1x2 and fading

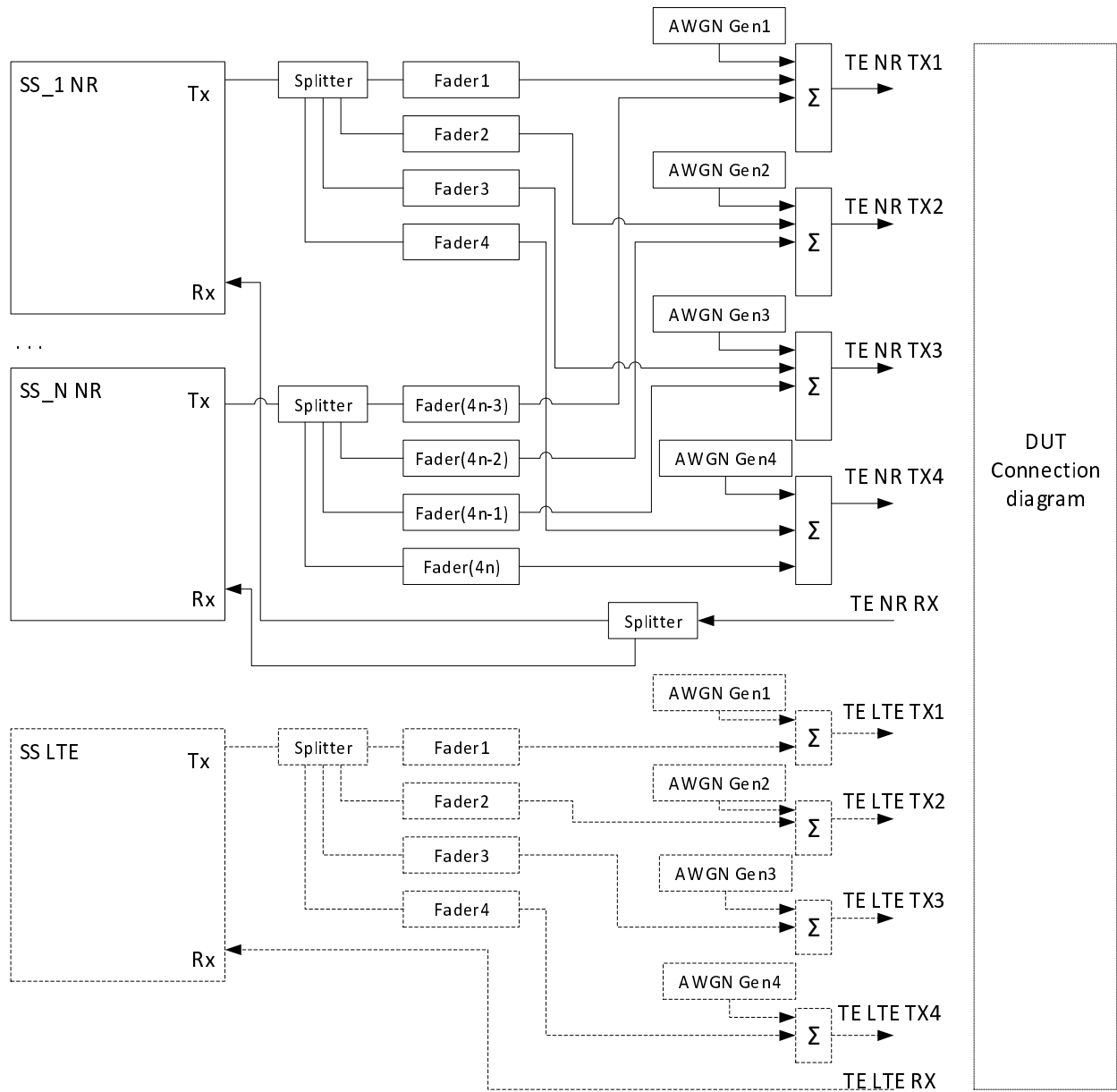


Figure A.3.1.8.4: Test Equipment connection for tests with more than one NR cell for 4Rx capable UEs with fading

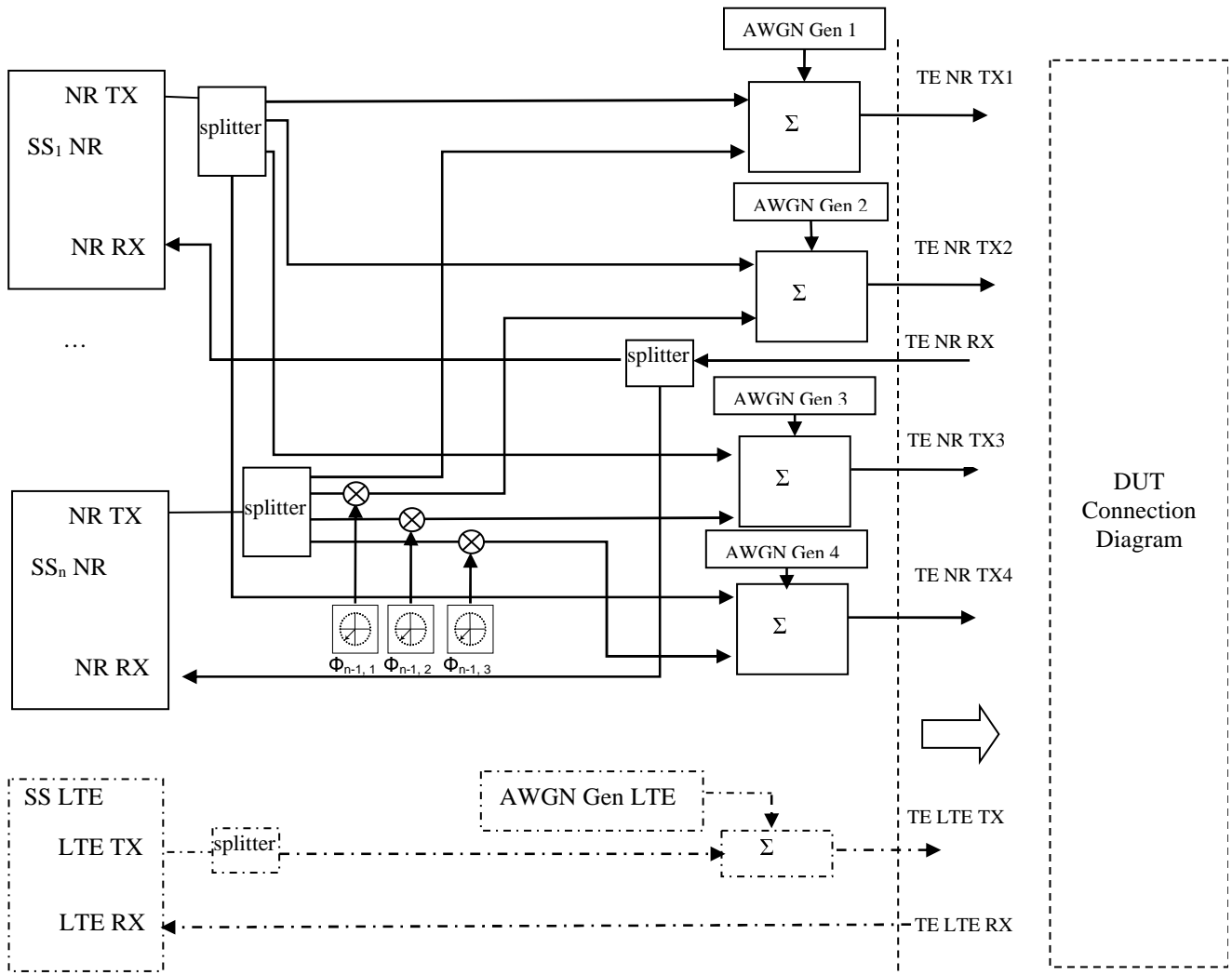
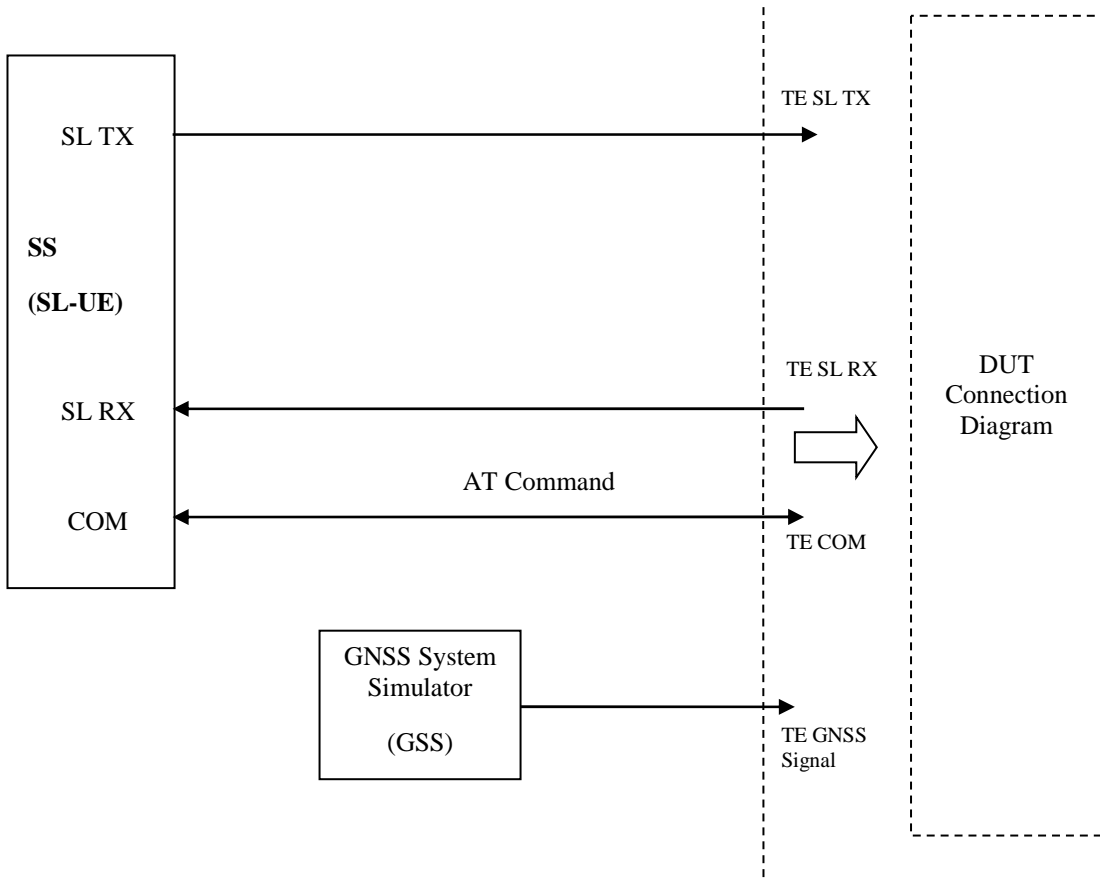


Figure A.3.1.8.5: Test Equipment connection for tests with more than one NR cell and antenna configuration 1x4



### A.3.1.9 Test Equipment supporting NR Sidelink



**Figure A.3.1.9.1: Test Equipment connection for NR sidelink operation non-concurrent with NR UL/DL transmission**

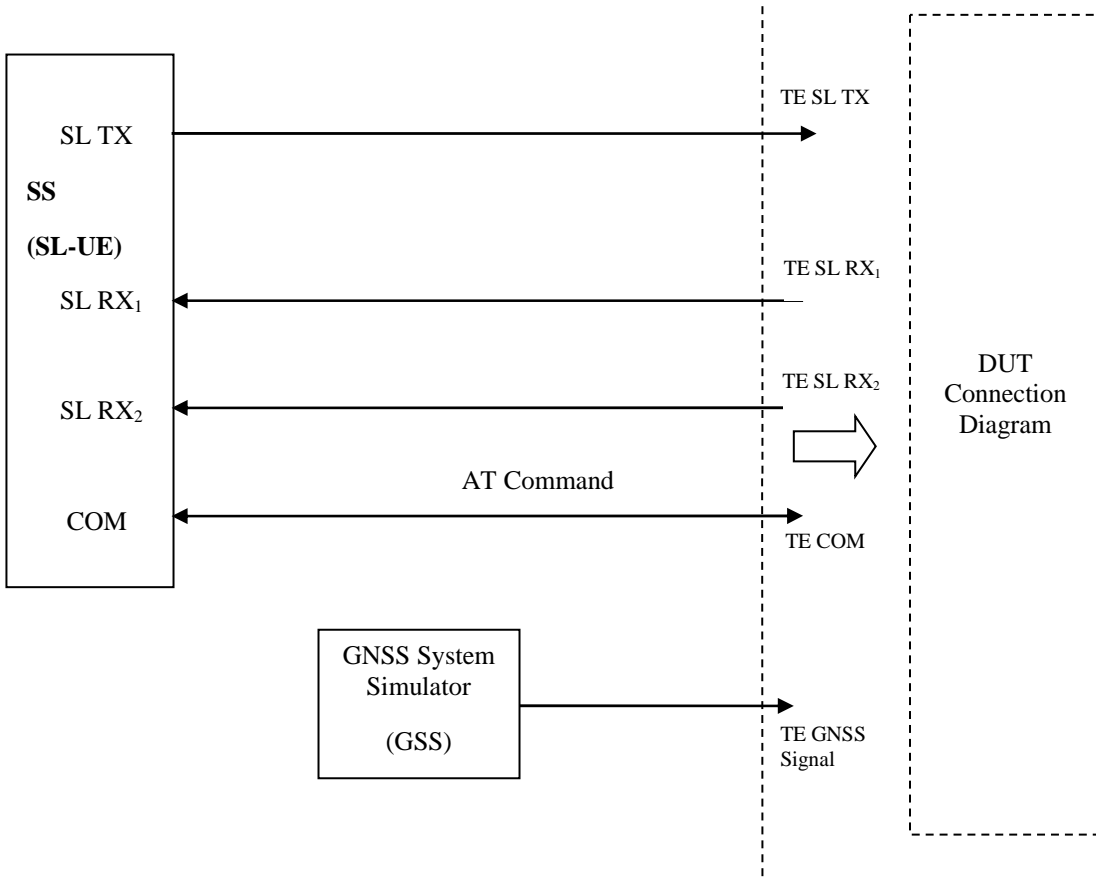


Figure A.3.1.9.2: Test Equipment connection for NR sidelink operation non-concurrent with NR UL/DL transmission SL-MIMO

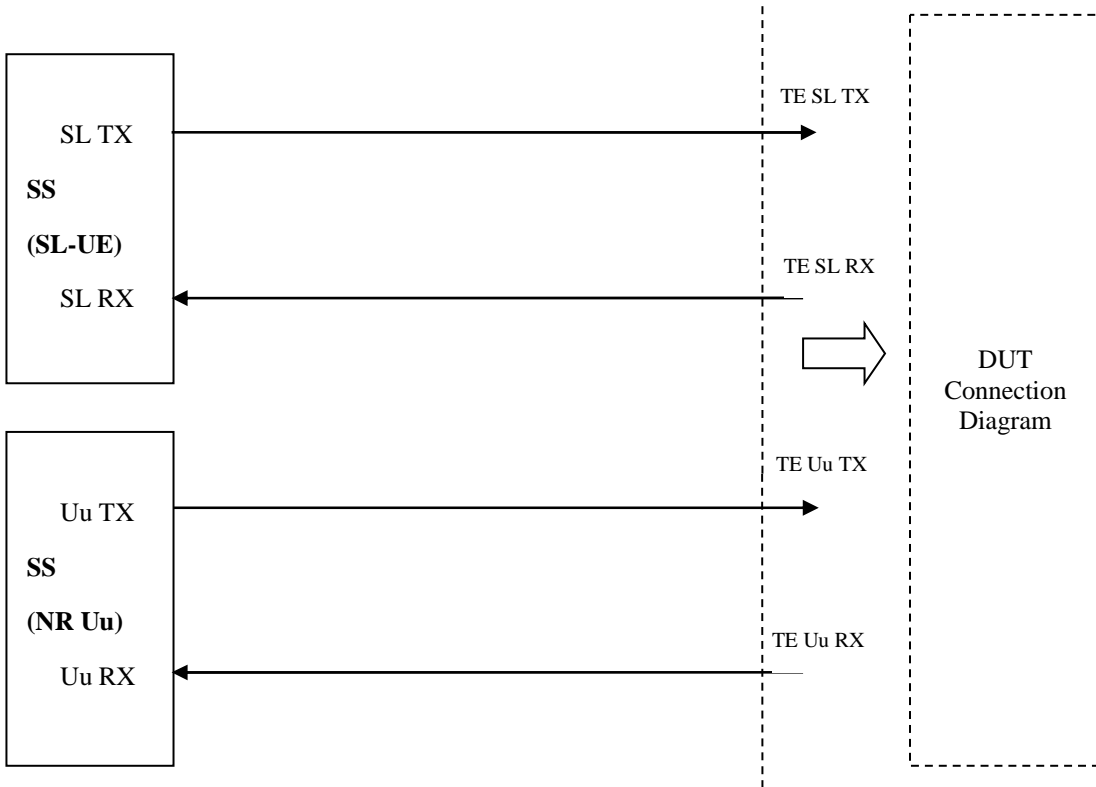


Figure A.3.1.9.3: Test Equipment connection for inter-band concurrent NR V2X operation

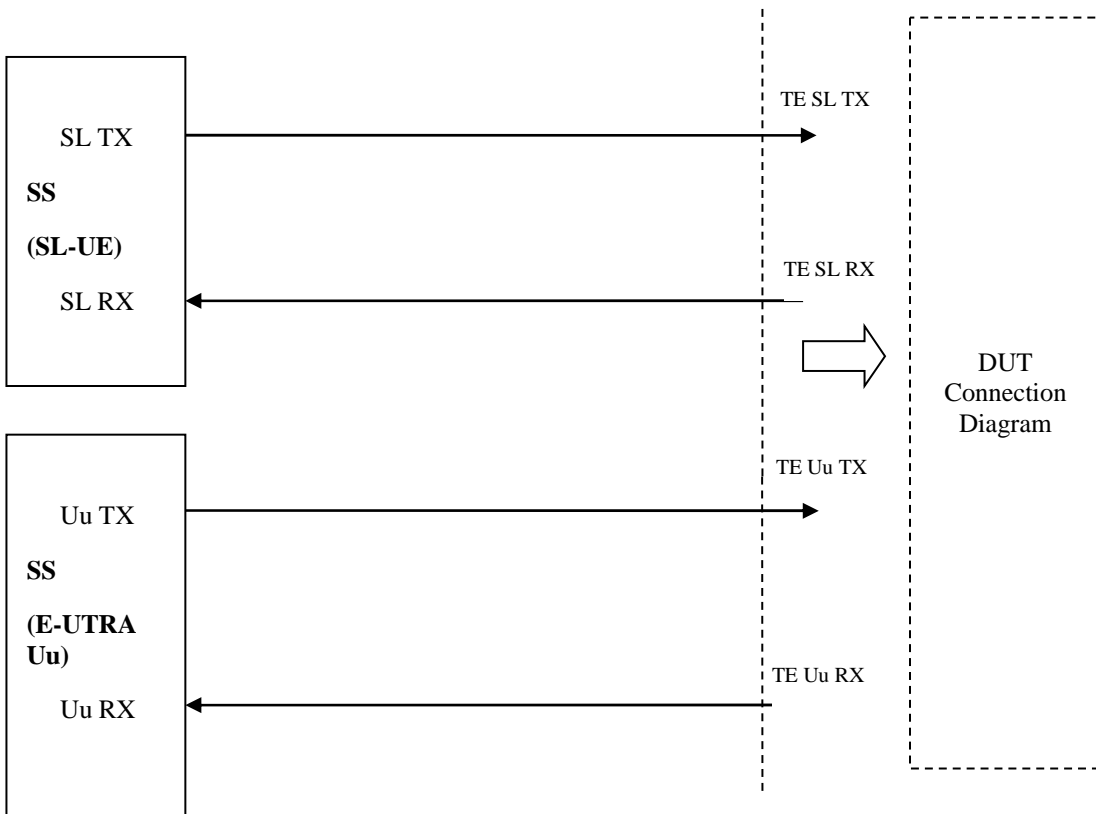


Figure A.3.1.9.4: Test Equipment connection for concurrent E-UTRA Uu and NR Sidelink operation

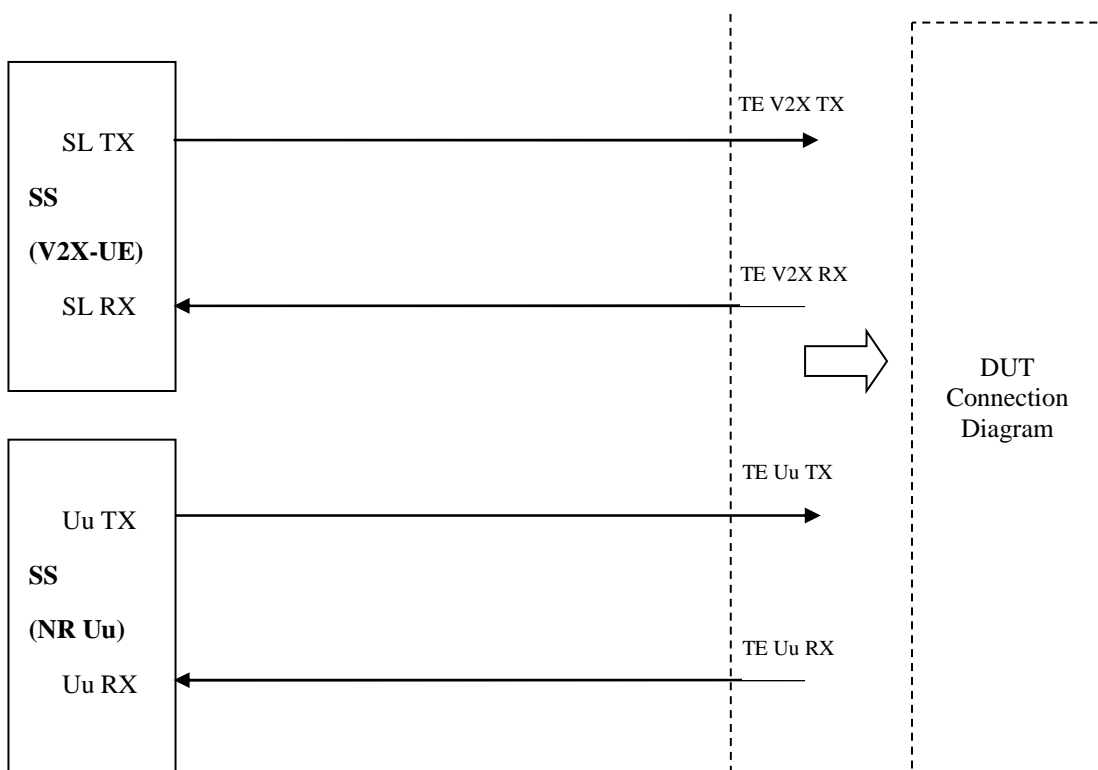


Figure A.3.1.9.5: Test Equipment connection for con-current E-UTRA V2X sidelink and NR Uu operation

## A.3.2 User Equipment Parts for Conducted Measurements

### A.3.2.1 General

The User Equipment part is focused on the number of physical antenna connectors and how to combine in the DUT. Depending on the DUT implementation only one of the following connection diagrams applies. These connection diagrams are examples of User equipment parts.

### A.3.2.2 One Antenna Connector

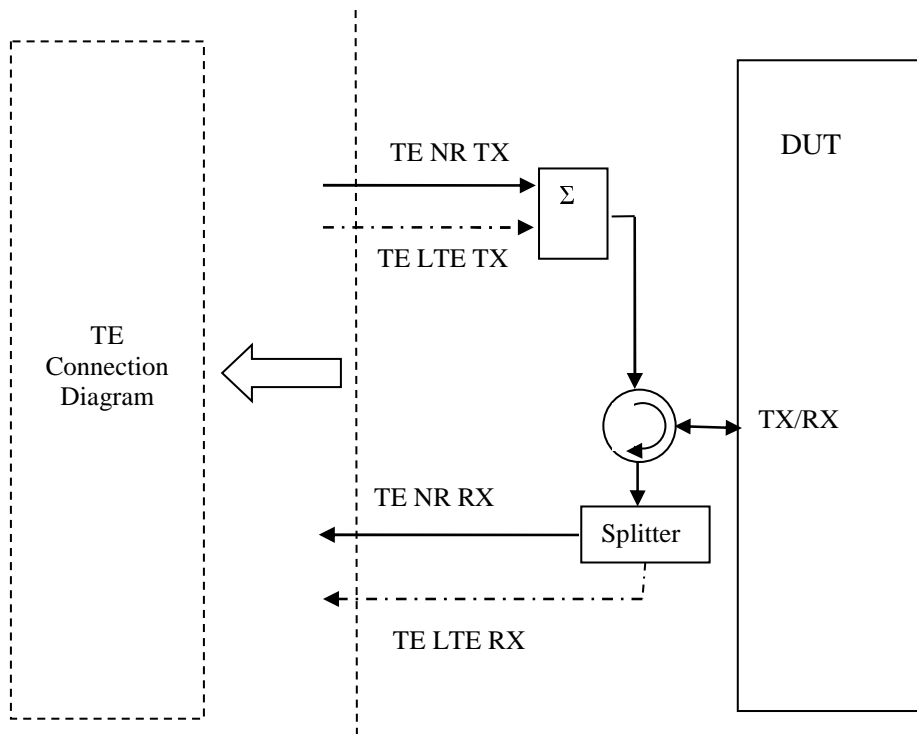


Figure A.3.2.2.1: User Equipment connection for single basic cell

### A.3.2.3 Two Antenna Connectors

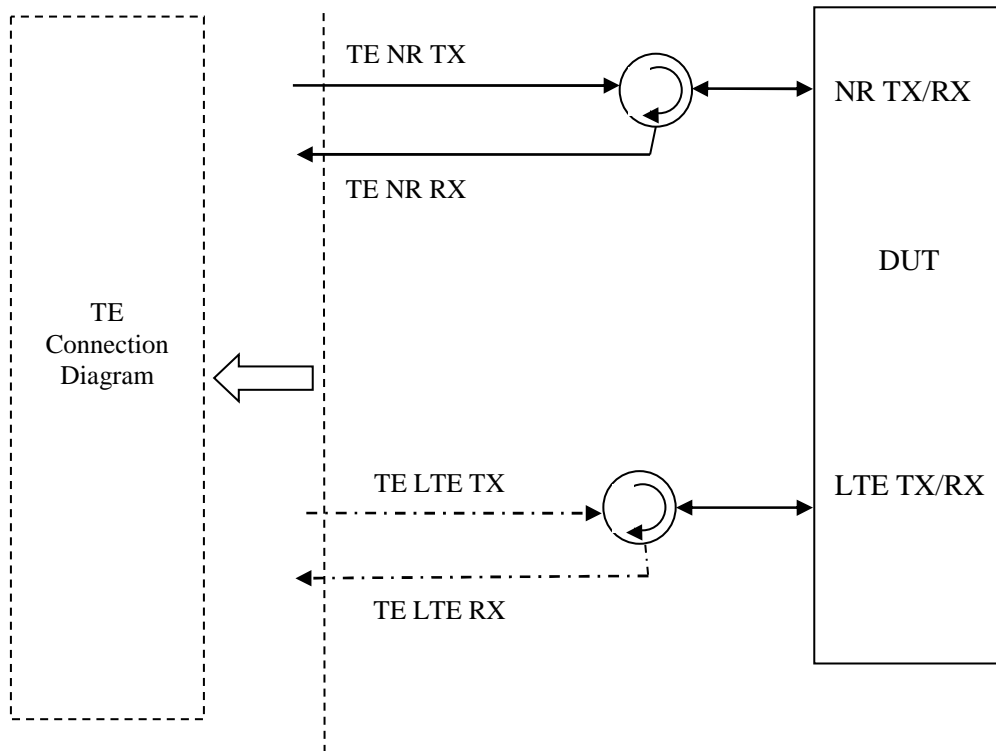
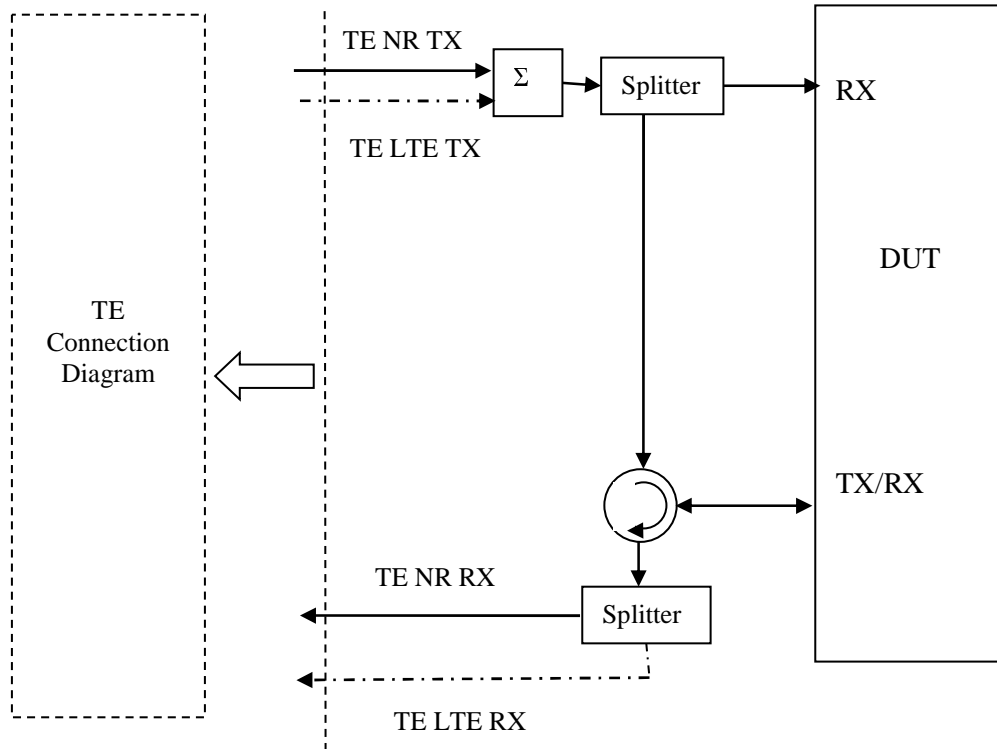
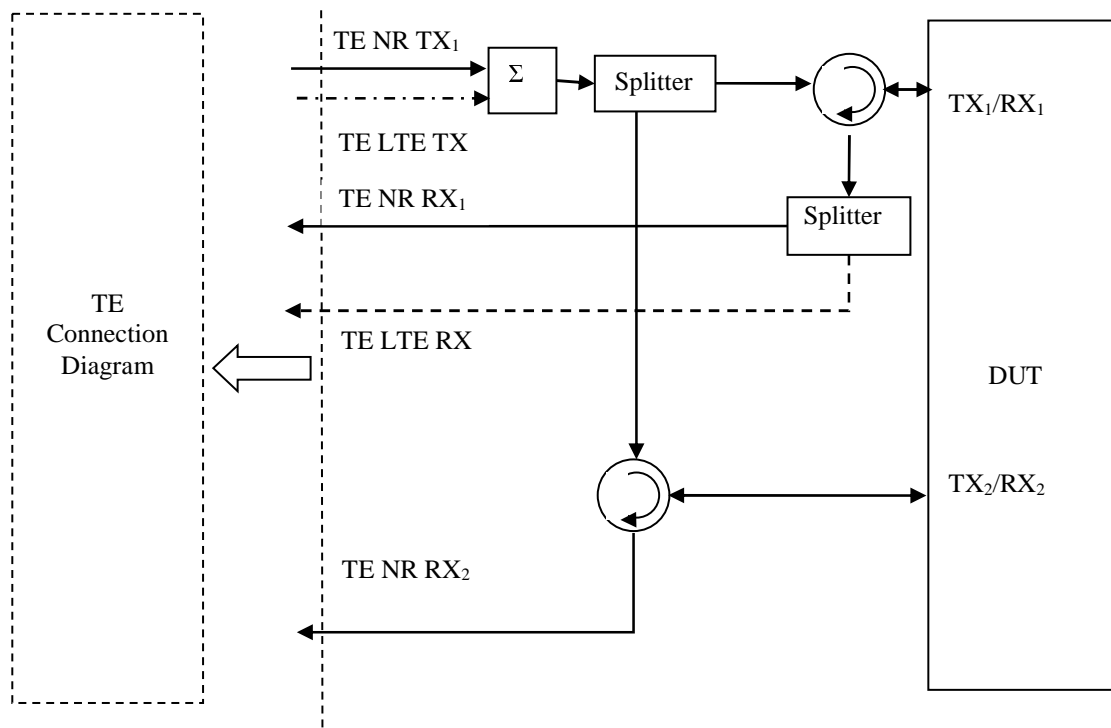


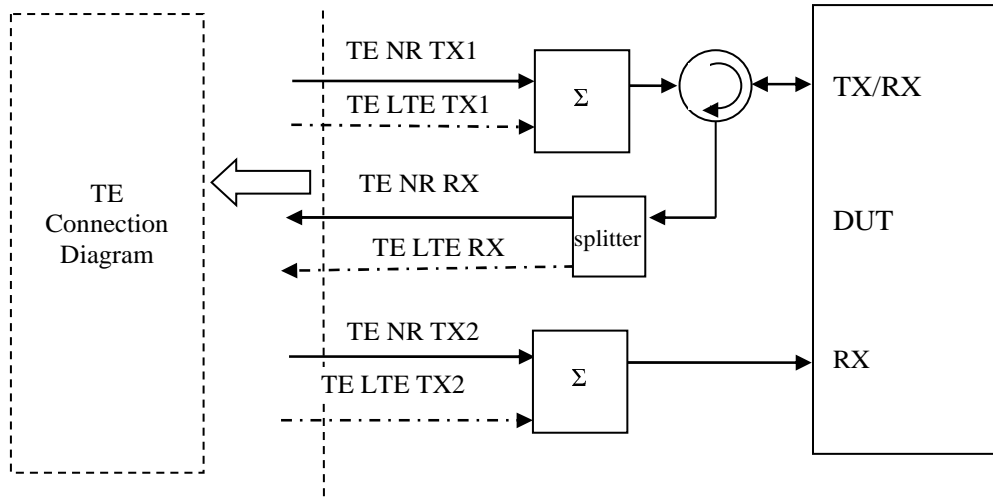
Figure A.3.2.3.1: User Equipment connection for single basic cell with NR and LTE cells at different separated connectors



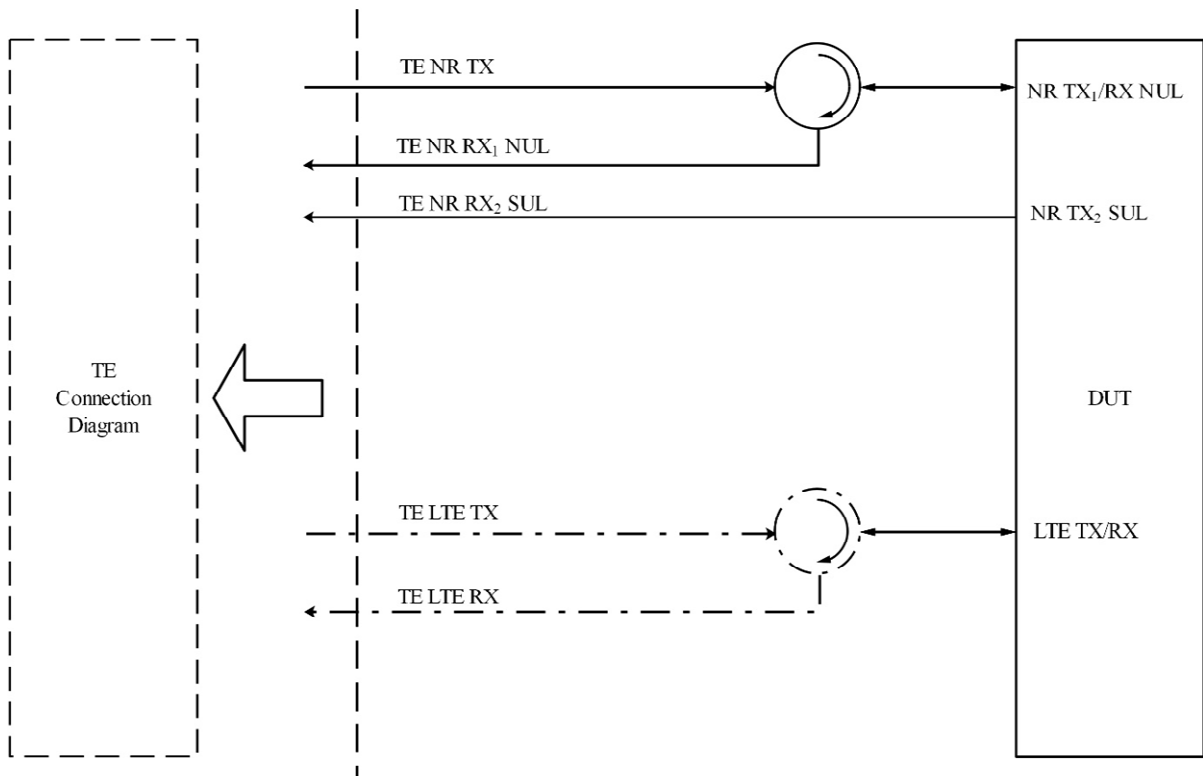
**Figure A.3.2.3.2: User Equipment connection for single basic cell with NR and LTE cells at the same connectors for both cells**



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

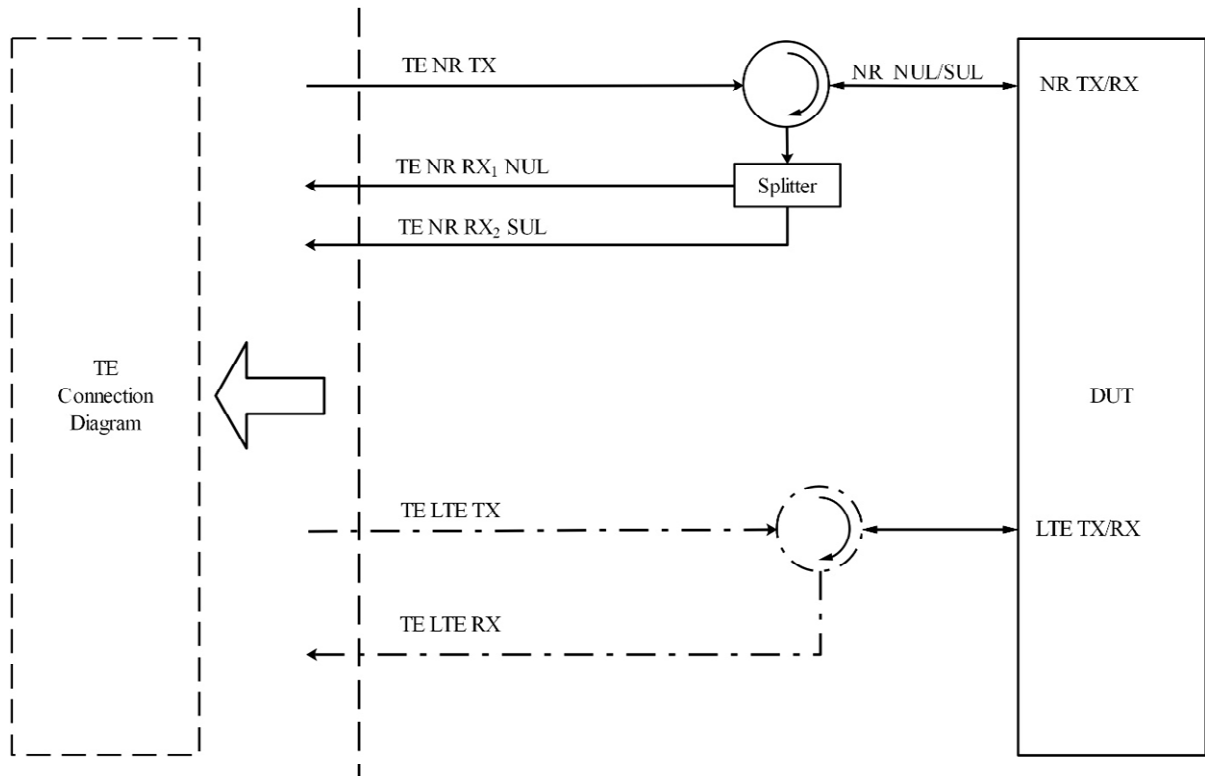


**Figure A.3.2.3.4: User Equipment connection for UEs with NR and LTE RxTx and Rx antenna at same connectors**

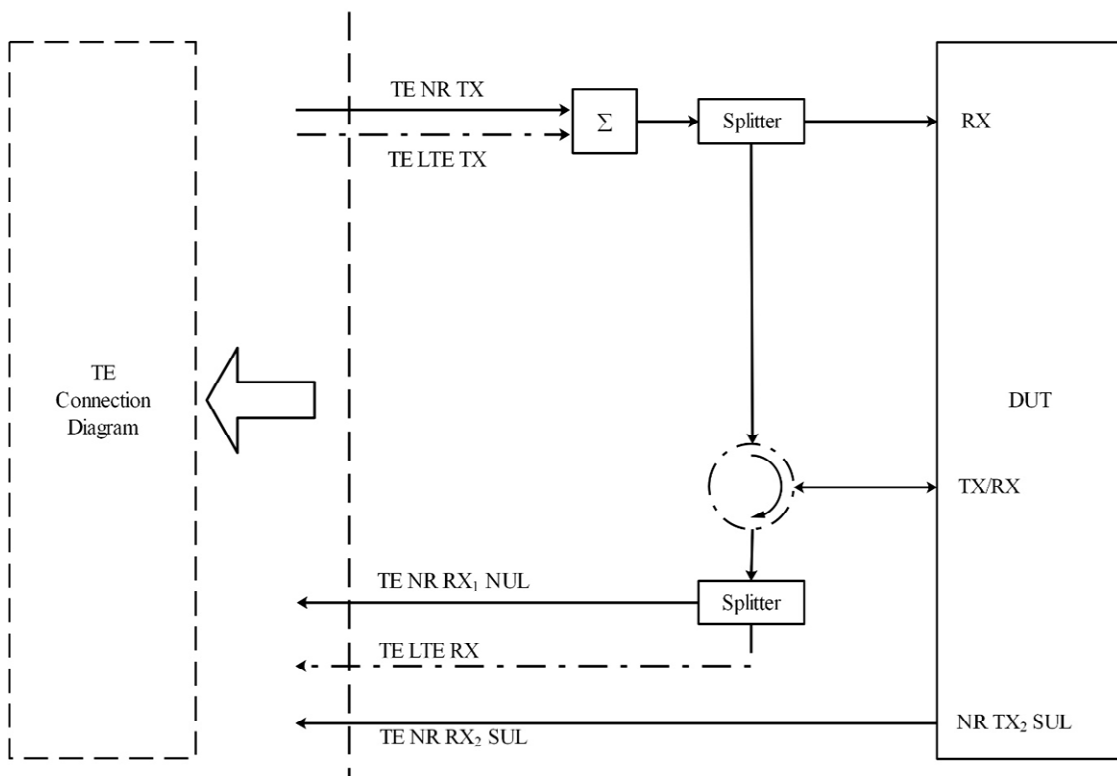


**Figure A.3.2.3.5: User Equipment connection for single basic cell with NR and LTE cells at different separated connectors with NR SUL and NR NUL transmitted on separate antenna connectors**

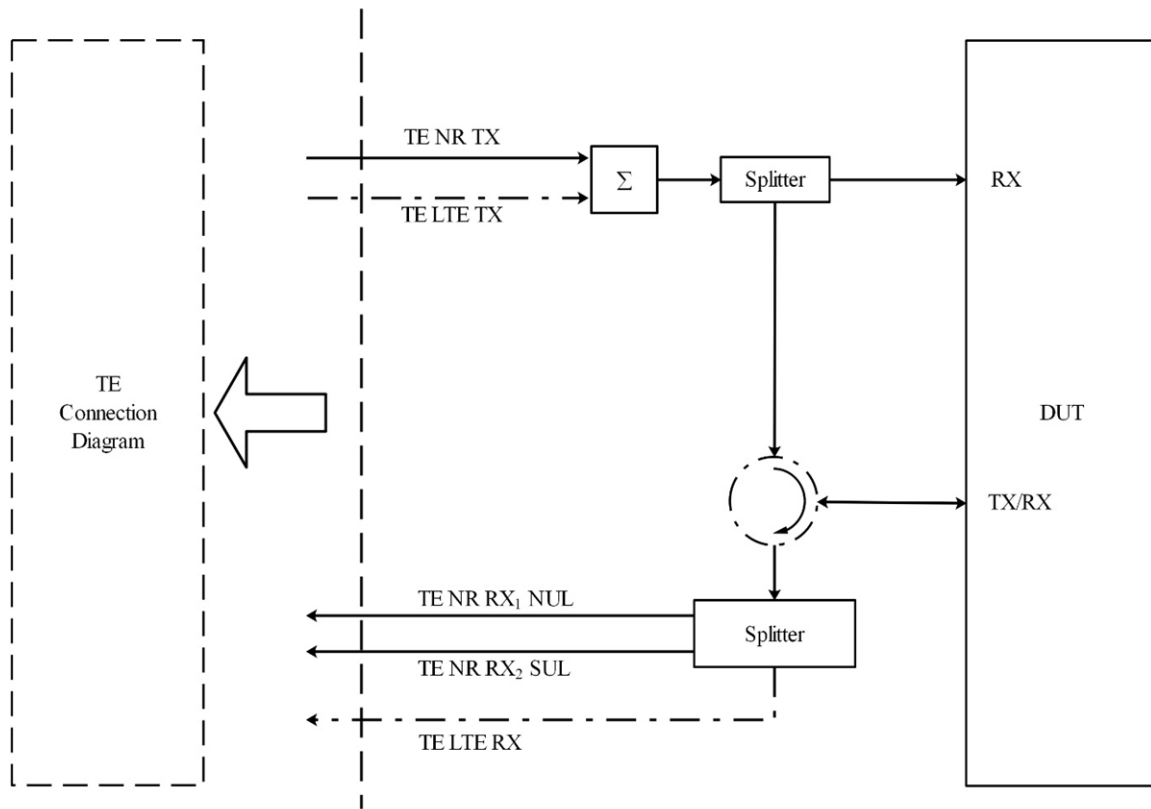




**Figure A.3.2.3.6: User Equipment connection for single basic cell with NR and LTE cells at different separated connectors with NR SUL and NR NUL transmitted on the same antenna connector**

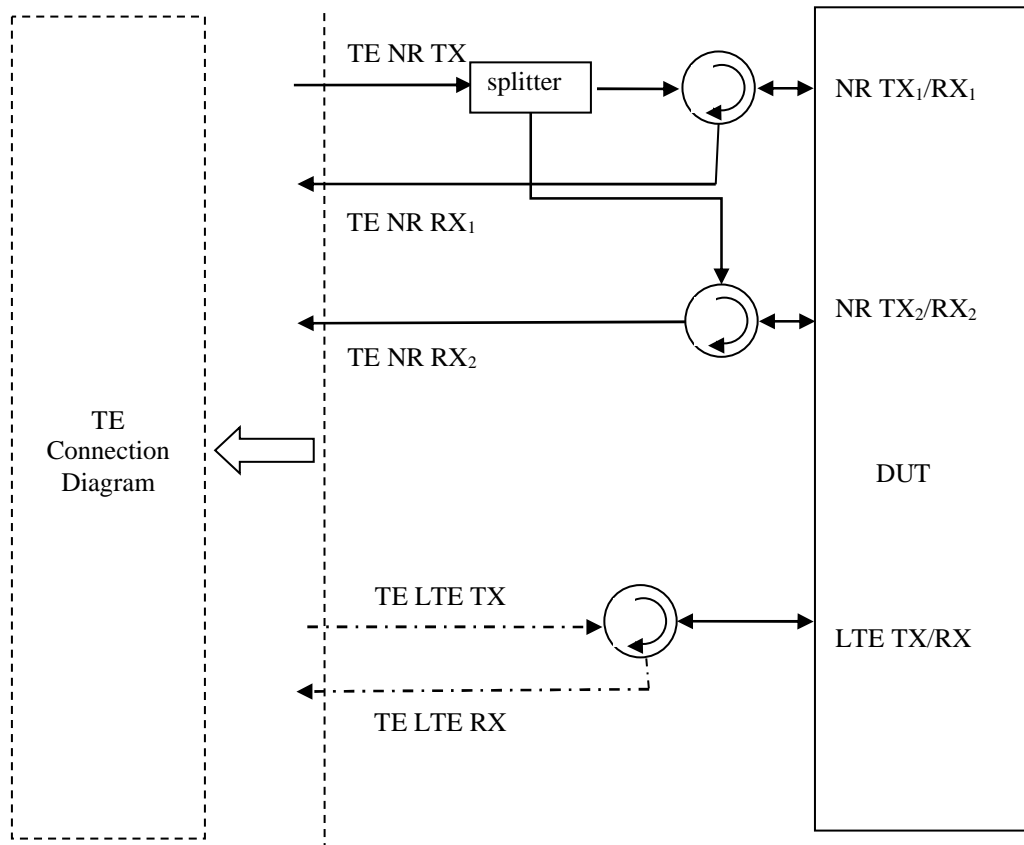


**Figure A.3.2.3.7: User Equipment connection for single basic cell with NR and LTE cells at the same connectors for both cells with NR SUL and NR NUL transmitted on separate antenna connectors**



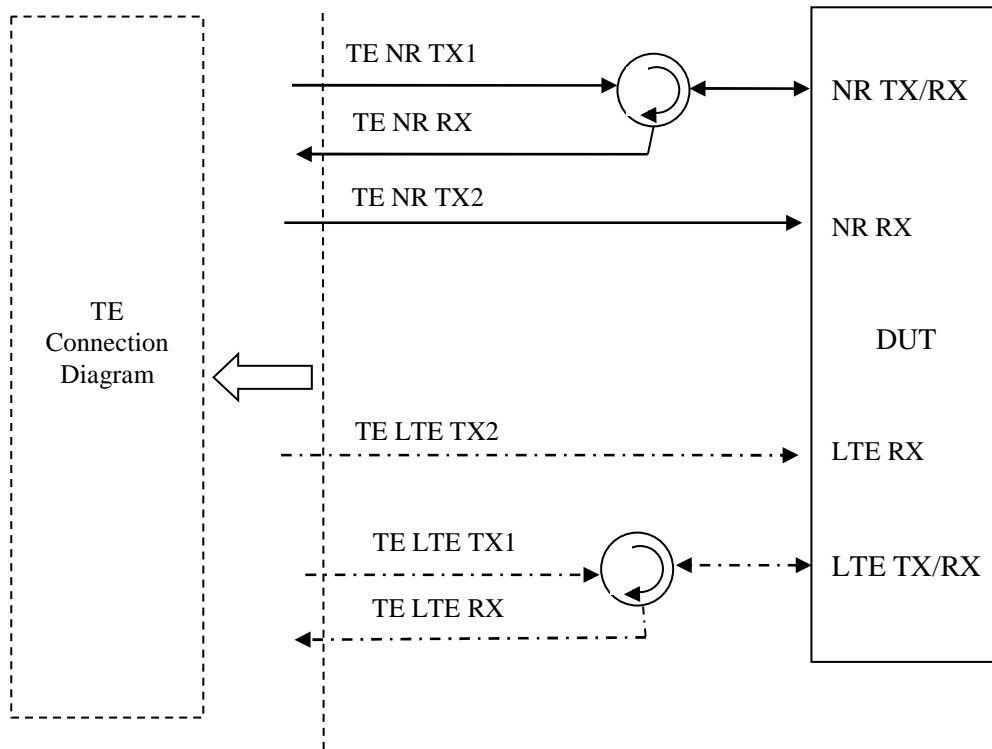
**Figure A.3.2.3.8: User Equipment connection for single basic cell with NR and LTE cells at the same connectors for both cells with NR SUL and NR NUL transmitted on the same antenna connector**

### A.3.2.4 Three Antenna Connectors

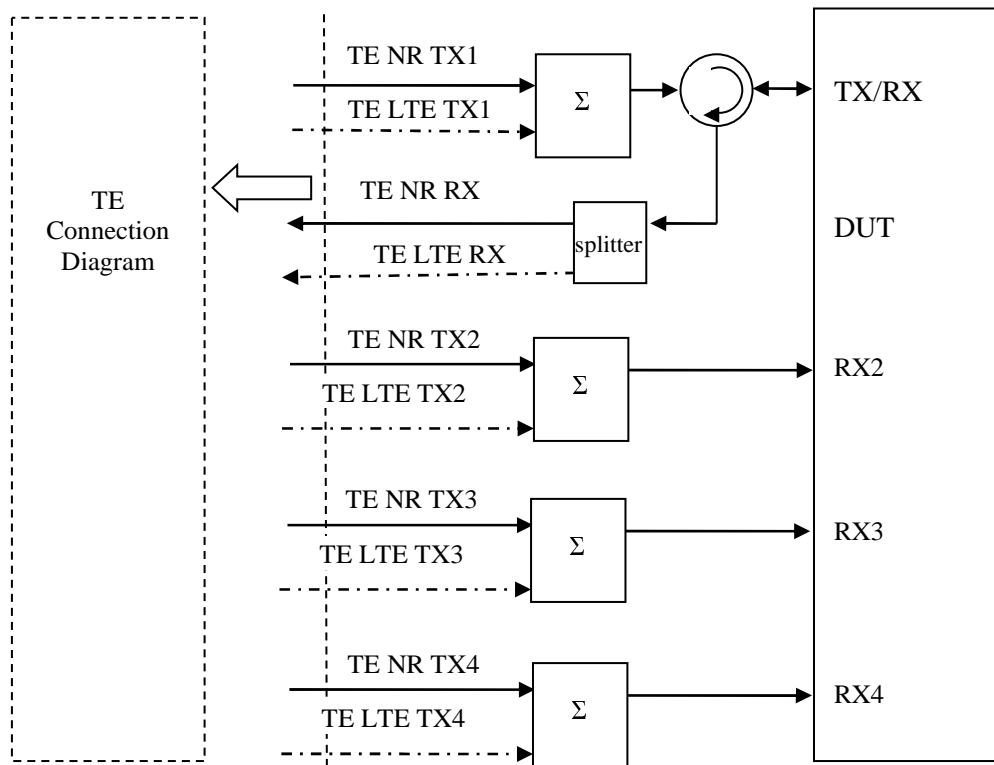


**Figure A.3.2.4.1: 2Tx User Equipment connection for single basic cell with NR and LTE cells at different separated connectors and 2TX UL MIMO supported**

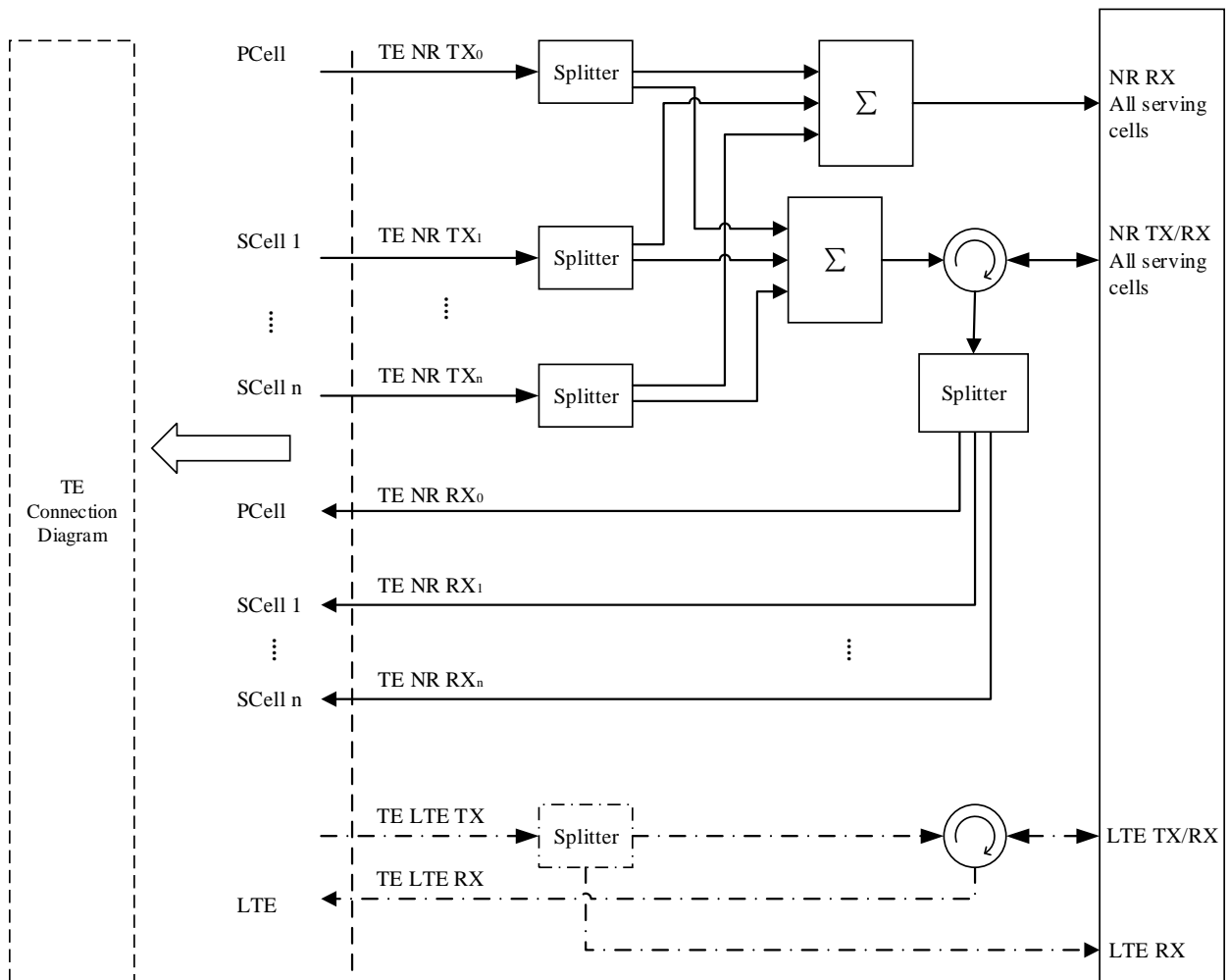
### A.3.2.5 Four Antenna Connectors



**Figure A.3.2.5.1: User Equipment connection for UEs with NR and LTE RxTx and Rx antenna at different separated connectors**



**Figure A.3.2.5.2: User Equipment connection for 4Rx capable UEs without any 2Rx RF bands (NR and LTE at same connectors)**



**Figure A.3.2.5.3: User Equipment connection for UEs with NR CA (component carriers on common connector) and LTE**

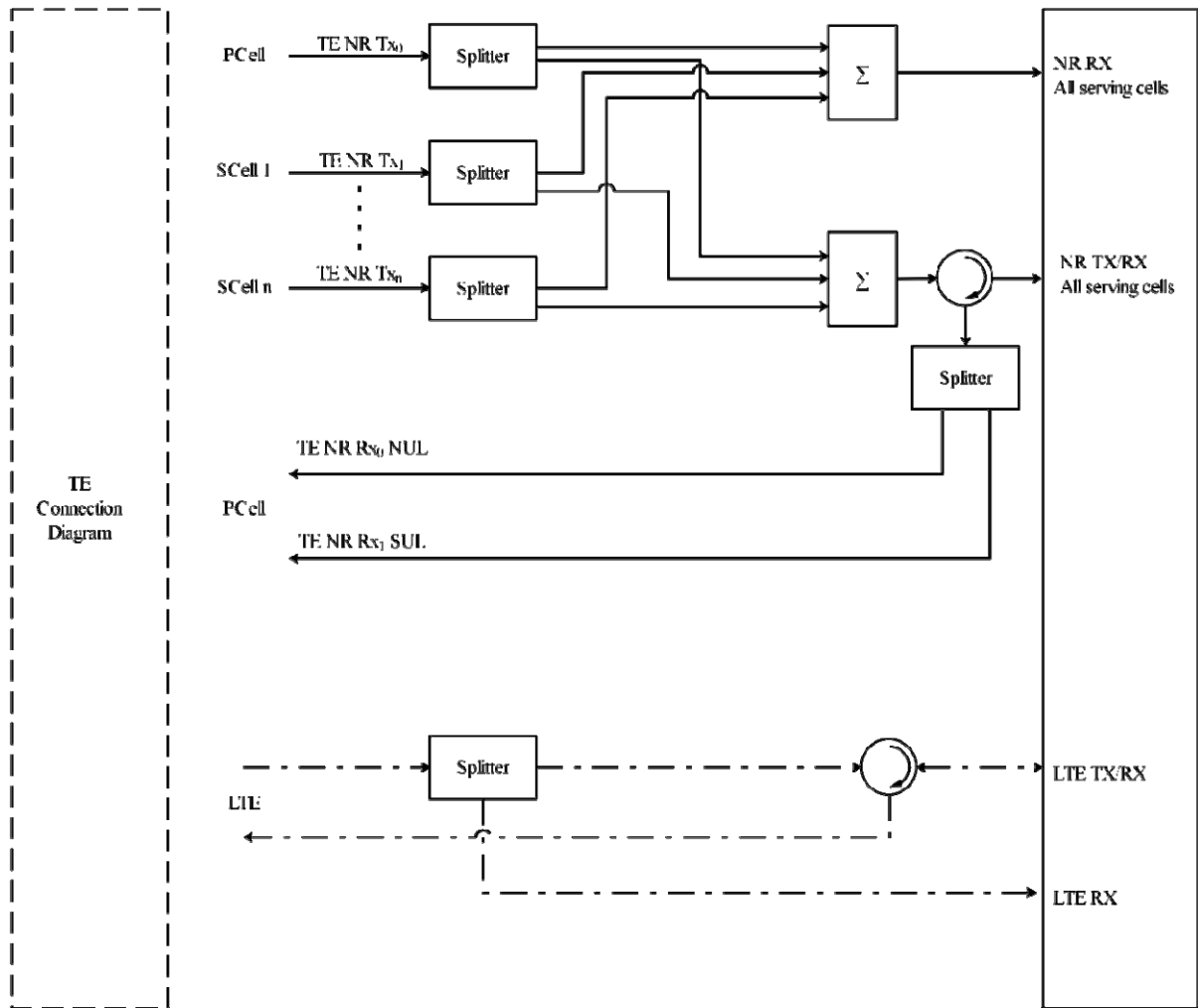


Figure A.3.2.5.4: User Equipment connection for UEs with NR SUL and DL CA (component carriers on common connector) and LTE

### A.3.2.6 Over Four Antenna Connectors

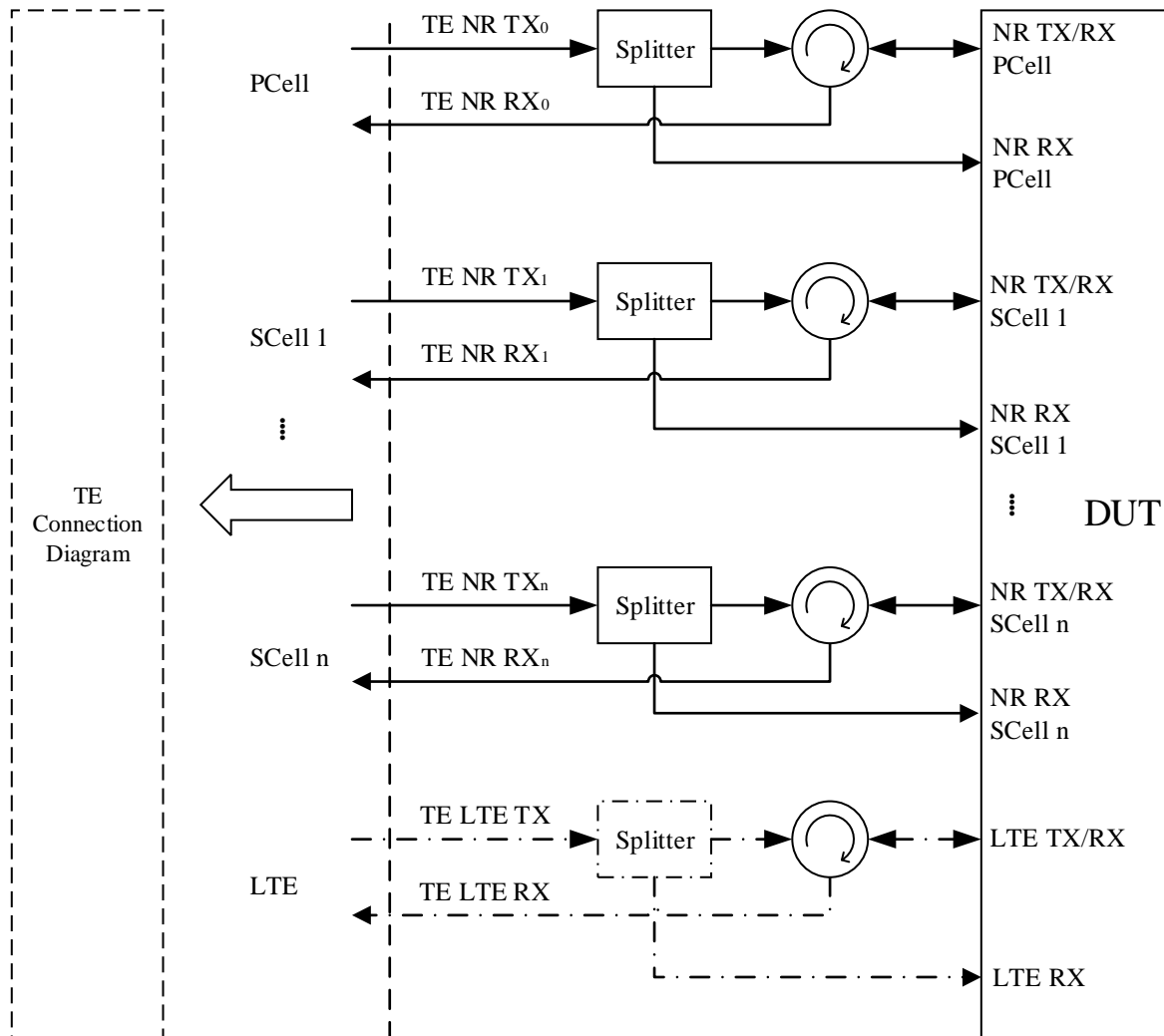
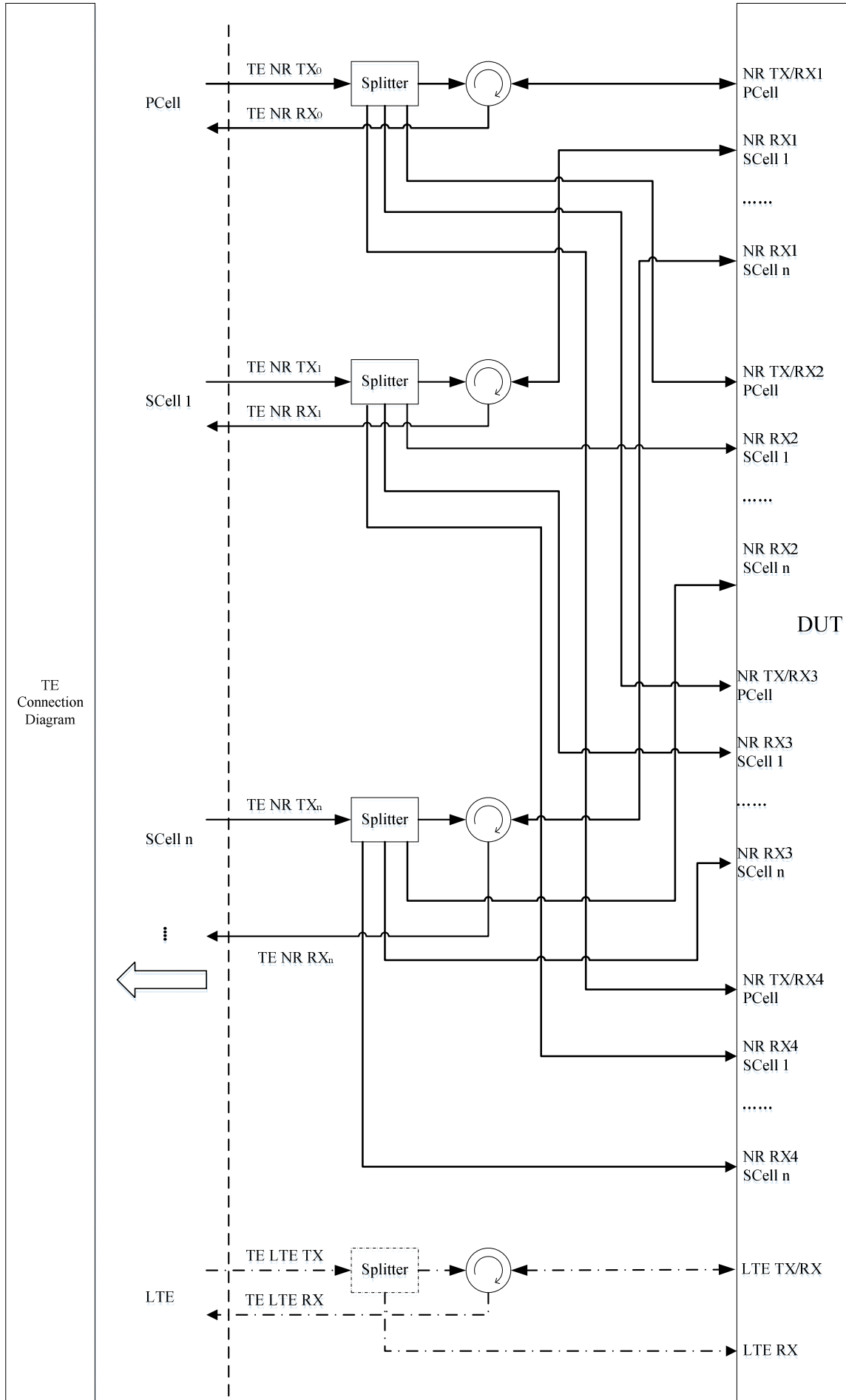


Figure A.3.2.6.1: User Equipment connection for UEs with NR CA (component carriers on separated connectors) and LTE

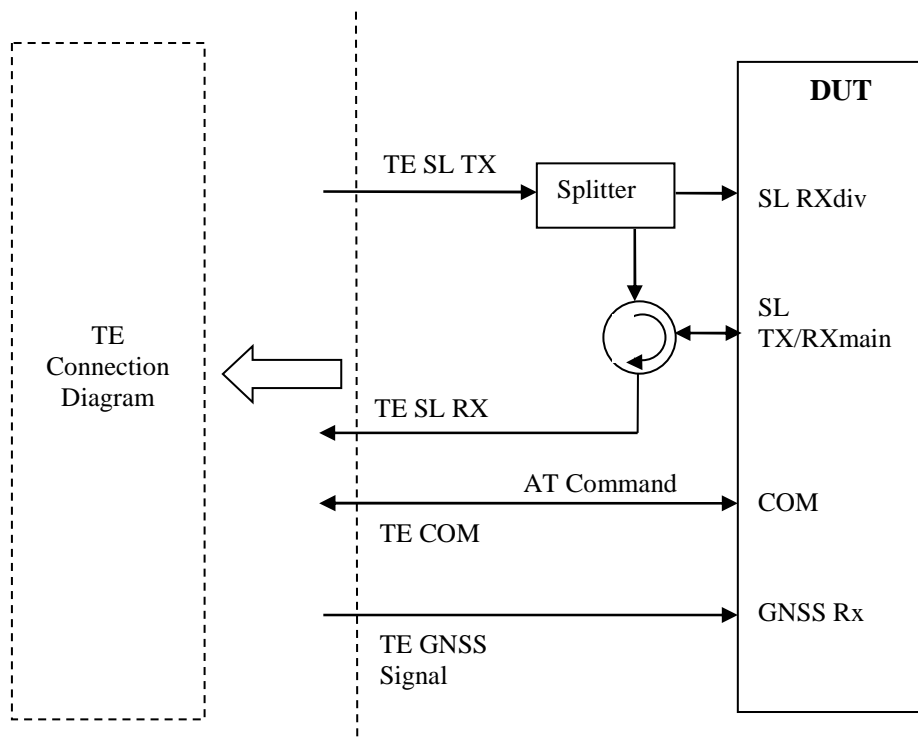




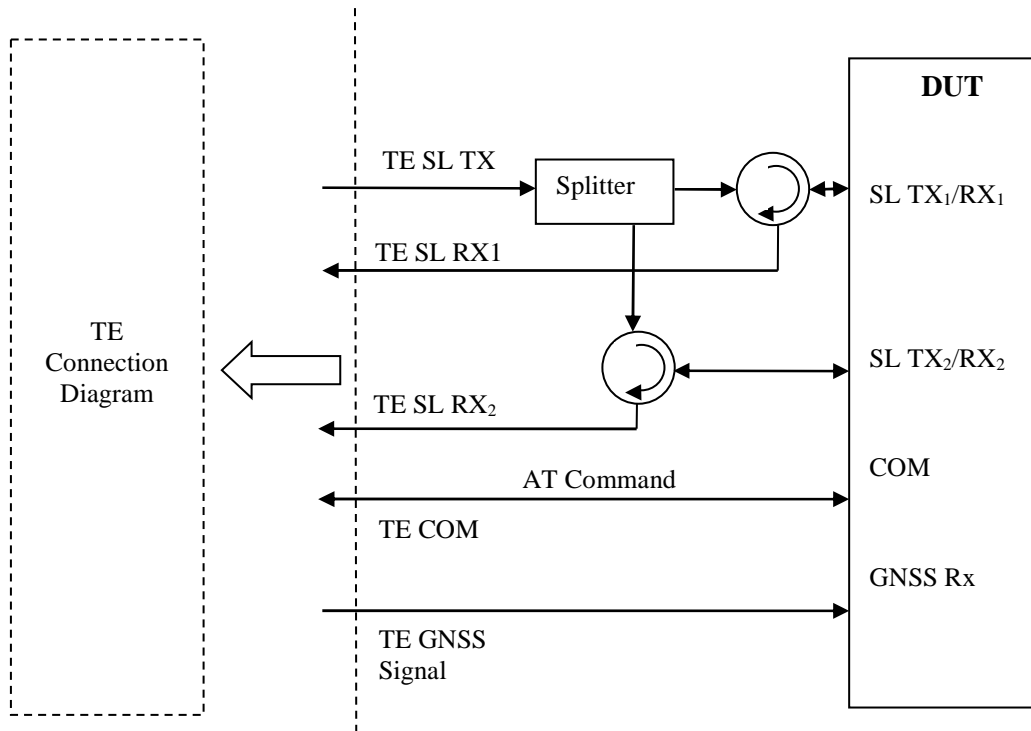
**Figure A.3.2.6.2: User Equipment connection for UEs with NR CA and NR 4Rx (component carriers on separated connectors) and LTE**

Note: NR may be 2Rx on some of the CCs, in that case RX3 and RX4 are not used

**A.3.2.7 User Equipment supporting NR Sidelink**



**Figure A.3.2.7.1: User Equipment connection for NR sidelink operation non-concurrent with NR UL/DL transmission**



**Figure A.3.2.7.2: User Equipment connection for NR sidelink operation non-concurrent with NR UL/DL transmission with SL-MIMO**

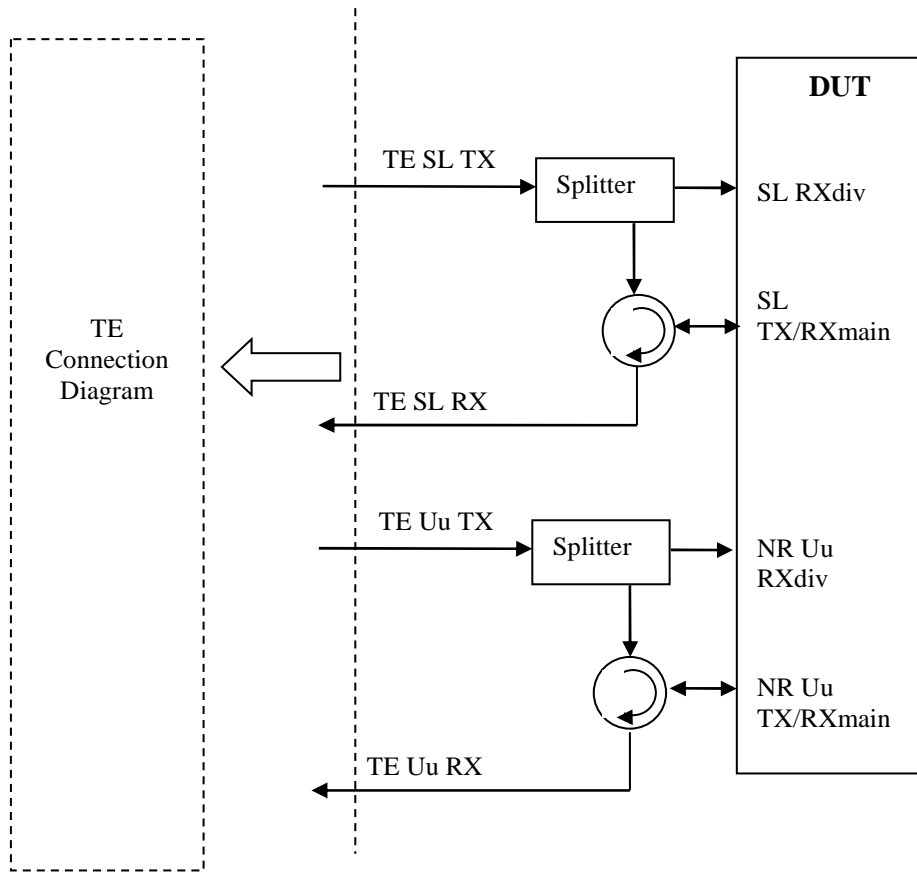


Figure A.3.2.7.3: User Equipment connection for inter-band concurrent NR V2X operation

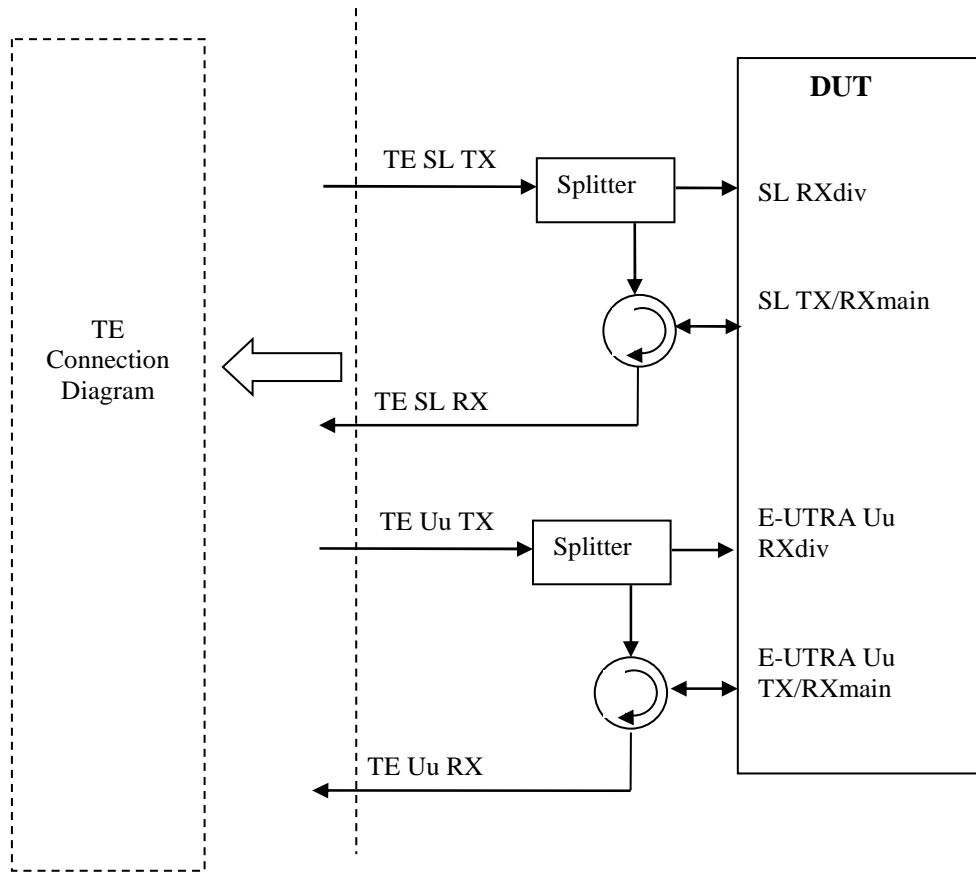
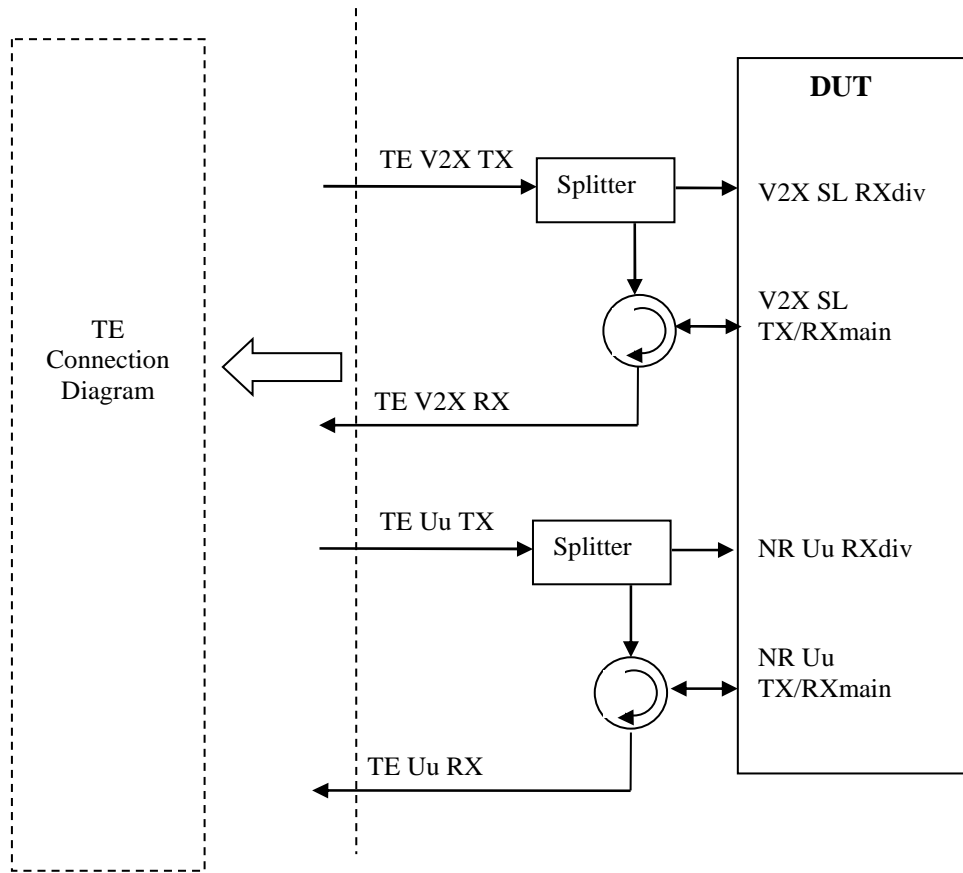


Figure A.3.2.7.4: User Equipment connection for con-current E-UTRA Uu and NR Sidelink operation

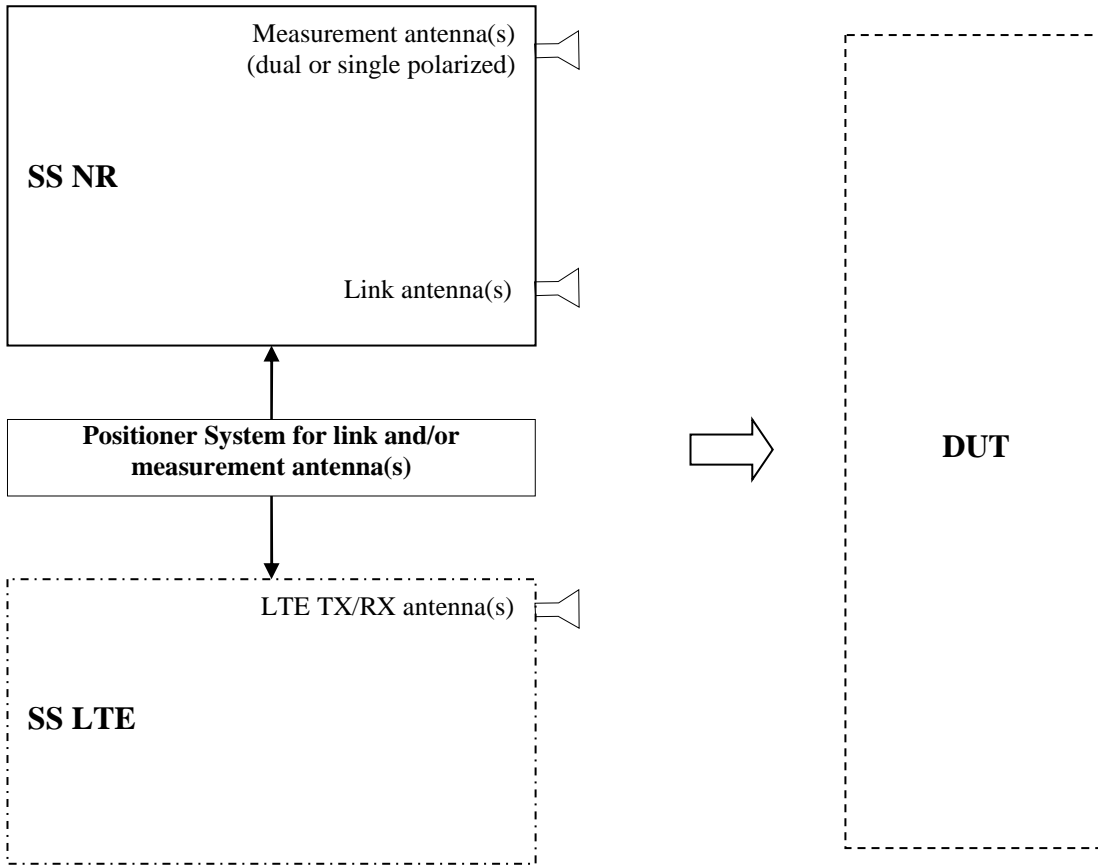


**Figure A.3.2.7.5: User Equipment connection for con-current E-UTRA V2X sidelink and NR Uu operation**

### A.3.3 Test Equipment Parts for Radiated Measurements

#### A.3.3.1 Transmitter/Receiver tests

The Test Equipment part is focused on logical representation of TE measurement and link antenna(s) and positioner controller. The Test Equipment connection diagram below is applicable for NR radiated RX and TX tests, including CA and UL MIMO tests.



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

For NR radiated RX tests requiring to simulate a modulated interference, connection diagram defined in figure A.3.3.1.2 will apply.

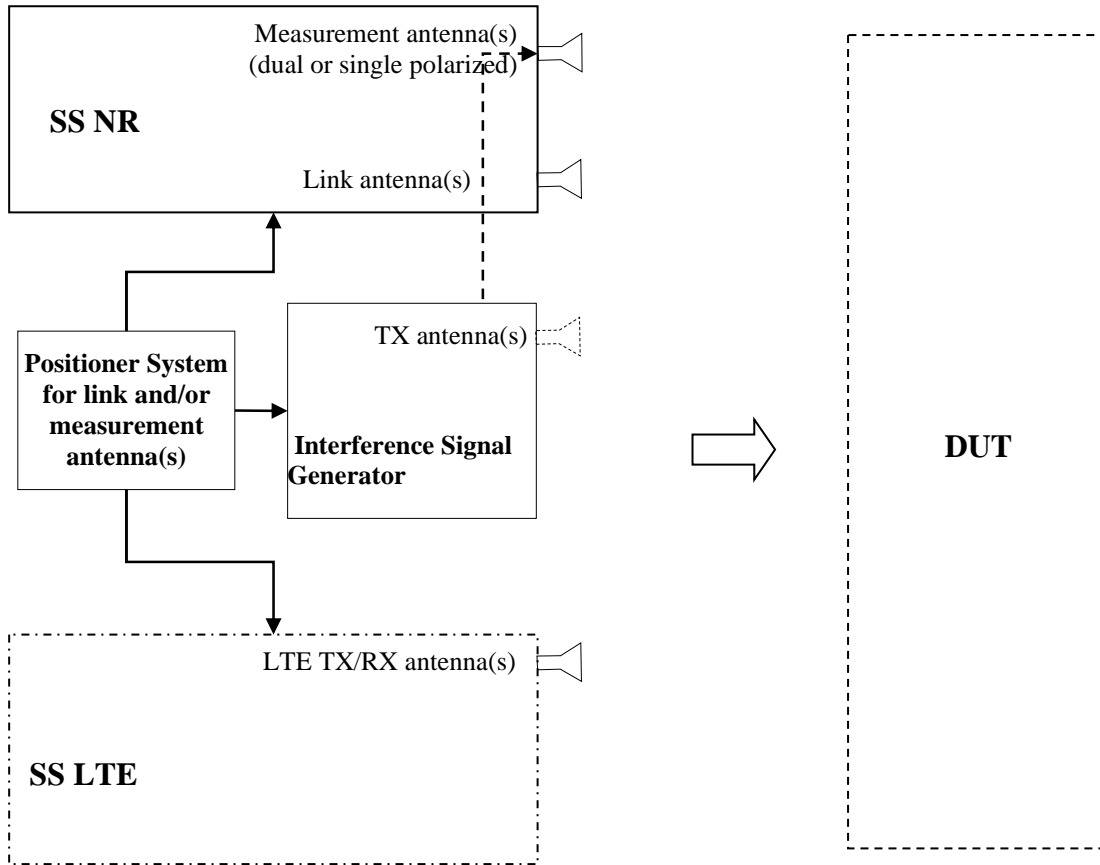


Figure A.3.3.1.2: TE diagram for radiated RX tests with Modulated Interference



A.3.3.2 Demodulation and CSI tests

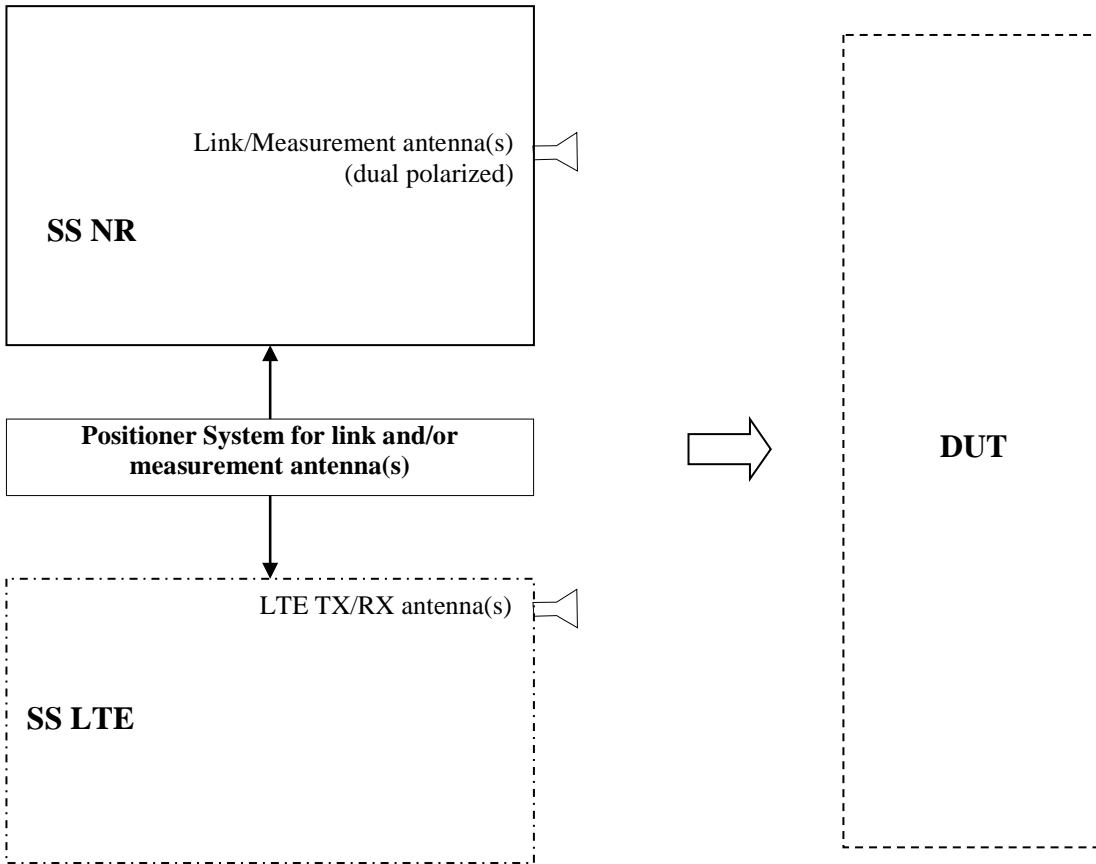


Figure A.3.3.2.1: Demodulation and CSI tests

Figures A.3.3.2.1-1 and A.3.3.2.1-1 show the connection diagram inside SS NR of Figure A.3.3.2.1 for downlink signal path.

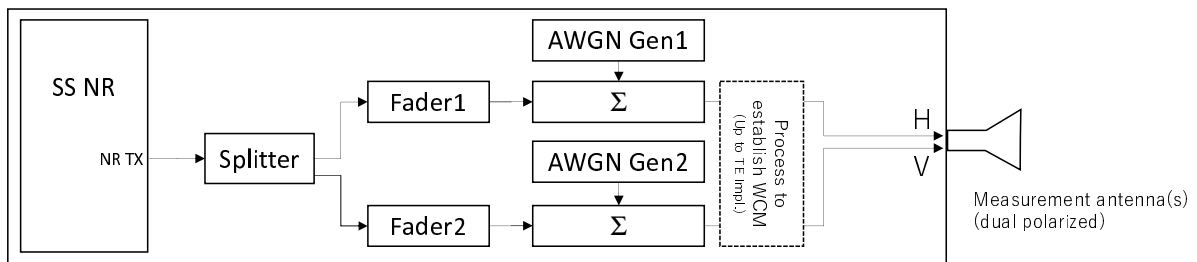


Figure A.3.3.2.1-1: TE diagram for Demodulation and CSI tests (1x2)

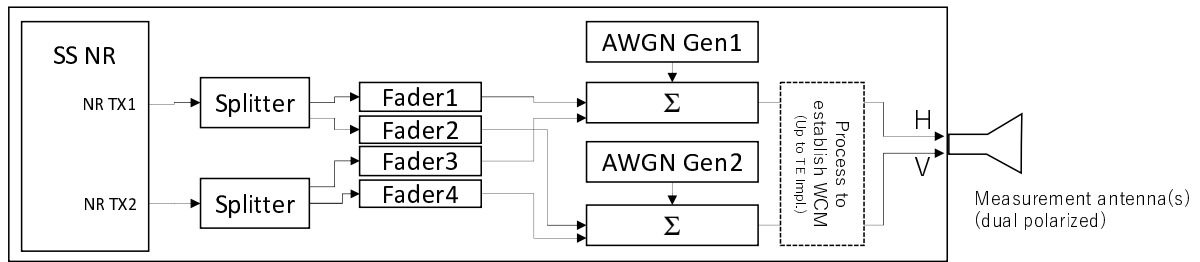


Figure A.3.3.2.1-2: TE diagram for Demodulation and CSI tests (2x2)

### A.3.3.3 RRM tests

The Test Equipment part is focused on logical representation of TE antenna(s) and positioner. The Test Equipment connection diagram below is applicable for NR radiated RRM tests. SS NR uses several antennas to cover all required AoA offsets. The actual number of antennas is not determined and depends on the TE implementation. Positioner in the TE part is optional.

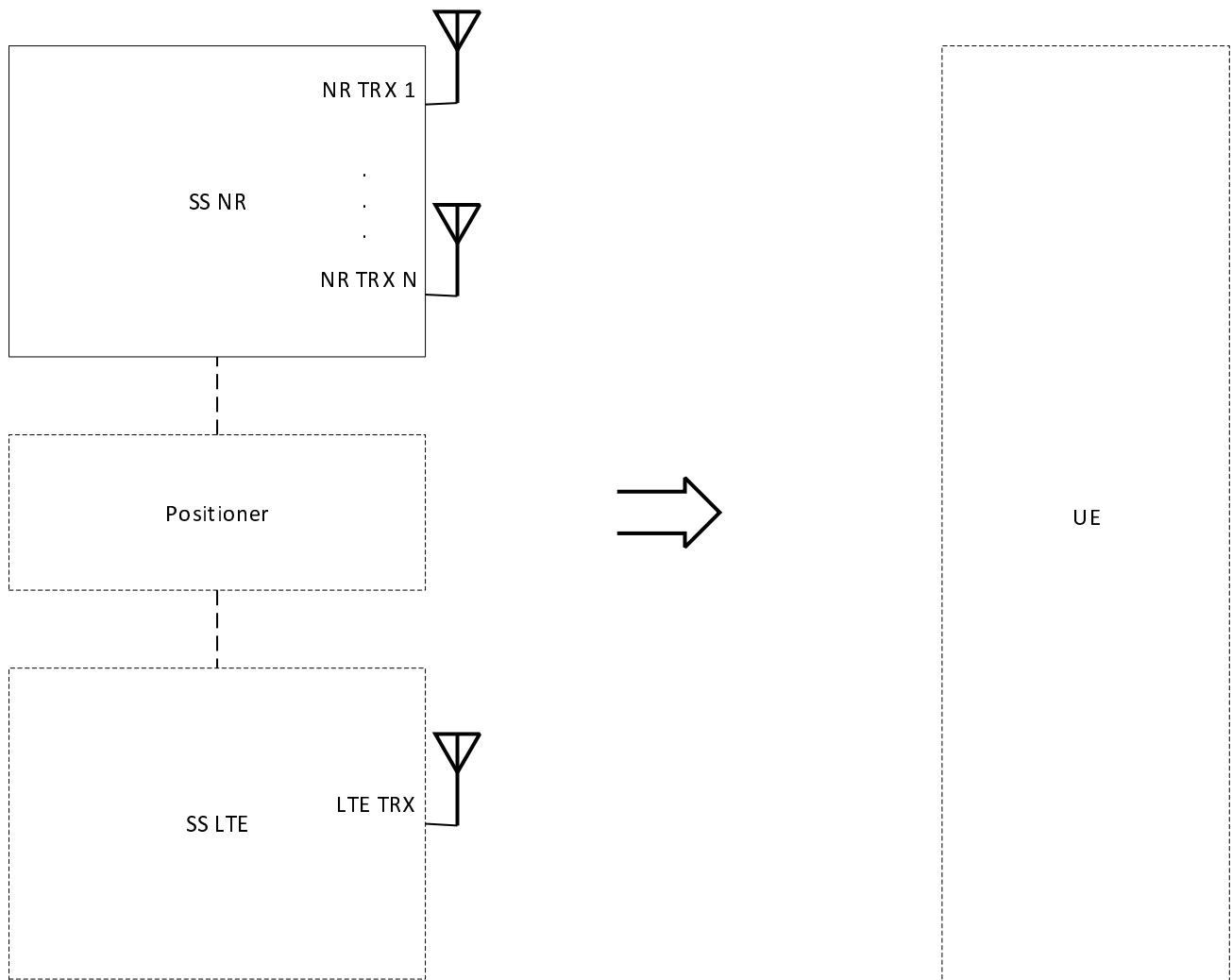


Figure A.3.3.3.1: TE diagram for radiated RRM tests

Figure A.3.3.3.1-1 shows the connection diagram inside the SS NR of Figure A.3.3.3.1 for downlink signal path (for single probe). 1x2 without fading in FR2 RRM test case represents the scenario with single antenna transmission from

TE side and 2 antenna receptions at UE side, which is equivalent to 1x1 in conducted test case from test equipment perspective.

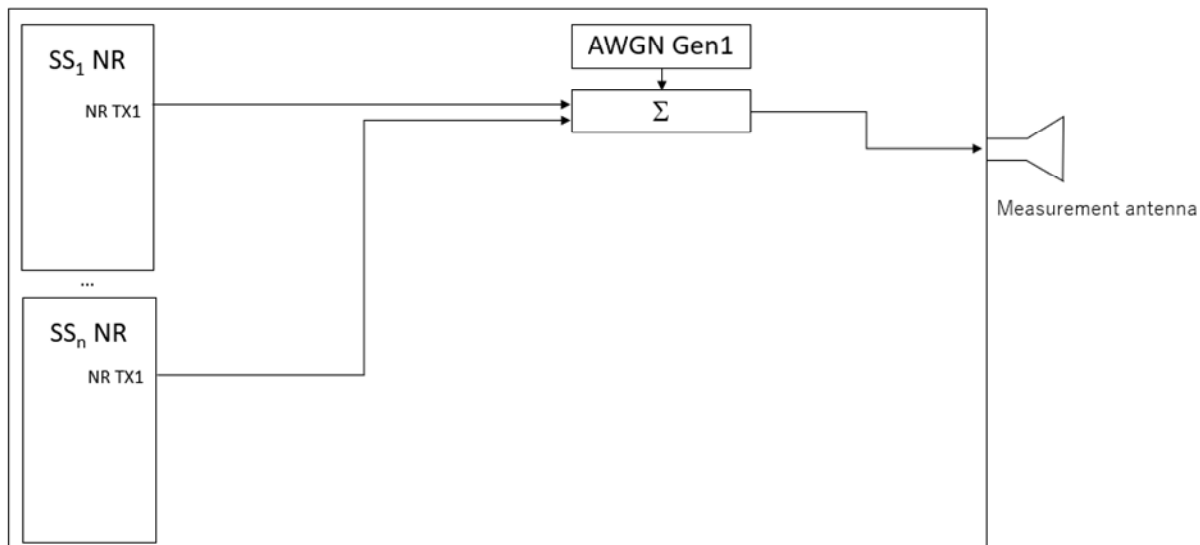
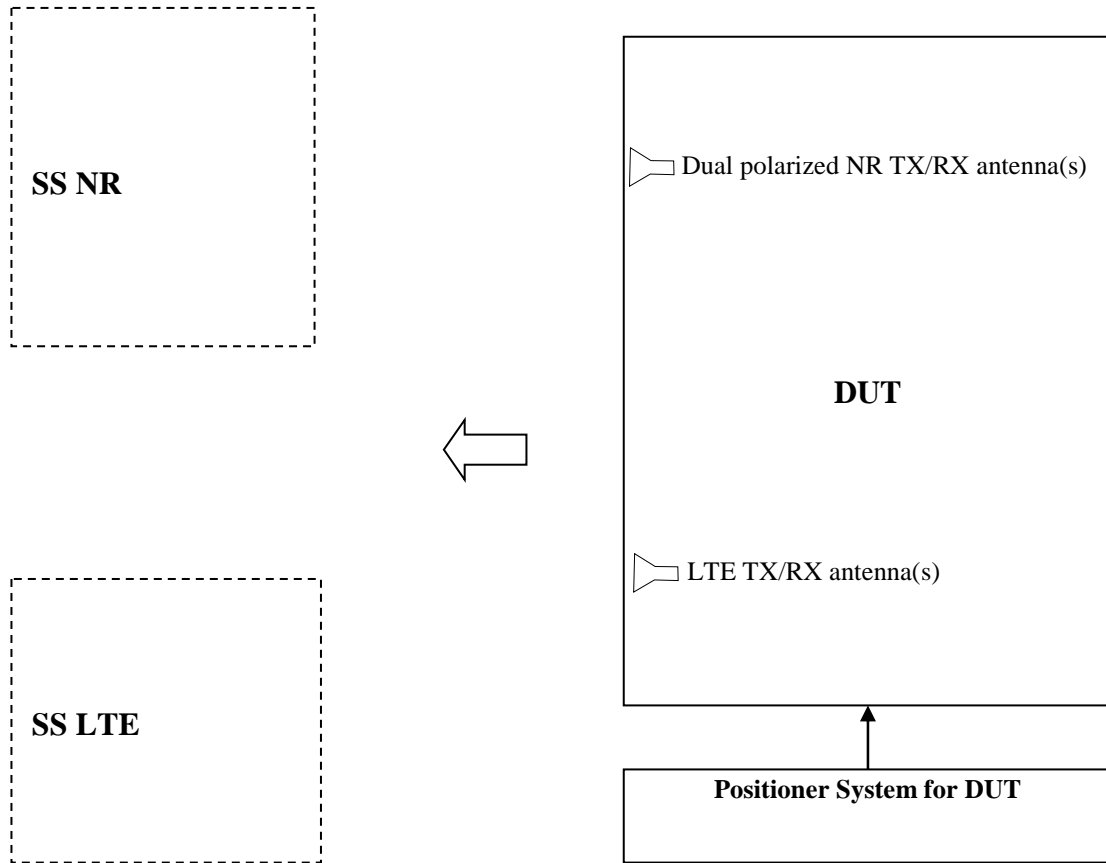


Figure A.3.3.3.1-1: TE diagram for radiated 1AoA RRM tests (1x2 without fading)

## A.3.4 User Equipment Parts for Radiated Measurements

### A.3.4.1 Basic Transmitter/Receiver tests

The User Equipment part is focused on logical representation of UE antenna(s), DUT positioner and positioner controller. The UE connection diagram below is applicable for NR radiated RX and TX tests, including CA and UL MIMO tests.



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

**A.3.4.2 Demodulation and CSI tests**

Same as Figure A.3.4.1.1.

**A.3.4.3 RRM tests**

Same as Figure A.3.4.1.1.

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

## B.1 General

**Editor's Note:** The working assumption is that the DFF or IFF: CATR based OTA test methodologies defined in Annexes B.2.2 and B.2.4 respectively should be used for Signalling test.

The applicability of the permitted test methods herein is defined by the appropriate references within clauses 5, 6, and 7. A summary of the applicability is shown in Table B.1-1.

**Table B.1-1: Permitted Test Methods Applicability Summary**

Permitted Test Methods	UE RF	Demodulation	RRM	
			1 AoA	2 AoA
DFF	yes	yes	yes	yes
DFF Simplification	yes	yes	yes	N/A
IFF	yes	yes	yes	N/A
NFTF	yes (Note 1)	N/A	N/A	N/A
Enhanced IFF	yes	yes	yes	yes
IFF+DFF	yes	yes	yes	yes
DNF	N/A	yes	N/A	N/A

Note 1: Not applicable for EIS, Frequency Error, EVM, Carrier Leakage, In-Band Emission, EVM SF, OBW as defined in Table J-1 of TS38.521-2 [15]

## B.2 Permitted Test Methods

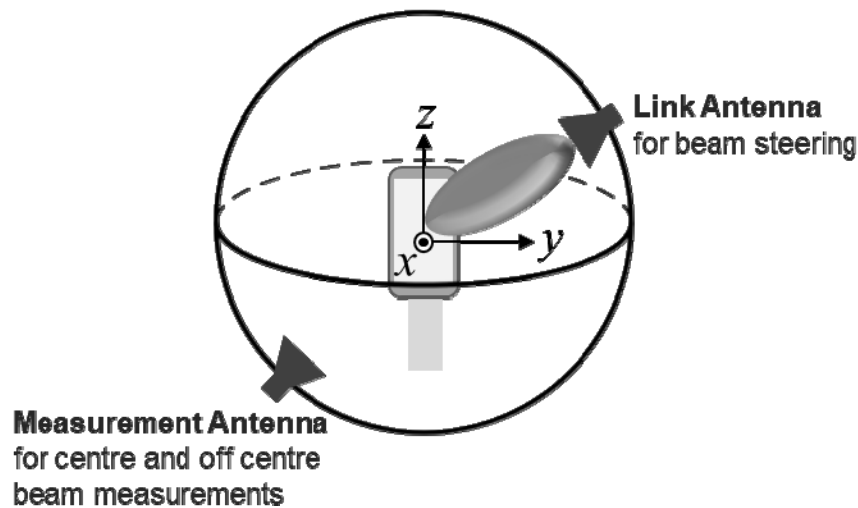
### B.2.1 General

The main objective of this annex is to specify basic parameters of permitted OTA test methods suitable for RF Tx and Rx, Performance, and RRM measurements and Signalling Conformance tests performed at high frequency in the FR2 operating bands defined in clause 4.3.1.2. The applicability of each OTA test method is summarized in Table B.1-1.

### B.2.2 Direct far field (DFF)

#### B.2.2.1 Description

The DFF measurement setup for FR2 is capable of centre and off-centre of beam measurements and is shown in Figure B.2.2.1-1 below.



**Figure B.2.2.1-1: DFF measurement setup**

The key aspects of the DFF setup are:

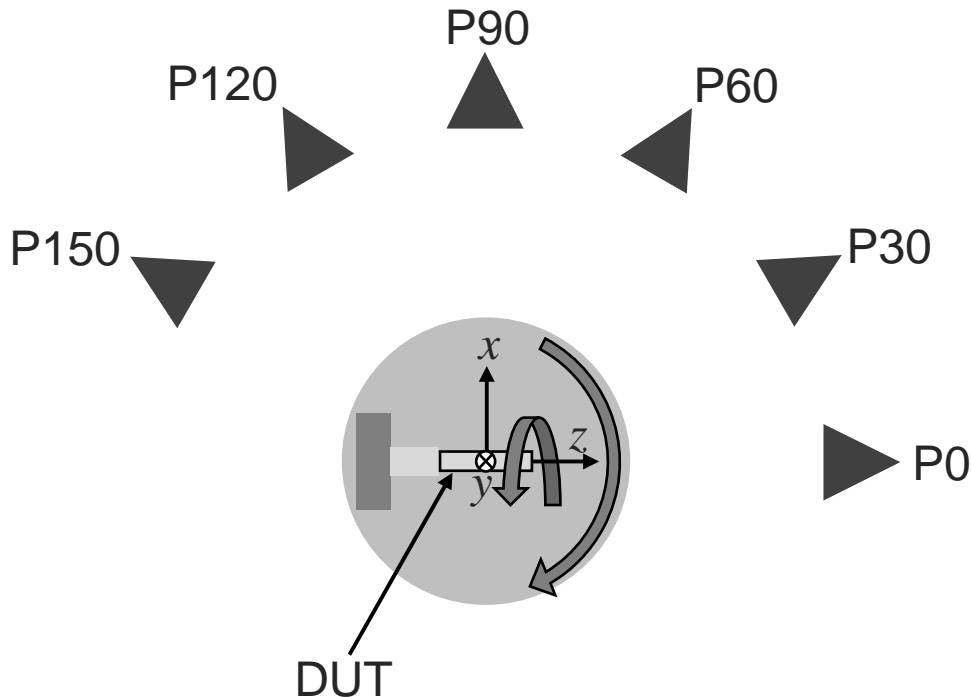
- Far-field measurement system in an anechoic chamber
  - The criterion for determining the far-field distance is described in B.2.2.4.
- A positioning system such that the angle between the dual-polarized measurement antenna and the DUT has at least two axes of freedom and maintains a polarization reference.
- A positioning system such that the angle between the link antenna and the DUT has at least two axes of freedom and maintains a polarization reference; this positioning system for the link antenna is in addition to the positioning system for the measurement antenna and provides for an angular relationship independently controllable from the measurement antenna.
- For setups intended for measurements of UE RF characteristics in non-standalone (NSA) mode with 1 UL configuration, an LTE link antenna is used to provide the LTE link to the DUT. The LTE link antenna provides a stable LTE signal without precise path loss or polarization control.
- For setups intended for measurements in NR CA mode with FR1 and FR2 inter-band NR CA, test setup provides NR FR1 link to the DUT. The NR FR1 link has a stable and noise-free signal without precise path loss or polarization control.

The applicability criteria of the DFF setup are:

- The DUT radiating aperture is  $D \leq 5$  cm
  - Either a single radiating aperture, multiple non-coherent apertures, or multiple coherent apertures DUTs can be tested
  - If multiple antenna panels that are phase coherent are defined as a single array, the criterion on DUT radiating aperture applies to this single array
  - D is based on the MU assessment in Annex B.1.1.3 of TR 38.810 [24]
  - A measurement distance larger than the far-field criteria defined in B.2.2.4 is not precluded
  - If the uncertainties can be further optimized, the MU may be reduced or D may be increased
- A manufacturer declaration on the following elements is needed unless the entire DUT size is contained in a sphere of diameter of  $\leq 5$  cm:

- Manufacturer declares antenna array size

For RRM testing, an example baseline system with two simultaneously active AoA ( $N_{MAX\_AoAs} = 2$ ) as defined in Clause 7.1.3 using a DFF setup is illustrated in Figure 2.2.1-2. Implementations of the RRM baseline system with only a subset of the probes are possible as long as the system can satisfy the relative angular relationships outlined in Clause 7.1.3.2.1.

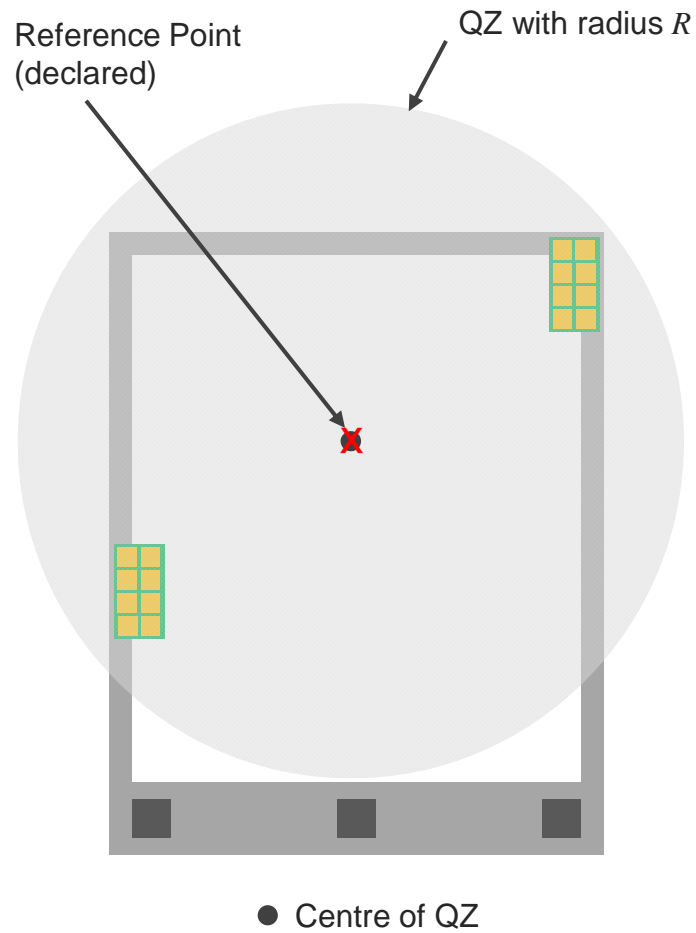


**Figure B.2.2.1-2: Example RRM baseline system with two simultaneously active AoA using a DFF setup.**

### B.2.2.2 Quiet zone dimension

In order to allow testing of DUTs of different sizes and to allow for flexibility in test chamber implementations, there will be various defined quiet zone dimensions. The smallest quiet zone shall have a radius of 100mm to accommodate DUTs such as smartphones. The next larger quiet zone shall have a radius of 150mm to accommodate larger DUTs such as tablets. To test even larger devices, e.g., larger tablets and laptops, quiet zones with 200mm and 275mm are defined. The device types are listed as examples and other device types are not precluded.

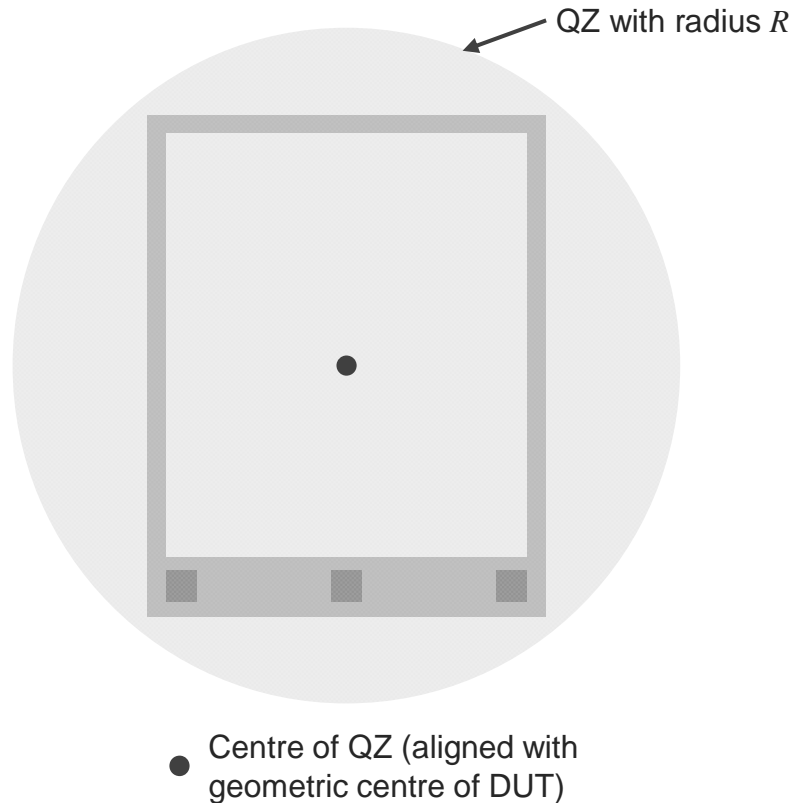
The radiating portions of the device have to be fully enclosed within the quiet zone, but the non-radiating portions of the device can be located/placed outside the quiet zone if a vendor declaration with positioning reference points and the minimum QZ required to contain all active antennas within the quiet zone (per band) is provided. This grey-box testing approach where the declared reference point is aligned with the centre of the QZ is further illustrated in Figure B.2.2.2-1.



**Figure B.2.2.2-1: Grey-box test approach**

In the absence of a vendor declaration, the geometric centre of the DUT shall be aligned with the centre of the QZ and the DUT shall be fully contained within the QZ. This black-box testing approach is further illustrated in Figure B.2.2.2-2.





**Figure B.2.2.2-2: Black-box test approach**

### B.2.2.3 Quality of the quiet zone

The quality of the quiet zone shall be measured for the frequencies defined in FFS. The measured quality of the quiet zone performance is used in uncertainty calculations for the appropriate quality of the quiet zone dimension utilized for the DUT.

### B.2.2.4 Measurement Distance

For far-field measurements, the distance  $R$  between the DUT and the measurement antenna shall be calculated by the following equation.

$$R > \frac{2D^2}{\lambda}$$

where  $\lambda$  is the largest wavelength within the frequency band of interest and  $D$  is the diameter of the smallest sphere that encloses the radiating parts of the DUT.

For DFF, free space path loss is calculated by applying the Free Space Loss formula with  $R$  equal to the far field

distance:  $\left(\frac{4\pi R}{\lambda}\right)^2$ .

The minimum range length of a DFF system, i.e., the minimum distance between the centre of the quiet zone and the measurement antenna, needs to take into account the unknown offset of the antenna aperture from the centre of quiet zone in order to guarantee far-field conditions for any antenna array integrated inside the DUT. The distance between the centre of the quiet zone to the measurement antenna is referenced as  $R_{\text{DFF}}$ , while the radius of the quiet zone is  $R_{\text{QZ}}$  as illustrated in Figure B.2.2.4-1. The minimum distance between the antenna array integrated anywhere within the DUT and the measurement antenna needs to meet the far-field distance,  $R_{\text{FF}} = 2D^2/\lambda$ .

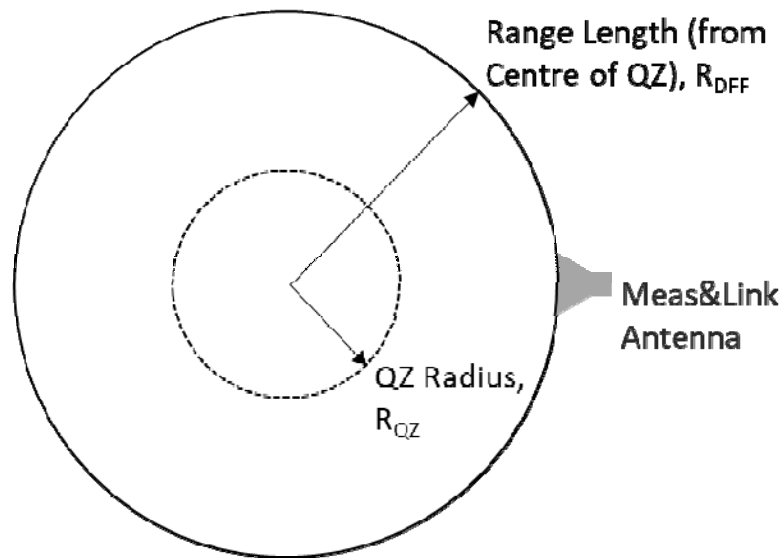


Figure B.2.2.4-1: Illustration of DFF System for range length definition

The setup in Figure B.2.2.4-2 is used to derive the minimum range length for NR FR2 DFF systems where the sphere enclosing the DUT matches the QZ and the DUT antenna with radiating aperture diameter  $D$  located in the corner of the DUT. With this setup, the minimum range length,  $R_{DFF}$ , can be determined as

$$R_{DFF} = R_{QZ} - D/2 + R_{FF} = R_{QZ} - D/2 + 2D^2/\lambda$$

which is tabulated in Table B.2.2.4-1 for two different QZ sizes assuming  $D=5\text{cm}$ .

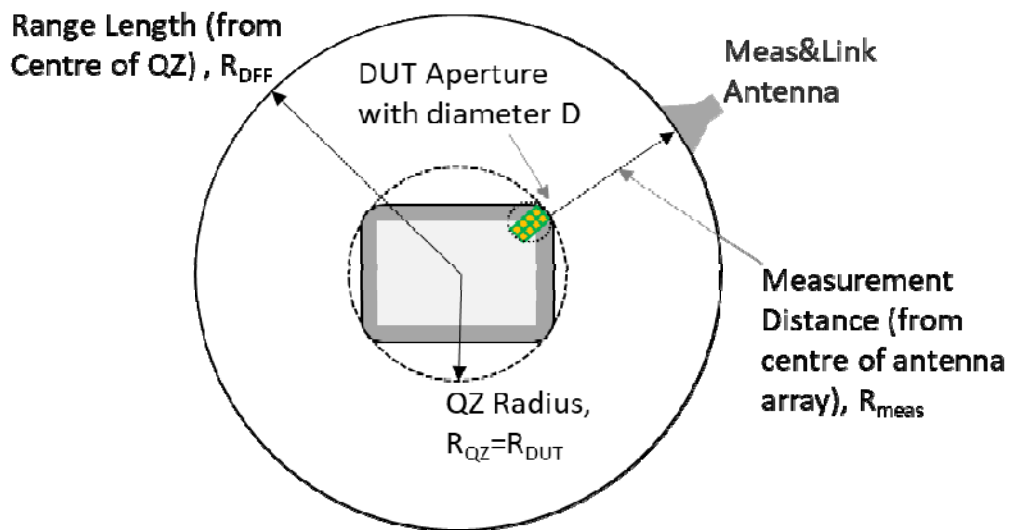


Figure B.2.2.4-2: Illustration of DFF System for minimum range length definition

Table B.2.2.4-1: Minimum Range Length of DFF System for  $D = 5\text{cm}$

QZ [cm] \ $f$ [GHz]	24.25	30	40	50	52.6
20	0.48	0.58	0.74	0.91	0.95

30	0.53	0.63	0.79	0.96	1.00
----	------	------	------	------	------

The influence of measurement distance on measurement uncertainty is discussed in Annex B.2.1 of TR 38.903 [XX].

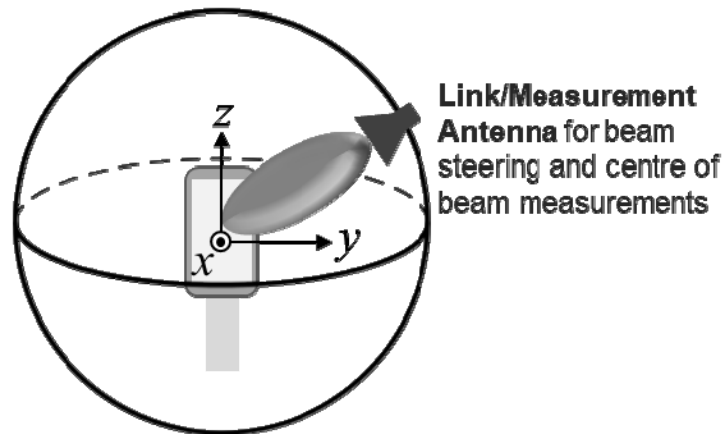
## B.2.3 Direct far field (DFF) setup simplification for centre of beam measurements

### B.2.3.1 Description

The DFF setup in Annex B.2.2 can be simplified in the following way to perform centre of the beam measurements:

- The measurement and the link antenna can be combined so that the single antenna is used to steer the beam and to perform UE measurements.

The measurement setup for FR2 capable of centre of beam measurements is shown in Figure B.2.3.1-1 below.



**Figure B.2.3.1-1: DFF simplification for centre of beam measurement setup**

The applicability criteria of the simplified DFF setup for centre of beam measurements are defined in B.2.2.1.

### B.2.3.2 Quiet zone dimension

Same as Annex B.2.2.2.

### B.2.3.3 Quality of the quiet zone

Same as Annex B.2.2.3.

### B.2.3.4 Measurement Distance

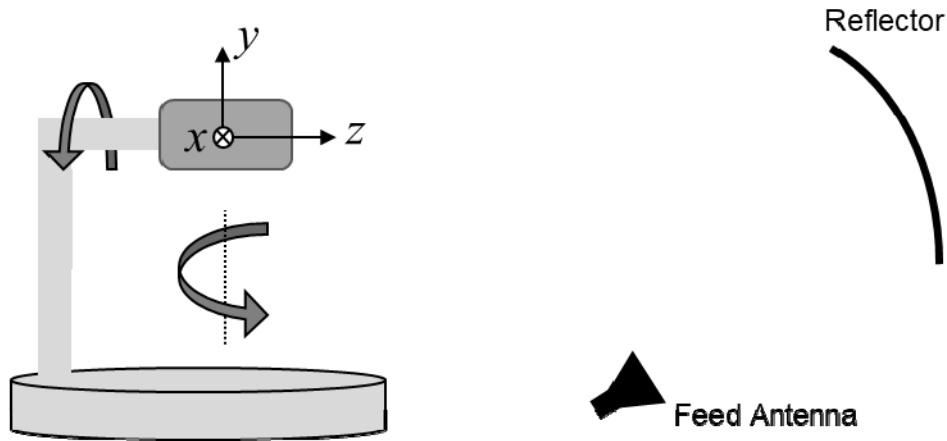
Same as Annex B.2.2.4.

## B.2.4 Indirect far field (IFF): Compact Antenna Test Range (CATR)

### B.2.4.1 Description

The IFF method utilizing a compact antenna test range (CATR) creates the far field environment using a transformation with a parabolic reflector.

The IFF CATR measurement setup for FR2 is capable of centre and off-centre of beam measurements and an example setup is shown in Figure B.2.4.1-1 below. The relative orientation of the coordinate system with respect to the reflector and the axes of rotation apply to any CATR measurement setup.



**Figure B.2.4.1-1: Example of IFF: CATR measurement setup**

The key aspects of this test method setup are:

- Indirect Far Field using Compact Antenna Test Range as described in TR 38.810 [24] with quiet zone diameter that meets the requirements of B.2.4.2.
- A positioning system such that the angle between the dual-polarized measurement antenna and the DUT has at least two axes of freedom and maintains a polarization reference.
- Before performing the UE Beamlock Test Function as defined in clause 4.9.2, the measurement probe acts as a link antenna maintaining polarization reference with respect to the DUT. Once the beam is locked then the link is to be passed to the link antenna which maintains reliable signal level with respect to the DUT.
- For setups intended for measurements of UE RF characteristics in non-standalone (NSA) mode with 1UL configuration, an LTE link antenna is used to provide the LTE link to the DUT. The LTE link antenna provides a stable LTE signal without precise path loss or polarization control.
- For setups intended for measurements in NR CA mode with FR1 and FR2 inter-band NR CA, test setup provides NR FR1 link to the DUT. The NR FR1 link has a stable and noise-free signal without precise path loss or polarization control.

The applicability criteria of this test method are:

- The total test volume, i.e., the quiet zone is defined as a sphere with radius R.
- DUT must fit within the quiet zone for the entire duration of the test.
- Either a single radiating aperture, multiple non-coherent apertures or multiple coherent apertures DUTs can be tested.
- No manufacturer declaration of the antenna array size is needed.

## B.2.4.2 Quiet zone dimension

Same as Annex B.2.2.2.

### B.2.4.3 Quality of the quiet zone

Same as Annex B.2.2.3.

### B.2.4.4 Measurement Distance

The CATR system does not require a measurement distance of  $R > \frac{2D^2}{\lambda}$  to achieve a plane wave as in a standard far field range.

For the CATR system, the far-field distance is seen as the focal length. The focal length is the distance between the feed and the reflector of the CATR. Further information on the focal length of a CATR system can be found in clause 5.2.3.2 of TR 38.810 [24].

The measurement distance for any CATR system implementation shall be adequate to meet the quiet zone dimensions defined in B.2.4.2.

In a CATR, from the reflector to the quiet zone, there is a plane wave with no free space path loss.

For CATR, free space path loss is calculated by applying the Free Space Loss formula with  $R$  equal to the far field

distance based on the focal length:  $\left(\frac{4\pi R}{\lambda}\right)^2$ .

A summary of the comparison of path losses which can be expected for the CATR compared to a Fraunhofer limit distance ( $R > \frac{2D^2}{\lambda}$ ) for different antenna sizes and frequencies can be found in clause 5.2.3.2 of TR 38.810 [24].

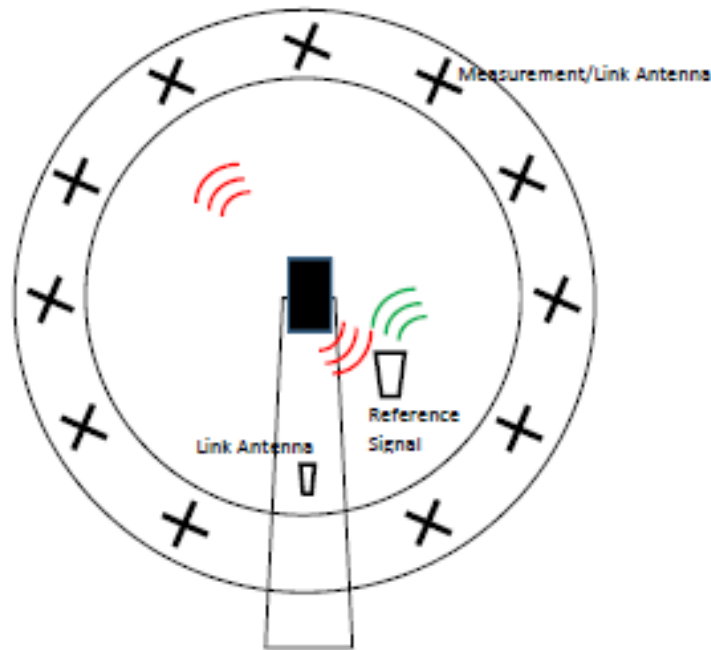
The influence of measurement distance on measurement uncertainty can be considered as zero as defined in Annex B.2.2 of TR 38.903 [XX].

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

### B.2.5.1 Description

The NFTF method computes the metrics defined in Far Field by using the Near Field to Far Field transformation.

The NFTF measurement setup of UE RF characteristics for FR2 is capable of centre and off centre of beam measurements and an example setup is shown in Figure B.2.5.1-1:



**Figure B.2.5.1-1: Example of NFTF measurement setup**

The key aspects of the Near Field test range are:

- Radiated Near Field UE beam pattern is measured and based on the NFTF mathematical transform, the final metric such as EIRP is the same as the metric for the baseline setup
- A positioning system such as the angle between the dual-polarized measurement/link antenna and the DUT has at least two axes of freedom and maintains a polarization reference
- For setups intended for measurements of UE RF characteristics in non-standalone (NSA) mode with 1UL configuration, an LTE link antenna is used to provide the LTE link to the DUT. The LTE link antenna provides a stable LTE signal without precise path loss or polarization control.
- For setups intended for measurements in NR CA mode with FR1 and FR2 inter-band NR CA, test setup provides NR FR1 link to the DUT. The NR FR1 link has a stable and noise-free signal without precise path loss or polarization control.

The applicability criteria of the NFTF setup are:

- The DUT radiating aperture is  $D \leq 5$  cm
  - Either a single radiating aperture, multiple non-coherent apertures or multiple coherent apertures DUTs can be tested
  - If multiple antenna panels that are phase coherent are defined as a single array, the criterion on DUT radiating aperture applies to this single array
  - D is based on the MU assessment in Annex B.1.4.3 of TR 38.810 [24]
  - If the uncertainties can be further optimized, the MU may be reduced or D may be increased
- A manufacturer declaration on the following elements is needed unless the entire DUT size is contained in a sphere of diameter of  $\leq 5$  cm:
  - Manufacturer declares antenna array size
- EIRP, TRP, and spurious emissions metrics can be tested.

## B.2.5.2 Quiet zone dimension

Same as Annex B.2.2.2.

## B.2.5.3 Quality of the quiet zone

Same as Annex B.2.2.3.

## B.2.5.4 Measurement Distance

The NFTF system does not require a measurement distance of  $R > \frac{2D^2}{\lambda}$  as in a standard far field range due to the use of the Near Field to Far Field transformation.

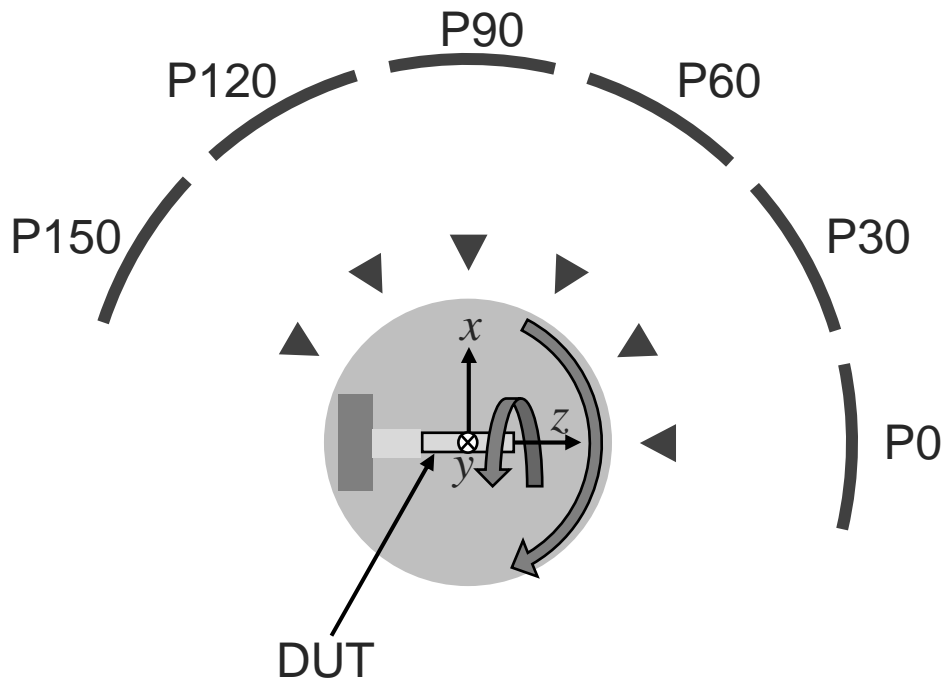
The measurement distance for any NFTF system implementation shall ensure that the DUT is not measured in the reactive near-field region and is adequate to meet the quiet zone dimensions defined in B.2.5.2.

## B.2.6 Enhanced IFF

### B.2.6.1 Description

The Enhanced IFF method utilizing multiple compact antenna test ranges (CATRs) creates the far field environment using a transformation with 2 or more parabolic reflectors for RRM testing with two simultaneously active AoA ( $N_{MAX\_AoAs} = 2$ ) as defined in Clause 7.1.3.

An example RRM baseline system using an Enhanced IFF setup are shown in Figure B.2.6.1-1. Implementations of the RRM baseline system with only a subset of the reflectors/probes are possible as long as the system can satisfy the relative angular relationships outlined in Clause 7.1.3.2.1.



**Figure B.2.6.1-1: Example RRM baseline system with two simultaneously active AoA using an Enhanced IFF setup**

The key aspects of this test method setup are the same as the IFF setup, outlined in Clause B.2.4.1.

### B.2.6.2 Quiet zone dimension

Same as Clause B.2.2.2.

### B.2.6.3 Quality of the quiet zone

Same as Clause B.2.2.3.

### B.2.6.4 Measurement Distance

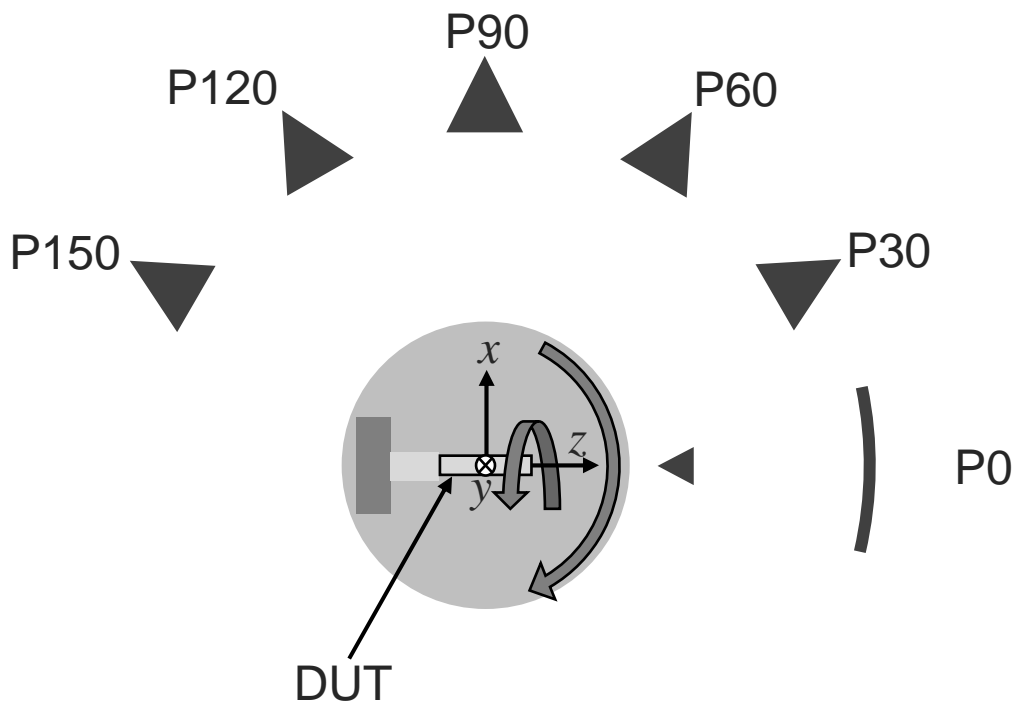
Same as Clause B.2.4.4.

## B.2.7 IFF+DFF

### B.2.7.1 Description

The IFF+DFF method is utilizing a combination of compact antenna test ranges (CATRs) and DFF probes for RRM testing with two simultaneously active AoA ( $N_{MAX\_AoAs} = 2$ ) as defined in Clause 7.1.3.

An example RRM baseline system using the IFF+DFF setup is shown in Figure B.2.7.1-1. Implementations of the RRM baseline system with only a subset of the probes are possible as long as the system can satisfy the relative angular relationships outlined in Clause 7.1.3.2.1.



**Figure B.2.7.1-1: Example RRM baseline system with two simultaneously active AoA using an IFF+DFF setup**

The key aspects of this test method setup are the same as the IFF setup for the probes based on the IFF method, outlined in B.2.4.1 and the DFF setup for the probes based on the DFF method, outlined in Clause B.2.2.1.

### B.2.7.2 Quiet zone dimension

Same as Clause B.2.2.2.



### B.2.7.3 Quality of the quiet zone

Same as Clause B.2.2.3.

### B.2.7.4 Measurement Distance

Same as Clause B.2.4.4 for the IFF setup for the probes based on the IFF method and Clause B.2.2.4 for the DFF setup for the probes based on the DFF method.

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## Annex C (informative): Calculation of test frequencies

### C.0 General

Test frequencies are defined in clause 4.3.1 with extensions for signalling test cases in clause 6.2.3. This annex gives a guideline to determine these test frequencies and the associated signalling parameters for a given NR band, NR CA or NR DC band combination.

Clause C.1 describes definitions and parameters used by the procedures to determine test frequencies, SS/PBCH Block (SSB) and CORESET#0 configuration parameters.

Clause C.2 describes how to calculate test frequencies for symmetric NR bands, asymmetric NR bands, NR CA and NR DC configurations.

Clause C.3.2 describes how to determine the SSB, CORESET#0 and signalling parameters for FR1 carriers with SCS=15 kHz or SCS=30 kHz, and for FR2 carriers with SCS=60 kHz or SCS=120 kHz. CORESET#0 is required for a carrier to be used as a Pcell.

Clause C.3.3 describes how to determine the SSB and signalling parameters for a carriers without CORESET#0.

Clause C.5 describes how to calculate test frequencies for NR V2X bands.

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### C.1 Definitions and Parameters

Figure C.1-1 shows SSB and CORESET#0 and related parameters. CORESET#0 is required for a carrier to be used as a PCell.

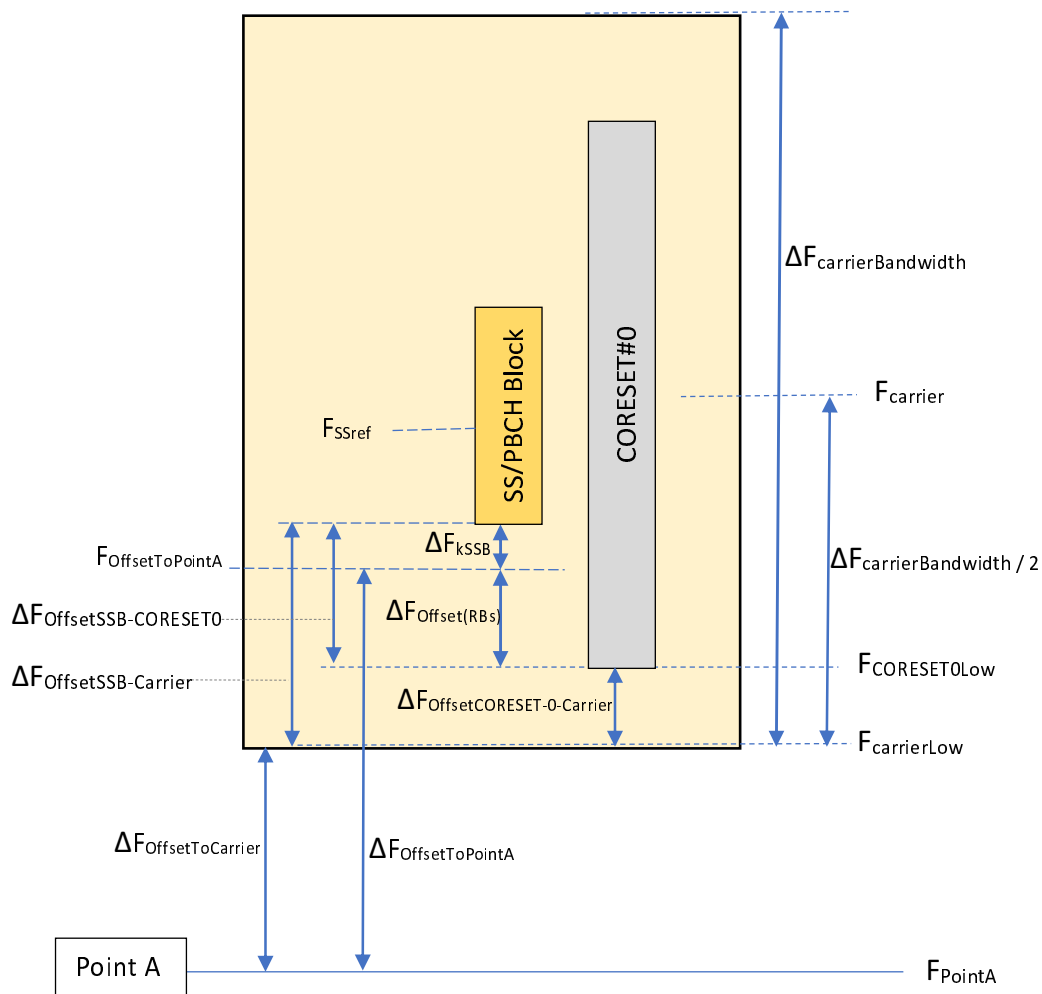


Figure C.1-1: location of SSB and CORESET#0 within a channel

The parameters referenced in figure C.1-1 are defined in Table C.1-1.

Table C.1-1: Definition of parameters in Figure C.1-1 used in Annex C

Parameter	Description
F <sub>PointA</sub>	Reference Point A frequency.
F <sub>carrier</sub>	F <sub>carrier</sub> is the centre frequency of a carrier corresponding to its NR-ARFCN value.
F <sub>carrierLow</sub>	F <sub>carrierLow</sub> is the centre frequency of lowest subcarrier of the carrier. F <sub>carrierLow</sub> = F <sub>carrier</sub> - 12 * SCS <sub>Carrier</sub> * (N <sub>RB</sub> / 2) with N <sub>RB</sub> according to Table 5.3.2-1 of TS 38.101-1 [7] and TS 38.101-2 [8] for the channel bandwidth of the carrier.
ΔF <sub>carrierBandwidth</sub>	ΔF <sub>carrierBandwidth</sub> is the carrier's channel bandwidth as provided in <i>carrierBandwidth</i> to the UE ( <i>SCS-SpecificCarrier</i> ).
ΔF <sub>offsetToCarrier</sub>	ΔF <sub>offsetToCarrier</sub> is the frequency offset between Point A and the lower edge of the carrier. F <sub>offsetToCarrier</sub> = <i>offsetToCarrier</i> * PRB size, where PRB size according to the subcarrier spacing of the carrier. <i>offsetToCarrier</i> is signalled to the UE ( <i>SCS-SpecificCarrier</i> ).
F <sub>SSref</sub>	Centre frequency of SSB. For a cell selectable as PCell the F <sub>SSref</sub> corresponds to a valid GSCN value according to clause 5.4.3.1 of TS 38.101-1 [7] and TS 38.101-2 [8].
ΔF <sub>Offset(RBs)</sub>	ΔF <sub>Offset(RBs)</sub> = 12 * Offset(RBs) * <i>subCarrierSpacingCommon</i> , where Offset(RBs) is given in tables 13-1 to 13-10 of TS 38.213 [22].
ΔF <sub>kSSB</sub>	ΔF <sub>kSSB</sub> = k <sub>SSB</sub> * subcarrier spacing of SSB (SCS <sub>SSB</sub> ).
ΔF <sub>OffsetSSB-CORESET0</sub>	Frequency offset between the lowest subcarrier of the SSB and the lowest subcarrier of CORESET#0. ΔF <sub>OffsetSSB-CORESET0</sub> = ΔF <sub>Offset(RBs)</sub> + ΔF <sub>kSSB</sub> .
ΔF <sub>OffsetCORESET0-Carrier</sub>	Frequency offset, F <sub>OffsetCORESET0-Carrier</sub> , between the lowest subcarrier of CORESET#0 and the lowest subcarrier of the carrier.
ΔF <sub>OffsetSSB-Carrier</sub>	Frequency offset between the lowest subcarrier of the SSB and the lowest subcarrier of the carrier.
F <sub>CORESET0Low</sub>	Centre frequency of subcarrier 0 of CORESET#0.
F <sub>OffsetToPointA</sub>	Frequency of the lowest subcarrier of the lowest resource block, which has the subcarrier spacing provided by the higher-layer parameter <i>subCarrierSpacingCommon</i> and overlaps with the SS/PBCH block used by the UE for initial cell selection, expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2 (TS 38.211 [29] clause 4.4.4.2).
ΔF <sub>OffsetToPointA</sub>	Frequency offset between F <sub>OffsetToPointA</sub> and point A. ΔF <sub>OffsetToPointA</sub> = <i>offsetToPointA</i> * {15 kHz for FR1; 60 kHz for FR2} (TS 38.211 [29] clause 4.4.4.2).

Additional parameters used in this annex are defined in Table C.1-2.

Table C.1-2: Definition of additional parameters used in Annex C.

$k_{SSB}$	as defined in TS 38.211 [29] clause 7.4.3.1
$SCS_{Carrier}$	subcarrier spacing for the carrier ( <i>SCS-SpecificCarrier</i> ): FR1: 15kHz, 30kHz or 60kHz according to TS 38.101-1 [7] Table 5.3.5-1 FR2: 60kHz or 120kHz according to TS 38.101-2 [8] Table 5.3.5-1
$SCS_{SSB}$	SS/PBCH block subcarrier spacing FR1: 15kHz or 30kHz according to TS 38.101-1 [7] Table 5.4.3.3-1 FR2: 120kHz or 240kHz according to TS 38.101-2 [8] Table 5.4.3.3-1 NOTE: According to the tables in clause 13 of TS 38.213 [22] not all combinations of $SCS_{SSB}$ and $SCS_{Carrier}$ are applicable.
$SCS_{common}$	Subcarrier spacing for SIB1, Msg.2/4 for initial access, paging and broadcast SI-messages. Provided to the UE in the MIB in IE <i>subCarrierSpacingCommon</i> .
$PRB_{size}$	Physical Resource Block size of the carrier = $12 * SCS_{Carrier}$ .
$CRB_{size}$	Common Resource Block size = $12 * SCS_{common}$ .
$F_{DL\_Low}, F_{UL\_Low}$	Lowest frequency of the downlink and uplink frequency range of the band as defined in clause 5.2 of TS 38.101-1 [7] and TS 38.101-2 [8].
$F_{DL\_High}, F_{UL\_High}$	Highest frequency of the downlink and uplink frequency range of the band as defined in clause 5.2 of TS 38.101-1 [7] and TS 38.101-2 [8].
$\Delta F_{Raster}$	Frequency raster of the band as defined in clause 5.4.2.3 of TS 38.101-1 [7] and TS 38.101-2 [8].
$BW_{DL}$	Bandwidth of downlink frequency range of the band.
$BW_{UL}$	Bandwidth of uplink frequency range of the band.
$CBW_{DL}$	Downlink channel bandwidth (MHz) of the carrier according to Table 5.3.2-1 of TS 38.101-1 [7] and TS 38.101-2 [8].
$CBW_{UL}$	Uplink channel bandwidth (MHz) of the carrier according to Table 5.3.2-1 of TS 38.101-1 [7] and TS 38.101-2 [8].
$F_{Tx-Rx\_separation}$	Default Tx – Rx carrier centre frequency separation of the band as defined in clause 5.4.4 of TS 38.101-1 [7]. For TDD bands $F_{Tx-Rx\_separation} = 0$ .
$\Delta F_{Tx-Rx\_separation}$	$\Delta F_{Tx-Rx} =  (BW_{DL} - BW_{UL})/2 $ is the deviation to the default Tx-Rx carrier centre frequency separation ( $F_{Tx-Rx\_separation}$ ) for FDD FR1 bands supporting asymmetric channel bandwidths as defined in clause 5.3.6 of TS 38.101-1 [7].
$BW_{SSB}$	Bandwidth of the SSB. $BW_{SSB} = 12 * SCS_{SSB} * 20$
$\Delta GSCN, GSCN_{MIN}, GSCN_{MAX}$	GSCN step size, GSCN minimum and GSCN maximum values for the NR band according to table 5.4.3.3-1 of TS 38.101-1 [7] and TS 38.101-2 [8]
$Offset_{RBs}$	Offset (RBs) according to the applicable table 13-1 to 13-10 in TS 38.213 [22] for the given band and $\{SCS_{SSB}, SCS_{Carrier}\}$ combination of the carrier.
$Offset_{RBs,max}$	Maximum value for Offset (RBs) according to the applicable table 13-1 to 13-10 in TS 38.213 [22] for the given band and $\{SCS_{SSB}, SCS_{Carrier}\}$ combination of the carrier limited to the table indexes with number of RBs $N_{RB}^{CORESET}$ equal to the minimum value of $N_{RB}^{CORESET}$ in the table.
$Offset_{RBs,min}$	Minimum value for Offset (RBs) according to the applicable table 13-1 to 13-10 in TS 38.213 [22] for the given band and $\{SCS_{SSB}, SCS_{Carrier}\}$ combination of the carrier limited to the table indexes with number of RBs $N_{RB}^{CORESET}$ equal to the minimum value of $N_{RB}^{CORESET}$ in the table.

## C.2 Determination of test frequencies

### C.2.0 General

Test frequencies are determined as:

For symmetric NR bands (supporting same bandwidth in UL and DL):

- test frequencies for the supported symmetric channel bandwidth combinations are determined as described in clause C.2.1; and
- the test frequencies for the supported asymmetric channel bandwidth combinations are determined as described in clause C.2.3.

For asymmetric NR bands (supporting different bandwidth in UL and DL):

- the test frequencies for the supported symmetric channel bandwidth combinations are determined as described in clause C.2.2; and
- the test frequencies for the supported asymmetric channel bandwidth combinations are determined as described in clause C.2.3.

For NR CA and NR DC:

- the test frequencies are determined as described in the relevant subclause in C.2.4 depending to the type of configuration.

The carrier test frequencies are determined considering the channel raster according to clause 5.4.2.3 in TS 38.101-1 [7] for FR1 and in TS 38.101-2 [8] for FR2.

## C.2.1 Determination of test frequencies for symmetric NR bands and symmetric uplink and downlink channel bandwidth combinations

### C.2.1.1 Determination of test frequencies for Low-, Mid- and High-Range

Downlink:

$F_{DL\_LowRange} = \text{Ceil}((F_{DL\_Low} + CBW_{DL}/2) / \Delta F_{Raster}) * \Delta F_{Raster}$	C.2.1.1-Eq1
$F_{DL\_MidRange} = \text{Round}((F_{DL\_Low} + BW_{DL}/2) / \Delta F_{Raster}) * \Delta F_{Raster}$	C.2.1.1-Eq2
$F_{DL\_HighRange} = \text{Floor}((F_{DL\_High} - CBW_{DL}/2) / \Delta F_{Raster}) * \Delta F_{Raster}$	C.2.1.1-Eq3

$F_{DL\_LowRange}$  is rounded up and  $F_{DL\_HighRange}$  is rounded down to obey to the minimum guard band according to clause 5.3.3 of TS 38.101-1 [7] and TS 38.101-2 [8].

Uplink:

$F_{UL\_LowRange} = F_{DL\_LowRange} - F_{Tx-Rx\_separation}$	C.2.1.1-Eq4
$F_{UL\_MidRange} = F_{DL\_MidRange} - F_{Tx-Rx\_separation}$	C.2.1.1-Eq5
$F_{UL\_HighRange} = F_{DL\_HighRange} - F_{Tx-Rx\_separation}$	C.2.1.1-Eq6

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

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

## C.2.2 Determination of test frequencies for asymmetric NR bands and symmetric uplink and downlink channel bandwidth combinations

Determination of test frequencies for asymmetric NR bands, and symmetric uplink and downlink channel bandwidth combinations are determined using the procedure in clause C.2.3 with  $\Delta F_{Tx-Rx} = 0$ .

### C.2.3 Determination of test frequencies for bands supporting asymmetric channel bandwidth combinations

#### C.2.3.1 General

The following procedure is used to calculate test frequencies for NR bands supporting asymmetric UL and DL channel bandwidths as described below, where  $CBW_{UL}$  and  $CBW_{DL}$  refer to the carrier's UL and DL channel bandwidths; and  $BW_{UL}$  and  $BW_{DL}$  refer to the band's total UL and DL bandwidths.

The procedure is also used to calculate test frequencies for symmetric UL and DL bandwidth combinations for asymmetric NR bands.

For FDD bands supporting asymmetric uplink and downlink bandwidth combinations a deviation of  $\Delta F_{\text{Tx-Rx}}$  (C.2.3.1-Eq1) is to be added to the default Tx-Rx carrier centre frequency separation,  $F_{\text{Tx-Rx\_separation}}$  (TS 38.101-1 [7] clause 5.3.6).

$\Delta F_{\text{Tx-Rx}} =  (\text{CBW}_{\text{DL}} - \text{CBW}_{\text{UL}})/2 $	C.2.3.1-Eq1
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For the case of asymmetric NR bands and symmetric UL and DL bandwidth combinations  $\Delta F_{\text{Tx-Rx}} = 0$ . To meet the Tx-Rx frequency separation requirement for asymmetric NR bands where the supported overall UL bandwidth is smaller than the supported overall DL bandwidth it may not be possible to cover the full DL frequency range for all UL and DL channel bandwidth combinations. For CA when such band is only used for DL CC the full range can be used for all DL channel bandwidths.

To maximize the tested frequency range for the non-CA case the UL frequency range, as being smaller than the DL frequency range, need to be used as the starting point to calculate the uplink and downlink test frequencies.

### C.2.3.2 Determination of Low-, Mid- and High-Range for bands supporting asymmetric uplink and downlink bandwidth combinations

The following procedure is used to determine the test frequencies for Low-, Mid- and High-Range for bands supporting asymmetric UL and DL bandwidth combinations.

1. Calculate uplink carrier centre frequencies:

$F_{\text{UL\_LowRange}} = \text{Ceil}((F_{\text{UL\_Low}} + \text{CBW}_{\text{UL}}/2) / \Delta F_{\text{Raster}}) * \Delta F_{\text{Raster}}$	C.2.3.2-Eq1
$F_{\text{UL\_MidRange}} = \text{Round}((F_{\text{UL\_Low}} + \text{BW}_{\text{UL\_Band}}/2) / \Delta F_{\text{Raster}}) * \Delta F_{\text{Raster}}$	C.2.3.2-Eq2
$F_{\text{UL\_HighRange}} = \text{Floor}((F_{\text{UL\_Low}} + \text{BW}_{\text{UL\_Band}} - \text{CBW}_{\text{UL}}/2) / \Delta F_{\text{Raster}}) * \Delta F_{\text{Raster}}$	C.2.3.2-Eq3

2. Calculate the downlink frequencies:

Calculate the DL carrier centre frequencies from the UL frequencies in step 1.

$F_{\text{DL\_LowRange}} = F_{\text{UL\_LowRange}} + F_{\text{Tx-Rx\_separation}} + \Delta F_{\text{Tx-Rx}}$	C.2.3.2-Eq4
$F_{\text{DL\_MidRange}} = F_{\text{UL\_MidRange}} + F_{\text{Tx-Rx\_separation}} + \Delta F_{\text{Tx-Rx}}$	C.2.3.2-Eq5
$F_{\text{DL\_HighRange}} = F_{\text{UL\_HighRange}} + F_{\text{Tx-Rx\_separation}} + \Delta F_{\text{Tx-Rx}}$	C.2.3.2-Eq6

3. Check that the calculated centre test frequencies in step 2 for the  $\text{BW}_{\text{DL}}$  fits within the bands DL frequency range:

If  $F_{\text{DL\_LowRange}}$  is smaller than the lowest frequency of the band then recalculate the minimum  $F_{\text{DL\_LowRange}}$  and modify the associated  $F_{\text{UL\_LowRange}}$ ,  $F_{\text{DL\_MidRange}}$  and  $F_{\text{UL\_MidRange}}$  as:

$F_{\text{DL\_LowRange}} = \text{Ceil}((F_{\text{DL\_Low}} + \text{CBW}_{\text{DL}}/2) / \Delta F_{\text{Raster}}) * \Delta F_{\text{Raster}}$	C.2.3.2-Eq7
$F_{\text{UL\_LowRange}} = F_{\text{DL\_LowRange}} - F_{\text{Tx-Rx\_separation}} - \Delta F_{\text{Tx-Rx}}$	C.2.3.2-Eq8
$F_{\text{DL\_MidRange}} = \text{Round}((F_{\text{DL\_LowRange}} + F_{\text{DL\_HighRange}})/2 / \Delta F_{\text{Raster}}) * \Delta F_{\text{Raster}}$	C.2.3.2-Eq8a
$F_{\text{UL\_MidRange}} = F_{\text{DL\_MidRange}} - F_{\text{Tx-Rx\_separation}} - \Delta F_{\text{Tx-Rx}}$	C.2.3.2-Eq8b

If  $F_{\text{DL\_HighRange}}$  is larger than the higher frequency of the band then recalculate the maximum  $F_{\text{DL\_HighRange}}$  and modify the associated  $F_{\text{UL\_HighRange}}$ ,  $F_{\text{DL\_MidRange}}$  and  $F_{\text{UL\_MidRange}}$  as:

$F_{\text{DL\_HighRange}} = \text{Floor}((F_{\text{DL\_Low}} + \text{BW}_{\text{DL\_Band}} - \text{CBW}_{\text{DL}}/2) / \Delta F_{\text{Raster}}) * \Delta F_{\text{Raster}}$	C.2.3.2-Eq9
$F_{\text{UL\_HighRange}} = F_{\text{DL\_HighRange}} - F_{\text{Tx-Rx\_separation}} - \Delta F_{\text{Tx-Rx}}$	C.2.3.2-Eq10
$F_{\text{DL\_MidRange}} = \text{Round}((F_{\text{DL\_LowRange}} + F_{\text{DL\_HighRange}})/2 / \Delta F_{\text{Raster}}) * \Delta F_{\text{Raster}}$	C.2.3.2-Eq11
$F_{\text{UL\_MidRange}} = F_{\text{DL\_MidRange}} - F_{\text{Tx-Rx\_separation}} - \Delta F_{\text{Tx-Rx}}$	C.2.3.2-Eq12

### C.2.3.3 Determination of test frequencies for a Mid range adjacent inter-frequency cell for FR2 RRM multicell testing

The following procedure is used to determine the test frequencies for Mid-Range adjacent inter-frequency cell used for RRM FR2 NR multi-cell in NR SA and EN-DC test cases. The reason for using an adjacent inter-frequency cell to the Mid-range cell for FR2 instead of using Low- or High- Range test frequencies as used for FR1 is to reduce test system complexity.

In addition to the definition of parameters in clause C.1 the following parameters are used to calculate the test frequencies for the Mid adjacent inter-frequency cell:

Parameter	Description
$F_{Mid}$	Carrier centre frequency (MHz) of the Mid-range cell
$CBW_{Mid}$	Channel bandwidth (MHz) of the Mid-range cell
$CBW_{Adjacent}$	Channel bandwidth (MHz) of the adjacent cell

1. Calculate the Mid-range adjacent cell carrier centre frequencies:

$F_{MidRangeAdjacentCell} = \text{Ceil}((F_{Mid} + (CBW_{Mid} + CBW_{Adjacent})/2) / \Delta F_{Raster}) * \Delta F_{Raster}$	C.2.3.3-Eq1
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2. Calculate SSB and CORESET#0 parameters as described in clause C.4.

## C.2.4 Frequency determination for NR CA and NR DC configurations

### C.2.4.1 Determination of test frequencies for NR Inter-band CA and NR DC

Test frequencies for NR Inter-band CA configurations and NR DC use the single carrier test frequencies for each of the included NR bands in the configuration as specified in clause 4.3.1.1.1 for FR1 bands and in clause 4.3.1.2.1 for FR2 bands.

### C.2.4.2 Determination of test frequencies for NR Intra-band Contiguous CA

#### C.2.4.2.1 General

By default, test frequencies for NR Intra-band Contiguous CA in clause 4.3.1 are specified using the nominal channel spacing between the carrier components as specified in TS 38.101-1 [7] clause 5.4A.1 for FR1 and TS 38.101-2 [8] clause 5.4A.1 for FR2. In addition, some NR bands may have test frequencies specified based on an adjusted channel spacing as specified in in TS 38.101-1 [7] clause 5.4A.1 for FR1 and TS 38.101-2 [8] clause 5.4A.1 for FR2.

The test frequencies for NR Intra-band Contiguous CA with SCS=15kHz or SCS=30 kHz for FR1 and with SCS=60 kHz or SCS=120 kHz for FR2 is calculated for each CC such that the specific test cases can decide which CC is used as PCell. This means that all CC test frequencies is calculated with a CORESET#0 as specified in clause C.3.2.

The test frequencies for CCs with SCS=60 kHz for FR1 and with SCS=240 kHz for FR2 is calculated without CORESET#0 as specified in C.3.3. CCs with SCS=60 kHz for FR1 and with SCS=240 kHz for FR2 can only be used for NR Intra-band Contiguous CA configurations with mixed numerologies.

**Note:** For NR Intra-band Contiguous CA configurations for bands where Tx frequency range is lower than Rx frequency range the RAN4 requirements for reference sensitivity testing is specified having the PCC frequency lower than the SCC frequencies such that UL PRB maximise the Tx-Rx separation. This means that CC1 shall be used as PCell in the reference test case for bands where Tx frequency range is lower than Rx frequency range; and highest CC shall be used as PCell in the reference test case for bands where Tx frequency range is higher than Rx frequency range.

In addition to the definition of parameters in clause C.1 the following parameters are used to calculate carrier components (CC) test frequencies for NR Intra-band Contiguous and Non-contiguous CA configurations:



Parameter	Description
$N_{CC}$	Number of CCs in the for NR Intra-band configuration
$CCBW_{DL}(i)$	Channel bandwidth (MHz) of downlink CC(i), where $i = 1$ to $N_{CC}$
$F_{Channel\_Spacing}(i)$	Channel spacing between CC(i) and CC(i+1), where $i = 1$ to $(N_{CC}-1)$

### C.2.4.2.2 Determination of test frequencies for Low-, Mid- and High-Range

Downlink CC(1), lowest frequency CC:

$F_{DL\_LowRange\_CC}(1)$  is rounded up and  $F_{DL\_HighRange\_CC}(1)$  is rounded down to obey to the minimum guard band according to clause 5.3.3 of TS 38.101-1 [7] and TS 38.101-2 [8].

$F_{DL\_LowRange\_CC}(1) = \text{Ceil}((F_{DL\_Low} + CCBW_{DL}(1) / 2) / \Delta F_{Raster}) * \Delta F_{Raster}$	C.2.4.2.2-Eq1
$F_{DL\_MidRange\_CC}(1) = \text{Round}((F_{DL\_Low} + BW_{DL}/2 - \sum_{k=1}^{(N_{CC})} CCBW_{DL}(k)/2 + CCBW_{DL}(1)/2) / \Delta F_{Raster}) * \Delta F_{Raster}$	C.2.4.2.2-Eq2
$F_{DL\_HighRange\_CC}(1) = \text{Floor}((F_{DL\_High} - CCBW_{DL}(N_{CC})/2 - \sum_{k=1}^{(N_{CC}-1)} F_{Channel\_Spacing}(k) / \Delta F_{Raster}) * \Delta F_{Raster})$	C.2.4.2.2-Eq3

Downlink CC(2) to CC( $N_{CC}$ ), in increasing frequency order:

$F_{DL\_LowRange\_CC}(i) = F_{DL\_LowRange\_CC}(i-1) + F_{Channel\_Spacing}(i), i=2$ to $N_{CC}$	C.2.4.2.2-Eq4
$F_{DL\_MidRange\_CC}(i) = F_{DL\_MidRange\_CC}(i-1) + F_{Channel\_Spacing}(i), i=2$ to $N_{CC}$	C.2.4.2.2-Eq5
$F_{DL\_HighRange\_CC}(i) = F_{DL\_HighRange\_CC}(i-1) + F_{Channel\_Spacing}(i), i=2$ to $N_{CC}$	C.2.4.2.2-Eq6

Uplink CC(i),  $i=1$  to  $N_{CC}$ :

$F_{UL\_LowRange\_CC}(i) = F_{DL\_LowRange\_CC}(i) - F_{Tx-Rx\_separation}$	C.2.4.2.2-Eq7
$F_{UL\_MidRange\_CC}(i) = F_{DL\_MidRange\_CC}(i) - F_{Tx-Rx\_separation}$	C.2.4.2.2-Eq8
$F_{UL\_HighRange\_CC}(i) = F_{DL\_HighRange\_CC}(i) - F_{Tx-Rx\_separation}$	C.2.4.2.2-Eq9

## C.2.4.2A Determination of test frequencies for FR1 NR Intra-band Contiguous CA without UL CA for bands with uplink bandwidth less than downlink bandwidth

### C.2.4.2A.1 General

By default, test frequencies for FR1 NR Intra-band Contiguous CA for bands with uplink bandwidth less than downlink bandwidth in clause 4.3.1 (e.g. n66 and n70) are specified with CC1 used as PCC and all additional CCs are specified as SCCs without UL to enable the SCCs for High range to extend into the upper DL BW beyond the UL BW. The nominal channel spacing between the carrier components is calculated as specified in TS 38.101-1 [7] clause 5.4A.1.

In addition to the definition of parameters in clause C.1 the definition of parameters  $N_{CC}$ ,  $CCBW_{DL}$  and  $F_{Channel\_Spacing}$  in clause C.2.4.2.1, and  $\Delta F_{TX-RX}$  in clause C.2.3.1 are used to calculate the test frequencies.

### C.2.4.2A.2 Determination of test frequencies for Low-, Mid- and High-Range

1. Calculate UL carrier centre frequencies for Low and High ranges:

$F_{UL\_LowRange} = \text{Ceil}((F_{UL\_Low} + CBW_{UL}/2) / \Delta F_{Raster}) * \Delta F_{Raster}$	C.2.4.2A.2-Eq1
$F_{UL\_HighRange} = \text{Floor}((F_{UL\_Low} + BW_{UL\_Band} - CBW_{UL}/2) / \Delta F_{Raster}) * \Delta F_{Raster}$	C.2.4.2A.2-Eq2

2. Calculate the DL CC(1) carrier centre frequencies from the UL frequencies in step 1 for Low and High ranges:

$\Delta F_{TX-RX} =  (CBW_{DL}(1) - CBW_{UL})/2 $	C.2.4.2A.2-Eq3
$s = +1$ if $F_{UL\_Low} \leq F_{DL\_Low}$ else $-1$	C.2.4.2A.2-Eq4
$F_{DL\_LowRange\_CC}(1) = F_{UL\_LowRange} + s * (F_{Tx-Rx\_separation} + \Delta F_{Tx-Rx})$	C.2.4.2A.2-Eq5
$F_{DL\_HighRange\_CC}(1) = F_{UL\_HighRange} + s * (F_{Tx-Rx\_separation} + \Delta F_{Tx-Rx})$	C.2.4.2A.2-Eq6

3. Check that DL aggregated CBW for the High range fits into the DL bandwidth.

$F_{DL\_HighRange\_max} = \text{Floor}((F_{DL\_HighRange\_CC}(1) + \sum_{k=1 \text{ to } N_{CC}-1} F_{Channel\_Spacing}(k) + CCBW_{DL}(N_{CC})/2)$	C.2.4.2A.2-Eq7
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If  $F_{DL\_HighRange\_max}$  is less or equal to  $F_{DL\_High}$  then goto step 4 else modify  $F_{DL\_HighRange\_CC1}$  such that the full aggregated CBW is located at the DL bandwidth high edge and recalculate  $F_{UL\_HighRange}$ .

$F_{DL\_HighRange\_cc}(1) = F_{DL\_High} - CCBW_{DL}(N_{CC})/2 - \sum_{k=1 \text{ to } (N_{CC}-2)} F_{Channel\_Spacing}(k)$	C.2.4.2A.2-Eq8
$F_{UL\_HighRange} = F_{DL\_HighRange\_CC}(1) - S^*(F_{Tx-Rx\_separation} + \Delta F_{Tx-Rx})$	C.2.4.2A.2-Eq9

4. Calculate the  $F_{UL\_MidRange}$  and  $F_{DL\_MidRange\_CC}(1)$ :

$F_{DL\_MidRange\_cc}(1) = \text{Round}((F_{DL\_LowRange\_CC}(1) + F_{DL\_HighRange\_CC}(1))/2) / \Delta F_{Raster} * \Delta F_{Raster}$	C.2.4.2A.2-Eq10
$F_{UL\_MidRange} = F_{DL\_MidRange\_CC}(1) - S^*(F_{Tx-Rx\_separation} + \Delta F_{Tx-Rx})$	C.2.4.2A.2-Eq11

5. Calculate DL CC(2) to CC( $N_{CC}$ ), in increasing frequency order:

$F_{DL\_LowRange\_CC}(i) = F_{DL\_LowRange\_CC}(i-1) + F_{Channel\_Spacing}(i), i=2 \text{ to } N_{CC}$	C.2.4.2A.2-Eq12
$F_{DL\_MidRange\_CC}(i) = F_{DL\_MidRange\_CC}(i-1) + F_{Channel\_Spacing}(i), i=2 \text{ to } N_{CC}$	C.2.4.2A.2-Eq13
$F_{DL\_HighRange\_CC}(i) = F_{DL\_HighRange\_CC}(i-1) + F_{Channel\_Spacing}(i), i=2 \text{ to } N_{CC}$	C.2.4.2A.2-Eq14

## C.2.4.3 Determination of test frequencies for NR Intra-band Non-Contiguous CA

### C.2.4.3.1 General

The default test frequencies in clause 4.3.1 for NR Intra-band Non-Contiguous CA are based on maximum  $W_{gap}$  between the carrier components of the different bands taking the UE capability of maximum supported frequency separation between the lower edge of lowest component carrier and upper edge of highest component carrier for UL for FR1, and UL and DL for FR2.

Test frequencies with  $W_{gap}$  different from maximum  $W_{gap}$  are specified in the specific test cases using them.

In addition to the definition of parameters in clause C.1 the following parameters are used to calculate carrier components (CC) test frequencies for NR Intra-band Contiguous and Non-contiguous CA configurations:

Parameter	Description
$N_{SB}$	Number of sub-block in the for NR Intra-band non-contiguous configuration
$SBCBW_{DL}(i)$	Downlink channel bandwidth (MHz) of sub-block $SB(i)$ , where $i = 1$ to $N_{SB}$
$maxFsBW$	Maximum frequency separation bandwidth between the lower edge of lowest component carrier and upper edge of highest component carrier.
$maxW_{gap}$	$maxW_{gap}$ is the maximum separation in MHz between each sub-block in the NR Intra-band non-contiguous configuration within $maxFsBW$ for a given sub-block combination.

#### C.2.4.3.1A Selection of maximum frequency separation for FR1

Select the  $maxFsBW$  dependent on the type of configuration and aggregated CBW for the sub-block combination in Table C.2.4.3.1A-1:

Table C.2.4.3.1A-1: Selecting maxFsBW for FR1

Type of configuration	Aggregated CBW	maxFsBW
Without UL CA	All	Full NR bandwidth
With UL CA	<100 MHz	100 MHz
	>=100 MHz and <200 MHz	200 MHz
	>=100 MHz and <600 MHz	600 MHz
	>600 MHz	Full NR bandwidth

### C.2.4.3.1B Selection of maximum frequency separation for FR2

Select the maxFsBW dependent on the type of configuration and aggregated CBW for the sub-block combination in Table C.2.4.3.1B-1:

Table C.2.4.3.1B-1: Selecting maxFsBW for FR2

Type of configuration	Aggregated CBW	maxFsBW (Note 1)
With non-contiguous UL CA	<400 MHz	400 MHz
	>=400 MHz and <600 MHz	600 MHz
	>=600 MHz and <800 MHz	800 MHz
	>=800 MHz and <1000 MHz	1000 MHz
	>=1000 MHz and <1200 MHz	1200 MHz
	>=1200 MHz and <1400 MHz	1400 MHz
	>=1400 MHz	N/A
Without non-contiguous UL CA	<400 MHz	400 MHz
	>=400 MHz and <600 MHz	600 MHz
	>=600 MHz and <800 MHz	800 MHz
	>=800 MHz and <1000 MHz	1000 MHz
	>=1000 MHz and <1200 MHz	1200 MHz
	>=1200 MHz and <1400 MHz	1400 MHz
	>=1400 MHz and <1600 MHz	1600 MHz
	>=1600 MHz and <1800 MHz	1800 MHz
	>=1800 MHz and <2000 MHz	2000 MHz
	>=2000 MHz and <2200 MHz	2200 MHz
>=2200 MHz and <2400 MHz	2400 MHz	

Note 1: For FR2 intra-band non-contiguous CA configurations with non-contiguous UL CA the selected value of maxFsBW is based on applicable frequency separation classes for UL non-contiguous operation in TS 38.101-2 [8], Table 5.3A.4-2. For FR2 intra-band non-contiguous CA configurations without non-contiguous UL CA the selected value of maxFsBW is based on applicable frequency separation classes for DL non-contiguous operation in TS 38.101-2 [8], Table 5.3A.4-2.

### C.2.4.3.2 Determination of test frequencies for a sub-block combination

**Editor's note:** The number of test points for intra-band non-contiguous CA configurations is under investigation, e.g. "Low" and "High", or "Mid".

1. Calculate the maxWgap value between sub-blocks for the sub-block combination:

$$\text{maxWgap} = (\text{maxFsBW} - \sum_{k=1 \text{ to } N_{\text{SB}}} \text{SBCBW}_{\text{DL}}(k)) / (N_{\text{SB}} - 1) \quad \text{C.2.4.3.3-Eq1}$$

2. Calculate test frequencies for all sub-blocks in the sub-block combination:

If the maxFsBW is smaller than the full bandwidth of the NR band then calculate test frequencies for both Low and High range else only for the Low range.

For Low range the test frequencies are calculated such that the lower edge of the lowest component carrier of the lowest frequency sub-block is located at the lower edge of the NR bandwidth. The sub-blocks are separated by the calculated maxWgap in step 1.

For High range the test frequencies are calculated such that the upper edge of the highest component carrier of the highest frequency sub-block is located at the upper edge frequency of the NR bandwidth. The sub-blocks are separated by the calculated maxWgap in step 1.

Within each sub-block the test frequencies and parameters of the sub-block are calculated based on the location of the sub-block and the relevant principles in clause C.2, C3 and C4 for the type of component carriers in the sub-block.

The test frequencies for CCs with SCS=60 kHz for FR1 and with SCS=240 kHz for FR2 is calculated without CORESET#0 as specified in C.3.3. CCs with SCS=60 kHz for FR1 and with SCS=240 kHz for FR2 can only be used for NR Intra-band Non-Contiguous CA configurations with mixed numerologies.

### C.2.4.3.3 Void

## C.2.5 Frequency determination for supplemental uplink

### C.2.5.1 General

The following procedure is used to calculate test frequencies for NR supplemental uplink as described below, where  $CBW_{UL}$  refers to the carrier's UL channel bandwidths and  $BW_{UL}$  refers to the band's total UL bandwidths.

### C.2.5.2 Determination of Low-, Mid- and High-Range for supplemental uplink bands

The following procedure is used to determine the uplink carrier centre frequencies for Low-, Mid- and High-Range for supplemental uplink bands.

$F_{UL\_LowRange} = \text{Ceil}((F_{UL\_Low} + CBW_{UL}/2) / \Delta F_{Raster}) * \Delta F_{Raster}$	C.2.5.2-Eq1
$F_{UL\_MidRange} = \text{Round}((F_{UL\_Low} + BW_{UL\_Band}/2) / \Delta F_{Raster}) * \Delta F_{Raster}$	C.2.5.2-Eq2
$F_{UL\_HighRange} = \text{Floor}((F_{UL\_Low} + BW_{UL\_Band} - CBW_{UL}/2) / \Delta F_{Raster}) * \Delta F_{Raster}$	C.2.5.2-Eq3

## C.2.6 Frequency determination for EN-DC configurations

### C.2.6.1 Determination of test frequencies for EN-DC Inter-band

Test frequencies for EN-DC Intra-band non-contiguous configurations use the Low and High ranges test frequencies for each of the included single carrier E-UTRA and NR bands, and E-UTRA and NR CA configurations in the configuration as specified E-UTRA in TS 36.508 [2], clause 4.3.1 and for NR in clause 4.3.1.1.1 for FR1 bands and in clause 4.3.1.2.1 for FR2 bands.

### C.2.6.2 Determination of test frequencies for EN\_DC Intra-band Contiguous CA

#### C.2.6.2.1 General

By default, test frequencies for EN-DC Intra-band Contiguous CA in clause 4.3.1 are specified using the nominal channel spacing between the E-UTRA and NR carrier components as specified in TS 38.101-3 [9], clause 5.4B.1.

The test frequencies for EN\_DC Intra-band Contiguous CA is calculated for Low and High ranges for the following two cases:

- with NR CC at the band edge; and
- with E-UTRA CC at the band edge.

In addition to the definition of parameters in clause C.1 the following parameters are used to calculate carrier components (CC) test frequencies for EN\_DC Intra-band Contiguous:

Parameter	Description
$N_{NR\_CC}$	Number of NR CCs in the EN-DC Intra-band configuration
$N_{EUTRA\_CC}$	Number of E-UTRA CCs in the EN-DC Intra-band configuration
$CCBW_{NR\_DL}(i)$	Channel bandwidth (MHz) of downlink NR CC(i), where $i = 1$ to $N_{NR\_CC}$
$CCBW_{EUTRA\_DL}(m)$	Channel bandwidth (MHz) of downlink E-UTRA CC(m), where $m = 1$ to $N_{EUTRA\_CC}$
$F_{NR\_EUTRA\_Channel\_Spacing}$	Nominal channel spacing between adjacent NR and E-UTRA CCs as defined in TS 38.101-3 [9], 5.4B.1.
$F_{EUTRA\_Channel\_Spacing}(m)$	Nominal channel spacing between E-UTRA adjacent contiguous CC(m) and CC(m+1), where $m = 1$ to $(N_{EUTRA\_CC}-1)$ as defined in TS 36.101 [48], 5.7.1A.
$F_{NR\_Channel\_Spacing}(i)$	Nominal channel spacing between NR adjacent contiguous CC(i) and CC(i+1), where $i = 1$ to $(N_{NR\_CC}-1)$ as defined in TS 38.101-1 [7] clause 5.4A.1 for FR1 and TS 38.101-2 [8] clause 5.4A.1 for FR2
$LCM\Delta F_{Raster}$	Least Common Multiple of NR $\Delta F_{Raster}$ and E-UTRA $\Delta F_{Raster}$ equals to 300 kHz for E-UTRA $\Delta F_{Raster} = 100$ kHz and NR $\Delta F_{Raster} = 15$ kHz, 30kHz and 60kHz.

### C.2.6.2.2 Determination of test frequencies for Low-, Mid- and High-Range with NR at band edges

Downlink NR CC(1), lowest frequency CC:

$F_{NR\_DL\_LowRange\_CC}(1)$  is rounded up and  $F_{NR\_DL\_HighRange\_CC}(1)$  is rounded down to obey to the minimum guard band according to clause 5.3.3 of TS 38.101-1 [7] and TS 38.101-2 [8].

The NR test frequencies are calculated such that both the NR CC and E-UTRA CC adjacent to each other are located at the NR and E-UTRA frequency raster respectively.

$F_{NR\_DL\_LowRange\_CC}(1) = \text{Ceil}((F_{DL\_Low} + CCBW_{NR\_DL}(1) / 2 + F_{NR\_EUTRA\_Channel\_Spacing}) / LCM\Delta F_{Raster}) * LCM\Delta F_{Raster} - F_{NR\_EUTRA\_Channel\_Spacing}$ , where $F_{NR\_EUTRA\_Channel\_Spacing} = \text{Round}((CCBW_{EUTRA\_DL}(1) + CCBW_{NR\_DL}(N_{NR\_CC})) / (2 * \Delta F_{Raster})) * \Delta F_{Raster}$	C.2.6.2.2-Eq1
$F_{NR\_DL\_MidRange\_CC}(1) = \text{Round}((F_{DL\_Low} + BW_{DL}/2 - (\sum_{i=1}^{N_{NR\_CC}} CCBW_{NR\_DL}(i) + \sum_{m=1}^{N_{EUTRA\_CC}} CCBW_{EUTRA\_DL}(m)) / 2 + CCBW_{NR\_DL}(1)) / 2 + F_{NR\_EUTRA\_Channel\_Spacing} / LCM\Delta F_{Raster}) * LCM\Delta F_{Raster} - F_{NR\_EUTRA\_Channel\_Spacing}$ , where $F_{NR\_EUTRA\_Channel\_Spacing} = \text{Round}((CCBW_{EUTRA\_DL}(1) + CCBW_{NR\_DL}(N_{NR\_CC})) / (2 * \Delta F_{Raster})) * \Delta F_{Raster}$	C.2.6.2.2-Eq2
$F_{NR\_DL\_HighRange\_CC}(1) = \text{Floor}((F_{DL\_High} - CCBW_{NR\_DL}(N_{NR\_CC}) / 2 - \sum_{i=1}^{(N_{NR\_CC}-1)} F_{NR\_Channel\_Spacing}(i) - F_{NR\_EUTRA\_Channel\_Spacing}) / LCM\Delta F_{Raster}) * LCM\Delta F_{Raster} + F_{NR\_EUTRA\_Channel\_Spacing}$ , where $F_{NR\_EUTRA\_Channel\_Spacing} = \text{Round}((CCBW_{EUTRA\_DL}(N_{EUTRA\_CC}) + CCBW_{NR\_DL}(1)) / (2 * \Delta F_{Raster})) * \Delta F_{Raster}$	C.2.6.2.2-Eq3

Downlink NR CC(2) to CC( $N_{NR\_CC}$ ), in increasing frequency order:

$F_{NR\_DL\_LowRange\_CC}(k) = F_{DL\_LowRange\_CC}(k-1) + \sum F_{NR\_Channel\_Spacing}(k)$ , $k=2$ to $N_{DL\_CC}$	C.2.6.2.2-Eq4
$F_{NR\_DL\_MidRange\_CC}(k) = F_{DL\_MidRange\_CC}(k-1) + \sum F_{NR\_Channel\_Spacing}(k)$ , $k=2$ to $N_{DL\_CC}$	C.2.6.2.2-Eq5
$F_{NR\_DL\_HighRange\_CC}(k) = F_{DL\_HighRange\_CC}(k-1) + \sum F_{NR\_Channel\_Spacing}(k)$ , $k=2$ to $N_{DL\_CC}$	C.2.6.2.2-Eq6

Uplink NR CC(k),  $k=1$  to  $N_{CC}$ :

$F_{NR\_UL\_LowRange\_CC}(k) = F_{NR\_DL\_LowRange\_CC}(k) - F_{Tx-Rx\_separation}$	C.2.6.2.2-Eq7
$F_{NR\_UL\_MidRange\_CC}(k) = F_{NR\_DL\_MidRange\_CC}(k) - F_{Tx-Rx\_separation}$	C.2.6.2.2-Eq8
$F_{NR\_UL\_HighRange\_CC}(k) = F_{NR\_DL\_HighRange\_CC}(k) - F_{Tx-Rx\_separation}$	C.2.6.2.2-Eq9

Downlink E-UTRA CC(1), lowest frequency CC:

$\Delta F_{NR\_EUTRA\_Channel\_Spacing}$  is selected in each formula C.2.6.2.2-Eq10, C.2.6.2.2-Eq11 and C.2.6.2.2-Eq12 selected such that  $F_{EUTRA\_DL\_LowRange\_CC}(1)$ ,  $F_{EUTRA\_DL\_MidRange\_CC}(1)$  and  $F_{EUTRA\_DL\_HighRange\_CC}(1)$  are located on the E-UTRA band frequency raster.

$F_{EUTRA\_DL\_LowRange\_CC}(1) = F_{NR\_DL\_LowRange\_CC}(N_{DL\_CC}) + F_{NR\_EUTRA\_Channel\_Spacing}$	C.2.6.2.2-Eq10
$F_{EUTRA\_DL\_MidRange\_CC}(1) = F_{NR\_DL\_MidRange\_CC}(N_{DL\_CC}) + F_{NR\_EUTRA\_Channel\_Spacing}$	C.2.6.2.2-Eq11
$F_{EUTRA\_DL\_HighRange\_CC}(1) = F_{NR\_DL\_HighRange\_CC}(N_{DL\_CC}) - \sum_{i=1}^{(N_{NR\_CC}-1)} F_{NR\_Channel\_Spacing}(i) - F_{NR\_EUTRA\_Channel\_Spacing} - \sum_{i=1}^{(N_{EUTRA\_CC}-1)} F_{EUTRA\_Channel\_Spacing}(i)$	C.2.6.2.2-Eq12

Downlink E-UTRA CC(2) to CC( $N_{\text{EUTRA\_CC}}$ ), in increasing frequency order:

$F_{\text{EUTRA\_DL\_LowRange\_CC}}(k) = F_{\text{EUTRA\_DL\_LowRange\_CC}}(k-1) + \sum F_{\text{EUTRA\_Channel\_Spacing}}(k), k=2 \text{ to } N_{\text{EUTRA\_CC}}$	C.2.6.2.2-Eq13
$F_{\text{EUTRA\_DL\_MidRange\_CC}}(k) = F_{\text{EUTRA\_DL\_MidRange\_CC}}(k-1) + \sum F_{\text{EUTRA\_Channel\_Spacing}}(k), k=2 \text{ to } N_{\text{EUTRA\_CC}}$	C.2.6.2.2-Eq14
$F_{\text{EUTRA\_DL\_HighRange\_CC}}(k) = F_{\text{EUTRA\_DL\_HighRange\_CC}}(k-1) + \sum F_{\text{EUTRA\_Channel\_Spacing}}(k), k=2 \text{ to } N_{\text{EUTRA\_CC}}$	C.2.6.2.2-Eq15

Uplink E-UTRA CC(k), k=1 to  $N_{\text{EUTRA\_CC}}$ :

$F_{\text{EUTRA\_UL\_LowRange\_CC}}(k) = F_{\text{EUTRA\_DL\_LowRange\_CC}}(k) - F_{\text{Tx-Rx\_separation}}$	C.2.6.2.2-Eq16
$F_{\text{EUTRA\_UL\_MidRange\_CC}}(k) = F_{\text{EUTRA\_DL\_MidRange\_CC}}(k) - F_{\text{Tx-Rx\_separation}}$	C.2.6.2.2-Eq17
$F_{\text{EUTRA\_UL\_HighRange\_CC}}(k) = F_{\text{EUTRA\_DL\_HighRange\_CC}}(k) - F_{\text{Tx-Rx\_separation}}$	C.2.6.2.2-Eq18

### C.2.6.2.3 Determination of test frequencies for Low-, Mid- and High-Range with E-UTRA at band edges

To get the NR carrier on the synchronisation raster the calculations of the E-UTRA carrier components needs to be based on the location of the NR carrier.

Downlink NR CC(1), lowest frequency CC:

$F_{\text{NR\_DL\_LowRange\_CC}}(1)$  is rounded up and  $F_{\text{NR\_DL\_HighRange\_CC}}(1)$  is rounded down to obey to the minimum guard band according to clause 5.3.3 of TS 38.101-1 [7] and TS 38.101-2 [8].

$F_{\text{NR\_DL\_LowRange\_CC}}(1) = \text{Ceil}((F_{\text{DL\_Low}} + \sum_{m=1 \text{ to } N_{\text{EUTRA\_CC}}} \text{CCBW}_{\text{EUTRA\_DL}}(m) + \text{CCBW}_{\text{NR\_DL}}(1) / 2 - F_{\text{NR\_EUTRA\_Channel\_Spacing}}) / \text{LCM}\Delta F_{\text{Raster}}) * \text{LCM}\Delta F_{\text{Raster}} + F_{\text{NR\_EUTRA\_Channel\_Spacing}}$ , where $F_{\text{NR\_EUTRA\_Channel\_Spacing}} = \text{Round}((\text{CCBW}_{\text{EUTRA\_DL}}(N_{\text{EUTRA\_CC}}) + \text{CCBW}_{\text{NR\_DL}}(1)) / (2 * \Delta F_{\text{Raster}})) * \Delta F_{\text{Raster}}$	C.2.6.2.3-Eq1
$F_{\text{NR\_DL\_MidRange\_CC}}(1) = \text{same formula as C.2.6.2.2-Eq2}$	C.2.6.2.3-Eq2
$F_{\text{NR\_DL\_HighRange\_CC}}(1) = \text{Floor}((F_{\text{DL\_High}} - (\sum_{m=1 \text{ to } N_{\text{EUTRA\_CC}}} \text{CCBW}_{\text{EUTRA\_DL}}(m) + \sum_{i=1 \text{ to } N_{\text{NR\_CC}}} \text{CCBW}_{\text{NR\_DL}}(i)) + \text{CCBW}_{\text{NR\_DL}}(1) / 2 + F_{\text{NR\_EUTRA\_Channel\_Spacing}}) / \text{LCM}\Delta F_{\text{Raster}}) * \text{LCM}\Delta F_{\text{Raster}} - F_{\text{NR\_EUTRA\_Channel\_Spacing}}$ , where $F_{\text{NR\_EUTRA\_Channel\_Spacing}} = \text{Round}((\text{CCBW}_{\text{EUTRA\_DL}}(1) + \text{CCBW}_{\text{NR\_DL}}(N_{\text{NR\_CC}})) / (2 * \Delta F_{\text{Raster}})) * \Delta F_{\text{Raster}}$	C.2.6.2.3-Eq3

Downlink NR CC(2) to CC( $N_{\text{NR\_CC}}$ ), in increasing frequency order:

$F_{\text{NR\_DL\_LowRange\_CC}}(k) = \text{same formula as C.2.6.2.2-Eq4}$	C.2.6.2.3-Eq4
$F_{\text{NR\_DL\_MidRange\_CC}}(k) = \text{same formula as C.2.6.2.2-Eq5}$	C.2.6.2.3-Eq5
$F_{\text{NR\_DL\_HighRange\_CC}}(k) = \text{same formula as C.2.6.2.2-Eq6}$	C.2.6.2.3-Eq6

Uplink NR CC(k), k=1 to  $N_{\text{CC}}$ :

$F_{\text{NR\_UL\_LowRange\_CC}}(k) = \text{same formula as C.2.6.2.2-Eq7}$	C.2.6.2.3-Eq7
$F_{\text{NR\_UL\_MidRange\_CC}}(k) = \text{same formula as C.2.6.2.2-Eq8}$	C.2.6.2.3-Eq8
$F_{\text{NR\_UL\_HighRange\_CC}}(k) = \text{same formula as C.2.6.2.2-Eq9}$	C.2.6.2.3-Eq9

Downlink E-UTRA CC(1), lowest frequency CC:

$F_{\text{EUTRA\_DL\_LowRange\_CC}}(1) = F_{\text{NR\_DL\_LowRange\_CC}}(1) - F_{\text{NR\_EUTRA\_Channel\_Spacing}} - \sum_{m=1 \text{ to } (N_{\text{EUTRA\_CC}} - 1)} F_{\text{EUTRA\_Channel\_Spacing}}(m)$	C.2.6.2.3-Eq10
$F_{\text{EUTRA\_DL\_MidRange\_CC}}(1) = \text{same formula as C.2.6.2.2-Eq11}$	C.2.6.2.3-Eq11
$F_{\text{EUTRA\_DL\_HighRange\_CC}}(1) = F_{\text{NR\_DL\_HighRange\_CC}}(N_{\text{DL\_CC}}) + \sum_{i=1 \text{ to } (N_{\text{NR\_CC}} - 1)} F_{\text{NR\_Channel\_Spacing}}(i) + F_{\text{NR\_EUTRA\_Channel\_Spacing}} + \sum_{i=1 \text{ to } (N_{\text{EUTRA\_CC}} - 1)} F_{\text{EUTRA\_Channel\_Spacing}}(i)$	C.2.6.2.3-Eq12

Downlink E-UTRA CC(2) to CC( $N_{\text{EUTRA\_CC}}$ ), in increasing frequency order:

$F_{\text{EUTRA\_DL\_LowRange\_CC}}(k) = \text{same formula as C.2.6.2.2-Eq13}$	C.2.6.2.3-Eq13
$F_{\text{EUTRA\_DL\_MidRange\_CC}}(k) = \text{same formula as C.2.6.2.2-Eq14}$	C.2.6.2.3-Eq14
$F_{\text{EUTRA\_DL\_HighRange\_CC}}(k) = \text{same formula as C.2.6.2.2-Eq15}$	C.2.6.2.3-Eq15

Uplink E-UTRA CC(k), k=1 to  $N_{\text{EUTRA\_CC}}$ :

$F_{\text{EUTRA\_UL\_LowRange\_cc}}(\mathbf{k})$ = same formula as C.2.6.2.2-Eq16	C.2.6.2.3-Eq16
$F_{\text{EUTRA\_UL\_MidRange\_cc}}(\mathbf{k})$ = same formula as C.2.6.2.2-Eq17	C.2.6.2.3-Eq17
$F_{\text{EUTRA\_UL\_HighRange\_cc}}(\mathbf{k})$ = same formula as C.2.6.2.2-Eq18	C.2.6.2.3-Eq18

### C.2.6.3 Determination of test frequencies for EN-DC Intra-band non-contiguous

Test frequencies for EN-DC Intra-band non-contiguous configurations use the Low and High ranges test frequencies for each of the included single carrier E-UTRA and NR bands, and E-UTRA and NR CA configurations in the configuration as specified E-UTRA in TS 36.508 [2], clause 4.3.1 and for NR in clause 4.3.1.1.1 for FR1 bands and in clause 4.3.1.2.1 for FR2 bands.

The following cases of test frequencies are specified for relevant E-UTRA and NR CBW combinations, and NR SCS:

- Low with maxWgap (NR - E-UTRA): NR Low range and E-UTRA High range
- High with maxWgap (E-UTRA - NR): NR High range and E-UTRA Low range

## C.3 Determination of SSB and CORESET#0

### C.3.1 General

The requirements to be met and the principles used for determining the SSB and CORESET#0 for a PCell are:

1. The complete SSB and CORESET#0 shall be within the carrier's channel bandwidth.
2. The SSB centre frequency ( $F_{\text{SSref}}$ ) shall be on the synchronisation raster.
3. The SSB shall be kept as close as possible to the carrier's lower edge centre frequency.
4. CORESET#0 configuration is selected using lowest number of RBs and symbols in applicable table in TS 38.213 [22], clause 13.
5. The first SSB subcarrier shall be aligned with the defined resource grid given by SCS indicated by *subCarrierSpacingCommon* in the MIB.

### C.3.2 Determination of SSB, CORESET#0 and signalling parameters for a PCell

Calculation of SSB and CORESET#0 parameters is limited to FR1 carriers with SCS=15 kHz or SCS=30 kHz, and to FR2 carriers with SCS=60 kHz or SCS=120 kHz. CORESET#0 is required for a carrier to be used as a PCell.

The following procedure is used to determine an SSB on the synchronisation raster (GSCN) and a CORESET#0 configuration ( $k_{\text{SSB}}$ ,  $\text{Offset}_{\text{RBs}}$  and  $\text{OffsetToPointA}$ ) as close as possible to the carrier's lower edge. See figure C1-1 and clause C.1 for definition of parameters referenced in the procedure.

1. Determine SSB and CORESET#0:
  - 1a. Calculate the lower of  $F_{\text{SSref}}$ ,  $F_{\text{SSref\_Min}}$ , correspondent to SSB lowest subcarrier being at the same frequency as the carrier's lowest subcarrier; and the higher limit of  $F_{\text{SSref}}$ ,  $F_{\text{SSref\_Max}}$ , correspondent to SSB highest subcarrier being at the same frequency as the carrier's highest subcarrier  $F_{\text{SSref\_Min}}$

$F_{\text{carrierLow}} = \text{see formula for } F_{\text{carrierLow}} \text{ in Table C.1-1}$
$F_{\text{SSref\_Min}} = F_{\text{carrierLow}} + \text{CRB}_{\text{size}} * \text{Offset}_{\text{RBs\_min}} + \text{BW}_{\text{SSB}} / 2$
$F_{\text{SSref\_Max}} = F_{\text{carrierLow}} + \Delta F_{\text{carrierBandwidth}} - \text{BW}_{\text{SSB}} / 2$

- 1b. Calculate  $\text{GSCN}_{\text{MIN}}$  correspondent to  $F_{\text{SSref\_Min}}$  in accordance to TS 38.101-1 [7], clause 5.4.3.1 for FR1 and TS 38.101-2 [7], clause 5.4.3.1 for FR2 and select the closest valid GSCN value with  $\text{GSCN} \geq \text{GSCN}_{\text{MIN}}$  for the carrier in according to the carrier's synchronisation raster as specified in clause 5.4.3.3 in TS 38.101-1 [7] and TS 38.101-2 [8].

- 1c. Calculate the  $F_{SSref}$  for the selected GSCN value in step 1b in accordance to TS 38.101-1 [7], clause 5.4.3.1 for FR1 and TS 38.101-2 [7], clause 5.4.3.1 for FR2.
- 1d. Calculate the frequency  $F_{offsetToPointA}$ , which is the lowest subcarrier of the lowest resource block with the subcarrier spacing being a multiple of resource blocks expressed in terms of common PRB size and overlaps with the SS/PBCH block subcarrier 0 of the first resource block of the SS/PBCH block,  $F_{SSBlow}$  (TS 38.211 [3], clause 7.4.3.1):

$F_{SSBlow} = F_{SSref} - BW_{SSB} / 2$
$F_{offsetToPointA} = CRB_{size} * \text{Floor}((F_{SSBlow} - F_{carrierLow}) / CRB_{size}) + F_{carrierLow}$

- 1e. Calculate the maximum  $Offset_{RBs}$  value with  $F_{CORESET0Low} \geq F_{carrierLow}$ :

$Max\_Offset_{RBs} = (F_{offsetToPointA} - F_{carrierLow}) / CRB_{size}$
--

- 1f. Select the largest valid  $Offset_{RBs}$  value equal or smaller than the calculated max value,  $Max\_Offset_{RBs}$  in step 1e within the applicable values for the carrier in TS 38.213 [4], table 13-1 to 13-10 limited to the table indexes with number of RBs  $N_{RB}^{CORESET}$  and number of symbols  $N_{symb}^{CORESET}$  equal to the minimum value of  $N_{RB}^{CORESET}$  in the table and minimum value of  $N_{symb}^{CORESET}$  for the selected  $N_{RB}^{CORESET}$ . If a valid  $Offset_{RBs}$  value is found, then continue from step 1g.

If no valid  $Offset_{RBs}$  value is found, then select the next valid GSCN with  $F_{SSref} \leq F_{SSref\_Max}$  within the valid GSCN range for the carrier and repeat steps 1b to 1f.

If no valid  $Offset_{RBs}$  value found within the valid GSCN range then will the carrier not be possible to use as PCell and  $F_{SSref}$ ,  $k_{SSB}$ ,  $F_{PointA}$ ,  $OffsetToCarrier$  and  $OffsetToPointA$  are calculated as described in clause C.3.3 and the procedure is completed.

- 1g. Calculate  $k_{SSB}$

$k_{SSB} = (F_{SSBlow} - F_{offsetToPointA}) / \{15 \text{ kHz for FR1, } subCarrierSpacingCommon \text{ (MIB) for FR2}\}$ (TS 38.211 [3], clause 7.4.3.1).
$N = SCS_{SSB} / \{15 \text{ kHz for FR1; } subCarrierSpacingCommon \text{ (MIB) for FR2}\}$ .
$k_{SSB} \text{ MOD } N \neq 0$ indicates that the SSB subcarriers are not aligned with the resource grid given by the SCS indicated by $subCarrierSpacingCommon$ in the MIB.

If  $k_{SSB}$  is an integer and  $k_{SSB} \text{ MOD } N = 0$ , then continue from step 2.

If  $k_{SSB}$  is not an integer value or  $k_{SSB} \text{ MOD } N \neq 0$ , then select the next valid GSCN with  $F_{SSref} < F_{SSref\_Max}$  within the valid GSCN range for the carrier and repeat steps 1b to 1g.

If  $N > 1$  and no valid  $k_{SSB}$  value found within the valid GSCN range for the currently selected carrier frequency  $F_{carrier}$  then shift  $F_{carrier}$  up by  $\Delta F_{Raster}$  for Low range; or down by  $\Delta F_{Raster}$  for Mid, Mid-Low, Mid-High and High ranges and repeat steps 1a to 1g for a maximum shift of  $3 * \Delta F_{Raster}$  (see clause C.3.1, Note 1).

If no valid  $k_{SSB}$  value found within the valid GSCN range then will the carrier not be possible to use as PCell and  $F_{SSref}$ ,  $k_{SSB}$ ,  $F_{PointA}$ ,  $OffsetToCarrier$  and  $OffsetToPointA$  are calculated as described in clause C.3.2 and the procedure is completed.

2. Determine  $OffsetToCarrier$

Select  $offsetToCarrier$  value for the carrier in accordance to Table C.3.2-1.



Table C.3.2-1: Downlink and uplink *offsetToCarrier* default values for different frequency ranges

Frequency range	Downlink <i>offsetToCarrier</i>	Uplink <i>offsetToCarrier</i>
Low range	0	0
Mid range	102	504
High range	504	6
Mid-Low range	12	36
Mid-High range	24	114
Note:	Different values of <i>offsetToCarrier</i> have been selected for Low, Mid-Low, Mid, Mid-High and High ranges to achieve enhanced test coverage of the <i>offsetToCarrier</i> range of values.	

In case low, mid and high range are exactly the same frequency, use *offsetToCarrier* associated to low range.

2b. Determine  $F_{\text{pointA}}$ :

$$F_{\text{pointA}} = F_{\text{carrierLow}} - \text{offsetToCarrier} * \text{PRB}_{\text{size}}$$

3. Calculate  $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ :

The  $\Delta F_{\text{OffsetCORESET-0-Carrier}}$  value is used to calculate the Offset Carrier CORESET#0 parameter included in the test frequency tables in sub-clauses 4.3.1 and 6.2.3.

$$\Delta F_{\text{OffsetCORESET-0-Carrier}} = F_{\text{offsetToPointA}} - \text{Offset}_{\text{RB}} * \text{CRB}_{\text{size}} - F_{\text{carrierLow}}$$

4. Calculate signalling parameters:

IE field	Value
<i>ssb-SubcarrierOffset</i>	Set to the 4 least significant bits of $k_{\text{SSB}}$ . For the case $k_{\text{SSB}} > 15$ the extended by an additional most significant bit encoded within PBCH as specified in TS 38.213 [22]. The IE field <i>ssb-SubcarrierOffset</i> is signalled in the MIB.
<i>controlResourceSetZero</i>	Set to the index associated with the selected $\text{Offset}_{\text{RBs}}$ value in the applicable table, 13-1 to 13-10, in TS 38.213 [22]. The IE field <i>controlResourceSetZero</i> is signalled in the IE <i>pdccch-ConfigSIB1</i> in the MIB.
<i>absoluteFrequencySSB</i>	Set to $F_{\text{SSref}}$ expressed in ARFCN as defined in TS 38.101-1 [15] and TS 38.101-2 [39], clause 5.4.2.
<i>absoluteFrequencyPointA</i>	Set to $F_{\text{pointA}}$ expressed in ARFCN as defined in TS 38.101-1 [15] and TS 38.101-2 [39], clause 5.4.2.
<i>offsetToPointA</i>	$(F_{\text{offsetToPointA}} - F_{\text{pointA}}) / (12 * \{15 \text{ kHz for FR1; } 60 \text{ kHz for FR2}\})$ . The IE field <i>offsetToPointA</i> is signalled in IE <i>FrequencyInfoDL-SIB</i> .
<i>offsetToCarrier</i>	Set to value calculated in step 2a. The IE field <i>offsetToCarrier</i> is signalled in IE <i>SCS-SpecificCarrier</i> .

### C.3.3 Determination of SSB and signalling parameters for a carrier without CORESET#0

The following procedure is used for calculation of SSB and signalling parameters for a carrier without a CORESET#0.

1. Calculate  $F_{\text{SSref}}$ ,  $k_{\text{SSB}}$  and  $F_{\text{pointA}}$  with the SSB lowest subcarrier at the carrier's lowest subcarrier ( $\Delta F_{\text{OffsetSSB-Carrier}}$  in Figure C.1-1 = 0):

$$F_{\text{SSref}} = F_{\text{carrierLow}} + \text{BW}_{\text{SSB}} / 2$$

$k_{\text{SSB}} = \{31 \text{ for FR1; } 15 \text{ for FR2}\}$  indicating that no CORESET#0 is present for the carrier (TS 38.213 [4], clause 13).

*offsetToCarrier* = target value for *offsetToCarrier* dependent on frequency range as specified in Table C.3.1-1.

$$F_{\text{pointA}} = F_{\text{carrierLow}} - \text{offsetToCarrier} * \text{PRB}_{\text{size}}$$

## 2. Calculate signalling parameters:

IE field	Value
<i>ssb-SubcarrierOffset</i>	Set to the 4 least significant bits of $k_{SSB}$ . For the case $k_{SSB} > 15$ the extended by an additional most significant bit encoded within PBCH as specified in TS 38.213 [22]. The IE field <i>ssb-SubcarrierOffset</i> is signalled in the MIB.
<i>controlResourceSetZero</i>	Set to 0 indicating that no CORESET#0 exist (TS 38.213 [22], clause 13). The IE field <i>controlResourceSetZero</i> is signalled in the IE <i>pdccch-ConfigSIB1</i> in the MIB.
<i>searchSpaceZero</i>	Set to 0 indicating that no CORESET#0 exist (TS 38.213 [22], clause 13). The IE field <i>searchSpaceZero</i> is signalled in the IE <i>pdccch-ConfigSIB1</i> in the MIB.
<i>absoluteFrequencySSB</i>	Set to $F_{SSref}$ expressed in ARFCN as defined in TS 38.101-1 [15] and TS 38.101-2 [39], clause 5.4.2.
<i>absoluteFrequencyPointA</i>	Set to $F_{PointA}$ expressed in ARFCN as defined in TS 38.101-1 [15] and TS 38.101-2 [39], clause 5.4.2.
<i>offsetToCarrier</i>	Set to <i>offsetToCarrier</i> target value selected in step 1.

## C.4 Determination of SSB and CORESET#0 for RRM testing with SSB SCS 120 kHz and 240 kHz

### C.4.1 General

The requirements to be met and the principles used for determining the SSB and CORESET#0 for a PCell used in RRM test cases are:

1. The complete SSB and CORESET#0 shall be within the carrier's channel bandwidth.
2. The SSB centre frequency ( $F_{SSref}$ ) shall be on the synchronisation raster.
3. The SSB shall be kept as close as possible to the carrier's lower edge centre frequency.
4. The CORESET#0 configuration is selected using 24 RBs and  $Offset_{RBs} = 0$  according to Table 13-8 and Index 0 for  $SCS_{SSB} = 120$  KHz and Table 13-10 and Index 0 for  $SCS_{SSB} = 240$  KHz.
5. The first SSB subcarrier shall be aligned with the defined resource grid given by SCS indicated by *subCarrierSpacingCommon* in the MIB.

### C.4.2 Determination of SSB, CORESET#0 and signalling parameters

The following procedure is used to determine an SSB on the synchronisation raster (GSCN) and a CORESET#0 configuration ( $k_{SSB}$ ,  $Offset_{RBs} = 0$  and *OffsetToPointA*) as close as possible to the carrier's lower edge. See figure C1-1 and clause C.1 for definition of parameters referenced in the procedure.

1. The target test frequencies for Low, Mid and High ranges are calculated as described in clause C.2.1.1.

For each of Low, Mid and High ranges do:

2. Determine SSB and CORESET#0:

- 2a. Calculate the lower of  $F_{SSref}$ ,  $F_{SSref\_Min}$ , correspondent to SSB lowest subcarrier being at the same frequency as the carrier's lowest subcarrier; and the higher limit of  $F_{SSref}$ ,  $F_{SSref\_Max}$ , correspondent to SSB highest subcarrier being at the same frequency as the carrier's highest subcarrier  $F_{SSref\_Min}$

$F_{carrierLow} =$ see formula for $F_{carrierLow}$ in Table C.1-1
$F_{SSref\_Min} = F_{carrierLow} + CRB_{size} * Offset_{RBs,min} + BW_{SSB} / 2$
$F_{SSref\_Max} = F_{carrierLow} + \Delta F_{carrierBandwidth} - BW_{SSB} / 2$

- 2b. Calculate  $GSCN_{MIN}$  correspondent to  $F_{SSref\_Min}$  in accordance to TS 38.101-2 [7], clause 5.4.3.1 and select the closest valid GSCN value with  $GSCN \geq GSCN_{MIN}$  for the carrier in according to the carrier's synchronisation raster as specified in clause 5.4.3.3 in TS 38.101-2 [8].
- 2c. Calculate the  $F_{SSref}$  for the selected GSCN value in step 2b in accordance to TS 38.101-2 [7], clause 5.4.3.1 for FR2.
- 2d. Calculate the frequency  $F_{SSBlow}$  and shift the carrier frequency to achieve  $F_{carrierLow}$  equal or as close as possible  $F_{SSBlow}$  on the carrier's frequency raster.

$F_{SSBlow} = F_{SSref} - BW_{SSB} / 2$
$F_{carrier} =$ calculated using the formula in clause C.2.1.1 with $F_{DL\_Low} = F_{SSBlow}$
$F_{carrierLow} =$ see formula for $F_{carrierLow}$ in Table C.1-1 with new value of $F_{carrier}$

- 2e. Calculate  $k_{SSB}$

$k_{SSB} = (F_{SSBlow} - F_{carrierLow}) / subCarrierSpacingCommon$ (MIB, FR2) (TS 38.211 [3], clause 7.4.3.1).
$N = SCS_{SSB} / subCarrierSpacingCommon$ (MIB, FR2).
$k_{SSB} \text{ MOD } N \neq 0$ indicates that the SSB subcarriers are not aligned with the resource grid given by the SCS indicated by $subCarrierSpacingCommon$ in the MIB.

If  $k_{SSB}$  is an integer and  $k_{SSB} \text{ MOD } N = 0$ , then continue from step 3 else modify the carrier frequency to get valid value of  $k_{SSB}$  and  $k_{SSB} \text{ MOD } N = 0$ .

3. Calculate Point A frequency,  $\Delta F_{offsetToCarrier}$  and  $\Delta F_{offsetToPointA}$ :  
The CORESET#0 configuration is selected using 24 RBs and  $Offset_{RBs} = 0$  according to Table 13-8 and Index 0 for  $SCS_{SSB} = 120$  KHz and Table 13-10 and Index 0 for  $SCS_{SSB} = 240$  KHz (see C.4.1). This means that  $F_{offsetToPointA} = F_{carrierLow}$ . By selecting Point A equal to  $F_{carrierLow}$  this gives:

$F_{PointA} = F_{carrierLow}$
$\Delta F_{offsetToCarrier} = 0$
$\Delta F_{offsetToPointA} = 0$

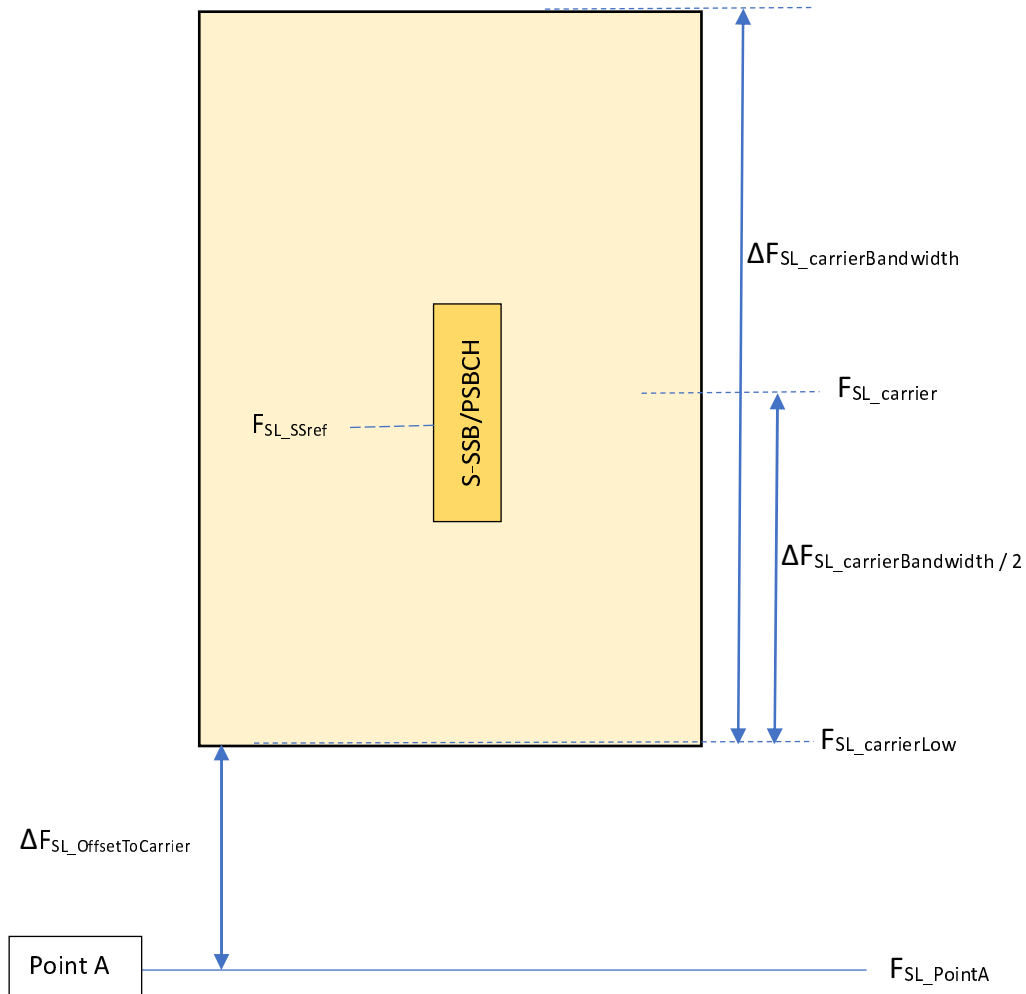
4. Calculate signalling parameters:

IE field	Value
<i>ssb-SubcarrierOffset</i>	Set to the 4 least significant bits of $k_{SSB}$ . The IE field <i>ssb-SubcarrierOffset</i> is signalled in the MIB.
<i>controlResourceSetZero</i>	0 (Index=0 in table 13-8 for $SCS_{SSB} = 120$ KHz and table 13-10 for $SCS_{SSB} = 240$ KHz in TS 38.213 [22]). The IE field <i>controlResourceSetZero</i> is signalled in the IE <i>pdcc-ConfigSIB1</i> in the MIB.
<i>absoluteFrequencySSB</i>	Set to $F_{SSref}$ expressed in ARFCN as defined in TS 38.101-1 [15] and TS 38.101-2 [39], clause 5.4.2.
<i>absoluteFrequencyPointA</i>	Set to $F_{PointA}$ expressed in ARFCN as defined in TS 38.101-1 [15] and TS 38.101-2 [39], clause 5.4.2.
<i>offsetToPointA</i>	0 The IE field <i>offsetToPointA</i> is signalled in IE <i>FrequencyInfoDL-SIB</i> .
<i>offsetToCarrier</i>	0 The IE field <i>offsetToCarrier</i> is signalled in IE <i>SCS-SpecificCarrier</i> .

## C.5 Determination of test frequencies and S-SSB for V2X bands

### C.5.1 General

Figure C.5.1-1 shows carrier and S-SSB on V2X bands and related parameters.



**Figure C.5.1-1: location of S-SSB within a channel**

The parameters referenced in Figure C.5.1-1 are defined in Table C.5.1-1.

**Table C.5.1-1: Definition of parameters for V2X bands**

Parameter	Description
$F_{SL\_PointA}$	Reference Point A frequency.
$F_{SL\_carrier}$	$F_{SL\_carrier}$ is the centre frequency of a carrier corresponding to its NR-ARFCN value.
$F_{SL\_carrierLow}$	$F_{SL\_carrierLow}$ is the centre frequency of lowest subcarrier of the carrier. $F_{SL\_carrierLow} = F_{SL\_carrier} - 12 * SCS_{SL\_Carrier} * (N_{RB} / 2)$ with $N_{RB}$ according to section 5.3E.1 of TS 38.101-1 for the channel bandwidth of the carrier.
$\Delta F_{SL\_carrierBandwidth}$	$\Delta F_{SL\_carrierBandwidth}$ is the carrier's channel bandwidth as provided in <i>carrierBandwidth</i> to the UE ( <i>sl-SCS-SpecificCarrierList-r16</i> ).
$\Delta F_{SL\_OffsetToCarrier}$	$\Delta F_{SL\_OffsetToCarrier}$ is the frequency offset between Point A and the lower edge of the carrier. $\Delta F_{SL\_OffsetToCarrier} = offsetToCarrier * CRB_{size}$ , where $CRB_{size}$ according to the subcarrier spacing of the carrier. <i>offsetToCarrier</i> is signalled to the UE ( <i>sl-SCS-SpecificCarrierList-r16</i> ).
$F_{SL\_SSref}$	Centre frequency of subcarrier with index 66 in the S-SS/PSBCH block, corresponding to NR-ARFCN value signalled to the UE by <i>sl-AbsoluteFrequencySSB-r16</i> .

Additional parameters used in this annex are defined in Table C.5.1-2.

**Table C.5.1-2: Definition of additional parameters used in section C.5.2**

SCS <sub>SL_Carrier</sub>	subcarrier spacing for the carrier ( <i>sl-SCS-SpecificCarrierList-r16</i> ): FR1: 15kHz, 30kHz or 60kHz according to TS 38.101-1 [7] Table 5.3.5-1
CRB <sub>size</sub>	Common Resource Block size = 12 * SCS <sub>SL_Carrier</sub> .
F <sub>SL_Low</sub>	Lowest frequency of the frequency range of the V2X band as defined in clause 5.2E.1 of TS 38.101-1 [7].
F <sub>SL_High</sub>	Highest frequency of the frequency range of the V2X band as defined in clause 5.2E.1 of TS 38.101-1 [7].
ΔF <sub>SL_Raster</sub>	Frequency raster of the band as defined in clause 5.4E.2.3 of TS 38.101-1 [7].
BW <sub>SL</sub>	Bandwidth of V2X operation frequency range of the band.
CBW <sub>SL</sub>	UE V2X operation channel bandwidth (MHz) of the carrier according to section 5.3E.1 of TS 38.101-1 [7].
BW <sub>SL_SSB</sub>	Bandwidth of the SSB. BW <sub>SL_SSB</sub> = 11 * SCS <sub>SL_Carrier</sub> * 20

## C.5.2 Determination of test frequencies and S-SSB for V2X bands

The carrier test frequencies are determined considering the channel raster according to clause 5.4.2.3 in TS 38.101-1 [7] for FR1.

The complete S-SSB shall be within a bandwidth of the SL BWP. The subcarrier with index 0 in the S-SSB shall be aligned with a subcarrier with index 0 in an RB of the SL BWP.

1. Determine sidelink carrier centre frequencies and the frequency of the carrier's lowest subcarrier:

$F_{SL\_LowRange} = \text{Ceil}((F_{SL\_Low} + CBW_{SL}/2) / \Delta F_{SL\_Raster}) * \Delta F_{SL\_Raster}$	C.5.2-Eq1
$F_{SL\_MidRange} = \text{Round}((F_{SL\_Low} + BW_{SL}/2) / \Delta F_{SL\_Raster}) * \Delta F_{SL\_Raster}$	C.5.2-Eq2
$F_{SL\_HighRange} = \text{Floor}((F_{SL\_High} - CBW_{SL}/2) / \Delta F_{SL\_Raster}) * \Delta F_{SL\_Raster}$	C.5.2-Eq3
$F_{SL\_carrierLow} = \text{see formula for } F_{SL\_carrierLow} \text{ in Table C.1-1}$	

2. Determine OffsetToCarrier

Select offsetToCarrier value for the carrier in accordance to Table C.5.2-1.

**Table C.5.2-1: Sidelink offsetToCarrier default values for different frequency ranges**

Frequency range	Sidelink <i>offsetToCarrier</i>
Low range	0
Mid range	504
High range	6
Mid-Low range	36
Mid-High range	114
Note:	Different values of <i>offsetToCarrier</i> have been selected for Low, Mid-Low, Mid, Mid-High and High ranges to achieve enhanced test coverage of the <i>offsetToCarrier</i> range of values.

3. Determine F<sub>SL\_PointA</sub>:

$$F_{SL\_PointA} = F_{SL\_carrierLow} - \text{offsetToCarrier} * CRB_{size}$$

4. Determine the centre frequencies of S-SSB for the lowest, mid and highest possible location of F<sub>SL\_SSBref</sub>:

$$F_{SL\_SSBref\_Low} = F_{carrierLow} + BW_{SL\_SSB} / 2$$

$$F_{SL\_SSBref\_Mid} = F_{carrierLow} + (\text{Floor}(NRB/2) - 5) * CRB_{size} + BW_{SSB} / 2$$

$$F_{SL\_SSBref\_High} = F_{carrierLow} + (NRB - 11) * CRB_{size} + BW_{SSB} / 2$$

5. Calculate signalling parameters:

<b>IE field</b>	<b>Value</b>
<i>sl-AbsoluteFrequencySSB-r16</i>	Set to $F_{SL\_SSref}$ expressed in ARFCN as defined in TS 38.101-1 [15] clause 5.4E.2.
<i>sl-AbsoluteFrequencyPointA-r16</i>	Set to $F_{SL\_PointA}$ expressed in ARFCN as defined in TS 38.101-1 [15] clause 5.4E.2.
<i>offsetToCarrier</i>	Set to value calculated in step 2. The IE field <i>offsetToCarrier</i> is signalled in IE <i>sl-SCS-SpecificCarrierList-r16</i> .

## 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
2019-03	RAN#83	R5-191047	0526	-	F	Update IE PDCCH-ConfigCommon	15.3.0
2019-03	RAN#83	R5-191048	0527	-	F	Update IE RadioBearerConfig	15.3.0
2019-03	RAN#83	R5-191094	0529	-	F	Updates of test channel bandwidth in TS 38.508-1	15.3.0
2019-03	RAN#83	R5-191129	0530	-	F	Update IE SDAP-Config	15.3.0
2019-03	RAN#83	R5-191145	0531	-	F	Update IE CellGroupId	15.3.0
2019-03	RAN#83	R5-191155	0532	-	F	Correction to temperature and voltage of Common test environments	15.3.0
2019-03	RAN#83	R5-191187	0534	-	F	Updates for Other SI support	15.3.0
2019-03	RAN#83	R5-191189	0536	-	F	Correction to RadioBearerConfig	15.3.0
2019-03	RAN#83	R5-191191	0538	-	F	Correction to SystemInformation	15.3.0
2019-03	RAN#83	R5-191192	0539	-	F	Correction to PUCCH-Config	15.3.0
2019-03	RAN#83	R5-191193	0540	-	F	Correction to SIB3 and SIB4	15.3.0
2019-03	RAN#83	R5-191194	0541	-	F	Correction of PUSCH-TimeDomainResourceAllocationList	15.3.0

2019-03	RAN#83	R5-191195	0542	-	F	Corrections and clarifications regarding DCI formats 0_1 and 1_1	15.3.0
2019-03	RAN#83	R5-191219	0545	-	F	Updates to Authentication 5GMM messages	15.3.0
2019-03	RAN#83	R5-191220	0546	-	F	Updates to Configuration Update 5GMM messages	15.3.0
2019-03	RAN#83	R5-191221	0547	-	F	Updates to De-registration 5GMM messages	15.3.0
2019-03	RAN#83	R5-191222	0548	-	F	Updates to NAS transport 5GMM messages	15.3.0
2019-03	RAN#83	R5-191223	0549	-	F	Updates to PDU session establishment 5GSM messages	15.3.0
2019-03	RAN#83	R5-191224	0550	-	F	Updates to PDU session modification 5GSM messages	15.3.0
2019-03	RAN#83	R5-191225	0551	-	F	Updates to PDU session release 5GSM messages	15.3.0
2019-03	RAN#83	R5-191226	0552	-	F	Updates to Registration 5GMM messages	15.3.0
2019-03	RAN#83	R5-191227	0553	-	F	Updates to Security Mode 5GMM messages	15.3.0
2019-03	RAN#83	R5-191228	0554	-	F	Updates to Security Protected 5GS NAS message	15.3.0
2019-03	RAN#83	R5-191229	0555	-	F	Updates to Service Request 5GMM messages	15.3.0
2019-03	RAN#83	R5-191233	0556	-	F	Update IE BWP-Id	15.3.0
2019-03	RAN#83	R5-191234	0557	-	F	Add IE RejectWaitTime	15.3.0
2019-03	RAN#83	R5-191235	0558	-	F	Update IE ShortMAC-I	15.3.0
2019-03	RAN#83	R5-191236	0559	-	F	Update IE UE-TimersAndConstants	15.3.0
2019-03	RAN#83	R5-191237	0560	-	F	Update IE PUCCH-ConfigCommon	15.3.0
2019-03	RAN#83	R5-191242	0561	-	F	Addition of Positioning specifications	15.3.0
2019-03	RAN#83	R5-191243	0562	-	F	Update AS security Algorithm for RF testing	15.3.0
2019-03	RAN#83	R5-191274	0563	-	F	Update of structure of test frequency clauses	15.3.0
2019-03	RAN#83	R5-191280	0564	-	F	Correction to UL configuration	15.3.0
2019-03	RAN#83	R5-191281	0565	-	F	Correction to default value of IE's in PDSCH-Config in Table 4.6.3-75	15.3.0
2019-03	RAN#83	R5-191301	0568	-	F	Correction of test frequencies for signalling testing in clause 6	15.3.0
2019-03	RAN#83	R5-191302	0569	-	F	Correction of test frequencies for EN-DC configuration DC_(n)41	15.3.0
2019-03	RAN#83	R5-191304	0571	-	F	Correction of test frequencies for NR band n1	15.3.0
2019-03	RAN#83	R5-191305	0572	-	F	Correction of test frequencies for NR band n2	15.3.0
2019-03	RAN#83	R5-191306	0573	-	F	Correction of test frequencies for NR band n3	15.3.0
2019-03	RAN#83	R5-191307	0574	-	F	Correction of test frequencies for NR band n5	15.3.0
2019-03	RAN#83	R5-191308	0575	-	F	Correction of test frequencies for NR band n7	15.3.0
2019-03	RAN#83	R5-191309	0576	-	F	Correction of test frequencies for NR band n8	15.3.0
2019-03	RAN#83	R5-191310	0577	-	F	Correction of test frequencies for NR band n12	15.3.0
2019-03	RAN#83	R5-191311	0578	-	F	Correction of test frequencies for NR band n20	15.3.0
2019-03	RAN#83	R5-191312	0579	-	F	Correction of test frequencies for NR band n25	15.3.0
2019-03	RAN#83	R5-191313	0580	-	F	Correction of test frequencies for NR band n28	15.3.0
2019-03	RAN#83	R5-191314	0581	-	F	Correction of test frequencies for NR band n34	15.3.0
2019-03	RAN#83	R5-191315	0582	-	F	Correction of test frequencies for NR band n38	15.3.0
2019-03	RAN#83	R5-191316	0583	-	F	Correction of test frequencies for NR band n39	15.3.0
2019-03	RAN#83	R5-191317	0584	-	F	Correction of test frequencies for NR band n40	15.3.0
2019-03	RAN#83	R5-191318	0585	-	F	Correction of test frequencies for NR band n41	15.3.0
2019-03	RAN#83	R5-191319	0586	-	F	Introduction of test frequencies for NR band n50	15.3.0
2019-03	RAN#83	R5-191320	0587	-	F	Correction of test frequencies for NR band n51	15.3.0
2019-03	RAN#83	R5-191321	0588	-	F	Correction of test frequencies for NR band n66	15.3.0
2019-03	RAN#83	R5-191322	0589	-	F	Correction of test frequencies for NR band n70	15.3.0
2019-03	RAN#83	R5-191323	0590	-	F	Correction of test frequencies for NR band n71	15.3.0
2019-03	RAN#83	R5-191324	0591	-	F	Introduction of test frequencies for NR band n74	15.3.0
2019-03	RAN#83	R5-191325	0592	-	F	Correction of test frequencies for NR band n75	15.3.0
2019-03	RAN#83	R5-191326	0593	-	F	Correction of test frequencies for NR band n76	15.3.0
2019-03	RAN#83	R5-191327	0594	-	F	Correction of test frequencies for NR band n77	15.3.0
2019-03	RAN#83	R5-191328	0595	-	F	Correction of test frequencies for NR band n78	15.3.0
2019-03	RAN#83	R5-191329	0596	-	F	Correction of test frequencies for NR band n79	15.3.0
2019-03	RAN#83	R5-191330	0597	-	F	Correction of test frequencies for NR band n257	15.3.0
2019-03	RAN#83	R5-191331	0598	-	F	Correction of test frequencies for NR band n258	15.3.0
2019-03	RAN#83	R5-191332	0599	-	F	Correction of test frequencies for NR band n260	15.3.0
2019-03	RAN#83	R5-191333	0600	-	F	Correction of test frequencies for NR band n261	15.3.0
2019-03	RAN#83	R5-191334	0601	-	F	Correction of DCI format 1_0	15.3.0
2019-03	RAN#83	R5-191352	0603	-	F	Update CounterCheckResponse	15.3.0
2019-03	RAN#83	R5-191354	0604	-	F	Add FailureInformation	15.3.0
2019-03	RAN#83	R5-191355	0605	-	F	Update LocationMeasurementIndication	15.3.0
2019-03	RAN#83	R5-191356	0606	-	F	Updates to section 4.8.3 (test USIM parameters)	15.3.0
2019-03	RAN#83	R5-191360	0607	-	F	Update MeasurementReport	15.3.0
2019-03	RAN#83	R5-191361	0608	-	F	Update MobilityFromNRCommand	15.3.0
2019-03	RAN#83	R5-191364	0609	-	F	Update Paging	15.3.0
2019-03	RAN#83	R5-191366	0610	-	F	Update RRCSetupComplete	15.3.0
2019-03	RAN#83	R5-191368	0611	-	F	Update SecurityModeComplete	15.3.0
2019-03	RAN#83	R5-191370	0612	-	F	Update SecurityModeFailure	15.3.0
2019-03	RAN#83	R5-191371	0613	-	F	Update UEAssistanceInformation	15.3.0
2019-03	RAN#83	R5-191372	0614	-	F	Update UECapabilityInformation	15.3.0
2019-03	RAN#83	R5-191384	0616	-	F	Correction to SecurityConfig of RadioBearerConfig	15.3.0
2019-03	RAN#83	R5-191385	0617	-	F	Correction to SIB9	15.3.0
2019-03	RAN#83	R5-191386	0618	-	F	Correction to SRS-Config of BWP-UplinkDedicated	15.3.0

2019-03	RAN#83	R5-191446	0620	-	F	Correction of default configuration of RRC IEs in 38.508-1	15.3.0
2019-03	RAN#83	R5-191450	0621	-	F	Addition of NR system information combination SIB6, SIB7	15.3.0
2019-03	RAN#83	R5-191538	0624	-	F	Update ULInformationTransfer	15.3.0
2019-03	RAN#83	R5-191539	0625	-	F	Update IE QuantityConfig and CSI-ReportConfig	15.3.0
2019-03	RAN#83	R5-191620	0629	-	F	Clarification for NR inter-band measurement test case configuration	15.3.0
2019-03	RAN#83	R5-191762	0637	-	F	Editorial update in MeasObjectNR and ReportConfigNR	15.3.0
2019-03	RAN#83	R5-191763	0638	-	F	Update ReportConfigNR and TimeToTrigger	15.3.0
2019-03	RAN#83	R5-192271	0570	1	F	Correction of test frequencies for EN-DC configuration DC_(n)71	15.3.0
2019-03	RAN#83	R5-192272	0602	1	F	Update chapter 4.5 RRC Connected initiation	15.3.0
2019-03	RAN#83	R5-192273	0626	1	F	Update RRCRelease	15.3.0
2019-03	RAN#83	R5-192274	0615	1	F	Correction to NR SchedulingRequestResourceConfig	15.3.0
2019-03	RAN#83	R5-192275	0627	1	F	Update IE I-RNTI-Value	15.3.0
2019-03	RAN#83	R5-192276	0628	1	F	Update IE ShortI-RNTI-Value	15.3.0
2019-03	RAN#83	R5-192277	0630	1	F	Updates to test environments for Signalling test	15.3.0
2019-03	RAN#83	R5-192278	0633	1	F	Addition of USIM Profiles for Signaling TC	15.3.0
2019-03	RAN#83	R5-192279	0636	1	F	Update QoS Configuration	15.3.0
2019-03	RAN#83	R5-192280	0643	1	F	Update to of Generic procedure E-UTRA RRC_IDLE	15.3.0
2019-03	RAN#83	R5-192281	0644	1	F	Introduction of EAP AKA	15.3.0
2019-03	RAN#83	R5-192290	0655	-	F	Update chapter 4.5 RRC_INACTIVE	15.3.0
2019-03	RAN#83	R5-192363	0631	1	F	Updating P-Max IE	15.3.0
2019-03	RAN#83	R5-192364	0632	2	F	Updating IEs part of SearchSpace	15.3.0
2019-03	RAN#83	R5-192400	0528	1	F	Setup diagram for receiver test using spectrum analyzer	15.3.0
2019-03	RAN#83	R5-192541	0622	1	F	Connection diagrams for RRM tests	15.3.0
2019-03	RAN#83	R5-192542	0646	1	F	Antenna Connection diagram for UE part for RRM	15.3.0
2019-03	RAN#83	R5-192543	0649	1	F	Connection diagram for FR1 demod test cases	15.3.0
2019-03	RAN#83	R5-192705	0645	1	F	Introduction of Non 3GPP Access over WLAN	15.3.0
2019-03	RAN#83	R5-192735	0533	1	F	Correction to PUSCH-Config	15.3.0
2019-03	RAN#83	R5-192736	0535	1	F	Addition of details on Test State 0	15.3.0
2019-03	RAN#83	R5-192737	0537	1	F	Correction of CellGroupConfig tables and logical channel identities	15.3.0
2019-03	RAN#83	R5-192738	0543	1	F	Additions and updates to UE capability Information Elements	15.3.0
2019-03	RAN#83	R5-192739	0544	1	F	Updates and additions of default QoS configurations	15.3.0
2019-03	RAN#83	R5-192740	0566	1	F	Update chapter 4.5 General for PDUs	15.3.0
2019-03	RAN#83	R5-192741	0567	1	F	Update of Annex C on calculation of test frequencies	15.3.0
2019-03	RAN#83	R5-192742	0619	1	F	Correction to schedulingRequestID Configuration	15.3.0
2019-03	RAN#83	R5-192743	0639	1	F	Addition of Switch/Power UE procedures	15.3.0
2019-03	RAN#83	R5-192744	0640	1	F	Update to Test procedure to check that UE is camped on a new cell belonging to a new TA	15.3.0
2019-03	RAN#83	R5-192745	0641	1	F	Update to Test procedure to check that UE is in state 5GC RRC_IDLE on a certain cell	15.3.0
2019-03	RAN#83	R5-192846	0648	1	F	Updates to Annex B to add Permitted OTA Test Methods	15.3.0
2019-03	RAN#83	-	-	-	-	Editorial updates of table numbering	15.3.0
2019-06	RAN#84	R5-193537	0680	-	F	Remove unused DCI formats from 38.508-1	15.4.0
2019-06	RAN#84	R5-193540	0681	-	F	Adding setup diagram for Receiver performance tests 2x2	15.4.0
2019-06	RAN#84	R5-193542	0682	-	F	Remove brackets from parameters for DCI formats for scheduling	15.4.0
2019-06	RAN#84	R5-193613	0691	-	F	Update default configuration of QuantityConfig	15.4.0
2019-06	RAN#84	R5-193681	0693	-	F	Update chapter 4.5.3 RRC_INACTIVE procedures	15.4.0
2019-06	RAN#84	R5-193682	0694	-	F	Update chapter 4.5.4 RRC_CONNECTED procedures	15.4.0
2019-06	RAN#84	R5-193683	0695	-	F	Update chapter 4.5.5 SWITCHED_OFF procedures	15.4.0
2019-06	RAN#84	R5-193690	0696	-	F	Resubmission: Connection diagram for 1x2 Demod test cases	15.4.0
2019-06	RAN#84	R5-193734	0701	-	F	Update IE I-RNTI-Value	15.4.0
2019-06	RAN#84	R5-193735	0702	-	F	Update IE ShortI-RNTI-Value	15.4.0
2019-06	RAN#84	R5-193746	0710	-	F	Update IE SubcarrierSpacing	15.4.0
2019-06	RAN#84	R5-193813	0711	-	F	Update of USIM EF5GS3GPPLOCI & EF5GSN3GPPLOCI	15.4.0
2019-06	RAN#84	R5-193828	0713	-	F	Add IE MultiFrequencyBandListNR-SIB	15.4.0
2019-06	RAN#84	R5-193829	0714	-	F	Add IE NR-NS-PmaxList	15.4.0
2019-06	RAN#84	R5-193843	0716	-	F	Update IE ServingCellConfig	15.4.0
2019-06	RAN#84	R5-193862	0717	-	F	Corrections to References	15.4.0
2019-06	RAN#84	R5-193980	0725	-	F	New test procedure for Registration Reject	15.4.0
2019-06	RAN#84	R5-193981	0726	-	F	Updates to test procedure 4.9.1	15.4.0
2019-06	RAN#84	R5-194038	0728	-	F	Editorial Correction - USIM Profiles for Signaling TC	15.4.0
2019-06	RAN#84	R5-194040	0729	-	F	Correction to QoS Configuration	15.4.0
2019-06	RAN#84	R5-194086	0733	-	F	Update K2 value to align with RF DL RMC	15.4.0
2019-06	RAN#84	R5-194087	0734	-	F	Update aggregationlevel2 in SearchSpace IE	15.4.0
2019-06	RAN#84	R5-194303	0740	-	F	TDD-UL-DL-Config for FR1 SCS 60kHz	15.4.0
2019-06	RAN#84	R5-194359	0742	-	F	Removal of column for Number of PDU sessions established from tables for Test States	15.4.0
2019-06	RAN#84	R5-194362	0743	-	F	Editorial correction to test frequency clauses	15.4.0
2019-06	RAN#84	R5-194364	0744	-	F	Update of test frequencies for EN-DC combination DC_41A_n41A	15.4.0
2019-06	RAN#84	R5-194367	0745	-	F	Common procedure to configure SCC for CA RF testing	15.4.0
2019-06	RAN#84	R5-194369	0746	-	F	Introduction of test frequencies for inter-band Rel-15 EN-DC two bands configurations	15.4.0

2019-06	RAN#84	R5-194420	0751	-	F	Update IE BWP-Downlink	15.4.0
2019-06	RAN#84	R5-194435	0752	-	F	Update IE BWP-Id	15.4.0
2019-06	RAN#84	R5-194438	0755	-	F	Updates to UE 4.6.5 Other Information Elements	15.4.0
2019-06	RAN#84	R5-194441	0757	-	F	Update IE BWP-Uplink	15.4.0
2019-06	RAN#84	R5-194479	0758	-	F	Editorial updates to 4.7.1 Contents of 5GMM messages	15.4.0
2019-06	RAN#84	R5-194480	0759	-	F	Editorial updates to 4.7.2 Contents of 5GSM messages	15.4.0
2019-06	RAN#84	R5-194510	0762	-	F	Update of Switch off - Power off procedure in RRC_CONNECTED	15.4.0
2019-06	RAN#84	R5-194539	0767	-	F	Introduction of test frequencies for EN-DC CA configuration DC_30A_n260(A-I)	15.4.0
2019-06	RAN#84	R5-194541	0768	-	F	Antenna Connection diagram for TE part for RRM	15.4.0
2019-06	RAN#84	R5-194709	0785	-	F	Update 38.508 RF and RRM clauses with agreed recommendation to configure UE as non-IMS	15.4.0
2019-06	RAN#84	R5-194783	0774	-	F	Introduction of test frequencies for NR band n50 and signalling testing	15.4.0
2019-06	RAN#84	R5-194784	0775	-	F	Introduction of test frequencies for NR band n74 and signalling testing	15.4.0
2019-06	RAN#84	R5-194790	0778	-	F	Updates to power allocations	15.4.0
2019-06	RAN#84	R5-194791	0779	-	F	Update of DownlinkConfigCommonSIB	15.4.0
2019-06	RAN#84	R5-194794	0684	1	F	Update IE PDSCH-Config	15.4.0
2019-06	RAN#84	R5-194795	0687	1	F	Update NR MeasObjectNR	15.4.0
2019-06	RAN#84	R5-194796	0690	1	F	Update default configuration of ReportConfigNR	15.4.0
2019-06	RAN#84	R5-194797	0692	1	F	Update chapter 4.5.2 RRC_IDLE procedures	15.4.0
2019-06	RAN#84	R5-194798	0704	1	F	Correction to the note associated to the Table 4.7.1-2	15.4.0
2019-06	RAN#84	R5-194800	0708	1	F	Update IE MIB	15.4.0
2019-06	RAN#84	R5-194801	0709	1	F	Update IE SchedulingRequestResourceConfig	15.4.0
2019-06	RAN#84	R5-194802	0712	1	F	Correct clause numbers in 4.5A	15.4.0
2019-06	RAN#84	R5-194803	0718	1	F	Update IE ServingCellConfigCommon	15.4.0
2019-06	RAN#84	R5-194804	0721	1	F	Update IE FrequencyInfoUL	15.4.0
2019-06	RAN#84	R5-194805	0722	1	F	Update IE FrequencyInfoUL-SIB	15.4.0
2019-06	RAN#84	R5-194806	0723	1	F	Update generic procedures chapter general	15.4.0
2019-06	RAN#84	R5-194807	0724	1	F	Update chapter 4.5.2 RRC_IDLE Initiation	15.4.0
2019-06	RAN#84	R5-194808	0730	1	F	Updates to RadioBearerConfig	15.4.0
2019-06	RAN#84	R5-194809	0732	1	F	Updates to PhysicalCellGroupConfig	15.4.0
2019-06	RAN#84	R5-194810	0739	1	F	New test procedure for RRC_CONNECTED	15.4.0
2019-06	RAN#84	R5-194811	0741	1	F	Updated IE MeasObjectEUTRA and ReportConfigInterRAT	15.4.0
2019-06	RAN#84	R5-194812	0753	1	F	Updates to Registration 5GMM messages	15.4.0
2019-06	RAN#84	R5-194813	0754	1	F	Updates to UE 4.6.4 UE Capability Information Elements	15.4.0
2019-06	RAN#84	R5-194814	0760	1	F	New Test procedure for UE for Tracking area updating / inter-system change from N1 mode to S1 mode in 5GMM/EMM-IDLE mode	15.4.0
2019-06	RAN#84	R5-194817	0777	1	F	New Test procedure for UE for Tracking area updating / inter-system change from S1 mode to N1 mode in 5GMM/EMM-IDLE mode	15.4.0
2019-06	RAN#84	R5-194821	0780	-	F	Introducing conditions for Handover in RRCReconfiguration and RadioBearerConfig	15.4.0
2019-06	RAN#84	R5-194824	0781	-	F	Updates to Service Request 5GMM message	15.4.0
2019-06	RAN#84	R5-194879	0735	1	F	Updates to Multi-Cell SIG OTA testing for FR2	15.4.0
2019-06	RAN#84	R5-194881	0763	1	F	Introduction of test frequencies for NR CA configuration CA_n257B	15.4.0
2019-06	RAN#84	R5-194882	0764	1	F	Introduction of test frequencies for NR CA configuration CA_n260B	15.4.0
2019-06	RAN#84	R5-194883	0765	1	F	Introduction of test frequencies for NR CA configuration CA_n260I	15.4.0
2019-06	RAN#84	R5-194884	0766	1	F	Introduction of test frequencies for NR CA configuration CA_n261B	15.4.0
2019-06	RAN#84	R5-194885	0782	1	F	Introduction of test frequencies for NR CA configuration CA_n260(A-I)	15.4.0
2019-06	RAN#84	R5-194889	0737	1	F	corrections to Non 3GPP Access over WLAN procedures	15.4.0
2019-06	RAN#84	R5-194894	0783	-	F	Update FFS in ResumeCause	15.4.0
2019-06	RAN#84	R5-194896	0784	-	F	Updates to reference QoS configurations for EPS interworking	15.4.0
2019-06	RAN#84	R5-194902	0685	1	F	Correction of Setup Diagrams for Receiver tests using Signal Generator in 38.508-1	15.4.0
2019-06	RAN#84	R5-195095	0750	1	F	Introduction of Connection diagram for 2x4 and 4x4 Demod test cases	15.4.0
2019-06	RAN#84	R5-195322	0686	1	F	Update NR SIB1	15.4.0
2019-06	RAN#84	R5-195323	0703	1	F	Update IE CommonCellGroupConfig	15.4.0
2019-06	RAN#84	R5-195324	0715	1	F	Update default configuration of MeasGapConfig	15.4.0
2019-06	RAN#84	R5-195325	0719	1	F	Addition of Switch off / Power off procedure in RRC_INACTIVE	15.4.0
2019-06	RAN#84	R5-195326	0720	1	F	Update of SIB5	15.4.0
2019-06	RAN#84	R5-195327	0731	1	F	Updates to RLC-BearerConfig	15.4.0
2019-06	RAN#84	R5-195328	0756	1	F	Updates to PDU session establishment 5GSM messages	15.4.0
2019-06	RAN#84	R5-195329	0773	1	F	Introduction of test frequencies for inter-RAT signalling testing	15.4.0
2019-06	RAN#84	R5-195330	0776	1	F	Correction to PUSCH-Config	15.4.0
2019-06	RAN#84	R5-195426	0727	2	F	38.508-1 implementation of FR2 UL demod OTA tests using single pol Rx TE	15.4.0
2019-06	RAN#84	R5-195427	0772	2	F	Addition of message contents needed for DEMOD test cases	15.4.0

2019-06	RAN#84	R5-194370	0747	-	F	Introduction of test frequencies for inter-band Rel-16 EN-DC two bands configurations	16.0.0
2019-06	RAN#84	R5-194371	0748	-	F	Introduction of test frequencies for inter-band Rel-16 EN-DC five bands configurations	16.0.0
2019-06	RAN#84	R5-194373	0749	-	F	Introduction of test frequencies for NR CA configuration CA_n41C	16.0.0
2019-09	RAN#85	R5-195696	0795	-	F	Update IE PDCP-Config	16.1.0
2019-09	RAN#85	R5-195711	0797	-	F	Add IE CGI-InfoEUTRA	16.1.0
2019-09	RAN#85	R5-195729	0798	-	F	Update IE CGI-Info	16.1.0
2019-09	RAN#85	R5-195730	0799	-	F	Update IE MeasResults	16.1.0
2019-09	RAN#85	R5-195731	0800	-	F	Update of 4.3.1.0A mid test CBW in 38.508-1	16.1.0
2019-09	RAN#85	R5-195747	0803	-	F	Update IE MeasResultCellListSFTD	16.1.0
2019-09	RAN#85	R5-195748	0804	-	F	Add IE MeasResultCellListSFTD-EUTRA	16.1.0
2019-09	RAN#85	R5-195749	0805	-	F	Add IE MeasResult2EUTRA	16.1.0
2019-09	RAN#85	R5-195750	0806	-	F	Add IE MeasResult2NR	16.1.0
2019-09	RAN#85	R5-195751	0807	-	F	Add IE SK-Counter	16.1.0
2019-09	RAN#85	R5-195752	0808	-	F	Update IE SS-RSSI-Measurement	16.1.0
2019-09	RAN#85	R5-195792	0811	-	F	Update MeasurementReport	16.1.0
2019-09	RAN#85	R5-195885	0814	-	F	Update RRCResume	16.1.0
2019-09	RAN#85	R5-195886	0815	-	F	Editorial update RRCReconfigurationComplete	16.1.0
2019-09	RAN#85	R5-195887	0816	-	F	Editorial update RRCReject	16.1.0
2019-09	RAN#85	R5-195888	0817	-	F	Editorial update RRCRelease	16.1.0
2019-09	RAN#85	R5-195889	0818	-	F	Add SCGFailureInformation	16.1.0
2019-09	RAN#85	R5-195890	0819	-	F	Add SCGFailureInformationEUTRA	16.1.0
2019-09	RAN#85	R5-195895	0820	-	F	Update UECapabilityEnquiry	16.1.0
2019-09	RAN#85	R5-195909	0821	-	F	Editorial update UECapabilityInformation	16.1.0
2019-09	RAN#85	R5-195910	0822	-	F	Add ULInformationTransferMRDC	16.1.0
2019-09	RAN#85	R5-195926	0823	-	F	Editorial update RRC IEs	16.1.0
2019-09	RAN#85	R5-195927	0824	-	F	Editorial update S-NSSAI	16.1.0
2019-09	RAN#85	R5-195944	0826	-	F	Correction to ReportConfigNR	16.1.0
2019-09	RAN#85	R5-195945	0827	-	F	Updates to default configurations for 5GC NAS test cases	16.1.0
2019-09	RAN#85	R5-196030	0829	-	F	Handling of thresholds in FR2 when Events A3 and A6 are inter-frequency	16.1.0
2019-09	RAN#85	R5-196031	0830	-	F	Adding references to TS 38.508-1	16.1.0
2019-09	RAN#85	R5-196136	0836	-	F	Addition new NR cell for SS-RSRP RRM tests	16.1.0
2019-09	RAN#85	R5-196148	0837	-	F	Update of Annex C for selecting SSB location for cells not selectable as PCell	16.1.0
2019-09	RAN#85	R5-196158	0838	-	F	Correction of references to test frequency tables	16.1.0
2019-09	RAN#85	R5-196159	0839	-	F	Correction of clause numbers for test frequencies for Non-3GPP Access	16.1.0
2019-09	RAN#85	R5-196168	0840	-	F	Correction of test frequency parameters for SSB location for NR band n1 and SCS 60kHz	16.1.0



2019-09	RAN#85	R5-196169	0841	-	F	Correction of test frequency parameters for SSB location for NR band n2 and SCS 60kHz	16.1.0
2019-09	RAN#85	R5-196170	0842	-	F	Correction of test frequency parameters for SSB location for NR band n3 and SCS 60kHz	16.1.0
2019-09	RAN#85	R5-196171	0843	-	F	Correction of test frequency parameters for SSB location for NR band n7 and SCS 60kHz	16.1.0
2019-09	RAN#85	R5-196172	0844	-	F	Correction of test frequency parameters for SSB location for NR band n25 and SCS 60kHz	16.1.0
2019-09	RAN#85	R5-196174	0846	-	F	Correction of test frequency parameters for SSB location for NR band n38 and SCS 60kHz	16.1.0
2019-09	RAN#85	R5-196175	0847	-	F	Correction of test frequency parameters for SSB location for NR band n39 and SCS 60kHz	16.1.0
2019-09	RAN#85	R5-196176	0848	-	F	Correction of test frequency parameters for SSB location for NR band n40 and SCS 60kHz	16.1.0
2019-09	RAN#85	R5-196177	0849	-	F	Correction of test frequency parameters for SSB location for NR band n41 and SCS 60kHz	16.1.0
2019-09	RAN#85	R5-196178	0850	-	F	Correction of test frequency parameters for SSB location for NR band n50 and SCS 60kHz	16.1.0
2019-09	RAN#85	R5-196179	0851	-	F	Correction of test frequency parameters for SSB location for NR band n66 and SCS 60kHz	16.1.0
2019-09	RAN#85	R5-196180	0852	-	F	Correction of test frequency parameters for SSB location for NR band n70 and SCS 60kHz	16.1.0
2019-09	RAN#85	R5-196181	0853	-	F	Correction of test frequency parameters for SSB location for NR band n74 and SCS 60kHz	16.1.0
2019-09	RAN#85	R5-196182	0854	-	F	Correction of test frequency parameters for SSB location for NR band n75 and SCS 15kHz and SCS 60kHz	16.1.0
2019-09	RAN#85	R5-196183	0855	-	F	Correction of test frequency parameters for SSB location for NR band n77 and SCS 60kHz	16.1.0
2019-09	RAN#85	R5-196184	0856	-	F	Correction of test frequency parameters for SSB location for NR band n78 and SCS 60kHz	16.1.0
2019-09	RAN#85	R5-196185	0857	-	F	Correction of test frequency parameters for SSB location for NR band n79 and SCS 60kHz	16.1.0
2019-09	RAN#85	R5-196197	0860	-	F	Update IE ServingCellConfigCommon	16.1.0
2019-09	RAN#85	R5-196198	0861	-	F	Update IE SubcarrierSpacing	16.1.0
2019-09	RAN#85	R5-196262	0863	-	F	Editorial update IE RLC-BearerConfig	16.1.0
2019-09	RAN#85	R5-196289	0864	-	F	Update chapter 4.5A.2 UE-requested PDU session establishment procedure	16.1.0
2019-09	RAN#85	R5-196310	0867	-	F	Addition of SUL bands for protocol testing in clause 6.2.3.1	16.1.0
2019-09	RAN#85	R5-196311	0868	-	F	Update of test frequency parameters for NR CA configuration CA_n41C	16.1.0
2019-09	RAN#85	R5-196315	0872	-	F	Update of test frequency parameters for NR CA configuration CA_n260(A-I)	16.1.0
2019-09	RAN#85	R5-196316	0873	-	F	Introduction of test frequencies for NR CA configuration CA_n261B and CA_n261C	16.1.0
2019-09	RAN#85	R5-196317	0874	-	F	Update of test frequency table for EN-DC configuration DC_41A_n41A for BCS1	16.1.0
2019-09	RAN#85	R5-196318	0875	-	F	Correction of test frequency parameters for EN-DC configuration DC_(n)41AA	16.1.0

2019-09	RAN#85	R5-196319	0876	-	F	Correction of test frequency parameters for EN-DC configuration DC_(n)71AA	16.1.0
2019-09	RAN#85	R5-196468	0885	-	F	Introduction of test frequencies for NR CA configuration CA_n258B and CA_n258C	16.1.0
2019-09	RAN#85	R5-196469	0886	-	F	Introduction of test frequencies for NR CA configuration CA_n258G to CA_n258M	16.1.0
2019-09	RAN#85	R5-196470	0887	-	F	Introduction of test frequencies for NR CA configuration CA_n260G to CA_n260I	16.1.0
2019-09	RAN#85	R5-196472	0889	-	F	Introduction of test frequencies for NR CA configuration CA_n261G to CA_n261I	16.1.0
2019-09	RAN#85	R5-196473	0890	-	F	Introduction of test frequencies for NR CA configuration CA_n261O to CA_n261Q	16.1.0
2019-09	RAN#85	R5-196490	0894	-	F	Introduction of test frequencies for NR CA configuration CA_n78C	16.1.0
2019-09	RAN#85	R5-196539	0895	-	F	Update to 38.508-1 for Demod specific message contents	16.1.0
2019-09	RAN#85	R5-196581	0897	-	F	Removing brackets from values for DCI formats	16.1.0
2019-09	RAN#85	R5-196597	0899	-	F	Cleanup of editor note of EFOPL5G	16.1.0
2019-09	RAN#85	R5-196637	0900	-	F	Update of default messages for EMERGENCY services test scenarios	16.1.0
2019-09	RAN#85	R5-196641	0904	-	F	Update of Test procedure for UE for Tracking area updating / Inter-system change from S1 mode to N1 mode in 5GMM/EMM-IDLE mode	16.1.0
2019-09	RAN#85	R5-196654	0905	-	F	Editorial correction of reference test conditions	16.1.0
2019-09	RAN#85	R5-196751	0911	-	F	AP#82.01: Update default DCI format to 0_1 / 1_1 in TS 38.508-1 for SIG test cases	16.1.0
2019-09	RAN#85	R5-196824	0917	-	F	Updates to UE 4.6.4 UE Capability Information Elements	16.1.0
2019-09	RAN#85	R5-196825	0918	-	F	Addition of default test control messages	16.1.0
2019-09	RAN#85	R5-196873	0922	-	F	Introduction of test frequencies for NR CA configuration CA_n258D to CA_n258F	16.1.0
2019-09	RAN#85	R5-196874	0923	-	F	Introduction of test frequencies for NR CA configuration CA_n260D to CA_n260F	16.1.0
2019-09	RAN#85	R5-196875	0924	-	F	Introduction of test frequencies for NR CA configuration CA_n260O to CA_n260Q	16.1.0
2019-09	RAN#85	R5-196942	0927	-	F	Correction of clause 2 and 4.3 in 38.508-1	16.1.0
2019-09	RAN#85	R5-196980	0786	1	F	Using generic procedure for IMS registration to 5GS	16.1.0
2019-09	RAN#85	R5-196981	0788	1	F	Update of SIB2	16.1.0
2019-09	RAN#85	R5-196982	0790	1	F	Update of SIB5	16.1.0
2019-09	RAN#85	R5-196984	0792	1	F	Update of frequency definition for Inter-RAT test cases	16.1.0
2019-09	RAN#85	R5-196985	0793	1	F	Update IE CellGroupConfig	16.1.0
2019-09	RAN#85	R5-196986	0858	1	F	Update MIB	16.1.0
2019-09	RAN#85	R5-196987	0865	1	F	Update chapter 4.5.4 RRC_CONNECTED procedures	16.1.0
2019-09	RAN#85	R5-196988	0831	1	F	Addition of IE MasterKeyUpdate	16.1.0
2019-09	RAN#85	R5-196990	0833	1	F	USIM Configuration for Signalling Test Cases	16.1.0
2019-09	RAN#85	R5-196991	0835	1	F	Correction to SIG OTA UE Orientation procedure	16.1.0

2019-09	RAN#85	R5-196992	0878	1	F	Addition of New Test Procedure - Response\No response to Paging for 5GC NAS testing	16.1.0
2019-09	RAN#85	R5-196994	0913	1	F	Update IE ServingCellConfig	16.1.0
2019-09	RAN#85	R5-196995	0910	1	F	Corrections to DCI_1_0 configuration	16.1.0
2019-09	RAN#85	R5-196996	0919	1	F	Updates to generic procedure using SERVICE REQUEST procedure	16.1.0
2019-09	RAN#85	R5-196997	0901	1	F	Introduction of Test Procedure for IMS Emergency call establishment in 5GC NORMAL-SERVICE	16.1.0
2019-09	RAN#85	R5-196998	0903	1	F	Update of Test procedure for UE for Tracking area updating / Inter-system change from N1 mode to S1 mode in 5GMM/EMM-IDLE mode	16.1.0
2019-09	RAN#85	R5-197014	0928	-	F	Addition of NR CA test frequencies for protocol testing in clause 6.2.3	16.1.0
2019-09	RAN#85	R5-197099	0929	-	F	Correction to Switch off-Power off procedure in RRC_CONNECTED	16.1.0
2019-09	RAN#85	R5-197104	0884	1	F	Introduction of test frequencies for NR CA configuration CA_n257G to CA_n257M	16.1.0
2019-09	RAN#85	R5-197106	0892	1	F	Update of EN-DC inter-band configurations in clause 4.3.1	16.1.0
2019-09	RAN#85	R5-197139	0891	2	F	Update of NR CA inter-band configurations in clause 4.3.1	16.1.0
2019-09	RAN#85	R5-197226	0915	1	F	changes for Non 3GPP Access over WLAN	16.1.0
2019-09	RAN#85	R5-197230	0883	1	F	Introduction of test frequencies for NR CA configuration CA_n257D to CA_n257F	16.1.0
2019-09	RAN#85	R5-197231	0869	1	F	Update of test frequency parameters for NR CA configuration CA_n257B and CA_n257C	16.1.0
2019-09	RAN#85	R5-197232	0870	1	F	Introduction of test frequencies for NR CA configuration CA_n260B and CA_n260C	16.1.0
2019-09	RAN#85	R5-197233	0888	1	F	Introduction of test frequencies for NR CA configuration CA_n260J to CA_n260M	16.1.0
2019-09	RAN#85	R5-197234	0813	1	F	Update RRCReconfiguration	16.1.0
2019-09	RAN#85	R5-197235	0796	1	F	Update RadioBearerConfig-DRB	16.1.0
2019-09	RAN#85	R5-197236	0825	1	F	Update RRCReconfiguration-HO	16.1.0
2019-09	RAN#85	R5-197241	0791	1	F	Update of EUTRA-AllowedMeasBandwidth	16.1.0
2019-09	RAN#85	R5-197243	0809	1	F	Addition of Delta to signalling threshold in System Information in FR2	16.1.0
2019-09	RAN#85	R5-197244	0866	1	F	Correction to REGISTRATION REJECT message	16.1.0
2019-09	RAN#85	R5-197246	0902	1	F	Introduction of Test Procedure for IMS Emergency call establishment in 5GC LIMITED-SERVICE or NO-SUPI	16.1.0
2019-09	RAN#85	R5-197296	0898	2	F	Update of PHR-Config	16.1.0
2019-09	RAN#85	R5-197300	0787	1	F	4x2 Connection Diagram for demodulation tests	16.1.0
2019-09	RAN#85	R5-197301	0862	1	F	Correction to Section 5.4.2 Message definition for Performance Test	16.1.0
2019-09	RAN#85	R5-197302	0882	1	F	Addition of FR2 CA connection diagram	16.1.0
2019-09	RAN#85	R5-197303	0920	1	F	Corrections to test frequencies and formulas	16.1.0
2019-09	RAN#85	R5-197304	0896	1	F	Removing IOT bit information from test channel bandwidth tables	16.1.0
2019-09	RAN#85	R5-197305	0908	1	F	Addition of SMTC Configuration for RRM test cases	16.1.0
2019-09	RAN#85	R5-197507	0906	1	F	Addition of TDD UL DL Config for RRM test cases	16.1.0
2019-09	RAN#85	R5-197508	0907	1	F	Addition of FilterCoefficient configuration for RRM test cases	16.1.0

2019-09	RAN#85	R5-197638	0881	2	F	Addition of FR1 CA connection diagram	16.1.0
2019-10	RAN#85	-	-	-	-	Implementation fixes	16.1.1
2019-12	RAN#86	R5-197727	0932	-	F	Editorial update IE BWP-Id	16.2.0
2019-12	RAN#86	R5-197751	0933	-	F	Editorial update IE PDSCH-TimeDomainResourceAllocationList	16.2.0
2019-12	RAN#86	R5-197835	0937	-	F	Correction to IE ReportConfigNR	16.2.0
2019-12	RAN#86	R5-197897	0940	-	F	Editorial update IE CodebookConfig	16.2.0
2019-12	RAN#86	R5-197932	0946	-	F	Editorial update IE PDSCH-Config	16.2.0
2019-12	RAN#86	R5-197967	0948	-	F	Update of Annex C on calculation of test frequencies and parameters	16.2.0
2019-12	RAN#86	R5-197968	0949	-	F	Correction of test frequency parameters for NR band n1	16.2.0
2019-12	RAN#86	R5-197969	0950	-	F	Correction of test frequency parameters for NR band n2	16.2.0
2019-12	RAN#86	R5-197970	0951	-	F	Correction of test frequency parameters for NR band n3	16.2.0
2019-12	RAN#86	R5-197971	0952	-	F	Correction of test frequency parameters for NR band n5	16.2.0
2019-12	RAN#86	R5-197972	0953	-	F	Correction of test frequency parameters for NR band n7	16.2.0
2019-12	RAN#86	R5-197973	0954	-	F	Correction of test frequency parameters for NR band n8	16.2.0
2019-12	RAN#86	R5-197974	0955	-	F	Correction of test frequency parameters for NR band n12	16.2.0
2019-12	RAN#86	R5-197975	0956	-	F	Correction of test frequency parameters for NR band n20	16.2.0
2019-12	RAN#86	R5-197976	0957	-	F	Correction of test frequency parameters for NR band n25	16.2.0
2019-12	RAN#86	R5-197977	0958	-	F	Correction of test frequency parameters for NR band n28	16.2.0
2019-12	RAN#86	R5-197978	0959	-	F	Correction of test frequency parameters for NR band n34	16.2.0
2019-12	RAN#86	R5-197979	0960	-	F	Correction of test frequency parameters for NR band n38	16.2.0
2019-12	RAN#86	R5-197980	0961	-	F	Correction of test frequency parameters for NR band n39	16.2.0
2019-12	RAN#86	R5-197981	0962	-	F	Correction of test frequency parameters for NR band n40	16.2.0
2019-12	RAN#86	R5-197982	0963	-	F	Correction of test frequency parameters for NR band n41	16.2.0
2019-12	RAN#86	R5-197983	0964	-	F	Correction of test frequency parameters for NR band n50	16.2.0
2019-12	RAN#86	R5-197984	0965	-	F	Correction of test frequency parameters for NR band n51	16.2.0
2019-12	RAN#86	R5-197985	0966	-	F	Correction of test frequency parameters for NR band n66	16.2.0
2019-12	RAN#86	R5-197986	0967	-	F	Correction of test frequency parameters for NR band n70	16.2.0
2019-12	RAN#86	R5-197987	0968	-	F	Correction of test frequency parameters for NR band n71	16.2.0
2019-12	RAN#86	R5-197988	0969	-	F	Correction of test frequency parameters for NR band n74	16.2.0
2019-12	RAN#86	R5-197989	0970	-	F	Correction of test frequency parameters for NR band n75 (SDL)	16.2.0
2019-12	RAN#86	R5-197990	0971	-	F	Correction of test frequency parameters for NR band n76 (SDL)	16.2.0
2019-12	RAN#86	R5-197991	0972	-	F	Correction of test frequency parameters for NR band n77	16.2.0
2019-12	RAN#86	R5-197992	0973	-	F	Correction of test frequency parameters for NR band n78	16.2.0
2019-12	RAN#86	R5-197993	0974	-	F	Correction of test frequency parameters for NR band n79	16.2.0
2019-12	RAN#86	R5-197994	0975	-	F	Editorial correction to note 1 in frequency tables for NR bands n257, n258, n260 and n261	16.2.0
2019-12	RAN#86	R5-197997	0978	-	F	Introduction of test frequencies for NR CA configuration CA_n261D to CA_n261F	16.2.0

2019-12	RAN#86	R5-197998	0979	-	F	Introduction of test frequencies for NR CA configuration CA_n261J to CA_n261M	16.2.0
2019-12	RAN#86	R5-198016	0983	-	F	Introduction of test frequencies parameters for Rel-16 NR CA configuration CA_n66B	16.2.0
2019-12	RAN#86	R5-198017	0984	-	F	Introduction of test frequencies parameters for Rel-16 NR CA configuration CA_n66(2A)	16.2.0
2019-12	RAN#86	R5-198018	0985	-	F	Introduction of test frequencies and parameters for NR band n29	16.2.0
2019-12	RAN#86	R5-198019	0986	-	F	Introduction of test frequencies and parameters for NR band n65	16.2.0
2019-12	RAN#86	R5-198028	0988	-	F	Add 4Rx connection diagram for RRM measurement tests	16.2.0
2019-12	RAN#86	R5-198057	0993	-	F	Editorial update IE RateMatchPattern	16.2.0
2019-12	RAN#86	R5-198058	0994	-	F	Editorial update IE SchedulingRequestResourceConfig	16.2.0
2019-12	RAN#86	R5-198082	0999	-	F	Introduce general chapter in 4.6	16.2.0
2019-12	RAN#86	R5-198120	1004	-	F	Correction of test frequencies parameters for Rel-15 EN-DC configuration DC_(n)41AA	16.2.0
2019-12	RAN#86	R5-198121	1005	-	F	Correction of test frequencies parameters for Rel-15 EN-DC configuration DC_(n)71AA	16.2.0
2019-12	RAN#86	R5-198125	1009	-	F	Introduction of test frequencies and parameters for NR band n48	16.2.0
2019-12	RAN#86	R5-198126	1010	-	F	Introduction of test frequencies for NR band b41 and CBW 30MHz	16.2.0
2019-12	RAN#86	R5-198131	1012	-	F	Update of USIM Configuration 15 for forbidden PLMN	16.2.0
2019-12	RAN#86	R5-198133	1014	-	F	Update IE ServingCellConfigCommonSIB	16.2.0
2019-12	RAN#86	R5-198141	1015	-	F	Clarification on default radio configuration of NAS cells	16.2.0
2019-12	RAN#86	R5-198217	1019	-	F	Correction of test frequency parameters for protocol testing and NR bands with scs=15kHz	16.2.0
2019-12	RAN#86	R5-198223	1021	-	F	Add IE BetaOffsets	16.2.0
2019-12	RAN#86	R5-198224	1022	-	F	Update IE PUSCH-Config	16.2.0
2019-12	RAN#86	R5-198250	1023	-	F	Update IE CSI-FrequencyOccupation	16.2.0
2019-12	RAN#86	R5-198251	1024	-	F	Update IE PHR-Config	16.2.0
2019-12	RAN#86	R5-198258	1026	-	F	Editorial update IE DRX-Config	16.2.0
2019-12	RAN#86	R5-198282	1027	-	F	Update to Connection diagram for 2x4 and 4x4 Demod test cases	16.2.0
2019-12	RAN#86	R5-198286	1028	-	F	Correction of mapping of frequency ranges to NR test frequencies for NR SA	16.2.0
2019-12	RAN#86	R5-198304	1029	-	F	Editorial update IE LogicalChannelConfig	16.2.0
2019-12	RAN#86	R5-198370	1035	-	F	Connection diagram for FR2 Demod and CSI test cases	16.2.0
2019-12	RAN#86	R5-198480	1039	-	F	Editorial update IE PDCCH-ConfigCommon	16.2.0
2019-12	RAN#86	R5-198485	1041	-	F	Editorial update IE PDCP-Config	16.2.0
2019-12	RAN#86	R5-198506	1044	-	F	Addition of RRCReconfiguration for Speech call setup	16.2.0
2019-12	RAN#86	R5-198507	1045	-	F	Editorial updates to section 4.7.0	16.2.0
2019-12	RAN#86	R5-198508	1046	-	F	New reference QoS configurations for IMS voice and video	16.2.0
2019-12	RAN#86	R5-198509	1047	-	F	Updates to REGISTRATION ACCEPT 5GMM message	16.2.0
2019-12	RAN#86	R5-198510	1048	-	F	Updates to test control messages	16.2.0
2019-12	RAN#86	R5-198540	1051	-	F	Update of REGISTRATION ACCEPT for IMS emergency support	16.2.0

2019-12	RAN#86	R5-198544	1053	-	F	Update of Table 4.6.3-162 SearchSpace in 38.508-1	16.2.0
2019-12	RAN#86	R5-198638	1058	-	F	Corrections on test frequencies for NR CA band n260 in 38.508-1	16.2.0
2019-12	RAN#86	R5-198649	1059	-	F	Corrections on test frequencies for NR CA band n261 in 38.508-1	16.2.0
2019-12	RAN#86	R5-198659	1062	-	F	Update TCI State Cell parameter in Demod section	16.2.0
2019-12	RAN#86	R5-198718	1067	-	F	Updates to RSRP-Range, RSRQ-Range and SINR-Range	16.2.0
2019-12	RAN#86	R5-198847	0941	1	F	Corrections to DCI_1_1 configuration	16.2.0
2019-12	RAN#86	R5-198848	0931	1	F	Update IE PUSCH-TimeDomainResourceAllocationList	16.2.0
2019-12	RAN#86	R5-198850	0934	1	F	Correction to IE MasterKeyUpdate	16.2.0
2019-12	RAN#86	R5-198851	0935	1	F	Update of NR SIBs	16.2.0
2019-12	RAN#86	R5-198852	0936	1	F	Correction to USIM configuration	16.2.0
2019-12	RAN#86	R5-198853	0938	1	F	Correction to IE ReportConfigInterRAT	16.2.0
2019-12	RAN#86	R5-198854	0942	1	F	Correction to Table 4.9.9.2.3-1 for Inter-system change from S1 mode to N1 mode in 5GMM-IDLE mode	16.2.0
2019-12	RAN#86	R5-198856	0982	1	F	Addition of frequency configurations for NR MFBI testing	16.2.0
2019-12	RAN#86	R5-198857	0992	1	F	Editorial update IE CSI-AperiodicTriggerStateList	16.2.0
2019-12	RAN#86	R5-198858	0998	1	F	Editorial update IE ServingCellConfig	16.2.0
2019-12	RAN#86	R5-198859	1000	1	F	Editorial update IE SecurityAlgorithmConfig	16.2.0
2019-12	RAN#86	R5-198860	1002	1	F	Update IE SRS-Config	16.2.0
2019-12	RAN#86	R5-198861	1001	1	F	Update of Generic Test Procedures for IMS Emergency call establishment 4.9.11 and 4.9.12 to reflect the fact that they can be used in multiple states and scenarios	16.2.0
2019-12	RAN#86	R5-198862	1013	1	F	Update IE ServingCellConfigCommon	16.2.0
2019-12	RAN#86	R5-198863	1016	1	F	Update IE CSI-RS-ResourceMapping	16.2.0
2019-12	RAN#86	R5-198865	1032	1	F	Update RRCReconfiguration	16.2.0
2019-12	RAN#86	R5-198866	1033	1	F	Update chapter 4.5.1 General	16.2.0
2019-12	RAN#86	R5-198867	1034	1	F	Update to PDU SESSION ESTABLISHMENT ACCEPT and Reference QoS flow descriptions to align EPS bearer id format	16.2.0
2019-12	RAN#86	R5-198869	1061	1	F	New Test Procedures for IMS Emergency call release	16.2.0
2019-12	RAN#86	R5-198870	1063	1	F	Update chapter 4.5.2 RRC_IDLE	16.2.0
2019-12	RAN#86	R5-198871	1072	1	F	Update of RRCReconfiguration for measurement configuration	16.2.0
2019-12	RAN#86	R5-198955	0995	1	F	Update procedure for NR RF CA testing	16.2.0
2019-12	RAN#86	R5-198956	0996	1	F	Update procedure for EN-DC RF CA testing	16.2.0
2019-12	RAN#86	R5-198957	1036	1	F	Update to 38.508-1 for DEMOD message contents	16.2.0
2019-12	RAN#86	R5-198958	0991	1	F	Update IE PUCCH-Config	16.2.0
2019-12	RAN#86	R5-198959	0976	1	F	Introduction of test frequencies for Rel-15 EN-DC inter-band configurations	16.2.0
2019-12	RAN#86	R5-198960	0980	1	F	Introduction of test frequencies for Rel-16 NR inter-band CA configurations	16.2.0
2019-12	RAN#86	R5-198961	0987	1	F	Introduction of test frequencies for NR configuration CA_n29A-n66A	16.2.0
2019-12	RAN#86	R5-198962	1003	1	F	Introduction of test frequencies for Rel-15 NR DC configurations	16.2.0

2019-12	RAN#86	R5-198997	1068	1	F	Introduction of test frequencies and parameters for NR bands n29, n48 and n65 for protocol testing	16.2.0
2019-12	RAN#86	R5-199008	0997	1	F	Editorial update WLAN table 4.5.2.2-3	16.2.0
2019-12	RAN#86	R5-199013	0943	1	F	Correction to SMTC and GAP for inter frequency cell	16.2.0
2019-12	RAN#86	R5-199015	0981	1	F	Correction of test frequencies for NR CA and EN-DC protocol testing	16.2.0
2019-12	RAN#86	R5-199016	1049	1	F	Updates to Test Procedure 4.9.11	16.2.0
2019-12	RAN#86	R5-199017	1050	1	F	Updates to Test Procedure 4.9.12	16.2.0
2019-12	RAN#86	R5-199020	1079	-	F	Update default setting of deriveSSB-IndexFromCell	16.2.0
2019-12	RAN#86	R5-199021	1011	1	F	Update IE TDD-UL-DL-Config	16.2.0
2019-12	RAN#86	R5-199022	1070	1	F	Updates to Signalling Reference test conditions	16.2.0
2019-12	RAN#86	R5-199026	1025	2	F	Update IE CellGroupConfig	16.2.0
2019-12	RAN#86	R5-199071	0944	2	F	Update of SUL related messages	16.2.0
2019-12	RAN#86	R5-199075	1080	1	F	Correction to NR RRC_IDLE mode procedure	16.2.0
2019-12	RAN#86	R5-199093	1065	2	F	Update chapter 4.5.4 RRC_CONNECTED	16.2.0
2019-12	RAN#86	R5-199094	1069	1	F	Updates for handling of Multiple PDU sessions / Multiple DRBs	16.2.0
2019-12	RAN#86	R5-199103	1076	2	F	Adding new generic procedure for UE-requested PDU session modification after the first S1 to N1 mode change	16.2.0
2019-12	RAN#86	R5-199300	1042	1	F	Corrections on category of EN-DC configurations for test frequencies in 38.508-1	16.2.0
2019-12	RAN#86	R5-199301	1054	1	F	Addition of ServingCellConfigCommon for RRM tests	16.2.0
2019-12	RAN#86	R5-199302	1057	1	F	Corrections on test frequencies for NR CA band n257 in 38.508-1	16.2.0
2019-12	RAN#86	R5-199303	1060	1	F	Corrections on test frequencies for NR CA band n258 in 38.508-1	16.2.0
2019-12	RAN#86	R5-199304	1066	1	F	Update Radio resource control information elements for RRM to add CSI-RS for Tracking	16.2.0
2019-12	RAN#86	R5-199423	1077	-	F	Update ra-responseWindow in TS 38.508-1	16.2.0
2019-12	RAN#86	R5-199481	0989	1	F	Addition of FR1 NR CA and NR 4Rx connection diagrams	16.2.0
2019-12	RAN#86	R5-199511	1078	-	F	Update of quiet zone size	16.2.0
2019-12	RAN#86	R5-199545	1020	1	F	Addition of multi-AoA capabilities for IFF	16.2.0
2020-03	RAN#87	R5-200135	1120		F	Removal of Correction to SIG OTA UE Orientation procedure	16.3.0
2020-03	RAN#87	R5-200147	1130		F	Update to USIM config 6.4.1-11	16.3.0
2020-03	RAN#87	R5-200244	1133		F	Correction to nAndPagingFrameOffset	16.3.0
2020-03	RAN#87	R5-200296	1136		F	Addition of generic procedure for IMS MO speech setup	16.3.0
2020-03	RAN#87	R5-200297	1137		F	Addition of generic procedure for IMS MT speech setup	16.3.0
2020-03	RAN#87	R5-200298	1138		F	Addition of generic procedure for IMS MO call release	16.3.0
2020-03	RAN#87	R5-200299	1139		F	Addition of generic procedure for IMS MT call release	16.3.0
2020-03	RAN#87	R5-200349	1142		F	Correction to frequencyBandList in SIB4	16.3.0
2020-03	RAN#87	R5-200431	1146		F	Correction to CSI-FrequencyOccupation	16.3.0
2020-03	RAN#87	R5-200432	1147		F	Correction to default setting of additionalPmax	16.3.0
2020-03	RAN#87	R5-200433	1148		F	Correction to powerControlOffset for performance tests	16.3.0

2020-03	RAN#87	R5-200434	1149		F	Correction to RACH configuration for RRM tests	16.3.0
2020-03	RAN#87	R5-200435	1150		F	Correction to TDD UL-DL Config for performance test cases	16.3.0
2020-03	RAN#87	R5-200477	1154		F	Update to Registration REQ and Authentication Response message	16.3.0
2020-03	RAN#87	R5-200499	1157		F	Correction of test frequency tables for NR band n1	16.3.0
2020-03	RAN#87	R5-200500	1158		F	Correction of test frequency tables for NR band n2	16.3.0
2020-03	RAN#87	R5-200501	1159		F	Correction of test frequency tables for NR band n3	16.3.0
2020-03	RAN#87	R5-200502	1160		F	Correction of test frequency tables for NR band n7	16.3.0
2020-03	RAN#87	R5-200503	1161		F	Correction of test frequency tables for NR band n25	16.3.0
2020-03	RAN#87	R5-200504	1162		F	Correction of test frequency tables for NR band n28	16.3.0
2020-03	RAN#87	R5-200505	1163		F	Correction of test frequency tables for NR band n34	16.3.0
2020-03	RAN#87	R5-200506	1164		F	Correction of test frequency tables for NR band n38	16.3.0
2020-03	RAN#87	R5-200507	1165		F	Correction of test frequency tables for NR band n39	16.3.0
2020-03	RAN#87	R5-200508	1166		F	Correction of test frequency tables for NR band n40	16.3.0
2020-03	RAN#87	R5-200510	1168		F	Correction of test frequency tables for NR band n50	16.3.0
2020-03	RAN#87	R5-200511	1169		F	Correction of test frequency tables for NR band n66	16.3.0
2020-03	RAN#87	R5-200512	1170		F	Correction of test frequency tables for NR band n70	16.3.0
2020-03	RAN#87	R5-200513	1171		F	Correction of test frequency tables for NR band n71	16.3.0
2020-03	RAN#87	R5-200514	1172		F	Correction of test frequency tables for NR band n74	16.3.0
2020-03	RAN#87	R5-200515	1173		F	Correction of test frequency tables for NR band n75	16.3.0
2020-03	RAN#87	R5-200531	1189		F	Correction of test frequency tables for NR band n29	16.3.0
2020-03	RAN#87	R5-200532	1190		F	Correction of test frequency tables for NR band n48	16.3.0
2020-03	RAN#87	R5-200533	1191		F	Correction of test frequency tables for NR band n65	16.3.0
2020-03	RAN#87	R5-200597	1200		F	Introduction of test frequencies for inter-band Rel-16 EN-DC configurations in 38.508-1	16.3.0
2020-03	RAN#87	R5-200605	1202		F	Addition of test frequencies for n95 SUL band	16.3.0
2020-03	RAN#87	R5-200645	1206		F	Updates to 4.6.4 UE Capability Information Elements	16.3.0
2020-03	RAN#87	R5-200646	1207		F	Correction to QoS rule number 7	16.3.0
2020-03	RAN#87	R5-200647	1208		F	Correction to IMS emergency call release procedures	16.3.0
2020-03	RAN#87	R5-201246	1209	1	F	TRS configuration messages definition for RF in 38.508-1	16.3.0
2020-03	RAN#87	R5-200678	1210		F	Update of IE ControlResourceSet to introduce band and channel bandwidth specific values for frequencyDomainResources	16.3.0
2020-03	RAN#87	R5-200703	1213		F	Correction to IE BeamFailureRecoveryConfig	16.3.0
2020-03	RAN#87	R5-200774	1215		F	Editorial update IE MeasConfig	16.3.0
2020-03	RAN#87	R5-200775	1216		F	Editorial update IE radioLinkMonitoringRS-Id	16.3.0
2020-03	RAN#87	R5-200804	1218		F	Correction of test frequency tables for NR band n5	16.3.0
2020-03	RAN#87	R5-200805	1219		F	Correction of test frequency tables for NR band n8	16.3.0
2020-03	RAN#87	R5-200806	1220		F	Correction of test frequency tables for NR band n12	16.3.0
2020-03	RAN#87	R5-200807	1221		F	Correction of test frequency tables for NR band n20	16.3.0



2020-03	RAN#87	R5-200808	1222		F	Correction of test frequency tables for NR band n51	16.3.0
2020-03	RAN#87	R5-200900	1197	1	F	Corrections on test frequencies for EN-DC band combinations including FR1 and FR2 in 38.508-1	16.3.0
2020-03	RAN#87	R5-200901	1198	1	F	Corrections on test frequencies for EN-DC band combinations including FR2 in 38.508-1	16.3.0
2020-03	RAN#87	R5-200902	1199	1	F	Corrections on uplink EN-DC configurations for test frequencies in 38.508-1	16.3.0
2020-03	RAN#87	R5-200921	1132	1	F	Addition of Rel-16 inter-band CA and EN-DC FR1 two bands test configurations	16.3.0
2020-03	RAN#87	R5-200930	1081	1	F	Update SIB1	16.3.0
2020-03	RAN#87	R5-200931	1082	1	F	Update CounterCheck	16.3.0
2020-03	RAN#87	R5-200932	1083	1	F	Editorial update DLInformationTransfer	16.3.0
2020-03	RAN#87	R5-200933	1084	1	F	Editorial update FailureInformation	16.3.0
2020-03	RAN#87	R5-200934	1085	1	F	Editorial update MeasurementReport	16.3.0
2020-03	RAN#87	R5-200935	1086	1	F	Editorial update MobilityFromNRCommand	16.3.0
2020-03	RAN#87	R5-200936	1087	1	F	Editorial update Paging	16.3.0
2020-03	RAN#87	R5-200937	1088	1	F	Editorial update RRCReestablishment	16.3.0
2020-03	RAN#87	R5-200938	1090	1	F	Editorial update RRCReconfigurationComplete	16.3.0
2020-03	RAN#87	R5-200939	1091	1	F	Editorial update RRCReject	16.3.0
2020-03	RAN#87	R5-200940	1092	1	F	Editorial update RRCRelease	16.3.0
2020-03	RAN#87	R5-200941	1093	1	F	Editorial update RRCResumeComplete	16.3.0
2020-03	RAN#87	R5-200942	1094	1	F	Editorial update RRCSetup	16.3.0
2020-03	RAN#87	R5-200943	1096	1	F	Editorial update SCGFailureInformation	16.3.0
2020-03	RAN#87	R5-200944	1097	1	F	Editorial update SecurityMode	16.3.0
2020-03	RAN#87	R5-200945	1098	1	F	Update SystemInformation	16.3.0
2020-03	RAN#87	R5-200946	1099	1	F	Editorial update UEAssistanceInformation	16.3.0
2020-03	RAN#87	R5-200947	1100	1	F	Editorial update UECapability	16.3.0
2020-03	RAN#87	R5-200948	1101	1	F	Editorial update ULInformation	16.3.0
2020-03	RAN#87	R5-200949	1103	1	F	Editorial update IE RLC-BearerConfig	16.3.0
2020-03	RAN#87	R5-200951	1108	1	F	Add IE TDD-UL-DL-ConfigDedicated	16.3.0
2020-03	RAN#87	R5-200952	1111	1	F	Update IE ServingCellConfig	16.3.0
2020-03	RAN#87	R5-200953	1112	1	F	Update IE ServingCellConfigCommonSIB	16.3.0
2020-03	RAN#87	R5-200954	1113	1	F	Update IE DMRS-DownlinkConfig	16.3.0
2020-03	RAN#87	R5-200955	1114	1	F	Update IE FrequencyInfoUL	16.3.0
2020-03	RAN#87	R5-200956	1118	1	F	Update chapter 4.5.1 General	16.3.0
2020-03	RAN#87	R5-200957	1122	1	F	Update chapter 4.5.4 RRC_CONNECTED	16.3.0
2020-03	RAN#87	R5-200958	1125	1	F	Update IE CellGroupId	16.3.0
2020-03	RAN#87	R5-200959	1126	1	F	Update IE ServCellIndex	16.3.0
2020-03	RAN#87	R5-200960	1127	1	F	Update IE SK-Counter	16.3.0

2020-03	RAN#87	R5-200961	1128	1	F	Update IE SDAP-Config	16.3.0
2020-03	RAN#87	R5-200965	1145	1	F	Correction to CORESET and search space configuration	16.3.0
2020-03	RAN#87	R5-200966	1193	1	F	Addition of NR SUL connection diagrams	16.3.0
2020-03	RAN#87	R5-200967	1201	1	F	Clarification to high test channel bandwidth table	16.3.0
2020-03	RAN#87	R5-200968	1203	1	F	Addition of missing EN-DC test frequencies	16.3.0
2020-03	RAN#87	R5-200996	1124	1	F	Correction to PUCCH-Config for Format1 and Format2	16.3.0
2020-03	RAN#87	R5-201005	1131	1	F	Update of Annex C on calculation of test frequencies to achieve full bandwidth testing of NR bands	16.3.0
2020-03	RAN#87	R5-201020	1155	1	F	Update SIG test frequencies in clause 6.2.3.x	16.3.0
2020-03	RAN#87	R5-201021	1167	1	F	Correction of test frequency tables for NR band n41	16.3.0
2020-03	RAN#87	R5-201022	1174	1	F	Correction of test frequency tables for NR band n77	16.3.0
2020-03	RAN#87	R5-201023	1175	1	F	Correction of test frequency tables for NR band n78	16.3.0
2020-03	RAN#87	R5-201024	1176	1	F	Correction of test frequency tables for NR band n79	16.3.0
2020-03	RAN#87	R5-201025	1177	1	F	Correction of test frequency tables for NR band n257	16.3.0
2020-03	RAN#87	R5-201026	1178	1	F	Correction of test frequency tables for NR band n258	16.3.0
2020-03	RAN#87	R5-201027	1179	1	F	Correction of test frequency tables for NR band n260	16.3.0
2020-03	RAN#87	R5-201028	1180	1	F	Correction of test frequency tables for NR band n261	16.3.0
2020-03	RAN#87	R5-201029	1192	1	F	Update of clause 4.4.2 on simulated cells	16.3.0
2020-03	RAN#87	R5-201061	1153	1	F	Addition of a few R16s inter-band EN-DC FR1 test configurations	16.3.0
2020-03	RAN#87	R5-201065	1194	1	F	Addition of test channel bandwidth for NR bands in 38.508-1	16.3.0
2020-03	RAN#87	R5-201092	1123	1	F	Updates to NR FR1 and LTE Power levels in OTA	16.3.0
2020-03	RAN#87	R5-201093	1224	1	F	Message content Updates for Carrier Aggregation	16.3.0
2020-03	RAN#87	R5-201108	1143	1	F	Correction to EUTRA-AllowedMeasBandwidth	16.3.0
2020-03	RAN#87	R5-201116	1204	1	F	Updates to 4.7.3 Contents of EAP-AKA messages in 38.508-1	16.3.0
2020-03	RAN#87	R5-201148	1134	1	F	Updates to default SSB index of intra-frequency NR cells	16.3.0
2020-03	RAN#87	R5-201159	1151	1	F	Correction to test frequencies for n257 intra-band contiguous CA	16.3.0
2020-03	RAN#87	R5-201173	1117	1	F	Update IE TDD-UL-DL-Config	16.3.0
2020-03	RAN#87	R5-201174	1095	1	F	Update RRCSystemInfoRequest	16.3.0
2020-03	RAN#87	R5-201175	1106	1	F	Update IE RLF-TimersAndConstants	16.3.0
2020-03	RAN#87	R5-201176	1107	1	F	Update IE SCS-SpecificCarrier	16.3.0
2020-03	RAN#87	R5-201177	1109	1	F	Update chapter 4.6.0	16.3.0
2020-03	RAN#87	R5-201179	1116	1	F	Update IE MeasObjectNR	16.3.0
2020-03	RAN#87	R5-201189	1214	1	F	Addition of IFF DFF Hybrid Setup for FR2 2AoA RRM test	16.3.0
2020-03	RAN#87	R5-201194	1141	1	F	Update to Common Coreset RB IE and section 5-6 Demod message contents	16.3.0
2020-03	RAN#87	R5-201195	1144	1	F	Update of DCI 1_0 and DCI_1_1 configuration	16.3.0
2020-03	RAN#87	R5-201197	1152	1	F	Correction to TRS configuration for RRM tests	16.3.0
2020-03	RAN#87	R5-201202	1205	1	F	Update to Switch Off/ Power off procedure in RRC_CONNECTED mode	16.3.0

2020-03	RAN#87	R5-201203	1129	1	F	Update to PDCP-Config	16.3.0
2020-03	RAN#87	R5-201217	1217	1	F	Updates to PsDU session modification procedures	16.3.0
2020-03	RAN#87	R5-201221	1089	1	F	Update RRCReconfiguration	16.3.0
2020-03	RAN#87	R5-201222	1121	1	F	Update IE CellGroupConfig	16.3.0
2020-03	RAN#87	R5-201232	1140	2	F	CR to 38.508-1 to introduce DFF Range Length	16.3.0
2020-03	RAN#87	R5-201234	1110	2	F	Update IE ServingCellConfigCommon	16.3.0
2020-03	RAN#87	R5-201148	1134	1	F	Add new missing column of Table 4.4.2-2	16.3.1
2020-06	RAN#88	R5-201320	1225	-	F	Update IE CellGroupConfig	16.4.0
2020-06	RAN#88	R5-201322	1227	-	F	Update of default value of frequencyDomainResources in ControlResourceSet IE	16.4.0
2020-06	RAN#88	R5-201331	1228	-	F	Correction to Table 4.9.6.1-1-Switch off in Idle	16.4.0
2020-06	RAN#88	R5-201333	1230	-	F	Addition of 4.9.6.3A Switch off Power off procedure in RRC_CONNECTED with T3540 started	16.4.0
2020-06	RAN#88	R5-201335	1232	-	F	Update to USIM config 6.4.1-1	16.4.0
2020-06	RAN#88	R5-201336	1233	-	F	Update to USIM Table 6.4.1-10	16.4.0
2020-06	RAN#88	R5-201337	1234	-	F	Correction to Table 7.3.1-7 NZP-CSI-RS-Resource for TRS	16.4.0
2020-06	RAN#88	R5-201446	1235	-	F	Fixing wrong reference for RRC_CONNECTED state on WLAN access	16.4.0
2020-06	RAN#88	R5-201572	1253	-	F	Corrections to default content of DCI messages	16.4.0
2020-06	RAN#88	RP-201138	1258	1	F	Correction to IE SearchSpace	16.4.0
2020-06	RAN#88	R5-201731	1265	-	F	Addition of NR SUL connection diagram in A.3.1.4	16.4.0
2020-06	RAN#88	R5-201800	1267	-	F	Addition of USIM configuration for TC 6.3.1.8 and TC 6.3.1.9	16.4.0
2020-06	RAN#88	R5-201837	1268	-	F	Update of test channel bandwidths for band n48	16.4.0
2020-06	RAN#88	R5-201932	1271	-	F	Removing brackets from mid test channel BWs for FR2	16.4.0
2020-06	RAN#88	R5-201956	1273	-	F	Correction of clause 4.4.2 on simulated cells	16.4.0
2020-06	RAN#88	R5-201958	1275	-	F	Correction to Annex C on calculation of kSSB to align SSB and RMSI subcarriers	16.4.0
2020-06	RAN#88	R5-201959	1276	-	F	Removal of definition of frequencyDomainResources value dependent on CORESET#0 configuration in Annex C.	16.4.0
2020-06	RAN#88	R5-201961	1278	-	F	Correction of test frequency tables for NR band n1	16.4.0
2020-06	RAN#88	R5-201962	1279	-	F	Correction of test frequency tables for NR band n2	16.4.0
2020-06	RAN#88	R5-201963	1280	-	F	Correction of test frequency tables for NR band n3	16.4.0
2020-06	RAN#88	R5-201964	1281	-	F	Correction of test frequency tables for NR band n5	16.4.0
2020-06	RAN#88	R5-201965	1282	-	F	Correction of test frequency tables for NR band n7	16.4.0
2020-06	RAN#88	R5-201966	1283	-	F	Correction of test frequency tables for NR band n8	16.4.0
2020-06	RAN#88	R5-201967	1284	-	F	Correction of test frequency tables for NR band n12	16.4.0
2020-06	RAN#88	R5-201968	1285	-	F	Correction of test frequency tables for NR band n20	16.4.0
2020-06	RAN#88	R5-201969	1286	-	F	Correction of test frequency tables for NR band n25	16.4.0
2020-06	RAN#88	R5-201970	1287	-	F	Correction of test frequency tables for NR band n28	16.4.0
2020-06	RAN#88	R5-201971	1288	-	F	Correction of test frequency tables for NR band n34	16.4.0

2020-06	RAN#88	R5-201972	1289	-	F	Correction of test frequency tables for NR band n38	16.4.0
2020-06	RAN#88	R5-201973	1290	-	F	Correction of test frequency tables for NR band n39	16.4.0
2020-06	RAN#88	R5-201974	1291	-	F	Correction of test frequency tables for NR band n40	16.4.0
2020-06	RAN#88	R5-201975	1292	-	F	Correction of test frequency tables for NR band n41	16.4.0
2020-06	RAN#88	R5-201976	1293	-	F	Correction of test frequency tables for NR band n50	16.4.0
2020-06	RAN#88	R5-201977	1294	-	F	Correction of test frequency tables for NR band n51	16.4.0
2020-06	RAN#88	R5-201978	1295	-	F	Correction of test frequency tables for NR band n66	16.4.0
2020-06	RAN#88	R5-201979	1296	-	F	Correction of test frequency tables for NR band n70	16.4.0
2020-06	RAN#88	R5-201980	1297	-	F	Correction of test frequency tables for NR band n71	16.4.0
2020-06	RAN#88	R5-201981	1298	-	F	Correction of test frequency tables for NR band n74	16.4.0
2020-06	RAN#88	R5-201982	1299	-	F	Correction of test frequency tables for NR band n77	16.4.0
2020-06	RAN#88	R5-201983	1300	-	F	Correction of test frequency tables for NR band n78	16.4.0
2020-06	RAN#88	R5-201984	1301	-	F	Correction of test frequency tables for NR band n79	16.4.0
2020-06	RAN#88	R5-201989	1306	-	F	Corrections of test frequency tables for CA_n41C	16.4.0
2020-06	RAN#88	R5-201990	1307	-	F	Corrections of test frequency tables for CA_n78C	16.4.0
2020-06	RAN#88	R5-201991	1308	-	F	Editorial correction to test frequency clause numbering	16.4.0
2020-06	RAN#88	R5-201995	1312	-	F	Correction of test frequency tables for CA_n66B	16.4.0
2020-06	RAN#88	R5-201997	1314	-	F	Introduction of test frequencies for NR band n26	16.4.0
2020-06	RAN#88	R5-201998	1315	-	F	Introduction of test frequencies for NR band 26 for protocol testing	16.4.0
2020-06	RAN#88	R5-201999	1316	-	F	Correction of test frequency tables for NR band n29	16.4.0
2020-06	RAN#88	R5-202000	1317	-	F	Correction of test frequency tables for NR band n48	16.4.0
2020-06	RAN#88	R5-202001	1318	-	F	Correction of test frequency tables for NR band n65	16.4.0
2020-06	RAN#88	R5-202024	1327	-	F	Update IE PDCP-Config	16.4.0
2020-06	RAN#88	R5-202123	1330	-	F	CR to 38.508-1 to clarify the test zone/quiet zone	16.4.0
2020-06	RAN#88	R5-202186	1333	-	F	Addition of locationAndBandwidth in BWP for FR1 in 38.508-1	16.4.0
2020-06	RAN#88	R5-202210	1335	-	F	Corrections on test frequencies for inter-band EN-DC configurations within FR1 for five bands in 38.508-1	16.4.0
2020-06	RAN#88	R5-202212	1336	-	F	Corrections of test frequency tables for CA_n257x	16.4.0
2020-06	RAN#88	R5-202213	1337	-	F	Corrections of test frequency tables for CA_n258x	16.4.0
2020-06	RAN#88	R5-202214	1338	-	F	Corrections of test frequency tables for CA_n260x	16.4.0
2020-06	RAN#88	R5-202215	1339	-	F	Corrections of test frequency tables for CA_n261x	16.4.0
2020-06	RAN#88	R5-202244	1343	-	F	Correction to nrofRBs under TRS CSI-FrequencyOccupation for Demod test cases with 10 MHz CBW	16.4.0
2020-06	RAN#88	R5-202284	1351	-	F	Correction to configuration bwp-id parameter in TCI-State IE	16.4.0
2020-06	RAN#88	R5-202409	1354	-	F	Update PDCCH-ControlResourceSet for RRM testing	16.4.0
2020-06	RAN#88	R5-202410	1355	-	F	Addition Physical Layer Parameter section for RRM testing	16.4.0
2020-06	RAN#88	R5-202449	1356	-	F	Correction of test frequencies for DC n71AA	16.4.0
2020-06	RAN#88	R5-202486	1358	-	F	Correction to content of EF5GSN3GPPLOC1	16.4.0

2020-06	RAN#88	R5-202525	1360	-	F	Correction to System Information Combination for PWS	16.4.0
2020-06	RAN#88	R5-202531	1353	1	F	Addition of R16 new channel bandwidths for n1 in 38.508-1	16.4.0
2020-06	RAN#88	R5-202534	1266	1	F	Removal of USIM configuration 14	16.4.0
2020-06	RAN#88	R5-202549	1350	1	F	Aligning the tabular representation of ASN.1 with PRD13 sections 4.8 and 5	16.4.0
2020-06	RAN#88	R5-202554	1252	1	F	Updates to PDCCH-ConfigCommon	16.4.0
2020-06	RAN#88	R5-202561	1226	1	F	Update IE default content for control resource set establishment and common search space mapping	16.4.0
2020-06	RAN#88	R5-202562	1229	1	F	Update to 4.9.6.3 Switch off Power off procedure in RRC_CONNECTED	16.4.0
2020-06	RAN#88	R5-202563	1231	1	F	Correction to Table 4.9.7.2.3-1-Tracking Area Update Request	16.4.0
2020-06	RAN#88	R5-202564	1236	1	F	Correction to Table 4.5.2.2-2-Adding second SMC procedure for Selected EPS NAS security algorithms IE	16.4.0
2020-06	RAN#88	R5-202565	1237	1	F	Clarification to ROUND for negative Threshold values in SIB1 and SIB4	16.4.0
2020-06	RAN#88	R5-202573	1251	1	F	Updates to test frequency definitions for SDL NR bands	16.4.0
2020-06	RAN#88	R5-202574	1257	1	F	Correction to condition SRB_NR_PDCP in RadioBearerConfig	16.4.0
2020-06	RAN#88	R5-202575	1260	1	F	Correction to UECapabilityEnquiry in case of EN-DC interband CA	16.4.0
2020-06	RAN#88	R5-202576	1262	1	F	Updates to PDCP-Config	16.4.0
2020-06	RAN#88	R5-202577	1274	1	F	Clarifications of Annex C on calculation of test frequencies	16.4.0
2020-06	RAN#88	R5-202578	1277	1	F	Update SIG test frequencies in clause 6.2.3.x	16.4.0
2020-06	RAN#88	R5-202579	1302	1	F	Correction of test frequency tables for NR band n257	16.4.0
2020-06	RAN#88	R5-202580	1303	1	F	Correction of test frequency tables for NR band n258	16.4.0
2020-06	RAN#88	R5-202581	1304	1	F	Correction of test frequency tables for NR band n260	16.4.0
2020-06	RAN#88	R5-202582	1305	1	F	Correction of test frequency tables for NR band n261	16.4.0
2020-06	RAN#88	R5-202583	1322	1	F	Introduction of protocol testing applicability for EN-DC inter-band, NR-CA inter-band and NR DC test frequency tables	16.4.0
2020-06	RAN#88	R5-202585	1331	1	F	Correction to Reference QoS rules	16.4.0
2020-06	RAN#88	R5-202586	1346	1	F	Updates to Generic Test Procedure for IMS MT speech call establishment	16.4.0
2020-06	RAN#88	R5-202587	1347	1	F	Updates to Generic Test Procedure for IMS MO call release	16.4.0
2020-06	RAN#88	R5-202588	1349	1	F	Aligning the tabular representation of ASN.1 with PRD13 section 4.6	16.4.0
2020-06	RAN#88	R5-202589	1359	1	F	Update the default USIM configurations	16.4.0
2020-06	RAN#88	R5-202590	1361	1	F	Addition of Generic procedure to check user plane connectivity for CA tests	16.4.0
2020-06	RAN#88	R5-202703	1255	1	F	Clarifications on the QoQZ validation procedure for RRM	16.4.0
2020-06	RAN#88	R5-202708	1254	1	F	TRS - PowerControlOffset correction for UE RF testing	16.4.0
2020-06	RAN#88	R5-202820	1352	1	F	Correction to PRB-Id for secondHopPRB	16.4.0
2020-06	RAN#88	R5-202859	1329	1	F	Updates on FR2 inter-band EN-DC configurations for test frequencies in 38.508-1	16.4.0
2020-06	RAN#88	R5-202879	1332	1	F	Addition of BW to Table 4.6.3-33	16.4.0
2020-06	RAN#88	R5-202880	1334	1	F	Clarification of disabling Tx diversity for FR2 UE	16.4.0

2020-06	RAN#88	R5-202881	1341	1	F	Restructuring 38.508-1 message contents for Demod and CSI reporting test cases	16.4.0
2020-06	RAN#88	R5-202882	1342	1	F	Update of PUCCH-ResourceId for Demod test cases	16.4.0
2020-06	RAN#88	R5-202883	1348	1	F	Configuration of p-ZP-CSI-RS-ResourceSet for PDSCH Demod test cases	16.4.0
2020-06	RAN#88	R5-202956	1270	1	F	Update of default test channel BW	16.4.0
2020-06	RAN#88	R5-202962	1269	2	F	Updating DCI related messages	16.4.0
2020-06	RAN#88	R5-202967	1344	1	F	Update to default value of PDSCH-to-HARQ_feedback timing indicator (k1)	16.4.0
2020-06	RAN#88	R5-203056	1313	1	F	Introduction of test frequencies for Rel-16 NR CA configuration CA_n66B and CA_n66(2A) in cl 6.2.3.4	16.4.0
2020-06	RAN#88	R5-203057	1319	1	F	Addition of test frequencies for additional channel bandwidths for NR band n66	16.4.0
2020-06	RAN#88	R5-203078	1325	1	F	Updates to Generic Test Procedure for IMS MO speech call establishment	16.4.0
2020-06	RAN#88	R5-203079	1326	2	F	Update NR-DC in chapter 4	16.4.0
2020-09	RAN#89	R5-203275	1364	-	F	Editorial update IE ARFCN-ValueNR	16.5.0
2020-09	RAN#89	R5-203277	1366	-	F	Add IEs ARFCN-ValueUTRA-FDD, AvailabilityCombinationsPerCell, AvailabilityIndicator and BAP-Routing-ID	16.5.0
2020-09	RAN#89	R5-203278	1367	-	F	n26 Default CH BW in 38.508-1	16.5.0
2020-09	RAN#89	R5-203287	1368	-	F	Correction PRB-Id for PUCCH secondHopPRB	16.5.0
2020-09	RAN#89	R5-203320	1369	-	F	Add IE BeamFailureRecoverySCellConfig	16.5.0
2020-09	RAN#89	R5-203339	1372	-	F	Add IE CGI-InfoEUTRALogging	16.5.0
2020-09	RAN#89	R5-203340	1373	-	F	Add IEs CGI-Info-Logging and CLI-RSSI-Range	16.5.0
2020-09	RAN#89	R5-203341	1374	-	F	Add IEs CommonLocationInfo, CondReconfigId, CondReconfigToAddModList and ConditionalReconfiguration	16.5.0
2020-09	RAN#89	R5-203342	1375	-	F	Add IEs ConfiguredGrantConfigIndex and ConfiguredGrantConfigIndexMAC	16.5.0
2020-09	RAN#89	R5-203343	1376	-	F	Add IE DRX-ConfigSecondaryGroup	16.5.0
2020-09	RAN#89	R5-203344	1377	-	F	Add IE HighSpeedConfig	16.5.0
2020-09	RAN#89	R5-203345	1378	-	F	Add IE InvalidSymbolPattern	16.5.0
2020-09	RAN#89	R5-203346	1379	-	F	Add IEs LBT-FailureRecoveryConfig and LocationInfo	16.5.0
2020-09	RAN#89	R5-203347	1380	-	F	Add IE MeasIdleConfig	16.5.0
2020-09	RAN#89	R5-203348	1381	-	F	Add IE MeasObjectCLI	16.5.0
2020-09	RAN#89	R5-203349	1382	-	F	Add IE MeasObjectNR-SL	16.5.0
2020-09	RAN#89	R5-203350	1383	-	F	Add IE MeasObjectUTRA-FDD	16.5.0
2020-09	RAN#89	R5-203351	1384	-	F	Add IEs MeasResultIdleEUTRA and MeasResultIdleNR	16.5.0
2020-09	RAN#89	R5-203355	1387	-	F	Add IEs MsgA-ConfigCommon and MsgA-PUSCH-Config	16.5.0
2020-09	RAN#89	R5-203356	1388	-	F	Add IEs NeedForGapsConfigNR and NeedForGapsInfoNR	16.5.0
2020-09	RAN#89	R5-203357	1389	-	F	Correction to Table 4.5.2.2-2-second SMC procedure for Selected EPS NAS security algorithms IE	16.5.0
2020-09	RAN#89	R5-203359	1391	-	F	Correction to Table 4.6.3-141 ReportConfigInterRAT	16.5.0

2020-09	RAN#89	R5-203446	1395	-	F	Add IEs NPN-Identity and NPN-IdentityInfoList	16.5.0
2020-09	RAN#89	R5-203449	1396	-	F	Add IE PLMN-IdentityList2	16.5.0
2020-09	RAN#89	R5-203450	1397	-	F	Add IE PUCCH-ConfigurationList	16.5.0
2020-09	RAN#89	R5-203451	1398	-	F	Add IE PUCCH-SpatialRelationInfo-Id	16.5.0
2020-09	RAN#89	R5-203455	1399	-	F	Corrections to 4.5.1	16.5.0
2020-09	RAN#89	R5-203456	1400	-	F	Updating usages of TS 34.229-1 to TS 34.229-5	16.5.0
2020-09	RAN#89	R5-203467	1401	-	F	Add IE RACH-ConfigCommonTwoStepRA	16.5.0
2020-09	RAN#89	R5-203470	1402	-	F	Add IE RACH-ConfigGenericTwoStepRA	16.5.0
2020-09	RAN#89	R5-203471	1403	-	F	Add IE ReferenceTimeInfo	16.5.0
2020-09	RAN#89	R5-203472	1404	-	F	Add IE RepetitionSchemeConfig	16.5.0
2020-09	RAN#89	R5-203476	1405	-	F	Add IE ReportConfigNR-SL	16.5.0
2020-09	RAN#89	R5-203500	1410	-	F	Update to Table 4.6.3-74: MeasObjectEUTRA	16.5.0
2020-09	RAN#89	R5-203506	1411	-	F	Add IE RSSI-Range	16.5.0
2020-09	RAN#89	R5-203507	1412	-	F	Add IEs SemiStaticChannelAccessConfig and Sensor-LocationInfo	16.5.0
2020-09	RAN#89	R5-203508	1413	-	F	Add IE SI-RequestConfig	16.5.0
2020-09	RAN#89	R5-203509	1414	-	F	Add IEs SPS-ConfigIndex, SPS-PUCCH-AN and SPS-PUCCH-AN-List	16.5.0
2020-09	RAN#89	R5-203510	1415	-	F	Add IE SRS-RSRP-Range	16.5.0
2020-09	RAN#89	R5-203533	1417	-	F	Update to PDSCH-ServingCellConfig	16.5.0
2020-09	RAN#89	R5-203534	1418	-	F	Updates to CellGroupConfig and RNTI-Value for NR-DC	16.5.0
2020-09	RAN#89	R5-203557	1420	-	F	Add IEs UL-DelayValueConfig and UplinkCancellation	16.5.0
2020-09	RAN#89	R5-203575	1422	-	F	Add chapter Positioning System information blocks	16.5.0
2020-09	RAN#89	R5-203577	1423	-	F	Add IEs SIB10, SIB11, SIB12, SIB13 and SIB14	16.5.0
2020-09	RAN#89	R5-203582	1424	-	F	Add messages DedicatedSIBRequest, DL DedicatedMessageSegment, DL InformationTransferMRDC and IABOtherInformation	16.5.0
2020-09	RAN#89	R5-203634	1429	-	F	Introduction of test frequencies for additional Rel-16 EN-DC inter-band configurations	16.5.0
2020-09	RAN#89	R5-203662	1432	-	F	Removal of USIM profile #16	16.5.0
2020-09	RAN#89	R5-203671	1433	-	F	Update of PDSCH-to-HARQ_feedback timing indicator (k1) value	16.5.0
2020-09	RAN#89	R5-203681	1436	-	F	Editorial correction typos in annex C.2.3.2	16.5.0
2020-09	RAN#89	R5-203704	1438	-	F	Correction to Table 4.6.3-87 NZP-CSI-RS-ResourceSet	16.5.0
2020-09	RAN#89	R5-203719	1441	-	F	Add messages LoggedMeasurementConfiguration, MCGFailureInformation and SidelinkUEInformationNR	16.5.0
2020-09	RAN#89	R5-203725	1442	-	F	Add messages UEInformationRequest, UEInformationResponse, UL DedicatedMessageSegment and UL InformationTransferIRAT	16.5.0
2020-09	RAN#89	R5-203729	1443	-	F	Update IE RACH-ConfigGeneric	16.5.0
2020-09	RAN#89	R5-203730	1444	-	F	Scheduling Request Resource config for RRM test cases	16.5.0
2020-09	RAN#89	R5-203731	1445	-	F	OSI scheduling config for RRM test cases	16.5.0
2020-09	RAN#89	R5-203755	1447	-	F	Update IE SchedulingRequestResourceConfig	16.5.0

2020-09	RAN#89	R5-203767	1449	-	F	Addition of test frequencies for new Rel-16 CBW for NR band n77	16.5.0
2020-09	RAN#89	R5-203768	1450	-	F	Addition of test frequencies for new Rel-16 CBW for NR band n78	16.5.0
2020-09	RAN#89	R5-203769	1451	-	F	Introduction of test frequencies for Rel-16 NR band n30	16.5.0
2020-09	RAN#89	R5-203793	1454	-	F	Correction of n29 test frequencies for protocol testing	16.5.0
2020-09	RAN#89	R5-203794	1455	-	F	Introduction of n30 test frequencies for protocol testing	16.5.0
2020-09	RAN#89	R5-203796	1456	-	F	Correction of EN-DC test frequency information for protocol testing	16.5.0
2020-09	RAN#89	R5-203813	1457	-	F	Correction to PUCCH-Config	16.5.0
2020-09	RAN#89	R5-203815	1458	-	F	FR2 PUSCH K2 values alignment to TS 38.214	16.5.0
2020-09	RAN#89	R5-203908	1463	-	F	Corrections on test frequencies for NR FR2 CA band n261	16.5.0
2020-09	RAN#89	R5-203998	1467	-	F	Addition of test frequencies for new Rel-16 CBW 25 and 50 MHz for NR band n1	16.5.0
2020-09	RAN#89	R5-204021	1469	-	F	Correction of n51 and n76 test frequencies for protocol testing	16.5.0
2020-09	RAN#89	R5-204032	1470	-	F	Introduction of n259 test frequencies for protocol testing	16.5.0
2020-09	RAN#89	R5-204038	1471	-	F	Corrections of test frequency tables for EN-DC configuration DC_(n)41AA	16.5.0
2020-09	RAN#89	R5-204039	1472	-	F	Corrections of test frequency tables for EN-DC configuration DC_(n)71AA	16.5.0
2020-09	RAN#89	R5-204041	1473	-	F	Addition of test channel bandwidths for n1 new CBW in 38.508-1 R16	16.5.0
2020-09	RAN#89	R5-204049	1475	-	F	Correction to the procedure for determination of SSB and CORESET0	16.5.0
2020-09	RAN#89	R5-204052	1478	-	F	PUCCH Resource ID for CSI TCs	16.5.0
2020-09	RAN#89	R5-204053	1479	-	F	Correction to PDCCH-ConfigCommon for performance tests	16.5.0
2020-09	RAN#89	R5-204150	1484	-	F	Update Table 5.4.2.0-2: ServingCellConfigCommon	16.5.0
2020-09	RAN#89	R5-204167	1488	-	F	Corrections of test frequency tables for CA_n260(A-I)	16.5.0
2020-09	RAN#89	R5-204168	1489	-	F	Update Table 7.3.1-4: ServingCellConfigCommon	16.5.0
2020-09	RAN#89	R5-204223	1491	-	F	Update missing SMTC configurations in RRM message contents	16.5.0
2020-09	RAN#89	R5-204238	1493	-	F	Correction to default contents of RRCReestablishmentRequest message	16.5.0
2020-09	RAN#89	R5-204325	1495	-	F	Adding procedure for establishment of multiple additional PDN connections in EPS (S1 mode)	16.5.0
2020-09	RAN#89	R5-204327	1497	-	F	Updates to Test procedure for UE for Tracking area updating / Inter-system change from N1 mode to S1 mode in 5GMM/EMM-IDLE mode	16.5.0
2020-09	RAN#89	R5-204329	1499	-	F	Update of 4.5A.2 UE-requested PDU session establishment procedure	16.5.0
2020-09	RAN#89	R5-204330	1500	-	F	Updates Procedure to UE-requested PDU session modification after the first S1 to N1 mode change	16.5.0
2020-09	RAN#89	R5-204331	1501	-	F	Void 4.9.14 Procedure for UE-requested PDU session modification after the first S1 to N1 mode change	16.5.0
2020-09	RAN#89	R5-204346	1502	-	F	Introduction of test frequencies for Rel-16 NR band n259	16.5.0
2020-09	RAN#89	R5-204378	1427	1	F	Correction to NR inter-band CA configurations in FR1	16.5.0



2020-09	RAN#89	R5-204384	1409	1	F	Correction to test procedure for UE for Tracking area updating / Inter-system change from S1 mode to N1 mode in 5GMM/EMM-IDLE mode	16.5.0
2020-09	RAN#89	R5-204386	1390	1	F	Correction to Table 4.6.1-17 RRCResume	16.5.0
2020-09	RAN#89	R5-204387	1406	1	F	Corrections to generic procedures for MO and MT speech call establishment	16.5.0
2020-09	RAN#89	R5-204388	1407	1	F	Correction to USIM configurations 7 and 13	16.5.0
2020-09	RAN#89	R5-204389	1408	1	F	Correction to switch off / power off procedures for IMS	16.5.0
2020-09	RAN#89	R5-204390	1421	1	F	Correction of description of NGEN-DC in table 4.5.1-1	16.5.0
2020-09	RAN#89	R5-204391	1425	1	F	Correction to UE-CapabilityRAT-RequestList and UE-CapabilityRequestFilterNR	16.5.0
2020-09	RAN#89	R5-204392	1439	1	F	Addition of Generic Test Procedure for IMS MO SMS in 5GC	16.5.0
2020-09	RAN#89	R5-204393	1440	1	F	Addition of Generic Test Procedure for IMS MT SMS in 5GC	16.5.0
2020-09	RAN#89	R5-204394	1446	1	F	Update IE RLC-BearerConfig	16.5.0
2020-09	RAN#89	R5-204395	1481	1	F	Update IE SIB2	16.5.0
2020-09	RAN#89	R5-204396	1482	1	F	New procedure for PDU Session Release	16.5.0
2020-09	RAN#89	R5-204397	1483	1	F	Update to FreqBandList	16.5.0
2020-09	RAN#89	R5-204398	1490	1	F	Update IE ServingCellConfigCommon	16.5.0
2020-09	RAN#89	R5-204399	1494	1	F	Adding generic procedure E-UTRA RRC_IDLE with unrestricted number of PDN connections	16.5.0
2020-09	RAN#89	R5-204400	1496	1	F	Update of PDU SESSION ESTABLISHMENT ACCEPT for multi PDU-PDN handling	16.5.0
2020-09	RAN#89	R5-204401	1498	1	F	Updates of Test procedure for UE for Tracking area updating / Inter-system change from S1 mode to N1 mode in 5GMM/EMM-IDLE mode	16.5.0
2020-09	RAN#89	R5-204507	1371	1	F	Add IEs BH-RLC-ChannelConfig, BH-LogicalChannelIdentity, BH-LogicalChannelIdentity-Ext and BH-RLC-ChannelID	16.5.0
2020-09	RAN#89	R5-204508	1386	1	F	Add IEs MeasResultsSL and MeasTriggerQuantityEUTRA	16.5.0
2020-09	RAN#89	R5-204509	1416	1	F	Modification to InterRAT-Parameters to add the UE capability nr-HO-ToEN-DC-r16	16.5.0
2020-09	RAN#89	R5-204510	1419	1	F	Add IE SSB-PositionQCL-Relation	16.5.0
2020-09	RAN#89	R5-204704	1503	-	F	Adding the test frequency for DC_3A-7A_n78A	16.5.0
2020-09	RAN#89	R5-204706	1504	-	F	Adding the test frequency for DC_28A_n3A	16.5.0
2020-09	RAN#89	R5-204708	1435	1	F	Updating indicator for SUL FR1 test cases	16.5.0
2020-09	RAN#89	R5-204709	1437	1	F	Update frequencyDomainResources and nrofCandidates	16.5.0
2020-09	RAN#89	R5-204751	1428	1	F	Introduction of test frequencies for additional Rel-15 band EN-DC inter-band configurations	16.5.0
2020-09	RAN#89	R5-204752	1460	1	F	Correction to TCI-state related configurations	16.5.0
2020-09	RAN#89	R5-204753	1461	1	F	Correction to CSI-RS related configurations	16.5.0
2020-09	RAN#89	R5-204754	1468	1	F	Update on test frequencies for EN-DC configurations including FR2	16.5.0
2020-09	RAN#89	R5-204755	1485	1	F	Corrections of test frequency tables for CA_n258x	16.5.0
2020-09	RAN#89	R5-204756	1486	1	F	Corrections of test frequency tables for CA_n260x	16.5.0
2020-09	RAN#89	R5-204757	1487	1	F	Corrections of test frequency tables for CA_n261x	16.5.0

2020-09	RAN#89	R5-204758	1492	1	F	Add SSB subcarrier spacing configurations in RRM message contents	16.5.0
2020-09	RAN#89	R5-204800	1362	1	F	Introduction of test frequencies for Rel-16 inter-band EN-DC combinations within FR1	16.5.0
2020-09	RAN#89	R5-204852	1434	1	F	Jumbo CR for update to Demod message contents	16.5.0
2020-09	RAN#89	R5-204896	1370	1	F	Addition of test frequencies for n28 with CBW of 30MHz	16.5.0
2020-09	RAN#89	R5-204899	1448	1	F	Adding default value for IE rbg-Size for demodulation and CSI reporting tests	16.5.0
2020-09	RAN#89	R5-204900	1462	1	F	Introduction of definition of Mid, Low, High test channel bandwidth and removal of NOTES that incorrectly permit UE not to support mandatory BWs	16.5.0
2020-09	RAN#89	R5-204901	1476	1	F	Correction to message configuration for performance tests	16.5.0
2020-10	RAN#89	R5-204325	1495	-	F	Addition of missing Table 4.5A.2B.2.2-2 and specific message contents of R5-204325	16.5.1
2020-12	RAN#90	R5-205093	1507	-	F	Add IE BandCombinationListSidelink	16.6.0
2020-12	RAN#90	R5-205096	1508	-	F	Add IE CarrierAggregationVariant	16.6.0
2020-12	RAN#90	R5-205104	1509	-	F	Add IEs FreqSeparationClassDL-Only and HighSpeedParameters	16.6.0
2020-12	RAN#90	R5-205130	1514	-	F	Add IE PowSav-Parameters	16.6.0
2020-12	RAN#90	R5-205167	1519	-	F	Add IE OLPC-SRS-Pos	16.6.0
2020-12	RAN#90	R5-205172	1521	-	F	Add IEs SidelinkParameters, SON-Parameters and SpatialRelationsSRS-Pos	16.6.0
2020-12	RAN#90	R5-205178	1522	-	F	Add IE UE-BasedPerfMeas-Parameters	16.6.0
2020-12	RAN#90	R5-205181	1523	-	F	Add IE SharedSpectrumChAccessParamsPerBand	16.6.0
2020-12	RAN#90	R5-205186	1524	-	F	Add IEs AbsoluteTimeInfo, AreaConfiguration and BT-NameList	16.6.0
2020-12	RAN#90	R5-205187	1525	-	F	Add IEs IAB-IP-Address, IAB-IP-AddressIndex and IAB-IP-Usage	16.6.0
2020-12	RAN#90	R5-205188	1526	-	F	Add IEs LoggingDuration, LoggingInterval, LogMeasResultListBT and LogMeasResultListWLAN	16.6.0
2020-12	RAN#90	R5-205189	1527	-	F	Add IE PhysCellIdUTRA-FDD	16.6.0
2020-12	RAN#90	R5-205190	1528	-	F	Add IEs Sensor-NameList, TraceReference and UE-MeasurementsAvailable-r16	16.6.0
2020-12	RAN#90	R5-205191	1529	-	F	Add IEs UTRA-FDD-Q-OffsetRange, VisitedCellInfoList and WLAN-NameList	16.6.0
2020-12	RAN#90	R5-205215	1533	-	F	Update chapter 4.5.1 General	16.6.0
2020-12	RAN#90	R5-205249	1537	-	F	Introduction of test frequencies for NR Band n53 signalling testing	16.6.0
2020-12	RAN#90	R5-205250	1538	-	F	Introduction of test channel BWs for NR Band n53	16.6.0
2020-12	RAN#90	R5-205288	1539	-	F	Addition of IE DCP-Config-r16	16.6.0
2020-12	RAN#90	R5-205332	1542	-	F	Updates to generic procedure NR-DC RRC_CONNECTED	16.6.0
2020-12	RAN#90	R5-205334	1544	-	F	Updates to RadioBearerConfig in Table 4.6.3-132	16.6.0
2020-12	RAN#90	R5-205336	1546	-	F	Updates to RRCReconfiguration in Table 4.6.1-13	16.6.0
2020-12	RAN#90	R5-205339	1549	-	F	Updates to RRCReconfiguration-NR-DC in Table 4.8.1-1CA	16.6.0
2020-12	RAN#90	R5-205403	1554	-	F	Addition of PC5 RRC messages for sidelink communication	16.6.0
2020-12	RAN#90	R5-205404	1555	-	F	Addition of sidelink IEs for Uu RRC and PC5 RRC	16.6.0

2020-12	RAN#90	R5-205532	1573	-	F	Clarifications to Annex C and CORESET1	16.6.0
2020-12	RAN#90	R5-205661	1580	-	F	Update of Annex C on calculating test frequencies for RRM testing	16.6.0
2020-12	RAN#90	R5-205701	1588	-	F	Update RF test channel bandwidths for n14 and n30	16.6.0
2020-12	RAN#90	R5-205725	1594	-	F	Correction to test channel bandwidth for NR band n40 and n50	16.6.0
2020-12	RAN#90	R5-205728	1597	-	F	Adding test frequencies for CA_n78B	16.6.0
2020-12	RAN#90	R5-205771	1602	-	F	Addition of test frequencies for a few Rel-16 EN-DC configurations	16.6.0
2020-12	RAN#90	R5-205832	1603	-	F	Connection diagrams for radiated RRM Tests	16.6.0
2020-12	RAN#90	R5-205874	1607	-	F	Correction of test frequency of CA_n41C	16.6.0
2020-12	RAN#90	R5-205875	1608	-	F	Correction of test frequency of CA_n66B	16.6.0
2020-12	RAN#90	R5-205881	1610	-	F	Addition of test frequency for 40MHz of band n38	16.6.0
2020-12	RAN#90	R5-205926	1612	-	F	Correction to nrofRBs IE for CSI-FrequencyOccupation	16.6.0
2020-12	RAN#90	R5-205932	1614	-	F	Addition of IE configuration for ULFPTx to clause 5	16.6.0
2020-12	RAN#90	R5-205937	1615	-	F	Update of 4.9.12 Generic Test Procedure for IMS Emergency call establishment in 5GC without IMS emergency registration and editorials	16.6.0
2020-12	RAN#90	R5-205939	1617	-	F	Update for Flexible PDU-PDN - Default messages	16.6.0
2020-12	RAN#90	R5-205940	1618	-	F	Update for Flexible PDU-PDN - DNN Configurations	16.6.0
2020-12	RAN#90	R5-205997	1621	-	F	Correction of test frequencies for NR band n1	16.6.0
2020-12	RAN#90	R5-205998	1622	-	F	Editorial correction to NR-DC test frequency clause 4.3.1	16.6.0
2020-12	RAN#90	R5-206002	1626	-	F	Correction of FR1 NR band test frequency tables for protocol testing	16.6.0
2020-12	RAN#90	R5-206003	1627	-	F	Correction of FR2 NR band test frequency tables for protocol testing	16.6.0
2020-12	RAN#90	R5-206004	1628	-	F	Change of default SCS for NR CA test frequencies for FR2 protocol testing	16.6.0
2020-12	RAN#90	R5-206008	1632	-	F	Editorial correction to NR CA test frequencies for FR1 protocol testing	16.6.0
2020-12	RAN#90	R5-206019	1637	-	F	Correction of test frequencies for CA_n260 of intra-band non-contiguous A-I	16.6.0
2020-12	RAN#90	R5-206046	1642	-	F	Clarify usage of SSB-Ids for RRM test cases	16.6.0
2020-12	RAN#90	R5-206048	1644	-	F	Clarification on the conditions in DCI format 1_1 table for RRM	16.6.0
2020-12	RAN#90	R5-206060	1645	-	F	Correction to 4.9.17 IMS MO release	16.6.0
2020-12	RAN#90	R5-206061	1646	-	F	Correction to 4.9.18 IMS MT release	16.6.0
2020-12	RAN#90	R5-206065	1650	-	F	Alignment of Rel-16 5GSM messages	16.6.0
2020-12	RAN#90	R5-206066	1651	-	F	Addition of new SSTs	16.6.0
2020-12	RAN#90	R5-206067	1652	-	F	Update IE SIB2	16.6.0
2020-12	RAN#90	R5-206078	1654	-	F	Update IE SIB4	16.6.0
2020-12	RAN#90	R5-206086	1655	-	F	Addition of common message contents for sustained downlink data rate tests	16.6.0
2020-12	RAN#90	R5-206087	1656	-	F	Correction to Default RRM TRS qcl-info and PDCCH TCI State	16.6.0
2020-12	RAN#90	R5-206112	1657	-	F	Update requirements of test equipment for RF test	16.6.0
2020-12	RAN#90	R5-206113	1658	-	F	Update requirements of test equipment for RRM tests	16.6.0

2020-12	RAN#90	R5-206115	1659	-	F	Update requirements of reference test conditions for RRM tests	16.6.0
2020-12	RAN#90	R5-206157	1663	-	F	CSI-measConfig applicable for RRM testing	16.6.0
2020-12	RAN#90	R5-206158	1664	-	F	Editorial update IE CellAccessRelatedInfo-EUTRA-5GC	16.6.0
2020-12	RAN#90	R5-206164	1666	-	F	Editorial update IE CellAccessRelatedInfo-EUTRA-EPC	16.6.0
2020-12	RAN#90	R5-206266	1671	-	F	Corrections to test procedures in subclause 4.9	16.6.0
2020-12	RAN#90	R5-206288	1510	1	F	Corrections to UE-requested PDU session establishment procedure	16.6.0
2020-12	RAN#90	R5-206289	1515	1	F	Update of 4.9.7 Test procedure for UE for Tracking area updating / Inter-system change from N1 mode to S1 mode in 5GMM/EMM-IDLE mode	16.6.0
2020-12	RAN#90	R5-206290	1516	1	F	Update of 4.9.9 Test procedure for UE for Tracking area updating / Inter-system change from S1 mode to N1 mode in 5GMM/EMM-IDLE mode	16.6.0
2020-12	RAN#90	R5-206291	1517	1	F	Update of 4.5.2 RRC_IDLE	16.6.0
2020-12	RAN#90	R5-206292	1532	1	F	Correction to Test procedure 4.9.5	16.6.0
2020-12	RAN#90	R5-206293	1534	1	F	Corrections to generic procedures regarding IMS usage	16.6.0
2020-12	RAN#90	R5-206294	1540	1	F	Update Generic Test Procedures for IMS MO, MT speech call	16.6.0
2020-12	RAN#90	R5-206295	1543	1	F	Updates to generic procedure parameters in Table 4.5.1-1	16.6.0
2020-12	RAN#90	R5-206296	1616	1	F	Update for Flexible PDU-PDN - Session-Connection establishment	16.6.0
2020-12	RAN#90	R5-206297	1541	1	F	Updates to CellGroupConfig in Table 4.6.3-19	16.6.0
2020-12	RAN#90	R5-206298	1545	1	F	Updates to RadioBearerConfig in Table 4.6.3-132 for NR-DC	16.6.0
2020-12	RAN#90	R5-206299	1547	1	F	Updates to RRCReconfiguration in Table 4.6.1-13 for NR-DC	16.6.0
2020-12	RAN#90	R5-206300	1548	1	F	Updates to RRCReconfigurationComplete	16.6.0
2020-12	RAN#90	R5-206301	1586	1	F	Update IE SSB-ToMeasure	16.6.0
2020-12	RAN#90	R5-206302	1620	1	F	Correction to PDCCH-ConfigCommon	16.6.0
2020-12	RAN#90	R5-206303	1665	1	F	Messages Exceptions corrections for SUL cases	16.6.0
2020-12	RAN#90	R5-206304	1670	1	F	Update to ims-EmergencySupport indication of SIB1	16.6.0
2020-12	RAN#90	R5-206305	1595	1	F	Correction to test frequencies for signalling testing	16.6.0
2020-12	RAN#90	R5-206306	1625	1	F	Introducing test frequencies for CA_n261(2A) for protocol testing	16.6.0
2020-12	RAN#90	R5-206307	1629	1	F	Introduction of NR-DC test frequencies for protocol testing	16.6.0
2020-12	RAN#90	R5-206308	1661	1	F	Update requirements of test equipment for Signalling test	16.6.0
2020-12	RAN#90	R5-206309	1531	1	F	Correction to Table 4.8.1-1A RRCReconfiguration-HO	16.6.0
2020-12	RAN#90	R5-206388	1631	1	F	Introduction of n14 test frequencies for protocol testing	16.6.0
2020-12	RAN#90	R5-206394	1552	1	F	Adding ReferenceTimeInfo IE config for IIoT test	16.6.0
2020-12	RAN#90	R5-206403	1559	1	F	Update to RRC messages and IEs for R16 Mobility Enhancement	16.6.0
2020-12	RAN#90	R5-206407	1553	1	F	Correction to Uu RRC messages and SIBs for sidelink communication	16.6.0
2020-12	RAN#90	R5-206408	1556	1	F	Addition of V2X default configuration_USIM	16.6.0
2020-12	RAN#90	R5-206409	1557	1	F	Addition of V2X default configuration_NAS Messages	16.6.0
2020-12	RAN#90	R5-206419	1575	1	F	Updates to default contents of NAS messages for Rel-16 RACS	16.6.0
2020-12	RAN#90	R5-206420	1576	1	F	Updates to default contents of RRC messages for Rel-16 RACS	16.6.0

2020-12	RAN#90	R5-206426	1649	1	F	Alignment of Rel-16 5GMM messages	16.6.0
2020-12	RAN#90	R5-206427	1668	1	F	Updates to DL DedicatedMessageSegment message	16.6.0
2020-12	RAN#90	R5-206621	1589	1	F	Correction to test frequencies for NR band n34	16.6.0
2020-12	RAN#90	R5-206622	1590	1	F	Correction to test frequencies for NR band n38	16.6.0
2020-12	RAN#90	R5-206623	1591	1	F	Correction to test frequencies for NR band n39	16.6.0
2020-12	RAN#90	R5-206624	1592	1	F	Correction to test frequencies for NR band n40	16.6.0
2020-12	RAN#90	R5-206625	1593	1	F	Correction to test frequencies for NR band n50	16.6.0
2020-12	RAN#90	R5-206626	1609	1	F	Correction of test frequency of CA_n78C	16.6.0
2020-12	RAN#90	R5-206628	1611	1	F	Update to DEMOD message contents	16.6.0
2020-12	RAN#90	R5-206629	1669	1	F	Single PDN and PDU configuration for EN-DC RF testing	16.6.0
2020-12	RAN#90	R5-206630	1619	1	F	Addition of aperiodic CSI-RS reference configuration for RRM test	16.6.0
2020-12	RAN#90	R5-206631	1623	1	F	Introduction of test frequencies for SCS=60 kHz and EN-DC configurations DC_41X_n41A	16.6.0
2020-12	RAN#90	R5-206632	1505	1	F	Message contents for iRAT periodical measurements	16.6.0
2020-12	RAN#90	R5-206633	1638	1	F	Minor corrections of 4.1 for test environment conditions	16.6.0
2020-12	RAN#90	R5-206712	1579	1	F	Addition of UL and DL inter-band CA configurations for several FR1 bands	16.6.0
2020-12	RAN#90	R5-206713	1587	1	F	Update to reference test conditions for R16 EN-DC configuration	16.6.0
2020-12	RAN#90	R5-206714	1639	1	F	Introduction of test frequencies for additional Rel-16 EN-DC inter-band configurations	16.6.0
2020-12	RAN#90	R5-206715	1660	1	F	Introduction of test frequencies for additional Rel-16 EN-DC inter-band configurations	16.6.0
2020-12	RAN#90	R5-206736	1536	1	F	Introduction of test frequencies for NR Band n53	16.6.0
2020-12	RAN#90	R5-206737	1572	1	F	Addition of R16 new channel bandwidths for n3 in 38.508-1	16.6.0
2020-12	RAN#90	R5-206738	1630	1	F	Introduction of test frequencies for n14	16.6.0
2020-12	RAN#90	R5-206739	1636	1	F	Correction of 4.3.1 for test channel bandwidth of NR bands	16.6.0
2020-12	RAN#90	R5-206757	1596	1	F	Adding test frequencies for CA_n40B	16.6.0
2020-12	RAN#90	R5-206758	1598	1	F	Adding test frequencies for CA_n77A-n77A	16.6.0
2020-12	RAN#90	R5-206759	1599	1	F	Adding test frequencies for CA_n78A-n78A	16.6.0
2020-12	RAN#90	R5-206760	1633	1	F	Updating message contents for Uplink carrier switching	16.6.0
2020-12	RAN#90	R5-206790	1581	1	F	Introduction of test frequencies for RRM and NR band n257	16.6.0
2020-12	RAN#90	R5-206791	1582	1	F	Introduction of test frequencies for RRM and NR band n258	16.6.0
2020-12	RAN#90	R5-206792	1583	1	F	Introduction of test frequencies for RRM and NR band n260	16.6.0
2020-12	RAN#90	R5-206793	1584	1	F	Introduction of test frequencies for RRM and NR band n261	16.6.0
2020-12	RAN#90	R5-206794	1585	1	F	Introduction of test frequencies for RRM and NR band n259	16.6.0
2020-12	RAN#90	R5-206820	1667	1	F	Update to quality of quiet zone validation rule for IFF DFF hybrid setup	16.6.0
2020-12	RAN#90	R5-206860	1506	1	F	SSB bitmap correction for RRM test cases	16.6.0
2020-12	RAN#90	R5-206861	1624	1	F	Introducing test frequencies for CA_n261(2A)	16.6.0
2020-12	RAN#90	R5-206862	1643	1	F	Clarify the RF / RRM conditions for default messages	16.6.0

2021-03	RAN#91	R5-210186	1678	-	F	Update global conditions	16.7.0
2021-03	RAN#91	R5-210327	1688	-	F	Update FailureInformation message	16.7.0
2021-03	RAN#91	R5-210328	1689	-	F	Editorial update RRCReconfiguration message	16.7.0
2021-03	RAN#91	R5-210359	1692	-	F	Editorial update SidelinkUEInformationNR message	16.7.0
2021-03	RAN#91	R5-210394	1697	-	F	Editorial update UEAssistanceInformation message	16.7.0
2021-03	RAN#91	R5-210414	1699	-	F	Update UECapabilityEnquiry message	16.7.0
2021-03	RAN#91	R5-210468	1704	-	F	Add new SIB combination for RRM tests with single cell	16.7.0
2021-03	RAN#91	R5-210599	1711	-	F	Editorial correction on numbering of several Tables in 38.508-1	16.7.0
2021-03	RAN#91	R5-210616	1713	-	F	Editorial update DLDedicatedMessageSegment message	16.7.0
2021-03	RAN#91	R5-210623	1714	-	F	Correction to Table 4.6.1-13 RRCReconfiguration	16.7.0
2021-03	RAN#91	R5-210626	1717	-	F	Correction to Table 6.4.1-11 USIM Configuration 11	16.7.0
2021-03	RAN#91	R5-210627	1718	-	F	Correction to Table 4.8.2.1-7 Reference QoS rule 7	16.7.0
2021-03	RAN#91	R5-210687	1719	-	F	Correction to Table 4.6.3-25B CondReconfigId	16.7.0
2021-03	RAN#91	R5-210688	1720	-	F	Correction to Table 4.6.3-25C CondReconfigToAddModList	16.7.0
2021-03	RAN#91	R5-210689	1721	-	F	Correction to Table 4.6.3-25D ConditionalReconfiguration	16.7.0
2021-03	RAN#91	R5-210698	1723	-	F	Addition of IE SL-PreconfigurationNR	16.7.0
2021-03	RAN#91	R5-210699	1724	-	F	Addition of V2X NAS IEs	16.7.0
2021-03	RAN#91	R5-210701	1726	-	F	Correction of NR SL IE SL-BWP-ConfigCommon	16.7.0
2021-03	RAN#91	R5-210703	1728	-	F	Correction of NR SL IE SL-ConfigDedicatedNR	16.7.0
2021-03	RAN#91	R5-210704	1729	-	F	Correction of NR SL IE SL-FreqConfigCommon	16.7.0
2021-03	RAN#91	R5-210705	1730	-	F	Correction of NR SL IE SL-LogicalChannelConfig	16.7.0
2021-03	RAN#91	R5-210706	1731	-	F	Correction of NR SL IE SL-MeasConfigInfo	16.7.0
2021-03	RAN#91	R5-210707	1732	-	F	Correction of NR SL IE SL-PDCP-Config	16.7.0
2021-03	RAN#91	R5-210708	1733	-	F	Correction of NR SL IE SL-RadioBearerConfig	16.7.0
2021-03	RAN#91	R5-210709	1734	-	F	Correction of NR SL IE SL-ResourcePool	16.7.0
2021-03	RAN#91	R5-210710	1735	-	F	Correction of NR SL IE SL-RLC-BearerConfig	16.7.0
2021-03	RAN#91	R5-210711	1736	-	F	Correction of NR SL IE SL-RLC-Config	16.7.0
2021-03	RAN#91	R5-210713	1738	-	F	Correction to NR Uu IE ARFCN-ValueNR	16.7.0
2021-03	RAN#91	R5-210714	1739	-	F	Correction to NR Uu IE SCS-SpecificCarrier	16.7.0
2021-03	RAN#91	R5-210771	1744	-	F	Correction in CodebookConfig for 4Tx RI Demod test cases	16.7.0
2021-03	RAN#91	R5-210772	1745	-	F	Alignment xOverhead setting with PDSCH RMCs for Demod FR2 testing	16.7.0
2021-03	RAN#91	R5-210805	1746	-	F	Update IE SemiStaticChannelAccessConfig	16.7.0
2021-03	RAN#91	R5-210812	1747	-	F	Update IE ServingCellConfig	16.7.0
2021-03	RAN#91	R5-210824	1748	-	F	Number of control symbols for RRM tests with 240kHz SSB SCS	16.7.0
2021-03	RAN#91	R5-210826	1750	-	F	Editorial update IE ServingCellConfigCommon	16.7.0
2021-03	RAN#91	R5-210873	1752	-	F	Correction of aperiodic CSI-RS reference configuration for RRM tests	16.7.0

2021-03	RAN#91	R5-210897	1753	-	F	Correction to test frequency parameters for band n83	16.7.0
2021-03	RAN#91	R5-210898	1754	-	F	Correction to test frequency parameters for band n84	16.7.0
2021-03	RAN#91	R5-211032	1759	-	F	Correction test frequencies for CA_n261(2A)	16.7.0
2021-03	RAN#91	R5-211033	1760	-	F	Correction test frequencies for CA_n261(2A) for protocol testing	16.7.0
2021-03	RAN#91	R5-211034	1761	-	F	Correction of protocol applicability for test frequencies for DC_xA_n261(2A) configurations	16.7.0
2021-03	RAN#91	R5-211107	1770	-	F	Corrections to subclauses in 38.508-1 with appropriate subclause level and heading styles	16.7.0
2021-03	RAN#91	R5-211116	1772	-	F	Update of 4.3.1.1.3.41.1 for test frequency of NR intra-band contiguous CA_n41C	16.7.0
2021-03	RAN#91	R5-211117	1773	-	F	Update of 4.3.1.1.3.66.1 for test frequency of NR intra-band contiguous CA_n66B	16.7.0
2021-03	RAN#91	R5-211118	1774	-	F	Update of 4.3.1.1.3.78.1 for test frequency of NR intra-band contiguous CA_n78C	16.7.0
2021-03	RAN#91	R5-211121	1777	-	F	Update of 4.3.1.3.2.1 for test frequencies for NR-DC configurations between FR1 and FR2	16.7.0
2021-03	RAN#91	R5-211124	1780	-	F	Update of 4.3.1.6.1.3 for test frequencies for EN-DC band combinations including FR1 and FR2	16.7.0
2021-03	RAN#91	R5-211168	1784	-	F	Updates to PDU SESSION ESTABLISHMENT ACCEPT message	16.7.0
2021-03	RAN#91	R5-211170	1786	-	F	Editorial update to BandCombinationListSidelink IE	16.7.0
2021-03	RAN#91	R5-211171	1787	-	F	Update to RRCReconfiguration-Speech IE	16.7.0
2021-03	RAN#91	R5-211204	1791	-	F	Editorial update IE BWP	16.7.0
2021-03	RAN#91	R5-211328	1796	-	F	Correction to frequency parameters for band n53	16.7.0
2021-03	RAN#91	R5-211335	1727	1	F	Correction of NR SL IE SL-BWP-PoolConfigCommon	16.7.0
2021-03	RAN#91	R5-211336	1737	1	F	Correction of NR SL IE SL-SDAP-Config	16.7.0
2021-03	RAN#91	R5-211337	1740	1	F	Correction to PC5-RRC message RRCReconfigurationSidelink	16.7.0
2021-03	RAN#91	R5-211338	1741	1	F	Correction to PC5-RRC message UECapabilityEnquirySidelink	16.7.0
2021-03	RAN#91	R5-211339	1742	1	F	Correction to PC5-RRC message UECapabilityInformationSidelink	16.7.0
2021-03	RAN#91	R5-211369	1673	1	F	Corrections to generic test procedures for IMS	16.7.0
2021-03	RAN#91	R5-211370	1676	1	F	Correction to generic procedure for UE-requested PDU session modification after S1 to N1 change	16.7.0
2021-03	RAN#91	R5-211371	1680	1	F	Correction to test procedure 4.9.7	16.7.0
2021-03	RAN#91	R5-211372	1698	1	F	Correction to RRC IDLE procedures	16.7.0
2021-03	RAN#91	R5-211374	1712	1	F	Update IE PDCCH-ConfigCommon	16.7.0
2021-03	RAN#91	R5-211375	1715	1	F	Correction to Table 4.6.3-185 SSB-MTC	16.7.0
2021-03	RAN#91	R5-211456	1722	1	F	Correction to Table 4.6.3-142 ReportConfigNR	16.7.0
2021-03	RAN#91	R5-211462	1725	1	F	Addition of SI combination for NR SL	16.7.0
2021-03	RAN#91	R5-211465	1693	1	F	Updates to SIB1 and SIB10 for Rel-16 NPN	16.7.0
2021-03	RAN#91	R5-211466	1694	1	F	Addition of System information combination for Rel-16 NPN	16.7.0
2021-03	RAN#91	R5-211467	1684	1	F	Introduction of definition of common environment for R16 NR Immediate MDT	16.7.0
2021-03	RAN#91	R5-211468	1685	1	F	Updating Contents of RRC messages for Logged MDT test cases	16.7.0

2021-03	RAN#91	R5-211491	1700	1	F	Addition of Cell configurations for 5G-SRVCC from NG-RAN to UTRAN	16.7.0
2021-03	RAN#91	R5-211497	1682	1	F	Editorial update IE PhysicalCellGroupConfig	16.7.0
2021-03	RAN#91	R5-211498	1781	1	F	Introduction of support for URLLC	16.7.0
2021-03	RAN#91	R5-211499	1782	1	F	Addition of QoS for URLLC	16.7.0
2021-03	RAN#91	R5-211548	1695	1	F	Addition of NID information for Rel-16 NPN	16.7.0
2021-03	RAN#91	R5-211604	1794	-	F	Introduction of test frequencies for CBW 70 MHz for n77	16.7.0
2021-03	RAN#91	R5-211605	1795	-	F	Introduction of test frequencies for CBW 70 MHz for n78	16.7.0
2021-03	RAN#91	R5-211660	1677	1	F	Update of EN-DC inter-band configurations in clause 4.3.1	16.7.0
2021-03	RAN#91	R5-211661	1690	1	F	Addition of 3 band EN-DC Test Frequency (DC_1A-8A_n78A, DC_3A-8A_n78A)	16.7.0
2021-03	RAN#91	R5-211662	1691	1	F	Addition of 4 band EN-DC Test Frequency (DC_1A-3A-8A_n78A)	16.7.0
2021-03	RAN#91	R5-211663	1743	1	F	Update PDSCH-TimeDomainResourceAllocationList to consider coresets0 for Demod FR2 test cases	16.7.0
2021-03	RAN#91	R5-211664	1763	1	F	Update message content for PMI reporting test cases	16.7.0
2021-03	RAN#91	R5-211665	1705	1	F	Changes to RRM default message contents	16.7.0
2021-03	RAN#91	R5-211666	1706	1	F	Add SSB Index table for RRM with SECOND_SSB condition	16.7.0
2021-03	RAN#91	R5-211667	1751	1	F	Addition of default configuration of CSI-IM for RRM tests	16.7.0
2021-03	RAN#91	R5-211668	1790	1	F	Specify CSI-SSB-ResourceSet for RRM	16.7.0
2021-03	RAN#91	R5-211669	1702	1	F	Editorial rework of the conditions for CSI-FrequencyOccupation	16.7.0
2021-03	RAN#91	R5-211670	1703	1	F	Align TDD UL DL Common for RRM with TS 38.533	16.7.0
2021-03	RAN#91	R5-211671	1707	1	F	Correct reportOffsetList in CSI-ReportConfig	16.7.0
2021-03	RAN#91	R5-211672	1708	1	F	Specify CSI-SSB-ResourceSet	16.7.0
2021-03	RAN#91	R5-211673	1764	1	F	Clarification on the connection diagram for FR2 demod and RRM test cases	16.7.0
2021-03	RAN#91	R5-211762	1778	1	F	Update of 4.3.1.4.1 for test frequencies for EN-DC band combinations within FR1	16.7.0
2021-03	RAN#91	R5-211763	1779	1	F	Update of 4.3.1.5.1 for test frequencies for EN-DC band combinations including FR2	16.7.0
2021-03	RAN#91	R5-211784	1776	1	F	Update of 4.3.1.0A for mid test channel bandwidth	16.7.0
2021-03	RAN#91	R5-211785	1792	1	F	Correction of test frequencies for NR band n48	16.7.0
2021-03	RAN#91	R5-211855	1758	1	F	Updating the value of P-Max for EN-DC and NR SA test cases	16.7.0
2021-03	RAN#91	R5-211856	1768	1	F	Correction to the message contents for CQI reporting tests in 5.4.2.4	16.7.0
2021-03	RAN#91	R5-211857	1769	1	F	Correction to the message contents for PMI reporting tests in 5.4.2.5	16.7.0
2021-03	RAN#91	R5-210927	1755	-	F	Updating Rel-17 mid and highest channel bandwidth for n83 and n84	17.0.0
2021-03	RAN#91	R5-210928	1756	-	F	Adding Rel-17 CBW 30MHz test frequencies for n83	17.0.0
2021-03	RAN#91	R5-210929	1757	-	F	Updating test frequencies for Rel-17 new CBWs for band n84	17.0.0
2021-03	RAN#91	R5-211836	1766	1	F	Introduction of test frequencies for n48 adding CBW 70 MHz - DL only	17.0.0
2021-06	RAN#92	R5-212203	1804	-	F	Resubmission of Addition of SI combination for NR SL	17.1.0
2021-06	RAN#92	R5-212213	1807	-	F	Add IE Phy-ParametersSharedSpectrumChAccess	17.1.0



2021-06	RAN#92	R5-212248	1811	-	F	Correction to TCI stated of CSI-RS for TRS	17.1.0
2021-06	RAN#92	R5-212249	1812	-	F	Correction to physical layer parameters for demodulation tests	17.1.0
2021-06	RAN#92	R5-212250	1813	-	F	Update of TE diagram for FR2 RRM tests with multiple NR cells	17.1.0
2021-06	RAN#92	R5-212409	1817	-	F	Correction to IE BWP-DownlinkDedicated	17.1.0
2021-06	RAN#92	R5-212455	1822	-	F	Correction of NR SL IE SL-BWP-Config	17.1.0
2021-06	RAN#92	R5-212456	1823	-	F	Correction of NR SL IE SL-BWP-PoolConfig	17.1.0
2021-06	RAN#92	R5-212457	1824	-	F	Correction of NR SL IE SL-CBR-CommonTxConfigList	17.1.0
2021-06	RAN#92	R5-212458	1825	-	F	Correction of NR SL IE SL-CBR-PriorityTxConfigList	17.1.0
2021-06	RAN#92	R5-212459	1826	-	F	Correction of NR SL IE SL-ConfiguredGrantConfig	17.1.0
2021-06	RAN#92	R5-212460	1827	-	F	Correction of NR SL IE SL-DestinationIdentity	17.1.0
2021-06	RAN#92	R5-212461	1828	-	F	Correction of NR SL IE SL-FreqConfig	17.1.0
2021-06	RAN#92	R5-212462	1829	-	F	Correction of NR SL IE SL-MeasConfigCommon	17.1.0
2021-06	RAN#92	R5-212463	1830	-	F	Correction of NR SL IE SL-MeasIdList	17.1.0
2021-06	RAN#92	R5-212464	1831	-	F	Correction of NR SL IE SL-MeasObjectList	17.1.0
2021-06	RAN#92	R5-212465	1832	-	F	Correction of NR SL IE SL-PSBCH-Config	17.1.0
2021-06	RAN#92	R5-212468	1835	-	F	Correction of NR SL IE SL-QoS-Profile	17.1.0
2021-06	RAN#92	R5-212469	1836	-	F	Correction of NR SL IE SL-QuantityConfig	17.1.0
2021-06	RAN#92	R5-212473	1840	-	F	Correction of NR SL IE SL-ScheduledConfig	17.1.0
2021-06	RAN#92	R5-212476	1843	-	F	Correction of NR SL IE SL-TxPower	17.1.0
2021-06	RAN#92	R5-212478	1845	-	F	Correction of NR SL IE SL-UE-SelectedConfig	17.1.0
2021-06	RAN#92	R5-212479	1846	-	F	Correction of NR SL IE SL-ZoneConfig	17.1.0
2021-06	RAN#92	R5-212616	1859	-	F	Correction to PUCCH resource indicator value for PMI reporting requirements	17.1.0
2021-06	RAN#92	R5-212642	1861	-	F	Editorial correction of header level in clause 5.4.2.0 in 38.508-1	17.1.0
2021-06	RAN#92	R5-212688	1865	-	F	Correction of nominal channel spacing in test frequencies for CA_n257x	17.1.0
2021-06	RAN#92	R5-212689	1866	-	F	Correction of nominal channel spacing in test frequencies for CA_n258x	17.1.0
2021-06	RAN#92	R5-212690	1867	-	F	Correction of nominal channel spacing in test frequencies for CA_n260x	17.1.0
2021-06	RAN#92	R5-212691	1868	-	F	Correction of nominal channel spacing in test frequencies for CA_n261x	17.1.0
2021-06	RAN#92	R5-212692	1869	-	F	Correction of test frequencies for CA_n41C	17.1.0
2021-06	RAN#92	R5-212693	1870	-	F	Correction of test frequencies for CA_n78C	17.1.0
2021-06	RAN#92	R5-212694	1871	-	F	Correction of test frequencies for DC_(n)41AA	17.1.0
2021-06	RAN#92	R5-212695	1872	-	F	Editorial correction of test frequencies for protocol testing	17.1.0
2021-06	RAN#92	R5-212698	1875	-	F	Introduction of test frequencies for n41 adding CBW 70 MHz	17.1.0
2021-06	RAN#92	R5-212699	1876	-	F	Introduction of test frequencies for n48 adding CBW 30 MHz	17.1.0
2021-06	RAN#92	R5-212702	1879	-	F	Introduction of principles for calculating test frequencies for NR Intra-band Contiguous CA for asymmetric bands in Annex C	17.1.0

2021-06	RAN#92	R5-212703	1880	-	F	Correction of test frequencies for CA_n66B	17.1.0
2021-06	RAN#92	R5-212705	1881	-	F	Add message contents for RRM FR2 tests with reduced RB allocation	17.1.0
2021-06	RAN#92	R5-212724	1885	-	F	Correct number of HARQ processes for PDSCH	17.1.0
2021-06	RAN#92	R5-212819	1892	-	F	Correction of 4.3.1.0D for bandwidth part	17.1.0
2021-06	RAN#92	R5-212820	1893	-	F	Correction of 4.3.1.1.2 for test frequencies for NR FR1 inter-band CA configurations	17.1.0
2021-06	RAN#92	R5-212886	1897	-	F	Update of default SCS for n48 for protocol testing	17.1.0
2021-06	RAN#92	R5-212890	1898	-	F	Test frequencies definition for EN-DC band 41CA	17.1.0
2021-06	RAN#92	R5-212892	1900	-	F	Correction to NZP CSI-RS default configuration for RRM test	17.1.0
2021-06	RAN#92	R5-212921	1901	-	F	Addition of GNSS requirements for NR sidelink	17.1.0
2021-06	RAN#92	R5-212924	1904	-	F	Addition of connection diagram of NR sidelink testing	17.1.0
2021-06	RAN#92	R5-212946	1905	-	F	Updating IEs for URLLC	17.1.0
2021-06	RAN#92	R5-212986	1906	-	F	Introducing Rel-16 CA configuration CA_n28A-n41A to clause 4.3.1	17.1.0
2021-06	RAN#92	R5-213003	1907	-	F	Adding test frequency description for SUL configuration	17.1.0
2021-06	RAN#92	R5-213004	1908	-	F	Adding connection diagrams for SUL configuration with DL CA	17.1.0
2021-06	RAN#92	R5-213054	1910	-	F	Correction to PDU Session Authentication Command, PDU Session Authentication Complete and PDU Session Authentication Result messages.	17.1.0
2021-06	RAN#92	R5-213057	1912	-	F	Introduction of test frequencies for CA_n48(2A)	17.1.0
2021-06	RAN#92	R5-213150	1917	-	F	Updates to global conditions	17.1.0
2021-06	RAN#92	R5-213153	1920	-	F	Updates to PDU SESSION ESTABLISHMENT REJECT message	17.1.0
2021-06	RAN#92	R5-213154	1921	-	F	Updates to PDU SESSION MODIFICATION REJECT message	17.1.0
2021-06	RAN#92	R5-213155	1922	-	F	Updates to QoS flows	17.1.0
2021-06	RAN#92	R5-213180	1939	-	F	Update chapter 4.5.2 RRC_IDLE	17.1.0
2021-06	RAN#92	R5-213192	1940	-	F	Update chapter 4.5.4 RRC_CONNECTED	17.1.0
2021-06	RAN#92	R5-213304	1953	-	F	Correction of test frequencies for NR band n66	17.1.0
2021-06	RAN#92	R5-213307	1954	-	F	Correction of common default messages for demod FR2	17.1.0
2021-06	RAN#92	R5-213339	1956	-	F	Update PUCCH-ConfigCommon for Demod testing	17.1.0
2021-06	RAN#92	R5-213340	1957	-	F	Update message content for subband CQI reporting test cases	17.1.0
2021-06	RAN#92	R5-213400	1961	-	F	Inclusion of additional P-CSCF IP address in PDU session establishment	17.1.0
2021-06	RAN#92	R5-213409	1955	1	F	Editorial updates to test procedure titles	17.1.0
2021-06	RAN#92	R5-213416	1838	1	F	Correction of NR SL IE SL-ReportConfigList	17.1.0
2021-06	RAN#92	R5-213417	1841	1	F	Correction of NR SL IE SL-SyncConfig	17.1.0
2021-06	RAN#92	R5-213418	1848	1	F	Correction to PC5-RRC message MeasurementReportSidelink	17.1.0
2021-06	RAN#92	R5-213419	1850	1	F	Correction to PC5-RRC message RRCReconfigurationFailureSidelink	17.1.0
2021-06	RAN#92	R5-213423	1857	1	F	Updates to NETWORK SLICE-SPECIFIC AUTHENTICATION COMMAND and NETWORK SLICE-SPECIFIC AUTHENTICATION COMPLETE messages	17.1.0

2021-06	RAN#92	R5-213424	1858	1	F	Updates to NETWORK SLICE-SPECIFIC AUTHENTICATION RESULT message	17.1.0
2021-06	RAN#92	R5-213425	1924	1	F	Introduction of Always-On indication for URLLC	17.1.0
2021-06	RAN#92	R5-213439	1816	1	F	Correction to IMS call release sequences	17.1.0
2021-06	RAN#92	R5-213440	1886	1	F	Addition of Generic Test procedure for IMS MO Video call establishment in 5GC	17.1.0
2021-06	RAN#92	R5-213441	1913	1	F	Correction to Table 4.9.12.2.2-1 for IMS Emergency call establishment in 5GC without IMS emergency registration	17.1.0
2021-06	RAN#92	R5-213442	1914	1	F	Correction to Procedure for UE-requested PDU session modification after the first S1 to N1 mode change / Single-registration mode with N26	17.1.0
2021-06	RAN#92	R5-213443	1941	1	F	Update chapter 4.5.1 General	17.1.0
2021-06	RAN#92	R5-213444	1887	1	F	Addition of default contents for RRCReconfiguration-Video	17.1.0
2021-06	RAN#92	R5-213445	1888	1	F	Corrections to PDCP config	17.1.0
2021-06	RAN#92	R5-213446	1798	1	F	Update of USIM Configurations 4, 7, 8, 10, 12 and 21	17.1.0
2021-06	RAN#92	R5-213447	1854	1	F	Correction to Table 6.4.1-12 USIM Configuration 12	17.1.0
2021-06	RAN#92	R5-213448	1873	1	F	Update of default SCS for n38, n39, n40 and n50 for protocol testing	17.1.0
2021-06	RAN#92	R5-213449	1942	1	F	Update maximum number of simultaneous configured cells for FR1 and FR2 in OTA	17.1.0
2021-06	RAN#92	R5-213450	1951	1	F	Updates to FR1 and E-UTRA OTA signal level testing	17.1.0
2021-06	RAN#92	R5-213451	1802	1	F	Correction and editorials to default message content specification	17.1.0
2021-06	RAN#92	R5-213452	1915	1	F	Correction to Combinations of system information blocks	17.1.0
2021-06	RAN#92	R5-213557	1819	1	F	Addition of general procedures for NR sidelink	17.1.0
2021-06	RAN#92	R5-213558	1820	1	F	Addition of test procedure to establish sidelink unicast mode	17.1.0
2021-06	RAN#92	R5-213559	1821	1	F	Addition of test state for NR sidelink	17.1.0
2021-06	RAN#92	R5-213560	1833	1	F	Correction of NR SL IE SL-PSSCH-TxConfigList	17.1.0
2021-06	RAN#92	R5-213561	1834	1	F	Correction of NR SL IE SL-QoS-FlowIdentity	17.1.0
2021-06	RAN#92	R5-213562	1837	1	F	Correction of NR SL IE SLRB-Uu-ConfigIndex	17.1.0
2021-06	RAN#92	R5-213563	1839	1	F	Correction of NR SL IE SL-RLC-BearerConfigIndex	17.1.0
2021-06	RAN#92	R5-213564	1844	1	F	Correction of NR SL IE SL-TypeTxSync	17.1.0
2021-06	RAN#92	R5-213565	1847	1	F	Correction to PC5-RRC message MasterInformationBlockSidelink	17.1.0
2021-06	RAN#92	R5-213566	1849	1	F	Correction to PC5-RRC message RRCReconfigurationCompleteSidelink	17.1.0
2021-06	RAN#92	R5-213567	1856	1	F	Update IE SL-Thres-RSRP-List	17.1.0
2021-06	RAN#92	R5-213573	1890	1	F	Updates to NPN-Identity for Rel-16 NPN	17.1.0
2021-06	RAN#92	R5-213574	1891	1	F	Addition of System information combination for Rel-16 NPN	17.1.0
2021-06	RAN#92	R5-213580	1889	1	F	Updates to default contents of UECapabilityEnquiry message	17.1.0
2021-06	RAN#92	R5-213601	1855	1	F	Introduction of definition of common environment for R16 NR SON and MDT	17.1.0
2021-06	RAN#92	R5-213643	1918	1	F	Addition of DNN configurations for new SSTs	17.1.0
2021-06	RAN#92	R5-213644	1919	1	F	Updates to UE Policy Delivery messages	17.1.0

2021-06	RAN#92	R5-213645	1923	1	F	Updates to REGISTRATION ACCEPT message	17.1.0
2021-06	RAN#92	R5-213675	1960	1	F	Correction to procedure 4.9.9 Tracking area updating / Inter-system change from S1 mode to N1 mode in 5GMM/EMM-IDLE mode	17.1.0
2021-06	RAN#92	R5-213833	1926	1	F	Testing frequencies update for band n3	17.1.0
2021-06	RAN#92	R5-213834	1950	1	F	CR to 38.508-1 on larger quiet zone with grey-box approach	17.1.0
2021-06	RAN#92	R5-213853	1864	1	F	Correction of test frequencies for CA_n260(A-I)	17.1.0
2021-06	RAN#92	R5-213854	1862	1	F	Introduction of principles for calculating test frequencies for NR Intra-band Non-Contiguous CA in Annex C	17.1.0
2021-06	RAN#92	R5-213858	1896	1	F	Update Note about n28 Test frequency Mid range and CBW 30 MHz	17.1.0
2021-06	RAN#92	R5-213859	1925	1	F	Mid range test frequencies update in case asymmetric bandwidths	17.1.0
2021-06	RAN#92	R5-213860	1927	1	F	Testing frequencies update for band n34	17.1.0
2021-06	RAN#92	R5-213861	1928	1	F	Testing frequencies update for band n39	17.1.0
2021-06	RAN#92	R5-213862	1929	1	F	Testing frequencies update for band n53	17.1.0
2021-06	RAN#92	R5-213863	1930	1	F	Testing frequencies update for band n66	17.1.0
2021-06	RAN#92	R5-213864	1931	1	F	Testing frequencies update for band n70	17.1.0
2021-06	RAN#92	R5-213865	1932	1	F	Testing frequencies update for band n80	17.1.0
2021-06	RAN#92	R5-213866	1933	1	F	Testing frequencies update for band n81	17.1.0
2021-06	RAN#92	R5-213867	1934	1	F	Testing frequencies update for band n82	17.1.0
2021-06	RAN#92	R5-213868	1935	1	F	Testing frequencies update for band n86	17.1.0
2021-06	RAN#92	R5-213869	1937	1	F	OffsetToCarrier alignment for cases with equal low, mid and high frequency range (n30, n39, n51, n70) and editorial corrections in annex C.3.	17.1.0
2021-06	RAN#92	R5-213870	1884	1	F	Align Chapter 7 of TS 38.508-1 with Annex H of TS 38.533	17.1.0
2021-06	RAN#92	R5-213871	1944	1	F	Introduction of test frequencies for n257 for RRM Inter-freq adjacent cell	17.1.0
2021-06	RAN#92	R5-213872	1945	1	F	Introduction of test frequencies for n258 for RRM Inter-freq adjacent cell	17.1.0
2021-06	RAN#92	R5-213873	1947	1	F	Introduction of test frequencies for n260 for RRM Inter-freq adjacent cell	17.1.0
2021-06	RAN#92	R5-213874	1948	1	F	Introduction of test frequencies for n261 for RRM Inter-freq adjacent cell	17.1.0
2021-06	RAN#92	R5-213875	1863	1	F	Introduction of principles for calculating test frequencies for EN-DC configurations in Annex C	17.1.0
2021-06	RAN#92	R5-213876	1882	1	F	Add locationAndBandwidth for RRM FR2 tests with reduced RB allocation	17.1.0
2021-06	RAN#92	R5-213877	1936	1	F	Annex C: Clarifications to maximum and minimum offsetRBs	17.1.0
2021-06	RAN#92	R5-213878	1938	1	F	Annex C update to add SUL test frequencies calculation	17.1.0
2021-06	RAN#92	R5-213879	1949	1	F	Determination of test frequencies for a Mid range adjacent inter-frequency cell for FR2 RRM multicell testing in Annex C	17.1.0
2021-06	RAN#92	R5-213964	1877	1	F	Correction of test frequencies for CA_n66(2A)	17.1.0
2021-06	RAN#92	R5-213977	1946	1	F	Introduction of test frequencies for n259 for RRM Inter-freq adjacent cell	17.1.0
2021-06	RAN#92	R5-213996	1902	1	F	Addition of calculation method of NR sidelink test frequencies	17.1.0

2021-06	RAN#92	R5-213997	1903	1	F	Addition of V2X test frequencies of band n47	17.1.0
2021-06	RAN#92	R5-214017	1799	1	F	Updating test frequencies for Rel-17 EN-DC band combinations within FR1	17.1.0
2021-06	RAN#92	R5-214018	1801	1	F	Add test frequencies for R17 NR inter-band CA configurations in FR1	17.1.0
2021-06	RAN#92	R5-214019	1909	1	F	Introducing Rel-17 CA configuration CA_n28A-n79A to clause 4.3.1	17.1.0
2021-06	RAN#92	R5-214026	1809	1	F	RRC signalling for UL power boosting via suspended IBE requirements	17.1.0
2021-06	RAN#92	R5-214047	1959	1	F	Clarification on PDU configuration for RF, Demod and RRM tests	17.1.0
2021-06	RAN#92	R5-214076	1860	1	F	Update IE PDCCH-ConfigCommon for additional BWP	17.1.0
2021-06	RAN#92	R5-214107	1883	1	F	Align RRM CSI-ResourcePeriodicityAndOffset to TS 38.133	17.1.0
2021-09	RAN#93	R5-214381	1963	-	F	Correct dl_DataToUL_ACK for short DCI test cases	17.2.0
2021-09	RAN#93	R5-214436	1967	-	F	Correction to 38.508 Table 4.8.2.3-2: Reference QoS flow #2	17.2.0
2021-09	RAN#93	R5-214554	1968	-	F	Correction of default test frequencies for bands n38, n39, n40 and n50 and protocol testing	17.2.0
2021-09	RAN#93	R5-214611	1970	-	F	Correction of default test frequencies for band n48 and protocol testing	17.2.0
2021-09	RAN#93	R5-214622	1971	-	F	Editorial updates to test procedure titles	17.2.0
2021-09	RAN#93	R5-214678	1972	-	F	Correction to k1 setting for FR2 RRM	17.2.0
2021-09	RAN#93	R5-214727	1974	-	F	Introduction of test frequencies for CA_n48B	17.2.0
2021-09	RAN#93	R5-214728	1975	-	F	Corrections to UEInformationRequest and UEInformationResponse	17.2.0
2021-09	RAN#93	R5-214755	1976	-	F	Updates to System information combination for NR-DC	17.2.0
2021-09	RAN#93	R5-214800	1979	-	F	Correction to IEs for UE policy part	17.2.0
2021-09	RAN#93	R5-214808	1987	-	F	Correction to NR V2X USIM configuration	17.2.0
2021-09	RAN#93	R5-214853	1989	-	F	Introduction of test frequencies for CA_n48B and protocol testing	17.2.0
2021-09	RAN#93	R5-214900	1992	-	F	Editorial Updates to Clause. 4.4.3.1.2 for System information combination	17.2.0
2021-09	RAN#93	R5-214929	1994	-	F	Introduction of test frequencies for CA_n71(2A) for protocol testing	17.2.0
2021-09	RAN#93	R5-214947	1997	-	F	Correction to Table 6.4.1-8 USIM Configuration 8	17.2.0
2021-09	RAN#93	R5-214959	1998	-	F	Correction of test frequencies for CA_n66(2A) for protocol testing	17.2.0
2021-09	RAN#93	R5-214962	1999	-	F	Alignment of test frequency tables for CA_n48(2A), CA_n66(2A), CA_n77(2A) and CA_n78(2A)	17.2.0
2021-09	RAN#93	R5-214977	2003	-	F	Correction to default configuration-ControlResourceSet	17.2.0
2021-09	RAN#93	R5-214978	2004	-	F	Correction to default configuration-SCell CSI on PCell	17.2.0
2021-09	RAN#93	R5-215071	2006	-	F	Update to Out of Coverage procedure to trigger SL-MIMO transmission	17.2.0
2021-09	RAN#93	R5-215308	2012	-	F	Adding test frequencies for SUL band n97	17.2.0
2021-09	RAN#93	R5-215341	2015	-	F	Correction to TRS configuration for RF test cases	17.2.0
2021-09	RAN#93	R5-215456	2019	-	F	Update of 4.3.1.4.1 for test frequencies for EN-DC configurations within FR1	17.2.0
2021-09	RAN#93	R5-215462	2021	-	F	Correction of 4.3.1.0D for locationAndBandwidth in BWP	17.2.0
2021-09	RAN#93	R5-215499	2023	-	F	Introduction of V2X SST	17.2.0

2021-09	RAN#93	R5-215504	2028	-	F	Updates to Table 4.4A.5-2	17.2.0
2021-09	RAN#93	R5-215518	2029	-	F	Editorial correction: channel bandwidth and RB allocation revision in Test frequencies for CA_n260(A-I)	17.2.0
2021-09	RAN#93	R5-215530	2030	-	F	Correction on Test frequencies for DC_(n)41CA	17.2.0
2021-09	RAN#93	R5-215541	2031	-	F	Test frequencies update for CA_n257G, CA_n257H and CA_n257I	17.2.0
2021-09	RAN#93	R5-215612	2032	-	F	Correction RF E-UTRA CONNECTED state	17.2.0
2021-09	RAN#93	R5-215678	2034	-	F	RRC and NAS message handling in uplink in case of simultaneous RRC and NAS procedures	17.2.0
2021-09	RAN#93	R5-215679	2035	-	F	Enquiry of Capability and checking of UeCapabilityInformation contents for NR-DC	17.2.0
2021-09	RAN#93	R5-215689	2039	-	F	Correction to USIM Configuration 18 and 19	17.2.0
2021-09	RAN#93	R5-215691	2040	-	F	Update chapter 4.5.4 RRC_CONNECTED	17.2.0
2021-09	RAN#93	R5-215835	1964	1	F	Correct CSI-MeasConfig for test cases with 1SSB	17.2.0
2021-09	RAN#93	R5-215836	1965	1	F	Complete CSI-ReportConfig for RRM	17.2.0
2021-09	RAN#93	R5-215837	2014	1	F	Correction to CSI report configurations	17.2.0
2021-09	RAN#93	R5-215936	2005	1	F	Update of SIB2 to add messages for relaxed RRM measurement	17.2.0
2021-09	RAN#93	R5-215969	1962	1	F	Updating Test Frequencies for Rel-17 CA,DC band combinations within FR1 into TS 38.508-1	17.2.0
2021-09	RAN#93	R5-215970	1993	1	F	Introduction of test frequencies for CA_n71(2A)	17.2.0
2021-09	RAN#93	R5-215971	2008	1	F	Addition of R17 CADC configuration into 38.508-1	17.2.0
2021-09	RAN#93	R5-215972	2020	1	F	Update of 4.3.1.1.2 for NR inter-band CA configurations in FR1	17.2.0
2021-09	RAN#93	R5-216027	2016	1	F	Addition of Perf RI FR2 message contents	17.2.0
2021-09	RAN#93	R5-216070	2007	1	F	Adding connection diagram for eMIMO multi-TRP demod test cases	17.2.0
2021-09	RAN#93	R5-216079	1973	1	F	Updating test frequencies for Rel-17 inter-band EN-DC configurations	17.2.0
2021-09	RAN#93	R5-216116	2009	1	F	Updates to Test Equipment connection for Demodulation Performance and CSI reporting tests	17.2.0
2021-09	RAN#93	R5-216122	2010	1	B	Introduction of test frequencies for n24 and n99	17.2.0
2021-09	RAN#93	R5-216150	1977	1	F	Correction to Test Procedure for IMS MO and MT call release in 5GC	17.2.0
2021-09	RAN#93	R5-216151	2017	1	F	Correction to introduce Handling of PDU Session Release during switch off/Power off procedures	17.2.0
2021-09	RAN#93	R5-216152	2026	1	F	Addition of UE Configuration Update procedure	17.2.0
2021-09	RAN#93	R5-216153	2037	1	F	Corrections for IMS video call signalling	17.2.0
2021-09	RAN#93	R5-216154	2041	1	F	Correction to Table 4.6.3-142 and Table 4.6.3-79 for SFTD measurement reporting	17.2.0
2021-09	RAN#93	R5-216155	2024	1	F	Introduction of PS Data Off	17.2.0
2021-09	RAN#93	R5-216156	2025	1	F	Introduction of URSP	17.2.0
2021-09	RAN#93	R5-216157	2027	1	F	Updates to REGISTRATION messages	17.2.0
2021-09	RAN#93	R5-216158	2036	1	F	Correction to Table 4.8.2.2-1 for default Packet filter ID	17.2.0
2021-09	RAN#93	R5-216159	1969	1	F	Correction for USIM configurations	17.2.0
2021-09	RAN#93	R5-216160	2018	1	F	Updates to NR cell configurations for SIG	17.2.0

2021-09	RAN#93	R5-216161	2038	1	F	Correction to reference configurations for IMS video call signalling	17.2.0
2021-09	RAN#93	R5-216243	1991	1	F	Correction of test frequencies for CA_n66B for protocol testing	17.2.0
2021-09	RAN#93	R5-216256	2022	1	F	Introduction of MIoT SST	17.2.0
2021-09	RAN#93	R5-216263	1980	1	F	Correction to IEs for V2XP info	17.2.0
2021-09	RAN#93	R5-216264	1981	1	F	Correction to IEs for Served by E-UTRA or served by NR	17.2.0
2021-09	RAN#93	R5-216265	1982	1	F	Correction to IEs for Not served by E-UTRA and not served by NR	17.2.0
2021-09	RAN#93	R5-216266	1983	1	F	Correction to IEs for V2X service identifier to PC5 RAT and Tx profiles mapping rules	17.2.0
2021-09	RAN#93	R5-216267	1984	1	F	Correction to IEs for Privacy config	17.2.0
2021-09	RAN#93	R5-216268	1985	1	F	Correction to IEs for V2X communication over PC5 in E-UTRA-PC5	17.2.0
2021-09	RAN#93	R5-216269	1986	1	F	Correction to IEs for V2X communication over PC5 in NR-PC5	17.2.0
2021-09	RAN#93	R5-216270	1988	1	F	Correction to UE Policy Delivery msg	17.2.0
2021-09	RAN#93	R5-216284	1990	1	F	Update default message contents of LoggedMeasurementConfiguration	17.2.0
2021-09	RAN#93	R5-216320	2011	1	B	Introduction of signalling test frequencies for n24 and n99	17.2.0
2021-09	RAN#93	R5-216321	2013	1	F	Adding signalling test frequencies for SUL band n97	17.2.0
2021-09	RAN#93	R5-216327	2000	1	F	Default message content update for NR EIEI	17.2.0
2021-09	RAN#93	R5-216328	2001	1	F	Generic procedure for eCall over IMS establishment in 5GS Normal Service	17.2.0
2021-09	RAN#93	R5-216329	2002	1	F	USIM configuration for NR EIEI	17.2.0
2021-12	RAN#94	R5-216510	2047	-	F	Updating Test Frequencies for Rel-16 CA,DC band combinations within FR1 into TS 38.508-1	17.3.0
2021-12	RAN#94	R5-216530	2048	-	F	Addition of test frequencies for asymmetric channel bandwidths for n24	17.3.0
2021-12	RAN#94	R5-216603	2051	-	F	Addition of NR band n95	17.3.0
2021-12	RAN#94	R5-216636	2052	-	F	Updates on simultaneous co-existence of NR cells	17.3.0
2021-12	RAN#94	R5-216761	2053	-	F	Addition of PDCCH Search Space Ext configuration in 38.508-1	17.3.0
2021-12	RAN#94	R5-216767	2054	-	F	Updates to NETWORK SLICE-SPECIFIC AUTHENTICATION COMMAND message	17.3.0
2021-12	RAN#94	R5-216768	2055	-	F	Updates to NETWORK SLICE-SPECIFIC AUTHENTICATION COMPLETE message	17.3.0
2021-12	RAN#94	R5-216773	2059	-	F	Update IE SSB-PositionQCL-Relation	17.3.0
2021-12	RAN#94	R5-216829	2061	-	F	Correction to IMS MO emergency call release procedure	17.3.0
2021-12	RAN#94	R5-216851	2062	-	F	Correction to IE Table 7.3.1-3 - SSB-MTC	17.3.0
2021-12	RAN#94	R5-216895	2063	-	F	Correction to IE Table 4.6.3-77A - MeasObjectUTRA-FDD	17.3.0
2021-12	RAN#94	R5-216896	2064	-	F	Correction to IE Table 4.6.3-79 - MeasResults	17.3.0
2021-12	RAN#94	R5-216898	2066	-	F	Correction to IE Table 4.6.5-16 - UTRA-FDD-Q-OffsetRange	17.3.0
2021-12	RAN#94	R5-216899	2067	-	F	Correction to RRC message Table 4.6.1-8 - MobilityFromNRCommand	17.3.0
2021-12	RAN#94	R5-216905	2068	-	F	Correction to IE Table 4.6.3-62A - HighSpeedConfig	17.3.0
2021-12	RAN#94	R5-216922	2097	-	F	Update of Table 4.7.1-7-Registration Accept	17.3.0

2021-12	RAN#94	R5-217024	2101	-	F	Add Reference file	17.3.0
2021-12	RAN#94	R5-217025	2102	-	F	Correction to DIRECT LINK ESTABLISHMENT REQUEST msg	17.3.0
2021-12	RAN#94	R5-217026	2103	-	F	Correction to DIRECT LINK ESTABLISHMENT ACCEPT msg	17.3.0
2021-12	RAN#94	R5-217027	2104	-	F	Correction to DIRECT LINK MODIFICATION REQUEST msg	17.3.0
2021-12	RAN#94	R5-217028	2105	-	F	Correction to DIRECT LINK MODIFICATION ACCEPT msg	17.3.0
2021-12	RAN#94	R5-217029	2106	-	F	Correction to DIRECT LINK RELEASE REQUEST msg	17.3.0
2021-12	RAN#94	R5-217030	2107	-	F	Correction to DIRECT LINK RELEASE ACCEPT msg	17.3.0
2021-12	RAN#94	R5-217032	2109	-	F	Correction to DIRECT LINK KEEPALIVE RESPONSE msg	17.3.0
2021-12	RAN#94	R5-217035	2112	-	F	Correction to DIRECT LINK AUTHENTICATION REJECT msg	17.3.0
2021-12	RAN#94	R5-217038	2115	-	F	Correction to DIRECT LINK SECURITY MODE REJECT msg	17.3.0
2021-12	RAN#94	R5-217039	2116	-	F	Correction to DIRECT LINK REKEYING REQUEST msg	17.3.0
2021-12	RAN#94	R5-217040	2117	-	F	Correction to DIRECT LINK REKEYING RESPONSE msg	17.3.0
2021-12	RAN#94	R5-217044	2121	-	F	Correction to DIRECT LINK IDENTIFIER UPDATE REJECT msg	17.3.0
2021-12	RAN#94	R5-217045	2122	-	F	Correction to DIRECT LINK MODIFICATION REJECT msg	17.3.0
2021-12	RAN#94	R5-217095	2125	-	F	Update chapter 4.8.1 for NE-DC	17.3.0
2021-12	RAN#94	R5-217118	2128	-	F	Meas exception for TRS config in RF test cases	17.3.0
2021-12	RAN#94	R5-217243	2133	-	F	Correction to IE Table 4.6.3-127 QuantityConfig	17.3.0
2021-12	RAN#94	R5-217246	2134	-	F	Correction of spec number and addition of uncertainty value for OTA testing in section 5.2.1	17.3.0
2021-12	RAN#94	R5-217259	2135	-	F	Addition of 13 NR CA combinations to FR1 inter-band configurations table	17.3.0
2021-12	RAN#94	R5-217286	2137	-	F	Correction to IMS Emergency call establishment test procedure with IMS emergency registration	17.3.0
2021-12	RAN#94	R5-217298	2138	-	F	Addition of test frequencies for Rel-15 EN-DC configurations	17.3.0
2021-12	RAN#94	R5-217340	2139	-	F	Correction of 4.3.1.2.4.4.2 for test frequency for intra-band non-contiguous CA_n260	17.3.0
2021-12	RAN#94	R5-217366	2140	-	F	Addition of default message for 16Tx PMI reporting test cases in 5.4.2.5	17.3.0
2021-12	RAN#94	R5-217379	2141	-	F	Addition of default DCI_0_2 for URLLC	17.3.0
2021-12	RAN#94	R5-217390	2143	-	F	Update to SIG test frequencies for V2X	17.3.0
2021-12	RAN#94	R5-217430	2144	-	F	Correction to the periodicity of CSI-RS for tracking	17.3.0
2021-12	RAN#94	R5-217453	2146	-	F	Updates to 4.8.4	17.3.0
2021-12	RAN#94	R5-217527	2148	-	F	message content update for HST single tap 1Tx PDSCH test cases	17.3.0
2021-12	RAN#94	R5-217555	2153	-	F	Editorial correction in channel bandwidth clause	17.3.0
2021-12	RAN#94	R5-217587	2155	-	F	Addition of CA_n1A-n3A into TS 38.508-1	17.3.0
2021-12	RAN#94	R5-217588	2156	-	F	Introduction of test frequencies for CA_n48(2A) for protocol testing	17.3.0
2021-12	RAN#94	R5-217589	2157	-	F	Introduction of test frequencies for n38 and CBWs 25 MHz and 30 MHz	17.3.0
2021-12	RAN#94	R5-217682	2160	-	F	Editorial update to clause 4.5A.2	17.3.0
2021-12	RAN#94	R5-217735	2163	-	F	Introduction of test frequencies for CA_n260K, CA_n260L and CA_n260M	17.3.0



2021-12	RAN#94	R5-217766	2165	-	F	Correction to NR V2X default configuration	17.3.0
2021-12	RAN#94	R5-217792	2043	1	F	Update chapter 4.5.4 RRC_CONNECTED	17.3.0
2021-12	RAN#94	R5-217793	2044	1	F	Update chapter 4.5.1 General	17.3.0
2021-12	RAN#94	R5-217794	2045	1	F	Update chapter 4.5.2 RRC_IDLE	17.3.0
2021-12	RAN#94	R5-217795	2060	1	F	Addition of new generic procedure for IMS MT video call establishment	17.3.0
2021-12	RAN#94	R5-217796	2130	1	F	Adding test procedure for adding video to a speech call	17.3.0
2021-12	RAN#94	R5-217797	2136	1	F	Correction to IMS MO Video call establishment test procedure	17.3.0
2021-12	RAN#94	R5-217798	2147	1	F	Adding test procedure for removing video from an ongoing call	17.3.0
2021-12	RAN#94	R5-217799	2042	1	F	Update RRCReconfiguration	17.3.0
2021-12	RAN#94	R5-217800	2046	1	F	Update IE CellAccessRelatedInfo	17.3.0
2021-12	RAN#94	R5-217801	2127	1	F	Update RRCReconfigurationComplete	17.3.0
2021-12	RAN#94	R5-217877	2098	1	F	Correction to default configuration of SIB12	17.3.0
2021-12	RAN#94	R5-217878	2099	1	F	Addition of default configuration of DCI and SCI for NR SL test	17.3.0
2021-12	RAN#94	R5-217879	2100	1	F	Addition of power level setting for NR SL test	17.3.0
2021-12	RAN#94	R5-217880	2108	1	F	Correction to DIRECT LINK KEEPALIVE REQUEST msg	17.3.0
2021-12	RAN#94	R5-217881	2110	1	F	Correction to DIRECT LINK AUTHENTICATION REQUEST msg	17.3.0
2021-12	RAN#94	R5-217882	2111	1	F	Correction to DIRECT LINK AUTHENTICATION RESPONSE msg	17.3.0
2021-12	RAN#94	R5-217883	2113	1	F	Correction to DIRECT LINK SECURITY MODE COMMAND msg	17.3.0
2021-12	RAN#94	R5-217884	2114	1	F	Correction to DIRECT LINK SECURITY MODE COMPLETE msg	17.3.0
2021-12	RAN#94	R5-217885	2118	1	F	Correction to DIRECT LINK IDENTIFIER UPDATE REQUEST msg	17.3.0
2021-12	RAN#94	R5-217886	2119	1	F	Correction to DIRECT LINK IDENTIFIER UPDATE ACCEPT msg	17.3.0
2021-12	RAN#94	R5-217887	2120	1	F	Correction to DIRECT LINK IDENTIFIER UPDATE ACK msg	17.3.0
2021-12	RAN#94	R5-217888	2123	1	F	Correction to DIRECT LINK ESTABLISHMENT REJECT	17.3.0
2021-12	RAN#94	R5-217933	2050	1	F	Updates to UTRA signal levels in FR1 and OTA environment	17.3.0
2021-12	RAN#94	R5-217943	2124	1	F	Update Radio resource control information elements for NR 2-step RACH test cases	17.3.0
2021-12	RAN#94	R5-217944	2161	1	F	Test Procedure for eCall over IMS establishment in 5GS eCall only Support	17.3.0
2021-12	RAN#94	R5-217949	2056	1	F	Update IE MeasObjectNR	17.3.0
2021-12	RAN#94	R5-217950	2057	1	F	Update IE ServingCellConfigCommon	17.3.0
2021-12	RAN#94	R5-217951	2058	1	F	Update IE ServingCellConfigCommonSIB	17.3.0
2021-12	RAN#94	R5-218220	2158	1	F	Correction of test frequencies for CA_n257x	17.3.0
2021-12	RAN#94	R5-218221	2129	1	F	Add meas objects and report config for inter-RAT	17.3.0
2021-12	RAN#94	R5-218267	2049	1	F	Addition of NR inter-band CA configurations for CA_n260-n261 in FR2	17.3.0
2021-12	RAN#94	R5-218268	2151	1	F	Addition of R16 FR1+FR2 CADC configuration into 38.508-1	17.3.0
2021-12	RAN#94	R5-218269	2159	1	F	Addition of test frequencies for R16 EN-DC FR2 configurations with n260	17.3.0
2021-12	RAN#94	R5-218335	2065	1	F	Correction to IE Table 4.6.3-141 - ReportConfigInterRAT	17.3.0

2021-12	RAN#94	R5-218361	2152	1	F	Addition of test frequencies for n3 CBW 50MHz	17.3.0
2021-12	RAN#94	R5-218414	2166	1	F	Update to demod parameter CSI-RS-ResourceMapping to add 1Tx condition	17.3.0
2021-12	RAN#94	R5-218415	2164	1	F	Update to n71 test frequencies for LTE-NR coex test cases	17.3.0
2021-12	RAN#94	R5-218451	2132	1	F	Introduction_of_test_frequencies_for_new_EN-DC_comb_within_FR1	17.3.0
2021-12	RAN#94	R5-218452	2149	1	F	Introduction of test frequencies for CA_n48B BCS1	17.3.0
2021-12	RAN#94	R5-218470	2150	1	F	Introduction of test frequencies for CA_n48B BCS2	17.3.0
2022-03	RAN#95	R5-220090	2171	-	F	Correction of clause title typos of 4.3.1.1.1.x	17.4.0
2022-03	RAN#95	R5-220094	2172	-	F	Correction of test channel bandwidth for n38	17.4.0
2022-03	RAN#95	R5-220186	2186	-	F	Editorial update of test procedure 4.9.15	17.4.0
2022-03	RAN#95	R5-220206	2188	-	F	Addition of test frequencies for CA_n3A-n41A with and without UL configuration	17.4.0
2022-03	RAN#95	R5-220240	2189	-	F	Corrections to 4.9.17 on IMS MO call release	17.4.0
2022-03	RAN#95	R5-220248	2191	-	F	Correct TDD pattern for FR2 RF 60kHz SCS	17.4.0
2022-03	RAN#95	R5-220271	2192	-	F	Addition of test frequencies for CA_n41A-n79A with UL configuration	17.4.0
2022-03	RAN#95	R5-220308	2195	-	F	Introduction of test frequencies for CA_n261M	17.4.0
2022-03	RAN#95	R5-220309	2196	-	F	Correction of NR inter-band CA configurations for CA_n260-n261 in FR2	17.4.0
2022-03	RAN#95	R5-220311	2197	-	F	Introduction of test frequencies for Rel-16 inter-band EN-DC two band combinations within FR1	17.4.0
2022-03	RAN#95	R5-220374	2198	-	F	Introduction of test frequencies for additional Rel-17 EN-DC inter-band configurations	17.4.0
2022-03	RAN#95	R5-220449	2199	-	F	Update of test frequencies for protocol testing and NR inter-band CA	17.4.0
2022-03	RAN#95	R5-220452	2200	-	F	Correction to RF E-UTRA RRC_CONNECTED procedure	17.4.0
2022-03	RAN#95	R5-220541	2204	-	F	Introduction of test frequencies for n25 adding CBWs 25MHz, 30MHz, 40MHz	17.4.0
2022-03	RAN#95	R5-220567	2206	-	F	Addition of default AT command and information element for NR SL test	17.4.0
2022-03	RAN#95	R5-220569	2208	-	F	Correction to test procedures for establishing unicast link	17.4.0
2022-03	RAN#95	R5-220579	2218	-	F	Correction to SIB12	17.4.0
2022-03	RAN#95	R5-220580	2219	-	F	Correction to IE SL-BWP-Config and SL-BWP-ConfigCommon	17.4.0
2022-03	RAN#95	R5-220582	2221	-	F	Correction to IE SL-ResourcePool	17.4.0
2022-03	RAN#95	R5-220590	2229	-	F	Correction to V2X service identifier to PC5 RAT and Tx profiles mapping rule	17.4.0
2022-03	RAN#95	R5-220591	2230	-	F	Correction to V2X frequencies	17.4.0
2022-03	RAN#95	R5-220632	2231	-	F	Introduction_of_test_frequencies_for_new_EN-DC_comb_within_FR1	17.4.0
2022-03	RAN#95	R5-220643	2232	-	F	Introduction of test frequencies for n2 adding CBWs 25MHz, 30MHz, 40MHz	17.4.0
2022-03	RAN#95	R5-220653	2234	-	F	Addition of test frequencies for CA_n41C-n79A with and without UL configuration	17.4.0
2022-03	RAN#95	R5-220725	2237	-	F	Addition of default configuration for NR SL RRM test	17.4.0

2022-03	RAN#95	R5-220760	2238	-	F	Introduction of test frequencies for n5 adding CBW 25MHz	17.4.0
2022-03	RAN#95	R5-220761	2239	-	F	Editorial corrections for NR CA configuration CA_n48B	17.4.0
2022-03	RAN#95	R5-220771	2242	-	F	Introduction of test frequencies for CA_n66(2A) BCS1 and BCS2	17.4.0
2022-03	RAN#95	R5-220774	2243	-	F	Corrections to test procedures 4.9.26 and 4.9.27	17.4.0
2022-03	RAN#95	R5-220779	2245	-	F	Update of test frequencies for n66 and asymmetric channel bandwidth combination set 1	17.4.0
2022-03	RAN#95	R5-220788	2246	-	F	Addition of V2X connection diagram	17.4.0
2022-03	RAN#95	R5-220797	2249	-	F	Addition of connection diagram for 16Tx	17.4.0
2022-03	RAN#95	R5-220808	2250	-	F	Update to MAC-CellGroupConfig	17.4.0
2022-03	RAN#95	R5-220847	2253	-	F	Addition of test frequency n53 in Table 6.2.3.1-4	17.4.0
2022-03	RAN#95	R5-220860	2254	-	F	Introducing Rel-17 2 band CA configurations for n24 and n41 to clause 4.3.1	17.4.0
2022-03	RAN#95	R5-220861	2255	-	F	Introducing Rel-17 2 band CA configurations for n24 and n48 to clause 4.3.1	17.4.0
2022-03	RAN#95	R5-220862	2256	-	F	Introducing Rel-17 2 band CA configurations for n24 and n77 to clause 4.3.1	17.4.0
2022-03	RAN#95	R5-220916	2259	-	F	Addition of PRB-Id setting for RRM test cases	17.4.0
2022-03	RAN#95	R5-220955	2262	-	F	Updates to IE UE Route Selection Policy Rules	17.4.0
2022-03	RAN#95	R5-220960	2264	-	F	Addition of test frequency for DC_7C_n78A	17.4.0
2022-03	RAN#95	R5-220972	2265	-	F	Addition of test frequencies for Rel-16 EN-DC configurations	17.4.0
2022-03	RAN#95	R5-220974	2266	-	F	Correction to applicability for protocol testing for inter-band EN-DC configurations	17.4.0
2022-03	RAN#95	R5-221070	2269	-	F	USIM configurations for NR EIEI test cases	17.4.0
2022-03	RAN#95	R5-221104	2270	-	F	Addition of new USIM configuration for RACS test case	17.4.0
2022-03	RAN#95	R5-221132	2271	-	F	Updating channel bandwidths for NR band n97	17.4.0
2022-03	RAN#95	R5-221133	2272	-	F	Updating test frequencies for NR band n97	17.4.0
2022-03	RAN#95	R5-221167	2275	-	F	Update to Ciphering algo IE for FR1 NSA SDR	17.4.0
2022-03	RAN#95	R5-221176	2276	-	F	Introduction of test frequencies for NR CA configurations CA_n5A-n7A, CA_n5A-n78A and CA_n7A-n78A	17.4.0
2022-03	RAN#95	R5-221186	2278	-	F	Introduction of test frequencies for DC_1A_n5A, DC_1A_n7A, DC_3A_n5A, DC_7A_n5A, DC_28A_n7A	17.4.0
2022-03	RAN#95	R5-221255	2282	-	F	Update K1 value for RRM TDD FR1 30kHz RMC	17.4.0
2022-03	RAN#95	R5-221264	2284	-	F	Correction of csi-ResourceConfigId	17.4.0
2022-03	RAN#95	R5-221265	2285	-	F	Correction of DMRS-DownlinkConfig	17.4.0
2022-03	RAN#95	R5-221292	2287	-	F	Addition of Setup Diagram for RRM multicell 2x2 test cases	17.4.0
2022-03	RAN#95	R5-221369	2289	-	F	Update to PUCCH resource configuration for Scell CSI	17.4.0
2022-03	RAN#95	R5-221377	2290	-	F	Addition of Test frequencies for NE-DC band configurations for signalling testing	17.4.0
2022-03	RAN#95	R5-221389	2291	-	F	Correction to SIG test frequencies for intra-band non-contiguous CA	17.4.0
2022-03	RAN#95	R5-221413	2293	-	F	Update IE SDAP-Config	17.4.0
2022-03	RAN#95	R5-221419	2173	1	F	Update chapter 4.5.1 General	17.4.0

2022-03	RAN#95	R5-221420	2233	1	F	Correction to RRCReconfiguration message with condition REEST	17.4.0
2022-03	RAN#95	R5-221421	2277	1	F	Correction to the BWP-DownlinkDedicated	17.4.0
2022-03	RAN#95	R5-221422	2280	1	F	NE-DC support for UECapabilityEnquiry and UECapabilityInformation messages	17.4.0
2022-03	RAN#95	R5-221423	2194	1	F	Correction to IMS MO speech call establishment generic procedure	17.4.0
2022-03	RAN#95	R5-221424	2176	1	F	Correction to test procedure 4.9.11 IMS Emergency call or eCall over IMS establishment in 5GC with IMS emergency registration	17.4.0
2022-03	RAN#95	R5-221425	2177	1	F	Correction to test procedure 4.9.12 IMS Emergency call or eCall over IMS establishment in 5GC without IMS emergency registration	17.4.0
2022-03	RAN#95	R5-221426	2263	1	F	Updates to IE Route Selection Descriptors	17.4.0
2022-03	RAN#95	R5-221491	2168	1	F	Update of NR CA configurations for Protocol testing with NR CA 3CC	17.4.0
2022-03	RAN#95	R5-221492	2169	1	F	Update of inter-band cell environment for Protocol testing with NR CA 3CC	17.4.0
2022-03	RAN#95	R5-221493	2286	1	F	Modification of common test environment for EHC testing	17.4.0
2022-03	RAN#95	R5-221499	2207	1	F	Correction to generic test procedures for NR SL MIMO tests	17.4.0
2022-03	RAN#95	R5-221500	2209	1	F	Addition of test procedures for releasing unicast link	17.4.0
2022-03	RAN#95	R5-221501	2210	1	F	Addition of test procedures for data exchanging on unicast link	17.4.0
2022-03	RAN#95	R5-221502	2211	1	F	Correction to PC5 RRC message MasterInformationBlockSidelink	17.4.0
2022-03	RAN#95	R5-221503	2212	1	F	Correction to PC5 RRC message MeasurementReportSidelink	17.4.0
2022-03	RAN#95	R5-221504	2213	1	F	Correction to PC5 RRC message RRCReconfigurationSidelink	17.4.0
2022-03	RAN#95	R5-221505	2214	1	F	Correction to PC5 RRC message RRCReconfigurationCompleteSidelink	17.4.0
2022-03	RAN#95	R5-221506	2215	1	F	Correction to PC5 RRC message RRCReconfigurationFailureSidelink	17.4.0
2022-03	RAN#95	R5-221507	2216	1	F	Correction to PC5 RRC message UECapabilityEnquirySidelink	17.4.0
2022-03	RAN#95	R5-221508	2217	1	F	Correction to PC5 RRC message UECapabilityInformationSidelink	17.4.0
2022-03	RAN#95	R5-221509	2222	1	F	Correction to V2X message DIRECT LINK ESTABLISHMENT REQUEST	17.4.0
2022-03	RAN#95	R5-221510	2223	1	F	Correction to V2X message DIRECT LINK ESTABLISHMENT ACCEPT	17.4.0
2022-03	RAN#95	R5-221511	2224	1	F	Correction to V2X message DIRECT LINK RELEASE REQUEST	17.4.0
2022-03	RAN#95	R5-221512	2225	1	F	Correction to V2X message DIRECT LINK RELEASE ACCEPT	17.4.0
2022-03	RAN#95	R5-221513	2226	1	F	Correction to V2X message DIRECT LINK KEEPALIVE REQUEST	17.4.0
2022-03	RAN#95	R5-221514	2227	1	F	Correction to V2X message DIRECT LINK SECURITY MODE COMMAND	17.4.0
2022-03	RAN#95	R5-221515	2228	1	F	Correction to V2X message DIRECT LINK SECURITY MODE COMPLETE	17.4.0
2022-03	RAN#95	R5-221584	2251	1	F	Addition of default DCI_1_2 for URLLC	17.4.0
2022-03	RAN#95	R5-221591	2203	1	F	Addition of positioning system information blocks associated parameters	17.4.0
2022-03	RAN#95	R5-221667	2258	1	F	Correction to test frequency range for n14	17.4.0
2022-03	RAN#95	R5-221668	2268	1	F	Correction of 4.3.1.2.4.4.2 for test frequencies for CA_n260_A-I	17.4.0

2022-03	RAN#95	R5-221669	2236	1	F	Correction to default RRC IEs for RRM	17.4.0
2022-03	RAN#95	R5-221670	2167	1	F	Updated the related RRC information for DSS	17.4.0
2022-03	RAN#95	R5-221671	2190	1	F	Added FR2 connection diagram using modulated interferer	17.4.0
2022-03	RAN#95	R5-221672	2244	1	F	Correction of 4.1.1 on removal of lower humidity limit in NR test environment	17.4.0
2022-03	RAN#95	R5-221757	2267	1	F	Correction of 4.3.1.1.5.48 for test frequencies of CA_n48_2A	17.4.0
2022-03	RAN#95	R5-221787	2283	1	F	Update of mid test channel bandwidth for band n25	17.4.0
2022-03	RAN#95	R5-221815	2247	1	F	Update to NR sidelink preconfiguration	17.4.0
2022-03	RAN#95	R5-221816	2248	1	F	Update to GNSS configuration for NR sidelink	17.4.0
2022-03	RAN#95	R5-221869	2273	1	F	Updating test frequencies for NR band n1	17.4.0
2022-03	RAN#95	R5-221871	2185	1	F	Add test frequencies for R17 NR inter-band CA configurations in FR1	17.4.0
2022-03	RAN#95	R5-221872	2187	1	F	Addition of test frequencies for NE-DC configurations DC_n28A_3A, DC_n28A_3C, DC_n28A_39A, DC_n28A_39C	17.4.0
2022-03	RAN#95	R5-221873	2202	1	F	Update of protocol testing applicability for 3CC inter-band NR DC configurations	17.4.0
2022-03	RAN#95	R5-221874	2261	1	F	Addition of several NR CA combinations to FR1 inter-band configurations table	17.4.0
2022-03	RAN#95	R5-222039	2205	1	F	Correction to cl 4.5.3 RRC_INACTIVE generic procedure	17.4.0
2022-06	RAN#96	R5-222122	2294	-	F	Correction for Procedure for UE-requested PDU session modification after the first S1 to N1 mode change	17.5.0
2022-06	RAN#96	R5-222173	2296	-	F	Introduction of test frequencies for CA_n77C BCS0 and BCS1	17.5.0
2022-06	RAN#96	R5-222175	2297	-	F	Introduction of test frequencies for CA_n77C for protocol testing	17.5.0
2022-06	RAN#96	R5-222283	2300	-	F	Introduction of test frequencies for Rel-16 inter-band EN-DC three band combinations within FR1	17.5.0
2022-06	RAN#96	R5-222308	2302	-	F	Introduction of NR-DC in FR1 for test setup diagrams	17.5.0
2022-06	RAN#96	R5-222329	2303	-	F	Correction of test frequencies for CA_n66(2A) BCS1 and BCS2	17.5.0
2022-06	RAN#96	R5-222380	2308	-	F	Updating RRCReconfiguration and RadioBearerConfig for NR-DC and NE-DC	17.5.0
2022-06	RAN#96	R5-222431	2310	-	F	Correction to message contents for CQI reporting	17.5.0
2022-06	RAN#96	R5-222460	2312	-	F	Updates to REGISTRATION ACCEPT message	17.5.0
2022-06	RAN#96	R5-222461	2313	-	F	Updates to Configuration Update Command message	17.5.0
2022-06	RAN#96	R5-222462	2314	-	F	Updates to Registration Reject message	17.5.0
2022-06	RAN#96	R5-222463	2315	-	F	Updates to De-registration Request message	17.5.0
2022-06	RAN#96	R5-222464	2316	-	F	Update of Combinations of system information blocks for NE-DC	17.5.0
2022-06	RAN#96	R5-222502	2317	-	F	Addition of test frequency for performance test cases	17.5.0
2022-06	RAN#96	R5-222503	2318	-	F	Addition of locationAndBandwidth for BW 45 MHz	17.5.0
2022-06	RAN#96	R5-222512	2319	-	F	Correction to generic procedure 4.9.28	17.5.0
2022-06	RAN#96	R5-222513	2320	-	F	Editorial update RRCReconfiguration	17.5.0
2022-06	RAN#96	R5-222537	2321	-	F	Corrections to Table 7.3.1-12G	17.5.0
2022-06	RAN#96	R5-222565	2324	-	F	Update IE P-Max	17.5.0

2022-06	RAN#96	R5-222566	2325	-	F	Editorial update IE FreqBandList	17.5.0
2022-06	RAN#96	R5-222567	2326	-	F	Editorial update IE CellGroupConfig	17.5.0
2022-06	RAN#96	R5-222568	2327	-	F	Editorial update IE CellGroupId	17.5.0
2022-06	RAN#96	R5-222570	2328	-	F	Editorial update IE PDCCH-ConfigCommon	17.5.0
2022-06	RAN#96	R5-222572	2329	-	F	Addition of CA configuration for CA_n29A-n71A	17.5.0
2022-06	RAN#96	R5-222617	2331	-	F	Addition of default message contents for NR SL Demod	17.5.0
2022-06	RAN#96	R5-222647	2338	-	F	Correction to sidelink IE SL-ReportConfigList	17.5.0
2022-06	RAN#96	R5-222650	2341	-	F	Correction to general functional requirements for RedCap test	17.5.0
2022-06	RAN#96	R5-222657	2344	-	F	Editorial update IE SCellIndex	17.5.0
2022-06	RAN#96	R5-222818	2346	-	F	Correction to V2X message	17.5.0
2022-06	RAN#96	R5-222836	2354	-	F	Clarification of Annex C for calculation of SSB and CORESET#0 for PCells	17.5.0
2022-06	RAN#96	R5-222876	2370	-	F	Removing redundant ciphering algorithm for SDR testing	17.5.0
2022-06	RAN#96	R5-222917	2372	-	F	Connection diagram for 1x2 nDLCA Demodulation and CSI cases	17.5.0
2022-06	RAN#96	R5-222924	2373	-	F	Addition of connection diagram for Tx Diversity support	17.5.0
2022-06	RAN#96	R5-222933	2374	-	F	Update of auxiliary procedure 4.5A.2B	17.5.0
2022-06	RAN#96	R5-223025	2376	-	F	Update of NR inter-band CA configurations in FR1	17.5.0
2022-06	RAN#96	R5-223067	2378	-	F	Addition of test frequency for NR inter-band CA configurations including n1	17.5.0
2022-06	RAN#96	R5-223072	2379	-	F	Introduction of test frequencies for CA_n258G for protocol testing	17.5.0
2022-06	RAN#96	R5-223084	2382	-	F	Corrections to usages of Annex A.6 of TS 34.229-5	17.5.0
2022-06	RAN#96	R5-223126	2397	-	F	Introducing band configuration DC_20A_n257A	17.5.0
2022-06	RAN#96	R5-223158	2399	-	F	Editorial update IE ServCellIndex	17.5.0
2022-06	RAN#96	R5-223197	2401	-	F	Introduction of test frequencies for additional Rel-17 NR CA and EN-DC inter-band configurations	17.5.0
2022-06	RAN#96	R5-223222	2403	-	F	Correction to 4.3.1.1.2.1 on test frequencies for NR inter-band CA configurations in FR1 with two bands	17.5.0
2022-06	RAN#96	R5-223223	2404	-	F	Correction to 4.3.1.1.2.2 on test frequencies for NR inter-band CA configurations in FR1 with three bands	17.5.0
2022-06	RAN#96	R5-223224	2405	-	F	Correction to 4.3.1.1.5.66 on test frequencies for NR intra-band non-contiguous CA configurations of CA_n66 with class 2A	17.5.0
2022-06	RAN#96	R5-223225	2406	-	F	Correction to 4.3.1.1.5.71 on test frequencies for NR intra-band non-contiguous CA configurations of CA_n71 with class 2A	17.5.0
2022-06	RAN#96	R5-223229	2410	-	F	Correction to 4.3.1.4.1.3 on test frequencies for inter-band EN-DC R17 configurations with three bands	17.5.0
2022-06	RAN#96	R5-223234	2411	-	F	Editorial correction to 4.3.1.2.2 on test frequencies for NR inter-band CA configurations in FR2 for CA_n260-n261	17.5.0
2022-06	RAN#96	R5-223250	2412	-	F	Hardcoding USIM configurations	17.5.0
2022-06	RAN#96	R5-223341	2375	1	F	Update of Test procedure for IMS MO Emergency call release	17.5.0
2022-06	RAN#96	R5-223359	2332	1	F	Addition of test frequency for NR SL concurrent	17.5.0
2022-06	RAN#96	R5-223360	2333	1	F	Correction to default configuration of SCI	17.5.0
2022-06	RAN#96	R5-223361	2334	1	F	Correction to sidelink IE SL-BWP-PoolConfig	17.5.0

2022-06	RAN#96	R5-223362	2335	1	F	Correction to sidelink IE SL-BWP-PoolConfigCommon	17.5.0
2022-06	RAN#96	R5-223363	2336	1	F	Correction to sidelink IE SL-FreqConfig	17.5.0
2022-06	RAN#96	R5-223364	2337	1	F	Correction to sidelink IE SL-FreqConfigCommon	17.5.0
2022-06	RAN#96	R5-223365	2339	1	F	Correction to test procedures for unicast link establishment	17.5.0
2022-06	RAN#96	R5-223387	2330	1	F	Addition of scheduling information for positioning system information blocks	17.5.0
2022-06	RAN#96	R5-223399	2295	1	F	Addition of SIB11 to common environment for early measurements	17.5.0
2022-06	RAN#96	R5-223400	2414	1	F	Modification of SIB1 in common environment for idle/inactive measurements	17.5.0
2022-06	RAN#96	R5-223410	2340	1	F	Addition of abbreviations for RedCap test	17.5.0
2022-06	RAN#96	R5-223413	2380	1	F	Updates to Test procedure 4.9.15	17.5.0
2022-06	RAN#96	R5-223414	2307	1	F	Editorial updates to SIBs	17.5.0
2022-06	RAN#96	R5-223415	2381	1	F	Updates to Data-off condition for PDU SESSION ESTABLISHMENT REQUEST message	17.5.0
2022-06	RAN#96	R5-223416	2299	1	F	Resolving test frequency for n53 10 Mhz CBW	17.5.0
2022-06	RAN#96	R5-223417	2353	1	F	Correction to Combinations of system information blocks	17.5.0
2022-06	RAN#96	R5-223480	2402	1	F	Corrections on mandatory channel bandwidths after Rel-15	17.5.0
2022-06	RAN#96	R5-223602	2415	-	F	Correction to 4.3.1.4.1.3 on test frequencies for DC_1A-28A_n78C	17.5.0
2022-06	RAN#96	R5-223649	2398	1	F	Introduction of test frequencies for 3 band EN-DC configurations	17.5.0
2022-06	RAN#96	R5-223650	2400	1	F	Introduction of test frequencies for additional Rel-16 NR CA DC and EN-DC inter-band configurations	17.5.0
2022-06	RAN#96	R5-223651	2407	1	F	Correction to 4.3.1.1.5.77 on test frequencies for NR intra-band non-contiguous CA configurations of CA_n77 with class 2A	17.5.0
2022-06	RAN#96	R5-223652	2408	1	F	Correction to 4.3.1.1.5.78 on test frequencies for NR intra-band non-contiguous CA configurations of CA_n78 with class 2A	17.5.0
2022-06	RAN#96	R5-223653	2409	1	F	Correction to 4.3.1.4.1.3 on test frequencies for inter-band EN-DC R16 configurations	17.5.0
2022-06	RAN#96	R5-223755	2301	1	F	Introduction of test frequencies for NR-DC in FR1	17.5.0
2022-06	RAN#96	R5-223784	2371	1	F	Addition of RedCap default test channel bandwidth	17.5.0
2022-06	RAN#96	R5-223792	2322	1	F	Correction to test frequency for n53	17.5.0
2022-06	RAN#96	R5-223793	2369	1	F	Clarification of PCC and SCC configuration for CA test cases	17.5.0
2022-06	RAN#96	R5-223795	2323	1	F	CR on Permitted Methodologies and Applicability	17.5.0
2022-06	RAN#96	R5-223796	2377	1	F	Add new messages and procedure for test function to limit Pcell Power	17.5.0

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# History

<b>Document history</b>		
V17.4.0	May 2022	Publication
V17.5.0	September 2022	Publication