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Technical Specification

3rd Generation Partnership Project;

Technical Specification Group Radio Access Network;

NR;

User Equipment (UE) conformance specification;

Applicability of radio transmission, radio reception and radio resource management test cases

(Release 18)

** 

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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

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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 one part of a multi-part Technical Specification (TS) covering the New Radio (NR) User Equipment (UE) conformance specification, which is divided in the following parts:

3GPP TS 38.521-1 [1]: NR; User Equipment (UE) conformance specification; Radio transmission and reception; Part 1: Range 1 Standalone;

3GPP TS 38.521-2 [2]: NR; User Equipment (UE) conformance specification; Radio transmission and reception; Part 2: Range 2 Standalone;

3GPP TS 38.521-3 [3]: NR; User Equipment (UE) conformance specification; Radio transmission and reception; Part 3: Range 1 and Range 2 Interworking operation with other radios;

3GPP TS 38.521-4 [4]: NR; User Equipment conformance specification; Radio transmission and reception; Part 4: Performance;

**3GPP TS 38.522: NR; User Equipment (UE) conformance specification; Applicability of RF and RRM test cases;**

3GPP TS 38.533 [5]: NR; User Equipment (UE) conformance specification; Radio resource management;

# 1 Scope

The present document specifies the recommended applicability statement and completion status for the test cases included in 3GPP TS 38.521-1 [1], TS 38.521-2 [2], TS 38.521-3 [3], TS 38.521-4 [4] and TS 38.533 [5]. These applicability statements are based on the features implemented in the UE.

Special conformance testing functions can be found in 3GPP TS 38.509 [6] and the common test environments are included in 3GPP TS 38.508-1 [7]. Common implementation conformance statement (ICS) proforma can be found in 3GPP TS 38.508-2 [8].

The present document is valid for UE implemented according to 3GPP releases starting from Release 15 up to the Release indicated on the cover page of the present document.

# 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 unless the context in which the reference is made suggests a different Release is relevant (information on the applicable release in a particular context can be found in e.g. test case title, description or applicability, message description or content).

[1] 3GPP TS 38.521-1: NR; User Equipment (UE) conformance specification; Radio transmission and reception; Part 1: Range 1 Standalone

[2] 3GPP TS 38.521-2: NR; User Equipment (UE) conformance specification; Radio transmission and reception; Part 2: Range 2 Standalone

[3] 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

[4] 3GPP TS 38.521-4: NR; User Equipment conformance specification; Radio transmission and reception; Part 4: Performance

[5] 3GPP TS 38.533: NR; User Equipment (UE) conformance specification; Radio resource management

[6] 3GPP TS 38.509: 5GS; Special conformance testing functions for User Equipment (UE)

[7] 3GPP TS 38.508-1: 5GS; User Equipment (UE) conformance specification; Part 1: Common test environment

[8] 3GPP TS 38.508-2: 5GS; User Equipment (UE) conformance specification; Part 2: Common Implementation Conformance Statement (ICS) proforma

[9] 3GPP TR 21.905: Vocabulary for 3GPP Specifications

[10] 3GPP TS 36.521-2: Evolved Universal Terrestrial Radio Access (E-UTRA); User Equipment (UE) conformance specification; Radio transmission and reception; Part 2: Implementation Conformance Statement (ICS)

[11] 3GPP TS 38.331: NR; Radio Resource Control (RRC) protocol specification

# 3 Definitions, symbols and abbreviations

## 3.1 Definitions

For the purposes of the present document, the terms and definitions given in TR 21.905 [9] 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 [9].

**DL\_*n*CC:** DL\_*n*CC(*table\_index*) includes all supported *n*-carrier CA/DC configurations in Table *table\_index* in TS 38.508-2 [8].

**DL\_NR\_*n*CC:** DL\_NR\_*n*CC(*table\_index*) includes all supported DC configurations with *n*-carrier NR DL CA configuration in Table *table\_index* in TS 38.508-2 [8].

**EIRP(Link=Link angle, Meas=Link angle):** measurement of the UE such that the link angle is aligned with the measurement angle. EIRP (indicator to be measured) can be replaced by EIS, Frequency, EVM, carrier Leakage, In-band emission and OBW. Beam peak search grids, TX beam peak direction, and RX beam peak direction can be selected to describe Link.

**EIRP(Link=Link angle, Meas=beam peak direction):** measurement of the EIRP of the UE such that the measurement angle is aligned with the beam peak direction within an acceptable measurement error uncertainty.

**Implementation Conformance Statement (ICS):** statement made by the supplier of an implementation or system claimed to conform to a given specification, stating which capabilities have been implemented

**ICS proforma:** document, in the form of a questionnaire, which when completed for an implementation or system becomes an ICS

**Implementation extra Information for Testing (IXIT):** A statement made by a supplier or implementer of an UEUT which contains or references all of the information (in addition to that given in the ICS) related to the UEUT and its testing environment, which will enable the test laboratory to run an appropriate test suite against the UEUT

**Inter-band carrier aggregation:** Carrier aggregation of component carriers in different operating bands.

NOTE: Carriers aggregated in each band can be contiguous or non-contiguous.

**Intra-band contiguous carrier aggregation:** Contiguous carriers aggregated in the same operating band.

**Intra-band non-contiguous carrier aggregation:** Non-contiguous carriers aggregated in the same operating band.

**IXIT proforma:** A document, in the form of a questionnaire, which when completed for an UEUT becomes an IXIT

**Protocol Implementation Conformance Statement (PICS):** An ICS for an implementation or system claimed to conform to a given protocol specification

**Protocol Implementation eXtra Information for Testing (PIXIT):** An IXIT related to testing for conformance to a given protocol specification

**Static conformance review**: A review of the extent to which the static conformance requirements are claimed to be supported by the UEUT, by comparing the answers in the ICS(s) with the static conformance requirements expressed in the relevant specification(s)

**TRP(Link=**Link **angle):** measurement of the TRP of the UE such that the measurement angle is aligned with the beam peak direction within an acceptable measurement uncertainty. TX beam peak direction and RX beam peak direction can be selected to describe Link.

NOTE: For requirements based on EIRP/EIS, the radiated interface boundary is associated to the far-field region

**UL:** UL(*table\_index*) includes all supported CA Configurations where at least one UL CA configuration was declared in column "Supported CA Bandwidth Class(es) in UL" in Table *table\_index* in TS 38.508-2 [8].

**UL\_*n*CC:** UL\_*n*CC(*table\_index*) includes all supported CA Configurations where at least one *n*-carrier UL CA configuration was declared in column "Supported CA Bandwidth Class(es) in UL" in Table *table\_index* in TS 38.508-2 [8].

**UL\_NR\_*n*CC:** UL\_NR\_*n*CC(*table\_index*) includes all supported DC Configurations where at least one DC configuration with *n*-carrier NR UL CA configuration was declared in column "Supported EN-DC Bandwidth Class(es) in UL" in Table *table\_index* in TS 38.508-2 [8].

**ULTxSwitching:** ULTxSwitching(*table\_index*) includes all supported CA/DC/SUL Configurations where at least one uplink band pair was declared in column “Supported ULTxSwitching Band Pair" in Table *table\_index* in TS 38.508-2 [8].

## 3.2 Symbols

No specific symbols have been identified so far.

## 3.3 Abbreviations

For the purposes of the present document, the abbreviations given in TR 21.905 [9] 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 [9].

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

5GS 5G System

ACLR Adjacent Channel Leakage Ratio

AWGN Additive White Gaussian Noise

BFD Beam Failure Detection

BPSK Binary Phase Shift Keying

BWP Bandwidth Part

CA Carrier Aggregation

CBW Channel Bandwidth

CC Component Carrier

CCA Clear Channel Assessment

CMR Channel Measurement Resource

CQI Channel Quality Indicator

CSI Channel State Information

CSI-RS CSI Reference Signal

DAPS Dual Active Protocol Stack

DC Dual Connectivity

DCI Downlink Control Information

DL Downlink

DRX Discontinuous Reception

EIRP Effective Isotropic Radiated Power

E-UTRA Evolved UTRA

EVM Error Vector Magnitude

FDD Frequency Division Duplex

EN-DC E-UTRA/NR Dual Connectivity

FR1 Frequency Range 1 (410 MHz - 7125 MHz)

FR2 Frequency Range 2 (24250 MHz - 52600 MHz)

HST High Speed Train

ICS Implementation Conformance Statement

IMR Interference Measurement Resource

IXIT Implementation eXtra Information for Testing

L1 Layer 1

L1-RSRP Layer 1 RSRP

L1 SL-RSRP Layer 1 Sidelink RSRP which corresponds to PSCCH-RSRP and/or PSSCH-RSRP

MAC Medium Access Control

MCG Master Cell Group

MPR Allowed maximum power reduction

NR New Radio

NSA Non-Standalone, a mode of operation where operation of another radio is assisted with another radio

PCell Primary Cell

PDCCH Physical Downlink Control Channel

PDSCH Physical Downlink Shared Channel

PIXIT Protocol Implementation eXtra Information for Testing

PMI Pre-coding Matrix Indicator

PRACH Physical Random Access Channel

PSCell Primary SCG Cell

QAM Quadrature Amplitude Modulation

RF Radio Frequency

RLM Radio Link Monitoring

RRC Radio Resource Control

RRM Radio Resource Management

RSRP Reference Signal Received Power

RSRQ Reference Signal Received Quality

SA Standalone

SC Single Carrier

SCC Secondary Component Carrier

SCell Secondary Cell

SCG Secondary Cell Group

SCS System Conformance Statement / Subcarrier Spacing

SDL Supplementary Downlink

SFN System Frame Number

SFTD SFN and Frame Timing Difference

SINR Signal to Interference plus Noise Ratio

SL Sidelink

SL-MIMO Sidelink-Multiple Antenna Transmission

SRS Sounding Reference Signal

SRS-RSRP Sounding Reference Signal based Reference Signal Received Power

SSB Synchronization Signal Block

SS-RSRP Synchronization Signal based RSRP

SS-RSRQ Synchronization Signal based RSRQ

SS-SINR Synchronization Signal based SINR

SUL Supplementary UpLink

TC Test Case

TDD Time Division Duplex

TRP Total Radiated Power

TxD Tx Diversity

UEUT User Equipment Under Test

UL Uplink

ULFPTx Uplink Full Power Transmission

UL MIMO Uplink Multiple Antenna transmission

UTRA UMTS Terrestrial Radio Access

V2X Vehicle to Everything

# 4 Recommended test case applicability

The applicability of each individual test is identified in the tables 4.1.1-1 / 4.1.2-1 / 4.1.3-1 / 4.1.4-1 / 4.2-1 / 4.2-2 / 4.2-3 / 4.2-4 / 4.2-5 / 4.2-6 / 4.2-7 / 4.2-8 / 4.2-9 / 4.2-10 / 4.3.1-1 / 4.3.2-1. This is just a recommendation based on the purpose for which the test case was written.

The applicability of every test is formally expressed by the use of Boolean expressions that are based on parameters (ICS). The parameters (ICS) included in TS 38.508-2 [8] are used in the test case applicability condition without reference. Parameters (ICS) specified in TS 36.521-2 [10] shall be referred with proper reference. The parameters (ICS) shall be set according to the capabilities of the UE on the operating band / band combination under test.

Selection criteria of tested bands and tested CA configurations for each applicable test is formally expressed using group theory based on parameters (ICS) included in annex A of TS 38.508-2 [8] without reference.

Additional information related to the Test Case (TC), e.g. affecting its dynamic behaviour or its execution may be provided as well.

The columns in tables 4.1.1-1 / 4.1.2-1 / 4.1.3-1 / 4.1.4-1 / 4.2-1 / 4.2-2 / 4.2-3 / 4.2-4 / 4.2-5 / 4.2-6 / 4.2-7 / 4.2-8 / 4.2-9 / 4.2-10 / 4.3.1-1 / 4.3.2-1 have the following meaning:

Clause

The clause column indicates the clause number in TS 38.521-1 [1], TS 38.521-2 [2], TS 38.521-3 [3], TS 38.521-4 [4] and TS 38.533 [5] that contains the test body.

TC Title

The TC Title column describes the name of the test and contains the clause title of the clause in TS 38.521-1 [1], TS 38.521-2 [2], TS 38.521-3 [3], TS 38.521-4 [4] and TS 38.533 [5] that contains the test body.

Release

The release column indicates the earliest release from which each test case is applicable. It may also indicate a range of releases or a single release to which a test case is applicable.

Applicability - Condition

The following notations are used for the applicability column:

R recommended - the test case is recommended to all terminals supporting NR

O optional - the test case is optional

N/A not applicable - in the given context, the test case is not recommended.

Ci conditional - the test is recommended ("R") or not ("N/A") depending on the support of other items. "i" is an integer identifying a unique conditional status expression which is defined in Table 4.0-1. For nested conditional expressions, the syntax "IF ... THEN (IF ... THEN ... ELSE...) ELSE ..." is used to avoid ambiguities.

Applicability - Comment

This comment column contains a verbal description of the condition included in the applicability column.

Tested Bands / CA/DC Configurations / Subtest Selection

This column defines a set of bands / CA/DC Configurations the test is to be run for, if the test is applicable. If the set is empty, the test is considered as not applicable.

The following notations are used in the tested bands selection column:

Di Derive the set based on Band Selection Criteria Di defined in table 4.0-2.

Ei Derive the set based on CA/DC Configurations Selection Criteria Ei defined in table 4.0-3.

Fi Derive the set based on Subtest Selection Criteria Fi defined in table 4.0-4.

TBD Band selection not defined at this time, in the meantime test all Bands / CA/DC Configurations

Text For more complex selection criteria, or if the criteria are already specified somewhere else in the spec, text reference to the clause is given.

Branch

This column contains indication if the test case may perform differently depending on the UE capabilities.

NOTE 1: Void.

NOTE 2: Void.

Additional Information

This column contains indication if the test case may perform differently depending on the UE capabilities and the measurement execution.

This column also contains indication of the completion status of the test case.

## 4.0 Test case conditions and selection criteria

For the purposes of the present document, the applicability of conformance test cases conditions given in Table 4.0-1 apply. The tested bands selection criteria given in Table 4.0-2 apply. The tested CA/DC configuration selection criteria given in Table 4.0-3 apply. The subtest selection criteria given in Table 4.0-4 apply. The ICS proformas used in Table 4.0-1, Table 4.0-2, Table 4.0-3 and Table 4.0-4 are defined in TS 38.508-2 [8] unless otherwise stated.

Table 4.0-1: Applicability of conformance test cases conditions

|  |  |
| --- | --- |
| C001 IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-2/7 AND A.4.1-3/1 THEN R ELSE N/A | |
| C001a IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-2/7 AND A.4.1-3/1 AND A.4.3.1-7/3 AND NOT A.4.3.2-1/84 THEN R ELSE N/A | |
| C001b IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-2/7 AND A.4.1-3/1 AND A.4.3.5-1/1 THEN R ELSE N/A | |
| C001c IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-2/7 AND A.4.1-3/1 AND (A.4.3.1-2/2e OR A.4.3.1-2/12) THEN R ELSE N/A | |
| C001d Void | |
| C001e IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-2/7 AND A.4.1-3/1 AND A.4.3.2A.1-1/1 THEN R ELSE N/A | |
| C001f IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-2/7 AND A.4.1-3/1 AND A.4.3.5-1/1 AND (A.4.3.11-1/1 OR A.4.3.11-1/3) THEN R ELSE N/A | |
| C001g IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-2/7 AND A.4.1-3/1 AND (A.4.3.1-7/5 OR ((A.4.3.1-7/2 OR A.4.3.1-7/3) AND A.4.3.2-1/84)) THEN R ELSE N/A | |
| C001h IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-2/7 AND A.4.1-3/1 AND NOT A.4.3.2-1/84 THEN R ELSE N/A | |
| C001i IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-2/7 AND A.4.1-3/1 AND A.4.3.2A.1-1/2 THEN R ELSE N/A | |
| C001j IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-2/7 AND A.4.1-3/1 AND A.4.3.2A.1-1/3 THEN R ELSE N/A | |
| C001k IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-2/7 AND A.4.1-3/1 AND A.4.3.2A.1-1/4 THEN R ELSE N/A | |
| C001l IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-2/7 AND A.4.1-3/1 AND NOT A.4.3.2-1/84 AND NOT A.4.3.12-1/2 THEN R ELSE N/A | |
| C001m IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-2/7 AND A.4.1-3/1 AND A.4.3.5-1/1 AND A.4.4-1/16 THEN R ELSE N/A | |
| C001n IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-2/7 AND A.4.1-3/1 AND A.4.3.7-1/XX->65 THEN R ELSE N/A | |
| C001o IF A.4.1-1/1 AND A.4.1-2/YY->9 AND A.4.1-3/1 AND A.4.4-1/17 THEN R ELSE N/A | |
| C001p IF A.4.1-1/1 AND A.4.1-2/YY->9 AND A.4.1-3/1 AND A.4.4-1/17 AND A.4.3.2-1/91 THEN R ELSE N/A | |
| C001q IF A.4.1-1/1 AND A.4.1-2/YY->9 AND A.4.1-3/1 AND A.4.4-1/17 AND A.4.3.2-1/92 THEN R ELSE N/A | |
| C002 IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-2/7 AND A.4.1-3/1 AND (A.4.1-2/3 OR A.4.1-2/5) THEN R ELSE N/A | |
| C003 IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-2/7 AND A.4.1-3/1 AND A.4.3.2-1/14 THEN R ELSE N/A | |
| C003a IF A.4.1-1/1 AND A.4.1-2/7 AND A.4.1-3/1 AND A.4.3.2-1/14 THEN R ELSE N/A | |
| C003b IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-2/7 AND A.4.1-3/1 AND (A.4.3.2-1/58 OR A.4.3.2-1/59 OR A.4.3.2-1/60) THEN R ELSE N/A | |
| C004 IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-2/7 AND A.4.1-3/1 AND (A.4.1-4A/1 OR A.4.1-4A/2 OR A.4.1-4A/5) AND A.4.3.2A.1-2/1 THEN R ELSE N/A | |
| C004a IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-2/7 AND A.4.1-3/1 AND A.4.3.2B.1.0a.1-2/1 THEN R ELSE N/A | |
| C005 IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-2/7 AND A.4.1-3/1 AND A.4.1-4A/5 AND A.4.1-2/4 AND A.4.3.2A.1-1/1 AND A.4.1-3/1 THEN R ELSE N/A | |
| C006 IF A.4.1-1/2 AND A.4.1-2/8 AND A.4.1-3/1 THEN R ELSE N/A | |
| C006a IF A.4.1-1/2 AND A.4.1-2/8 AND A.4.1-3/1 AND A.4.3.5-1/1 THEN R ELSE N/A | |
| C006b IF A.4.1-1/2 AND A.4.1-2/8 AND A.4.1-3/1 AND A.4.3.2-1/31a THEN R ELSE N/A | |
| C006c IF A.4.1-1/2 AND A.4.1-2/8 AND A.4.1-3/1 AND (A.4.1-4A/3 OR A.4.1-4A/4) AND A.4.3.2A.1-1/1 THEN R ELSE N/A | |
| C006d IF A.4.1-1/2 AND A.4.1-2/8 AND A.4.1-3/1 AND (A.4.1-4A/3 OR A.4.1-4A/4) AND A.4.3.2A.1-1/2 THEN R ELSE N/A | |
| C006e IF A.4.1-1/2 AND A.4.1-2/8 AND A.4.1-3/1 AND (A.4.1-4A/3 OR A.4.1-4A/4) AND A.4.3.2A.1-1/3 THEN R ELSE N/A | |
| C006f IF A.4.1-1/2 AND A.4.1-2/8 AND A.4.1-3/1 AND (A.4.1-4A/3 OR A.4.1-4A/4) AND A.4.3.2A.1-1/4 THEN R ELSE N/A | |
| C006g IF A.4.1-1/2 AND A.4.1-2/8 AND A.4.1-3/1 AND (A.4.1-4A/3 OR A.4.1-4A/4) AND A.4.3.2A.1-1/5 THEN R ELSE N/A | |
| C006h IF A.4.1-1/2 AND A.4.1-2/8 AND A.4.1-3/1 AND (A.4.1-4A/3 OR A.4.1-4A/4) AND A.4.3.2A.1-1/6 THEN R ELSE N/A | |
| C006i IF A.4.1-1/2 AND A.4.1-2/8 AND A.4.1-3/1 AND (A.4.1-4A/3 OR A.4.1-4A/4) AND A.4.3.2A.1-1/7 THEN R ELSE N/A | |
| C006j IF A.4.1-1/2 AND A.4.1-2/8 AND A.4.1-3/1 AND NOT (A.4.3.2-1/22A OR A.4.3.2-1/22B) THEN R ELSE N/A | |
| C006k IF A.4.1-1/2 AND A.4.1-2/8 AND A.4.1-3/1 AND (A.4.3.2-1/22A OR A.4.3.2-1/22B) THEN R ELSE N/A | |
| C006l IF A.4.1-1/2 AND A.4.1-2/8 AND A.4.1-3/1 AND A.4.3.6/56A THEN R ELSE N/A | |
| C006m IF A.4.1-1/2 AND A.4.1-2/8 AND A.4.1-3/1 AND A.4.3.2-1/56 AND 4.3.2-1/78 THEN R ELSE N/A | |
| C006n IF A.4.1-1/2 AND A.4.1-2/8 AND A.4.1-3/1 AND (A.4.3.2-1/130 OR A.4.3.2-1/131) THEN R ELSE N/A | |
| C006o IF A.4.1-1/2 AND A.4.1-2/8 AND A.4.1-3/1 AND A.4.3.2-1/25A THEN R ELSE N/A | |
| C006p IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-2/7 AND A.4.1-2/8 AND A.4.1-3/1 AND A.4.1-4A/7 AND A.4.3.2A.1-1/1 THEN R ELSE N/A | |
| C006w IF A.4.1-1/2 AND A.4.1-2/8 AND A.4.1-3/1 AND A.4.3.2-1/38 THEN R ELSE N/A | |
| C006x IF A.4.1-1/2 AND A.4.1-2/8 AND A.4.1-3/1 AND A.4.3.2-1/xy1->139 THEN R ELSE N/A | |
| C007 IF A.4.1-1/2 AND A.4.1-2/8 AND A.4.1-3/1 AND A.4.3.2-1/22 THEN R ELSE N/A | |
| C008 IF A.4.1-1/2 AND A.4.1-2/8 AND A.4.1-3/1 AND NOT (A.4.3.2-1/22) AND NOT (A.4.3.2-1/22A OR A.4.3.2-1/22B) THEN R ELSE N/A | |
| C008a IF A.4.1-1/2 AND A.4.1-2/8 AND A.4.1-3/1 AND NOT (A.4.3.2-1/22) AND (A.4.3.2-1/22A OR A.4.3.2-1/22B) THEN R ELSE N/A | |
| C009 IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-3/2 AND A.4.1-4/1 AND A.4.3.2B.2.0-2/1 THEN R ELSE N/A | |
| C009a IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-3/2 AND A.4.1-4/1 AND A.4.3.2B.2.0-1/1 THEN R ELSE N/A | |
| C009z IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-3/2 AND A.4.1-4/1 AND A.4.3.2B.2.0-2/1 AND A.4.3.2-1/25 THEN R ELSE N/A | |
| C010 IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-3/2 AND A.4.1-4/2 AND A.4.3.2B.2.0-2/1 THEN R ELSE N/A | |
| C010a IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-3/2 AND A.4.1-4/2 AND A.4.3.2B.2.0-1/1 THEN R ELSE N/A | |
| C010z IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-3/2 AND A.4.1-4/2 AND A.4.3.2B.2.0-2/1 AND A.4.3.2-1/25 THEN R ELSE N/A | |
| C011 IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-3/2 AND A.4.1-4/3 AND A.4.3.2B.2.0-2/1 THEN R ELSE N/A | |
| C011a IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-3/2 AND A.4.1-4/3 AND A.4.3.2B.2.0-1/1 THEN R ELSE N/A | |
| C011b IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-3/2 AND A.4.1-4/3 AND A.4.3.2B.2.0-2A/1 THEN R ELSE N/A | |
| C011c IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-3/2 AND A.4.1-4/3 AND A.4.3.2B.2.0-1A/1 THEN R ELSE N/A | |
| C011d IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-3/2 AND A.4.1-4/3 AND A.4.3.2B.2.0-2/2 AND A.4.3.2B.2.0-2A/1 THEN R ELSE N/A | |
| C011z IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-3/2 AND A.4.1-4/3 AND A.4.3.2B.2.0-2A/1 AND A.4.3.2-1/25 THEN R ELSE N/A | |
| C012 IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-3/2 AND A.4.1-4/4 AND A.4.3.2B.2.0-2/1 THEN R ELSE N/A | |
| C012a IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-3/2 AND A.4.1-4/4 AND A.4.3.2B.2.0-1A/1 THEN R ELSE N/A | |
| C012b IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-3/2 AND A.4.1-4/4 AND A.4.3.2B.2.0-2A/2 THEN R ELSE N/A | |
| C012c IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-3/2 AND A.4.1-4/4 AND A.4.3.2B.2.0-2A/3 THEN R ELSE N/A | |
| C012d IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-3/2 AND A.4.1-4/4 AND A.4.3.2B.2.0-2A/4 THEN R ELSE N/A | |
| C012e IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-3/2 AND A.4.1-4/4 AND A.4.3.2B.2.0-1A/2 THEN R ELSE N/A | |
| C012f IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-3/2 AND A.4.1-4/4 AND A.4.3.2B.2.0-2/1 AND A.4.3.2-1/31a THEN R ELSE N/A | |
| C012g IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-3/2 AND A.4.1-4/4 AND A.4.3.2B.2.0-1A/3 THEN R ELSE N/A | |
| C012h IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-3/2 AND A.4.1-4/4 AND A.4.3.2B.2.0-1A/4 THEN R ELSE N/A | |
| C012i IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-3/2 AND A.4.1-4/4 AND A.4.3.2B.2.0-2A/5 THEN R ELSE N/A | |
| C012j IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-3/2 AND A.4.1-4/4 AND A.4.3.2B.2.0-2A/6 THEN R ELSE N/A | |
| C012k IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-3/2 AND A.4.1-4/4 AND A.4.3.2B.2.0-2A/7 THEN R ELSE N/A | |
| C012l IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-3/2 AND A.4.1-4/4 AND A.4.3.2B.2.0-2A/8 THEN R ELSE N/A | |
| C012m IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-3/2 AND A.4.1-4/4 AND A.4.3.2B.2.0-2A/2 AND A.4.3.2-1/25 THEN R ELSE N/A | |
| C012n IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-3/2 AND A.4.1-4/4 AND A.4.3.2B.2.0-2A/3 AND A.4.3.2-1/25 THEN R ELSE N/A | |
| C012o IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-3/2 AND A.4.1-4/4 AND A.4.3.2B.2.0-2A/4 AND A.4.3.2-1/25 THEN R ELSE N/A | |
| C012p IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-3/2 AND A.4.1-4/4 AND A.4.3.2B.2.0-2/1 AND A.4.3.2-1/14 THEN R ELSE N/A | |
| C012q IF A.4.1-1/2 AND A.4.1-3/2 AND A.4.1-4/4 AND A.4.3.2B.2.0-2A/1 AND A.4.3.2-1/25A THEN R ELSE N/A | |
| C012w IF A.4.1-1/2 AND A.4.1-3/2 AND A.4.1-4/4 AND A.4.3.2B.2.0-2A/1 AND A.4.3.2-1/38 THEN R ELSE N/A | |
| C012z IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-3/2 AND A.4.1-4/4 AND A.4.3.2B.2.0-2A/1 AND A.4.3.2-1/25 THEN R ELSE N/A | |
| C013 IF (A.4.1-1/1 OR A.4.1-1/2) AND (A.4.1-3/2 OR A.4.1-3/3 OR A.4.1-3/5) AND (A.4.1-4/3 OR A.4.1-4/4) THEN R ELSE N/A | |
| C014 IF (A.4.1-1/1 OR A.4.1-1/2) AND (A.4.1-3/2 OR A.4.1-3/3 OR A.4.1-3/5) AND (A.4.1-4/1 OR A.4.1-4/2 OR A.4.1-4/3 OR A.4.1-4/4) THEN R ELSE N/A | |
| C015 IF A.4.1-1/1 AND (A.4.1-3/1 OR A.4.1-3/2 OR A.4.1-3/3 OR A.4.1-3/5) AND NOT A.4.3.1-7a/2 THEN R ELSE N/A | |
| C015b IF A.4.1-1/1 AND (A.4.1-3/1 OR A.4.1-3/2 OR A.4.1-3/3 OR A.4.1-3/5) AND A.4.3.2-1/6 AND NOT A.4.3.1-7a/2 THEN R ELSE N/A | |
| C015c IF A.4.1-1/1 AND (A.4.1-3/1 OR A.4.1-3/2 OR A.4.1-3/3 OR A.4.1-3/5) AND A.4.3.2-1/66 AND NOT A.4.3.1-7a/2 THEN R ELSE N/A | |
| C015d IF A.4.1-1/1 AND (A.4.1-3/1 OR A.4.1-3/2 OR A.4.1-3/3 OR A.4.1-3/5) AND A.4.3.9-1/3 AND NOT A.4.3.1-7a/2 THEN R ELSE N/A | |
| C015e IF A.4.1-1/1 AND (A.4.1-3/1 OR A.4.1-3/2 OR A.4.1-3/3 OR A.4.1-3/5) AND NOT A.4.3.1-7a/2 AND A.4.3.2-1/xy2->140 THEN R ELSE N/A | |
| C015x IF A.4.1-1/1 AND (A.4.1-3/1 OR A.4.1-3/2 OR A.4.1-3/3 OR A.4.1-3/5) AND A.4.3.9-1/1 AND NOT A.4.3.1-7a/2 THEN R ELSE N/A | |
| C015y IF A.4.1-1/1 AND (A.4.1-3/1 OR A.4.1-3/2 OR A.4.1-3/3 OR A.4.1-3/5) AND A.4.3.2-1/33 AND NOT A.4.3.1-7a/2 THEN R ELSE N/A | |
| C016 IF A.4.1-1/2 AND (A.4.1-3/1 OR A.4.1-3/2 OR A.4.1-3/3 OR A.4.1-3/5) AND NOT A.4.3.1-7a/3 THEN R ELSE N/A | |
| C016b IF A.4.1-1/2 AND (A.4.1-3/1 OR A.4.1-3/2 OR A.4.1-3/3 OR A.4.1-3/5) AND A.4.3.2-1/6 AND NOT A.4.3.1-7a/3 THEN R ELSE N/A | |
| C016c IF A.4.1-1/2 AND (A.4.1-3/1 OR A.4.1-3/2 OR A.4.1-3/3 OR A.4.1-3/5) AND A.4.3.2-1/66 AND NOT A.4.3.1-7a/3 THEN R ELSE N/A | |
| C016d IF A.4.1-1/2 AND (A.4.1-3/1 OR A.4.1-3/2 OR A.4.1-3/3 OR A.4.1-3/5) AND A.4.3.9-1/3 AND NOT A.4.3.1-7a/3 THEN R ELSE N/A | |
| C016e IF A.4.1-1/2 AND (A.4.1-3/1 OR A.4.1-3/2 OR A.4.1-3/3 OR A.4.1-3/5) AND NOT A.4.3.1-7a/3 AND A.4.3.2-1/xy2->140 THEN R ELSE N/A | |
| C016x IF A.4.1-1/2 AND (A.4.1-3/1 OR A.4.1-3/2 OR A.4.1-3/3 OR A.4.1-3/5) AND A.4.3.9-1/1 AND NOT A.4.3.1-7a/3 THEN R ELSE N/A | |
| C016y IF A.4.1-1/2 AND (A.4.1-3/1 OR A.4.1-3/2 OR A.4.1-3/3 OR A.4.1-3/5) AND A.4.3.2-1/33 AND NOT A.4.3.1-7a/3 THEN R ELSE N/A | |
| C017 IF A.4.1-1/1 AND (A.4.1-3/1 OR A.4.1-3/2 OR A.4.1-3/3 OR A.4.1-3/5) AND (NOT A.4.3.9-1/2 AND A.4.3.1-7a/2) THEN R ELSE N/A | |
| C017b IF A.4.1-1/1 AND (A.4.1-3/1 OR A.4.1-3/2 OR A.4.1-3/3 OR A.4.1-3/5) AND (NOT A.4.3.9-1/2 AND A.4.3.1-7a/2) AND A.4.3.2-1/6 THEN R ELSE N/A | |
| C017c IF A.4.1-1/1 AND (A.4.1-3/1 OR A.4.1-3/2 OR A.4.1-3/3 OR A.4.1-3/5) AND (NOT A.4.3.9-1/2 AND A.4.3.1-7a/2) AND A.4.3.2-1/66 THEN R ELSE N/A | |
| C017d IF A.4.1-1/1 AND (A.4.1-3/1 OR A.4.1-3/2 OR A.4.1-3/3 OR A.4.1-3/5) AND (NOT A.4.3.9-1/2 AND A.4.3.1-7a/2 AND A.4.3.9-1/3 THEN R ELSE N/A | |
| C017e IF A.4.1-1/1 AND (A.4.1-3/1 OR A.4.1-3/2 OR A.4.1-3/3 OR A.4.1-3/5) AND (NOT A.4.3.9-1/2 AND A.4.3.1-7a/2) AND A.4.3.2-1/xy2->140 THEN R ELSE N/A | |
| C017g IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-2/7 AND A.4.1-3/1 AND A.4.3.2A.1-1/1 AND (NOT A.4.3.9-1/2 AND (A.4.3.1-7a/2 OR A.4.3.1-7a/3)) THEN R ELSE N/A | |
| C017h IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-2/7 AND A.4.1-3/1 AND A.4.3.2A.1-1/2 AND (NOT A.4.3.9-1/2 AND (A.4.3.1-7a/2 OR A.4.3.1-7a/3)) THEN R ELSE N/A | |
| C017i IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-2/7 AND A.4.1-3/1 AND A.4.3.2A.1-1/3 AND (NOT A.4.3.9-1/2 AND (A.4.3.1-7a/2 OR A.4.3.1-7a/3)) THEN R ELSE N/A | |
| C017j Void | |
| C017x IF A.4.1-1/1 AND (A.4.1-3/1 OR A.4.1-3/2 OR A.4.1-3/3 OR A.4.1-3/5) AND (NOT A.4.3.9-1/2 AND A.4.3.1-7a/2) AND A.4.3.9-1/1 THEN R ELSE N/A | |
| C017y IF A.4.1-1/1 AND (A.4.1-3/1 OR A.4.1-3/2 OR A.4.1-3/3 OR A.4.1-3/5) AND (NOT A.4.3.9-1/2 AND A.4.3.1-7a/2) AND A.4.3.2-1/33 THEN R ELSE N/A | |
| C017z IF A.4.1-1/2 AND (A.4.1-3/1 OR A.4.1-3/2 OR A.4.1-3/3 OR A.4.1-3/5) AND (NOT A.4.3.9-1/2 AND A.4.3.1-7a/3) AND A.4.3.2-1/33 THEN R ELSE N/A | |
| C018 IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-2/7 AND A.4.1-3/1 AND 4.3.2-1/9 THEN R ELSE N/A | |
| C019 IF A.4.1-1/2 AND (A.4.1-3/1 OR A.4.1-3/2 OR A.4.1-3/3 OR A.4.1-3/5) AND (NOT A.4.3.9-1/2 AND A.4.3.1-7a/3) THEN R ELSE N/A | |
| C019b IF A.4.1-1/2 AND (A.4.1-3/1 OR A.4.1-3/2 OR A.4.1-3/3 OR A.4.1-3/5) AND (NOT A.4.3.9-1/2 AND A.4.3.1-7a/3) AND A.4.3.2-1/6 THEN R ELSE N/A | |
| C019c IF A.4.1-1/2 AND (A.4.1-3/1 OR A.4.1-3/2 OR A.4.1-3/3 OR A.4.1-3/5) AND (NOT A.4.3.9-1/2 AND A.4.3.1-7a/3) AND A.4.3.2-1/66 THEN R ELSE N/A | |
| C019d IF A.4.1-1/2 AND (A.4.1-3/1 OR A.4.1-3/2 OR A.4.1-3/3 OR A.4.1-3/5) AND (NOT A.4.3.9-1/2 AND (A.4.3.9-4b/38 OR A.4.3.9-4b/41 OR A.4.3.9-4b/48 OR A.4.3.9-4b/77 OR A.4.3.9-4b/78 OR A.4.3.9-4b/79) OR (A.4.3.9-4b/34 OR A.4.3.9-4b/39 OR A.4.3.9-4b/40)) AND A.4.3.9-1/3 THEN R ELSE N/A | |
| C019e IF A.4.1-1/2 AND (A.4.1-3/1 OR A.4.1-3/2 OR A.4.1-3/3 OR A.4.1-3/5) AND (NOT A.4.3.9-1/2 AND A.4.3.1-7a/3) AND A.4.3.2-1/xy2->140 THEN R ELSE N/A | |
| C019f IF A.4.1-1/2 AND (A.4.1-3/1 OR A.4.1-3/2 OR A.4.1-3/3 OR A.4.1-3/5) AND A.4.3.2-1/41 AND A.4.3.2-1/xy2->140 AND (NOT A.4.3.9-1/2 AND A.4.3.1-7a/3) THEN R ELSE N/A | |
| C019x IF A.4.1-1/2 AND (A.4.1-3/1 OR A.4.1-3/2 OR A.4.1-3/3 OR A.4.1-3/5) AND (NOT A.4.3.9-1/2 AND A.4.3.1-7a/3) AND A.4.3.9-1/1 THEN R ELSE N/A | |
| C019y IF A.4.1-1/2 AND (A.4.1-3/1 OR A.4.1-3/2 OR A.4.1-3/3 OR A.4.1-3/5) AND (NOT A.4.3.9-1/2 AND A.4.3.1-7a/3) AND A.4.3.11-1/2 THEN R ELSE N/A | |
| C020 IF (A.4.1-1/1 OR A.4.1-1/2) AND (A.4.1-3/2 OR A.4.1-3/3 OR A.4.1-3/5) THEN R ELSE N/A | |
| C021 IF (A.4.1-4/1 OR A.4.1-4/2 OR A.4.1-4/3 OR A.4.1-4/5) AND A.4.1-3/2 THEN R ELSE N/A | |
| C021a IF (A.4.1-4/1 OR A.4.1-4/2 OR A.4.1-4/3 OR A.4.1-4/5) AND A.4.1-3/2 AND A.4.3.5-1/1 THEN R ELSE N/A | |
| C021b IF A.4.1-1/1 AND (A.4.1-4/1 OR A.4.1-4/2 OR A.4.1-4/3 OR A.4.1-4/5) AND A.4.1-3/2 THEN R ELSE N/A | |
| C021c IF (A.4.1-4/1 OR A.4.1-4/2 OR A.4.1-4/3 OR A.4.1-4/5) AND A.4.1-3/2 AND A.4.3.11-1/6 THEN R ELSE N/A | |
| C021d IF (A.4.1-4/1 OR A.4.1-4/2 OR A.4.1-4/3 OR A.4.1-4/5) AND A.4.1-3/2 AND A.4.3.11-1/7 THEN R ELSE N/A | |
| C021e IF (A.4.1-4/1 OR A.4.1-4/2 OR A.4.1-4/3 OR A.4.1-4/5) AND A.4.1-3/2 AND A.4.3.5-1/1 AND A.4.3.6-1/79 THEN R ELSE N/A | |
| C022 IF (A.4.1-4/4 OR A.4.1-4/5) AND A.4.1-3/2 THEN R ELSE N/A | |
| C022a IF (A.4.1-4/4 OR A.4.1-4/5) AND A.4.1-3/2 AND A.4.3.5-1/1 THEN R ELSE N/A | |
| C022b IF (A.4.1-4/4 OR A.4.1-4/5) AND A.4.1-3/2 AND A.4.3.6/56A THEN R ELSE N/A | |
| C022e IF (A.4.1-4/4 OR A.4.1-4/5) AND A.4.1-3/2 AND A.4.3.5-1/1 AND A.4.3.6-1/79 THEN R ELSE N/A | |
| C022m IF (A.4.1-4/4 OR A.4.1-4/5) AND A.4.1-3/2 AND A.4.3.2-1/56 AND 4.3.2-1/78 THEN R ELSE N/A | |
| C022n IF (A.4.1-4/4 OR A.4.1-4/5) AND A.4.1-3/2 AND (A.4.3.2-1/130 OR A.4.3.2-1/131) THEN R ELSE N/A | |
| C023 IF A.4.1-4/5 AND A.4.1-3/2 THEN R ELSE N/A | |
| C023a IF A.4.1-4/5 AND A.4.1-3/2 AND A.4.3.5-1/1 THEN R ELSE N/A | |
| C024 IF A.4.1-1/1 AND A.4.1-2/7 AND A.4.1-3/1 THEN R ELSE N/A | |
| C025 IF ((A.4.1-1/1 AND [10]A.4.1-1/1) OR (A.4.1-1/1 AND [10]A.4.1-1/2) OR (A.4.1-1/2 AND [10]A.4.1-1/1) OR (A.4.1-1/2 AND [10]A.4.1-1/2)) AND A.4.1-3/1 THEN R ELSE N/A | |
| C025a IF ((A.4.1-1/1 AND [10]A.4.1-1/1) OR (A.4.1-1/1 AND [10]A.4.1-1/2) OR (A.4.1-1/2 AND [10]A.4.1-1/1) OR (A.4.1-1/2 AND [10]A.4.1-1/2)) AND A.4.1-3/1 AND A.4.3.5-1/1 THEN R ELSE N/A | |
| C025b IF ((A.4.1-1/1 AND [10]A.4.1-1/1) OR (A.4.1-1/1 AND [10]A.4.1-1/2) OR (A.4.1-1/2 AND [10]A.4.1-1/1) OR (A.4.1-1/2 AND [10]A.4.1-1/2)) AND A.4.1-3/1 AND (A.4.3.11-1/1 OR A.4.3.11-1/4) THEN R ELSE N/A | |
| C025c IF ((A.4.1-1/1 AND [10]A.4.1-1/1) OR (A.4.1-1/1 AND [10]A.4.1-1/2) OR (A.4.1-1/2 AND [10]A.4.1-1/1) OR (A.4.1-1/2 AND [10]A.4.1-1/2)) AND A.4.1-3/1 AND A.4.3.5-1/1 AND (A.4.3.11-1/1 OR A.4.3.11-1/4) THEN R ELSE N/A | |
| C025d IF ((A.4.1-1/1 AND [10]A.4.1-1/1) OR (A.4.1-1/1 AND [10]A.4.1-1/2) OR (A.4.1-1/2 AND [10]A.4.1-1/1) OR (A.4.1-1/2 AND [10]A.4.1-1/2)) AND A.4.1-3/1 AND A.4.3.11-1/5 THEN R ELSE N/A | |
| C025e IF ((A.4.1-1/1 AND [10]A.4.1-1/1) OR (A.4.1-1/1 AND [10]A.4.1-1/2) OR (A.4.1-1/2 AND [10]A.4.1-1/1) OR (A.4.1-1/2 AND [10]A.4.1-1/2)) AND A.4.1-3/1 AND A.4.3.5-1/1 AND A.4.3.11-1/5 THEN R ELSE N/A | |
| C025f IF ((A.4.1-1/1 AND [10]A.4.1-1/1) OR (A.4.1-1/1 AND [10]A.4.1-1/2) OR (A.4.1-1/2 AND [10]A.4.1-1/1) OR (A.4.1-1/2 AND [10]A.4.1-1/2)) AND A.4.1-3/1 AND A.4.1-2/7 AND A.4.3.6-1/61 THEN R ELSE N/A | |
| C025g IF ((A.4.1-1/1 AND [10]A.4.1-1/1) OR (A.4.1-1/1 AND [10]A.4.1-1/2) OR (A.4.1-1/2 AND [10]A.4.1-1/1) OR (A.4.1-1/2 AND [10]A.4.1-1/2)) AND A.4.1-3/1 AND A.4.1-2/8 AND A.4.3.6-1/62 THEN R ELSE N/A | |
| C026 IF (A.4.1-4/1 OR A.4.1-4/2 OR A.4.1-4/3 OR A.4.1-4/5) AND A.4.1-3/2 AND 4.3.6-1/11 THEN R ELSE N/A | |
| C027 Void | |
| C028 IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-3/1 AND 4.3.6-1/11 THEN R ELSE N/A | |
| C029 IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-3/1 AND 4.3.2-1/9 THEN R ELSE N/A | |
| C030 IF (A.4.1-4/1 OR A.4.1-4/2 OR A.4.1-4/3 OR A.4.1-4/5) AND A.4.1-3/2 AND A.4.3.2-1/9 THEN R ELSE N/A | |
| C030a IF (A.4.1-4/4 OR A.4.1-4/5) AND A.4.1-3/2 AND A.4.3.2-1/9 THEN R ELSE N/A | |
| C031 IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-2/7 AND A.4.1-3/1 AND (A.4.1-4A/1 OR A.4.1-4A/2 OR A.4.1-4A/5) AND A.4.3.2A.1-1/1 THEN R ELSE N/A | |
| C031a IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-2/7 AND A.4.1-3/1 AND (A.4.1-4A/1 OR A.4.1-4A/2 OR A.4.1-4A/5) AND A.4.3.2A.1-1/1 AND A.4.3.6-1/54 THEN R ELSE N/A | |
| C031b IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-2/7 AND A.4.1-3/3 AND A.4.1-4/7 AND A.4.3.6-1/55 THEN R ELSE N/A | |
| C031c IF (A.4.1-1/2 AND A.4.1-2/8 AND A.4.1-3/1 AND A.4.1-4A/6 AND A.4.3.2A.1-1/1) THEN R ELSE N/A | |
| C032 IF (A.4.1-4/1 OR A.4.1-4/2 OR A.4.1-4/3 OR A.4.1-4/5) AND A.4.1-3/2 AND (A.4.1-2/3 OR A.4.1-2/5) THEN R ELSE N/A | |
| C033 IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-2/7 AND A.4.1-3/1 AND (A.4.1-4A/1 OR A.4.1-4A/2 OR A.4.1-4A/5) AND A.4.3.2A.1-1/2 THEN R ELSE N/A | |
| C034 IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-2/7 AND A.4.1-3/1 AND A.4.3.6-1/6 THEN R ELSE N/A | |
| C035 IF (A.4.1-4/1 OR A.4.1-4/2 OR A.4.1-4/3 OR A.4.1-4/5) AND A.4.1-3/2 AND A.4.3.6-1/6 THEN R ELSE N/A | |
| C036 IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-2/7 AND A.4.1-3/1 AND (A.4.1-4A/1 OR A.4.1-4A/2 OR A.4.1-4A/5) AND A.4.3.2A.1-1/3 THEN R ELSE N/A | |
| C037 IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-2/7 AND A.4.1-3/1 AND A.4.3.6-1/41 THEN R ELSE N/A | |
| C037a IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-2/7 AND A.4.1-3/1 AND A.4.3.6-1/41 AND A.4.3.5-1/1 THEN R ELSE N/A | |
| C037b IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-2/7 AND A.4.1-3/1 AND A.4.3.6-1/41 AND A.4.3.5-1/1 AND A.4.3.6-1/79 THEN R ELSE N/A | |
| C038 IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-2/7 AND A.4.1-3/2 AND (A.4.1-4/1 OR A.4.1-4/2 OR A.4.1-4/3 OR A.4.1-4/5) AND A.4.3.6-1/41 THEN R ELSE N/A | |
| C038a IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-2/7 AND A.4.1-3/2 AND (A.4.1-4/1 OR A.4.1-4/2 OR A.4.1-4/3 OR A.4.1-4/5) AND A.4.3.6-1/41 AND A.4.3.5-1/1 THEN R ELSE N/A | |
| C039 IF A.4.1-1/1 AND A.4.1-2/7 AND A.4.1-3/1 AND (A.4.1-4A/1 OR A.4.1-4A/2 OR A.4.1-4/5 OR A.4.1-4/7) AND A.4.1-5/1 AND A.4.3.6-1/41 THEN R ELSE N/A | |
| C040 IF A.4.1-1/1 AND A.4.1-2/7 AND A.4.1-3/2 AND (A.4.1-4/1 OR A.4.1-4/2 OR A.4.1-4/3 OR A.4.1-4/5) AND A.4.3.6-1/41 THEN R ELSE N/A | |
| C041 IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-2/7 AND A.4.1-3/1 AND A.4.1-5/1 AND A.4.3.2-1/34 AND A.4.3.6-1/41 THEN R ELSE N/A | |
| C041a IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-2/7 AND A.4.1-3/1 AND A.4.1-5/1 AND A.4.3.2-1/34 AND A.4.3.6-1/41 AND A.4.3.5-1/1 THEN R ELSE N/A | |
| C041b IF A.4.1-1/1 AND A.4.1-2/7 AND A.4.1-3/1 AND A.4.1-5/1 AND A.4.3.2-1/34 AND A.4.3.6-1/41 AND A.4.3.5-1/1 THEN R ELSE N/A | |
| C042 IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-2/7 AND A.4.1-3/2 AND (A.4.1-4/1 OR A.4.1-4/2 OR A.4.1-4/3 OR A.4.1-4/5) AND A.4.3.2-1/34 AND A.4.3.6-1/41 THEN R ELSE N/A | |
| C042a IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-2/7 AND A.4.1-3/2 AND (A.4.1-4/1 OR A.4.1-4/2 OR A.4.1-4/3 OR A.4.1-4/5) AND A.4.3.2-1/34 AND A.4.3.6-1/41 AND A.4.3.5-1/1 THEN R ELSE N/A | |
| C042b IF A.4.1-1/1 AND A.4.1-2/7 AND A.4.1-3/2 AND (A.4.1-4/1 OR A.4.1-4/2 OR A.4.1-4/3 OR A.4.1-4/5) AND A.4.3.2-1/34 AND A.4.3.6-1/41 AND A.4.3.5-1/1 THEN R ELSE N/A | |
| C043 IF (A.4.1-4/1 OR A.4.1-4/2 OR A.4.1-4/3 OR A.4.1-4/5) AND A.4.1-3/2 AND (A.4.3.6-1/43 OR A.4.3.6-1/44) THEN R ELSE N/A | |
| C043a IF (A.4.1-4/4 OR A.4.1-4/5) AND A.4.1-3/2 AND A.4.3.2-1/34 AND A.4.3.6-1/41a AND A.4.3.5-1/1 THEN R ELSE N/A | |
| C044 IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-2/7 AND A.4.1-3/1 AND A.4.3.6-1/42 THEN R ELSE N/A | |
| C045 IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-3/2 AND A.4.3.2B.2.0-1/2 AND (A.4.1-4/1 OR A.4.1-4/2 OR A.4.1-4/3) THEN R ELSE N/A | |
| C046 IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-3/2 AND A.4.3.2B.2.0-1/3 AND (A.4.1-4/1 OR A.4.1-4/2 OR A.4.1-4/3 ) THEN R ELSE N/A | |
| C047 IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-3/2 AND A.4.3.2B.2.0-1/4 AND (A.4.1-4/1 OR A.4.1-4/2 OR A.4.1-4/3) THEN R ELSE N/A | |
| C048 IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-3/2 AND A.4.3.2B.2.0-1/2 AND A.4.1-4/1 THEN R ELSE N/A | |
| C049 IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-3/2 AND A.4.3.2B.2.0-1/3 AND A.4.1-4/1 THEN R ELSE N/A | |
| C050 IF A.4.1-1/2 AND A.4.1-2/7 AND A.4.1-3/1 AND A.4.3.1-7/3 AND A.4.3.2-1/36 THEN R ELSE N/A | |
| C051 IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-2/7 AND A.4.1-3/1 AND A.4.1-4A/5 AND A.4.3.2A.1-2/1 AND A.4.3.2-1/37 THEN R ELSE N/A | |
| C051a IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-2/7 AND A.4.1-3/1 AND A.4.1-4A/5 AND A.4.3.2A.1-2/1 AND A.4.3.2-1/37 AND A.4.3.6-1/80 THEN R ELSE N/A | |
| C051b IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-2/7 AND A.4.1-3/1 AND A.4.1-4A/5 AND A.4.3.2A.1-2/1 AND A.4.3.2-1/127 THEN R ELSE N/A | |
| C051c IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-2/7 AND A.4.1-3/1 AND A.4.1-4A/5 AND A.4.3.2A.1-2/1 AND A.4.3.2-1/127 AND A.4.3.6-1/80 THEN R ELSE N/A | |
| C051d IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-2/7 AND A.4.1-3/1 AND (A.4.1-4A/1 OR A.4.1-4A/5) AND A.4.3.2A.1-2/2 AND A.4.3.2-1/37 THEN R ELSE N/A | |
| C051e IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-2/7 AND A.4.1-3/1 AND (A.4.1-4A/1 OR A.4.1-4A/5) AND A.4.3.2A.1-2/2 AND A.4.3.2-1/37 AND A.4.3.6-1/80 THEN R ELSE N/A | |
| C051f IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-2/7 AND A.4.1-3/1 AND (A.4.1-4A/1 OR A.4.1-4A/5) AND A.4.3.2A.1-2/2 AND A.4.3.2-1/127 THEN R ELSE N/A | |
| C051g IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-2/7 AND A.4.1-3/1 AND (A.4.1-4A/1 OR A.4.1-4A/5) AND A.4.3.2A.1-2/2 AND A.4.3.2-1/127 AND A.4.3.6-1/80 THEN R ELSE N/A | |
| C052 IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-2/7 AND A.4.1-3/1 AND (A.4.3.11-1/1 OR A.4.3.11-1/3) THEN R ELSE N/A | |
| C052a IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-2/7 AND A.4.1-3/1 AND A.4.3.11-1/8 THEN R ELSE N/A | |
| C052b IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-2/7 AND A.4.1-3/1 AND A.4.3.11-1/6 THEN R ELSE N/A | |
| C052c IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-2/7 AND A.4.1-3/1 AND A.4.3.11-1/7 THEN R ELSE N/A | |
| C053 IF A.4.1-1/2 AND A.4.1-2/8 AND A.4.1-3/1 AND (A.4.1-4A/3 OR A.4.1-4A/4) AND A.4.3.2A.1-2/1 THEN R ELSE N/A | |
| C054 IF A.4.1-1/2 AND A.4.1-2/8 AND A.4.1-3/1 AND (A.4.1-4A/3 OR A.4.1-4A/4) AND A.4.3.2A.1-2/2 THEN R ELSE N/A | |
| C055 IF A.4.1-1/2 AND A.4.1-2/8 AND A.4.1-3/1 AND (A.4.1-4A/3 OR A.4.1-4A/4) AND A.4.3.2A.1-2/3 THEN R ELSE N/A | |
| C056 IF A.4.1-1/2 AND A.4.1-2/8 AND A.4.1-3/1 AND (A.4.1-4A/3 OR A.4.1-4A/4) AND A.4.3.2A.1-2/4 THEN R ELSE N/A | |
| C057 IF A.4.1-1/2 AND A.4.1-2/8 AND A.4.1-3/1 AND (A.4.1-4A/3 OR A.4.1-4A/4) AND A.4.3.2A.1-2/5 THEN R ELSE N/A | |
| C058 IF A.4.1-1/2 AND A.4.1-2/8 AND A.4.1-3/1 AND (A.4.1-4A/3 OR A.4.1-4A/4) AND A.4.3.2A.1-2/6 THEN R ELSE N/A | |
| C059 IF A.4.1-1/2 AND A.4.1-2/8 AND A.4.1-3/1 AND (A.4.1-4A/3 OR A.4.1-4A/4) AND A.4.3.2A.1-2/7 THEN R ELSE N/A | |
| C060 IF A.4.1-1/2 AND A.4.1-2/8 AND A.4.1-3/1 AND A.4.3.2-1/14 THEN R ELSE N/A | |
| C061 IF A.4.1-1/2 AND A.4.1-2/8 AND (A.4.1-3/1 OR A.4.1-3/2 OR A.4.1-3/3 OR A.4.1-3/5) THEN R ELSE N/A | |
| C061a IF A.4.1-1/2 AND A.4.1-2/8 AND (A.4.1-3/1 OR A.4.1-3/2 OR A.4.1-3/3 OR A.4.1-3/5) AND A.4.3.2A.1-1 THEN R ELSE N/A | |
| C061b IF A.4.1-1/2 AND A.4.1-2/8 AND (A.4.1-3/1 OR A.4.1-3/2 OR A.4.1-3/3 OR A.4.1-3/5) AND A.4.3.2A.1-2 THEN R ELSE N/A | |
| C062c IF A.4.1-1/2 AND A.4.1.2/8 AND (A.4.1-3/1 OR A.4.1-3/2 OR A.4.1-3/3 OR A.4.1-3/5) AND A.4.3.9-1/1 THEN R ELSE N/A | |
| C063 IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-3/2 AND (A.4.1-4/3 OR A.4.1-4/2) AND A.4.3.2B.2.0-1A/2 THEN R ELSE N/A | |
| C064 IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-3/2 AND (A.4.1-4/3 OR A.4.1-4/2) AND A.4.3.2B.2.0-1A/3 THEN R ELSE N/A | |
| C064a IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-3/2 AND (A.4.1-4/3 OR A.4.1-4/2) AND A.4.3.2B.2.0-1A/4 THEN R ELSE N/A | |
| C064b IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-3/2 AND (A.4.1-4/3 OR A.4.1-4/2) AND A.4.3.2B.2.0-1A/5 THEN R ELSE N/A | |
| C065 IF (A.4.1-4/1 OR A.4.1-4/2 OR A.4.1-4/3) AND A.4.1-3/2 AND (A.4.3.2-1/42 OR A.4.3.2-1/43 OR A.4.3.2-1/44) OR (A.4.3.2-1/42a OR A.4.3.2-1/43a OR A.4.3.2-1/44a)) AND (A.4.3.2-1/24 OR A.4.3.2-1/24A) THEN R ELSE N/A | |
| C065a IF (A.4.1-4/1 OR A.4.1-4/2 OR A.4.1-4/3) AND A.4.1-3/2 AND (A.4.3.2-1/42 OR A.4.3.2-1/43 OR A.4.3.2-1/44) OR (A.4.3.2-1/42a OR A.4.3.2-1/43a OR A.4.3.2-1/44a)) AND (A.4.3.2-1/24 OR A.4.3.2-1/24A) AND A.4.3.2A.1-1/1 THEN R ELSE N/A | |
| C065b IF (A.4.1-4/1 OR A.4.1-4/2 OR A.4.1-4/3) AND A.4.1-3/2 AND (A.4.3.2-1/42 OR A.4.3.2-1/43 OR A.4.3.2-1/44) OR (A.4.3.2-1/42a OR A.4.3.2-1/43a OR A.4.3.2-1/44a)) THEN R ELSE N/A | |
| C065c IF (A.4.1-4/4 OR A.4.1-4/5) AND A.4.1-3/2 AND (A.4.3.2-1/42b OR A.4.3.2-1/43b) THEN R ELSE N/A | |
| C065d IF (A.4.1-4/1 OR A.4.1-4/2 OR A.4.1-4/3) AND A.4.1-3/2 AND (A.4.3.2-1/24B OR A.4.3.2-1/24C) AND A.4.3.2A.1-1/1 THEN R ELSE N/A | |
| C066 IF A.4.1-2/7 AND A.4.1-3/1 AND ((A.4.3.2-1/42 OR A.4.3.2-1/43 OR A.4.3.2-1/44) OR (A.4.3.2-1/42a OR A.4.3.2-1/43a OR A.4.3.2-1/44a)) AND (A.4.3.2-1/24 OR A.4.3.2-1/24A) THEN R ELSE N/A | |
| C066a IF A.4.1-2/7 AND A.4.1-3/1 AND ((A.4.3.2-1/42 OR A.4.3.2-1/43 OR A.4.3.2-1/44) OR (A.4.3.2-1/42a OR A.4.3.2-1/43a OR A.4.3.2-1/44a)) AND (A.4.3.2-1/24 OR A.4.3.2-1/24A) AND A.4.3.2A.1-1/1 THEN R ELSE N/A | |
| C066b IF A.4.1-2/7 AND A.4.1-3/1 AND ((A.4.3.2-1/42 OR A.4.3.2-1/43 OR A.4.3.2-1/44) OR (A.4.3.2-1/42a OR A.4.3.2-1/43a OR A.4.3.2-1/44a)) THEN R ELSE N/A | |
| C066c IF A.4.1-1/2 AND A.4.1-2/8 AND A.4.1-3/2 AND (A.4.3.2-1/42b OR A.4.3.2-1/43b) THEN R ELSE N/A | |
| C066d IF A.4.1-2/7 AND A.4.1-3/1 AND (A.4.3.2-1/24B OR A.4.3.2-1/24C) AND A.4.3.2A.1-1/1 THEN R ELSE N/A | |
| C066e IF A.4.1-2/7 AND A.4.1-3/1 AND (A.4.3.2-1/24B OR A.4.3.2-1/24C) AND A.4.3.2A.1-1/2 THEN R ELSE N/A | |
| C067 IF (A.4.1-4/1 OR A.4.1-4/2 OR A.4.1-4/3 OR A.4.1-4/5) AND (A.4.1-4A/1 OR A.4.1-4A/2 OR A.4.1-4A/5) AND A.4.1-3/2 THEN R ELSE N/A | |
| C068 IF (A.4.1-4/1 OR A.4.1-4/2 OR A.4.1-4/3 OR A.4.1-4/5) AND [10] A.4.6-1/1 AND A.4.1-3/2 THEN R ELSE N/A | |
| C069 IF (A.4.1-4/4 OR A.4.1-4/5) AND A.4.1-3/2 AND A.4.3.6-1/6 THEN R ELSE N/A | |
| C070 IF A.4.1-1/1 AND (A.4.1-3/1 OR A.4.1-3/2 OR A.4.1-3/3 OR A.4.1-3/5) AND A.4.3.2-1/41 AND NOT A.4.3.1-7a/2 THEN R ELSE N/A | |
| C071 IF A.4.1-1/2 AND (A.4.1-3/1 OR A.4.1-3/2 OR A.4.1-3/3 OR A.4.1-3/5) AND A.4.3.2-1/41 AND NOT A.4.3.1-7a/3 THEN R ELSE N/A | |
| C072 IF A.4.1-1/1 AND (A.4.1-3/1 OR A.4.1-3/2 OR A.4.1-3/3 OR A.4.1-3/5) AND A.4.3.2-1/41 AND (NOT A.4.3.9-1/2 AND A.4.3.1-7a/2) THEN R ELSE N/A | |
| C073 IF A.4.1-1/2 AND (A.4.1-3/1 OR A.4.1-3/2 OR A.4.1-3/3 OR A.4.1-3/5) AND A.4.3.2-1/41 AND A.4.3.1-7a/3 THEN R ELSE N/A | |
| C074 IF A.4.1-1/1 AND (A.4.1-3/1 OR A.4.1-3/2 OR A.4.1-3/3 OR A.4.1-3/5) AND A.4.3.2-1/39 AND A.4.3.2-1/40 AND NOT A.4.3.1-7a/2 THEN R ELSE N/A | |
| C075 IF A.4.1-1/2 AND (A.4.1-3/1 OR A.4.1-3/2 OR A.4.1-3/3 OR A.4.1-3/5) AND A.4.3.2-1/39 AND A.4.3.2-1/40 AND NOT A.4.3.1-7a/3 THEN R ELSE N/A | |
| C076 IF A.4.1-1/1 AND (A.4.1-3/1 OR A.4.1-3/2 OR A.4.1-3/3 OR A.4.1-3/5) AND A.4.3.2-1/39 AND A.4.3.2-1/40 AND (NOT A.4.3.9-1/2 AND A.4.3.1-7a/2) THEN R ELSE N/A | |
| C077 IF A.4.1-1/2 AND (A.4.1-3/1 OR A.4.1-3/2 OR A.4.1-3/3 OR A.4.1-3/5) AND A.4.3.2-1/39 AND A.4.3.2-1/40 AND A.4.3.1-7a/3 THEN R ELSE N/A | |
| C078 IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-2/7 AND A.4.1-3/1 AND (A.4.1-2/3 OR A.4.1-2/5) AND A.4.1-4A/1 AND A.4.3.2A.1-1/1 THEN R ELSE N/A | |
| C079 IF A.4.1-1/3 AND A.4.1-2/7 THEN R ELSE N/A | |
| C079a IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-1/3 AND A.4.1-2/7 THEN R ELSE N/A | |
| C079b IF A.4.1-1/3 AND A.4.1-2/7 AND A.4.3.10-1/25 THEN R ELSE N/A | |
| C080 IF ([10]A.4.1-1/1 OR [10]A.4.1-1/2) AND A.4.1-1/2 AND A.4.1-2/8 THEN R ELSE N/A | |
| C080a IF ([10]A.4.1-1/1 OR [10]A.4.1-1/2) AND A.4.1-1/2 AND A.4.1-2/8 AND A.4.3.5-1/1 THEN R ELSE N/A | |
| C081 IF ([10]A.4.1-1/1 OR [10]A.4.1-1/2) AND (A.4.1-3/2 OR A.4.1-3/5) AND (A.4.3.6-1/46 OR A.4.3.6-1/47) THEN R ELSE N/A | |
| C081a IF ([10]A.4.1-1/1 OR [10]A.4.1-1/2) AND (A.4.1-3/2 OR A.4.1-3/5) AND ([10]A.4.4-1a/5 OR [10]A.4.4-1b/5) AND (A.4.3.6-1/46 OR A.4.3.6-1/47) THEN R ELSE N/A | |
| C082 IF (A.4.1-4/1 OR A.4.1-4/2 OR A.4.1-4/3 OR A.4.1-4/5) AND A.4.1-3/2 AND A.4.3.2-1/63 AND A.4.3.2-1/65 THEN R ELSE N/A | |
| C082a IF (A.4.1-4/1 OR A.4.1-4/2 OR A.4.1-4/3 OR A.4.1-4/5) AND A.4.1-3/2 AND A.4.3.2-1/63 AND A.4.3.2-1/65 AND A.4.3.5-1/1 THEN R ELSE N/A | |
| C082b IF (A.4.1-4/1 OR A.4.1-4/2 OR A.4.1-4/3 OR A.4.1-4/5) AND A.4.1-3/2 AND A.4.3.2-1/63 AND A.4.3.2-1/65 AND A.4.3.2-1/xy1->139 THEN R ELSE N/A | |
| C083 IF (A.4.1-4/1 OR A.4.1-4/2 OR A.4.1-4/3 OR A.4.1-4/5) AND A.4.1-3/2 AND A.4.3.6-1/41 AND A.4.3.2-1/64 AND A.4.3.2-1/65 THEN R ELSE N/A | |
| C083a IF (A.4.1-4/1 OR A.4.1-4/2 OR A.4.1-4/3 OR A.4.1-4/5) AND A.4.1-3/2 AND A.4.3.6-1/41 AND A.4.3.2-1/64 AND A.4.3.2-1/65 AND A.4.3.5-1/1 THEN R ELSE N/A | |
| C084 IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-2/7 AND A.4.1-3/1 AND A.4.3.2-1/63 AND A.4.3.2-1/65 THEN R ELSE N/A | |
| C084a IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-2/7 AND A.4.1-3/1 AND A.4.3.2-1/63 AND A.4.3.2-1/65 AND A.4.3.5-1/1THEN R ELSE N/A | |
| C085 IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-2/7 AND A.4.1-3/1 AND A.4.3.6-1/41 AND A.4.3.2-1/64 AND A.4.3.2-1/65 THEN R ELSE N/A | |
| C085a IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-2/7 AND A.4.1-3/1 AND A.4.3.6-1/41 AND A.4.3.2-1/64 AND A.4.3.2-1/65 AND A.4.3.5-1/1 THEN R ELSE N/A | |
| C085b IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-2/7 AND A.4.1-3/1 AND A.4.3.6-1/41 AND A.4.3.2-1/64 AND A.4.3.2-1/65 AND A.4.3.5-1/1 AND A.4.3.2-1/xy1->139 THEN R ELSE N/A | |
| C086 IF ((A.4.1-1/1 AND [10]A.4.1-1/1) OR (A.4.1-1/1 AND [10]A.4.1-1/2) OR (A.4.1-1/2 AND [10]A.4.1-1/1) OR (A.4.1-1/2 AND [10]A.4.1-1/2)) AND A.4.1-2/7 THEN R ELSE N/A | |
| C086a IF ((A.4.1-1/1 AND [10]A.4.1-1/1) OR (A.4.1-1/1 AND [10]A.4.1-1/2) OR (A.4.1-1/2 AND [10]A.4.1-1/1) OR (A.4.1-1/2 AND [10]A.4.1-1/2)) AND A.4.1-2/7 AND A.4.3.5-1/1 THEN R ELSE N/A | |
| C087 Void | |
| C088 IF A.4.1-1/1 AND (A.4.1-3/1 OR A.4.1-3/2 OR A.4.1-3/3 OR A.4.1-3/5) AND NOT A.4.3.1-7a/2 AND A.4.3.5-1/1 AND A.4.3.5-1/5 THEN R ELSE N/A | |
| C089 IF A.4.1-1/1 AND (A.4.1-3/1 OR A.4.1-3/2 OR A.4.1-3/3 OR A.4.1-3/5) AND (NOT A.4.3.9-1/2 AND A.4.3.1-7a/2) AND A.4.3.5-1/1 AND A.4.3.5-1/5 THEN R ELSE N/A | |
| C090 IF A.4.1-1/2 AND (A.4.1-3/1 OR A.4.1-3/2 OR A.4.1-3/3 OR A.4.1-3/5) AND NOT A.4.3.1-7a/3 AND A.4.3.5-1/1 AND A.4.3.5-1/5 THEN R ELSE N/A | |
| C091 IF A.4.1-1/2 AND (A.4.1-3/1 OR A.4.1-3/2 OR A.4.1-3/3 OR A.4.1-3/5) AND (NOT A.4.3.9-1/2 AND A.4.3.1-7a/3) AND A.4.3.5-1/1 AND A.4.3.5-1/5 THEN R ELSE N/A | |
| C092 IF A.4.1-1/2 AND A.4.1-2/8 AND (A.4.1-3/1 OR A.4.1-3/2 OR A.4.1-3/3 OR A.4.1-3/5) AND A.4.3.5-1/1 AND A.4.3.5-1/5 THEN R ELSE N/A | |
| C093 IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-2/7 AND A.4.1-3/1 AND A.4.3.6-1/45 THEN R ELSE N/A | |
| C094 IF ((A.4.1-1/1 AND A.4.1-1/1) OR (A.4.1-1/1 AND A.4.1-1/2) OR (A.4.1-1/2 AND A.4.1-1/1) OR (A.4.1-1/2 AND A.4.1-1/2)) AND A.4.1-3/1 AND A.4.3.6-1/45 THEN R ELSE N/A | |
| C095 IF A.4.1-1/2 AND A.4.1-2/8 AND A.4.1-3/1 AND A.4.3.6-1/45 THEN R ELSE N/A | |
| C095a IF A.4.1-1/2 AND A.4.1-2/8 AND A.4.1-3/1 AND A.4.3.6-1/54 AND A.4.3.7-1/19 AND A.4.4-1/16 THEN R ELSE N/A | |
| C096 IF ((A.4.1-1/1 OR A.4.1-1/2) AND [10] A.4.1-1/3) THEN R ELSE N/A | |
| C097 IF ((A.4.1-1/1 AND [10]A.4.1-1/1) OR (A.4.1-1/1 AND [10]A.4.1-1/2) OR (A.4.1-1/2 AND [10]A.4.1-1/1) OR (A.4.1-1/2 AND [10]A.4.1-1/2)) AND A.4.1-2/7 AND A.4.1-3/2 AND A.4.3.5-1/1 AND (A.4.3.11-1/1 OR A.4.3.11-1/3) THEN R ELSE N/A | |
| C098 IF (A.4.1-4/1 OR A.4.1-4/2 OR A.4.1-4/3) AND A.4.1-3/2 AND A.4.3.5-1/1 AND (A.4.3.11-1/1 OR A.4.3.11-1/3) THEN R ELSE N/A THEN R ELSE N/A | |
| C099 IF A.4.1-1/1 AND (A.4.1-3/1 OR A.4.1-3/2 OR A.4.1-3/3 OR A.4.1-3/5) AND A.4.3.11-1/2 AND NOT A.4.3.1-7a/2 THEN R ELSE N/A | |
| C100 IF A.4.1-1/3 AND A.4.1-2/7 AND A.4.3.10-1/3 THEN R ELSE N/A | |
| C101 IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-2/7 AND A.4.1-3/1 AND A.4.3.8-1/9 THEN R ELSE N/A | |
| C102 IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-2/7 AND A.4.1-3/1 AND A.4.3.8-1/16 THEN R ELSE N/A | |
| C103 IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-2/7 AND A.4.1-2/8 AND A.4.1-3/1 AND A.4.3.8-1/15 AND A.4.3.8-1/18 THEN R ELSE N/A | |
| C104 IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-2/7 AND A.4.1-2/8 AND A.4.1-3/1 AND A.4.3.8-1/17 AND A.4.3.8-1/18 THEN R ELSE N/A | |
| C105 IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-2/7 AND A.4.1-3/1 AND A.4.3.8-1/11 THEN R ELSE N/A | |
| C106 IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-2/8 AND A.4.1-3/1 AND A.4.3.8-1/11 THEN R ELSE N/A | |
| C107 IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-2/7 AND A.4.1-3/1 AND A.4.3.8-1/15 THEN R ELSE N/A | |
| C108 IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-2/7 AND A.4.1-3/1 AND A.4.3.8-1/17 THEN R ELSE N/A | |
| C109 IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-2/7 AND A.4.1-3/1 AND A.4.3.8-1/15 AND A.4.3.8-1/18 THEN R ELSE N/A | |
| C110 IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-2/7 AND A.4.1-3/1 AND A.4.3.8-1/17 AND A.4.3.8-1/18 THEN R ELSE N/A | |
| C111 IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-2/7 AND A.4.1-3/1 AND A.4.3.2-1/31 AND A.4.3.2-1/57 THEN R ELSE N/A | |
| C112 IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-2/7 AND A.4.1-3/1 AND A.4.3.2-1/31 AND A.4.3.2-1/57 AND (A.4.1-2/3 OR A.4.1-2/5) THEN R ELSE N/A | |
| C113 IF A.4.1-1/1 AND (A.4.1-3/1 OR A.4.1-3/2 OR A.4.1-3/3 OR A.4.1-3/5) AND A.4.3.2-1/53 AND A.4.3.2-1/56 AND NOT A.4.3.1-7a/2 THEN R ELSE N/A | |
| C113a IF A.4.1-1/2 AND (A.4.1-3/1 OR A.4.1-3/2 OR A.4.1-3/3 OR A.4.1-3/5) AND A.4.3.2-1/53 AND A.4.3.2-1/56 AND NOT A.4.3.1-7a/3 THEN R ELSE N/A | |
| C113b IF A.4.1-1/1 AND (A.4.1-3/1 OR A.4.1-3/2 OR A.4.1-3/3 OR A.4.1-3/5) AND A.4.3.2-1/53 AND A.4.3.2-1/56 AND (NOT A.4.3.9-1/2 AND A.4.3.1-7a/2) THEN R ELSE N/A | |
| C113c IF A.4.1-1/2 AND (A.4.1-3/1 OR A.4.1-3/2 OR A.4.1-3/3 OR A.4.1-3/5) AND A.4.3.2-1/53 AND A.4.3.2-1/56 AND A.4.3.1-7a/3 THEN R ELSE N/A | |
| C114 IF A.4.1-1/1 AND (A.4.1-3/1 OR A.4.1-3/2 OR A.4.1-3/3 OR A.4.1-3/5) AND A.4.3.2-1/54 AND A.4.3.2-1/56 AND NOT A.4.3.1-7a/2 THEN R ELSE N/A | |
| C114a IF A.4.1-1/2 AND (A.4.1-3/1 OR A.4.1-3/2 OR A.4.1-3/3 OR A.4.1-3/5) AND A.4.3.2-1/54 AND A.4.3.2-1/56 AND NOT A.4.3.1-7a/3 THEN R ELSE N/A | |
| C114b IF A.4.1-1/1 AND (A.4.1-3/1 OR A.4.1-3/2 OR A.4.1-3/3 OR A.4.1-3/5) AND A.4.3.2-1/54 AND A.4.3.2-1/56 AND (NOT A.4.3.9-1/2 AND A.4.3.1-7a/2) THEN R ELSE N/A | |
| C114c IF A.4.1-1/2 AND (A.4.1-3/1 OR A.4.1-3/2 OR A.4.1-3/3 OR A.4.1-3/5) AND A.4.3.2-1/54 AND A.4.3.2-1/56 AND A.4.3.1-7a/3 THEN R ELSE N/A | |
| C115 IF A.4.1-1/1 AND (A.4.1-3/1 OR A.4.1-3/2 OR A.4.1-3/3 OR A.4.1-3/5) AND A.4.3.2-1/55 AND A.4.3.2-1/56 AND NOT A.4.3.1-7a/2 THEN R ELSE N/A | |
| C115a IF A.4.1-1/2 AND (A.4.1-3/1 OR A.4.1-3/2 OR A.4.1-3/3 OR A.4.1-3/5) AND A.4.3.2-1/55 AND A.4.3.2-1/56 AND NOT A.4.3.1-7a/3 THEN R ELSE N/A | |
| C115b IF A.4.1-1/1 AND (A.4.1-3/1 OR A.4.1-3/2 OR A.4.1-3/3 OR A.4.1-3/5) AND A.4.3.2-1/55 AND A.4.3.2-1/56 AND (NOT A.4.3.9-1/2 AND A.4.3.1-7a/2) THEN R ELSE N/A | |
| C115c IF A.4.1-1/2 AND (A.4.1-3/1 OR A.4.1-3/2 OR A.4.1-3/3 OR A.4.1-3/5) AND A.4.3.2-1/55 AND A.4.3.2-1/56 AND A.4.3.1-7a/3 THEN R ELSE N/A | |
| C116 IF A.4.1-1/1 AND (A.4.1-3/1 OR A.4.1-3/2 OR A.4.1-3/3 OR A.4.1-3/5) AND A.4.3.2-1/61 AND NOT A.4.3.1-7a/2 THEN R ELSE N/A | |
| C117 IF A.4.1-1/2 AND (A.4.1-3/1 OR A.4.1-3/2 OR A.4.1-3/3 OR A.4.1-3/5) AND A.4.3.2-1/61 AND NOT A.4.3.1-7a/3 THEN R ELSE N/A | |
| C118 IF A.4.1-1/1 AND (A.4.1-3/1 OR A.4.1-3/2 OR A.4.1-3/3 OR A.4.1-3/5) AND A.4.3.2-1/61 AND (NOT A.4.3.9-1/2 AND A.4.3.1-7a/2) THEN R ELSE N/A | |
| C119 IF A.4.1-1/2 AND (A.4.1-3/1 OR A.4.1-3/2 OR A.4.1-3/3 OR A.4.1-3/5) AND A.4.3.2-1/61 AND A.4.3.1-7a/3 THEN R ELSE N/A | |
| C120 IF A.4.1-1/1 AND (A.4.1-3/1 OR A.4.1-3/2 OR A.4.1-3/3 OR A.4.1-3/5) AND A.4.3.2-1/12 AND A.4.3.2-1/39 AND NOT A.4.3.1-7a/2 THEN R ELSE N/A | |
| C121 IF A.4.1-1/1 AND (A.4.1-3/1 OR A.4.1-3/2 OR A.4.1-3/3 OR A.4.1-3/5) AND A.4.3.2-1/62 AND NOT A.4.3.1-7a/2 THEN R ELSE N/A | |
| C122 IF A.4.1-1/2 AND (A.4.1-3/1 OR A.4.1-3/2 OR A.4.1-3/3 OR A.4.1-3/5) AND A.4.3.2-1/12 AND A.4.3.2-1/39 AND NOT A.4.3.1-7a/3 THEN R ELSE N/A | |
| C123 IF A.4.1-1/2 AND (A.4.1-3/1 OR A.4.1-3/2 OR A.4.1-3/3 OR A.4.1-3/5) AND A.4.3.2-1/62 AND NOT A.4.3.1-7a/3 THEN R ELSE N/A | |
| C124 IF A.4.1-1/1 AND (A.4.1-3/1 OR A.4.1-3/2 OR A.4.1-3/3 OR A.4.1-3/5) AND A.4.3.2-1/12 AND A.4.3.2-1/39 AND (NOT A.4.3.9-1/2 AND A.4.3.1-7a/2) THEN R ELSE N/A | |
| C125 IF A.4.1-1/2 AND (A.4.1-3/1 OR A.4.1-3/2 OR A.4.1-3/3 OR A.4.1-3/5) AND A.4.3.2-1/12 AND A.4.3.2-1/39 AND A.4.3.1-7a/3 THEN R ELSE N/A | |
| C126 IF A.4.1-1/2 AND A.4.1-2/8 AND (A.4.1-3/1 OR A.4.1-3/2 OR A.4.1-3/3 OR A.4.1-3/5) and A.4.3.2-1/3 THEN R ELSE N/A | |
| C126a IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-2/7 AND A.4.1-3/2 AND A.4.1-4/3 AND A.4.3.2B.2.0-2A/1 AND A.4.3.2-1/37 THEN R ELSE N/A | |
| C127 IF A.4.1-1/1 AND (A.4.1-3/1 OR A.4.1-3/2 OR A.4.1-3/3 OR A.4.1-3/5) AND A.4.3.11-1/2 AND (NOT A.4.3.9-1/2 AND A.4.3.1-7a/2) THEN R ELSE N/A | |
| C127a IF A.4.1-1/1 AND (A.4.1-3/1 OR A.4.1-3/2 OR A.4.1-3/3 OR A.4.1-3/5) AND A.4.3.2A.1-1/1 AND A.4.3.11-1/2 AND (NOT A.4.3.9-1/2 AND A.4.3.1-7a/2) OR (NOT A.4.3.9-1/2 AND A.4.3.1-7a/3) THEN R ELSE N/A | |
| C128 IF A.4.1-1/1 AND (A.4.1-3/1 OR A.4.1-3/2 OR A.4.1-3/3 OR A.4.1-3/5) AND A.4.3.2-1/67 AND NOT A.4.3.1-7a/2 THEN R ELSE N/A | |
| C129 IF A.4.1-1/2 AND (A.4.1-3/1 OR A.4.1-3/2 OR A.4.1-3/3 OR A.4.1-3/5) AND A.4.3.2-1/67 AND NOT A.4.3.1-7a/3 THEN R ELSE N/A | |
| C130 IF A.4.1-1/1 AND (A.4.1-3/1 OR A.4.1-3/2 OR A.4.1-3/3 OR A.4.1-3/5) AND A.4.3.2-1/67 AND (NOT A.4.3.9-1/2 AND A.4.3.1-7a/2) THEN R ELSE N/A | |
| C131 IF A.4.1-1/2 AND (A.4.1-3/1 OR A.4.1-3/2 OR A.4.1-3/3 OR A.4.1-3/5) AND A.4.3.2-1/67 AND (NOT A.4.3.9-1/2 AND A.4.3.1-7a/3) THEN R ELSE N/A | |
| C132 IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-2/7 AND A.4.1-3/1 AND A.4.3.2-1/71 AND A.4.3.2-1/76 THEN R ELSE N/A THEN R ELSE N/A | |
| C133 IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-2/7 AND A.4.1-3/1 AND A.4.3.2-1/74 THEN R ELSE N/A THEN R ELSE N/A | |
| C134 IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-2/7 AND A.4.1-3/1 AND A.4.3.2-1/71 AND A.4.3.2-1/72 THEN R ELSE N/A THEN R ELSE N/A | |
| C135 IF (A.4.1-4/1 OR A.4.1-4/2 OR A.4.1-4/3) AND A.4.1-3/2 AND A.4.3.2-1/71 AND A.4.3.2-1/76 THEN R ELSE N/A | |
| C136 IF (A.4.1-4/1 OR A.4.1-4/2 OR A.4.1-4/3) AND A.4.1-3/2 AND A.4.3.2-1/73 THEN R ELSE N/A | |
| C137 IF (A.4.1-4/1 OR A.4.1-4/2 OR A.4.1-4/3) AND A.4.1-3/2 AND A.4.3.2-1/71 AND A.4.3.2-1/75 THEN R ELSE N/A | |
| C138 IF A.4.1-1/2 AND A.4.1-2/8 AND A.4.1-3/1 AND A.4.3.2-1/71 AND A.4.3.2-1/76 THEN R ELSE N/A | |
| C139 IF A.4.1-1/2 AND A.4.1-2/8 AND A.4.1-3/1 AND A.4.3.2-1/74 THEN R ELSE N/A | |
| C140 IF A.4.1-1/2 AND A.4.1-2/8 AND A.4.1-3/1 AND A.4.3.2-1/71 AND A.4.3.2-1/72 THEN R ELSE N/A | |
| C141 IF (A.4.1-1/1 OR A.4.1-1/2) AND (A.4.1-4/1 OR A.4.1-4/2 OR A.4.1-4/3) AND A.4.1-3/2 AND A.4.3.2-1/71 AND A.4.3.2-1/76 THEN R ELSE N/A | |
| C141a IF (A.4.1-1/1 OR A.4.1-1/2) AND (A.4.1-4/4 OR A.4.1-4/5) AND A.4.1-3/2 AND A.4.3.5-1/1 AND A.4.3.2-1/71 AND A.4.3.2-1/76 THEN R ELSE N/A | |
| C141b IF (A.4.1-1/1 OR A.4.1-1/2) AND (A.4.1-4/4 OR A.4.1-4/5) AND A.4.1-3/2 AND A.4.3.2-1/71 AND A.4.3.2-1/76 THEN R ELSE N/A | |
| C142 IF (A.4.1-1/1 OR A.4.1-1/2) AND (A.4.1-4/1 OR A.4.1-4/2 OR A.4.1-4/3) AND A.4.1-3/2 AND A.4.3.5-1/1 AND A.4.3.2-1/73 THEN R ELSE N/A | |
| C142a IF (A.4.1-1/1 OR A.4.1-1/2) AND (A.4.1-4/4 OR A.4.1-4/5) AND A.4.1-3/2 AND A.4.3.2-1/74 THEN R ELSE N/A | |
| C143 IF (A.4.1-1/1 OR A.4.1-1/2) AND (A.4.1-4/1 OR A.4.1-4/2 OR A.4.1-4/3) AND A.4.1-3/2 AND A.4.3.5-1/1 AND A.4.3.2-1/71 AND A.4.3.2-1/75 THEN R ELSE N/A | |
| C143a IF (A.4.1-1/1 OR A.4.1-1/2) AND (A.4.1-4/4 OR A.4.1-4/5) AND A.4.1-3/2 AND A.4.3.2-1/71 AND A.4.3.2-1/75 THEN R ELSE N/A | |
| C144 IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-2/7 AND A.4.1-3/1 AND A.4.3.5-1/1 AND A.4.3.2-1/71 AND A.4.3.2-1/76 THEN R ELSE N/A | |
| C144a IF A.4.1-1/2 AND A.4.1-2/8 AND A.4.1-3/1 AND A.4.3.2-1/71 AND A.4.3.2-1/76 THEN R ELSE N/A | |
| C145 IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-2/7 AND A.4.1-3/1 AND A.4.3.2-1/74 THEN R ELSE N/A | |
| C145a IF A.4.1-1/2 AND A.4.1-2/8 AND A.4.1-3/1 AND A.4.3.5-1/1 AND A.4.3.2-1/73 THEN R ELSE N/A | |
| C146 IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-2/7 AND A.4.1-3/1 AND A.4.3.2-1/71 AND A.4.3.2-1/72 THEN R ELSE N/A | |
| C146a IF A.4.1-1/1 AND A.4.1-2/8 AND A.4.1-3/1 AND A.4.3.5-1/1 AND A.4.3.2-1/71 AND A.4.3.2-1/75 THEN R ELSE N/A | |
| C147 IF A.4.1-1/2 AND A.4.1-2/8 AND A.4.1-3/1 AND A.4.3.2-1/64 AND A.4.3.2-1/77 THEN R ELSE N/A | |
| C148 IF A.4.1-1/2 AND A.4.1-2/8 AND A.4.1-3/1 AND A.4.3.5-1/1 AND A.4.3.2-1/64 AND A.4.3.2-1/77 THEN R ELSE N/A | |
| C148a IF A.4.1-1/2 AND A.4.1-2/8 AND A.4.1-3/1 AND A.4.3.5-1/1 AND A.4.3.2-1/64 AND A.4.3.2-1/77 AND A.4.3.2-1/xy1->139 THEN R ELSE N/A | |
| C149 IF (A.4.1-4/4 OR A.4.1-4/5) AND A.4.1-3/2 AND A.4.3.2-1/64 AND A.4.3.2-1/77 THEN R ELSE N/A | |
| C150 IF (A.4.1-4/4 OR A.4.1-4/5) AND A.4.1-3/2 AND A.4.3.5-1/1 AND A.4.3.2-1/64 AND A.4.3.2-1/77 THEN R ELSE N/A | |
| C151 Void | |
| C152 IF A.4.1-1/1 AND (A.4.1-3/1 OR A.4.1-3/2 OR A.4.1-3/3 OR A.4.1-3/5) AND A.4.3.2-1/56 AND A.4.3.2-1/78 AND A.4.3.1-7a/1 AND NOT A.4.3.1-7a/2 THEN R ELSE N/A | |
| C152a IF (A.4.1-1/1 OR A.4.1-1/2) AND (A.4.1-3/1 OR A.4.1-3/2 OR A.4.1-3/3 OR A.4.1-3/5) AND A.4.3.2-1/56 AND A.4.3.2-1/78 AND A.4.3.2A.1-1/1 AND A.4.3.1-7a/1 AND NOT A.4.3.1-7a/2 AND NOT A.4.3.1-7a/3 THEN R ELSE N/A | |
| C152b IF (A.4.1-1/1 OR A.4.1-1/2) AND (A.4.1-3/1 OR A.4.1-3/2 OR A.4.1-3/3 OR A.4.1-3/5) AND A.4.3.2-1/56 AND A.4.3.2-1/78 AND A.4.3.11-1/2 AND A.4.3.1-7a/1 AND NOT A.4.3.1-7a/2 AND NOT A.4.3.1-7a/3 THEN R ELSE N/A | |
| C153 IF A.4.1-1/2 AND (A.4.1-3/1 OR A.4.1-3/2 OR A.4.1-3/3 OR A.4.1-3/5) AND A.4.3.2-1/56 AND A.4.3.2-1/78 AND NOT A.4.3.1-7a/3 THEN R ELSE N/A | |
| C154 IF A.4.1-1/1 AND (A.4.1-3/1 OR A.4.1-3/2 OR A.4.1-3/3 OR A.4.1-3/5) AND A.4.3.2-1/56 AND A.4.3.2-1/78 AND (NOT A.4.3.9-1/2 AND A.4.3.1-7a/2) THEN R ELSE N/A | |
| C154a IF (A.4.1-1/1 OR A.4.1-1/2) AND (A.4.1-3/1 OR A.4.1-3/2 OR A.4.1-3/3 OR A.4.1-3/5) AND A.4.3.2-1/56 AND A.4.3.2-1/78 AND A.4.3.2A.1-1/1 AND (NOT A.4.3.9-1/2 AND A.4.3.1-7a/2) OR (NOT A.4.3.9-1/2 AND A.4.3.1-7a/3) THEN R ELSE N/A | |
| C155 IF A.4.1-1/2 AND (A.4.1-3/1 OR A.4.1-3/2 OR A.4.1-3/3 OR A.4.1-3/5) AND A.4.3.2-1/56 AND A.4.3.2-1/78 AND A.4.3.1-7a/3 THEN R ELSE N/A | |
| C156 IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-2/7 AND A.4.1-3/1 AND A.4.3.2-1/79 AND NOT A.4.3.2-1/84 THEN R ELSE N/A | |
| C157 IF (A.4.1-4/1 OR A.4.1-4/2 OR A.4.1-4/3 OR A.4.1-4/5) AND A.4.1-3/2 AND A.4.3.2-1/46 THEN R ELSE N/A | |
| C158 IF (A.4.1-4/4 OR A.4.1-4/5) AND A.4.1-3/2 AND A.4.3.2-1/46 THEN R ELSE N/A | |
| C159 IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-2/7 AND A.4.1-3/1 AND A.4.3.2-1/46THEN R ELSE N/A | |
| C160 IF A.4.1-1/2 AND A.4.1-2/8 AND A.4.1-3/1 AND A.4.3.2-1/46 THEN R ELSE N/A | |
| C161 IF (A.4.1-4/4 OR A.4.1-4/5) AND A.4.1-3/2 AND A.4.3.6-1/41a THEN R ELSE N/A | |
| C162 IF (A.4.1-4/4 OR A.4.1-4/5) AND A.4.1-3/2 AND A.4.3.6-1/41a AND A.4.3.5-1/1 THEN R ELSE N/A | |
| C162a IF (A.4.1-4/4 OR A.4.1-4/5) AND A.4.1-3/2 AND A.4.3.6-1/41a AND A.4.3.5-1/1 AND A.4.3.2-1/xy1->139 THEN R ELSE N/A | |
| C163 IF (A.4.1-4/4 OR A.4.1-4/5) AND A.4.1-3/2 AND A.4.3.6-1/41a AND A.4.3.2-1/34 THEN R ELSE N/A | |
| C164 IF (A.4.1-1/2 AND A.4.1-2/8 AND A.4.1-3/1) AND A.4.3.6-1/41a THEN R ELSE N/A | |
| C165 IF (A.4.1-1/2 AND A.4.1-2/8 AND A.4.1-3/1) AND A.4.3.6-1/41a AND A.4.3.5-1/1 THEN R ELSE N/A | |
| C166 IF (A.4.1-1/2 AND A.4.1-2/8 AND A.4.1-3/1) AND A.4.3.6-1/41a AND A.4.3.2-1/34 THEN R ELSE N/A | |
| C167 IF (A.4.1-1/2 AND A.4.1-2/8 AND A.4.1-3/1) AND A.4.3.6-1/41a AND A.4.3.6-1/41a AND A.4.3.2-1/34 THEN R ELSE N/A | |
| C168 IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-2/7 AND A.4.1-3/1 AND A.4.3.6-1/42 THEN R ELSE N/A | |
| C169 IF A.4.1-1/1 AND (A.4.1-3/1 OR A.4.1-3/2 OR A.4.1-3/3 OR A.4.1-3/5) AND A.4.3.2-1/62 AND (NOT A.4.3.9-1/2 AND A.4.3.1-7a/2) THEN R ELSE N/A | |
| C170 IF A.4.1-1/2 AND (A.4.1-3/1 OR A.4.1-3/2 OR A.4.1-3/3 OR A.4.1-3/5) AND A.4.3.2-1/62 AND (NOT A.4.3.9-1/2 AND A.4.3.1-7a/3) THEN R ELSE N/A | |
| C171 IF A.4.1-1/2 AND A.4.1.2/8 AND (A.4.1-3/1 OR A.4.1-3/2 OR A.4.1-3/3 OR A.4.1-3/5) AND A.4.3.2-1/12 AND A.4.3.2-1/39 THEN R ELSE N/A | |
| C172 IF A.4.1-1/2 AND A.4.1.2/8 AND (A.4.1-3/1 OR A.4.1-3/2 OR A.4.1-3/3 OR A.4.1-3/5) AND A.4.3.2-1/6 THEN R ELSE N/A | |
| C173 IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-2/7 AND A.4.1-3/1 AND A.4.3.2-1/64 AND A.4.3.2-1/65 AND A.4.3.2-1/77 THEN R ELSE N/A | |
| C174 IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-2/7 AND A.4.1-3/1 AND A.4.3.5-1/1 AND A.4.3.2-1/64 AND A.4.3.2-1/65 AND A.4.3.2-1/77 THEN R ELSE N/A | |
| C175 IF (A.4.1-4/1 OR A.4.1-4/2 OR A.4.1-4/3 OR A.4.1-4/5) AND A.4.1-3/2 AND A.4.3.2-1/64 AND A.4.3.2-1/65 AND A.4.3.2-1/77 THEN R ELSE N/A | |
| C175a IF (A.4.1-4/1 OR A.4.1-4/2 OR A.4.1-4/3 OR A.4.1-4/5) AND A.4.1-3/2 AND A.4.3.2-1/64 AND A.4.3.2-1/65 AND A.4.3.2-1/77 AND A.4.3.2-1/xy1->139 THEN R ELSE N/A | |
| C176 IF (A.4.1-4/1 OR A.4.1-4/2 OR A.4.1-4/3 OR A.4.1-4/5) AND A.4.1-3/2 AND A.4.3.5-1/1 AND A.4.3.2-1/64 AND A.4.3.2-1/65 AND A.4.3.2-1/77 THEN R ELSE N/A | |
| C177 IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-2/7 AND A.4.1-3/1 AND A.4.3.12-1/2 THEN R ELSE N/A | |
| C177a IF A.4.1-1/1 AND A.4.1-2/7 AND A.4.1-3/1 AND A.4.3.12-1/2 AND A.4.3.1-7a/4 THEN R ELSE N/A | |
| C177b IF A.4.1-1/1 AND A.4.1-2/7 AND A.4.1-3/1 AND A.4.3.12-1/2 AND A.4.3.1-7a/1 THEN R ELSE N/A | |
| C177c IF A.4.1-1/2 AND A.4.1-2/7 AND A.4.1-3/1 AND A.4.3.12-1/2 AND A.4.3.1-7a/4 THEN R ELSE N/A | |
| C177d IF A.4.1-1/2 AND A.4.1-2/7 AND A.4.1-3/1 AND A.4.3.12-1/2 AND A.4.3.1-7a/1 THEN R ELSE N/A | |
| C178 IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-2/7 AND A.4.1-3/1 AND (A.4.1-2/3 OR A.4.1-2/5) AND A.4.3.2-1/37 THEN R ELSE N/A | |
| C178a IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-2/7 AND A.4.1-3/1 AND (A.4.1-2/3 OR A.4.1-2/5) AND A.4.3.2-1/127 THEN R ELSE N/A |
| C178b IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-2/7 AND A.4.1-3/1 AND (A.4.1-2/3 OR A.4.1-2/5) AND A.4.1-4A/1 AND A.4.3.2-1/37 THEN R ELSE N/A |
| C178c IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-2/7 AND A.4.1-3/1 AND (A.4.1-2/3 OR A.4.1-2/5) AND A.4.1-4A/1 AND A.4.3.2-1/127 THEN R ELSE N/A |
| C179 IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-2/7 AND A.4.1-3/1 AND (A.4.1-2/3 OR A.4.1-2/5) AND (A.4.3.2-1/14) THEN R ELSE N/A | |
| C179a IF A.4.1-1/1 AND A.4.1-2/7 AND A.4.1-3/1 AND (A.4.1-2/3 OR A.4.1-2/5) AND A.4.3.2-1/14 THEN R ELSE N/A | |
| C180 IF (A.4.1-4/1 OR A.4.1-4/2 OR A.4.1-4/3 OR A.4.1-4/5) AND (A.4.1-4A/3 OR A.4.1-4A/4 OR A.4.1-4A/6) AND A.4.1-3/2 THEN R ELSE N/A | |
| C181 IF ((A.4.1-1/1 AND [10]A.4.1-1/1) OR (A.4.1-1/1 AND [10]A.4.1-1/2) OR (A.4.1-1/2 AND [10]A.4.1-1/1) OR (A.4.1-1/2 AND [10]A.4.1-1/2)) AND A.4.1-3/1 AND A.4.3.12-1/2 AND A.4.3.1-7a/4 THEN R ELSE N/A | |
| C182 IF ((A.4.1-1/1 AND [10]A.4.1-1/1) OR (A.4.1-1/1 AND [10]A.4.1-1/2) OR (A.4.1-1/2 AND [10]A.4.1-1/1) OR (A.4.1-1/2 AND [10]A.4.1-1/2)) AND A.4.1-3/1 AND A.4.3.12-1/2 AND A.4.3.1-7a/1 THEN R ELSE N/A | |
| C183 IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-2/7 AND A.4.1-3/1 AND A.4.3.12-1/2 AND A.4.3.1-7a/4 THEN R ELSE N/A | |
| C183a IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-2/7 AND A.4.1-3/1 AND A.4.3.12-1/2 AND A.4.3.1-7a/4 AND A.4.3.6-1/20 THEN R ELSE N/A | |
| C184 IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-2/7 AND A.4.1-3/1 AND A.4.3.12-1/2 AND A.4.3.1-7a/1 THEN R ELSE N/A | |
| C184a IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-2/7 AND A.4.1-3/1 AND A.4.3.12-1/2 AND A.4.3.1-7a/1 AND A.4.3.6-1/20 THEN R ELSE N/A | |
| C185 IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-3/1 AND 4.3.2-1/9 AND A.4.3.12-1/2 AND A.4.3.1-7a/4 THEN R ELSE N/A | |
| C186 IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-3/1 AND 4.3.2-1/9 AND A.4.3.12-1/2 AND A.4.3.1-7a/1 THEN R ELSE N/A | |
| C187 IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-2/7 AND A.4.1-3/1 AND A.4.3.2-1/46 AND A.4.3.12-1/2 AND A.4.3.1-7a/4 THEN R ELSE N/A | |
| C188 IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-2/7 AND A.4.1-3/1 AND A.4.3.2-1/46 AND A.4.3.12-1/2 AND A.4.3.1-7a/1 THEN R ELSE N/A | |
| C189 IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-2/7 AND A.4.1-3/1 AND A.4.3.5-1/1 AND A.4.3.12-1/2 AND A.4.3.1-7a/4 THEN R ELSE N/A | |
| C190 IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-2/7 AND A.4.1-3/1 AND A.4.3.5-1/1 AND A.4.3.12-1/2 AND A.4.3.1-7a/1 THEN R ELSE N/A | |
| C191 IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-2/7 AND A.4.1-3/1 AND A.4.3.2-1/63 AND A.4.3.2-1/65 AND A.4.3.12-1/2 AND A.4.3.1-7a/4 THEN R ELSE N/A | |
| C192 IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-2/7 AND A.4.1-3/1 AND A.4.3.2-1/63 AND A.4.3.2-1/65 AND A.4.3.12-1/2 AND A.4.3.1-7a/1 THEN R ELSE N/A | |
| C193 IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-2/7 AND A.4.1-3/1 AND A.4.1-5/1 AND A.4.3.2-1/34 AND A.4.3.6-1/41 AND A.4.3.5-1/1 AND A.4.3.12-1/2 AND A.4.3.1-7a/4 THEN R ELSE N/A | |
| C194 IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-2/7 AND A.4.1-3/1 AND A.4.1-5/1 AND A.4.3.2-1/34 AND A.4.3.6-1/41 AND A.4.3.5-1/1 AND A.4.3.12-1/2 AND A.4.3.1-7a/1 THEN R ELSE N/A | |
| C195 IF A.4.1-1/1 AND A.4.1-2/7 AND A.4.1-3/1 AND A.4.1-5/1 AND A.4.3.2-1/34 AND A.4.3.6-1/41 AND A.4.3.5-1/1 AND A.4.3.12-1/2 AND A.4.3.1-7a/4 THEN R ELSE N/A | |
| C196 IF A.4.1-1/1 AND A.4.1-2/7 AND A.4.1-3/1 AND A.4.1-5/1 AND A.4.3.2-1/34 AND A.4.3.6-1/41 AND A.4.3.5-1/1 AND A.4.3.12-1/2 AND A.4.3.1-7a/1 THEN R ELSE N/A | |
| C197 IF A.4.1-1/2 AND A.4.1-2/8 AND A.4.1-3/1 AND A.4.3.12-1/2 THEN R ELSE N/A | |
| C198 IF A.4.1-1/2 AND A.4.1-2/8 AND A.4.1-3/1 AND A.4.3.5-1/1 AND A.4.3.12-1/2 THEN R ELSE N/A | |
| C199 IF ((A.4.1-1/1 AND [10]A.4.1-1/1) OR (A.4.1-1/1 AND [10]A.4.1-1/2) OR (A.4.1-1/2 AND [10]A.4.1-1/1) OR (A.4.1-1/2 AND [10]A.4.1-1/2)) AND A.4.1-3/1 AND A.4.3.12-1/2 THEN R ELSE N/A | |
| C200 IF (A.4.1-1/1 AND (A.4.1-3/1 OR A.4.1-3/2 OR A.4.1-3/3 OR A.4.1-3/5) AND NOT A.4.3.1-7a/2) AND A.4.3.2-1/104 THEN R ELSE N/A | |
| C201 IF (A.4.1-1/2 AND (A.4.1-3/1 OR A.4.1-3/2 OR A.4.1-3/3 OR A.4.1-3/5) AND NOT A.4.3.1-7a/3) AND A.4.3.2-1/105 THEN R ELSE N/A | |
| C202 IF (A.4.1-1/1 AND (A.4.1-3/1 OR A.4.1-3/2 OR A.4.1-3/3 OR A.4.1-3/5) AND (NOT A.4.3.9-1/2 AND A.4.3.1-7a/2)) AND A.4.3.2-1/106 THEN R ELSE N/A | |
| C203 IF (A.4.1-1/2 AND (A.4.1-3/1 OR A.4.1-3/2 OR A.4.1-3/3 OR A.4.1-3/5) AND (NOT A.4.3.9-1/2 AND A.4.3.1-7a/3) AND A.4.3.2-1/107 THEN R ELSE N/A | |
| C204 IF (A.4.1-3/1 AND A.4.3.2-2/3 AND A.4.3.2-2/6 AND A.4.3.2-2/7) OR ((A.4.1-3/2 OR A.4.1-3/3 OR A.4.1-3/5) AND A.4.3.2-2/2 AND A.4.3.2-2/6 AND (A.4.1-4/1 OR A.4.1-4/2 OR A.4.1-4/3)) AND A.4.1-1/2 AND (A.4.3.2-2/8 OR A.4.3.2-2/9) AND A.4.3.1-7a/1 THEN R ELSE N/A | |
| C205 IF (A.4.1-3/1 AND A.4.3.2-2/3 AND A.4.3.2-2/6 AND A.4.3.2-2/7) OR ((A.4.1-3/2 OR A.4.1-3/3 OR A.4.1-3/5) AND A.4.3.2-2/2 AND A.4.3.2-2/6 AND (A.4.1-4/1 OR A.4.1-4/2 OR A.4.1-4/3)) AND A.4.1-1/2 AND (A.4.3.2-2/8 OR A.4.3.2-2/9) AND A.4.3.1-7a/3 THEN R ELSE N/A | |
| C206 IF A.4.1-1/2 AND A.4.1-2/7 AND A.4.1-3/2 AND (A.4.1-4/1 OR A.4.1-4/2 OR A.4.1-4/3) AND A.4.3.2-2/2 AND A.4.3.2-2/6 AND ((A.4.3.2-2/8 AND A.4.3.2-2/10 AND A.4.3.2-2/12) OR (A.4.3.2-2/9 AND A.4.3.2-2/11 AND A.4.3.2-2/13)) THEN R ELSE N/A | |
| C206a IF A.4.1-1/2 AND A.4.1-2/7 AND A.4.1-3/2 AND (A.4.1-4/1 OR A.4.1-4/2 OR A.4.1-4/3) AND A.4.3.2-2/2 AND A.4.3.2-2/6 AND ((A.4.3.2-2/8 AND A.4.3.2-2/10 AND A.4.3.2-2/12) OR (A.4.3.2-2/9 AND A.4.3.2-2/11 AND A.4.3.2-2/13)) AND A.4.3.5-1/1 THEN R ELSE N/A | |
| C206b IF A.4.1-1/2 AND A.4.1-2/7 AND A.4.1-3/2 AND (A.4.1-4/1 OR A.4.1-4/2 OR A.4.1-4/3) AND A.4.3.2-2/2 AND A.4.3.2-2/6 AND ((A.4.3.2-2/8 AND A.4.3.2-2/10 AND A.4.3.2-2/12 AND A.4.3.2-2/14) OR (A.4.3.2-2/9 AND A.4.3.2-2/11 AND A.4.3.2-2/13 AND A.4.3.2-2/15)) THEN R ELSE N/A | |
| C206c IF A.4.1-1/2 AND A.4.1-2/7 AND A.4.1-3/2 AND (A.4.1-4/1 OR A.4.1-4/2 OR A.4.1-4/3) AND A.4.3.2-2/2 AND A.4.3.2-2/6 AND ((A.4.3.2-2/8 AND A.4.3.2-2/10 AND A.4.3.2-2/12 AND A.4.3.2-2/14) OR (A.4.3.2-2/9 AND A.4.3.2-2/11 AND A.4.3.2-2/13 AND A.4.3.2-2/15)) AND A.4.3.5-1/1 THEN R ELSE N/A | |
| C206d IF A.4.1-2 AND A.4.1-2/7 AND A.4.1-3/1 AND A.4.3.2-2/3 AND A.4.3.2-2/6 AND A.4.3.2-2/7 AND ((A.4.3.2-2/8 AND A.4.3.2-2/10) OR (A.4.3.2-2/9 AND A.4.3.2-2/11)) THEN R ELSE N/A |
| C206e IF A.4.1-2 AND A.4.1-2/7 AND A.4.1-3/1 AND A.4.3.2-2/3 AND A.4.3.2-2/6 AND A.4.3.2-2/7 AND ((A.4.3.2-2/8 AND A.4.3.2-2/10) OR (A.4.3.2-2/9 AND A.4.3.2-2/11)) AND A.4.3.5-1/1 THEN R ELSE N/A |
| C206f IF A.4.1-2 AND A.4.1-2/7 AND A.4.1-3/1 AND A.4.3.2-2/3 AND A.4.3.2-2/6 AND A.4.3.2-2/7 AND ((A.4.3.2-2/8 AND A.4.3.2-2/10) OR (A.4.3.2-2/9 AND A.4.3.2-2/11)) AND A.4.3.2-2/19 THEN R ELSE N/A |
| C207 IF A.4.1-1/2 AND A.4.1-2/7 AND A.4.1-3/2 AND (A.4.1-4/1 OR A.4.1-4/2 OR A.4.1-4/3) AND A.4.3.2-2/2 AND A.4.3.2-2/6 AND ((A.4.3.2-2/8 AND A.4.3.2-2/10) OR (A.4.3.2-2/9 AND A.4.3.2-2/11)) AND (A.4.3.2-1/42a OR A.4.3.2-1/43a OR A.4.3.2-1/44a) AND (A.4.3.2-1/24 OR A.4.3.2-1/24A) THEN R ELSE N/A | |
| C207a IF A.4.1-1/2 AND A.4.1-2/7 AND A.4.1-3/2 AND (A.4.1-4/1 OR A.4.1-4/2 OR A.4.1-4/3) AND A.4.3.2-2/2 AND A.4.3.2-2/6 AND ((A.4.3.2-2/8 AND A.4.3.2-2/10) OR (A.4.3.2-2/9 AND A.4.3.2-2/11)) AND (A.4.3.2-1/42a OR A.4.3.2-1/43a OR A.4.3.2-1/44a) AND (A.4.3.2-1/24 OR A.4.3.2-1/24A) AND A.4.3.2A.1-1/1 THEN R ELSE N/A | |
| C207b IF A.4.1-1/2 AND A.4.1-2/7 AND A.4.1-3/2 AND (A.4.1-4/1 OR A.4.1-4/2 OR A.4.1-4/3) AND A.4.3.2-2/2 AND A.4.3.2-2/6 AND ((A.4.3.2-2/8 AND A.4.3.2-2/10) OR (A.4.3.2-2/9 AND A.4.3.2-2/11)) AND (A.4.3.2-1/42a OR A.4.3.2-1/43a OR A.4.3.2-1/44a) THEN R ELSE N/A | |
| C207c IF A.4.1-1/2 AND A.4.1-2/7 AND A.4.1-3/2 AND (A.4.1-4/1 OR A.4.1-4/2 OR A.4.1-4/3) AND A.4.3.2-2/2 AND A.4.3.2-2/6 AND ((A.4.3.2-2/8 AND A.4.3.2-2/10) OR (A.4.3.2-2/9 AND A.4.3.2-2/11)) THEN R ELSE N/A | |
| C207d IF A.4.1-1/2 AND A.4.1-2/7 AND A.4.1-3/2 AND (A.4.1-4/1 OR A.4.1-4/2 OR A.4.1-4/3) AND A.4.3.2-2/2 AND A.4.3.2-2/6 AND (A.4.3.2-2/10 OR A.4.3.2-2/11) THEN R ELSE N/A | |
| C207e IF A.4.1-1/2 AND A.4.1-2/7 AND A.4.1-3/2 AND (A.4.1-4/1 OR A.4.1-4/2 OR A.4.1-4/3) AND A.4.3.2-2/2 AND A.4.3.2-2/6 AND (A.4.3.2-2/10 OR A.4.3.2-2/11) AND A.4.3.5-1/1 THEN R ELSE N/A | |
| C207f IF A.4.1-1/2 AND A.4.1-2/7 AND A.4.1-3/2 AND (A.4.1-4/1 OR A.4.1-4/2 OR A.4.1-4/3) AND A.4.3.2-2/2 AND A.4.3.2-2/6 AND (A.4.3.2-2/10 OR A.4.3.2-2/11) AND A.4.3.2-2/20 THEN R ELSE N/A | |
| C207g IF A.4.1-1/2 AND A.4.1-2/7 AND A.4.1-3/2 AND (A.4.1-4/1 OR A.4.1-4/2 OR A.4.1-4/3) AND A.4.3.2-2/2 AND A.4.3.2-2/6 AND ((A.4.3.2-2/8 AND A.4.3.2-2/10) OR (A.4.3.2-2/9 AND A.4.3.2-2/11)) AND (A.4.3.2-1/42a OR A.4.3.2-1/43a OR A.4.3.2-1/44a) AND (A.4.3.2-1/24 OR A.4.3.2-1/24A) AND 4.3.5-1/17 THEN R ELSE N/A |
| C208 IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-2/7 AND A.4.1-3/1 AND A.4.3.12-1/2 AND A.4.3.1-7a/4 AND A.4.3.12-1/8 THEN R ELSE N/A | |
| C209 IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-2/7 AND A.4.1-3/1 AND A.4.3.12-1/2 AND A.4.3.1-7a/1 AND A.4.3.12-1/8 THEN R ELSE N/A | |
| C210 IF ((A.4.1-1/1 AND [10]A.4.1-1/1) OR (A.4.1-1/1 AND [10]A.4.1-1/2) OR (A.4.1-1/2 AND [10]A.4.1-1/1) OR (A.4.1-1/2 AND [10]A.4.1-1/2)) AND A.4.1-3/1 AND A.4.3.12-1/2 AND A.4.3.1-7a/4 AND A.4.3.12-1/8 THEN R ELSE N/A | |
| C211 IF ((A.4.1-1/1 AND [10]A.4.1-1/1) OR (A.4.1-1/1 AND [10]A.4.1-1/2) OR (A.4.1-1/2 AND [10]A.4.1-1/1) OR (A.4.1-1/2 AND [10]A.4.1-1/2)) AND A.4.1-3/1 AND A.4.3.12-1/2 AND A.4.3.1-7a/1 AND A.4.3.12-1/8 THEN R ELSE N/A | |
| C212 IF A.4.3.2-1/109 OR A.4.3.7-1/49 THEN R ELSE N/A | |
| C213 IF A.4.3.2-1/108 OR A.4.3.7-1/49 THEN R ELSE N/A | |
| C214 IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-2/7 AND A.4.1-3/1 AND A.4.1-5/1 AND A.4.3.6-1/41 AND A.4.3.12-1/2 AND Table A.4.3.1-7a/4 THEN R ELSE N/A | |
| C215 IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-2/7 AND A.4.1-3/1 AND A.4.1-5/1 AND A.4.3.6-1/41 AND A.4.3.12-1/2 AND Table A.4.3.1-7a/1 THEN R ELSE N/A | |
| C216 IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-2/7 AND A.4.1-3/1 AND A.4.1-5/1 AND A.4.3.6-1/41 AND A.4.3.5-1/1 AND A.4.3.12-1/2 AND Table A.4.3.1-7a/4 THEN R ELSE N/A | |
| C217 IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-2/7 AND A.4.1-3/1 AND A.4.1-5/1 AND A.4.3.6-1/41 AND A.4.3.5-1/1 AND A.4.3.12-1/2 AND Table A.4.3.1-7a/1 THEN R ELSE N/A | |
| C218 IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-2/7 AND A.4.1-3/1 AND A.4.1-5/1 AND A.4.3.6-1/41 AND A.4.3.2-1/64 AND A.4.3.2-1/65 AND Table A.4.3.1-7a/4 THEN R ELSE N/A | |
| C219 IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-2/7 AND A.4.1-3/1 AND A.4.1-5/1 AND A.4.3.6-1/41 AND A.4.3.2-1/64 AND A.4.3.2-1/65 AND Table A.4.3.1-7a/1 THEN R ELSE N/A | |
| C220 IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-2/7 AND A.4.1-3/1 AND A.4.1-5/1 AND A.4.3.6-1/41 AND A.4.3.2-1/64 AND A.4.3.2-1/65 AND A.4.3.5-1/1 AND Table A.4.3.1-7a/4 THEN R ELSE N/A | |
| C221 IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-2/7 AND A.4.1-3/1 AND A.4.1-5/1 AND A.4.3.6-1/41 AND A.4.3.2-1/64 AND A.4.3.2-1/65 AND A.4.3.5-1/1 AND Table A.4.3.1-7a/1 THEN R ELSE N/A | |
| C222 IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-2/7 AND A.4.1-3/1 AND A.4.1-5/1 AND A.4.3.2-1/34 AND A.4.3.6-1/41 AND A.4.3.12-1/2 AND Table A.4.3.1-7a/4 THEN R ELSE N/A | |
| C223 IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-2/7 AND A.4.1-3/1 AND A.4.1-5/1 AND A.4.3.2-1/34 AND A.4.3.6-1/41 AND A.4.3.12-1/2 AND Table A.4.3.1-7a/1 THEN R ELSE N/A | |
| C224 IF A.4.1-1/2 AND A.4.1-2/8 AND A.4.1-3/1 AND A.4.3.12-1/2 AND 4.3.2-1/9 THEN R ELSE N/A | |
| C225 IF A.4.1-1/2 AND A.4.1-2/8 AND A.4.1-3/1 AND A.4.3.12-1/2 AND A.4.3.2-1/46 THEN R ELSE N/A | |
| C226 IF A.4.1-1/2 AND A.4.1-2/8 AND A.4.1-3/1 AND A.4.3.12-1/2 AND A.4.3.2-1/63 AND A.4.3.2-1/65 THEN R ELSE N/A | |
| C227 IF A.4.1-1/2 AND A.4.1-2/8 AND A.4.1-3/1 AND A.4.3.12-1/2 AND A.4.3.2-1/64 AND A.4.3.2-1/65 AND A.4.3.6-1/41a THEN R ELSE N/A | |
| C228 IF A.4.1-1/2 AND A.4.1-2/8 AND A.4.1-3/1 AND A.4.3.12-1/2 AND A.4.3.2-1/64 AND A.4.3.2-1/65 AND A.4.3.6-1/41a AND A.4.3.5-1/1 THEN R ELSE N/A | |
| C229 IF A.4.1-1/2 AND A.4.1-2/8 AND A.4.1-3/1 AND A.4.3.12-1/2 AND A.4.3.6-1/41a AND A.4.3.5-1/1 AND A.4.3.2-1/34 THEN R ELSE N/A | |
| C230 IF ([10]A.4.1-1/1 OR [10]A.4.1-1/2) AND (A.4.1-1/1 OR A.4.1-1/2 OR A.4.3.12-1/5) AND A.4.1-3/1 AND A.4.3.12-1/2 AND Table A.4.3.1-7a/1 AND (NOT A.4.3.6-1/2) THEN R ELSE N/A | |
| C231 IF ([10]A.4.1-1/1 OR [10]A.4.1-1/2) AND (A.4.1-1/1 OR A.4.1-1/2 OR A.4.3.12-1/5) AND A.4.1-3/1 AND A.4.3.12-1/2 AND Table A.4.3.1-7a/1 AND A.4.3.6-1/2 AND A.4.3.6-1/11 THEN R ELSE N/A | |
| C232 IF ([10]A.4.1-1/1 OR [10]A.4.1-1/2) AND (A.4.1-1/1 OR A.4.1-1/2 OR A.4.3.12-1/5) AND A.4.1-3/1 AND A.4.3.12-1/2 AND Table A.4.3.1-7a/1 AND (NOT A.4.3.6-1/2) AND A.4.3.5-1/1 THEN R ELSE N/A | |
| C233 IF ([10]A.4.1-1/1 OR [10]A.4.1-1/2) AND (A.4.1-1/1 OR A.4.1-1/2 OR A.4.3.12-1/5) AND A.4.1-3/1 AND A.4.3.12-1/2 AND Table A.4.3.1-7a/1 AND A.4.3.6-1/2 AND A.4.3.6-1/11 AND A.4.3.5-1/1 THEN R ELSE N/A | |
| C234 IF [10]A.4.1-1/1 OR [10]A.4.1-1/2) AND A.4.1-1/2 AND A.4.1-2/8 AND A.4.1-3/1 AND A.4.3.12-1/2 AND (NOT A.4.3.6-1/2) THEN R ELSE N/A | |
| C235 IF [10]A.4.1-1/1 OR [10]A.4.1-1/2) AND A.4.1-1/2 AND A.4.1-2/8 AND A.4.1-3/1 AND A.4.3.12-1/2 AND A.4.3.6-1/2 THEN R ELSE N/A | |
| C236 IF [10]A.4.1-1/1 OR [10]A.4.1-1/2) AND A.4.1-1/2 AND A.4.1-2/8 AND A.4.1-3/1 AND A.4.3.12-1/2 AND (NOT A.4.3.6-1/2) AND A.4.3.5-1/1 THEN R ELSE N/A | |
| C237 IF [10]A.4.1-1/1 OR [10]A.4.1-1/2) AND A.4.1-1/2 AND A.4.1-2/8 AND A.4.1-3/1 AND A.4.3.12-1/2 AND A.4.3.6-1/2 AND A.4.3.5-1/1 THEN R ELSE N/A | |
| C238 IF A.4.1-1/2 AND A.4.1-2/8 AND A.4.1-3/1 AND A.4.3.12-1/2 AND A.4.3.6-1/41a AND A.4.3.2-1/34 THEN R ELSE N/A | |
| C239 IF A.4.1-1/2 AND A.4.1-2/8 AND A.4.1-3/1 AND A.4.3.12-1/2 AND A.4.3.12-1/8 THEN R ELSE N/A | |
| C240 IF A.4.1-1/2 AND A.4.1-2/8 AND A.4.1-3/1 AND A.4.3.11-1/10 THEN R ELSE N/A | |
| C240a IF A.4.1-1/2 AND A.4.1-2/8 AND A.4.1-3/1 AND A.4.3.11-1/10 AND A.4.3.11-1/9 THEN R ELSE N/A | |
| C241 IF A.4.1-1/2 AND A.4.1-2/8 AND A.4.1-3/1 AND A.4.3.2A.1-1/1 AND A.4.3.5-1/13 THEN R ELSE N/A | |
| C242 IF (A.4.1-4/1 OR A.4.1-4/2 OR A.4.1-4/3 OR A.4.1-4/5) AND (A.4.1-4A/3 OR A.4.1-4A/4 OR A.4.1-4A/6) AND A.4.1-3/2 AND A.4.3.2B.2.0-1A/2 AND A.4.3.5-1/12 THEN R ELSE N/A | |
| C243 IF (A.4.1-4/1 OR A.4.1-4/2 OR A.4.1-4/3 OR A.4.1-4/5) AND (A.4.1-4A/1 OR A.4.1-4A/2 OR A.4.1-4A/5) AND A.4.1-3/2 AND A.4.3.2B.2.0-1A/2 AND A.4.3.5-1/12 THEN R ELSE N/A | |
| C244 IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-2/7 AND A.4.1-3/1 AND (A.4.1-4A/1 OR A.4.1-4A/2 OR A.4.1-4A/5) AND A.4.3.2A.1-1/1 AND A.4.3.5-1/13 THEN R ELSE N/A | |
| C245 IF A.4.1-1/1 AND (A.4.1-3/1 OR A.4.1-3/2 OR A.4.1-3/3 OR A.4.1-3/5) AND A.4.3.2-1/119 AND NOT A.4.3.1-7a/2 THEN R ELSE N/A | |
| C246 IF A.4.1-1/1 AND (A.4.1-3/1 OR A.4.1-3/2 OR A.4.1-3/3 OR A.4.1-3/5) AND A.4.3.2-1/120 AND NOT A.4.3.1-7a/2 THEN R ELSE N/A | |
| C247 IF A.4.1-1/2 AND (A.4.1-3/1 OR A.4.1-3/2 OR A.4.1-3/3 OR A.4.1-3/5) AND A.4.3.2-1/119 AND NOT A.4.3.1-7a/3 THEN R ELSE N/A | |
| C248 IF A.4.1-1/2 AND (A.4.1-3/1 OR A.4.1-3/2 OR A.4.1-3/3 OR A.4.1-3/5) AND A.4.3.2-1/120 AND NOT A.4.3.1-7a/3 THEN R ELSE N/A | |
| C249 IF A.4.1-1/1 AND (A.4.1-3/1 OR A.4.1-3/2 OR A.4.1-3/3 OR A.4.1-3/5) AND A.4.3.2-1/119 AND (NOT A.4.3.9-1/2 AND A.4.3.1-7a/2) THEN R ELSE N/A | |
| C250 IF A.4.1-1/1 AND (A.4.1-3/1 OR A.4.1-3/2 OR A.4.1-3/3 OR A.4.1-3/5) AND A.4.3.2-1/120 AND (NOT A.4.3.9-1/2 AND A.4.3.1-7a/2) THEN R ELSE N/A | |
| C251 IF A.4.1-1/2 AND (A.4.1-3/1 OR A.4.1-3/2 OR A.4.1-3/3 OR A.4.1-3/5) AND A.4.3.2-1/119 AND (NOT A.4.3.9-1/2 AND A.4.3.1-7a/3) THEN R ELSE N/A | |
| C252 IF A.4.1-1/2 AND (A.4.1-3/1 OR A.4.1-3/2 OR A.4.1-3/3 OR A.4.1-3/5) AND A.4.3.2-1/120 AND (NOT A.4.3.9-1/2 AND A.4.3.1-7a/3) THEN R ELSE N/A | |
| C253 IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-2/7 AND A.4.1-3/1 AND A.4.1-5/1 AND A.4.3.2-1/34 AND A.4.3.6-1/41 AND A.4.3.6-1/68 AND A.4.3.6-1/72 AND (NOT A.4.3.6-1/70) THEN R ELSE N/A | |
| C254 IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-2/7 AND A.4.1-3/1 AND A.4.1-5/1 AND A.4.3.2-1/34 AND A.4.3.6-1/41 AND A.4.3.6-1/68 AND A.4.3.6-1/72 AND A.4.3.6-1/70 THEN R ELSE N/A | |
| C255 IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-2/7 AND A.4.1-3/1 AND A.4.1-5/1 AND A.4.3.6-1/68 AND A.4.3.6-1/72 AND (NOT A.4.3.6-1/70) THEN R ELSE N/A | |
| C256 IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-2/7 AND A.4.1-3/1 AND A.4.1-5/1 AND A.4.3.6-1/68 AND A.4.3.6-1/72 AND A.4.3.6-1/70 THEN R ELSE N/A | |
| C257 IF ((A.4.1-1/1 AND [10]A.4.1-1/1) OR (A.4.1-1/1 AND [10]A.4.1-1/2) OR (A.4.1-1/2 AND [10]A.4.1-1/1) OR (A.4.1-1/2 AND [10]A.4.1-1/2)) AND A.4.1-5/1 AND A.4.3.6-1/66 AND A.4.3.6-1/69 THEN R ELSE N/A | |
| C258 IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-2/7 AND A.4.1-3/1 AND A.4.1-5/1 AND (A.4.1-4A/1 OR A.4.1-4A/2 OR A.4.1-4A/5) AND A.4.3.2A.1-1/1 AND A.4.3.6-1/68 AND A.4.3.6-1/72 THEN R ELSE N/A | |
| C259 IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-2/7 AND A.4.1-3/1 AND A.4.3.2-1/34 AND A.4.3.6-1/41 AND ((A.4.3.2-1/42 OR A.4.3.2-1/43 OR A.4.3.2-1/44) OR (A.4.3.2-1/42a OR A.4.3.2-1/43a OR A.4.3.2-1/44a)) AND A.4.3.6-1/73 THEN R ELSE N/A | |
| C260 IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-2/7 AND A.4.1-3/1 AND A.4.3.2-1/34 AND A.4.3.6-1/41 AND ((A.4.3.2-1/42 OR A.4.3.2-1/43 OR A.4.3.2-1/44) OR (A.4.3.2-1/42a OR A.4.3.2-1/43a OR A.4.3.2-1/44a)) AND A.4.3.6-1/74 THEN R ELSE N/A | |
| C261 IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-2/7 AND (A.4.1-3/1 OR A.4.1-3/2 OR A.4.1-3/3 OR A.4.1-3/5) AND A.4.3.1-7a/1 AND NOT A.4.3.1-7a/2 AND NOT A.4.3.1-7a/3 AND A.4.3.2A.1-1/1 THEN R ELSE N/A | |
| C262 IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-2/7 AND (A.4.1-3/1 OR A.4.1-3/2 OR A.4.1-3/3 OR A.4.1-3/5) AND A.4.3.1-7a/1 AND NOT A.4.3.1-7a/2 AND NOT A.4.3.1-7a/3 AND A.4.3.2A.1-1/2 THEN R ELSE N/A | |
| C263 IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-2/7 AND (A.4.1-3/1 OR A.4.1-3/2 OR A.4.1-3/3 OR A.4.1-3/5) AND A.4.3.1-7a/1 AND NOT A.4.3.1-7a/2 AND NOT A.4.3.1-7a/3 AND A.4.3.2A.1-1/3 THEN R ELSE N/A | |
| C264 IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-2/7 AND A.4.1-3/1 AND A.4.3.6-1/63 THEN R ELSE N/A | |
| C265 IF ((A.4.1-1/1 AND [10]A.4.1-1/1) OR (A.4.1-1/1 AND [10]A.4.1-1/2) OR (A.4.1-1/2 AND [10]A.4.1-1/1) OR (A.4.1-1/2 AND [10]A.4.1-1/2)) AND A.4.1-3/1 AND A.4.3.6-1/63 AND A.4.3.6-1/65 THEN R ELSE N/A | |
| C266 IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-2/7 AND A.4.1-3/1 AND A.4.3.6-1/63 AND A.4.3.6-1/67 THEN R ELSE N/A | |
| C267 IF (A.4.1-4/1 OR A.4.1-4/2 OR A.4.1-4/3 OR A.4.1-4/5) AND (A.4.1-4A/1 OR A.4.1-4A/2 OR A.4.1-4A/5) AND A.4.1-3/2 AND A.4.3.2B.2.0-1A/2 AND A.4.3.2-1/128 THEN R ELSE N/A | |
| C268 IF (A.4.1-1/1 OR A.4.1-1/2) AND (A.4.1-4/1 OR A.4.1-4/2 OR A.4.1-4/3) AND A.4.1-3/2 AND A.4.3.2-1/129 THEN R ELSE N/A | |
| C268a IF A.4.1-1/2 AND A.4.1-2/8 A.4.1-3/2 AND A.4.1-4A/4 AND A.4.3.2-1/129 THEN R ELSE N/A | |
| C268b IF A.4.1-1/2 AND A.4.1-2/8 AND A.4.1-3/1 AND A.4.1-4/6 AND A.4.3.2-1/130THEN R ELSE N/A | |
| C269 IF A.4.1-1/2 AND A.4.1-4/5 AND A.4.1-3/2 AND A.4.3.2B.2.0-1A/2 AND A.4.3.2-1/128 THEN R ELSE N/A | |
| C270 IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-2/7 AND A.4.1-3/1 AND (A.4.1-4A/1 OR A.4.1-4A/2 OR A.4.1-4A/5) AND A.4.3.2A.1-1/1 AND A.4.3.2-1/128 THEN R ELSE N/A | |
| C271 IF A.4.1-1/2 AND A.4.1-2/8 AND A.4.1-3/1 AND A.4.1-4A/3 AND A.4.3.2A.1-1/1 AND A.4.3.2-1/128 THEN R ELSE N/A | |
| C271a IF A.4.1-1/2 AND A.4.1-2/8 AND A.4.1-3/1 AND A.4.1-4A/6 AND A.4.3.2A.1-1/1 AND A.4.3.2-1/128 THEN R ELSE N/A | |
| C272 IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-2/7 AND A.4.1-3/1 AND A.4.3.2-1/63 AND A.4.3.2-1/65 AND A.4.3.5-1/1 AND A.4.3.12-1/2 AND A.4.3.1-7a/4 THEN R ELSE N/A | |
| C273 IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-2/7 AND A.4.1-3/1 AND A.4.3.2-1/63 AND A.4.3.2-1/65 AND A.4.3.5-1/1 AND A.4.3.12-1/2 AND A.4.3.1-7a/1 THEN R ELSE N/A | |
| C274 IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-2/7 AND A.4.1-3/1 AND ((A.4.3.2-1/42 OR A.4.3.2-1/43 OR A.4.3.2-1/44) OR (A.4.3.2-1/42a OR A.4.3.2-1/43a OR A.4.3.2-1/44a)) AND (A.4.3.2-1/24 OR A.4.3.2-1/24A) AND A.4.3.12-1/2 AND A.4.3.1-7a/4 THEN R ELSE N/A | |
| C275 IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-2/7 AND A.4.1-3/1 AND ((A.4.3.2-1/42 OR A.4.3.2-1/43 OR A.4.3.2-1/44) OR (A.4.3.2-1/42a OR A.4.3.2-1/43a OR A.4.3.2-1/44a)) AND (A.4.3.2-1/24 OR A.4.3.2-1/24A) AND A.4.3.12-1/2 AND A.4.3.1-7a/1 THEN R ELSE N/A | |
| C276 IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-2/7 AND A.4.1-3/1 AND ((A.4.3.2-1/42 OR A.4.3.2-1/43 OR A.4.3.2-1/44) OR (A.4.3.2-1/42a OR A.4.3.2-1/43a OR A.4.3.2-1/44a)) AND A.4.3.12-1/2 AND A.4.3.1-7a/4 THEN R ELSE N/A | |
| C277 IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-2/7 AND A.4.1-3/1 AND ((A.4.3.2-1/42 OR A.4.3.2-1/43 OR A.4.3.2-1/44) OR (A.4.3.2-1/42a OR A.4.3.2-1/43a OR A.4.3.2-1/44a)) AND A.4.3.12-1/2 AND A.4.3.1-7a/1 THEN R ELSE N/A | |
| C278 IF (A.4.1-4/4 OR A.4.1-4/5) AND A.4.1-3/2 AND A.4.3.2-1/123 AND A.4.3.2-1/22 THEN R ELSE N/A | |
| C279 IF (A.4.1-4/4 OR A.4.1-4/5) AND A.4.1-3/2 AND A.4.3.2-1/124 AND A.4.3.2-1/22 THEN R ELSE N/A | |
| C280 IF (A.4.1-4/4 OR A.4.1-4/5) AND A.4.1-3/2 AND A.4.3.2-1/124 AND A.4.3.2-1/125 A.4.3.2-1/126 THEN R ELSE N/A | |
| C281 IF A.4.1-1/2 AND A.4.1-2/8 AND A.4.1-3/1 AND A.4.3.2-1/123 AND A.4.3.2-1/22 THEN R ELSE N/A | |
| C282 IF A.4.1-1/2 AND A.4.1-2/8 AND A.4.1-3/1 AND A.4.3.2-1/124 AND A.4.3.2-1/22 THEN R ELSE N/A | |
| C283 IF A.4.1-1/2 AND A.4.1-2/8 AND A.4.1-3/1 AND A.4.3.2-1/124 AND A.4.3.2-1/125 AND A.4.3.2-1/126 THEN R ELSE N/A | |
| C284 IF A.4.1-1/2 AND A.4.1-2/8 AND A.4.1-3/1 AND A.4.1-4/6 AND A.4.3.2-1/132 | |
| C285 IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-2/7 AND A.4.1-3/1 AND A.4.1-4A/1 AND A.4.3.2-1/14 AND A.4.3.2A.1-2/1 THEN R ELSE N/A | |
| C286 IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-2/7 AND A.4.1-3/1 AND A.4.3.6-1/81 THEN R ELSE N/A | |
| C287 IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-2/7 AND A.4.1-3/1 AND A.4.3.5-1/1 AND A.4.3.6-1/81 THEN R ELSE N/A | |
| C288 IF (A.4.1-1/1 OR A.4.1-1/2) AND (A.4.1-4/1 OR A.4.1-4/2 OR A.4.1-4/3 OR A.4.1-4/5) AND A.4.1-3/2 AND A.4.3.2B.2.0-1A/12 AND A.4.3.2-1/132 THEN R ELSE N/A | |
| C289 IF (A.4.1-1/2) AND A.4.1-4/4 AND A.4.1-3/2 AND A.4.3.2B.2.0-1A/1 AND A.4.3.2-1/132 THEN R ELSE N/A | |
| C290 IF A.4.1-1/2 AND A.4.1-2/8 AND A.4.1-3/1 AND A.4.3.2-1/34 AND A.4.3.6-1/41a AND (A.4.3.2-1/42b OR A.4.3.2-1/43b OR A.4.3.2-1/44b) AND A.4.3.6-1/73 THEN R ELSE N/A | |
| C291 IF A.4.1-1/2 AND A.4.1-2/8 AND A.4.1-3/1 AND A.4.3.2-1/34 AND A.4.3.6-1/41a AND (A.4.3.2-1/42b OR A.4.3.2-1/43b OR A.4.3.2-1/44b) AND A.4.3.6-1/74 THEN R ELSE N/A | |
| C292 IF A.4.1-1/2 AND A.4.1-2/8 AND A.4.1-3/1 AND A.4.3.6-1/63 THEN R ELSE N/A | |
| C293 IF A.4.1-1/2 AND A.4.1-2/8 AND A.4.1-3/1 AND A.4.3.6-1/63 AND A.4.3.6-1/67 THEN R ELSE N/A | |
| C294 IF A.4.1-1/2 AND A.4.1-2/8 AND A.4.1-3/1 AND A.4.3.2-1/34 AND A.4.3.6-1/41a AND A.4.3.6-1/68 AND A.4.3.6-1/70 AND A.4.3.6-1/72 THEN R ELSE N/A | |
| C295 IF A.4.1-1/2 AND A.4.1-2/8 AND A.4.1-3/1 AND A.4.3.6-1/68 AND NOT A.4.3.6-1/70 AND A.4.3.6-1/72 THEN R ELSE N/A | |
| C296 IF A.4.1-1/2 AND A.4.1-2/8 AND A.4.1-3/1 AND A.4.3.6-1/68 AND A.4.3.6-1/70 AND A.4.3.6-1/72 THEN R ELSE N/A | |
| C297 IF A.4.1-1/2 AND A.4.1-2/8 AND A.4.1-3/1 AND (A.4.1-4A/3 OR A.4.1-4A/4 OR A.4.1-4A/6) AND A.4.3.2A.1-1/1 AND A.4.3.6-1/68 AND A.4.3.6-1/72 THEN R ELSE N/A | |
| C298 IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-2/7 AND A.4.1-3/1 AND A.4.3.5-1/1 AND A.4.3.12-1/2 AND A.4.3.1-7a/4 AND A.4.3.6-1/81 THEN R ELSE N/A | |
| C299 IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-2/7 AND A.4.1-3/1 AND A.4.3.5-1/1 AND A.4.3.12-1/2 AND A.4.3.1-7a/1 AND A.4.3.6-1/81 THEN R ELSE N/A | |
| C300 IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-2/7 AND A.4.1-3/1 AND A.4.3.12-1/2 AND A.4.3.1-7a/4 AND A.4.4-1/16 AND A.4.3.5-1/1 THEN R ELSE N/A | |
| C301 IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-2/7 AND A.4.1-3/1 AND A.4.3.12-1/2 AND A.4.3.1-7a/1 AND A.4.4-1/16 AND A.4.3.5-1/1 THEN R ELSE N/A | |
| C302 IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-2/7 AND A.4.1-3/1 AND A.4.3.12-1/2 AND A.4.3.1-7a/4 AND A.4.3.6-1/8a THEN R ELSE N/A | |
| C303 IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-2/7 AND A.4.1-3/1 AND A.4.3.12-1/2 AND A.4.3.1-7a/1 AND A.4.3.6-1/8a THEN R ELSE N/A | |
| C304 IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-2/7 AND A.4.1-3/1 AND A.4.3.12-1/2 AND A.4.3.1-7a/4 AND A.4.3.6-1/7a THEN R ELSE N/A | |
| C305 IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-2/7 AND A.4.1-3/1 AND A.4.3.12-1/2 AND A.4.3.1-7a/1 AND A.4.3.6-1/7a THEN R ELSE N/A | |
| C306 IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-2/7 AND A.4.1-3/1 AND A.4.3.12-1/2 AND A.4.3.1-7a/4 AND A.4.3.6-1/6 THEN R ELSE N/A | |
| C307 IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-2/7 AND A.4.1-3/1 AND A.4.3.12-1/2 AND A.4.3.1-7a/1 AND A.4.3.6-1/6 THEN R ELSE N/A | |
| C308 IF A.4.1-1/2 AND A.4.1-2/8 AND A.4.1-3/1 AND A.4.3.12-1/2 AND A.4.4-1/16 AND A.4.3.5-1/1 THEN R ELSE N/A | |
| C309 IF A.4.1-1/2 AND A.4.1-2/8 AND A.4.1-3/1 AND A.4.3.12-1/2 AND A.4.3.6-1/41a THEN R ELSE N/A | |
| C310 IF A.4.1-1/2 AND A.4.1-2/8 AND A.4.1-3/1 AND A.4.3.12-1/2 AND A.4.3.6-1/41a AND A.4.3.5-1/1 THEN R ELSE N/A | |
| C311 IF A.4.1-1/2 AND A.4.1-2/8 AND A.4.1-3/1 AND A.4.3.12-1/2 AND A.4.3.2-1/56 AND 4.3.2-1/78 THEN R ELSE N/A | |
| C312 IF A.4.1-1/2 AND A.4.1-2/8 AND A.4.1-3/1 AND A.4.3.12-1/2 AND A.4.3.6-1/8a THEN R ELSE N/A | |
| C313 IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-2/7 AND A.4.1-3/1 AND (A.4.1-4A/1 OR A.4.1-4A/2 OR A.4.1-4A/5) AND A.4.3.2A.1-1/4 THEN R ELSE N/A | |
| C314 IF A.4.1-1/2 AND A.4.1-2/8 AND A.4.1-3/1 AND A.4.3.2-1/XXX AND A.4.3.2-1/YYY OR A.4.3.2-1/ZZZ OR 4.3.2-1/XYZ THEN R ELSE N/A | |
| C315 IF A.4.1-1/2 AND A.4.1-2/8 AND A.4.1-3/1 AND ((A.4.3.2-1/42 OR A.4.3.2-1/43 OR A.4.3.2-1/44) OR (A.4.3.2-1/42a OR A.4.3.2-1/43a OR A.4.3.2-1/44a)) AND (A.4.3.2-1/24 OR A.4.3.2-1/24A) AND A.4.3.12-1/2 THEN R ELSE N/A | |
| C316 IF A.4.1-1/2 AND A.4.1-2/8 AND A.4.1-3/1 AND ((A.4.3.2-1/42 OR A.4.3.2-1/43 OR A.4.3.2-1/44) OR (A.4.3.2-1/42a OR A.4.3.2-1/43a OR A.4.3.2-1/44a)) AND A.4.3.12-1/2 THEN R ELSE N/A | |
| C317 IF A.4.1-1/2 AND A.4.1-2/8 AND A.4.1-3/1 AND A.4.3.12-1/2 AND A.4.3.6-1/6 THEN R ELSE N/A | |
| C318 IF ((A.4.1-1/1 AND [10]A.4.1-1/1) OR (A.4.1-1/1 AND [10]A.4.1-1/2) OR (A.4.1-1/2 AND [10]A.4.1-1/1) OR (A.4.1-1/2 AND [10]A.4.1-1/2)) AND A.4.1-3/1 AND A.4.3.12-1/2 AND A.4.3.1-7a/4 AND A.4.3.5-1/1 THEN R ELSE N/A | |
| C319 IF ((A.4.1-1/1 AND [10]A.4.1-1/1) OR (A.4.1-1/1 AND [10]A.4.1-1/2) OR (A.4.1-1/2 AND [10]A.4.1-1/1) OR (A.4.1-1/2 AND [10]A.4.1-1/2)) AND A.4.1-3/1 AND A.4.3.12-1/2 AND A.4.3.1-7a/1 AND A.4.3.5-1/1 THEN R ELSE N/A | |
| C320 IF (A.4.1-4/4 OR A.4.1-4/5) AND A.4.1-3/2 AND A.4.3.5-1/1 AND A.4.3.6/78 THEN R ELSE N/A | |
| C321 IF A.4.1-1/2 AND A.4.1-2/7 AND A.4.1-3/1 AND A.4.3.2-2/3 AND A.4.3.2-2/6 AND A.4.3.2-2/7 AND ((A.4.3.2-2/8 AND A.4.3.2-2/10) OR (A.4.3.2-2/9 AND A.4.3.2-2/11)) THEN R ELSE N/A |
| C322 IF A.4.1-1/2 AND A.4.1-2/7 AND A.4.1-3/1 AND A.4.3.2-2/3 AND A.4.3.2-2/6 AND A.4.3.2-2/7 AND ((A.4.3.2-2/8 AND A.4.3.2-2/10 AND A.4.3.2-2/12) OR (A.4.3.2-2/9 AND A.4.3.2-2/11 AND A.4.3.2-2/13)) THEN R ELSE N/A |
| C323 IF A.4.1-1/2 AND A.4.1-2/7 AND A.4.1-3/1 AND A.4.3.2-2/3 AND A.4.3.2-2/6 AND A.4.3.2-2/7 AND ((A.4.3.2-2/8 AND A.4.3.2-2/10 AND A.4.3.2-2/12 AND A.4.3.2-2/14) OR (A.4.3.2-2/9 AND A.4.3.2-2/11 AND A.4.3.2-2/13 AND A.4.3.2-2/15)) THEN R ELSE N/A |
| C324 IF A.4.1-1/2 AND A.4.1-2/7 AND A.4.1-3/1 AND A.4.3.2-2/3 AND A.4.3.2-2/6 AND A.4.3.2-2/7 AND ((A.4.3.2-2/8 AND A.4.3.2-2/10 AND A.4.3.2-2/12 AND A.4.3.2-2/14) OR (A.4.3.2-2/9 AND A.4.3.2-2/11 AND A.4.3.2-2/13 AND A.4.3.2-2/15)) AND A.4.3.5-1/1 THEN R ELSE N/A |
| C325 IF A.4.1-1/2 AND A.4.1-2/7 AND A.4.1-3/1 AND A.4.3.2-2/3 AND A.4.3.2-2/6 AND A.4.3.2-2/7 AND ((A.4.3.2-2/8 AND A.4.3.2-2/10) OR (A.4.3.2-2/9 AND A.4.3.2-2/11)) AND (A.4.3.2-1/42a OR A.4.3.2-1/43a OR A.4.3.2-1/44a) AND (A.4.3.2-1/24 OR A.4.3.2-1/24A) AND A.4.3.5-1/17 THEN R ELSE N/A |
| C326 IF A.4.1-1/2 AND A.4.1-2/7 AND A.4.1-3/1 AND A.4.3.2-2/3 AND A.4.3.2-2/6 AND A.4.3.2-2/7 AND ((A.4.3.2-2/8 AND A.4.3.2-2/10) OR (A.4.3.2-2/9 AND A.4.3.2-2/11)) AND (A.4.3.2-1/42a OR A.4.3.2-1/43a OR A.4.3.2-1/44a) AND (A.4.3.2-1/24 OR A.4.3.2-1/24A) THEN R ELSE N/A |
| C327 IF A.4.1-1/2 AND A.4.1-2/7 AND A.4.1-3/1 AND A.4.3.2-2/3 AND A.4.3.2-2/6 AND A.4.3.2-2/7 AND ((A.4.3.2-2/8 AND A.4.3.2-2/10) OR (A.4.3.2-2/9 AND A.4.3.2-2/11)) AND (A.4.3.2-1/42a OR A.4.3.2-1/43a OR A.4.3.2-1/44a) THEN R ELSE N/A |
| NOTE 1: Cxxxx applicability is defined for enhanced type 1 receiver for NR related tests (A.4.3.9-1/1).  NOTE 2: Cxxxy applicability is defined for alternative additional DMRS position for co-existence with LTE CRS related tests (A.4.3.2-1/20).  NOTE 3: Cxxxz applicability is defined for modified MPR behaviour related test (A.4.3.2-1/25).  NOTE 4: Cxxxw applicability is defined for mpr Power Boost related test (A.4.3.2-1/38). | |

Table 4.0-2: Tested Bands Selection Criteria

|  |  |  |
| --- | --- | --- |
| Code | Tested Bands Selection Criteria | Comment |
| D001 | A.4.3.1-1 OR A.4.3.1-2 | All supported FDD or TDD FR1 bands |
| D002 | Void |  |
| D003 | A.4.3.1-5 | All supported FR1 SUL Bands |
| D004 | {n1, n2, n3, n5, n7, n8, n12, n14, n20, n25, n28, n30, n34, n38, n39, n40, n41, n50, n51, n65, n66, n70, n71, n74, n75, n76} | All supported bands among n1, n2, n3, n5, n7, n8, n12, n14, n20, n25, n28, n30, n34, n38, n39, n40, n41, n50, n51, n65, n66, n70, n71, n74, n75, n76 |
| D005 | A.4.3.1-3 | All supported FR2 Bands |
| D006 | Void |  |
| D007 | Void |  |
| D008 | ANY((A.4.3.1-1) AND 10MHz) | Any FDD FR1 band within the set supporting 10 MHz UE Channel BW |
| D009 | ANY((A.4.3.1-2) AND 20MHz) | Any TDD FR1 band within the set supporting 20 MHz UE Channel BW |
| D010 | ANY((A.4.3.1-2) AND 40MHz) | Any TDD FR1 band within the set supporting 40 MHz UE Channel BW |
| D011 | A.4.3.9-4a OR A.4.3.9-4b | All supported 4 Rx antenna ports Bands |
| D012 | A.4.3.9-12 AND FDD | All supported FDD FR1 band with UL MIMO capabilities |
| D013 | ANY((A.4.3.1-3) AND 50MHz) | Any TDD FR2 band within the set supporting 50 MHz UE Channel BW |
| D014 | ANY((A.4.3.1-3) AND 100MHz) | Any TDD FR2 band within the set supporting 100 MHz UE Channel BW |
| D015 | ANY((A.4.3.1-3) AND 200MHz) | Any TDD FR2 band within the set supporting 200 MHz UE Channel BW |
| D016 | A.4.3.1-9 | All supported FR1 sidelink bands |
| D017 | {n40, n41, n77, n78, n79} | All supported TDD bands among n40, n41, n77, n78, n79 |
| D018 | A.4.3.1-2/2e OR A.4.3.1-2/12 | All supported FR1 Bands for operation with shared spectrum channel access |
| D019 | {n34, n38, n39, n48, n90} AND 10MHz | All supported TDD FR1 bands among n34, n38, n39, n48, n90 supporting 10MHz UE Channel BW |
| D020 | Void |  |
| D021 | Void |  |
| D022 | A.4.3.9-12 AND NOT A.4.3.1-5 | All supported FDD or TDD FR1 Bands with UL MIMO capabilities |
| D023 | A.4.3.9-13 | All supported FR2 Bands with UL MIMO capabilities |
| D024 | A.4.3.9-12 AND A.4.3.1-5 | All supported FR1 Bands with UL MIMO capabilities and SUL bands |
| D025 | {n46, n96, n102} AND CCA | All supported TDD FR1 bands with CCA |
| D026 | Void |  |
| D027 | A.4.3.1-11 | All supported NR NTN satellite bands in FR1 |
| D028 | {n1, n3, n34, n39, n41, n78, n79} | All supported ATG bands among n1, n3, n34, n39, n41, n78, n79 |
| NOTE 1: Band Selection is based on set theory. For each feature, item number shall correspond to the Band number. The result is the set of bands for which the test shall be conducted. The following operators are used:  AND: Set intersection ( \cap \!\, ). {n1,n2} AND {n2,n3} = {n2}  OR: Set union ( \cup \!\, ). {n1,n2} OR {n2,n3} = {n1,n2,n3}  NOT: Set complement (\), full set being all bands. NOT{n1} = {All bands except n1}  Also note that this is set without repetitions so {n1} AND {n1} = {n1}  The following basic sets are used:  {n1,n2}: Explicitly given band set  10MHz: All bands supporting 10 MHz  FDD: All bands in FDD mode | | |

Table 4.0-3: Tested CA/DC Configuration Selection Criteria

|  |  |  |
| --- | --- | --- |
| Code | Tested CA/DC Configuration Selection Criteria | Comment |
| E001 | DL\_2CC(A.4.3.2A.2.1-3) AND A.4.3.2B.2.0-1/1 AND NOT UL(A.4.3.2A.2.1-2) | All supported intra-band contiguous CA Configurations with 2 carriers in DL but no CA in UL |
| E002 | DL\_2CC(A.4.3.2A.4.1-3) AND A.4.3.2B.2.0-1/1 AND NOT UL(A.4.3.2A.4.1-2) | All supported inter-band CA Configurations with 2 carriers in DL but no CA in UL |
| E003 | UL\_2CC(A.4.3.2B.2.1-2) AND A.4.3.2B.2.0-2/1 | All supported Intra-band contiguous EN-DC configurations in FR1 (2UL CCs) |
| E003a | DL\_2CC(A.4.3.2B.2.1-2) AND A.4.3.2B.2.0-1/1 | All supported Intra-band contiguous EN-DC configurations in FR1 (2DL CCs) |
| E004 | UL\_2CC(A.4.3.2B.2.2-2) AND A.4.3.2B.2.0-2/1 | All supported Intra-band non-contiguous EN-DC configurations in FR1 (2UL CCs) |
| E004a | DL\_2CC(A.4.3.2B.2.2-2) AND A.4.3.2B.2.0-1/1 | All supported Intra-band non-contiguous EN-DC configurations in FR1 (2DL CCs) |
| E005 | UL\_2CC(A.4.3.2B.2.3.1-2 OR A.4.3.2B.2.3.2-2 OR A.4.3.2B.2.3.3-2 OR A.4.3.2B.2.3.4-2 OR A.4.3.2B.2.3.5-2) AND A.4.3.2B.2.0-2/1 | All supported Inter-band EN-DC configurations within FR1 (2UL CCs) |
| E005a | DL\_2CC(A.4.3.2B.2.3.1-2) OR A.4.3.2B.2.3.2-2 OR A.4.3.2B.2.3.3-2 OR A.4.3.2B.2.3.4-2 OR A.4.3.2B.2.3.5-2 AND A.4.3.2B.2.0-1/1 | All supported Inter-band EN-DC configurations within FR1 (2DL CCs) |
| E005b | UL\_NR\_1CC(A.4.3.2B.2.3.1-2 OR A.4.3.2B.2.3.2-2 OR A.4.3.2B.2.3.3-2 OR A.4.3.2B.2.3.4-2 OR A.4.3.2B.2.3.5-2) AND A.4.3.2B.2.0-2A/1 | All supported Inter-band EN-DC configurations within FR1 with 1 UL NR CC and one or more LTE UL CC(s) |
| E005c | DL\_NR\_1CC(A.4.3.2B.2.3.1-2 OR A.4.3.2B.2.3.2-2 OR A.4.3.2B.2.3.3-2 OR A.4.3.2B.2.3.4-2 OR A.4.3.2B.2.3.5-2) AND A.4.3.2B.2.0-1A/1 | All supported Inter-band EN-DC configurations within FR1 with 1 DL NR CC and one or more LTE DL CC(s) |
| E005d | A.4.3.2B.2.3.1-3 | All supported PC2 Inter-band EN-DC configurations within FR1 |
| E005z | UL\_3CC(A.4.3.2B.2.3.1-2 OR A.4.3.2B.2.3.2-2 OR A.4.3.2B.2.3.3-2 OR A.4.3.2B.2.3.4-2 OR A.4.3.2B.2.3.5-2) AND A.4.3.2B.2.0-2/2 AND A.4.3.2B.2.0-2A/1 | All supported Inter-band EN-DC configurations within FR1 (2UL E-UTRA CCs, 1UL NR CC) |
| E006 | DL\_3CC(A.4.3.2B.2.1-2 OR A.4.3.2B.2.2-2 OR A.4.3.2B.2.3.1-2 OR A.4.3.2B.2.3.2-2 OR A.4.3.2B.2.3.3-2 OR A.4.3.2B.2.3.4-2 OR A.4.3.2B.2.3.5-2) AND A.4.3.2B.2.0-1/2 | All supported EN-DC configurations within FR1 (3DL CCs) |
| E007 | DL\_4CC(A.4.3.2B.2.1-2 OR A.4.3.2B.2.2-2 OR A.4.3.2B.2.3.1-2 OR A.4.3.2B.2.3.2-2 OR A.4.3.2B.2.3.3-2 OR A.4.3.2B.2.3.4-2 OR A.4.3.2B.2.3.5-2) AND A.4.3.2B.2.0-1/3 | All supported EN-DC configurations within FR1 (4DL CCs) |
| E008 | DL\_5CC(A.4.3.2B.2.3.1-2 OR A.4.3.2B.2.3.2-2 OR A.4.3.2B.2.3.3-2 OR A.4.3.2B.2.3.4-2 OR A.4.3.2B.2.3.5-2) AND A.4.3.2B.2.0-1/4 | All supported EN-DC configurations within FR1 (5DL CCs) |
| E009 | DL\_6CC(A.4.3.2B.2.3.1-2 OR A.4.3.2B.2.3.2-2 OR A.4.3.2B.2.3.3-2 OR A.4.3.2B.2.3.4-2 OR A.4.3.2B.2.3.5-2) AND A.4.3.2B.2.0-1/5 | All supported EN-DC configurations within FR1 (6DL CCs) |
| E010 | UL\_NR\_1CC(A.4.3.2B.2.3.6-2 OR A.4.3.2B.2.3.7-2 OR A.4.3.2B.2.3.8-2 OR A.4.3.2B.2.3.9-2) AND A.4.3.2B.2.0-2A/1 | All supported Inter-band EN-DC configurations including FR2 (1UL NR CC) |
| E010a | DL\_NR\_1CC(A.4.3.2B.2.3.6-2 OR A.4.3.2B.2.3.7-2 OR A.4.3.2B.2.3.8-2 OR A.4.3.2B.2.3.9-2) AND A.4.3.2B.2.0-1A /1 | All supported Inter-band EN-DC configurations including FR2 (1DL NR CC) |
| E011 | UL\_NR\_2CC(A.4.3.2B.2.3.6-2 OR A.4.3.2B.2.3.7-2 OR A.4.3.2B.2.3.8-2 OR A.4.3.2B.2.3.9-2) AND A.4.3.2B.2.0-2/2 AND A.4.3.2B.2.0-2A/2 | All supported Inter-band EN-DC configurations including FR2 (2UL NR CCs) |
| E011a | DL\_NR\_2CC(A.4.3.2B.2.3.6-2 OR A.4.3.2B.2.3.7-2 OR A.4.3.2B.2.3.8-2 OR A.4.3.2B.2.3.9-2) AND A.4.3.2B.2.0-1/2 AND A.4.3.2B.2.0-1A/2 | All supported Inter-band EN-DC configurations including FR2 (2DL NR CCs) |
| E012 | UL\_NR\_3CC(A.4.3.2B.2.3.6-2 OR A.4.3.2B.2.3.7-2 OR A.4.3.2B.2.3.8-2 OR A.4.3.2B.2.3.9-2) AND A.4.3.2B.2.0-2/3 AND NR\_A.4.3.2B.2.0-2A/3 | All supported Inter-band EN-DC configurations including FR2 (3UL NR CCs) |
| E012a | DL\_NR\_3CC(A.4.3.2B.2.3.6-2 OR A.4.3.2B.2.3.7-2 OR A.4.3.2B.2.3.8-2 OR A.4.3.2B.2.3.9-2) AND A.4.3.2B.2.0-1/3 AND A.4.3.2B.2.0-1A/3 | All supported Inter-band EN-DC configurations including FR2 (3DL NR CCs) |
| E013 | UL\_NR\_4CC(A.4.3.2B.2.3.6-2 OR A.4.3.2B.2.3.7-2 OR A.4.3.2B.2.3.8-2 OR A.4.3.2B.2.3.9-2) AND A.4.3.2B.2.0-2/4 AND A.4.3.2B.2.0-2A/4 | All supported Inter-band EN-DC configurations including FR2 (4UL NR CCs) |
| E013a | DL\_NR\_4CC(A.4.3.2B.2.3.6-2 OR A.4.3.2B.2.3.7-2 OR A.4.3.2B.2.3.8-2 OR A.4.3.2B.2.3.9-2) AND A.4.3.2B.2.0-1/4 AND A.4.3.2B.2.0-1A/4 | All supported Inter-band EN-DC configurations including FR2 (4DL NR CCs) |
| E014 | DL\_NR\_5CC(A.4.3.2B.2.3.6-2 OR A.4.3.2B.2.3.7-2 OR A.4.3.2B.2.3.8-2 OR A.4.3.2B.2.3.9-2) AND A.4.3.2B.2.0-1/5 AND A.4.3.2B.2.0-1A/5 | All supported Inter-band EN-DC configurations including FR2 (5DL NR CCs) |
| E014a | UL\_NR\_5CC(A.4.3.2B.2.3.6-2 OR A.4.3.2B.2.3.7-2 OR A.4.3.2B.2.3.8-2 OR A.4.3.2B.2.3.9-2) AND A.4.3.2B.2.0-2/4 AND A.4.3.2B.2.0-2A/5 | All supported Inter-band EN-DC configurations including FR2 (5UL NR CCs) |
| E015 | UL\_2CC(A.4.3.2A.2.1-3 OR A.4.3.2A.3.1-3 OR A.4.3.2A.4.1-3 OR A.4.3.2A.4.2-3) AND A.4.3.2A.1-2/1 | All supported FR1 2UL CA configurations |
| E015a | A.4.3.2A.4.1-4 | All supported PC2 Inter-band CA configurations within FR1 |
| E015b | A.4.3.2B.1.0-2 AND A.4.3.2B.1.0a.1-2/1 | All supported FR1 2UL NR-DC configurations |
| E016 | DL\_2CC(A.4.3.2A.2.1-3 OR A.4.3.2A.3.1-3 OR A.4.3.2A.4.1-3) AND A.4.3.2A.1-1/1 | All supported FR1 2DL CA configurations |
| E017 | DL\_3CC(A.4.3.2A.2.1-3 OR A.4.3.2A.3.1-3 OR A.4.3.2A.4.1-3 OR A.4.3.2A.4.2-3) AND A.4.3.2A.1-1/2 | All supported FR1 3DL CA configurations |
| E018 | DL\_4CC(A.4.3.2A.2.1-3 OR A.4.3.2A.3.1-3 OR A.4.3.2A.4.1-3 OR A.4.3.2A.4.2-3) AND A.4.3.2A.1-1/3 | All supported FR1 4DL CA configurations |
| E018a | DL\_5CC(A.4.3.2A.2.1-3 OR A.4.3.2A.3.1-3 OR A.4.3.2A.4.1-3 OR A.4.3.2A.4.2-3) AND A.4.3.2A.1-1/4 | All supported FR1 5DL CA configurations |
| E019 | UL\_2CC(ULTxSwitching(A.4.3.2A.4.1-3)) | All supported FR1 2UL CA configurations with 1Tx-2Tx ULTxSwitching capability |
| E019a | UL\_2CC(2Tx\_ULTxSwitching(A.4.3.2A.4.1-3)) | All supported FR1 2UL CA configurations with 2Tx-2Tx ULTxSwitching capability |
| E019b | UL\_3CC(ULTxSwitching(A.4.3.2A.4.1-3)) | All supported FR1 3UL CA configurations with 1Tx-2Tx ULTxSwitching capability |
| E019c | UL\_3CC(2Tx\_ULTxSwitching(A.4.3.2A.4.1-3)) | All supported FR1 3UL CA configurations with 2Tx-2Tx ULTxSwitching capability |
| E020 | UL\_2CC(A.4.3.2A.2.2-3 OR A.4.3.2A.3.2-3 OR A.4.3.2A.3.2-3a) AND A.4.3.2A.1-2/1 | All supported FR2 2UL CA configurations |
| E021 | UL\_3CC(A.4.3.2A.2.2-3 OR A.4.3.2A.3.2-3 OR A.4.3.2A.3.2-3a) AND A.4.3.2A.1-2/2 | All supported FR2 3UL CA configurations |
| E022 | UL\_4CC(A.4.3.2A.2.2-3 OR A.4.3.2A.3.2-3 OR A.4.3.2A.3.2-3a) AND A.4.3.2A.1-2/3 | All supported FR2 4UL CA configurations |
| E023 | UL\_5CC(A.4.3.2A.2.2-3) AND A.4.3.2A.1-2/4 | All supported FR2 5UL CA configurations |
| E024 | UL\_6CC(A.4.3.2A.2.2-3) AND A.4.3.2A.1-2/5 | All supported FR2 6UL CA configurations |
| E025 | UL\_7CC(A.4.3.2A.2.2-3) AND A.4.3.2A.1-2/6 | All supported FR2 7UL CA configurations |
| E026 | UL\_8CC(A.4.3.2A.2.2-3) AND A.4.3.2A.1-2/7 | All supported FR2 8UL CA configurations |
| E027 | DL\_NR\_2CC(A.4.3.2B.2.2-2) AND A.4.3.2B.2.0-1A/2 | All supported Intra-band non-contiguous EN-DC configurations in FR1 (2DL NR CCs) |
| E028 | DL\_NR\_3CC(A.4.3.2B.2.2-2) AND A.4.3.2B.2.0-1A/3 | All supported Intra-band non-contiguous EN-DC configurations in FR1 (3DL NR CCs) |
| E028a | DL\_NR\_4CC(A.4.3.2B.2.2-2) AND A.4.3.2B.2.0-1A/4 | All supported Intra-band non-contiguous EN-DC configurations in FR1 (4DL NR CCs) |
| E028b | DL\_NR\_5CC(A.4.3.2B.2.2-2) AND A.4.3.2B.2.0-1A/5 | All supported Intra-band non-contiguous EN-DC configurations in FR1 (5DL NR CCs) |
| E029 | DL\_NR\_2CC(A.4.3.2B.2.3.1-2 OR A.4.3.2B.2.3.2-2 OR A.4.3.2B.2.3.3-2 OR A.4.3.2B.2.3.4-2 OR A.4.3.2B.2.3.5-2) AND A.4.3.2B.2.0-1A/2 | All supported Inter-band EN-DC configurations within FR1 (2DL NR CCs) |
| E030 | DL\_NR\_3CC(A.4.3.2B.2.3.1-2 OR A.4.3.2B.2.3.2-2 OR A.4.3.2B.2.3.3-2 OR A.4.3.2B.2.3.4-2 OR A.4.3.2B.2.3.5-2) AND A.4.3.2B.2.0-1A/3 | All supported Inter-band EN-DC configurations within FR1 (3DL NR CCs) |
| E030a | DL\_NR\_4CC(A.4.3.2B.2.3.1-2 OR A.4.3.2B.2.3.2-2 OR A.4.3.2B.2.3.3-2 OR A.4.3.2B.2.3.4-2 OR A.4.3.2B.2.3.5-2) AND A.4.3.2B.2.0-1A/4 | All supported Inter-band EN-DC configurations within FR1 (4DL NR CCs) |
| E030b | DL\_NR\_5CC(A.4.3.2B.2.3.1-2 OR A.4.3.2B.2.3.2-2 OR A.4.3.2B.2.3.3-2 OR A.4.3.2B.2.3.4-2 OR A.4.3.2B.2.3.5-2) AND A.4.3.2B.2.0-1A/5 | All supported Inter-band EN-DC configurations within FR1 (5DL NR CCs) |
| E031 | A.4.3.2C.3-2 | All supported FR1 intra-band contiguous 2DL CA with SUL in uplink Configurations |
| E031b | ULTxSwitching(A.4.3.2B.2.3.1-2) | All supported FR1 2UL inter-band EN-DC configurations with ULTxSwitching capability |
| E032 | DL\_2CC(A.4.3.2A.2.2-3 OR A.4.3.2A.3.2-3 OR A.4.3.2A.3.2-3a) AND A.4.3.2A.1-1/1 | All supported FR2 2DL CA configurations |
| E033 | DL\_3CC(A.4.3.2A.2.2-3 OR A.4.3.2A.3.2-3 OR A.4.3.2A.3.2-3a) AND A.4.3.2A.1-1/2 | All supported FR2 3DL CA configurations |
| E034 | DL\_4CC(A.4.3.2A.2.2-3 OR A.4.3.2A.3.2-3 OR A.4.3.2A.3.2-3a) AND A.4.3.2A.1-1/3 | All supported FR2 4DL CA configurations |
| E035 | DL\_5CC(A.4.3.2A.2.2-3 OR A.4.3.2A.3.2-3 OR A.4.3.2A.3.2-3a) AND A.4.3.2A.1-1/4 | All supported FR2 5DL CA configurations |
| E036 | DL\_6CC(A.4.3.2A.2.2-3 OR A.4.3.2A.3.2-3 OR A.4.3.2A.3.2-3a) AND A.4.3.2A.1-1/5 | All supported FR2 6DL CA configurations |
| E037 | DL\_7CC(A.4.3.2A.2.2-3 OR A.4.3.2A.3.2-3 OR A.4.3.2A.3.2-3a) AND A.4.3.2A.1-1/6 | All supported FR2 7DL CA configurations |
| E038 | DL\_8CC(A.4.3.2A.2.2-3 OR A.4.3.2A.3.2-3 OR A.4.3.2A.3.2-3a) AND A.4.3.2A.1-1/7 | All supported FR2 8DL CA configurations |
| E039 | UL\_NR\_6CC(A.4.3.2B.2.3.6-2 OR A.4.3.2B.2.3.7-2 OR A.4.3.2B.2.3.8-2 OR A.4.3.2B.2.3.9-2) AND A.4.3.2B.2.0-2/4 AND A.4.3.2B.2.0-2A/6 | All supported Inter-band EN-DC configurations including FR2 (6UL NR CCs) |
| E039a | DL\_NR\_6CC(A.4.3.2B.2.3.6-2 OR A.4.3.2B.2.3.7-2 OR A.4.3.2B.2.3.8-2 OR A.4.3.2B.2.3.9-2) AND A.4.3.2B.2.0-1/5 AND A.4.3.2B.2.0-1A/5 | All supported Inter-band EN-DC configurations including FR2 (6DL NR CCs) |
| E040 | UL\_NR\_7CC(A.4.3.2B.2.3.6-2 OR A.4.3.2B.2.3.7-2 OR A.4.3.2B.2.3.8-2 OR A.4.3.2B.2.3.9-2) AND A.4.3.2B.2.0-2/4 AND A.4.3.2B.2.0-2A/7 | All supported Inter-band EN-DC configurations including FR2 (7UL NR CCs) |
| E040a | DL\_NR\_7CC(A.4.3.2B.2.3.6-2 OR A.4.3.2B.2.3.7-2 OR A.4.3.2B.2.3.8-2 OR A.4.3.2B.2.3.9-2) AND A.4.3.2B.2.0-1/5 AND A.4.3.2B.2.0-1A/7 | All supported Inter-band EN-DC configurations including FR2 (7DL NR CCs) |
| E041 | UL\_NR\_8CC(A.4.3.2B.2.3.6-2 OR A.4.3.2B.2.3.7-2 OR A.4.3.2B.2.3.8-2 OR A.4.3.2B.2.3.9-2) AND A.4.3.2B.2.0-2/4 AND A.4.3.2B.2.0-2A/8 | All supported Inter-band EN-DC configurations including FR2 (8UL NR CCs) |
| E041a | DL\_NR\_8CC(A.4.3.2B.2.3.6-2 OR A.4.3.2B.2.3.7-2 OR A.4.3.2B.2.3.8-2 OR A.4.3.2B.2.3.9-2) AND A.4.3.2B.2.0-1/5 AND A.4.3.2B.2.0-1A/8 | All supported Inter-band EN-DC configurations including FR2 (8DL NR CCs) |
| E042 | Table A.4.3.2A.2.1-3a | All supported FR1 intra-band contiguous CA configuration with UL MIMO capabilities |
| E043 | UL\_NR\_1CC(A.4.3.2B.2.3.6-2 OR A.4.3.2B.2.3.7-2 OR A.4.3.2B.2.3.8-2 OR A.4.3.2B.2.3.9-2) AND A.4.3.2B.2.0-2A/1 AND A.4.3.9-13 | All supported Inter-band EN-DC configurations including FR2 (1UL NR CC) and UL MIMO |
| E044 | ULTxSwitching(A.4.3.2C.2-1) | All supported FR1 SUL configurations with 1Tx-2Tx ULTxSwitching capability |
| E044a | 2Tx\_ULTxSwitching(A.4.3.2C.2-1) | All supported FR1 SUL configurations with 2Tx-2Tx ULTxSwitching capability |
| E044b | ULTxSwitching(A.4.3.2C.3-2) | All supported FR1 SUL/intra-band CA configurations with 1Tx-2Tx ULTxSwitching capability |
| E044c | 2Tx\_ULTxSwitching(A.4.3.2C.3-2) | All supported FR1 SUL/intra-band CA configurations with 2Tx-2Tx ULTxSwitching capability |
| NOTE 1: UL(*table\_index*) includes all supported CA Configurations where at least one UL CA configuration was declared in column "Supported CA Bandwidth Class(es) in UL" in Table *table\_index* in TS 38.508-2 [8].  NOTE 2: UL\_*n*CC(table\_index) includes all supported CA or DC Configurations where at least one n-carrier UL CA or DC configuration was declared in column "Supported CA Bandwidth Class(es) in UL" or “Supported EN-DC Bandwidth Class(es) in UL” in Table table\_index in TS 38.508-2 [8].  NOTE 3: UL\_NR\_*n*CC(*table\_index*) includes all supported DC Configurations where at least one DC configuration with *n*-carrier NR UL CA configuration was declared in column "Supported EN-DC Bandwidth Class(es) in UL" in Table *table\_index* in TS 38.508-2 [8].  NOTE 4: DL\_*n*CC(*table\_index*) includes all supported *n*-carrier CA/DC Configurations in Table *table\_index* in TS 38.508-2 [8].  NOTE 5: DL\_NR\_*n*CC(*table\_index*) includes all supported DC Configurations with *n*-carrier NR DL CA configuration in Table *table\_index* in TS 38.508-2 [8].  NOTE 6: ULTxSwitching(*table\_index*) includes all supported CA/DC/SUL Configurations where at least one uplink band pair was declared in column “Supported ULTxSwitching Band Pair" in Table *table\_index* in TS 38.508-2 [8]. 2Tx\_ULTxSwitching(*table\_index*) includes all supported CA/DC/SUL Configurations where at least one uplink band pair was declared in column “Supported 2Tx-2Tx ULTxSwitching Band Pair" in Table *table\_index* in TS 38.508-2 [8]. | | |

Table 4.0-4: Subtest Selection Criteria for performance and RRM test cases

|  |  |  |
| --- | --- | --- |
| Code | Tested Bands Selection Criteria | Comment |
| F001 | IF (A.4.1-4/1 OR A.4.1-4/2 OR A.4.1-4/3 OR A.4.1-4/5) AND A.4.1-3/2 AND A.4.3.2-1/9 THEN R ELSE N/A | UEs supporting EN-DC FR1 AND CSI-RS based PRACH |
| F002 | IF (A.4.1-4/1 OR A.4.1-4/2 OR A.4.1-4/3 OR A.4.1-4/5) AND A.4.1-3/2 AND A.4.3.5-1/1 THEN R ELSE N/A | UEs supporting EN-DC FR1 and long DRX cycle |
| F003 | IF (A.4.1-4/4 OR A.4.1-4/5) AND A.4.1-3/2 AND A.4.3.2-1/9 THEN R ELSE N/A | UEs supporting EN-DC FR2 and CSI-RS based PRACH |
| F004 | IF (A.4.1-4/4 OR A.4.1-4/5) AND A.4.1-3/2 AND A.4.3.5-1/1 THEN R ELSE N/A | UEs supporting EN-DC FR2 and long DRX cycle |
| F005 | IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-3/1 AND 4.3.2-1/9 THEN R ELSE N/A | UEs supporting 5GS NR SA FR1 and CSI-RS based PRACH |
| F006 | IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-2/7 AND A.4.1-3/1 AND A.4.3.5-1/1 THEN R ELSE N/A | UEs supporting 5GS NR SA FR1 and long DRX cycle |
| F007 | IF A.4.1-1/2 AND A.4.1-2/8 AND A.4.1-3/1 AND 4.3.2-1/9 THEN R ELSE N/A | UEs supporting 5GS NR SA FR2 and CSI-RS based PRACH |
| F008 | IF A.4.1-1/2 AND A.4.1-2/8 AND A.4.1-3/1 AND A.4.3.5-1/1 THEN R ELSE N/A | UEs supporting 5GS NR SA FR2 and long DRX cycle |
| F009 | IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-3/1 AND 4.3.2-1/9 AND A.4.3.12-1/2 AND A.4.3.1-7a/4 THEN R ELSE N/A | 1Rx RedCap UEs supporting 5GS NR SA FR1 and CSI-RS based PRACH |
| F010 | IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-3/1 AND 4.3.2-1/9 AND A.4.3.12-1/2 AND A.4.3.1-7a/1 THEN R ELSE N/A | 2Rx RedCap UEs supporting 5GS NR SA FR1 and CSI-RS based PRACH |
| F011 | IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-2/7 AND A.4.1-3/1 AND A.4.3.2-1/46 AND A.4.3.12-1/2 AND A.4.3.1-7a/1 THEN R ELSE N/A | 1Rx RedCap UEs supporting 5GS NR SA FR1 and long DRX cycle |
| F012 | IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-2/7 AND A.4.1-3/1 AND A.4.3.5-1/1 AND A.4.3.12-1/2 AND A.4.3.1-7a/1 THEN R ELSE N/A | 2Rx RedCap UEs supporting 5GS NR SA FR1 and long DRX cycle |
| F013 | IF A.4.1-1/2 AND A.4.1-2/8 AND A.4.1-3/1 AND A.4.3.12-1/2 AND 4.3.2-1/9 THEN R ELSE N/A | RedCap UEs supporting 5GS NR SA FR2 and CSI-RS based PRACH |
| F014 | IF (A.4.1-4/4 OR A.4.1-4/5) AND A.4.1-3/2 AND A.4.3.6-1/2 THEN R ELSE N/A | UEs supporting EN-DC FR2 and per-FR gap |
| F015 | IF (A.4.1-4/4 OR A.4.1-4/5) AND A.4.1-3/2 AND A.4.3.5-1/1 AND A.4.3.6-1/2 THEN R ELSE N/A | UEs supporting EN-DC FR2, per-FR gap and long DRX cycle |
| F016 | IF (A.4.1-4/1 OR A.4.1-4/2 OR A.4.1-4/3 OR A.4.1-4/5) AND A.4.1-3/2 AND A.4.3.11-1/7 AND A.4.3.6-1/2 AND A.4.3.6-1/21 THEN R ELSE N/A | UEs supporting EN-DC FR1, inter-frequency measurement enhancements in HST, per-FR gap and Gap Pattern 4 |
| F017 | IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-2/7 AND A.4.1-3/1 AND A.4.3.11-1/7 AND A.4.3.6-1/2 AND A.4.3.6-1/21 THEN R ELSE N/A | UEs supporting 5GS NR SA FR1, inter-freq measurement enhancements in HST, per-FR gap and Gap Pattern 4 |
| F018 | IF ((A.4.1-1/1 AND [10]A.4.1-1/1) OR (A.4.1-1/1 AND [10]A.4.1-1/2) OR (A.4.1-1/2 AND [10]A.4.1-1/1) OR (A.4.1-1/2 AND [10]A.4.1-1/2)) AND A.4.1-2/7 AND A.4.3.6-1/2 AND A.4.3.6-1/21 THEN R ELSE N/A | UEs supporting E-UTRA, NR FR1 measurement, per-FR gap and Gap Pattern 4 |
| F019 | IF ((A.4.1-1/1 AND [10]A.4.1-1/1) OR (A.4.1-1/1 AND [10]A.4.1-1/2) OR (A.4.1-1/2 AND [10]A.4.1-1/1) OR (A.4.1-1/2 AND [10]A.4.1-1/2)) AND A.4.1-2/7 AND A.4.3.5-1/1 AND A.4.3.6-1/2 AND A.4.3.6-1/21 THEN R ELSE N/A | UEs supporting E-UTRA, NR FR1 measurement, long DRX cycle, per-FR gap and Gap Pattern 4 |
| F020 | IF ([10]A.4.1-1/1 OR [10]A.4.1-1/2) AND (A.4.1-1/1 OR A.4.1-1/2 OR A.4.3.12-1/5) AND A.4.1-3/1 AND A.4.3.12-1/2 AND Table A.4.3.1-7a/1 AND A.4.3.6-1/2 AND A.4.3.6-1/11 THEN R ELSE N/A | 2Rx RedCap UEs supporting 5GS NR SA FR1, E-UTRA, per-FR gap and Gap Pattern 4 |
| F021 | IF ([10]A.4.1-1/1 OR [10]A.4.1-1/2) AND (A.4.1-1/1 OR A.4.1-1/2 OR A.4.3.12-1/5) AND A.4.1-3/1 AND A.4.3.12-1/2 AND Table A.4.3.1-7a/1 AND A.4.3.6-1/2 AND A.4.3.6-1/11 AND A.4.3.5-1/1 THEN R ELSE N/A | 2Rx RedCap UEs supporting 5GS NR SA FR1, E-UTRA, long DRX cycle, per-FR gap and Gap Pattern 4 |
| Fxx1->F022 | IF A.4.3.2-1/20 THEN R ELSE N/A | UE supporting alternative additional DMRS position for co-existence with LTE CRS |
| Fxx2->F023 | IF A.4.3.2-1/2 THEN R ELSE N/A | UE supporting 256QAM for PDSCH for FR1 |

## 4.1 RF conformance test cases

NOTE: To determine applicability of a test case, supported CBW and SCS in the *RF-Parameters* IE (see TS 38.331 [11]) which conveys RF related capabilities for NR operation is taken into account.

### 4.1.1 FR1 standalone conformance test cases

Table 4.1.1-1: Applicability of RF SA FR1 conformance test cases, ref. TS 38.521-1 [1]

| Clause | TC Title | Release | Applicability | | Tested Bands/CA-Configurations Selection | Branch | Additional Information | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  |  | Condition | Comment |  |  |  | |
| **6** | **Transmitter Characteristics** |  |  |  |  |  |  | |
| 6.2.1 | UE maximum output power | Rel-15 | C001l | UEs supporting 5GS FR1 not supporting txDiversity-r16 and not supporting RedCap | D001 | PC1  PC2  PC3 | TC 6.2.1 is skipped if TC 6.2G.1 is executed. | |
| 6.2.2 | UE maximum output power reduction | Rel-15 | C001h | UEs supporting 5GS FR1 not supporting txDiversity-r16 | D001 | PC1  PC2  PC3 | Test execution is not necessary if TS 38.521-1 TC 6.5.2.4.1 is executed.  Skip TC 6.2.2 if UE supports NSA and TS 38.521-3 TC 6.2B.2.3 or 6.5B.2.3.3.1 has been executed.  TC 6.2.2 is skipped if TC 6.2G.2 is executed. | |
| 6.2.3 | UE additional maximum output power reduction | Rel-15 | C001h | UEs supporting 5GS FR1 not supporting txDiversity-r16 | D001 | PC1  PC2  PC3 | Test execution is not necessary if TS 38.521-1 TC 6.5.2.3, 6.5.2.4.2 and 6.5.3.3 are executed.  Skip TC 6.2.3 if UE supports NSA and TS 38.521-3 TC 6.2B.3.3 has been executed or TS 38.521-3 TCs 6.5B.2.3.2, 6.5B.2.3.3.2 and 6.5B.4.3 have been executed.  TC 6.2.3 is skipped if TC 6.2G.3 is executed. | |
| 6.2.4 | Configured transmitted power | Rel-15 | C001h | UEs supporting 5GS FR1 not supporting txDiversity-r16 | D001 | PC1  PC2  PC3 | TC 6.2.4 is skipped if TC 6.2G.4 is executed. | |
| 6.2A.1.1 | UE maximum output power for CA (2UL CA) | Rel-15 | C004 | UEs supporting 5GS FR1 and CA (2UL CA) | E015  E015a | **Inter-band CA**: PC2, PC3 |  | |
| 6.2A.2.1 | UE maximum output power reduction for CA (2UL CA) | Rel-15 | C004 | UEs supporting 5GS FR1 and CA (2UL CA) | E015  E015a | **Inter-band CA**: PC2, PC3  **Intra-band contiguous CA**: PC2, PC3  **Intra-band non-contiguous CA**: PC3 (NOTE 1) | Test execution is not necessary if TS 38.521-1 TC 6.5A.2.4.1.1 is executed. | |
| 6.2A.3.1 | UE additional maximum output power reduction for CA (2UL CA) | Rel-15 | C004 | UEs supporting 5GS FR1 and CA (2UL CA) | E015  E015a | **Inter-band CA**: PC2, PC3  **Intra-band contiguous CA**: PC2, PC3 | Test execution is not necessary if TS 38.521-1 TC 6.5A.2.3 and 6.5A.3.3 are executed. | |
| 6.2A.4.1 | Configured transmitted power for CA (2UL CA) | Rel-15 | C004 | UEs supporting 5GS FR1 and CA (2UL CA) | E015  E015a | **Inter-band CA**: PC2, PC3  **Intra-band contiguous CA**: PC2, PC3  **Intra-band non-contiguous CA**: PC3 (NOTE 1) |  | |
| 6.2B.1.1 | UE maximum output power for NR-DC | Rel-16 | C004a | UEs supporting 5GS FR1 and NR-DC | E015b |  |  | |
| 6.2B.2.1 | UE maximum output power reduction for NR-DC | Rel-16 | C004a | UEs supporting 5GS FR1 and NR-DC | E015b |  | Test execution is not necessary if TS 38.521-1 TC 6.5B.2.4 is executed. | |
| 6.2B.3.1 | UE additional maximum output power reduction for NR-DC | Rel-16 | C004a | UEs supporting 5GS FR1 and NR-DC | E015b |  | Test execution is not necessary if TS 38.521-1 TC 6.5B.2.3 and 6.5B.3.3 are executed. | |
| 6.2B.4.1 | Configured transmitted power level for NR-DC | Rel-16 | C004a | UEs supporting 5GS FR1 and NR-DC | E015b |  |  | |
| 6.2C.1 | Configured transmitted power for SUL | Rel-15 | C002 | UEs supporting 5GS FR1 and SUL | D003 |  | NOTE 2 | |
| 6.2C.3 | UE maximum output power for SUL | Rel-15 | C002 | UEs supporting 5GS FR1 and SUL | D003 |  | NOTE 2 | |
| 6.2C.4 | UE maximum output power reduction for SUL | Rel-15 | C002 | UEs supporting 5GS FR1 and SUL | D003 |  | NOTE 2  Test execution is not necessary if TS 38.521-1 TC 6.5C.2.4.1 is executed. | |
| 6.2C.5 | UE additional maximum output power reduction for SUL | Rel-15 | C002 | UEs supporting 5GS FR1 and SUL | D003 |  | NOTE 2 | |
| 6.2D.1 | UE maximum output power for UL MIMO | Rel-15 | N/A | No test point applicable to Rel-15 UE | D022 | PC1.5  PC2  PC3 |  | |
|  |  | Rel-16 | C003b | UEs supporting 5GS FR1 and ULFPTx |  |  |  | |
| 6.2D.1\_1 | UE maximum output power for SUL with UL MIMO | Rel-17 | C179 | UEs supporting 5GS FR1 and SUL and UL MIMO | D024 |  |  | |
| 6.2D.2 | UE maximum output power reduction for UL MIMO | Rel-15 | C003 | UEs supporting 5GS FR1 and 2-layer codebook based UL MIMO | D022 | PC1.5  PC2  PC3 | Test execution is not necessary if TS 38.521-1 TC 6.5D.2.4.1 is executed. | |
|  |  | Rel-16 | C003b | UEs supporting 5GS FR1 and ULFPTx |  |  |  | |
| 6.2D.2\_1 | UE maximum output power reduction for SUL with UL MIMO | Rel-17 | C179 | UEs supporting 5GS FR1 and SUL and UL MIMO | D024 |  | Test execution is not necessary if TS 38.521-1 TC 6.5D.2.4.1\_1 is executed. | |
| 6.2D.3 | UE additional maximum output power reduction for UL MIMO | Rel-15 | C003 | UEs supporting 5GS FR1 and 2-layer codebook based UL MIMO | D022 | PC1.5 (NOTE 1)  PC2  PC3 | Test execution is not necessary if TS 38.521-1 TC 6.5D.2.3, 6.5D.2.4.2 and 6.5D.3.3 are executed. | |
|  |  | Rel-16 | C003b | UEs supporting 5GS FR1 and ULFPTx |  |  |  | |
| 6.2D.3\_1 | UE additional maximum output power reduction for SUL with UL MIMO | Rel-17 | C179 | UEs supporting 5GS FR1 and SUL and UL MIMO | D024 |  |  | |
| 6.2D.4 | Configured transmitted power for UL MIMO | Rel-15 | C003 | UEs supporting 5GS FR1 and 2-layer codebook based UL MIMO | D022 | PC1.5  PC2  PC3 |  | |
|  |  | Rel-16 | C003b | UEs supporting 5GS FR1 and ULFPTx |  |  |  | |
| 6.2D.4\_1 | Configured transmitted power for SUL with UL MIMO | Rel-17 | C179 | UEs supporting 5GS FR1 and SUL and UL MIMO | D024 |  |  | |
| 6.2E.2.1 | UE maximum output power reduction for V2X / non-concurrent operation | Rel-16 | C079 | UEs supporting 5GS FR1 and NR sidelink | D016 |  | Test execution is not necessary if TS 38.521-1 TC 6.5E.2.4.1 is executed. | |
| 6.2E.2.2 | UE maximum output power reduction for V2X / concurrent operation | FFS | FFS | FFS | FFS |  |  | |
| 6.2E.3.1 | UE additional maximum output power reduction for V2X / non-concurrent operation | Rel-16 | C079 | UEs supporting 5GS FR1 and NR sidelink | D016 |  | Test execution is not necessary if TS 38.521-1 TC 6.5E.2.3.1 is executed. | |
| 6.2E.3.1D | UE additional maximum output power reduction for V2X / non-concurrent operation / SL-MIMO | Rel-16 | C079b | UEs supporting 5GS FR1 and NR sidelink and SL-MIMO | D016 |  | Test execution is not necessary if TS 38.521-1 TC 6.5E.2.3.1D is executed. | |
| 6.2F.1 | UE maximum output power for shared spectrum channel access | Rel-16 | C001c | UEs supporting 5GS FR1 and operation with shared spectrum channel access | D018 |  |  | |
| 6.2F.2 | UE maximum output power reduction for shared spectrum access | Rel-16 | C001c | UEs supporting 5GS FR1 and operation with shared spectrum channel access | D018 |  | NOTE 1 | |
| 6.2F.3 | UE additional maximum output power reduction for shared spectrum access | Rel-16 | C001c | UEs supporting 5GS FR1 and operation with shared spectrum channel access | D018 |  |  | |
| 6.2F.4 | Configured transmitted power for shared spectrum access | Rel-16 | C001c | UEs supporting 5GS FR1 and operation with shared spectrum channel access | D018 |  | NOTE 1 | |
| 6.2G.1 | UE maximum output power for Tx Diversity | Rel-15 | C001g | UEs supporting 5GS FR1 and supporting txDiversity-r16 | D001 | PC1.5  PC2  PC3 |  | |
| 6.2G.2 | UE maximum output power reduction for Tx Diversity | Rel-15 | C001g | UEs supporting 5GS FR1 and supporting txDiversity-r16 | D001 | PC1.5  PC2  PC3 | Test execution is not necessary if TS 38.521-1 TC 6.5G.2.3.1 is executed. | |
| 6.2G.3 | UE additional maximum output power reduction for Tx Diversity | Rel-15 | C001g | UEs supporting 5GS FR1 and supporting txDiversity-r16 | D001 | PC1.5  PC2  PC3 | Test execution is not necessary if TS 38.521-1 TC 6.5G.2.2 and 6.5G.3.3 are executed. | |
| 6.2G.4 | Configured transmitted power for Tx Diversity | Rel-15 | C001g | UEs supporting 5GS FR1 and supporting txDiversity-r16 | D001 | PC1.5  PC2  PC3 |  | |
| 6.2H.1.2 | UE maximum output power reduction for intra-band UL contiguous CA with UL MIMO | Rel-15 | C285 | UEs supporting 5GS FR1 and intra-band contiguous CA (2UL CA) and MIMO. | E042 | PC2  PC3 | Test execution is not necessary if TS 38.521-1 TC 6.5H.1.2.1 is executed. | |
| 6.2H.1.3 | UE additional maximum output power reduction for intra-band UL contiguous CA with UL MIMO | Rel-15 | C285 | UEs supporting 5GS FR1 and intra-band contiguous CA (2UL CA) and MIMO. | E042 | PC2  PC3 | Test execution is not necessary if TS 38.521-1 TC 6.5H.1.2.3 is executed. | |
| 6.2H.1.4 | Configured transmitted power for intra-band UL contiguous CA with UL MIMO | Rel-15 | C285 | UEs supporting 5GS FR1 and intra-band contiguous CA (2UL CA) and MIMO. | E042 | PC2  PC3 |  | |
| 6.2I.1 | UE maximum output power for RedCap | Rel-17 | C177 | RedCap UEs supporting 5GS FR1 | D001 |  |  | |
| 6.2I.2 | Void |  |  |  |  |  |  | |
| 6.2I.3 | Void |  |  |  |  |  |  | |
| 6.2I.4 | Void |  |  |  |  |  |  | |
| 6.2J.1 | UE maximum output power for ATG | Rel-18 | C001n | UEs supporting 5GS FR1 ATG | D028 |  | NOTE 1 | |
| 6.2J.2 | Configured transmitted power for ATG | Rel-18 | C001n | UEs supporting 5GS FR1 ATG | D028 |  | NOTE 1 | |
| 6.3.1 | Minimum output power | Rel-15 | C001h | UEs supporting 5GS FR1 not supporting txDiversity-r16 | D001 |  | TC 6.3.1 is skipped if TC 6.3G.1 is executed. | |
| 6.3.3.2 | General ON/OFF time mask | Rel-15 | C001h | UEs supporting 5GS FR1 not supporting txDiversity-r16 | D001 |  | Skip TC 6.3.3.2 if UE supports NSA and TS 38.521-3 TC 6.3B.3.1 or 6.3B.3.2 or 6.3B.3.3 has been executed.  TC 6.3.3.2 is skipped if TC 6.3G.3.1 is executed. | |
| 6.3.3.4 | PRACH time mask | Rel-15 | C001h | UEs supporting 5GS FR1 not supporting txDiversity-r16 | D001 |  | Skip TC 6.3.3.4 if UE supports NSA and TS 38.521-3 TC 6.3B.4.1 or 6.3B.4.2 or 6.3B.4.3 has been executed.  TC 6.3.3.4 is skipped if TC 6.3G.3.2 is executed. | |
| 6.3.3.6 | SRS time mask | Rel-15 | C001h | UEs supporting 5GS FR1 not supporting txDiversity-r16 | D001 |  | TC 6.3.3.6 is skipped if TC 6.3G.3.3 is executed. | |
| 6.3.4.2 | Absolute power tolerance | Rel-15 | C001h | UEs supporting 5GS FR1 not supporting txDiversity-r16 | D001 |  | TC 6.3.4.2 is skipped if TC 6.3G.4.1 is executed. | |
| 6.3.4.3 | Relative power tolerance | Rel-15 | C001h | UEs supporting 5GS FR1 not supporting txDiversity-r16 | D001 |  | TC 6.3.4.3 is skipped if TC 6.3G.4.2 is executed. | |
| 6.3F.4.3 | Relative power tolerance for shared spectrum channel access | Rel-16 | C001c | UEs supporting 5GS FR1 and operation with shared spectrum channel access | D018 |  | NOTE 1 | |
| 6.3.4.4 | Aggregate power tolerance | Rel-15 | C001h | UEs supporting 5GS FR1 not supporting txDiversity-r16 | D001 |  | TC 6.3.4.4 is skipped if TC 6.3G.4.3 is executed. | |
| 6.3A.1.1 | Minimum output power for CA (2UL CA) | Rel-15 | C004 | UEs supporting 5GS FR1 and CA (2UL CA) | E015 |  |  | |
| 6.3A.3.1 | Transmit ON/OFF time mask for CA (2UL CA) | Rel-15 | C004 | UEs supporting 5GS FR1 and CA (2UL CA) | E015 |  |  | |
| 6.3A.3.2 | Time mask for switching between two uplink carriers | Rel-16 | C051 | UEs supporting 5GS FR1 and Inter-band CA (2UL CA) and dynamic 1Tx-2Tx UL Tx switching | E019 |  |  | |
| 6.3A.3.3 | Time mask for switching between two uplink carriers with two transmit antenna connectors | Rel-17 | C051b | UEs supporting 5GS FR1 and Inter-band CA (2UL CA) and dynamic 2Tx-2Tx UL Tx switching | E019a |  |  | |
| 6.3A.3.4 | Time mask for switching between one uplink band with one transmit antenna connector and one uplink band with two transmit antenna connectors (3UL CA) | Rel-17 | C051d | UEs supporting 5GS FR1 and inter-band/intra-band CA (3UL CA) and dynamic 1Tx-2Tx UL Tx switching. | E019b |  |  | |
| 6.3A.3.5 | Time mask for switching between two uplink bands with two transmit antenna connectors (3UL CA) | Rel-17 | C051f | UEs supporting 5GS FR1 and inter-band/intra-band CA (3UL CA) and dynamic 2Tx-2Tx UL Tx switching. | E019c |  |  | |
| 6.3A.4.1.1 | Absolute power tolerance for CA (2UL CA) | Rel-15 | C004 | UEs supporting 5GS FR1 and CA (2UL CA) | E015 |  |  | |
| 6.3A.4.2.1 | Relative power tolerance for CA (2UL CA) | Rel-15 | C004 | UEs supporting 5GS FR1 and CA (2UL CA) | E015 |  |  | |
| 6.3A.4.3.1 | Aggregate power tolerance for CA (2UL CA) | Rel-15 | C004 | UEs supporting 5GS FR1 and CA (2UL CA) | E015 |  |  | |
| 6.3C.1 | Minimum output power for SUL | Rel-15 | C002 | UEs supporting 5GS FR1 and SUL | D003 |  | NOTE 2 | |
| 6.3C.3.1 | General transmit ON/OFF time mask for SUL | Rel-15 | C002 | UEs supporting 5GS FR1 and SUL | D003 |  | NOTE 2 | |
| 6.3C.3.2 | General transmit ON/OFF time mask for switching between two uplink carriers | Rel-16 | C178 | UEs supporting 5GS FR1 and SUL and dynamic UL 1Tx-2Tx switching | E44 |  | NOTE 2 | |
| 6.3C.3.3 | Time mask for switching between two uplink carriers with two transmit antenna connectors | Rel-17 | C178a | UEs supporting 5GS FR1 and SUL and dynamic UL 2Tx-2Tx switching | E044a |  |  | |
| 6.3C.3.4 | Time mask for switching between one uplink band with one transmit antenna connector and one uplink band with two transmit antenna connectors | Rel-17 | C178b | UEs supporting 5GS FR1 and SUL with intra-band contiguous CA and dynamic UL 1Tx-2Tx switching | E044b |  |  | |
| 6.3C.3.5 | Time mask for switching between two uplink bands with two transmit antenna connectors | Rel-17 | C178c | UEs supporting 5GS FR1 and SUL with intra-band contiguous CA and dynamic UL 2Tx-2Tx switching | E044c |  |  | |
| 6.3C.4.1 | Absolute power tolerance for SUL | Rel-15 | C002 | UEs supporting 5GS FR1 and SUL | D003 |  | NOTE 2 | |
| 6.3C.4.2 | Relative power tolerance for SUL | Rel-15 | C002 | UEs supporting 5GS FR1 and SUL | D003 |  | NOTE 2 | |
| 6.3C.4.3 | Aggregate power tolerance for SUL | Rel-15 | C002 | UEs supporting 5GS FR1 and SUL | D003 |  | NOTE 2 | |
| 6.3D.1 | Minimum output power for UL MIMO | Rel-15 | C003 | UEs supporting 5GS FR1 and 2-layer codebook based UL MIMO | D022 |  |  | |
| 6.3D.1\_1 | Minimum output power for SUL with UL MIMO | Rel-17 | C179 | UEs supporting 5GS FR1 and SUL and UL MIMO | D024 |  |  | |
| 6.3D.3 | Transmit ON/OFF time mask for UL MIMO | Rel-15 | C003 | UEs supporting 5GS FR1 and 2-layer codebook based UL MIMO | D022 |  |  | |
| 6.3D.3\_1 | Transmit ON/OFF time mask for SUL with UL MIMO | Rel-17 | C179 | UEs supporting 5GS FR1 and SUL and UL MIMO | D024 |  |  | |
| 6.3D.4.1 | Absolute power tolerance for UL MIMO | Rel-15 | C003 | UEs supporting 5GS FR1 and 2-layer codebook based UL MIMO | D022 |  |  | |
| 6.3D.4.1\_1 | Absolute power tolerance for SUL with UL MIMO | Rel-17 | C179 | UEs supporting 5GS FR1 and SUL and UL MIMO | D024 |  |  | |
| 6.3D.4.2 | Relative power tolerance for UL MIMO | Rel-15 | C003 | UEs supporting 5GS FR1 and 2-layer codebook based UL MIMO | D022 |  |  | |
| 6.3D.4.2\_1 | Relative power tolerance for SUL with UL MIMO | Rel-17 | C179 | UEs supporting 5GS FR1 and SUL and UL MIMO | D024 |  |  | |
| 6.3D.4.3 | Aggregate power tolerance for UL MIMO | Rel-15 | C003 | UEs supporting 5GS FR1 and 2-layer codebook based UL MIMO | D022 |  |  | |
| 6.3D.4.3\_1 | Aggregate power tolerance for SUL with UL MIMO | Rel-17 | C179 | UEs supporting 5GS FR1 and SUL and UL MIMO | D024 |  |  | |
| 6.3E.1.1 | Minimum output power for V2X / non-concurrent operation | Rel-16 | C079 | UEs supporting 5GS FR1 and NR sidelink | D016 |  |  | |
| 6.3E.1.1D | Minimum output power for V2X / non-concurrent operation / SL-MIMO | Rel-16 | C100 | UEs supporting 5GS FR1 and NR sidelink and SL-MIMO | D016 |  | NOTE 1 | |
| 6.3F.1 | Minimum output power | Rel-16 | C001c | UEs supporting 5GS FR1 and operation with shared spectrum channel access | D018 |  | NOTE 1 | |
| 6.3F.4.2 | Absolute power tolerance for shared spectrum access | Rel-16 | C001c | UEs supporting 5GS FR1 and operation with shared spectrum channel access | D018 |  | NOTE 1 | |
| 6.3G.1 | Minimum output power for Tx Diversity | Rel-15 | C001g | UEs supporting 5GS FR1 and supporting txDiversity-r16 | D001 | PC1.5  PC2  PC3 |  | |
| 6.3G.3.1 | General ON/OFF time mask for Tx Diversity | Rel-15 | C001g | UEs supporting 5GS FR1 and supporting txDiversity-r16 | D001 | PC1.5  PC2  PC3 |  | |
| 6.3G.3.2 | PRACH time mask for Tx Diversity | Rel-15 | C001g | UEs supporting 5GS FR1 and supporting txDiversity-r16 | D001 | PC1.5  PC2  PC3 |  | |
| 6.3G.3.3 | SRS time mask for Tx Diversity | Rel-15 | C001g | UEs supporting 5GS FR1 and supporting txDiversity-r16 | D001 | PC1.5  PC2  PC3 |  | |
| 6.3G.4.1 | Absolute power tolerance for Tx Diversity | Rel-15 | C001g | UEs supporting 5GS FR1 and supporting txDiversity-r16 | D001 | PC1.5  PC2  PC3 |  | |
| 6.3G.4.2 | Relative power tolerance for Tx Diversity | Rel-15 | C001g | UEs supporting 5GS FR1 and supporting txDiversity-r16 | D001 | PC1.5  PC2  PC3 |  | |
| 6.3G.4.3 | Aggregate power tolerance for Tx Diversity | Rel-15 | C001g | UEs supporting 5GS FR1 and supporting txDiversity-r16 | D001 | PC1.5  PC2  PC3 |  | |
| 6.3H.1.1 | Minimum output power for intra-band UL contiguous CA with UL MIMO | Rel-15 | C285 | UEs supporting 5GS FR1 and intra-band contiguous CA (2UL CA) and MIMO. | E042 | PC2  PC3 |  | |
| 6.3H.1.3 | Transmit ON/OFF time mask for intra-band UL contiguous CA with UL MIMO | Rel-15 | C285 | UEs supporting 5GS FR1 and intra-band contiguous CA (2UL CA) and MIMO. | E042 | PC2  PC3 |  | |
| 6.3J.1 | Minimum output power for ATG | Rel-18 | C001n | UEs supporting 5GS FR1 ATG | D028 |  | NOTE 1 | |
| 6.4.1 | Frequency error | Rel-15 | C001h | UEs supporting 5GS FR1 not supporting txDiversity-r16 | D001 |  | Skip TC 6.4.1 if UE supports NSA and TS 38.521-3 TC 6.4B.1.1 or 6.4B.1.2 or 6.4B.1.3 has been executed.  TC 6.4.1 is skipped if TC 6.4G.1 is executed. | |
| 6.4.2.1 | Error vector magnitude | Rel-15 | C001h | UEs supporting 5GS FR1 not supporting txDiversity-r16 | D001 |  | Skip TC 6.4.2.1 if UE supports NSA and TS 38.521-3 TC 6.4B.2.1.1 or 6.4B.2.2.1 or 6.4B.2.3.1 has been executed.  TC 6.4.2.1 is skipped if TC 6.4G.2.1 is executed. | |
| 6.4.2.1a | Error Vector Magnitude including symbols with transient period | Rel-16 | C156 | UEs supporting 5GS FR1 AND Band supporting enhancedUL-TransientPeriod and not supporting txDiversity-r16 | D001 |  | NOTE 1 | |
| 6.4.2.2 | Carrier leakage | Rel-15 | C001h | UEs supporting 5GS FR1 not supporting txDiversity-r16 | D001 |  | Skip TC 6.4.2.2 if UE supports NSA and TS 38.521-3 TC 6.4B.2.1.2 or 6.4B.2.2.2 or 6.4B.2.3.2 has been executed.  TC 6.4.2.2 is skipped if TC 6.4G.2.2 is executed. | |
| 6.4.2.3 | In-band emissions | Rel-15 | C001h | UEs supporting 5GS FR1 not supporting txDiversity-r16 | D001 |  | Skip TC 6.4.2.3 if UE supports NSA and TS 38.521-3 TC 6.4B.2.2.3 or 6.4B.2.3.3 has been executed.  TC 6.4.2.3 is skipped if TC 6.4G.2.3 is executed. | |
| 6.4.2.4 | EVM equalizer spectrum flatness | Rel-15 | C001h | UEs supporting 5GS FR1 not supporting txDiversity-r16 | D001 |  | Skip TC 6.4.2.4 if UE supports NSA and TS 38.521-3 TC 6.4B.2.1.4 or 6.4B.2.2.4 or 6.4B.2.3.4 has been executed.  TC 6.4.2.4 is skipped if TC 6.4G.2.4 is executed. | |
| 6.4.2.5 | EVM equalizer spectrum flatness for Pi/2 BPSK | Rel-15 | C050 | UEs supporting 5GS FR1 Power Class 3 and pi/2-BPSK modulation scheme for power boosting in FR1 | D017 | PC3 |  | |
|  |  | Rel-16 | C111 | UEs supporting 5GS FR1 and pi/2-BPSK modulation scheme and low PAPR DMRS | D001 |  |  | |
| 6.4.2.6 | Phase continuity requirements for DMRS bundling | Rel17 | FFS | UEs supporting 5GS FR1 and DMRS bundling | D005 |  | NOTE 1  Skip TC 6.4.2.6 if UE supports NSA and TS 38.521-3 TC [TBD] has been executed. | |
| 6.4A.1.1 | Frequency error for CA (2UL CA) | Rel-15 | C004 | UEs supporting 5GS FR1 and CA (2UL CA) | E015 | **Inter-band CA**: PC3  **Intra-band contiguous CA**: PC3  **Intra-band non-contiguous CA**: PC3 (NOTE 1) |  | |
| 6.4A.2.1.1 | Error vector magnitude for CA (2UL CA) | Rel-15 | C004 | UEs supporting 5GS FR1 and CA (2UL CA) | E015 | **Inter-band CA**: PC3  **Intra-band contiguous CA**: PC3  **Intra-band non-contiguous CA**: PC3 (NOTE 1) |  | |
| 6.4A.2.2.1 | Carrier leakage for CA (2UL CA) | Rel-15 | C004 | UEs supporting 5GS FR1 and CA (2UL CA) | E015 | **Inter-band CA**: PC3  **Intra-band contiguous CA**: PC3  **Intra-band non-contiguous CA**: PC3 (NOTE 1) |  | |
| 6.4A.2.3.1 | In-band emissions for CA (2UL CA) | Rel-15 | C004 | UEs supporting 5GS FR1 and CA (2UL CA) | E015 | **Inter-band CA**: PC3  **Intra-band contiguous CA**: PC3  **Intra-band non-contiguous CA**: PC3 (NOTE 1) |  | |
| 6.4C.1 | Frequency error for SUL | Rel-15 | C002 | UEs supporting 5GS FR1 and SUL | D003 |  | NOTE 2 | |
| 6.4C.2.1 | Error vector magnitude for SUL | Rel-15 | C002 | UEs supporting 5GS FR1 and SUL | D003 |  | NOTE 2 | |
| 6.4C.2.2 | Carrier leakage for SUL | Rel-15 | C002 | UEs supporting 5GS FR1 and SUL | D003 |  | NOTE 2 | |
| 6.4C.2.3 | In-band emissions for SUL | Rel-15 | C002 | UEs supporting 5GS FR1 and SUL | D003 |  | NOTE 2 | |
| 6.4C.2.4 | EVM equalizer spectrum flatness for SUL | Rel-15 | C002 | UEs supporting 5GS FR1 and SUL | D003 |  | NOTE 2 | |
| 6.4C.2.5 | EVM equalizer spectrum flatness for Pi/2 BPSK for SUL | Rel-16 | C112 | UEs supporting 5GS FR1 and SUL and pi/2-BPSK modulation scheme and low PAPR DMRS | D003 |  | NOTE 2 | |
| 6.4D.1 | Frequency error for UL MIMO | Rel-15 | C003 | UEs supporting 5GS FR1 and 2-layer codebook based UL MIMO | D022 |  |  | |
| 6.4D.1\_1 | Frequency error for SUL with UL MIMO | Rel-17 | C179 | UEs supporting 5GS FR1 and SUL and UL MIMO | D024 |  |  | |
| 6.4D.2.1 | Error vector magnitude for UL MIMO | Rel-15 | C003 | UEs supporting 5GS FR1 and 2-layer codebook based UL MIMO | D022 |  |  | |
| 6.4D.2.1\_1 | Error Vector Magnitude for SUL with UL MIMO | Rel-17 | C179 | UEs supporting 5GS FR1 and SUL and UL MIMO | D024 |  |  | |
| 6.4D.2.2 | Carrier leakage for UL MIMO | Rel-15 | C003 | UEs supporting 5GS FR1 and 2-layer codebook based UL MIMO | D022 |  |  | |
| 6.4D.2.2\_1 | Carrier leakage for SUL with UL MIMO | Rel-17 | C179 | UEs supporting 5GS FR1 and SUL and UL MIMO | D024 |  |  | |
| 6.4D.2.3 | In-band emissions for UL MIMO | Rel-15 | C003 | UEs supporting 5GS FR1 and 2-layer codebook based UL MIMO | D022 |  |  | |
| 6.4D.2.3\_1 | In-band emissions for SUL with UL MIMO | Rel-17 | C179 | UEs supporting 5GS FR1 and SUL and UL MIMO | D024 |  |  | |
| 6.4D.2.4 | EVM equalizer spectrum flatness for UL MIMO | Rel-15 | C003 | UEs supporting 5GS FR1 and 2-layer codebook based UL MIMO | D022 |  |  | |
| 6.4D.2.4\_1 | EVM equalizer spectrum flatness for SUL with UL MIMO | Rel-17 | C179 | UEs supporting 5GS FR1 and SUL and UL MIMO | D024 |  |  | |
| 6.4D.3 | Time alignment error for UL MIMO | Rel-15 | C003 | UEs supporting 5GS FR1 and 2-layer codebook based UL MIMO | D022 |  |  | |
| 6.4D.3\_1 | Time alignment error for SUL with UL MIMO | Rel-17 | C179 | UEs supporting 5GS FR1 and SUL and UL MIMO | D024 |  |  | |
| 6.4D.4 | Requirements for coherent UL MIMO | FFS | FFS | FFS | FFS |  | NOTE 1 | |
| 6.4E.2.2.1 | Error Vector Magnitude for V2X / non-concurrent operation | Rel-16 | C079 | UEs supporting 5GS FR1 and NR sidelink | D016 |  | NOTE 1 | |
| 6.4E.2.2.1D | Error Vector Magnitude for V2X / non-concurrent operation / SL-MIMO | Rel-16 | C100 | UEs supporting 5GS FR1 and NR sidelink and SL-MIMO | D016 |  | NOTE 1 | |
| 6.4E.2.4.1 | In-band emissions for V2X / non-concurrent operation | Rel-16 | C079 | UEs supporting 5GS FR1 and NR sidelink | D016 |  | NOTE 1 | |
| 6.4E.2.4.1D | In-band emissions for V2X / non-concurrent operation / SL-MIMO | Rel-16 | C100 | UEs supporting 5GS FR1 and NR sidelink and SL-MIMO | D016 |  | NOTE 1 | |
| 6.4F.1 | Frequency error | Rel-16 | C001c | UEs supporting 5GS FR1 and operation with shared spectrum channel access | D018 |  | NOTE 1 | |
| 6.4F.2.1 | Error Vector Magnitude | Rel-16 | C001c | UEs supporting 5GS FR1 and operation with shared spectrum channel access | D018 |  | NOTE 1 | |
| 6.4F.2.2 | Carrier leakage | Rel-16 | C001c | UEs supporting 5GS FR1 and operation with shared spectrum channel access | D018 |  | NOTE 1 | |
| 6.4G.1 | Frequency error for Tx Diversity | Rel-15 | C001g | UEs supporting 5GS FR1 and supporting txDiversity-r16 | D001 | PC1.5  PC2  PC3 |  | |
| 6.4G.2.1 | Error vector magnitude for Tx Diversity | Rel-15 | C001g | UEs supporting 5GS FR1 and supporting txDiversity-r16 | D001 | PC1.5  PC2  PC3 |  | |
| 6.4G.2.2 | Carrier leakage for Tx Diversity | Rel-15 | C001g | UEs supporting 5GS FR1 and supporting txDiversity-r16 | D001 | PC1.5  PC2  PC3 |  | |
| 6.4G.2.3 | In-band emissions for Tx Diversity | Rel-15 | C001g | UEs supporting 5GS FR1 and supporting txDiversity-r16 | D001 | PC1.5  PC2  PC3 |  | |
| 6.4G.2.4 | EVM equalizer spectrum flatness for Tx Diversity | Rel-15 | C001g | UEs supporting 5GS FR1 and supporting txDiversity-r16 | D001 | PC1.5  PC2  PC3 |  | |
| 6.4H.1.1 | Frequency error for intra-band UL contiguous CA with UL MIMO | Rel-15 | C285 | UEs supporting 5GS FR1 and intra-band contiguous CA (2UL CA) and MIMO. | E042 | PC2  PC3 |  | |
| 6.4H.1.2.1 | Error Vector Magnitude for intra-band UL contiguous CA with UL MIMO | Rel-15 | C285 | UEs supporting 5GS FR1 and intra-band contiguous CA (2UL CA) and MIMO. | E042 | PC2  PC3 |  | |
| 6.4H.1.2.2 | Carrier leakage for intra-band UL contiguous CA with UL MIMO | Rel-15 | C285 | UEs supporting 5GS FR1 and intra-band contiguous CA (2UL CA) and MIMO. | E042 | PC2  PC3 |  | |
| 6.4H.1.2.3 | In-band emissions for intra-band UL contiguous CA with UL MIMO | Rel-15 | C285 | UEs supporting 5GS FR1 and intra-band contiguous CA (2UL CA) and MIMO. | E042 | PC2  PC3 |  | |
| 6.4H.1.3 | Time alignment error for intra-band UL contiguous CA with UL MIMO | Rel-15 | C285 | UEs supporting 5GS FR1 and intra-band contiguous CA (2UL CA) and MIMO. | E042 | PC2  PC3 |  | |
| 6.4H.1.4 | Coherent UL MIMO for intra-band UL contiguous CA with UL MIMO | Rel-15 | C285 | UEs supporting 5GS FR1 and intra-band contiguous CA (2UL CA) and MIMO. | E042 | PC2  PC3 | NOTE 1 | |
| 6.5.1 | Occupied bandwidth | Rel-15 | C001h | UEs supporting 5GS FR1 not supporting txDiversity-r16 | D001 |  | Skip TC 6.5.1 if UE supports NSA and TS 38.521-3 TC 6.5B.1.2 or 6.5B.1.3 has been executed.  TC 6.5.1 is skipped if TC 6.5G.1 is executed. | |
| 6.5.2.2 | Spectrum emission mask | Rel-15 | C001h | UEs supporting 5GS FR1 not supporting txDiversity-r16 | D001 | PC1  PC2  PC3 | Skip TC 6.5.2.2 if UE supports NSA and TS 38.521-3 TC 6.5B.2.2.1 or 6.5B.2.3.1 has been executed.  TC 6.5.1 is skipped if TC 6.5G.1 is executed. | |
| 6.5.2.3 | Additional spectrum emission mask | Rel-15 | C001h | UEs supporting 5GS FR1 not supporting txDiversity-r16 | D001 | PC1  PC2  PC3 | Skip TC 6.5.2.3 if UE supports NSA and TS 38.521-3 TC 6.5B.2.3.2 has been executed.  TC 6.5.2.3 is skipped if TC 6.5G.2.2 is executed. | |
| 6.5.2.4.1 | NR ACLR | Rel-15 | C001h | UEs supporting 5GS FR1 not supporting txDiversity-r16 | D001 | PC1  PC2  PC3 | Skip TC 6.5.2.4.1 if UE supports NSA and TS 38.521-3 TC 6.5B.2.3.3.1 has been executed.  TC 6.5.2.4.1 is skipped if TC 6.5G.2.3.1 is executed. | |
| 6.5.2.4.2 | UTRA ACLR | Rel-15 | C001a | UEs supporting 5GS FR1 PC3 not supporting txDiversity-r16 | D001 |  | Skip TC 6.5.2.4.2 if UE supports NSA and TS 38.521-3 TC 6.5B.2.3.3.2 has been executed.  TC 6.5.2.4.2 is skipped if TC 6.5G.2.3.1 is executed. | |
| 6.5.3.1 | General spurious emissions | Rel-15 | C001h | UEs supporting 5GS FR1 not supporting txDiversity-r16 | D001 |  | Skip TC 6.5.3.1 if UE supports NSA and TS 38.521-3 TC 6.5B.3.1.1 or 6.5B.3.2.1 or 6.5B.3.3.1(non-exception requirements) has been executed.  TC 6.5.3.1 is skipped if TC 6.5G.3.1 is executed. | |
| 6.5.3.2 | Spurious emissions for UE co-existence | Rel-15 | C001h | UEs supporting 5GS FR1 not supporting txDiversity-r16 | D001 |  | Skip TC 6.5.3.2 if UE supports NSA and TS 38.521-3 TC 6.5B.3.3.2 (non-exception requirements) has been executed. | |
| 6.5.3.3 | Additional spurious emissions | Rel-15 | C001h | UEs supporting 5GS FR1 not supporting txDiversity-r16 | D001 |  | Skip TC 6.5.3.3 if UE supports NSA and TS 38.521-3 TC 6.5B.4.3 has been executed.  TC 6.5.3.3 is skipped if TC 6.5G.3.3 is executed. | |
| 6.5.4 | Transmit intermodulation | Rel-15 | C001h | UEs supporting 5GS FR1 not supporting txDiversity-r16 | D001 |  | Skip TC 6.5.4 if UE supports NSA and TS 38.521-3 TC 6.5B.5.3 has been executed.  TC 6.5.4 is skipped if TC 6.5G.4 is executed. | |
| 6.5A.1.1 | Occupied bandwidth for CA (2UL CA) | Rel-15 | C004 | UEs supporting 5GS FR1 and CA (2UL CA) | E015 | **Inter-band CA**: PC3  **Intra-band contiguous CA**: PC3  **Intra-band non-contiguous CA**: PC3 (NOTE 1) |  | |
| 6.5A.2.2.1 | Spectrum emission mask for CA (2UL CA) | Rel-15 | C004 | UEs supporting 5GS FR1 and CA (2UL CA) | E015  E015a | **Inter-band CA**: PC2, PC3  **Intra-band contiguous CA**: PC2, PC3 |  | |
| 6.5A.2.3.1 | Additional spectrum emission mask for CA (2UL CA) | Rel-15 | C004 | UEs supporting 5GS FR1 and CA (2UL CA) | E015 | **Intra-band contiguous CA**: PC2, PC3 |  | |
| 6.5A.2.4.1.1 | NR ACLR for CA (2UL CA) | Rel-15 | C004 | UEs supporting 5GS FR1 and CA (2UL CA) | E015  E015a | **Inter-band CA**: PC2, PC3  **Intra-band contiguous CA**: PC2, PC3 |  | |
| 6.5A.2.4.2.1 | UTRA ACLR for CA (2UL CA) | Rel-15 | C004 | UEs supporting 5GS FR1 and CA (2UL CA) | E015 | **Inter-band CA**: PC3 |  | |
| 6.5A.3.1.1 | General spurious emissions for CA (2UL CA) | Rel-15 | C004 | UEs supporting 5GS FR1 and CA (2UL CA) | E015 | **Inter-band CA**: PC3  **Intra-band contiguous CA**: PC2, PC3 |  | |
| 6.5A.3.2.1 | Spurious emissions for UE co-existence for CA (2UL CA) | Rel-15 | C004 | UEs supporting 5GS FR1 and CA (2UL CA) | E015 | **Inter-band CA**: PC3  **Intra-band contiguous CA**: PC2, PC3 |  | |
| 6.5A.3.3.1 | Additional spurious emissions for CA (2UL CA) | Rel-15 | C004 | UEs supporting 5GS FR1 and CA (2UL CA) | E015 | **Intra-band contiguous CA**: PC2, PC3 |  | |
| 6.5A.4.1 | Transmit intermodulation for CA (2UL CA) | Rel-15 | C004 | UEs supporting 5GS FR1 and CA (2UL CA) | E015 | **Inter-band CA**: PC3  **Intra-band contiguous CA**: PC3  **Intra-band non-contiguous CA**: PC3 (NOTE 1) |  | |
| 6.5C.1 | Occupied bandwidth for SUL | Rel-15 | C002 | UEs supporting 5GS FR1 and SUL | D003 |  | NOTE 2 | |
| 6.5C.2.2 | Spectrum emission mask for SUL | Rel-15 | C002 | UEs supporting 5GS FR1 and SUL | D003 |  | NOTE 2 | |
| 6.5C.2.3 | Additional spectrum emission mask for SUL | Rel-15 | C002 | UEs supporting 5GS FR1 and SUL | D003 |  | NOTE 2 | |
| 6.5C.2.4.1 | NR ACLR for SUL | Rel-15 | C002 | UEs supporting 5GS FR1 and SUL | D003 |  | NOTE 2 | |
| 6.5C.2.4.2 | UTRA ACLR for SUL | Rel-15 | C002 | UEs supporting 5GS FR1 and SUL | D003 |  | NOTE 2 | |
| 6.5C.3.1 | General spurious emissions for SUL | Rel-15 | C002 | UEs supporting 5GS FR1 and SUL | D003 |  | NOTE 2 | |
| 6.5C.3.2 | Spurious emissions for UE co-existence for SUL | Rel-15 | C002 | UEs supporting 5GS FR1 and SUL | D003 |  | NOTE 2 | |
| 6.5C.3.3 | Additional spurious emissions for SUL | Rel-15 | C002 | UEs supporting 5GS FR1 and SUL | D003 |  | NOTE 2 | |
| 6.5C.4 | Transmit intermodulation for SUL | Rel-15 | C002 | UEs supporting 5GS FR1 and SUL | D003 |  | NOTE 2 | |
| 6.5D.1 | Occupied bandwidth for UL MIMO | Rel-15 | C003 | UEs supporting 5GS FR1 and 2-layer codebook based UL MIMO | D022 |  |  | |
| 6.5D.1\_2 | Occupied bandwidth for SUL with UL MIMO | Rel-17 | C179 | UEs supporting 5GS FR1 and SUL and UL MIMO | D024 |  |  | |
| 6.5D.2.2 | Spectrum emission mask for UL MIMO | Rel-15 | C003 | UEs supporting 5GS FR1 and 2-layer codebook based UL MIMO | D022 |  |  | |
|  |  | Rel-16 | C003b | UEs supporting 5GS FR1 and ULFPTx |  |  |  | |
| 6.5D.2.2\_1 | Spectrum emission mask for SUL with UL MIMO | Rel-17 | C179 | UEs supporting 5GS FR1 and SUL and UL MIMO | D024 |  |  | |
| 6.5D.2.3 | Additional spectrum emission mask for UL MIMO | Rel-15 | C003 | UEs supporting 5GS FR1 and 2-layer codebook based UL MIMO | D022 |  |  | |
| 6.5D.2.4.1 | NR ACLR for UL MIMO | Rel-15 | C003 | UEs supporting 5GS FR1 and 2-layer codebook based UL MIMO | D022 |  |  | |
|  |  | Rel-16 | C003b | UEs supporting 5GS FR1 and ULFPTx |  |  |  | |
| 6.5D.2.4.1\_1 | NR ACLR for SUL with UL MIMO | Rel-17 | C179 | UEs supporting 5GS FR1 and SUL and UL MIMO | D024 |  |  | |
| 6.5D.2.4.2 | UTRA ACLR for UL MIMO | Rel-15y | C003 | UEs supporting 5GS FR1 and 2-layer codebook based UL MIMO | D022 |  |  | |
| 6.5D.2.4.2\_1 | UTRA ACLR for SUL with UL MIMO | Rel-17 | C179 | UEs supporting 5GS FR1 and SUL and UL MIMO | D024 |  |  | |
| 6.5D.3.1 | General spurious emissions for UL MIMO | Rel-15 only | C003 | UEs supporting 5GS FR1 and 2-layer codebook based UL MIMO | D022 |  |  | |
| 6.5D.3.2 | Spurious emissions for UE co-existence for UL MIMO | Rel-15 only | C003 | UEs supporting 5GS FR1 and 2-layer codebook based UL MIMO | D022 |  |  | |
| 6.5D.3.3 | Additional spurious emissions for UL MIMO | Rel-15 only | C003 | UEs supporting 5GS FR1 and 2-layer codebook based UL MIMO | D022 |  |  | |
| 6.5D.3\_1.1 | General spurious emissions for UL MIMO (Rel-16 onward) | Rel-16 | C003 | UEs supporting 5GS FR1 and 2-layer codebook based UL MIMO | D022 |  |  | |
| 6.5D.3\_1.2 | Spurious emission for UE co-existence for UL MIMO (Rel-16 onward) | Rel-16 | C003 | UEs supporting 5GS FR1 and 2-layer codebook based UL MIMO | D022 |  |  | |
| 6.5D.3\_1.3 | Additional spurious emissions for UL MIMO (Rel-16 onward) | Rel-16 | C003 | UEs supporting 5GS FR1 and 2-layer codebook based UL MIMO | D022 |  |  | |
| 6.5D.3\_2.1 | General spurious emissions for SUL with UL MIMO | Rel-17 | C179 | UEs supporting 5GS FR1 and SUL and UL MIMO | D024 |  |  | |
| 6.5D.3\_2.2 | Spurious emissions for UE co-existence for SUL with UL MIMO | Rel-17 | C179 | UEs supporting 5GS FR1 and SUL and UL MIMO | D024 |  |  | |
| 6.5D.3\_2.3 | Additional spurious emissions for SUL with UL MIMO | Rel-17 | C179 | UEs supporting 5GS FR1 and SUL and UL MIMO | D024 |  |  | |
| 6.5D.4 | Transmit intermodulation for UL MIMO | Rel-15 | C003 | UEs supporting 5GS FR1 and 2-layer codebook based UL MIMO | D022 |  |  | |
| 6.5D.4\_1 | Transmit intermodulation for SUL with UL MIMO | Rel-17 | C179 | UEs supporting 5GS FR1 and SUL and UL MIMO | D024 |  |  | |
| 6.5E.2.2.1 | Spectrum emission mask for V2X / non-concurrent operation | Rel-16 | C079 | UEs supporting 5GS FR1 and NR sidelink | D016 |  |  | |
| 6.5E.2.3.1 | Additional Spectrum emission mask for V2X / non-concurrent operation | Rel-16 | C079 | UEs supporting 5GS FR1 and NR sidelink | D016 |  |  | |
| 6.5E.2.3.1D | Additional Spectrum emission mask for V2X / non-concurrent operation / SL-MIMO | Rel-16 | C079b | UEs supporting 5GS FR1 and NR sidelink and SL-MIMO | D016 |  |  | |
| 6.5E.2.4.1 | Adjacent channel leakage ratio for V2X / non-concurrent operation | Rel-16 | C079 | UEs supporting 5GS FR1 and NR sidelink | D016 |  |  | |
| 6.5E.3.2.1 | Spurious emissions for UE co-existence for V2X / non-concurrent operation | Rel-16 | C079 | UEs supporting 5GS FR1 and NR sidelink | D016 |  | NOTE 1 | |
| 6.5E.3.3.1 | Additional spurious emissions requirements for V2X / non-concurrent operation | Rel-16 | C079 | UEs supporting 5GS FR1 and NR sidelink | D016 |  |  | |
| 6.5F.1 | Occupied bandwidth for shared spectrum channel access | Rel-16 | C001c | UEs supporting 5GS FR1 and operation with shared spectrum channel access | D018 |  | NOTE 1 | |
| 6.5F.2.2 | Spectrum emission mask for operation with shared spectrum channel access | Rel-16 | C001c | UEs supporting 5GS FR1 and operation with shared spectrum channel access | D018 |  |  | |
| 6.5F.2.4 | Adjacent channel leakage ratio for operation with shared spectrum channel access | Rel-16 | C001c | UEs supporting 5GS FR1 and operation with shared spectrum channel access | D018 |  |  | |
| 6.5F.2.4.2 | Shared spectrum channel access ACLR with additional requirement for NS\_29 | Rel-16 | C001c | UEs supporting 5GS FR1 and operation with shared spectrum channel access | D018 |  | NOTE 1 | |
| 6.5F.3.1 | General spurious emissions | Rel-16 | C001c | UEs supporting 5GS FR1 and operation with shared spectrum channel access | D018 |  | NOTE 1 | |
| 6.5F.3.3 | Additional spurious emissions for shared spectrum channel access | Rel-16 | C001c | UEs supporting 5GS FR1 and operation with shared spectrum channel access | D018 |  | NOTE 1 | |
| 6.5F.4 | Transmit intermodulation for shared spectrum channel access | Rel-16 | C001c | UEs supporting 5GS FR1 and operation with shared spectrum channel access | D018 |  | NOTE 1 | |
| 6.5G.1 | Occupied bandwidth for Tx Diversity | Rel-15 | C001g | UEs supporting 5GS FR1 and supporting txDiversity-r16 | D001 | PC1.5  PC2  PC3 |  | |
| 6.5G.2.1 | Spectrum emission mask for Tx Diversity | Rel-15 | C001g | UEs supporting 5GS FR1 and supporting txDiversity-r16 | D001 | PC1.5  PC2  PC3 |  | |
| 6.5G.2.2 | Additional spectrum emission mask for Tx Diversity | Rel-15 | C001g | UEs supporting 5GS FR1 and supporting txDiversity-r16 | D001 | PC1.5  PC2  PC3 |  | |
| 6.5G.2.3.1 | NR ACLR for Tx Diversity | Rel-15 | C001g | UEs supporting 5GS FR1 and supporting txDiversity-r16 | D001 | PC1.5  PC2  PC3 |  | |
| 6.5G.2.3.2 | UTRA ACLR for Tx Diversity | Rel-15 | C001g | UEs supporting 5GS FR1 and supporting txDiversity-r16 | D001 | PC3 |  | |
| 6.5G.3.1 | General spurious emissions for Tx Diversity | Rel-15 | C001g | UEs supporting 5GS FR1 and supporting txDiversity-r16 | D001 | PC1.5  PC2  PC3 |  | |
| 6.5G.3.2 | Spurious emissions for UE co-existence for Tx Diversity | Rel-15 | C001g | UEs supporting 5GS FR1 and supporting txDiversity-r16 | D001 | PC1.5  PC2  PC3 |  | |
| 6.5G.3.3 | Additional spurious emissions for Tx Diversity | Rel-15 | C001g | UEs supporting 5GS FR1 and supporting txDiversity-r16 | D001 | PC1.5  PC2  PC3 |  | |
| 6.5G.4 | Transmit intermodulation for Tx Diversity | Rel-15 | C001g | UEs supporting 5GS FR1 and supporting txDiversity-r16 | D001 | PC1.5  PC2  PC3 |  | |
| 6.5H.1.1 | Occupied bandwidth for intra-band UL contiguous CA for UL MIMO | Rel-15 | C285 | UEs supporting 5GS FR1 and intra-band contiguous CA (2UL CA) and MIMO. | E042 | PC2  PC3 |  | |
| 6.5H.1.2.1 | Spectrum emission mask for intra-band UL contiguous CA for UL MIMO | Rel-15 | C285 | UEs supporting 5GS FR1 and intra-band contiguous CA (2UL CA) and MIMO. | E042 | PC2  PC3 |  | |
| 6.5H.1.2.2 | Additional spectrum emission mask for intra-band UL contiguous CA for UL MIMO | Rel-15 | C285 | UEs supporting 5GS FR1 and intra-band contiguous CA (2UL CA) and MIMO. | E042 | PC2  PC3 |  | |
| 6.5H.1.2.3 | NR ACLR for intra-band UL contiguous CA for UL MIMO | Rel-15 | C285 | UEs supporting 5GS FR1 and intra-band contiguous CA (2UL CA) and MIMO. | E042 | PC2  PC3 |  | |
| 6.5H.1.3.1 | General spurious emissions for intra-band UL contiguous CA for UL MIMO | Rel-15 | C285 | UEs supporting 5GS FR1 and intra-band contiguous CA (2UL CA) and MIMO. | E042 | PC2  PC3 |  | |
| 6.5H.1.3.2 | Spurious emissions for UE co-existence for intra-band UL contiguous CA for UL MIMO | Rel-15 | C285 | UEs supporting 5GS FR1 and intra-band contiguous CA (2UL CA) and MIMO. | E042 | PC2  PC3 |  | |
| 6.5H.1.3.3 | Additional spurious emissions for intra-band UL contiguous CA for UL MIMO | Rel-15 | C285 | UEs supporting 5GS FR1 and intra-band contiguous CA (2UL CA) and MIMO. | E042 | PC2  PC3 |  | |
| 6.5H.1.4 | Transmit intermodulation for intra-band UL contiguous CA for UL MIMO | Rel-15 | C285 | UEs supporting 5GS FR1 and intra-band contiguous CA (2UL CA) and MIMO. | E042 | PC2  PC3 |  | |
| 6.5J.1 | Occupied bandwidth for ATG | Rel-18 | C001n | UEs supporting 5GS FR1 ATG | D028 |  | NOTE 1 | |
| 6.5J.3.1 | General spurious emissions for ATG | Rel-18 | C001n | UEs supporting 5GS FR1 ATG | D028 |  | NOTE 1 | |
| **7** | **Receiver Characteristics** |  |  |  |  |  |  | |
| 7.3.2 | Reference sensitivity power level | Rel-15 | C001h | UEs supporting 5GS FR1 and not supporting RedCap | D001 | 2Rx  4Rx  PC2  PC3 |  | |
| 7.3A.1 | Reference sensitivity power level for 2DL CA without exception | Rel-15 | C031 | UEs supporting 5GS FR1 and CA (2DL CA) | E016 | PC2  PC3 |  | |
| 7.3A.1\_1 | Reference sensitivity power level for 2DL CA exceptions | Rel-15 | C031 | UEs supporting 5GS FR1 and CA (2DL CA) | E016  E015a |  |  | |
| 7.3A.2 | Reference sensitivity power level for 3DL CA without exceptions | Rel-15 | C033 | UEs supporting 5GS FR1 and CA (3DL CA) | E017 |  |  | |
| 7.3A.2\_1 | Reference sensitivity power level for 3DL CA exceptions | Rel-15 | C033 | UEs supporting 5GS FR1 and CA (3DL CA) | E017 |  |  | |
| 7.3A.3 | Reference sensitivity power level for 4DL CA | Rel-15 | C036 | UEs supporting 5GS FR1 and CA (4DL CA) | E018 |  |  | |
| 7.3C.2 | Reference sensitivity power level for SUL | Rel-15 | C002 | UEs supporting 5GS FR1 and SUL | D003 |  |  | |
| 7.3D.2 | Reference sensitivity power level for UL MIMO | Rel-15 | C003a | UEs supporting 5GS FDD FR1 and UL MIMO | D012 |  |  | |
| 7.3D.2\_1 | Reference sensitivity power level for SUL with UL MIMO | Rel-17 | C179a | UEs supporting 5GS FR1 and SUL and UL MIMO | D024 |  |  | |
| 7.3E.2 | Reference sensitivity for V2X / non-concurrent operation | Rel-16 | C079 | UEs supporting 5GS FR1 and NR sidelink | D016 |  | NOTE 1 | |
| 7.3F.2 | Reference sensitivity for shared spectrum channel access | Rel-16 | C001c | UEs supporting 5GS FR1 and operation with shared spectrum channel access | D018 |  |  | |
| 7.3I.2 | Reference sensitivity power level for RedCap | Rel-17 | C177 | RedCap UEs supporting 5GS FR1 | D001 |  |  | |
| 7.4 | Maximum input level | Rel-15 | C001 | UEs supporting 5GS FR1 | D001 |  | Skip TC 7.4 if UE supports NSA and TS 38.521-3 TC 7.4B.2 or 7.4B.3 has been executed. | |
| 7.4A.1 | Maximum input level for CA (2DL CA) | Rel-15 | C031 | UEs supporting 5GS FR1 and CA (2DL CA) | E016 |  |  | |
| 7.4A.2 | Maximum input level for CA (3DL CA) | Rel-15 | C033 | UEs supporting 5GS FR1 and CA (3DL CA) | E017 |  |  | |
| 7.4A.3 | Maximum input level for CA (4DL CA) | Rel-15 | C036 | UEs supporting 5GS FR1 and CA (4DL CA) | E018 |  |  | |
| 7.4A.4 | Maximum input level for CA (5DL CA) | Rel-16 | C313 | UEs supporting 5GS FR1 and CA (5DL CA) | E018a |  | Skip TC 7.4A.4 if UE supports NSA and TS 38.521-3 TC 7.4B.3\_1.4 has been executed. | |
| 7.4D | Maximum input level for UL MIMO | Rel-15 | C003a | UEs supporting 5GS FDD FR1 and UL MIMO | D012 |  |  | |
| 7.4D\_1 | Maximum input level for SUL with UL MIMO | Rel-17 | C179a | UEs supporting 5GS FR1 and SUL and UL MIMO | D024 |  |  | |
| 7.4J | Maximum input level for ATG | Rel-18 | C001n | UEs supporting 5GS FR1 ATG | D028 |  | NOTE 1 | |
| 7.5 | Adjacent channel selectivity | Rel-15 | C001 | UEs supporting 5GS FR1 | D001 |  | NOTE 1  Skip TC 7.5 if UE supports NSA and TS 38.521-3 TC 7.5B.2 or 7.5B.3 has been executed. | |
| 7.5A.1 | Adjacent channel selectivity for CA (2DL CA) | Rel-15 | C031 | UEs supporting 5GS FR1 and CA (2DL CA) | E016 |  |  | |
| 7.5A.2 | Adjacent channel selectivity for CA (3DL CA) | Rel-15 | C033 | UEs supporting 5GS FR1 and CA (3DL CA) | E017 |  |  | |
| 7.5A.3 | Adjacent channel selectivity for CA (4DL CA) | Rel-15 | C036 | UEs supporting 5GS FR1 and CA (4DL CA) | E018 |  |  | |
| 7.5A.4 | Adjacent channel selectivity for CA (5DL CA) | Rel-16 | C313 | UEs supporting 5GS FR1 and CA (5DL CA) | E018a |  | Skip TC 7.5A.4 if UE supports NSA and TS 38.521-3 TC [FFS] has been executed. |
| 7.5D | Adjacent channel selectivity for UL MIMO | Rel-15 | C003a | UEs supporting 5GS FDD FR1 and UL MIMO | D012 |  |  | |
| 7.5D\_1 | Adjacent channel selectivity for SUL with UL MIMO | Rel-17 | C179a | UEs supporting 5GS FR1 and SUL and UL MIMO | D024 |  |  | |
| 7.5F.1 | Adjacent channel selectivity for shared spectrum channel access | Rel-16 | C001c | UEs supporting 5GS FR1 and operation with shared spectrum channel access | D018 |  |  | |
| 7.5J | Adjacent channel selectivity for ATG | Rel-18 | C001n | UEs supporting 5GS FR1 ATG | D028 |  | NOTE 1 | |
| 7.6.2 | In-band blocking | Rel-15 | C001 | UEs supporting 5GS FR1 | D001 |  | Skip TC 7.6.2 if UE supports NSA and TS 38.521-3 TC 7.6B.2.2 or 7.6B.2.3 has been executed. | |
| 7.6.3 | Out-of-band blocking | Rel-15 | C001 | UEs supporting 5GS FR1 | D001 |  |  | |
| 7.6.4 | Narrow band blocking | Rel-15 | C001 | UEs supporting 5GS FR1 | D004 |  | Skip TC 7.6.4 if UE supports NSA and TS 38.521-3 TC 7.6B.4.2 or 7.6B.4.3 has been executed. | |
| 7.6A.2.1 | In-band blocking for CA (2DL CA) | Rel-15 | C031 | UEs supporting 5GS FR1 and CA (2DL CA) | E016 |  |  | |
| 7.6A.2.2 | In-band blocking for CA (3DL CA) | Rel-15 | C033 | UEs supporting 5GS FR1 and CA (3DL CA) | E017 |  |  | |
| 7.6A.2.3 | In-band blocking for CA (4DL CA) | Rel-15 | C036 | UEs supporting 5GS FR1 and CA (4DL CA) | E018 |  | Skip TC 7.6A.2.3 if UE supports NSA and TS 38.521-3 TC 7.6B.2.3\_1.3 has been executed. | |
| 7.6A.3.1 | Out-of-band blocking for CA (2DL CA) | Rel-15 | C031 | UEs supporting 5GS FR1 and CA (2DL CA) | E016 |  |  | |
| 7.6A.3.2 | Out-of-band blocking for CA (3DL CA) | Rel-15 | C033 | UEs supporting 5GS FR1 and CA (3DL CA) | E017 |  |  | |
| 7.6A.3.3 | Out-of-band blocking for CA (4DL CA) | Rel-15 | C036 | UEs supporting 5GS FR1 and CA (4DL CA) | E018 |  |  | |
| 7.6A.4.1 | Narrow band blocking for CA (2DL CA) | Rel-15 | C031 | UEs supporting 5GS FR1 and CA (2DL CA) | E016 |  |  | |
| 7.6A.4.2 | Narrow band blocking for CA (3DL CA) | Rel-15 | C033 | UEs supporting 5GS FR1 and CA (3DL CA) | E017 |  |  | |
| 7.6A.4.3 | Narrow band blocking for CA (4DL CA) | Rel-15 | C036 | UEs supporting 5GS FR1 and CA (4DL CA) | E018 |  | Skip TC 7.6A.4.3 if UE supports NSA and TS 38.521-3 TC 7.6B.4.3\_1.3 has been executed. | |
| 7.6C.2 | In-band blocking for SUL | Rel-15 | C002 | UEs supporting 5GS FR1 and SUL | D003 |  |  | |
| 7.6C.2\_1 | Inband Blocking for SUL with DL CA | Rel-17 | C078 | UEs supporting 5GS FR1 and SUL and intra-band contiguous CA (2DL CA) | E031 |  |  | |
| 7.6C.3 | Out-of-band blocking for SUL | Rel-15 | C002 | UEs supporting 5GS FR1 and SUL | D003 |  |  | |
| 7.6C.3\_1 | Out-of-band blocking for SUL with DL CA | Rel-17 | C078 | UEs supporting 5GS FR1 and SUL and intra-band contiguous CA (2DL CA) | E031 |  |  | |
| 7.6D.2 | In-band blocking for UL MIMO | Rel-15 | C003a | UEs supporting 5GS FDD FR1 and UL MIMO | D012 |  |  | |
| 7.6D.2\_1 | In-band blocking for SUL with UL MIMO | Rel-17 | C179a | UEs supporting 5GS FR1 and SUL and UL MIMO | D024 |  |  | |
| 7.6D.3 | Out-of-band blocking for UL MIMO | Rel-15 | C003a | UEs supporting 5GS FDD FR1 and UL MIMO | D012 |  |  | |
| 7.6D.3\_1 | Out-of-band blocking for SUL with UL MIMO | Rel-17 | C179a | UEs supporting 5GS FR1 and SUL and UL MIMO | D024 |  |  | |
| 7.6D.4 | Narrow band blocking for UL MIMO | Rel-15 | C003a | UEs supporting 5GS FDD FR1 and UL MIMO | D012 |  |  | |
| 7.6D.4\_1 | Void |  |  |  |  |  |  | |
| 7.6F.2.1 | In-band blocking for shared spectrum channel access | Rel-16 | C001c | UEs supporting 5GS FR1 and operation with shared spectrum channel access | D018 |  |  | |
| 7.6F.3.1 | Out-of-band blocking for shared spectrum channel access | Rel-16 | C001c | UEs supporting 5GS FR1 and operation with shared spectrum channel access | D018 |  |  | |
| 7.6J.2 | In-band blocking for ATG | Rel-18 | C001n | UEs supporting 5GS FR1 ATG | D028 |  | NOTE 1 | |
| 7.6J.3 | Out-of-band blocking for ATG | Rel-18 | C001n | UEs supporting 5GS FR1 ATG | D028 |  | NOTE 1 | |
| 7.7 | Spurious response | Rel-15 | C001 | UEs supporting 5GS FR1 | D001 |  |  | |
| 7.7A.1 | Spurious response for CA (2DL CA) | Rel-15 | C031 | UEs supporting 5GS FR1 and CA (2DL CA) | E016 |  |  | |
| 7.7A.2 | Spurious response for CA (3DL CA) | Rel-15 | C033 | UEs supporting 5GS FR1 and CA (3DL CA) | E017 |  |  | |
| 7.7A.3 | Spurious response for CA (4DL CA) | Rel-15 | C036 | UEs supporting 5GS FR1 and CA (4DL CA) | E018 |  |  | |
| 7.7D | Spurious response for UL MIMO | Rel-15 | C003a | UEs supporting 5GS FDD FR1 and UL MIMO | D012 |  |  | |
| 7.7D\_1 | Spurious response for SUL with UL MIMO | Rel-17 | C179a | UEs supporting 5GS FR1 and SUL and UL MIMO | D024 |  |  | |
| 7.7F.1 | Spurious response for shared spectrum channel access | Rel-16 | C001c | UEs supporting 5GS FR1 and operation with shared spectrum channel access | D018 |  |  | |
| 7.7J | Spurious response for ATG | Rel-18 | C001n | UEs supporting 5GS FR1 ATG | D028 |  | NOTE 1 | |
| 7.8.2 | Wide band Intermodulation | Rel-15 | C001 | UEs supporting 5GS FR1 | D001 |  | Skip TC 7.8.2 if UE supports NSA and TS 38.521-3 TC 7.8B.2.2 or 7.8B.2.3 has been executed. | |
| 7.8A.2.1 | Wide band Intermodulation for CA (2DL CA) | Rel-15 | C031 | UEs supporting 5GS FR1 and CA (2DL CA) | E016 |  |  | |
| 7.8A.2.2 | Wide band Intermodulation for CA (3DL CA) | Rel-15 | C033 | UEs supporting 5GS FR1 and CA (3DL CA) | E017 |  |  | |
| 7.8A.2.3 | Wide band Intermodulation for CA (4DL CA) | Rel-15 | C036 | UEs supporting 5GS FR1 and CA (4DL CA) | E018 |  |  | |
| 7.8D.2 | Wide band Intermodulation for UL MIMO | Rel-15 | C003a | UEs supporting 5GS FDD FR1 and UL MIMO | D012 |  |  | |
| 7.8D.2\_1 | Wide band Intermodulation for SUL with UL MIMO | Rel-17 | C179a | UEs supporting 5GS FR1 and SUL and UL MIMO | D024 |  |  | |
| 7.8F.2 | Wide band Intermodulation for shared spectrum channel access | Rel-16 | C001c | UEs supporting 5GS FR1 and operation with shared spectrum channel access | D018 |  |  | |
| 7.8J.2 | Wide band intermodulation for ATG | Rel-18 | C001n | UEs supporting 5GS FR1 ATG | D028 |  | NOTE 1 | |
| 7.9 | Spurious emissions | Rel-15 | C001 | UEs supporting 5GS FR1 | D001 |  | Skip TC 7.9 if UE supports NSA and TS 38.521-3 TC 7.9B.1 or 7.9B.2 or 7.9B.3 has been executed. | |
| 7.9A.1 | Spurious emissions for CA (2DL CA) | Rel-15 | C005 | UEs supporting 5GS FR1 and inter-band 2DL CA with a DL-only band | E002 |  |  | |
| 7.9J | Spurious emissions for ATG | Rel-18 | C001n | UEs supporting 5GS FR1 ATG | D028 |  | NOTE 1 | |
| NOTE 1: The test case/branch is incomplete for any Band/CA/DC Configuration but has basic test configurations already. NOTE 1 can be removed only when the test case/branch is complete for at least one Band / CA/DC Configuration for at least one feature included in the test case/branch. Detailed completion status can be found in the corresponding test case section in 38.521-1.  NOTE 2: The test case is optional for Rel-17 RedCap UE implementing SUL. | | | | | | | | |

Table 4.1.1-1a: Void

Table 4.1.1-1b: Void

Table 4.1.1-1c: Void

### 4.1.2 FR2 standalone conformance test cases

Table 4.1.2-1: Applicability of RF SA FR2 conformance test cases, ref. TS 38.521-2 [2]

| Clause | TC Title | Release | Applicability | | Tested Bands/CA-Configurations Selection | Branch | Additional Information |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  |  |  | Condition | Comment |  |  |  |
| **6** | **Transmitter Characteristics** |  |  |  |  |  |  |
| 6.2.1.1 | UE maximum output power - EIRP and TRP | Rel-15 | C006j | Release 15 UEs supporting 5GS FR2 and Release 16 and forward UEs supporting 5GS FR2 and not supporting either CSI-RS or SSB based enhanced Beam Correspondence | D005 | PC1  PC2 (NOTE 1)  PC3  PC4 (NOTE 1) | Skip TC 6.2.1.1 if UE supports NSA and TS 38.521-3 TC 6.2B.1.4.1 has been executed. |
| 6.2.1.2 | UE maximum output power - Spherical coverage | Rel-15 | C006j | Release 15 UEs supporting 5GS FR2 and Release 16 and forward UEs supporting 5GS FR2 and not supporting either CSI-RS or SSB based enhanced Beam Correspondence | D005 | PC1  PC2 (NOTE 1)  PC3  PC4 (NOTE 1) | Skip TC 6.2.1.2 if UE supports NSA and TS 38.521-3 TC 6.2B.1.4.2 has been executed. |
| 6.2.1.1\_1 | UE maximum output power - EIRP and TRP (Rel16 and forward) | Rel-16 | C006k | Release 16 and forward UEs supporting 5GS FR2 and supporting either SSB-based or CSI-RS based enhanced beam correspondence | D005 | PC3 | Skip TC 6.2.1.1\_1 if UE supports NSA and TS 38.521-3 TC 6.2B.1.4.1 has been executed. |
| 6.2.1.2\_1 | UE maximum output power - Spherical coverage (Rel16 and forward) | Rel-16 | C006k | Release 16 and forward UEs supporting 5GS FR2 and supporting either SSB-based or CSI-RS based enhanced beam correspondence | D005 | PC3 | Skip TC 6.2.1.2\_1 if UE supports NSA and TS 38.521-3 TC 6.2B.1.4.2 has been executed. |
| 6.2.2 | UE maximum output power reduction | Rel-15 | C006 | UEs supporting 5GS FR2 | D005 | PC1  PC2 (NOTE 1)  PC3  PC4 (NOTE 1) | Skip TC 6.2.2 if UE supports NSA and TS 38.521-3 TC 6.2B.2.4 has been executed.  Skip TC 6.2.2 for PC3 UE of Rel-15 and Rel-16 supporting *modifiedMPRbehaviour* bit 0 or PC3 UE of Rel-17, if TC 6.2.2\_1 has been executed. |
| 6.2.2\_1 | UE maximum output power reduction enhancements | Rel-15  Rel-16 | C006o | UEs supporting 5GS FR2 and supporting *modifiedMPRbehaviour* bit 0. | D005 | PC3 | Skip TC 6.2.2\_1 if UE supports NSA and TS 38.521-3 TC 6.2B.2.4a has been executed. |
|  |  | Rel-17 | C006 | UEs supporting 5GS FR2 |  |  |  |
| 6.2.3 | UE maximum output power with additional requirements | Rel-15 | C006 | UEs supporting 5GS FR2 | D005 | PC1 (NOTE 1)  PC2 (NOTE 1)  PC3  PC4 (NOTE 1)  PC6 (NOTE 1) | Skip TC 6.2.3 if UE supports NSA and TS 38.521-3 TC 6.2B.3.4 has been executed. |
| 6.2.4\_1 | Configured transmitted power with Power Boost | Rel-16 | C006w | UEs supporting 5GS FR2 and *mpr-PowerBoost-FR2-r16* | D005 | PC1 (NOTE 1)  PC2 (NOTE 1)  PC3  PC4 (NOTE 1) | Skip TC 6.2.4\_1 if UE supports NSA and TS 38.521-3 TC 6.2B.4.1.4\_1 has been executed. |
| 6.2A.1.1.1 | UE maximum output power - EIRP and TRP for CA (2UL CA) | Rel-15 | C053 | UEs supporting 5GS FR2 and CA (2UL CA) | E020 | PC1 (NOTE 1)  PC2 (NOTE 1)  PC3  PC4 (NOTE 1) | Skip TC 6.2A.1.1.1 if UE supports NSA and TS 38.521-3 TC 6.2B.1.4\_1.1.1 has been executed. |
| 6.2A.1.1.2 | UE maximum output power - EIRP and TRP for CA (3UL CA) | Rel-15 | C054 | UEs supporting 5GS FR2 and CA (3UL CA) | E021 | PC1 (NOTE 1)  PC2 (NOTE 1)  PC3  PC4 (NOTE 1) | Skip TC 6.2A.1.1.2 if UE supports NSA and TS 38.521-3 TC 6.2B.1.4\_1.2.1 has been executed. |
| 6.2A.1.1.3 | UE maximum output power - EIRP and TRP for CA (4UL CA) | Rel-15 | C055 | UEs supporting 5GS FR2 and CA (4UL CA) | E022 | PC1 (NOTE 1)  PC2 (NOTE 1)  PC3  PC4 (NOTE 1) | Skip TC 6.2A.1.1.3 if UE supports NSA and TS 38.521-3 TC 6.2B.1.4\_1.3.1 has been executed. |
| 6.2A.1.2.1 | UE maximum output power - Spherical coverage for CA (2UL CA) | Rel-15 | C053 | UEs supporting 5GS FR2 and CA (2UL CA) | E020 | PC1 (NOTE 1)  PC2 (NOTE 1)  PC3  PC4 (NOTE 1) | Skip TC 6.2A.1.2.1 if UE supports NSA and TS 38.521-3 TC 6.2B.1.4\_1.1.2 has been executed. |
| 6.2A.1.2.2 | UE maximum output power - Spherical coverage for CA (3UL CA) | Rel-15 | C054 | UEs supporting 5GS FR2 and CA (3UL CA) | E021 | PC1 (NOTE 1)  PC2 (NOTE 1)  PC3  PC4 (NOTE 1) | Skip TC 6.2A.1.2.2 if UE supports NSA and TS 38.521-3 TC 6.2B.1.4\_1.2.2 has been executed. |
| 6.2A.1.2.3 | UE maximum output power - Spherical coverage for CA (4UL CA) | Rel-15 | C055 | UEs supporting 5GS FR2 and CA (4UL CA) | E022 | PC1 (NOTE 1)  PC2 (NOTE 1)  PC3  PC4 (NOTE 1) | Skip TC 6.2A.1.2.3 if UE supports NSA and TS 38.521-3 TC 6.2B.1.4\_1.3.2 has been executed. |
| 6.2A.2.1 | UE maximum output power reduction for CA (2UL CA) | Rel-15 | C053 | UEs supporting 5GS FR2 and CA (2UL CA) | E020 | PC1 (NOTE 1)  PC2 (NOTE 1)  PC3  PC4 (NOTE 1) | Skip TC 6.2A.2.1 if UE supports NSA and TS 38.521-3 TC 6.2B.2.4\_1.1 has been executed. |
| 6.2D.1.1 | UE maximum output power - EIRP and TRP for UL MIMO | Rel-15 | C060 | UEs supporting 5GS FR2 and UL-MIMO | D023 | PC1  PC2 (NOTE 1)  PC3  PC4 (NOTE 1)  PC5  PC6 (NOTE 1) | Skip TC 6.2D.1.1 if UE supports NSA and TS 38.521-3 TC 6.2B.1.4D.1 has been executed. |
| 6.2D.1.2 | UE maximum output power - Spherical coverage for UL MIMO | Rel-15 | C060 | UEs supporting 5GS FR2 and UL-MIMO | D023 | PC1  PC2 (NOTE 1)  PC3  PC4 (NOTE 1)  PC5 (NOTE 1) | Skip TC 6.2D.1.2 if UE supports NSA and TS 38.521-3 TC 6.2B.1.4D.2 has been executed. |
| 6.2.5 | UE Maximum Output Power – EIRP with UL Gaps | Rel-17 | FFS | FFS | FFS |  | NOTE 1 |
| 6.3.1 | Minimum output power | Rel-15 | C006 | UEs supporting 5GS FR2 | D005 | PC1  PC2 (NOTE 1)  PC3  PC4 (NOTE 1)  PC6 (NOTE 1) | Skip TC 6.3.1 if UE supports NSA and TS 38.521-3 TC 6.3B.1.4 has been executed. |
| 6.3.2 | Transmit OFF power | Rel-15 | C006 | UEs supporting 5GS FR2 | D005 |  |  |
| 6.3.3.2 | General ON/OFF time mask | Rel-15 | C006 | UEs supporting 5GS FR2 | D005 |  | Skip TC 6.3.3.2 if UE supports NSA and TS 38.521-3 TC 6.3B.3.4 has been executed. |
| 6.3.3.4 | PRACH time mask | Rel-15 | C006 | UEs supporting 5GS FR2 | D005 |  | NOTE 1 |
| 6.3.4.2 | Absolute power tolerance | Rel-15 | C006 | UEs supporting 5GS FR2 | D005 |  | Skip TC 6.3.4.2 if UE supports NSA and TS 38.521-3 TC 6.3B.8.1.4 has been executed. |
| 6.3.4.3 | Relative power tolerance | Rel-15 | C006 | UEs supporting 5GS FR2 | D005 |  | NOTE 1 |
| 6.3.4.4 | Aggregate power tolerance | Rel-15 | C006 | UEs supporting 5GS FR2 | D005 |  | Skip TC 6.3.4.2 if UE supports NSA and TS 38.521-3 TC 6.3B.8.3.4 has been executed. |
| 6.3A.1.1 | Minimum output power for CA (2UL CA) | Rel-15 | C053 | UEs supporting 5GS FR2 and CA (2UL CA) | E020 | PC1 (NOTE 1)  PC2 (NOTE 1)  PC3  PC4 (NOTE 1) | Skip TC 6.3A.1.1 if UE supports NSA and TS 38.521-3 TC 6.3B.1.4\_1.1 has been executed. |
| 6.3A.1.2 | Minimum output power for CA (3UL CA) | Rel-15 | C054 | UEs supporting 5GS FR2 and CA (3UL CA) | E021 | PC1 (NOTE 1)  PC2 (NOTE 1)  PC3  PC4 (NOTE 1) | Skip TC 6.3A.1.2 if UE supports NSA and TS 38.521-3 TC 6.3B.1.4\_1.2 has been executed. |
| 6.3A.1.3 | Minimum output power for CA (4UL CA) | Rel-15 | C055 | UEs supporting 5GS FR2 and CA (4UL CA) | E022 | PC1 (NOTE 1)  PC2 (NOTE 1)  PC3  PC4 (NOTE 1) | Skip TC 6.3A.1.3 if UE supports NSA and TS 38.521-3 TC 6.3B.1.4\_1.3 has been executed. |
| 6.3A.1.4 | Minimum output power for CA (5UL CA) | Rel-15 | C056 | UEs supporting 5GS FR2 and CA (5UL CA) | E023 | PC1 (NOTE 1)  PC2 (NOTE 1)  PC3  PC4 (NOTE 1) | Skip TC 6.3A.1.4 if UE supports NSA and TS 38.521-3 TC 6.3B.1.4\_1.4 has been executed. |
| 6.3A.1.5 | Minimum output power for CA (6UL CA) | Rel-15 | C057 | UEs supporting 5GS FR2 and CA (6UL CA) | E024 | PC1 (NOTE 1)  PC2 (NOTE 1)  PC3  PC4 (NOTE 1) | Skip TC 6.3A.1.5 if UE supports NSA and TS 38.521-3 TC 6.3B.1.4\_1.5 has been executed. |
| 6.3A.1.6 | Minimum output power for CA (7UL CA) | Rel-15 | C058 | UEs supporting 5GS FR2 and CA (7UL CA) | E025 | PC1 (NOTE 1)  PC2 (NOTE 1)  PC3  PC4 (NOTE 1) | Skip TC 6.3A.1.6 if UE supports NSA and TS 38.521-3 TC 6.3B.1.4\_1.6 has been executed. |
| 6.3A.1.7 | Minimum output power for CA (8UL CA) | Rel-15 | C059 | UEs supporting 5GS FR2 and CA (8UL CA) | E026 | PC1 (NOTE 1)  PC2 (NOTE 1)  PC3  PC4 (NOTE 1) | Skip TC 6.3A.1.7 if UE supports NSA and TS 38.521-3 TC 6.3B.1.4\_1.7 has been executed. |
| 6.3A.2.1 | Void |  |  |  |  |  |  |
| 6.3A.2.2 | Void |  |  |  |  |  |  |
| 6.3A.2.3 | Void |  |  |  |  |  |  |
| 6.3A.3.1.1 | General ON/OFF time mask for CA (2UL CA) | Rel-15 | C053 | UEs supporting 5GS FR2 and CA (2UL CA) | E020 |  | NOTE 1 |
| 6.3A.4.2.1 | Absolute power tolerance for CA (2UL CA) | Rel-15 | C053 | UEs supporting 5GS FR2 and CA (2UL CA) | E020 |  | NOTE 1 |
| 6.3A.4.2.2 | Absolute power tolerance for CA (3UL CA) | Rel-15 | C054 | UEs supporting 5GS FR2 and CA (3UL CA) | E021 |  | NOTE 1 |
| 6.3A.4.2.3 | Absolute power tolerance for CA (4UL CA) | Rel-15 | C055 | UEs supporting 5GS FR2 and CA (4UL CA) | E022 |  | NOTE 1 |
| 6.3A.4.2.4 | Absolute power tolerance for CA (5UL CA) | Rel-15 | C056 | UEs supporting 5GS FR2 and CA (5UL CA) | E023 |  | NOTE 1 |
| 6.3A.4.2.5 | Absolute power tolerance for CA (6UL CA) | Rel-15 | C057 | UEs supporting 5GS FR2 and CA (6UL CA) | E024 |  | NOTE 1 |
| 6.3A.4.2.6 | Absolute power tolerance for CA (7UL CA) | Rel-15 | C058 | UEs supporting 5GS FR2 and CA (7UL CA) | E025 |  | NOTE 1 |
| 6.3A.4.2.7 | Absolute power tolerance for CA (8UL CA) | Rel-15 | C059 | UEs supporting 5GS FR2 and CA (8UL CA) | E026 |  | NOTE 1 |
| 6.3A.4.4.1 | Aggregate power tolerance for CA (2UL CA) | Rel-15 | C053 | UEs supporting 5GS FR2 and CA (2UL CA) | E020 |  | NOTE 1 |
| 6.3A.4.4.2 | Aggregate power tolerance for CA (3UL CA) | Rel-15 | C054 | UEs supporting 5GS FR2 and CA (3UL CA) | E021 |  | NOTE 1 |
| 6.3A.4.4.3 | Aggregate power tolerance for CA (4UL CA) | Rel-15 | C055 | UEs supporting 5GS FR2 and CA (4UL CA) | E022 |  | NOTE 1 |
| 6.3A.4.4.4 | Aggregate power tolerance for CA (5UL CA) | Rel-15 | C056 | UEs supporting 5GS FR2 and CA (5UL CA) | E023 |  | NOTE 1 |
| 6.3A.4.4.5 | Aggregate power tolerance for CA (6UL CA) | Rel-15 | C057 | UEs supporting 5GS FR2 and CA (6UL CA) | E024 |  | NOTE 1 |
| 6.3A.4.4.6 | Aggregate power tolerance for CA (7UL CA) | Rel-15 | C058 | UEs supporting 5GS FR2 and CA (7UL CA) | E025 |  | NOTE 1 |
| 6.3A.4.4.7 | Aggregate power tolerance for CA (8UL CA) | Rel-15 | C059 | UEs supporting 5GS FR2 and CA (8UL CA) | E026 |  | NOTE 1 |
| 6.3D.1 | Minimum output power for UL MIMO | Rel-15 | C060 | UEs supporting 5GS FR2 and UL MIMO | D023 | PC1 (NOTE 1)  PC2 (NOTE 1)  PC3  PC4 (NOTE 1)  PC5 | Skip TC 6.3D.1 if UE supports NSA and TS 38.521-3 TC 6.3B.1.4D has been executed. |
| 6.3D.2 | Transmit OFF power for UL MIMO | Rel-15 | C060 | UEs supporting 5GS FR2 and UL MIMO | D023 | PC1  PC2 (NOTE 1)  PC3  PC4 (NOTE 1)  PC5 (NOTE 1) | Skip TC 6.3D.2 if UE supports NSA and TS 38.521-3 TC 6.3B.2.4D has been executed. |
| 6.3D.3.1 | General ON/OFF time mask for UL MIMO | Rel-15 | C060 | UEs supporting 5GS FR2 and UL MIMO | D023 |  | NOTE 1 |
| 6.3D.3.4 | Void |  |  |  |  |  |  |
| 6.4.1 | Frequency error | Rel-15 | C006 | UEs supporting 5GS FR2 | D005 |  | Skip TC 6.4.1 if UE supports NSA and TS 38.521-3 TC 6.4B.1.4 has been executed. |
| 6.4.2.1 | Error vector magnitude | Rel-15 | C006 | UEs supporting 5GS FR2 | D005 | PC1  PC2  PC3  PC4 | NOTE 1  Skip TC 6.4.2.1 if UE supports NSA and TS 38.521-3 TC 6.4B.2.4.1 has been executed. |
| 6.4.2.1\_1 | Error vector magnitude with Power Boost | Rel-16 | C006w | UEs supporting 5GS FR2 and supporting *mpr-PowerBoost-FR2-r16* | D005 | PC1  PC2  PC3  PC4 | NOTE 1  Skip TC 6.4.2.1\_1 if UE supports NSA and TS 38.521-3 TC 6.4B.2.4.1a has been executed. |
| 6.4.2.2 | Carrier leakage | Rel-15 | C006 | UEs supporting 5GS FR2 | D005 | PC1 (NOTE 1)  PC2 (NOTE 1)  PC3  PC4 (NOTE 1)  PC6 (NOTE 1) | Skip TC 6.4.2.2 if UE supports NSA and TS 38.521-3 TC 6.4B.2.4.2 has been executed. |
| 6.4.2.3 | In-band emissions | Rel-15 | C006 | UEs supporting 5GS FR2 | D005 | PC1  PC2  PC3  PC4  PC6 | NOTE 1  Skip TC 6.4.2.3 if UE supports NSA and TS 38.521-3 TC 6.4B.2.4.3 has been executed. |
| 6.4.2.4 | EVM equalizer spectrum flatness | Rel-15 | C006 | UEs supporting 5GS FR2 | D005 |  | NOTE 1  Skip TC 6.4.2.4 if UE supports NSA and TS 38.521-3 TC 6.4B.2.4.4 has been executed. |
| 6.4.2.5 | EVM spectral flatness for pi/2 BPSK modulation | Rel-15 | C006b | UEs supporting 5GS FR2 and pi/2 BPSK modulation | D005 |  | NOTE 1  Skip TC 6.4.2.5 if UE supports NSA and TS 38.521-3 TC 6.4B.2.4.5 has been executed. |
| 6.4.2.6 | Phase continuity requirements for DMRS bundling | Rel17 | C314 | Release 17 and forward UEs supporting 5GS FR2, *dmrs-BundlingPUCCH-Rep-r17* and either *dmrs-BundlingPUSCH-multiSlot-r17 or dmrs-BundlingPUSCH-RepTypeA-r17 or dmrs-BundlingPUSCH-RepTypeB-r17* | D005 |  | NOTE 1 |
| 6.4A.1.1 | Frequency error for CA (2UL CA) | Rel-15 | C053 | UEs supporting 5GS FR2 and CA (2UL CA) | E020 |  | NOTE 1 |
| 6.4A.1.2 | Frequency error for CA (3UL CA) | Rel-15 | C054 | UEs supporting 5GS FR2 and CA (3UL CA) | E021 |  | NOTE 1 |
| 6.4A.1.3 | Frequency error for CA (4UL CA) | Rel-15 | C055 | UEs supporting 5GS FR2 and CA (4UL CA) | E022 |  | NOTE 1 |
| 6.4A.2.1.1 | Error vector magnitude for CA (2UL CA) | Rel-15 | C053 | UEs supporting 5GS FR2 and CA (2UL CA) | E020 | PC1  PC2  PC3  PC4 | NOTE 1 |
| 6.4A.2.1.2 | Error vector magnitude for CA (3UL CA) | Rel-15 | C054 | UEs supporting 5GS FR2 and CA (3UL CA) | E021 | PC1  PC2  PC3  PC4 | NOTE 1 |
| 6.4A.2.1.3 | Error vector magnitude for CA (4UL CA) | Rel-15 | C055 | UEs supporting 5GS FR2 and CA (4UL CA) | E022 | PC1  PC2  PC3  PC4 | NOTE 1 |
| 6.4A.2.1.4 | Error vector magnitude for CA (5UL CA) | Rel-15 | C056 | UEs supporting 5GS FR2 and CA (5UL CA) | E023 | PC1  PC2  PC3  PC4 | NOTE 1 |
| 6.4A.2.1.5 | Error vector magnitude for CA (6UL CA) | Rel-15 | C057 | UEs supporting 5GS FR2 and CA (6UL CA) | E024 | PC1  PC2  PC3  PC4 | NOTE 1 |
| 6.4A.2.1.6 | Error vector magnitude for CA (7UL CA) | Rel-15 | C058 | UEs supporting 5GS FR2 and CA (7UL CA) | E025 | PC1  PC2  PC3  PC4 | NOTE 1 |
| 6.4A.2.1.7 | Error vector magnitude for CA (8UL CA) | Rel-15 | C059 | UEs supporting 5GS FR2 and CA (8UL CA) | E026 | PC1  PC2  PC3  PC4 | NOTE 1 |
| 6.4A.2.2.1 | Carrier leakage for CA (2UL CA) | Rel-15 | C053 | UEs supporting 5GS FR2 and CA (2UL CA) | E020 | PC1  PC2  PC3  PC4 | NOTE 1 |
| 6.4A.2.2.2 | Carrier leakage for CA (3UL CA) | Rel-15 | C054 | UEs supporting 5GS FR2 and CA (3UL CA) | E021 | PC1  PC2  PC3  PC4 | NOTE 1 |
| 6.4A.2.2.3 | Carrier leakage for CA (4UL CA) | Rel-15 | C055 | UEs supporting 5GS FR2 and CA (4UL CA) | E022 | PC1  PC2  PC3  PC4 | NOTE 1 |
| 6.4A.2.2.4 | Carrier leakage for CA (5UL CA) | Rel-15 | C056 | UEs supporting 5GS FR2 and CA (5UL CA) | E023 | PC1  PC2  PC3  PC4 | NOTE 1 |
| 6.4A.2.2.5 | Carrier leakage for CA (6UL CA) | Rel-15 | C057 | UEs supporting 5GS FR2 and CA (6UL CA) | E024 | PC1  PC2  PC3  PC4 | NOTE 1 |
| 6.4A.2.2.6 | Carrier leakage for CA (7UL CA) | Rel-15 | C058 | UEs supporting 5GS FR2 and CA (7UL CA) | E025 | PC1  PC2  PC3  PC4 | NOTE 1 |
| 6.4A.2.2.7 | Carrier leakage for CA (8UL CA) | Rel-15 | C059 | UEs supporting 5GS FR2 and CA (8UL CA) | E026 | PC1  PC2  PC3  PC4 | NOTE 1 |
| 6.4A.2.3.1 | In-band emissions for CA (2UL CA) | Rel-15 | C053 | UEs supporting 5GS FR2 CA (2UL CA) | E020 | PC1  PC2  PC3  PC4 | NOTE 1 |
| 6.4A.2.3.2 | In-band emissions for CA (3UL CA) | Rel-15 | C054 | UEs supporting 5GS FR2 and CA (3UL CA) | E021 | PC1  PC2  PC3  PC4 | NOTE 1 |
| 6.4A.2.3.3 | In-band emissions for CA (4UL CA) | Rel-15 | C055 | UEs supporting 5GS FR2 and CA (4UL CA) | E022 | PC1  PC2  PC3  PC4 | NOTE 1 |
| 6.4A.2.3.4 | In-band emissions for CA (5UL CA) | Rel-15 | C056 | UEs supporting 5GS FR2 and CA (5UL CA) | E023 | PC1  PC2  PC3  PC4 | NOTE 1 |
| 6.4A.2.3.5 | In-band emissions for CA (6UL CA) | Rel-15 | C057 | UEs supporting 5GS FR2 and CA (6UL CA) | E024 | PC1  PC2  PC3  PC4 | NOTE 1 |
| 6.4A.2.3.6 | In-band emissions for CA (7UL CA) | Rel-15 | C058 | UEs supporting 5GS FR2 and CA (7UL CA) | E025 | PC1  PC2  PC3  PC4 | NOTE 1 |
| 6.4A.2.3.7 | In-band emissions for CA (8UL CA) | Rel-15 | C059 | UEs supporting 5GS FR2 and CA (8UL CA) | E026 | PC1  PC2  PC3  PC4 | NOTE 1 |
| 6.4D.1 | Frequency error for UL MIMO | Rel-15 | C060 | UEs supporting 5GS FR2 and UL MIMO | D023 |  | NOTE 1 |
| 6.4D.3 | Time alignment error for UL MIMO | Rel-15 | C060 | UEs supporting 5GS FR2 and UL MIMO | D023 |  | NOTE 1 |
| 6.5.1 | Occupied bandwidth | Rel-15 | C006 | UEs supporting 5GS FR2 | D005 |  | Skip TC 6.5.1 if UE supports NSA and TS 38.521-3 TC 6.5B.1.4 has been executed. |
| 6.5.2.1 | Spectrum Emission Mask | Rel-15 | C006 | UEs supporting 5GS FR2 | D005 |  | Skip TC 6.5.2.1 if UE supports NSA and TS 38.521-3 TC 6.5B.2.4.1 has been executed. |
| 6.5.2.1\_1 | Spectrum Emission Mask with Power Boost | Rel-16 | C006w | UEs supporting 5GS FR2 and supporting *mpr-PowerBoost-FR2-r16* | D005 | PC1 (NOTE 1)  PC2 (NOTE 1)  PC3  PC4 (NOTE 1) | Skip TC 6.5.2.1\_1 if UE supports NSA and TS 38.521-3 TC 6.5B.2.4.1a has been executed. |
| 6.5.2.3 | Adjacent channel leakage ratio | Rel-15 | C006 | UEs supporting 5GS FR2 | D005 |  | Skip TC 6.5.2.3 if UE supports NSA and TS 38.521-3 TC 6.5B.2.4.3 has been executed. |
| 6.5.3.1 | Transmitter Spurious emissions | Rel-15 | C006 | UEs supporting 5GS FR2 | D005 |  | Skip TC 6.5.3.1 if UE supports NSA and TS 38.521-3 TC 6.5B.3.4.1 has been executed. |
| 6.5.3.1\_1 | Transmitter Spurious emissions with Power Boost | Rel-16 | C006w | UEs supporting 5GS FR2 and supporting *mpr-PowerBoost-FR2-r16* | D005 | PC1 (NOTE 1)  PC2 (NOTE 1)  PC3  PC4 (NOTE 1) | Skip TC 6.5.3.1\_1 if UE supports NSA and TS 38.521-3 TC 6.5B.3.4.1a has been executed. |
| 6.5.3.2 | Spurious emission band UE co-existence | Rel-15 | C006 | UEs supporting 5GS FR2 | D005 |  | Skip TC 6.5.3.2 if UE supports NSA and TS 38.521-3 TC 6.5B.3.4.2 has been executed. |
| 6.5.3.2\_1 | Spurious emission band UE co-existence with Power Boost | Rel-16 | C006w | UEs supporting 5GS FR2 and supporting *mpr-PowerBoost-FR2-r16* | D005 | PC1 (NOTE 1)  PC2 (NOTE 1)  PC3  PC4 (NOTE 1) | Skip TC 6.5.3.2\_1 if UE supports NSA and TS 38.521-3 TC 6.5B.3.4.2a has been executed. |
| 6.5.3.3 | Additional spurious emissions | Rel-15 | C006 | UEs supporting 5GS FR2 | D005 |  | Skip TC 6.5.3.3 if UE supports NSA and TS 38.521-3 TC 6.5B.4.4 has been executed. |
| 6.5.3.3\_1 | Additional spurious emissions with Power Boost | Rel-16 | C006w | UEs supporting 5GS FR2 and supporting *mpr-PowerBoost-FR2-r16* | D005 | PC1 (NOTE 1)  PC2 (NOTE 1)  PC3  PC4 (NOTE 1) | Skip TC 6.5.3.3\_1 if UE supports NSA and TS 38.521-3 TC 6.5B.4.4a has been executed. |
| 6.5A.1.1 | Occupied bandwidth for CA (2UL CA) | Rel-15 | C053 | UEs supporting 5GS FR2 and CA (2UL CA) | E020 |  | NOTE 1  Skip TC 6.5A.1.1 if UE supports NSA and TS 38.521-3 TC 6.5B.1.4\_1.1 has been executed. |
| 6.5A.1.2 | Occupied bandwidth for CA (3UL CA) | Rel-15 | C054 | UEs supporting 5GS FR2 and CA (3UL CA) | E021 |  | NOTE 1  Skip TC 6.5A.1.2 if UE supports NSA and TS 38.521-3 TC 6.5B.1.4\_1.2 has been executed. |
| 6.5A.1.3 | Occupied bandwidth for CA (4UL CA) | Rel-15 | C055 | UEs supporting 5GS FR2 and CA (4UL CA) | E022 |  | NOTE 1  Skip TC 6.5A.1.3 if UE supports NSA and TS 38.521-3 TC 6.5B.1.4\_1.3 has been executed. |
| 6.5A.1.4 | Occupied bandwidth for CA (5UL CA) | Rel-15 | C056 | UEs supporting 5GS FR2 and CA (5UL CA) | E023 |  | NOTE 1 |
| 6.5A.1.5 | Occupied bandwidth for CA (6UL CA) | Rel-15 | C057 | UEs supporting 5GS FR2 and CA (6UL CA) | E024 |  | NOTE 1 |
| 6.5A.1.6 | Occupied bandwidth for CA (7UL CA) | Rel-15 | C058 | UEs supporting 5GS FR2 and CA (7UL CA) | E025 |  | NOTE 1 |
| 6.5A.1.7 | Occupied bandwidth for CA (8UL CA) | Rel-15 | C059 | UEs supporting 5GS FR2 and CA (8UL CA) | E026 |  | NOTE 1 |
| 6.5A.2.1.1 | Spectrum Emission Mask for CA (2UL CA) | Rel-15 | C053 | UEs supporting 5GS FR2 and CA (2UL CA) | E020 |  | Skip TC 6.5A.2.1.1 if UE supports NSA and TS 38.521-3 TC 6.5B.2.4.1\_1.1 has been executed. |
| 6.5A.2.1.2 | Spectrum Emission Mask for CA (3UL CA) | Rel-15 | C054 | UEs supporting 5GS FR2 and CA (3UL CA) | E021 |  | NOTE 1  Skip TC 6.5A.2.1.2 if UE supports NSA and TS 38.521-3 TC 6.5B.2.4.1\_1.2 has been executed. |
| 6.5A.2.1.3 | Spectrum Emission Mask for CA (4UL CA) | Rel-15 | C055 | UEs supporting 5GS FR2 and CA (4UL CA) | E022 |  | NOTE 1  Skip TC 6.5A.2.1.3 if UE supports NSA and TS 38.521-3 TC 6.5B.2.4.1\_1.3 has been executed. |
| 6.5A.2.1.4 | Spectrum Emission Mask for CA (5UL CA) | Rel-15 | C056 | UEs supporting 5GS FR2 and CA (5UL CA) | E023 |  | NOTE 1 |
| 6.5A.2.1.5 | Spectrum Emission Mask for CA (6UL CA) | Rel-15 | C057 | UEs supporting 5GS FR2 and CA (6UL CA) | E024 |  | NOTE 1 |
| 6.5A.2.1.6 | Spectrum Emission Mask for CA (7UL CA) | Rel-15 | C058 | UEs supporting 5GS FR2 and CA (7UL CA) | E025 |  | NOTE 1 |
| 6.5A.2.1.7 | Spectrum Emission Mask for CA (8UL CA) | Rel-15 | C059 | UEs supporting 5GS FR2 and CA (8UL CA) | E026 |  | NOTE 1 |
| 6.5A.2.2.1 | Adjacent channel leakage ratio for CA (2UL CA) | Rel-15 | C053 | UEs supporting 5GS FR2 and CA (2UL CA) | E020 |  | Skip TC 6.5A.2.2.1 if UE supports NSA and TS 38.521-3 TC 6.5B.2.4.3\_1.1 has been executed. |
| 6.5A.2.2.2 | Adjacent channel leakage ratio for CA (3UL CA) | Rel-15 | C054 | UEs supporting 5GS FR2 and CA (3UL CA) | E021 |  | Skip TC 6.5A.2.2.2 if UE supports NSA and TS 38.521-3 TC 6.5B.2.4.3\_1.2 has been executed. |
| 6.5A.2.2.3 | Adjacent channel leakage ratio for CA (4UL CA) | Rel-15 | C055 | UEs supporting 5GS FR2 and CA (4UL CA) | E022 |  | Skip TC 6.5A.2.2.3 if UE supports NSA and TS 38.521-3 TC 6.5B.2.4.3\_1.3 has been executed. |
| 6.5A.2.2.4 | Adjacent channel leakage ratio for CA (5UL CA) | Rel-15 | C056 | UEs supporting 5GS FR2 and CA (5UL CA) | E023 |  | NOTE 1 |
| 6.5A.2.2.5 | Adjacent channel leakage ratio for CA (6UL CA) | Rel-15 | C057 | UEs supporting 5GS FR2 and CA (6UL CA) | E024 |  | NOTE 1 |
| 6.5A.2.2.6 | Adjacent channel leakage ratio for CA (7UL CA) | Rel-15 | C058 | UEs supporting 5GS FR2 and CA (7UL CA) | E025 |  | NOTE 1 |
| 6.5A.2.2.7 | Adjacent channel leakage ratio for CA (8UL CA) | Rel-15 | C059 | UEs supporting 5GS FR2 and CA (8UL CA) | E026 |  | NOTE 1 |
| 6.5A.3.1.1 | General spurious emissions for CA (2UL CA) | Rel-15 | C053 | UEs supporting 5GS FR2 and CA (2UL CA) | E020 | PC1 (NOTE 1)  PC2 (NOTE 1)  PC3  PC4 (NOTE 1) | Skip TC 6.5A.3.1.1 if UE supports NSA and TS 38.521-3 TC 6.5B.3.4.1\_1.1 has been executed. |
| 6.5A.3.1.2 | General spurious emissions for CA (3UL CA) | Rel-15 | C054 | UEs supporting 5GS FR2 and CA (3UL CA) | E021 | PC1 (NOTE 1)  PC2 (NOTE 1)  PC3  PC4 (NOTE 1) | Skip TC 6.5A.3.1.2 if UE supports NSA and TS 38.521-3 TC 6.5B.3.4.1\_1.2 has been executed. |
| 6.5A.3.1.3 | General spurious emissions for CA (4UL CA) | Rel-15 | C055 | UEs supporting 5GS FR2 and CA (4UL CA) | E022 | PC1 (NOTE 1)  PC2 (NOTE 1)  PC3  PC4 (NOTE 1) | Skip TC 6.5A.3.1.3 if UE supports NSA and TS 38.521-3 TC 6.5B.3.4.1\_1.3 has been executed. |
| 6.5A.3.1.4 | General spurious emissions for CA (5UL CA) | Rel-15 | C056 | UEs supporting 5GS FR2 and CA (5UL CA) | E023 | PC1 (NOTE 1)  PC2 (NOTE 1)  PC3  PC4 (NOTE 1) | Skip TC 6.5A.3.1.4 if UE supports NSA and TS 38.521-3 TC 6.5B.3.4.1\_1.4 has been executed. |
| 6.5A.3.1.5 | General spurious emissions for CA (6UL CA) | Rel-15 | C057 | UEs supporting 5GS FR2 and CA (6UL CA) | E024 | PC1 (NOTE 1)  PC2 (NOTE 1)  PC3  PC4 (NOTE 1) | Skip TC 6.5A.3.1.5 if UE supports NSA and TS 38.521-3 TC 6.5B.3.4.1\_1.5 has been executed. |
| 6.5A.3.1.6 | General spurious emissions for CA (7UL CA) | Rel-15 | C058 | UEs supporting 5GS FR2 and CA (7UL CA) | E025 | PC1 (NOTE 1)  PC2 (NOTE 1)  PC3  PC4 (NOTE 1) | Skip TC 6.5A.3.1.6 if UE supports NSA and TS 38.521-3 TC 6.5B.3.4.1\_1.6 has been executed. |
| 6.5A.3.1.7 | General spurious emissions for CA (8UL CA) | Rel-15 | C059 | UEs supporting 5GS FR2 and CA (8UL CA) | E026 | PC1 (NOTE 1)  PC2 (NOTE 1)  PC3  PC4 (NOTE 1) | Skip TC 6.5A.3.1.7 if UE supports NSA and TS 38.521-3 TC 6.5B.3.4.1\_1.7 has been executed. |
| 6.5A.3.2.1 | Spurious emission band UE co-existence for CA (2UL CA) | Rel-15 | C053 | UEs supporting 5GS FR2 CA (2UL CA) | E020 | PC1 (NOTE 1)  PC2 (NOTE 1)  PC3  PC4 (NOTE 1) | Skip TC 6.5A.3.2.1 if UE supports NSA and TS 38.521-3 TC 6.5B.3.4.2\_1.1 has been executed. |
| 6.5A.3.2.2 | Spurious emission band UE co-existence for CA (3UL CA) | Rel-15 | C054 | UEs supporting 5GS FR2 and CA (3UL CA) | E021 | PC1 (NOTE 1)  PC2 (NOTE 1)  PC3  PC4 (NOTE 1) | Skip TC 6.5A.3.2.2 if UE supports NSA and TS 38.521-3 TC 6.5B.3.4.2\_1.2 has been executed. |
| 6.5A.3.2.3 | Spurious emission band UE co-existence for CA (4UL CA) | Rel-15 | C055 | UEs supporting 5GS FR2 and CA (4UL CA) | E022 | PC1 (NOTE 1)  PC2 (NOTE 1)  PC3  PC4 (NOTE 1) | Skip TC 6.5A.3.2.3 if UE supports NSA and TS 38.521-3 TC 6.5B.3.4.2\_1.3 has been executed. |
| 6.5A.3.2.4 | Spurious emission band UE co-existence for CA (5UL CA) | Rel-15 | C056 | UEs supporting 5GS FR2 and CA (5UL CA) | E023 | PC1 (NOTE 1)  PC2 (NOTE 1)  PC3  PC4 (NOTE 1) | Skip TC 6.5A.3.2.4 if UE supports NSA and TS 38.521-3 TC 6.5B.3.4.2\_1.4 has been executed. |
| 6.5A.3.2.5 | Spurious emission band UE co-existence for CA (6UL CA) | Rel-15 | C057 | UEs supporting 5GS FR2 and CA (6UL CA) | E024 | PC1 (NOTE 1)  PC2 (NOTE 1)  PC3  PC4 (NOTE 1) | Skip TC 6.5A.3.2.5 if UE supports NSA and TS 38.521-3 TC 6.5B.3.4.2\_1.5 has been executed. |
| 6.5A.3.2.6 | Spurious emission band UE co-existence for CA (7UL CA) | Rel-15 | C058 | UEs supporting 5GS FR2 and CA (7UL CA) | E025 | PC1 (NOTE 1)  PC2 (NOTE 1)  PC3  PC4 (NOTE 1) | Skip TC 6.5A.3.2.6 if UE supports NSA and TS 38.521-3 TC 6.5B.3.4.2\_1.6 has been executed. |
| 6.5A.3.2.7 | Spurious emission band UE co-existence for CA (8UL CA) | Rel-15 | C059 | UEs supporting 5GS FR2 and CA (8UL CA) | E026 | PC1 (NOTE 1)  PC2 (NOTE 1)  PC3  PC4 (NOTE 1) | Skip TC 6.5A.3.2.7 if UE supports NSA and TS 38.521-3 TC 6.5B.3.4.2\_1.7 has been executed. |
| 6.5A.3.3.1 | Additional spurious emissions for CA (2UL CA) | Rel-15 | C053 | UEs supporting 5GS FR2 CA (2UL CA) | E020 | PC1 | Skip TC 6.5A.3.3.1 if UE supports NSA and TS 38.521-3 TC 6.5B.4.4.1\_1.1 has been executed. |
| 6.5A.3.3.2 | Additional spurious emissions for CA (3UL CA) | Rel-15 | C054 | UEs supporting 5GS FR2 and CA (3UL CA) | E021 | PC1 | Skip TC 6.5A.3.3.2 if UE supports NSA and TS 38.521-3 TC 6.5B.4.4.1\_1.2 has been executed. |
| 6.5A.3.3.3 | Additional spurious emissions for CA (4UL CA) | Rel-15 | C055 | UEs supporting 5GS FR2 and CA (4UL CA) | E022 | PC1 | Skip TC 6.5A.3.3.3 if UE supports NSA and TS 38.521-3 TC 6.5B.4.4.3\_1.3 has been executed. |
| 6.5A.3.3.4 | Additional spurious emissions for CA (5UL CA) | Rel-15 | C056 | UEs supporting 5GS FR2 and CA (5UL CA) | E023 |  | NOTE 1 |
| 6.5A.3.3.5 | Additional spurious emissions for CA (6UL CA) | Rel-15 | C057 | UEs supporting 5GS FR2 and CA (6UL CA) | E024 |  | NOTE 1 |
| 6.5A.3.3.6 | Additional spurious emissions for CA (7UL CA) | Rel-15 | C058 | UEs supporting 5GS FR2 and CA (7UL CA) | E025 |  | NOTE 1 |
| 6.5A.3.3.7 | Additional spurious emissions for CA (8UL CA) | Rel-15 | C059 | UEs supporting 5GS FR2 and CA (8UL CA) | E026 |  | NOTE 1 |
| 6.5D.1 | Occupied bandwidth for UL MIMO | Rel-15 | C060 | UEs supporting 5GS FR2 and UL MIMO | D023 |  | NOTE 1 |
| 6.5D.2.1 | Spectrum Emission Mask for UL MIMO | Rel-15 | C060 | UEs supporting 5GS FR2 and UL MIMO | D023 |  | NOTE 1 |
| 6.5D.2.2 | Adjacent channel leakage ratio for UL MIMO | Rel-15 | C060 | UEs supporting 5GS FR2 and UL MIMO | D023 |  | NOTE 1 |
| 6.5D.3.1 | Transmitter Spurious emissions for UL MIMO | Rel-15 | C060 | UEs supporting 5GS FR2 and UL MIMO | D023 |  | NOTE 1 |
| 6.5D.3.2 | Spurious emission band UE co-existence for UL MIMO | Rel-15 | C060 | UEs supporting 5GS FR2 and UL MIMO | D023 |  | NOTE 1 |
| 6.5D.3.3 | Additional spurious emissions for UL MIMO | Rel-15 | C060 | UEs supporting 5GS FR2 and UL MIMO | D023 |  | NOTE 1 |
| 6.6.1 | Beam correspondence - EIRP | Rel-15 | C008 | Release 15 UEs supporting 5GS FR2 and not beam correspondence without UL beam sweeping and release 16 and forward UEs that do not support SSB-based or CSI-RS based enhanced beam correspondence and do not support enhanced beam correspondence without UL beam sweeping | D005 | PC3 | Skip TC 6.6.1 if UE supports NSA and TS 38.521-3 TC 6.6B.4 has been executed. |
| 6.6.2 | Enhanced Beam correspondence - EIRP | Rel-16 | C008a | UEs supporting 5GS FR2 and support either CSI-RS or SSB based beam correspondence and do not support beam correspondence without UL beam sweeping | D005 | PC3 | Skip TC 6.6.2 if UE supports NSA and TS 38.521-3 TC 6.6B.5 has been executed. |
| **7** | **Receiver Characteristics** |  |  |  |  |  |  |
| 7.3.2 | Reference sensitivity power level | Rel-15 | C006 | UEs supporting 5GS FR2 | D005 | PC1  PC2 (NOTE 1)  PC3  PC4 (NOTE 1) | Skip TC 7.3.2 if UE supports NSA and TS 38.521-3 TC 7.3B.2.4 has been executed. |
| 7.3A.2.1 | Reference sensitivity power level for CA (2DL CA) | Rel-15 | C006c | UEs supporting 5GS FR2 and CA (2DL CA) | E032 | PC1 (NOTE 1)  PC2 (NOTE 1)  PC3  PC4 (NOTE 1) | Skip TC 7.3A.2.1 if UE supports NSA and TS 38.521-3 TC 7.3B.2.4\_1.1 has been executed |
| 7.3A.2.2 | Reference sensitivity power level for CA (3DL CA) | Rel-15 | C006d | UEs supporting 5GS FR2 and CA (3DL CA) | E033 | PC1 (NOTE 1)  PC2 (NOTE 1)  PC3  PC4 (NOTE 1) | Skip TC 7.3A.2.2 if UE supports NSA and TS 38.521-3 TC 7.3B.2.4\_1.2 has been executed |
| 7.3A.2.3 | Reference sensitivity power level for CA (4DL CA) | Rel-15 | C006e | UEs supporting 5GS FR2 and CA (4DL CA) | E034 | PC1 (NOTE 1)  PC2 (NOTE 1)  PC3  PC4 (NOTE 1) | Skip TC 7.3A.2.3 if UE supports NSA and TS 38.521-3 TC 7.3B.2.4\_1.3 has been executed |
| 7.3A.2.4 | Reference sensitivity power level for CA (5DL CA) | Rel-15 | C006f | UEs supporting 5GS FR2 and CA (5DL CA) | E035 | PC1  PC2  PC3  PC4 | NOTE 1  Skip TC 7.3A.2.4 if UE supports NSA and TS 38.521-3 TC 7.3B.2.4\_1.4 has been executed |
| 7.3A.2.5 | Reference sensitivity power level for CA (6DL CA) | Rel-15 | C006g | UEs supporting 5GS FR2 and CA (6DL CA) | E036 | PC1  PC2  PC3  PC4 | NOTE 1  Skip TC 7.3A.2.5 if UE supports NSA and TS 38.521-3 TC 7.3B.2.4\_1.5 has been executed |
| 7.3A.2.6 | Reference sensitivity power level for CA (7DL CA) | Rel-15 | C006h | UEs supporting 5GS FR2 and CA (7DL CA) | E037 | PC1  PC2  PC3  PC4 | NOTE 1  Skip TC 7.3A.2.6 if UE supports NSA and TS 38.521-3 TC 7.3B.2.4\_1.6 has been executed |
| 7.3A.2.7 | Reference sensitivity power level for CA (8DL CA) | Rel-15 | C006i | UEs supporting 5GS FR2 and CA (8DL CA) | E038 | PC1  PC2  PC3  PC4 | NOTE 1  Skip TC 7.3A.2.7 if UE supports NSA and TS 38.521-3 TC 7.3B.2.4\_1.7 has been executed |
| 7.3A.3.1 | EIS spherical coverage for Inter-band CA (2DL CA) | Rel-16 | C006c | UEs supporting 5GS FR2 and CA (2DL CA) | E032 | PC1  PC2  PC3  PC4 | NOTE 1 |
| 7.3A.3.2 | EIS spherical coverage for Inter-band CA (3DL CA) | Rel-16 | C006d | UEs supporting 5GS FR2 and CA (3DL CA) | E033 | PC1  PC2  PC3  PC4 | NOTE 1 |
| 7.3A.3.3 | EIS spherical coverage for Inter-band CA (4DL CA) | Rel-16 | C006e | UEs supporting 5GS FR2 and CA (4DL CA) | E034 | PC1  PC2  PC3  PC4 | NOTE 1 |
| 7.3A.3.4 | EIS spherical coverage for CA (5DL CA) | Rel-16 | C006f | UEs supporting 5GS FR2 and CA (5DL CA) | E035 | PC1  PC2  PC3  PC4 | NOTE 1 |
| 7.3A.3.5 | EIS spherical coverage for CA (6DL CA) | Rel-16 | C006g | UEs supporting 5GS FR2 and CA (6DL CA) | E036 | PC1  PC2  PC3  PC4 | NOTE 1 |
| 7.3A.3.6 | EIS spherical coverage for CA (7DL CA) | Rel-16 | C006h | UEs supporting 5GS FR2 and CA (7DL CA) | E037 | PC1  PC2  PC3  PC4 | NOTE 1 |
| 7.3A.3.7 | EIS spherical coverage for CA (8DL CA) | Rel-16 | C006i | UEs supporting 5GS FR2 and CA (8DL CA) | E038 | PC1  PC2  PC3  PC4 | NOTE 1 |
| 7.3.4 | EIS spherical coverage | Rel-15 | C006 | UEs supporting 5GS FR2 | D005 | PC1  PC2  PC3  PC4 | Skip TC 7.3.4 if UE supports NSA and TS 38.521-3 TC 7.3B.4 has been executed. |
| 7.4 | Maximum input level | Rel-15 | N/A | not recommended due to testability issues | N/A |  | NOTE 1 |
| 7.4A.1 | Maximum input level for CA (2DL CA) | Rel-15 | N/A | not recommended due to testability issues | N/A |  | NOTE 1 |
| 7.4A.2 | Maximum input level for CA (3DL CA) | Rel-15 | N/A | not recommended due to testability issues | N/A |  | NOTE 1 |
| 7.4A.3 | Maximum input level for CA (4DL CA) | Rel-15 | N/A | not recommended due to testability issues | N/A |  | NOTE 1 |
| 7.4A.4 | Maximum input level for CA (5DL CA) | Rel-15 | N/A | not recommended due to testability issues | N/A |  | NOTE 1 |
| 7.4A.5 | Maximum input level for CA (6DL CA) | Rel-15 | N/A | not recommended due to testability issues | N/A |  | NOTE 1 |
| 7.4A.6 | Maximum input level for CA (7DL CA) | Rel-15 | N/A | not recommended due to testability issues | N/A |  | NOTE 1 |
| 7.4A.7 | Maximum input level for CA (8DL CA) | Rel-15 | N/A | not recommended due to testability issues | N/A |  | NOTE 1 |
| 7.5 | Adjacent channel selectivity | Rel-15 | C006 | UEs supporting 5GS FR2 | D005 |  | Skip TC 7.5 if UE supports NSA and TS 38.521-3 TC 7.5B.4 has been executed. |
| 7.6.2 | In-band blocking | Rel-15 | C006 | UEs supporting 5GS FR2 | D005 |  | Skip TC 7.6.2 if UE supports NSA and TS 38.521-3 TC 7.6B.2.4 has been executed. |
| 7.9 | Spurious emissions | Rel-15 | C006 | UEs supporting 5GS FR2 | D005 |  | Skip TC 7.9 if UE supports NSA and TS 38.521-3 TC 7.9B.4 has been executed. |
| NOTE 1: The test case/branch is incomplete for any Band/CA/DC Configuration but has basic test configurations already. NOTE 1 can be removed only when the test case/branch is complete for at least one Band/CA/DC Configuration for at least one feature included in the test case/branch. Detailed completion status can be found in the corresponding test case section in 38.521-2.  NOTE 2: Void.  NOTE 3: Void.  NOTE 4: Void. | | | | | | | |

Table 4.1.2-1a: Void

Table 4.1.2-1b: Void

Table 4.1.2-1c: Void

### 4.1.3 NR interworking between NR FR1 and NR FR2 and between NR and LTE conformance test cases

Table 4.1.3-1: Applicability of RF EN-DC FR1 and FR2 conformance test cases, ref. TS 38.521-3 [3]

| Clause | TC Title | Release | Applicability | | Tested Bands/CA/DC-Configurations Selection | Branch | Additional Information |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  |  |  | Condition | Comment |  |  |  |
| **6** | **Transmitter characteristics** |  |  |  |  |  |  |
| **6.2B** | **Transmitter power for DC** |  |  |  |  |  |  |
| 6.2B.1.1 | UE Maximum Output Power for Intra-Band Contiguous EN-DC | Rel-15 | C009 | UEs supporting Intra-Band Contiguous EN-DC (2UL CCs) | E003 |  |  |
| 6.2B.1.2 | UE Maximum Output Power for Intra-Band Non-Contiguous EN-DC | Rel-15 | C010 | UEs supporting Intra-Band non-contiguous EN-DC (2UL CCs) | E004 |  |  |
| 6.2B.1.3 | UE Maximum Output Power for Inter-Band EN-DC within FR1 (1 E-UTRA CC, 1 NR CC) | Rel-15 | C011 | UEs supporting Inter-Band EN-DC within FR1 (2UL CCs) | E005  E005d | PC3  PC2 |  |
| 6.2B.1.3\_1 | UE Maximum Output Power for Inter-Band EN-DC within FR1 (2 E-UTRA CCs, 1 NR CC) | Rel-16 | C011d | UEs supporting Inter-Band EN-DC within FR1 (2UL E-UTRA CCs, 1UL NR CC) | E005z | PC3 |  |
| 6.2B.1.4.1 | UE Maximum Output Power for Inter-Band EN-DC including FR2 (1 NR CC) - EIRP and TRP | Rel-15 | C012 | UEs supporting Inter-Band EN-DC including FR2 with 1 NR UL CC | E010 | PC1  PC2 (NOTE 1)  PC3  PC4 (NOTE 1) | NOTE 5  Skip TC 6.2B.1.4.1 if UE supports SA and TSC 38.521-2 TC 6.2.1.1 has been executed. |
| 6.2B.1.4.2 | UE Maximum Output Power for Inter-Band EN-DC including FR2 (1 NR CC) - Spherical Coverage | Rel-15 | C012 | UEs supporting Inter-Band EN-DC including FR2 with 1 NR UL CC | E010 | PC1  PC2 (NOTE 1)  PC3  PC4 (NOTE 1) | NOTE 5  Skip TC 6.2B.1.4.2 if UE supports SA and TSC 38.521-2 TC 6.2.1.2 has been executed. |
| **6.2B.1.4\_1** | **UE Maximum Output Power for Inter-Band EN-DC including FR2 (>1 NR CC)** |  |  |  |  |  |  |
| 6.2B.1.4\_1.1.1 | UE Maximum Output Power for Inter-Band EN-DC including FR2 (2 NR CCs) - EIRP and TRP | Rel-15 | C012b | UEs supporting Inter-Band EN-DC including FR2 with 2 NR UL CCs | E011 | PC1 (NOTE 1)  PC2 (NOTE 1)  PC3  PC4 (NOTE 1) | NOTE 5  Skip TC 6.2B.1.4\_1.1.1 if UE supports SA and TS 38.521-2 TC 6.2A.1.1.1 has been executed. |
| 6.2B.1.4\_1.1.2 | UE Maximum Output Power for Inter-Band EN-DC including FR2 (2 NR CCs) - Spherical Coverage | Rel-15 | C012b | UEs supporting Inter-Band EN-DC including FR2 with 2 NR UL CCs | E011 | PC1 (NOTE 1)  PC2 (NOTE 1)  PC3  PC4 (NOTE 1) | NOTE 5  Skip TC 6.2B.1.4\_1.1.2 if UE supports SA and TS 38.521-2 TC 6.2A.1.2.1 has been executed. |
| 6.2B.1.4\_1.2.1 | UE Maximum Output Power for Inter-Band EN-DC including FR2 (3 NR CCs) - EIRP and TRP | Rel-15 | C012c | UEs supporting Inter-Band EN-DC including FR2 with 3 NR UL CCs | E012 | PC1 (NOTE 1)  PC2 (NOTE 1)  PC3  PC4 (NOTE 1) | NOTE 5  Skip TC 6.2B.1.4\_1.2.1 if UE supports SA and TS 38.521-2 TC 6.2A.1.1.2 has been executed. |
| 6.2B.1.4\_1.2.2 | UE Maximum Output Power for Inter-Band EN-DC including FR2 (3 NR CCs) - Spherical Coverage | Rel-15 | C012c | UEs supporting Inter-Band EN-DC including FR2 with 3 NR UL CCs | E012 | PC1 (NOTE 1)  PC2 (NOTE 1)  PC3  PC4 (NOTE 1) | NOTE 5  Skip TC 6.2B.1.4\_1.2.2 if UE supports SA and TS 38.521-2 TC 6.2A.1.2.2 has been executed. |
| 6.2B.1.4\_1.3.1 | UE Maximum Output Power for Inter-Band EN-DC including FR2 (4 NR CCs) - EIRP and TRP | Rel-15 | C012d | UEs supporting Inter-Band EN-DC including FR2 with 4 NR UL CCs | E013 | PC1 (NOTE 1)  PC2 (NOTE 1)  PC3  PC4 (NOTE 1) | NOTE 5  Skip TC 6.2B.1.4\_1.3.1 if UE supports SA and TS 38.521-2 TC 6.2A.1.1.3 has been executed. |
| 6.2B.1.4\_1.3.2 | UE Maximum Output Power for Inter-Band EN-DC including FR2 (4 NR CCs) - Spherical Coverage | Rel-15 | C012d | UEs supporting Inter-Band EN-DC including FR2 with 4 NR UL CCs | E013 | PC1 (NOTE 1)  PC2 (NOTE 1)  PC3  PC4 (NOTE 1) | NOTE 5  Skip TC 6.2B.1.4\_1.3.2 if UE supports SA and TS 38.521-2 TC 6.2A.1.2.3 has been executed. |
| 6.2B.1.4D.1 | UE Maximum Output Power for Inter-Band EN-DC including FR2 for UL MIMO - EIRP and TRP | Rel-15 | C012p | UEs supporting Inter-Band EN-DC including FR2 and UL MIMO | E043 | PC1  PC2 (NOTE 1)  PC3  PC4 (NOTE 1)  PC5 | NOTE 5  Skip TC 6.2B.1.4D.1 if UE supports SA and TS 38.521-2 TC 6.2D.1.1 has been executed. |
| 6.2B.1.4D.2 | UE Maximum Output Power for Inter-Band EN-DC including FR2 for UL MIMO - Spherical Coverage | Rel-15 | C012p | UEs supporting Inter-Band EN-DC including FR2 and UL MIMO | E043 | PC1  PC2 (NOTE 1)  PC3  PC4 (NOTE 1)  PC5 (NOTE 1) | NOTE 5  Skip TC 6.2B.1.4D.2 if UE supports SA and TS 38.521-2 TC 6.2D.1.2 has been executed. |
| 6.2B.1.6 | UE Maximum Output Power for Inter-Band EN-DC including FR2 (1 NR CC) - EIRP with UL Gaps | Rel-15 | C012b | UEs supporting Inter-Band EN-DC including FR2 and Uplink Gaps | E011 | PC1  PC2  PC3  PC4 | NOTE 1  NOTE 5  Skip TC 6.2B.1.6 if UE supports SA and TS 38.521-2 TC 6.2.5 has been executed. |
| 6.2B.2.1 | UE Maximum Output Power reduction for Intra-Band Contiguous EN-DC | Rel-15 | C009 | UEs supporting Intra-Band Contiguous EN-DC (2UL CCs) | E003 |  | Test execution is not necessary if TS 38.521-3 TC 6.5B.2.1.3 is executed. |
| 6.2B.2.2 | UE Maximum Output Power reduction for Intra-Band Non-Contiguous EN-DC | Rel-15 | C010 | UEs supporting Intra-Band non-contiguous EN-DC (2UL CCs) | E004 |  | Test execution is not necessary if TS 38.521-3 TC 6.5B.2.2.3 has been executed. |
| 6.2B.2.3 | UE Maximum Output Power reduction for Inter-Band EN-DC within FR1 (1 NR CC) | Rel-15 | C011 | UEs supporting Inter-Band EN-DC within FR1 with 1 NR UL CC | E005b | PC3  PC2 | NOTE 5  Test execution is not necessary if TS 38.521-3 TC 6.5B.2.3.3.1 is executed.  Skip TC 6.2B.2.3 if UE supports SA and TS 38.521-1 TC 6.2.2 or 6.5.2.4.1 has been executed. |
| 6.2B.2.4 | UE Maximum Output Power reduction for Inter-Band EN-DC including FR2 (1 NR CC) | Rel-15 | C012z | UEs supporting Inter-Band EN-DC including FR2 with 1 NR UL CC and modified MPR behaviour | E010 |  | NOTE 1  NOTE 5  Skip TC 6.2B.2.4 if UE supports SA and TS 38.521-2 TC 6.2.2 has been executed. |
| 6.2B.2.4a | UE maximum output power reduction enhancements for Inter-Band EN-DC including FR2 (1 NR CC) | Rel-16 | C012q | UEs supporting Inter-Band EN-DC including FR2 with 1 NR UL CC and modified MPR behaviour bit 0. | E010 | PC3 |  |
| **6.2B.2.4\_1** | **UE Maximum Output Power reduction for Inter-Band EN-DC including FR2 (>1 NR CC)** |  |  |  |  |  |  |
| 6.2B.2.4\_1.1 | UE Maximum Output Power reduction for Inter-Band EN-DC including FR2 (2 NR CCs) | Rel-15 | C012b | UEs supporting Inter-Band EN-DC including FR2 with 2 NR UL CCs | E011 |  | NOTE 1  NOTE 5  Skip TC 6.2B.2.4\_1.1 if UE supports SA and TS 38.521-2 TC 6.2A.2.1 has been executed. |
| 6.2B.2.4\_1.2 | UE Maximum Output Power reduction for Inter-Band EN-DC including FR2 (3 NR CCs) | Rel-15 | C012c | UEs supporting Inter-Band EN-DC including FR2 with 3 NR UL CCs | E012 |  | NOTE 1  NOTE 5  Skip TC 6.2B.2.4\_1.1 if UE supports SA and TS 38.521-2 TC 6.2A.2.2 has been executed. |
| 6.2B.2.4\_1.3 | UE Maximum Output Power reduction for Inter-Band EN-DC including FR2 (4 NR CCs) | Rel-15 | C012d | UEs supporting Inter-Band EN-DC including FR2 with 4 NR UL CCs | E013 |  | NOTE 1  NOTE 5  Skip TC 6.2B.2.4\_1.1 if UE supports SA and TS 38.521-2 TC 6.2A.2.3 has been executed. |
| 6.2B.3.1 | UE Additional Maximum Output Power reduction for Intra-band contiguous EN-DC | Rel-15 | C009z | UEs supporting Intra-Band Contiguous EN-DC (2UL CCs) and modified MPR behaviour | E003 |  |  |
| 6.2B.3.2 | UE Additional Maximum Output Power reduction for Intra-Band Non-Contiguous EN-DC | Rel-15 | FFS | FFS | FFS |  | NOTE 1 |
| 6.2B.3.3 | UE Additional Maximum Output power reduction for inter-band EN-DC within FR1 (1 NR CC) | Rel-15 | C011z | UEs supporting Inter-Band EN-DC within FR1 with 1 NR UL CC and modified MPR behaviour | E005b | PC3  PC2 | NOTE 5  Test execution is not necessary if TS 38.521-3 TCs 6.5B.2.3.2, 6.5B.2.3.3.2 and 6.5B.4.3 are executed.  Skip TC 6.2B.3.3 if UE supports SA and TS 38.521-1 TC 6.2.3 has been executed, or TS 38.521-1 TCs 6.5.2.3, 6,5,2,4,2 and 6.5.3.3 have been executed. |
| 6.2B.3.4 | UE Additional Maximum Output Power reduction for Inter-Band EN-DC including FR2 (1 NR CC) | Rel-15 | C012z | UEs supporting Inter-Band EN-DC including FR2 with 1 NR UL CC and modified MPR behaviour | E010 | PC3  PC2 | NOTE 5  Skip TC 6.2B.3.4 if UE supports SA and TS 38.521-2 TC 6.2.3 has been executed. |
| 6.2B.4.1.1 | Configured Output Power Level for Intra-Band Contiguous EN-DC | Rel-15 | C009 | UEs supporting Intra-Band Contiguous EN-DC (2UL CCs) | E003 |  |  |
| 6.2B.4.1.2 | Configured Output Power for Intra-Band Non-Contiguous EN-DC | Rel-15 | C010 | UEs supporting Intra-Band Non-Contiguous EN-DC (2UL CCs) | E004 |  |  |
| 6.2B.4.1.3 | Configured Output Power for Inter-Band EN-DC within FR1 (1 E-UTRA CC, 1 NR CC) | Rel-15 | C011 | UEs supporting Inter-Band EN-DC within FR1 (2UL CCs) | E005 |  |  |
| 6.2B.4.1.3\_1 | Configured Output Power for Inter-Band EN-DC within FR1 (2 E-UTRA CCs, 1 NR CC) | Rel-16 | C011d | UEs supporting Inter-Band EN-DC within FR1 (2UL E-UTRA CCs, 1UL NR CC) | E005z | PC3 |  |
| 6.2B.4.1.4 | Configured Output Power for Inter-Band EN-DC including FR2 (1 NR CC) | Rel-15 | C012 | UEs supporting inter-band EN-DC including FR2 with 1 NR UL CC | E010 |  |  |
| 6.2B.4.1.4\_1 | Configured Output Power with Power Boost for Inter-Band EN-DC including FR2 (1 NR CC) | Rel-16 | C012w | UEs supporting inter-band EN-DC including FR2 with 1 NR UL CC and *mpr-PowerBoost-FR2-r16* | E010 | PC1 (NOTE 1)  PC2 (NOTE 1)  PC3  PC4 (NOTE 1) | NOTE 5  Skip TC 6.2B.4.1.4\_1 if UE supports NSA and TS 38.521-2 TC 6.2.4\_1 has been executed. |
| **6.3B** | **Output power dynamics for DC** |  |  |  |  |  |  |
| 6.3B.1.1 | Minimum Output power for intra-band contiguous EN-DC | Rel-15 | C009 | UEs supporting intra-band contiguous EN-DC (2UL CCs) | E003 |  |  |
| 6.3B.1.2 | Minimum output power for intra-band non-contiguous EN-DC | Rel-15 | C010 | UEs supporting intra-band non-contiguous EN-DC (2UL CCs) | E004 |  | NOTE 5  Skip TC 6.3B.1.2 if UE supports SA and TS 38.521-1 TC 6.3.1 has been executed. |
| 6.3B.1.3 | Minimum output power for inter-band EN-DC within FR1 (1 NR CC) | Rel-15 | C011b | UEs supporting inter-band EN-DC within FR1 with 1 NR UL CC | E005b |  | NOTE 5  Skip TC 6.3B.1.3 if UE supports SA and TS 38.521-1 TC 6.3.1 has been executed. |
| 6.3B.1.4 | Minimum Output Power for EN-DC Interband including FR2 (1 NR CC) | Rel-15 | C012 | UEs supporting inter-band EN-DC including FR2 with 1 NR UL CC | E010 |  | NOTE 5  Skip TC 6.3B.1.4 if UE supports SA and TS 38.521-2 TC 6.3.1 has been executed. |
| **6.3B.1.4\_1** | **Minimum output power for inter-band EN-DC including FR2 (>1 NR CC)** |  |  |  |  |  |  |
| 6.3B.1.4\_1.1 | Minimum output power for inter-band EN-DC including FR2 (2 NR CCs) | Rel-15 | C012b | UEs supporting Inter-Band EN-DC including FR2 with 2 NR UL CCs | E011 |  | NOTE 5  Skip TC 6.3B.1.4\_1.1 if UE supports SA and TS 38.521-2 TC 6.3A.1.1 has been executed. |
| 6.3B.1.4\_1.2 | Minimum output power for inter-band EN-DC including FR2 (3 NR CCs) | Rel-15 | C012c | UEs supporting Inter-Band EN-DC including FR2 with 3 NR UL CCs | E012 |  | NOTE 5  Skip TC 6.3B.1.4\_1.2 if UE supports SA and TS 38.521-2 TC 6.3A.1.2 has been executed. |
| 6.3B.1.4\_1.3 | Minimum output power for inter-band EN-DC including FR2 (4 NR CCs) | Rel-15 | C012d | UEs supporting Inter-Band EN-DC including FR2 with 4 NR UL CCs | E013 |  | NOTE 5  Skip TC 6.3B.1.4\_1.3 if UE supports SA and TS 38.521-2 TC 6.3A.1.3 has been executed. |
| 6.3B.1.4D | Minimum output power for inter-band EN-DC including FR2 for UL MIMO | Rel-15 | C012p | UEs supporting inter-band EN-DC including FR2 and UL MIMO | E043 | PC1 (NOTE 1)  PC2 (NOTE 1)  PC3  PC4 (NOTE 1)  PC5 | NOTE 5  Skip TC 6.3B.1.4D if UE supports SA and TS 38.521-2 TC 6.3D.1 has been executed. |
| 6.3B.2.4 | Transmit OFF Power for inter-band EN-DC including FR2 (1 NR CC) | Rel-15 | C012 | UEs supporting inter-band EN-DC including FR2 with 1 NR UL CC | E005 |  |  |
| 6.3B.2.4\_1 | Void |  |  |  |  |  |  |
| 6.3B.2.4D | Transmit OFF Power for inter-band EN-DC including FR2 for UL-MIMO | Rel-15 | C012p | UEs supporting inter-band EN-DC including FR2 and UL MIMO | E043 | PC1  PC2 (NOTE 1)  PC3  PC4 (NOTE 1)  PC5 (NOTE 1) | NOTE 5  Skip TC 6.3B.2.4D if UE supports SA and TS 38.521-2 TC 6.3D.2 has been executed. |
| 6.3B.3.1 | Transmit ON/OFF time mask for intra-band contiguous EN-DC | Rel-15 | C009 | UEs supporting intra-band contiguous EN-DC (2UL CCs) | E003 |  | NOTE 5  Skip TC 6.3B.3.1 if UE supports SA and TS 38.521-1 TC 6.3.3.2 has been executed. |
| 6.3B.3.2 | Transmit ON/OFF time mask for intra-band non-contiguous EN-DC | Rel-15 | C010 | UEs supporting intra-band non-contiguous EN-DC (2UL CCs) | E004 |  | NOTE 5  Skip TC 6.3B.3.2 if UE supports SA and TS 38.521-1 TC 6.3.3.2 has been executed. |
| 6.3B.3.3 | Transmit ON/OFF time mask for inter-band EN-DC within FR1 (1 NR CC) | Rel-15 | C011b | UEs supporting inter-band EN-DC within FR1 with 1 NR UL CC | E005b |  | NOTE 5  Skip TC 6.3B.3.3 if UE supports SA and TS 38.521-1 TC 6.3.3.2 has been executed. |
| 6.3B.3.4 | Transmit ON/OFF time mask for inter-band EN-DC including FR2 (1 NR CC) | Rel-15 | C012 | UEs supporting inter-band EN-DC including FR2 with 1 NR UL CC | E010 |  | NOTE 5  Skip TC 6.3B.3.4 if UE supports SA and TS 38.521-2 TC 6.3.3.2 has been executed. |
| **6.3B.3.4\_1** | **Transmit ON/OFF time mask for inter-band EN-DC including FR2 (>1 NR CC)** |  |  |  |  |  |  |
| 6.3B.3.4\_1.1 | Transmit ON/OFF time mask for inter-band EN-DC including FR2 (2 NR CCs) | Rel-15 | C012b | UEs supporting inter-band EN-DC including FR2 with 2 NR UL CCs | E011 |  | NOTE 5  Skip TC 6.3B.3.4\_1.1 if UE supports SA and TS 38.521-2 TC 6.3A.3.1.1 has been executed. |
| 6.3B.3\_1.1 | E-UTRA and NR switching time mask for switching between two uplink carriers for inter-band EN-DC | Rel-16 | C126a | UEs supporting inter-band EN-DC within FR1 with 1 NR UL CC and dynamic UL Tx switching | E031b |  | NOTE 1 |
| 6.3B.4.1 | PRACH time mask for intra-band contiguous EN-DC | Rel-15 | C009 | UEs supporting intra-band contiguous EN-DC (2UL CCs) | E003 |  | NOTE 5  Skip TC 6.3B.4.1 if UE supports SA and TS 38.521-1 TC 6.3.3.4 has been executed. |
| 6.3B.4.2 | PRACH Time Mask for intra-band non-contiguous EN-DC | Rel-15 | C010 | UEs supporting intra-band non-contiguous EN-DC (2UL CCs) | E004 |  | NOTE 5  Skip TC 6.3B.4.2 if UE supports SA and TS 38.521-1 TC 6.3.3.4 has been executed. |
| 6.3B.4.3 | PRACH Time Mask for inter-band EN-DC within FR1 (1 NR CC) | Rel-15 | C011b | UEs supporting inter-band EN-DC within FR1 with 1 NR UL CC | E005b |  | NOTE 5  Skip TC 6.3B.4.3 if UE supports SA and TS 38.521-1 TC 6.3.3.4 has been executed. |
| 6.3B.4.4 | PRACH Time Mask for inter-band EN-DC including FR2 (1 NR CC) | Rel-15 | C012 | UEs supporting Inter-Band EN-DC including FR2 with 1 NR UL CC | E010 |  | NOTE 1  NOTE 5  Skip TC 6.3B.4.4 if UE supports SA and TS 38.521-2 TC 6.3.3.4 has been executed. |
| 6.3B.8.1.1 | Absolute Power Tolerance for intra-band contiguous EN-DC | Rel-15 | C009 | UEs supporting intra-band contiguous EN-DC (2 UL CCs) | E003 |  | NOTE 5  Skip TC 6.3B.8.1.1 if UE supports SA and TS 38.521-1 TC 6.3.4.2 has been executed. |
| 6.3B.8.1.2 | Absolute Power Tolerance for intra-band non-contiguous EN-DC | Rel-15 | C010 | UEs supporting intra-band non-contiguous EN-DC (2 UL CCs) | E004 |  | NOTE 5  Skip TC 6.3B.8.1.2 if UE supports SA and TS 38.521-1 TC 6.3.4.2 has been executed. |
| 6.3B.8.1.3 | Absolute Power Tolerance for inter-band EN-DC within FR1 (1 NR CC) | Rel-15 | C011b | UEs supporting inter-band EN-DC within FR1 with 1 NR UL CC | E005b |  | NOTE 5  Skip TC 6.3B.8.1.3 if UE supports SA and TS 38.521-1 TC 6.3.4.2 has been executed. |
| 6.3B.8.1.4 | Absolute Power Tolerance for inter-band EN-DC including FR2 (1 NR CC) | Rel-15 | C011b | UEs supporting inter-band EN-DC within FR1 with 1 NR UL CC | E005b |  | NOTE 5  Skip TC 6.3B.8.1.4 if UE supports SA and TS 38.521-2 TC 6.3.4.2 has been executed. |
| 6.3B.8.2.1 | Relative Power Tolerance for intra-band contiguous EN-DC | Rel-15 | C009 | UEs supporting intra-band contiguous EN-DC (2 UL CCs) | E003 |  | NOTE 5  Skip TC 6.3B.8.2.1 if UE supports SA and TS 38.521-1 TC 6.3.4.3 has been executed. |
| 6.3B.8.2.2 | Relative Power Tolerance for intra-band non-contiguous EN-DC | Rel-15 | C010 | UEs supporting intra-band non-contiguous EN-DC (2 UL CCs) | E004 |  | NOTE 5  Skip TC 6.3B.8.2.2 if UE supports SA and TS 38.521-1 TC 6.3.4.3 has been executed. |
| 6.3B.8.2.3 | Relative Power Tolerance for inter-band EN-DC within FR1 (1 NR CC) | Rel-15 | C011b | UEs supporting inter-band EN-DC within FR1 with 1 NR UL CC | E005b |  | NOTE 5  Skip TC 6.3B.8.2.3 if UE supports SA and TS 38.521-1 TC 6.3.4.3 has been executed. |
| 6.3B.8.2.4 | Relative Power Tolerance for inter-band EN-DC including FR2 (1 NR CC) | Rel-15 | FFS | FFS | FFS |  | NOTE 1 |
| 6.3B.8.3.1 | Aggregate Power Tolerance for intra-band contiguous EN-DC | Rel-15 | C009 | UEs supporting intra-band contiguous EN-DC (2 UL CCs) | E003 |  | NOTE 5  Skip TC 6.3B.8.3.1 if UE supports SA and TS 38.521-1 TC 6.3.4.4 has been executed. |
| 6.3B.8.3.2 | Aggregate Power Tolerance for intra-band non-contiguous EN-DC | Rel-15 | C010 | UEs supporting intra-band non-contiguous EN-DC (2 UL CCs) | E004 |  | NOTE 5  Skip TC 6.3B.8.3.2 if UE supports SA and TS 38.521-1 TC 6.3.4.4 has been executed. |
| 6.3B.8.3.3 | Aggregate Power Tolerance for inter-band EN-DC within FR1 (1 NR CC) | Rel-15 | C011b | UEs supporting inter-band EN-DC within FR1 with 1 NR UL CC | E005b |  | NOTE 5  Skip TC 6.3B.8.3.3 if UE supports SA and TS 38.521-1 TC 6.3.4.4 has been executed. |
| 6.3B.8.3.4 | Aggregate Power Tolerance for inter-band EN-DC including FR2 (1 NR CC) | Rel-15 | C011b | UEs supporting inter-band EN-DC within FR1 with 1 NR UL CC | E005b |  | NOTE 5  Skip TC 6.3B.8.3.4 if UE supports SA and TS 38.521-2 TC 6.3.4.4 has been executed. |
| **6.4B** | **Transmit Signal Quality for DC** |  |  |  |  |  |  |
| 6.4B.1.1 | Frequency Error for intra-band contiguous EN-DC | Rel-15 | C009 | UEs supporting Intra-Band Contiguous EN-DC (2UL CCs) | E003 |  | NOTE 5  Skip TC 6.4B.1.1 if UE supports SA and TS 38.521-1 TC 6.4.1 has been executed. |
| 6.4B.1.2 | Frequency Error for intra-band non-contiguous EN-DC | Rel-15 | C010 | UEs supporting intra-band non-contiguous EN-DC (2UL CCs) | E004 |  | NOTE 5  Skip TC 6.4B.1.2 if UE supports SA and TS 38.521-1 TC 6.4.1 has been executed. |
| 6.4B.1.3 | Frequency error for Inter-band EN-DC within FR1 (1 NR CC) | Rel-15 | C011b | UEs supporting inter-band EN-DC within FR1 with 1 NR UL CC | E005b |  | NOTE 5  Skip TC 6.4B.1.3 if UE supports SA and TS 38.521-1 TC 6.4.1 has been executed. |
| 6.4B.1.4 | Frequency Error for inter-band EN-DC including FR2 (1 NR CC) | Rel-15 | C012 | UEs supporting Inter-Band EN-DC including FR2 with 1 NR UL CC | E010 |  | NOTE 5  Skip TC 6.4B.1.4 if UE supports SA and TS 38.521-2 TC 6.4.1 has been executed. |
| **6.4B.1.4\_1** | **Frequency Error for Inter-band EN-DC including FR2 (>1 NR CC)** |  |  |  |  |  |  |
| 6.4B.1.4\_1.1 | Frequency Error for inter-band EN-DC including FR2 (2 NR CCs) | Rel-15 | C012b | UEs supporting Inter-Band EN-DC including FR2 with 2 NR UL CCs | E011 |  | NOTE 5  Skip TC 6.4B.1.4\_1.1 if UE supports SA and TS 38.521-2 TC 6.4A.1.1 has been executed. |
| 6.4B.1.4\_1.2 | Frequency Error for inter-band EN-DC including FR2 (3 NR CCs) | Rel-15 | C012c | UEs supporting Inter-Band EN-DC including FR2 with 3 NR UL CCs | E012 |  | NOTE 5  Skip TC 6.4B.1.4\_1.2 if UE supports SA and TS 38.521-2 TC 6.4A.1.2 has been executed. |
| 6.4B.1.4\_1.3 | Frequency Error for inter-band EN-DC including FR2 (4 NR CCs) | Rel-15 | C012d | UEs supporting Inter-Band EN-DC including FR2 with 4 NR UL CCs | E013 |  | NOTE 5  Skip TC 6.4B.1.4\_1.3 if UE supports SA and TS 38.521-2 TC 6.4A.1.3 has been executed. |
| 6.4B.2.1.1 | Error Vector Magnitude for intra-band contiguous EN-DC | Rel-15 | C009 | UEs supporting intra-band contiguous EN-DC (2UL CCs) | E003 |  | NOTE 5  Skip TC 6.4B.2.1.1 if UE supports SA and TS 38.521-1 TC 6.4.2.1 has been executed. |
| 6.4B.2.1.2 | Carrier Leakage for intra-band contiguous EN-DC | Rel-15 | C009 | UEs supporting intra-band contiguous EN-DC (2UL CCs) | E003 |  | NOTE 5  Skip TC 6.4B.2.1.2 if UE supports SA and TS 38.521-1 TC 6.4.2.2 has been executed. |
| 6.4B.2.1.3 | In-band Emissions for intra-band contiguous EN-DC | Rel-15 | C009 | UEs supporting intra-band contiguous EN-DC (2UL CCs) | E003 |  |  |
| 6.4B.2.1.4 | EVM Equalizer Flatness for intra-band contiguous EN-DC | Rel-15 | C009 | UEs supporting intra-band contiguous EN-DC (2UL CCs) | E003 |  | NOTE 5  Skip TC 6.4B.2.1.4 if UE supports SA and TS 38.521-1 TC 6.4.2.4 has been executed. |
| 6.4B.2.2.1 | Error Vector Magnitude for intra-band non-contiguous EN-DC | Rel-15 | C010 | UEs supporting intra-band non-contiguous EN-DC (2UL CCs) | E004 |  | NOTE 5  Skip TC 6.4B.2.2.1 if UE supports SA and TS 38.521-1 TC 6.4.2.1 has been executed. |
| 6.4B.2.2.2 | Carrier Leakage for intra-band non-contiguous EN-DC | Rel-15 | C010 | UEs supporting intra-band non-contiguous EN-DC (2UL CCs) | E004 |  | NOTE 5  Skip TC 6.4B.2.2.2 if UE supports SA and TS 38.521-1 TC 6.4.2.2has been executed. |
| 6.4B.2.2.3 | In-band Emissions for intra-band non-contiguous EN-DC | Rel-15 | C010 | UEs supporting intra-band non-contiguous EN-DC (2UL CCs) | E004 |  | NOTE 5  Skip TC 6.4B.2.2.3 if UE supports SA and TS 38.521-1 TC 6.4.2.3 has been executed. |
| 6.4B.2.2.4 | EVM Equalizer Flatness for intra-band non-contiguous EN-DC | Rel-15 | C010 | UEs supporting intra-band non-contiguous EN-DC (2UL CCs) | E004 |  | NOTE 5  Skip TC 6.4B.2.2.4 if UE supports SA and TS 38.521-1 TC 6.4.2.4 has been executed. |
| 6.4B.2.3.1 | Error Vector Magnitude for inter-band EN-DC within FR1 (1 NR CC) | Rel-15 | C011b | UEs supporting inter-band EN-DC within FR1 with 1 NR UL CC | E005b |  | NOTE 5  Skip TC 6.4B.2.3.1 if UE supports SA and TS 38.521-1 TC 6.4.2.1 has been executed. |
| 6.4B.2.3.2 | Carrier Leakage for inter-band EN-DC within FR1 (1 NR CC) | Rel-15 | C011b | UEs supporting inter-band EN-DC within FR1 with 1 NR UL CC | E005b |  | NOTE 5  Skip TC 6.4B.2.3.2 if UE supports SA and TS 38.521-1 TC 6.4.2.2 has been executed. |
| 6.4B.2.3.3 | In-band Emissions for inter-band EN-DC within FR1 (1 NR CC) | Rel-15 | C011b | UEs supporting inter-band EN-DC within FR1 with 1 NR UL CC | E005b |  | NOTE 5  Skip TC 6.4B.2.3.3 if UE supports SA and TS 38.521-1 TC 6.4.2.3 has been executed. |
| 6.4B.2.3.4 | EVM Equalizer Flatness for inter-band EN-DC within FR1 (1 NR CC) | Rel-15 | C011b | UEs supporting inter-band EN-DC within FR1 with 1 NR UL CC | E005b |  | NOTE 5  Skip TC 6.4B.2.3.4 if UE supports SA and TS 38.521-1 TC 6.4.2.4 has been executed. |
| 6.4B.2.4.1 | Error Vector Magnitude for inter-band EN-DC including FR2 (1 NR CC) | Rel-15 | C012 | UEs supporting Inter-band including FR2 with 1 NR UL CC | E010 |  | NOTE 1  NOTE 5  Skip TC 6.4B.2.4.1 if UE supports SA and TS 38.521-2 TC 6.4.2.1 has been executed. |
| 6.4B.2.4.1a | Error Vector Magnitude with Power Boost for inter-band EN-DC including FR2 (1 NR CC) | Rel-16 | C012w | UEs supporting inter-band EN-DC including FR2 with 1 NR UL CC and *mpr-PowerBoost-FR2-r16* | E010 | PC1  PC2  PC3  PC4 | NOTE 1  NOTE 5  Skip TC 6.4B.2.4.1a if UE supports SA and TS 38.521-2 TC 6.4.2.1\_1 has been executed. |
| **6.4B.2.4.1\_1** | **Error Vector Magnitude for inter-band EN-DC including FR2** **(>1 NR CC)** |  |  |  |  |  |  |
| 6.4B.2.4.1\_1.1 | Error Vector Magnitude for inter-band EN-DC including FR2 (2 NR CCs) | Rel-15 | FFS | FFS | FFS |  | NOTE 1  NOTE 5  Skip TC 6.4B.2.4.1\_1.1 if UE supports SA and TS 38.521-2 TC 6.4A.2.1.1 has been executed. |
| 6.4B.2.4.1\_1.2 | Error Vector Magnitude for inter-band EN-DC including FR2 (3 NR CCs) | Rel-15 | FFS | FFS | FFS |  | NOTE 1  NOTE 5  Skip TC 6.4B.2.4.1\_1.2 if UE supports SA and TS 38.521-2 TC 6.4A.2.1.2 has been executed. |
| 6.4B.2.4.1\_1.3 | Error Vector Magnitude for inter-band EN-DC including FR2 (4 NR CCs) | Rel-15 | FFS | FFS | FFS |  | NOTE 1  NOTE 5  Skip TC 6.4B.2.4.1\_1.3 if UE supports SA and TS 38.521-2 TC 6.4A.2.1.3 has been executed. |
| 6.4B.2.4.1D | Error Vector Magnitude for inter-band EN-DC including FR2 for UL MIMO | FFS | FFS | FFS | FFS |  | NOTE 1 |
| 6.4B.2.4.2 | Carrier Leakage for inter-band EN-DC including FR2 (1 NR CC) | Rel-15 | C012 | UEs supporting Inter-band including FR2 with 1 NR UL CC | E010 |  | NOTE 5  Skip TC 6.4B.2.4.2 if UE supports SA and TS 38.521-2 TC 6.4.2.2 has been executed. |
| **6.4B.2.4.2\_1** | **Carrier Leakage for inter-band EN-DC including FR2 (>1 NR CC)** |  |  |  |  |  |  |
| 6.4B.2.4.2\_1.1 | Carrier Leakage for inter-band EN-DC including FR2 (2 NR CCs) | Rel-15 | FFS | FFS | FFS |  | NOTE 1  NOTE 5  Skip TC 6.4B.2.4.2\_1.1 if UE supports SA and TS 38.521-2 TC 6.4A.2.2.1 has been executed. |
| 6.4B.2.4.2\_1.2 | Carrier Leakage for inter-band EN-DC including FR2 (3 NR CCs) | Rel-15 | FFS | FFS | FFS |  | NOTE 1  NOTE 5  Skip TC 6.4B.2.4.2\_1.2 if UE supports SA and TS 38.521-2 TC 6.4A.2.2.2 has been executed. |
| 6.4B.2.4.2\_1.3 | Carrier Leakage for inter-band EN-DC including FR2 (4 NR CCs) | Rel-15 | FFS | FFS | FFS |  | NOTE 1  NOTE 5  Skip TC 6.4B.2.4.2\_1.3 if UE supports SA and TS 38.521-2 TC 6.4A.2.2.3 has been executed. |
| 6.4B.2.4.2D | Carrier Leakage for inter-band EN-DC including FR2 for UL MIMO | FFS | FFS | FFS | FFS |  | NOTE 1 |
| 6.4B.2.4.3 | In-band Emissions for inter-band EN-DC including FR2 (1 NR CC) | Rel-15 | C012 | UEs supporting Inter-band including FR2 with 1 NR UL CC | E010 |  | NOTE 1  NOTE 5  Skip TC 6.4B.2.4.3 if UE supports SA and TS 38.521-2 TC 6.4.2.3 has been executed. |
| 6.4B.2.4.3D | In-band Emissions for inter-band EN-DC including FR2 for UL MIMO | FFS | FFS | FFS | FFS |  | NOTE 1 |
| **6.4B.2.4.3\_1** | **In-band Emissions for inter-band EN-DC including FR2 (>1 NR CC)** |  |  |  |  |  |  |
| 6.4B.2.4.3\_1.1 | In-band Emissions for inter-band EN-DC including FR2 (2 NR CCs) | FFS | FFS | FFS | FFS |  | NOTE 1 |
| 6.4B.2.4.3\_1.2 | In-band Emissions for inter-band EN-DC including FR2 (3 NR CCs) | FFS | FFS | FFS | FFS |  | NOTE 1 |
| 6.4B.2.4.3\_1.3 | In-band Emissions for inter-band EN-DC including FR2 (4 NR CCs) | FFS | FFS | FFS | FFS |  | NOTE 1 |
| 6.4B.2.4.4 | EVM Equalizer Flatness for inter-band EN-DC including FR2 (1 NR CC) | Rel-15 | C012 | UEs supporting Inter-band including FR2 with 1 NR UL CC | E010 |  | NOTE 1  NOTE 5  Skip TC 6.4B.2.4.4 if UE supports SA and TS 38.521-2 TC 6.4.2.4 has been executed. |
| 6.4B.2.4.4D | EVM Equalizer Flatness for inter-band EN-DC including FR2 for UL MIMO | FFS | FFS | FFS | FFS |  | NOTE 1 |
| 6.4B.2.4.5 | EVM spectral flatness for pi/2 BPSK modulation for inter-band EN-DC including FR2 (1 NR CC) | Rel-15 | C012f | UEs supporting Inter-band including FR2 with 1 NR UL CC and pi/2 BPSK modulation | E010 |  | NOTE 1  NOTE 5  Skip TC 6.4B.2.4.5 if UE supports SA and TS 38.521-2 TC 6.4.2.5 has been executed. |
| **6.5B** | **Output RF spectrum emissions for DC** |  |  |  |  |  |  |
| 6.5B.1.1 | Occupied bandwidth for Intra-Band Contiguous EN-DC | Rel-15 | C009 | UEs supporting intra-band contiguous EN-DC (2UL CCs) | E003 |  | NOTE 1 |
| 6.5B.1.2 | Occupied bandwidth for Intra-Band Non-Contiguous EN-DC | Rel-15 | C010 | UEs supporting intra-band non-contiguous EN-DC (2UL CCs) | E004 |  | NOTE 1  NOTE 5  Skip TC 6.5B.1.2 if UE supports SA and TS 38.521-1 TC 6.5.1 has been executed. |
| 6.5B.1.3 | Occupied bandwidth for Inter-Band EN-DC within FR1 (1 NR CC) | Rel-15 | C011b | UEs supporting inter-band EN-DC within FR1 with 1 NR UL CC | E005b |  | NOTE 5  Skip TC 6.5B.1.3 if UE supports SA and TS 38.521-1 TC 6.5.1 has been executed. |
| 6.5B.1.4 | Occupied bandwidth for Inter-Band EN-DC including FR2 (1 NR CC) | Rel-15 | C012 | UEs supporting Inter-band including FR2 with 1 NR UL CC | E010 |  | NOTE 5  Skip TC 6.5B.1.4 if UE supports SA and TS 38.521-2 TC 6.5.1 has been executed. |
| 6.5B.1.4D | Occupied bandwidth for inter-band EN-DC including FR2 for UL MIMO | FFS | FFS | FFS | FFS |  | NOTE 1 |
| **6.5B.1.4\_1** | **Occupied bandwidth for Inter-band EN-DC including FR2 (>1 NR CC)** |  |  |  |  |  |  |
| 6.5B.1.4\_1.1 | Occupied bandwidth for inter-band EN-DC including FR2 (2 NR CCs) | Rel-15 | FFS | FFS | FFS |  | NOTE 1  NOTE 5  Skip TC 6.5B.1.4\_1.1 if UE supports SA and TS 38.521-2 TC 6.5A.1.1 has been executed. |
| 6.5B.1.4\_1.2 | Occupied bandwidth for inter-band EN-DC including FR2 (3 NR CCs) | Rel-15 | FFS | FFS | FFS |  | NOTE 1  NOTE 5  Skip TC 6.5B.1.4\_1.2 if UE supports SA and TS 38.521-2 TC 6.5A.1.2 has been executed. |
| 6.5B.1.4\_1.3 | Occupied bandwidth for inter-band EN-DC including FR2 (4 NR CCs) | Rel-15 | FFS | FFS | FFS |  | NOTE 1  NOTE 5  Skip TC 6.5B.1.4\_1.3 if UE supports SA and TS 38.521-2 TC 6.5A.1.3 has been executed. |
| 6.5B.2.1.1 | Spectrum emissions mask for intra-band contiguous EN-DC | Rel-15 | C009 | UEs supporting intra-band contiguous EN-DC (2UL CCs) | E003 |  |  |
| 6.5B.2.1.2 | Additional spectrum emissions mask for intra-band contiguous EN-DC | Rel-15 | C009 | UEs supporting intra-band contiguous EN-DC (2UL CCs) | E003 |  |  |
| 6.5B.2.1.3 | Adjacent channel leakage ratio for intra-band contiguous EN-DC | Rel-15 | C009 | UEs supporting intra-band contiguous EN-DC (2UL CCs) | E003 |  |  |
| 6.5B.2.2.1 | Spectrum emissions mask for intra-band non-contiguous EN-DC | Rel-15 | C010 | UEs supporting intra-band non-contiguous EN-DC (2UL CCs) | E004 |  |  |
| 6.5B.2.2.2 | Additional Spectrum emissions mask for intra-band non-contiguous EN-DC | FFS | FFS | FFS | FFS |  | NOTE 1 |
| 6.5B.2.2.3 | Adjacent channel leakage ratio for intra-band non-contiguous EN-DC | Rel-15 | C010 | UEs supporting intra-band non-contiguous EN-DC (2UL CCs) | E004 |  |  |
| 6.5B.2.3.1 | Spectrum emissions mask for Inter-band EN-DC within FR1 (1 NR CC) | Rel-15 | C011b | UEs supporting Inter-band EN-DC within FR1 with 1 NR UL CC | E005b |  | NOTE 5  Skip TC 6.5B.2.3.1 if UE supports SA and TS 38.521-1 TC 6.5.2.2 has been executed. |
| 6.5B.2.3.2 | Additional Spectrum emissions mask for Inter-band EN-DC within FR1 (1 NR CC) | Rel-15 | C011b | UEs supporting Inter-band EN-DC within FR1 with 1 NR UL CC | E005b |  | NOTE 5  Skip TC 6.5B.2.3.2 if UE supports SA and TS 38.521-1 TC 6.5.2.3 has been executed. |
| 6.5B.2.3.3.1 | NR - Adjacent channel leakage ratio for inter-band EN-DC within FR1 (1 NR CC) | Rel-15 | C011b | UEs supporting Inter-band EN-DC within FR1 with 1 NR UL CC | E005b |  | NOTE 5  Skip TC 6.5B.2.3.3.1 if UE supports SA and TS 38.521-1 TC 6.5.2.4.1 has been executed. |
| 6.5B.2.3.3.2 | UTRA - Adjacent channel leakage ratio for inter-band EN-DC within FR1 (1 NR CC) | Rel-15 | C011b | UEs supporting Inter-band EN-DC within FR1 with 1 NR UL CC | E005b |  | NOTE 5  Skip TC 6.5B.2.3.3.2 if UE supports SA and TS 38.521-1 TC 6.5.2.4.2 has been executed. |
| 6.5B.2.4.1 | Spectrum emissions mask for Inter-band EN-DC including FR2 (1 NR CC) | Rel-15 | C012 | UEs supporting Inter-band including FR2 with 1 NR UL CC | E010 |  | NOTE 5  Skip TC 6.5B.2.4.1 if UE supports SA and TS 38.521-2 TC 6.5.2.1 has been executed. |
| 6.5B.2.4.1a | Spectrum emissions mask with Power Boost for Inter-band EN-DC including FR2 (1 NR CC) | Rel-16 | C012w | UEs supporting inter-band EN-DC including FR2 with 1 NR UL CC and *mpr-PowerBoost-FR2-r16* | E010 | PC1 (NOTE 1)  PC2 (NOTE 1)  PC3  PC4 (NOTE 1) | NOTE 5  Skip TC 6.5B.2.4.1a if UE supports SA and TS 38.521-2 TC 6.5.2.1\_1 has been executed. |
| **6.5B.2.4.1\_1** | **Spectrum emissions mask for Inter-band EN-DC including FR2 (>1 NR CC)** |  |  |  |  |  |  |
| 6.5B.2.4.1\_1.1 | Spectrum emissions mask for Inter-band EN-DC including FR2 (2 NR CCs) | Rel-15 | C012b | UEs supporting Inter-Band EN-DC including FR2 with 2 NR UL CCs | E011 |  | NOTE 5  Skip TC 6.5B.2.4.1\_1.1 if UE supports SA and TS 38.521-2 TC 6.5A.2.1.1 has been executed. |
| 6.5B.2.4.1\_1.2 | Spectrum emissions mask for Inter-band EN-DC including FR2 (3 NR CCs) | Rel-15 | C012c | UEs supporting Inter-Band EN-DC including FR2 with 3 NR UL CCs | E012 |  | NOTE 5  Skip TC 6.5B.2.4.1\_1.2 if UE supports SA and TS 38.521-2 TC 6.5A.2.1.2 has been executed. |
| 6.5B.2.4.1\_1.3 | Spectrum emissions mask for Inter-band EN-DC including FR2 (4 NR CCs) | Rel-15 | C012d | UEs supporting Inter-Band EN-DC including FR2 with 4 NR UL CCs | E013 |  | NOTE 5  Skip TC 6.5B.2.4.1\_1.3 if UE supports SA and TS 38.521-2 TC 6.5A.2.1.3 has been executed. |
| 6.5B.2.4.3 | Adjacent channel leakage ratio for Inter-band EN-DC including FR2 (1 NR CC) | Rel-15 | C012 | UEs supporting Inter-band including FR2 with 1 NR UL CC | E010 |  | NOTE 5  Skip TC 6.5B.2.4.3 if UE supports SA and TS 38.521-2 TC 6.5.2.3 has been executed. |
| **6.5B.2.4.3\_1** | **Adjacent channel leakage ratio for Inter-band EN-DC including FR2 (>1 NR CC)** |  |  |  |  |  |  |
| 6.5B.2.4.3\_1.1 | Adjacent channel leakage ratio for Inter-band EN-DC including FR2 (2 NR CCs) | Rel-15 | C012b | UEs supporting Inter-Band EN-DC including FR2 with 2 NR UL CCs | E011 |  | NOTE 5  Skip TC 6.5B.2.4.3\_1.1 if UE supports SA and TS 38.521-2 TC 6.5A.2.2.1 has been executed. |
| 6.5B.2.4.3\_1.2 | Adjacent channel leakage ratio for Inter-band EN-DC including FR2 (3 NR CCs) | Rel-15 | C012c | UEs supporting Inter-Band EN-DC including FR2 with 3 NR UL CCs | E012 |  | NOTE 5  Skip TC 6.5B.2.4.3\_1.2 if UE supports SA and TS 38.521-2 TC 6.5A.2.2.2 has been executed. |
| 6.5B.2.4.3\_1.3 | Adjacent channel leakage ratio for Inter-band EN-DC including FR2 (4 NR CCs) | Rel-15 | C012d | UEs supporting Inter-Band EN-DC including FR2 with 4 NR UL CCs | E013 |  | NOTE 5  Skip TC 6.5B.2.4.3\_1.3 if UE supports SA and TS 38.521-2 TC 6.5A.2.2.3 has been executed. |
| 6.5B.2.4.3\_1.4 | Adjacent channel leakage ratio for Inter-band EN-DC including FR2 (5 NR CCs) | Rel-15 | C012i | UEs supporting Inter-Band EN-DC including FR2 with 5 NR UL CCs | E014a |  | NOTE 1  NOTE 5  Skip TC 6.5B.2.4.3\_1.4 if UE supports SA and TS 38.521-2 TC 6.5A.2.2.4 has been executed. |
| 6.5B.2.4.3\_1.5 | Adjacent channel leakage ratio for Inter-band EN-DC including FR2 (6 NR CCs) | Rel-15 | C012j | UEs supporting Inter-Band EN-DC including FR2 with 6 NR UL CCs | E039 |  | NOTE 1  NOTE 5  Skip TC 6.5B.2.4.3\_1.5 if UE supports SA and TS 38.521-2 TC 6.5A.2.2.5 has been executed. |
| 6.5B.2.4.3\_1.6 | Adjacent channel leakage ratio for Inter-band EN-DC including FR2 (7 NR CCs) | Rel-15 | C012k | UEs supporting Inter-Band EN-DC including FR2 with 7 NR UL CCs | E040 |  | NOTE 1  NOTE 5  Skip TC 6.5B.2.4.3\_1.6 if UE supports SA and TS 38.521-2 TC 6.5A.2.2.6 has been executed. |
| 6.5B.2.4.3\_1.7 | Adjacent channel leakage ratio for Inter-band EN-DC including FR2 (8 NR CCs) | Rel-15 | C012l | UEs supporting Inter-Band EN-DC including FR2 with 8 NR UL CCs | E041 |  | NOTE 1  NOTE 5  Skip TC 6.5B.2.4.3\_1.7 if UE supports SA and TS 38.521-2 TC 6.5A.2.2.7 has been |
| 6.5B.2.4D.3 | Adjacent channel leakage ratio for inter-band EN-DC including FR2 for UL MIMO | FFS | FFS | FFS | FFS |  | NOTE 1 |
| 6.5B.3.1.1 | General spurious emissions for intra-band contiguous EN-DC | Rel-15 | C009 | UEs supporting intra-band contiguous EN-DC (2UL CCs) | E003 |  | NOTE 5  Skip TC 6.5B.3.1.1 if UE supports SA and TS 38.521-1 TC 6.5.3.1 has been executed. |
| 6.5B.3.1.2 | Spurious emission band UE co-existence for intra-band contiguous EN-DC | Rel-15 | C009 | UEs supporting intra-band contiguous EN-DC (2UL CCs) | E003 |  |  |
| 6.5B.3.2.1 | General spurious emissions for intra-band non-contiguous EN-DC | Rel-15 | C010 | UEs supporting intra-band non-contiguous EN-DC (2UL CCs) | E004 |  | NOTE 5  Skip TC 6.5B.3.2.1 if UE supports SA and TS 38.521-1 TC 6.5.3.1 has been executed. |
| 6.5B.3.2.2 | Spurious emission band UE co-existence for intra-band non-contiguous EN-DC | Rel-15 | C010 | UEs supporting intra-band non-contiguous EN-DC (2UL CCs) | E004 |  |  |
| 6.5B.3.3.1 | General spurious emissions for Inter-band EN-DC within FR1 | Rel-15 | C011 | UEs supporting Inter-band EN-DC within FR1 (2UL CCs) | E005 |  | Test only one EN-DC combination per 5G NR band.  Skip LTE anchor agnostic approach testing in TC 6.5B.3.3.1 if UE supports SA and TS 38.521-1 TC 6.5.3.1 has been executed. |
| 6.5B.3.3.2 | Spurious emission band UE co-existence for Inter-band within FR1 | Rel-15 | C011 | UEs supporting Inter-band EN-DC within FR1 (2UL CCs) | E005 |  | For LTE anchor agnostic approach testing in TC 6.5B.3.3.2:  1. NOTE 5 applied.  2. Skip the testing if UE supports SA and TS 38.521-1 TC 6.5.3.2 has been executed. |
| 6.5B.3.4.1 | General Spurious Emissions for Inter-band including FR2 (1 NR CC) | Rel-15 | C012 | UEs supporting Inter-band including FR2 with 1 NR UL CC | E010 |  | NOTE 5  Skip TC 6.5B.3.4.1 if UE supports SA and TS 38.521-2 TC 6.5.3.1 has been executed. |
| 6.5B.3.4.1a | General Spurious Emissions with Power Boost for Inter-band including FR2 (1 NR CC) | Rel-16 | C012w | UEs supporting inter-band EN-DC including FR2 with 1 NR UL CC and *mpr-PowerBoost-FR2-r16* | E010 | PC1 (NOTE 1)  PC2 (NOTE 1)  PC3  PC4 (NOTE 1) | NOTE 5  Skip TC 6.5B.3.4.1a if UE supports SA and TS 38.521-2 TC 6.5.3.1\_1 has been executed. |
| **6.5B.3.4.1\_1** | **General Spurious emissions for Inter-band EN-DC including FR2 (>1 NR CC)** |  |  |  |  |  |  |
| 6.5B.3.4.1\_1.1 | General Spurious Emissions for Inter-band EN-DC including FR2 (2 NR CCs) | Rel-15 | C012b | UEs supporting Inter-Band EN-DC including FR2 with 2 NR UL CCs | E011 |  | NOTE 5  Skip TC 6.5B.3.4.1\_1.1 if UE supports SA and TS 38.521-2 TC 6.5A.3.1.1 has been executed. |
| 6.5B.3.4.1\_1.2 | General Spurious Emissions for Inter-band EN-DC including FR2 (3 NR CCs) | Rel-15 | C012c | UEs supporting Inter-Band EN-DC including FR2 with 3 NR UL CCs | E012 |  | NOTE 5  Skip TC 6.5B.3.4.1\_1.2 if UE supports SA and TS 38.521-2 TC 6.5A.3.1.2 has been executed. |
| 6.5B.3.4.1\_1.3 | General Spurious Emissions for Inter-band EN-DC including FR2 (4 NR CCs) | Rel-15 | C012d | UEs supporting Inter-Band EN-DC including FR2 with 4 NR UL CCs | E013 |  | NOTE 5  Skip TC 6.5B.3.4.1\_1.3 if UE supports SA and TS 38.521-2 TC 6.5A.3.1.3 has been executed. |
| 6.5B.3.4.1\_1.4 | General Spurious Emissions for Inter-band EN-DC including FR2 (5 NR CCs) | Rel-15 | C012i | UEs supporting Inter-Band EN-DC including FR2 with 5 NR UL CCs | E014a |  | NOTE 5  Skip TC 6.5B.3.4.1\_1.4 if UE supports SA and TS 38.521-2 TC 6.5A.3.1.4 has been executed. |
| 6.5B.3.4.1\_1.5 | General Spurious Emissions for Inter-band EN-DC including FR2 (6 NR CCs) | Rel-15 | C012j | UEs supporting Inter-Band EN-DC including FR2 with 6 NR UL CCs | E039 |  | NOTE 5  Skip TC 6.5B.3.4.1\_1.5 if UE supports SA and TS 38.521-2 TC 6.5A.3.1.5 has been executed. |
| 6.5B.3.4.1\_1.6 | General Spurious Emissions for Inter-band EN-DC including FR2 (7 NR CCs) | Rel-15 | C012k | UEs supporting Inter-Band EN-DC including FR2 with 7 NR UL CCs | E040 |  | NOTE 5  Skip TC 6.5B.3.4.1\_1.6 if UE supports SA and TS 38.521-2 TC 6.5A.3.1.6 has been executed. |
| 6.5B.3.4.1\_1.7 | General Spurious Emissions for Inter-band EN-DC including FR2 (8 NR CCs) | Rel-15 | C012l | UEs supporting Inter-Band EN-DC including FR2 with 8 NR UL CCs | E041 |  | NOTE 5  Skip TC 6.5B.3.4.1\_1.7 if UE supports SA and TS 38.521-2 TC 6.5A.3.1.7 has been executed. |
| 6.5B.3.4.1D | General Spurious Emissions for inter-band EN-DC including FR2 for UL MIMO | FFS | FFS | FFS | FFS |  | NOTE 1 |
| 6.5B.3.4.2 | Spurious emission band UE co-existence for Inter-band including FR2 (1 NR CC) | Rel-15 | C012 | UEs supporting Inter-band including FR2 with 1 NR UL CC | E010 |  | NOTE 5  Skip TC 6.5B.3.4.2 if UE supports SA and TS 38.521-2 TC 6.5.3.2 has been executed. |
| 6.5B.3.4.2a | Spurious emission band UE co-existence with Power Boost for Inter-band including FR2 (1 NR CC) | Rel-16 | C012w | UEs supporting inter-band EN-DC including FR2 with 1 NR UL CC and *mpr-PowerBoost-FR2-r16* | E010 | PC1 (NOTE 1)  PC2 (NOTE 1)  PC3  PC4 (NOTE 1) | NOTE 5  Skip TC 6.5B.3.4.2a if UE supports SA and TS 38.521-2 TC 6.5.3.2\_1 has been executed. |
| **6.5B.3.4.2\_1** | **Spurious emission band UE co-existence for Inter-band including FR2 (>1 NR CC)** |  |  |  |  |  |  |
| 6.5B.3.4.2\_1.1 | Spurious emission band UE co-existence for Inter-band EN-DC including FR2 (2NR CCs) | Rel-15 | C012b | UEs supporting Inter-Band EN-DC including FR2 with 2 NR UL CCs | E011 |  | NOTE 5  Skip TC 6.5B.3.4.2\_1.1 if UE supports SA and TS 38.521-2 TC 6.5A.3.2.1 has been executed. |
| 6.5B.3.4.2\_1.2 | Spurious emission band UE co-existence for Inter-band EN-DC including FR2 (3NR CCs) | Rel-15 | C012c | UEs supporting Inter-Band EN-DC including FR2 with 3 NR UL CCs | E012 |  | NOTE 5  Skip TC 6.5B.3.4.2\_1.2 if UE supports SA and TS 38.521-2 TC 6.5A.3.2.2 has been executed. |
| 6.5B.3.4.2\_1.3 | Spurious emission band UE co-existence for Inter-band EN-DC including FR2 (4NR CCs) | Rel-15 | C012d | UEs supporting Inter-Band EN-DC including FR2 with 4 NR UL CCs | E013 |  | NOTE 5  Skip TC 6.5B.3.4.2\_1.3 if UE supports SA and TS 38.521-2 TC 6.5A.3.2.3 has been executed. |
| 6.5B.3.4.2\_1.4 | Spurious emission band UE co-existence for Inter-band EN-DC including FR2 (5 NR CCs) | Rel-15 | C012i | UEs supporting Inter-Band EN-DC including FR2 with 5 NR UL CCs | E014a |  | NOTE 5  Skip TC 6.5B.3.4.2\_1.4 if UE supports SA and TS 38.521-2 TC 6.5A.3.2.4 has been executed. |
| 6.5B.3.4.2\_1.5 | Spurious emission band UE co-existence for Inter-band EN-DC including FR2 (6 NR CCs) | Rel-15 | C012j | UEs supporting Inter-Band EN-DC including FR2 with 6 NR UL CCs | E039 |  | NOTE 5  Skip TC 6.5B.3.4.2\_1.5 if UE supports SA and TS 38.521-2 TC 6.5A.3.2.5 has been executed. |
| 6.5B.3.4.2\_1.6 | Spurious emission band UE co-existence for Inter-band EN-DC including FR2 (7 NR CCs) | Rel-15 | C012k | UEs supporting Inter-Band EN-DC including FR2 with 7 NR UL CCs | E040 |  | NOTE 5  Skip TC 6.5B.3.4.2\_1.6 if UE supports SA and TS 38.521-2 TC 6.5A.3.2.6 has been executed. |
| 6.5B.3.4.2\_1.7 | Spurious emission band UE co-existence for Inter-band EN-DC including FR2 (8 NR CCs) | Rel-15 | C012l | UEs supporting Inter-Band EN-DC including FR2 with 8 NR UL CCs | E041 |  | NOTE 5  Skip TC 6.5B.3.4.2\_1.7 if UE supports SA and TS 38.521-2 TC 6.5A.3.2.7 has been executed. |
| 6.5B.4.1 | Additional Spurious Emissions for Intra-band contiguous EN-DC | Rel-15 | C009 | UEs supporting intra-band contiguous EN-DC (2UL CCs) | E003 |  |  |
| 6.5B.4.2 | Additional Spurious Emissions for Intra-band non-contiguous EN-DC | Rel-15 | C010 | UEs supporting intra-band non-contiguous EN-DC (2UL CCs) | E004 |  | NOTE 1 |
| 6.5B.4.3 | Additional Spurious Emissions for Inter-band EN-DC within FR1 (1 NR CC) | Rel-15 | C011b | UEs supporting inter-band EN-DC within FR1 with 1 NR UL CC | E005b |  | NOTE 5  Skip TC 6.5B.4.3 if UE supports SA and TS 38.521-1 TC 6.5.3.3 has been executed. |
| 6.5B.4.4 | Additional Spurious Emissions for Inter-band including FR2 (1 NR CC) | Rel-15 | C012 | UEs supporting Inter-band including FR2 with 1 NR UL CC | E010 |  | NOTE 5  Skip TC 6.5B.4.4 if UE supports SA and TS 38.521-2 TC 6.5.3.3 has been executed. |
| 6.5B.4.4a | Additional Spurious Emissions with Power Boost for Inter-band including FR2 (1 NR CC) | Rel-16 | C012w | UEs supporting inter-band EN-DC including FR2 with 1 NR UL CC and *mpr-PowerBoost-FR2-r16* | E010 | PC1 (NOTE 1)  PC2 (NOTE 1)  PC3  PC4 (NOTE 1) | NOTE 5  Skip TC 6.5B.4.4a if UE supports SA and TS 38.521-2 TC 6.5.3.3\_1 has been executed. |
| **6.5B.4.4\_1** | **Additional Spurious Emissions for Inter-band including FR2 (>1 NR CC)** |  |  |  |  |  |  |
| 6.5B.4.4\_1.1 | Additional Spurious Emissions for Inter-band including FR2 (2 NR CC) | Rel-15 | C012b | UEs supporting Inter-Band EN-DC including FR2 with 2 NR UL CCs | E011 | PC1 | NOTE 5  Skip TC 6.5B.4.4\_1.1 if UE supports SA and TS 38.521-2 TC 6.5A.3.3.1 has been executed. |
| 6.5B.4.4\_1.2 | Additional Spurious Emissions for Inter-band including FR2 (3 NR CC) | Rel-15 | C012c | UEs supporting Inter-Band EN-DC including FR2 with 3 NR UL CCs | E012 | PC1 | NOTE 5  Skip TC 6.5B.4.4.1\_1.2 if UE supports SA and TS 38.521-2 TC 6.5A.3.3.2 has been executed. |
| 6.5B.4.4\_1.3 | Additional Spurious Emissions for Inter-band including FR2 (4 NR CC) | Rel-15 | C012d | UEs supporting Inter-Band EN-DC including FR2 with 4 NR UL CCs | E013 | PC1 | NOTE 5  Skip TC 6.5B.4.4.1\_1.3 if UE supports SA and TS 38.521-2 TC 6.5A.3.3.3 has been executed. |
| 6.5B.5.3 | Transmit Intermodulation for Inter-band EN-DC within FR1 (1 NR CC) | Rel-15 | C011b | UEs supporting Inter-band EN-DC within FR1 with 1 NR UL CC | E005b |  | NOTE 5  Skip TC 6.5B.5.3 if UE supports SA and TS 38.521-1 TC 6.5.4 has been executed. |
| 6.6B.4 | Beam Correspondence for inter-band EN-DC including FR2 (1 NR CC) - EIRP | Rel-15 | C011b | UEs supporting Inter-band EN-DC within FR2 with 1 NR UL CC and not beam correspondence without UL beam sweeping and release 16 and forward UEs that do not support SSB-based or CSI-RS based enhanced beam correspondence and do not support enhanced beam correspondence without UL beam sweeping | E005b |  | NOTE 1  NOTE 5  Skip TC 6.6B.4 if UE supports SA and TS 38.521-2 TC 6.6.1 has been executed. |
| 6.6B.5 | Enhanced Beam correspondence for inter-band EN-DC including FR2 (1 NR CC) - EIRP | Rel-16 | C011b | UEs supporting Inter-band EN-DC within FR2 with 1 NR UL CC and support either CSI-RS or SSB based beam correspondence and do not support beam correspondence without UL beam sweeping | E005b |  | NOTE 1  NOTE 5  Skip TC 6.6B.5 if UE supports SA and TS 38.521-2 TC 6.6.2 has been executed. |
| **7** | **Receiver Characteristics** |  |  |  |  |  |  |
| **7.3B** | **Reference sensitivity level for DC** |  |  |  |  |  |  |
| 7.3B.2.1 | Reference sensitivity for intra-band contiguous EN-DC (2 CCs) | Rel-15 | C009a | UEs supporting intra-band contiguous EN-DC (2DL CCs) | E003a |  |  |
| 7.3B.2.2 | Reference sensitivity for Intra-band non-contiguous EN-DC (2 CCs) | Rel-15 | C010a | UEs supporting intra-band non-contiguous EN-DC (2DL CCs) | E004a |  | NOTE 5  Skip TC 7.3B.2.2 if UE supports SA and TS 38.521-1 TC 7.3.2 has been executed. |
| 7.3B.2.3 | Reference sensitivity for Inter-band EN-DC within FR1 (2 CCs) | Rel-15 | C011a | UEs supporting inter-band EN-DC within FR1 (2DL CCs) | E005a  E005d | PC2  PC3 | For LTE anchor agnostic approach testing in TC 7.3B.2.3:  1. NOTE 5 applied.  2. Skip the testing if UE supports SA and TS 38.521-1 TC 7.3.2 has been executed. |
| **7.3B.2.3\_1** | **Reference sensitivity for EN-DC within FR1 (>2 CCs)** |  |  |  |  |  |  |
| 7.3B.2.3\_1.1 | Reference sensitivity for EN-DC within FR1 (3 CCs) | Rel-15 | C045 | UEs supporting EN-DC within FR1 (3DL CCs) | E006 |  |  |
| 7.3B.2.3\_1.2 | Reference sensitivity for EN-DC within FR1 (4 CCs) | Rel-15 | C046 | UEs supporting EN-DC within FR1 (4DL CCs) | E007 |  |  |
| 7.3B.2.3\_1.3 | Reference sensitivity for EN-DC within FR1 (5 CCs) | Rel-15 | C047 | UEs supporting EN-DC within FR1 (5DL CCs) | E008 |  |  |
| 7.3B.2.4 | Reference sensitivity for Inter-band EN-DC including FR2 (1 NR CC) | Rel-15 | C012a | UEs supporting inter-band EN-DC including FR2 with 1 NR DL CC | E010a |  | NOTE 5  Skip TC 7.3B.2.4 if UE supports SA and TS 38.521-2 TC 7.3.2 has been executed. |
| **7.3B.2.4\_1** | **Reference sensitivity for Inter-band EN-DC including FR2 (>1 NR CC)** |  |  |  |  |  |  |
| 7.3B.2.4\_1.1 | Reference sensitivity for Inter-band EN-DC including FR2 (2 NR CCs) | Rel-15 | C012e | UEs supporting inter-band EN-DC including FR2 with 2 NR DL CCs | E011a |  | NOTE 5  Skip TC 7.3B.2.4\_1.1 if UE supports SA and TS 38.521-2 TC 7.3A.2.1 has been executed. |
| 7.3B.2.4\_1.2 | Reference sensitivity for Inter-band EN-DC including FR2 (3 NR CCs) | Rel-15 | C012g | UEs supporting inter-band EN-DC including FR2 with 3 NR DL CCs | E012a |  | NOTE 5  Skip TC 7.3B.2.4\_1.2 if UE supports SA and TS 38.521-2 TC 7.3A.2.2 has been executed. |
| 7.3B.2.4\_1.3 | Reference sensitivity for Inter-band EN-DC including FR2 (4 NR CCs) | Rel-15 | C012h | UEs supporting inter-band EN-DC including FR2 with 4 NR DL CCs | E013a |  | NOTE 5  Skip TC 7.3B.2.4\_1.3 if UE supports SA and TS 38.521-2 TC 7.3A.2.3 has been executed. |
| 7.3B.2.4\_1.4 | Reference sensitivity for Inter-band EN-DC including FR2 (5 NR CCs) | Rel-15 | FFS | UEs supporting inter-band EN-DC including FR2 with 5 NR DL CCs | FFS |  | NOTE 1  NOTE 5  Skip TC 7.3B.2.4\_1.4 if UE supports SA and TS 38.521-2 TC 7.3A.2.4 has been executed. |
| 7.3B.2.4\_1.5 | Reference sensitivity for Inter-band EN-DC including FR2 (6 NR CCs) | Rel-15 | FFS | UEs supporting inter-band EN-DC including FR2 with 6 NR DL CCs | FFS |  | NOTE 1  NOTE 5  Skip TC 7.3B.2.4\_1.5 if UE supports SA and TS 38.521-2 TC 7.3A.2.5 has been executed. |
| 7.3B.2.4\_1.6 | Reference sensitivity for Inter-band EN-DC including FR2 (7 NR CCs) | Rel-15 | FFS | UEs supporting inter-band EN-DC including FR2 with 7 NR DL CCs | FFS |  | NOTE 1  NOTE 5  Skip TC 7.3B.2.4\_1.6 if UE supports SA and TS 38.521-2 TC 7.3A.2.6 has been executed. |
| 7.3B.2.4\_1.7 | Reference sensitivity for Inter-band EN-DC including FR2 (8 NR CCs) | Rel-15 | FFS | UEs supporting inter-band EN-DC including FR2 with 8 NR DL CCs | FFS |  | NOTE 1  NOTE 5  Skip TC 7.3B.2.4\_1.7 if UE supports SA and TS 38.521-2 TC 7.3A.2.7 has been executed. |
| 7.3B.2.4D | Reference sensitivity for inter-band EN-DC including FR2 for UL MIMO | FFS | FFS | FFS | FFS |  | NOTE 1 |
| 7.3B.4 | EIS Spherical Coverage for Inter-band EN-DC including FR2 (1 NR CC) | Rel-15 | C012a | UEs supporting inter-band EN-DC including FR2 with 1 NR DL CC | E010a |  | NOTE 5  Skip TC 7.3B.4 if UE supports SA and TS 38.521-2 TC 7.3.4 has been executed. |
| **7.4B** | **Maximum Input Level for DC** |  |  |  |  |  |  |
| 7.4B.1 | Maximum Input Level for Intra-Band Contiguous EN-DC (2 CCs) | Rel-15 | C009a | UEs supporting Intra-Band Contiguous EN-DC (2DL CCs) | E003a |  |  |
| 7.4B.2 | Maximum Input Level for Intra-Band Non-Contiguous EN-DC (2 CCs) | Rel-15 | C010a | UEs supporting Intra-Band Non-Contiguous EN-DC (2DL CCs) | E004a |  | NOTE 5  Skip TC7.4B.2 if UE supports SA and TS 38.521-1 TC 7.4 has been executed |
| 7.4B.3 | Maximum Input Level for Inter-band EN-DC within FR1 (1 NR CC) | Rel-15 | C011c | UEs supporting Inter-band EN-DC within FR1 with 1 NR DL CC | E005c |  | NOTE 5  Skip TC 7.4B.3 if UE supports SA and TS 38.521-1 TC 7.4 has been executed. |
| **7.4B.3\_1** | **Maximum Input Level for EN-DC within FR1 (>2 CCs)** |  |  |  |  |  |  |
| 7.4B.3\_1.1 | Maximum Input Level for EN-DC within FR1 (3 CCs) | Rel-15 | C045 | UEs supporting EN-DC within FR1 (3DL CCs) | E006 |  |  |
| 7.4B.3\_1.2 | Maximum Input Level for EN-DC within FR1 (4 CCs) | Rel-15 | C046 | UEs supporting EN-DC within FR1 (4DL CCs) | E007 |  |  |
| 7.4B.3\_1.3 | Maximum Input Level for EN-DC within FR1 (5 CCs) | Rel-15 | C047 | UEs supporting EN-DC within FR1 (5DL CCs) | E008 |  |  |
| 7.4B.3\_1.4 | Maximum Input Level for EN-DC within FR1 (6 CCs) | Rel-15 | FFS | FFS | FFS |  | NOTE 1 |
| 7.4B.4 | Maximum Input Level for inter-band EN-DC including FR2 (1 NR CC) | Rel-15 | C012a | UEs supporting Inter-band including FR2 with 1 NR DL CC | E010a |  | NOTE 1  NOTE 5  Skip TC 7.4B.4 if UE supports SA and TS 38.521-2 TC 7.4 has been executed. |
| **7.4B.4\_1** | **Maximum Input Level for inter-band EN-DC including FR2 (>1 NR CC)** |  |  |  |  |  |  |
| 7.4B.4\_1.1 | Maximum Input Level for inter-band EN-DC including FR2 (2 NR CCs) | FFS | FFS | FFS | FFS |  | NOTE 1 |
| 7.4B.4\_1.2 | Maximum Input Level for inter-band EN-DC including FR2 (3 NR CCs) | FFS | FFS | FFS | FFS |  | NOTE 1 |
| 7.4B.4\_1.3 | Maximum Input Level for inter-band EN-DC including FR2 (4 NR CCs) | FFS | FFS | FFS | FFS |  | NOTE 1 |
| 7.4B.4\_1.4 | Maximum Input Level for inter-band EN-DC including FR2 (5 NR CCs) | FFS | FFS | FFS | FFS |  | NOTE 1 |
| 7.4B.4D | Maximum Input Level for inter-band EN-DC including FR2 for UL MIMO | FFS | FFS | FFS | FFS |  | NOTE 1 |
| **7.5B** | **Adjacent channel selectivity for DC** |  |  |  |  |  |  |
| 7.5B.1 | Adjacent Channel Selectivity for intra-band contiguous EN-DC (2 CCs) | Rel-15 | C009a | UEs supporting intra-band contiguous EN-DC (2DL CCs) | E003a |  | NOTE 1 |
| 7.5B.2 | Adjacent Channel Selectivity for intra-band non-contiguous EN-DC (2 CCs) | Rel-15 | C010a | UEs supporting intra-band non-contiguous EN-DC (2DL CCs) | E004a |  | NOTE 1  NOTE 5  Skip TC 7.5B.2 if UE supports SA and TS 38.521-1 TC 7.5 has been executed. |
| 7.5B.3 | Adjacent Channel Selectivity for inter-band EN-DC within FR1 (1 NR CC) | Rel-15 | C011c | UEs supporting inter-band EN-DC within FR1 with 1 NR DL CCs and one or more LTE DL CC(s) | E005c |  | NOTE 5  Skip TC 7.5B.3 if UE supports SA and TS 38.521-1 TC 7.5 has been executed. |
| **7.5B.3\_1** | **Adjacent Channel Selectivity for EN-DC within FR1 (>2 CCs)** |  |  |  |  |  |  |
| 7.5B.3\_1.1 | Adjacent Channel Selectivity for EN-DC within FR1 (2 NR CCs) | Rel-15 | C063 | UEs supporting inter-band or intra-band non-contiguous EN-DC within FR1 with 2 NR DL CCs | E027  E029 |  | NOTE 5  Skip TC 7.5B.3\_1.1 if UE supports SA and TS 38.521-1 TC 7.5A.1 has been executed. |
| 7.5B.3\_1.2 | Adjacent Channel Selectivity for EN-DC within FR1 (3 NR CCs) | Rel-15 | C064 | UEs supporting inter-band or intra-band non-contiguous EN-DC within FR1 with 3 NR DL CCs | E028  E030 |  | NOTE 5  Skip TC 7.5B.3\_1.2 if UE supports SA and TS 38.521-1 TC 7.5A.2 has been executed. |
| 7.5B.3\_1.3 | Adjacent Channel Selectivity for EN-DC within FR1 (4 NR CCs) | Rel-15 | C064a | UEs supporting intra-band non-contiguous EN-DC within FR1 with 4 NR DL CCs | E028a  E030a |  | NOTE 5  Skip TC 7.5B.3\_1.3 if UE supports SA and TS 38.521-1 TC 7.5A.3 has been executed. |
| 7.5B.3\_1.4 | Adjacent Channel Selectivity for EN-DC within FR1 (5 NR CCs) | Rel-15 | C064b | UEs supporting intra-band non-contiguous EN-DC within FR1 with 5 NR DL CCs | E028b  E030b |  | NOTE 1  NOTE 5  Skip TC 7.5B.3\_1.4 if UE supports SA and TS 38.521-1 TC 7.5A.4 has been executed. |
| 7.5B.4 | Adjacent Channel Selectivity for inter-band EN-DC including FR2 (1 NR CC) | Rel-15 | FFS | FFS | FFS |  | NOTE 1  NOTE 5  Skip TC 7.5B.4 if UE supports SA and TS 38.521-2 TC 7.5 has been executed. |
| **7.5B.4\_1** | **Adjacent Channel Selectivity for inter-band EN-DC including FR2 (>1 NR CC)** |  |  |  |  |  |  |
| 7.5B.4\_1.1 | Adjacent Channel Selectivity for inter-band EN-DC including FR2 (2 NR CCs) | Rel-15 | FFS | FFS | FFS |  | NOTE 1  NOTE 5  Skip TC 7.5B.4\_1.1 if UE supports SA and TS 38.521-2 TC 7.5A.1 has been executed. |
| 7.5B.4\_1.2 | Void |  |  |  |  |  |  |
| 7.5B.4\_1.3 | Void |  |  |  |  |  |  |
| 7.5B.4\_1.4 | Void |  |  |  |  |  |  |
| 7.5B.4D | Adjacent Channel Selectivity for inter-band EN-DC including FR2 for UL MIMO | FFS | FFS | FFS | FFS |  | NOTE 1 |
| **7.6B** | **Blocking characteristics for DC** |  |  |  |  |  |  |
| 7.6B.2.1 | Inband blocking for intra-band contiguous EN-DC (2 CCs) | Rel-15 | C009a | UEs supporting Intra-Band Contiguous EN-DC (2DL CCs) | E003a |  |  |
| 7.6B.2.2 | Inband blocking for intra-band non-contiguous EN-DC (2 CCs) | Rel-15 | C010a | UEs supporting Intra-Band Non-Contiguous EN-DC (2DL CCs) | E004a |  | NOTE 5  Skip TC 7.6B.2.2 if UE supports SA and TS 38.521-1 TC 7.6.2 has been executed. |
| 7.6B.2.3 | Inband blocking for inter-band EN-DC within FR1 (1 NR CC) | Rel-15 | C011c | UEs supporting Inter-band EN-DC within FR1 with 1 NR DL CC | E005c |  | NOTE 5  Skip TC 7.6B.2.3 if UE supports SA and TS 38.521-1 TC 7.6.2 has been executed. |
| **7.6B.2.3\_1** | **Inband blocking for EN-DC within FR1 (>2 CCs)** |  |  |  |  |  |  |
| 7.6B.2.3\_1.1 | Inband blocking for EN-DC within FR1 (3 CCs) | Rel-15 | C045 | UEs supporting EN-DC within FR1 (3DL CCs) | E006 |  |  |
| 7.6B.2.3\_1.2 | Inband blocking for EN-DC within FR1 (4 CCs) | Rel-16 | C046 | UEs supporting EN-DC within FR1 (4DL CCs) | E007 |  |  |
| 7.6B.2.3\_1.3 | Inband blocking for EN-DC within FR1 (5 CCs) | Rel-16 | C047 | UEs supporting EN-DC within FR1 (5DL CCs) | E008 |  | Skip TC 7.6B.2.3\_1.3 if UE supports SA and TS 38.521-1 TC 7.6A.2.3 has been executed. |
| 7.6B.2.4 | Inband blocking for inter-band EN-DC including FR2 (1 NR CC) | Rel-15 | C012a | UEs supporting Inter-band EN-DC including FR2 with 1 NR DL CC | E010a |  | NOTE 5  Skip TC 7.6B.2.4 if UE supports SA and TS 38.521-2 TC 7.6.2 has been executed. |
| **7.6B.2.4\_1** | **Inband blocking for inter-band EN-DC including FR2 (>1 NR CC)** |  |  |  |  |  |  |
| 7.6B.2.4\_1.1 | Inband blocking for inter-band EN-DC including FR2 (2 NR CCs) | Rel-15 | FFS | FFS | FFS |  | NOTE 1  NOTE 5  Skip TC 7.6B.2.4\_1.1 if UE supports SA and TS 38.521-2 TC 7.6A.2.1 has been executed. |
| 7.6B.2.4\_1.2 | Void |  |  |  |  |  |  |
| 7.6B.2.4\_1.3 | Void |  |  |  |  |  |  |
| 7.6B.2.4\_1.4 | Void |  |  |  |  |  |  |
| 7.6B.2.4D | Inband blocking for inter-band EN-DC including FR2 for UL MIMO | FFS | FFS | FFS | FFS |  | NOTE 1 |
| 7.6B.3.1 | Out-of-band blocking for intra-band contiguous EN-DC (2 CCs) | Rel-15 | C009a | UEs supporting Intra-Band Contiguous EN-DC (2DL CCs) | E003a |  |  |
| 7.6B.3.2 | Out-of-band blocking for intra-band non-contiguous EN-DC (2 CCs) | Rel-15 | C010a | UEs supporting Intra-Band Non-Contiguous EN-DC (2DL CCs) | E004a |  | NOTE 5  Skip TC 7.6B.3.2 if UE supports SA and TS 38.521-1 TC 7.6.3 has been executed. |
| 7.6B.3.3 | Out-of-band blocking for inter-band EN-DC within FR1 (2 CCs) | Rel-15 | C011a | UEs supporting Inter-band EN-DC within FR1 (2DL CCs) | E005a |  |  |
| **7.6B.3.3\_1** | **Out-of-band blocking for EN-DC within FR1 (>2 CCs)** |  |  |  |  |  |  |
| 7.6B.3.3\_1.1 | Out-of-band blocking for EN-DC within FR1 (3 CCs) | Rel-15 | C048 | UEs supporting intra-band contiguous EN-DC within FR1 with 3 DL CCs | E006 |  |  |
| 7.6B.3.3\_1.2 | Out-of-band blocking for EN-DC within FR1 (4 CCs) | Rel-16 | C049 | UEs supporting intra-band contiguous EN-DC within FR1 with 4 DL CCs | E007 |  |  |
| 7.6B.4.1 | Narrow band blocking for intra-band contiguous EN-DC (2 CCs) | Rel-15 | C009a | UEs supporting Intra-Band Contiguous EN-DC (2DL CCs) | E003a |  |  |
| 7.6B.4.2 | Narrow band blocking for intra-band non-contiguous EN-DC (2 CCs) | Rel-15 | C010a | UEs supporting Intra-Band Non-Contiguous EN-DC (2DL CCs) | E004a |  | NOTE 5  Skip TC 7.6B.4.2 if UE supports SA and TS 38.521-1 TC 7.6.4 has been executed. |
| 7.6B.4.3 | Narrow band blocking for inter-band EN-DC within FR1 (1 NR CC) | Rel-15 | C011c | UEs supporting Inter-band EN-DC within FR1 with 1 NR DL CC | E005c |  | NOTE 5  Skip TC 7.6B.4.3 if UE supports SA and TS 38.521-1 TC 7.6.4 has been executed. |
| **7.6B.4.3\_1** | **Narrow band blocking for EN-DC within FR1 (>2 CCs)** |  |  |  |  |  |  |
| 7.6B.4.3\_1.1 | Narrow band blocking for EN-DC within FR1 (3 CCs) | Rel-15 | C045 | UEs supporting EN-DC within FR1 (3DL CCs) | E006 |  |  |
| 7.6B.4.3\_1.2 | Narrow band blocking for EN-DC within FR1 (4 CCs) | Rel-16 | C046 | UEs supporting EN-DC within FR1 (4DL CCs) | E007 |  |  |
| 7.6B.4.3\_1.3 | Narrow band blocking for EN-DC within FR1 (5 CCs) | Rel-16 | C047 | UEs supporting EN-DC within FR1 (5DL CCs) | E008 |  | Skip TC 7.6B.4.3\_1.3 if UE supports SA and TS 38.521-1 TC 7.6A.4.3 has been executed. |
| **7.7B** | **Spurious response for DC** |  |  |  |  |  |  |
| 7.7B.1 | Spurious Response for intra-band contiguous EN-DC (2 CCs) | Rel-15 | C009a | UEs supporting Intra-Band Contiguous EN-DC (2DL CCs) | E003a |  |  |
| 7.7B.2 | Spurious Response for intra-band non-contiguous EN-DC (2 CCs) | Rel-15 | C010a | UEs supporting Intra-Band Non-Contiguous EN-DC (2DL CCs) | E004a |  | NOTE 5  Skip TC 7.7B.2 if UE supports SA and TS 38.521-1 TC 7.7 has been executed. |
| 7.7B.3 | Spurious Response for inter-band EN-DC within FR1 (2 CCs) | Rel-15 | C011a | UEs supporting Inter-band EN-DC within FR1 (2DL CCs) | E005a |  |  |
| **7.7B.3\_1** | **Spurious Response for EN-DC within FR1 (>2 CCs)** |  |  |  |  |  |  |
| 7.7B.3\_1.1 | Spurious Response for EN-DC within FR1 (3 CCs) | Rel-15 | C048 | UEs supporting intra-band contiguous EN-DC within FR1 with 3 DL CCs | E006 |  |  |
| 7.7B.3\_1.2 | Spurious Response for EN-DC within FR1 (4 CCs) | Rel-16 | C049 | UEs supporting intra-band contiguous EN-DC within FR1 with 4 DL CCs | E007 |  |  |
| **7.8B** | **Intermodulation characteristics for DC** |  |  |  |  |  |  |
| 7.8B.2.1 | Wideband Intermodulation for intra-band contiguous EN-DC (2 CCs) | Rel-15 | C009a | UEs supporting Intra-Band Contiguous EN-DC (2DL CCs) | E003a |  | NOTE 1 |
| 7.8B.2.2 | Wideband Intermodulation for intra-band non-contiguous EN-DC (2 CCs) | Rel-15 | C010a | UEs supporting Intra-Band non-contiguous EN-DC (2DL CCs) | E004a |  | NOTE 5  Skip TC 7.8B.2.2 if UE supports SA and TS 38.521-1 TC 7.8.2 has been executed. |
| 7.8B.2.3 | Wideband Intermodulation for inter-band EN-DC within FR1 (2 CCs) | Rel-15 | C011a | UEs supporting inter-band EN-DC within FR1 (2DL CCs) | E005c |  | NOTE 5  Skip TC 7.8B.2.3 if UE supports SA and TS 38.521-1 TC 7.8.2 has been executed. |
| **7.8B.2.3\_1** | **Wideband Intermodulation for EN-DC within FR1 (>2 CCs)** |  |  |  |  |  |  |
| 7.8B.2.3\_1.1 | Wideband Intermodulation for EN-DC within FR1 (3 CCs) | Rel-15 | C045 | UEs supporting EN-DC within FR1 (3DL CCs) | E006 |  |  |
| 7.8B.2.3\_1.2 | Wideband Intermodulation for EN-DC within FR1 (4 CCs) | Rel-15 | C046 | UEs supporting EN-DC within FR1 (4DL CCs) | E007 |  |  |
| 7.8B.2.3\_1.3 | Wideband Intermodulation for EN-DC within FR1 (5 CCs) | Rel-15 | FFS | FFS | FFS |  | NOTE 1 |
| **7.9B** | **Spurious emissions for DC** |  |  |  |  |  |  |
| 7.9B.1 | Spurious Emissions for intra-band contiguous EN-DC (2 CCs) | Rel-15 | C009a | UEs supporting Intra-Band Contiguous EN-DC (2DL CCs) | E003a |  | NOTE 5  Skip TC 7.9B.1 if UE supports SA and TS 38.521-1 TC 7.9 has been executed. |
| 7.9B.2 | Spurious Emissions for intra-band non-contiguous EN-DC (2 CCs) | Rel-15 | C010a | UEs supporting Intra-Band non-contiguous EN-DC (2DL CCs) | E004a |  | NOTE 5  Skip TC 7.9B.2 if UE supports SA and TS 38.521-1 TC 7.9 has been executed. |
| 7.9B.3 | Spurious Emissions for inter-band EN-DC within FR1 (1 NR CC) | Rel-15 | C011c | UEs supporting inter-band EN-DC within FR1 with 1 NR DL CC | E005c |  | NOTE 5  Skip TC 7.9B.3 if UE supports SA and TS 38.521-1 TC 7.9 has been executed. |
| **7.9B.3\_1** | **Spurious Emissions for EN-DC within FR1 (>2 CCs)** |  |  |  |  |  |  |
| 7.9B.3\_1.1 | Spurious Emissions for EN-DC within FR1 (3 CCs) | Rel-15 | C048 | UEs supporting EN-DC within FR1 with 1 LTE DL CC and 2 inter-band NR DL CCs with DL-only NR band | E006 |  |  |
| 7.9B.4 | Spurious Emissions for inter-band EN-DC including FR2 (1 NR CC) | Rel-15 | C012a | UEs supporting Inter-band including FR2 with 1 NR DL CC | E010a |  | NOTE5  Skip TC 7.9B.4 if UE supports SA and TS 38.521-2 TC 7.9 has been executed. |
| NOTE 1: The test case/branch is incomplete for any Band/CA/DC Configuration but has basic test configurations already. NOTE 1 can be removed only when the test case/branch is complete for at least one Band / CA/DC Configuration for at least one feature included in the test case/branch. Detailed completion status can be found in the corresponding test case section in 38.521-3.  NOTE 2: Void.  NOTE 3: Void.  NOTE 4: Void.  NOTE 5: Test only one EN-DC combination per 5G NR band as LTE anchor agnostic approach is applied. | | | | | | | |

Table 4.1.3-1a: Void

Table 4.1.3-1b: Void

Table 4.1.3-1c: Void

### 4.1.4 Performance conformance test cases

Table 4.1.4-1: Applicability of performance test cases, ref. TS 38.521-4 [4]

| Clause | TC Title | Release | Applicability | | Tested Bands Selection | Additional Information | Subtest Selection Criteria |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  |  |  | Condition | Comment |  |  |  |
| **5** | **Demodulation performance requirements (Conducted requirements)** |  |  |  |  |  |  |
| **5.2** | **PDSCH demodulation requirements** |  |  |  |  |  |  |
| 5.2.1.1.1 | 1Rx FDD FR1 PDSCH performance for RedCap | Rel-17 | C177a | RedCap UEs supporting 5GS FDD FR1 and 1Rx UE capability | D008 | NOTE 1 | Subtest 1-4: Fxx2->F023 |
| 5.2.1.2.1 | 1Rx TDD FR1 PDSCH performance for RedCap | Rel-17 | C177c | RedCap UEs supporting 5GS TDD FR1 and 1Rx UE capability | D009 |  | Subtest 1-4: Fxx2->F023 |
| 5.2.2.1.1\_1 | 2Rx FDD FR1 PDSCH mapping Type A performance - 2x2 MIMO with baseline receiver for both SA and NSA | Rel-15 | C015 | UEs supporting 5GS FDD FR1 but not supporting FDD bands with 4Rx UE capability | D008 |  | Subtest 1-3: Fxx2->F023 |
| 5.2.2.1.1\_2 | 2Rx FDD FR1 PDSCH mapping Type A performance - 2x2 MIMO with enhanced receiver type 1 for both SA and NSA | Rel-15 | C015x | UEs supporting 5GS FDD FR1 and Enhanced Receiver Type 1 but not supporting FDD bands with 4Rx UE capability | D008 |  |  |
| 5.2.2.1.1\_3 | 2Rx FDD FR1 PDSCH mapping Type A performance - 2x2 MIMO with baseline receiver for DL1024QAM for both SA and NSA | Rel-17 | C200 | UEs supporting 5GS FDD FR1 and DL1024Qam but not supporting FDD bands with 4Rx UE capability | D008 | NOTE 1 |  |
| 5.2.2.1.2\_1 | 2Rx FDD FR1 PDSCH mapping Type A and CSI-RS overlapped with PDSCH performance - 2x2 MIMO with baseline receiver for both SA and NSA | Rel-15 | C015 | UEs supporting 5GS FDD FR1 but not supporting FDD bands with 4Rx UE capability | D008 |  |  |
| 5.2.2.1.3\_1 | 2Rx FDD FR1 PDSCH mapping Type B performance - 2x2 MIMO with baseline receiver for both SA and NSA | Rel-15 | C015b | UEs supporting 5GS FDD FR1 and PDSCH mapping Type B but not supporting FDD bands with 4Rx UE capability | D008 |  |  |
| 5.2.2.1.4\_1 | 2Rx FDD FR1 PDSCH Mapping Type A and LTE-NR coexistence performance - 4x2 MIMO with baseline receiver for both SA and NSA | Rel-15 | C015y | UEs supporting 5GS FDD FR1 and receiving PDSCH with resource mapping that excludes the REs determined by the higher layer configuration LTE-carrier configuring common RS but not supporting FDD bands with 4Rx UE capability | D008 | Subtest 1-1 execution not necessary if subtest 1-2 is executed. | Subtest 1-2: Fxx1->F022 |
| 5.2.2.1.5\_1 | 2Rx FDD FR1 PDSCH 0.001% BLER performance - 1x2 MIMO with baseline receiver for both SA and NSA | Rel-16 | C074 | UEs supporting 5GS FDD FR1 and alternative 64QAM MCS table for PDSCH and CQI table with target BLER of 10^-5, but not supporting FDD bands with 4Rx UE capability | D008 |  |  |
| 5.2.2.1.6\_1 | 2Rx FDD FR1 PDSCH repetitions over multiple slots performance - 2x2 MIMO with baseline receiver for both SA and NSA | Rel-16 | C120 | UEs supporting 5GS FDD FR1 and aggregationFactorDL > 1 for PDSCH repetition multislots and alternative 64QAM MCS table for PDSCH but not supporting FDD bands with 4Rx UE capability | D008 |  |  |
| 5.2.2.1.7\_1 | 2Rx FDD FR1 PDSCH Mapping Type B and UE processing capability 2 performance - 2x2 MIMO with baseline receiver for both SA and NSA | Rel-16 | C116 | UEs supporting 5GS FDD FR1 and PDSCH processing capability 2 and PDSCH mapping type B, but not supporting FDD bands with 4Rx UE capability | D008 |  |  |
| 5.2.2.1.8\_1 | 2Rx FDD FR1 PDSCH pre-emption performance - 2x2 MIMO with baseline receiver for both SA and NSA | Rel-16 | C121 | UEs supporting 5GS FDD FR1 and PDSCH pre-emption indication but not supporting FDD bands with 4Rx UE capability | D008 |  |  |
| 5.2.2.1.9\_1 | 2Rx FDD FR1 HST-SFN performance - 2x2 MIMO with baseline receiver for both SA and NSA | Rel-15 | C099 | UEs supporting 5GS FDD FR1 and enhanced demodulation processing for HST-SFN joint transmission scheme but not supporting FDD bands with 4Rx UE capability | D008 |  |  |
| 5.2.2.1.10\_1 | 2Rx FDD FR1 HST-DPS performance - 2x2 MIMO with baseline receiver for both SA and NSA | Rel-15 | C152 | UEs supporting 5GS FDD FR1 and number of active TCI states per BWP per CC but not supporting FDD bands with 4Rx UE capability | D008 |  |  |
| 5.2.2.1.11\_1 | 2Rx FDD FR1 PDSCH Single-DCI based SDM scheme performance - 2x2 MIMO for both SA and NSA | Rel-16 | C070 | UEs supporting 5GS FDD FR1 and single DCI based spatial division multiplexing scheme, but not supporting FDD bands with 4Rx UE capability | D008 |  |  |
| 5.2.2.1.12\_1 | 2Rx FDD FR1 PDSCH Multiple-DCI based transmission scheme performance - 2x2 MIMO for both SA and NSA | Rel-16 | C113 | UEs supporting 5GS FDD FR1 and multi-DCI based multi-TRP, but not supporting FDD bands with 4Rx UE capability | D008 |  |  |
| 5.2.2.1.13\_1 | 2Rx FDD FR1 PDSCH Single-DCI based FDM scheme A performance - 2x2 MIMO for both SA and NSA | Rel-16 | C114 | UEs supporting 5GS FDD FR1 and single DCI based FDMSchemeA, but not supporting FDD bands with 4Rx UE capability | D008 |  |  |
| 5.2.2.1.14\_1 | 2Rx FDD FR1 PDSCH Single-DCI based Inter-slot TDM scheme performance - 2x2 MIMO for both SA and NSA | Rel-16 | C115 | UEs supporting 5GS FDD FR1 and single-DCI based inter-slot TDM, but not supporting FDD bands with 4Rx UE capability | D008 | Test execution not necessary if 5.2.2.1.6\_1 is executed. |  |
| 5.2.2.1.15\_1 | 2Rx FDD FR1 PDSCH with inter-cell interference - 2x2 MIMO for both SA and NSA | Rel-15, Rel-16 | C015d | UEs supporting 5GS FDD FR1 and MMSE-IRC receiver but not supporting FDD bands with 4Rx UE capability | D008 |  |  |
|  |  | Rel-17 | C015 | UEs supporting 5GS FDD FR1 but not supporting FDD bands with 4Rx UE capability | D008 |  |  |
| 5.2.2.1.16\_1 | 2Rx FDD FR1 for PDSCH with intra cell inter user interference performance – 2x2 MIMO for both NSA and SA | Rel-15, Rel-16 | C015d | UEs supporting 5GS FDD FR1 and MMSE-IRC receiver but not supporting FDD bands with 4Rx UE capability | D008 |  |  |
|  |  | Rel-17 | C015 | UEs supporting 5GS FDD FR1 but not supporting FDD bands with 4Rx UE capability | D008 |  |  |
| 5.2.2.1.17 | 2Rx FDD FR1 PDSCH performance for RedCap | Rel-17 | C177b | RedCap UEs supporting 5GS FDD FR1 and 2Rx UE capability | D008 | NOTE 1 | Subtest 1-3: Fxx2->F023 |
| 5.2.2.1.20 | 2Rx FDD FR1 PDSCH HST-SFN Scheme A performance - 2x2 MIMO for both SA and NSA | Rel-17 | C245 | UEs supporting 5GS FDD FR1 and SFN scheme A for PDCCH scheduling SFN Scheme A PDSCH, but not supporting FDD bands with 4Rx UE capability | D008 | NOTE 1 |  |
| 5.2.2.1.21 | 2Rx FDD FR1 PDSCH HST-SFN Scheme B performance - 2x2 MIMO for both SA and NSA | Rel-17 | C246 | UEs supporting 5GS FDD FR1 and SFN scheme B for PDCCH scheduling SFN Scheme B PDSCH, but not supporting FDD bands with 4Rx UE capability | D008 | NOTE 1  Test execution is not necessary if TC 5.2.2.1.20 is executed. |  |
| 5.2.2.2.1\_1 | 2Rx TDD FR1 PDSCH mapping Type A performance - 2x2 MIMO with baseline receiver for both SA and NSA | Rel-15 | C016 | UEs supporting 5GS TDD FR1 but not supporting TDD bands with 4Rx UE capability | D009  D010 |  | Subtest 1-3: Fxx2->F023 |
| 5.2.2.2.1\_2 | 2Rx TDD FR1 PDSCH mapping Type A performance - 2x2 MIMO with enhanced receiver type 1 for both SA and NSA | Rel-15 | C016x | UEs supporting 5GS TDD FR1 and Enhanced Receiver Type 1 but not supporting TDD bands with 4Rx UE capability | D010 |  |  |
| 5.2.2.2.1\_3 | 2Rx TDD FR1 PDSCH mapping Type A performance - 2x2 MIMO with baseline receiver for DL1024QAM for both SA and NSA | Rel-17 | C201 | UEs supporting 5GS TDD FR1 and DL 1024QAM | D010 | NOTE 1 |  |
| 5.2.2.2.2\_1 | 2Rx TDD FR1 PDSCH mapping Type A and CSI-RS overlapped with PDSCH performance - 2x2 MIMO with baseline receiver for both SA and NSA | Rel-15 | C016 | UEs supporting 5GS TDD FR1 but not supporting TDD bands with 4Rx UE capability | D010 |  |  |
| 5.2.2.2.3\_1 | 2Rx TDD FR1 PDSCH mapping Type B performance - 2x2 MIMO with baseline receiver for both SA and NSA | Rel-15 | C016b | UEs supporting 5GS TDD FR1 and PDSCH mapping Type B but not supporting TDD bands with 4Rx UE capability | D010 |  |  |
| 5.2.2.2.4\_1 | 2Rx TDD FR1 PDSCH Mapping Type A and LTE-NR coexistence performance - 4x2 MIMO with baseline receiver for both SA and NSA | Rel-15 | C016y | UEs supporting 5GS TDD FR1 and receiving PDSCH with resource mapping that excludes the REs determined by the higher layer configuration LTE-carrier configuring common RS but not supporting TDD bands with 4Rx UE capability | D019 | Subtest 1-1 execution not necessary if subtest 1-2 is executed. | Subtest 1-2: Fxx1->F022 |
| 5.2.2.2.5\_1 | 2Rx TDD FR1 PDSCH 0.001% BLER performance - 1x2 MIMO with baseline receiver for both SA and NSA | Rel-16 | C075 | UEs supporting 5GS TDD FR1 and alternative 64QAM MCS table for PDSCH and CQI table with target BLER of 10^-5, but not supporting TDD bands with 4Rx UE capability | D009 |  |  |
| 5.2.2.2.6\_1 | 2Rx TDD FR1 PDSCH repetitions over multiple slots performance - 2x2 MIMO with baseline receiver for both SA and NSA | Rel-16 | C122 | UEs supporting 5GS TDD FR1 and aggregationFactorDL > 1 for PDSCH repetition multislots and alternative 64QAM MCS table for PDSCH but not supporting TDD bands with 4Rx UE capability | D010 |  |  |
| 5.2.2.2.7\_1 | 2Rx TDD FR1 PDSCH Mapping Type B and UE processing capability 2 performance - 2x2 MIMO with baseline receiver for both SA and NSA | Rel-16 | C117 | UEs supporting 5GS TDD FR1 and PDSCH processing capability 2 and PDSCH mapping type B, but not supporting TDD bands with 4Rx UE capability | D010 |  |  |
| 5.2.2.2.8\_1 | 2Rx TDD FR1 PDSCH pre-emption performance - 2x2 MIMO with baseline receiver for both SA and NSA | Rel-16 | C123 | UEs supporting 5GS TDD FR1 and PDSCH pre-emption indication but not supporting TDD bands with 4Rx UE capability | D010 |  |  |
| 5.2.2.2.9\_1 | 2Rx TDD FR1 HST-SFN performance - 2x2 MIMO with baseline receiver for both SA and NSA | Rel-15 | C016 | UEs supporting 5GS TDD FR1 but not supporting TDD bands with 4Rx UE capability | D010 |  |  |
| 5.2.2.2.10\_1 | 2Rx TDD FR1 HST-DPS performance - 2x2 MIMO with baseline receiver for both SA and NSA | Rel-15 | C016 | UEs supporting 5GS TDD FR1 but not supporting TDD bands with 4Rx UE capability | D010 |  |  |
| 5.2.2.2.11\_1 | 2Rx TDD FR1 PDSCH Single-DCI based SDM scheme performance - 2x2 MIMO for both SA and NSA | Rel-16 | C071 | UEs supporting 5GS TDD FR1 and single DCI based spatial division multiplexing scheme, but not supporting TDD bands with 4Rx UE capability | D009 |  |  |
| 5.2.2.2.12\_1 | 2Rx TDD FR1 PDSCH Multiple-DCI based transmission scheme performance - 2x2 MIMO for both SA and NSA | Rel-16 | C113a | UEs supporting 5GS TDD FR1 and multi-DCI based multi-TRP, but not supporting TDD bands with 4Rx UE capability | D009 |  |  |
| 5.2.2.2.13\_1 | 2Rx TDD FR1 PDSCH Single-DCI based FDM scheme A performance - 2x2 MIMO for both SA and NSA | Rel-16 | C114a | UEs supporting 5GS TDD FR1 and single DCI based FDMSchemeA, but not supporting TDD bands with 4Rx UE capability | D009 |  |  |
| 5.2.2.2.14\_1 | 2Rx TDD FR1 PDSCH Single-DCI based Inter-slot TDM scheme performance - 2x2 MIMO for both SA and NSA | Rel-16 | C115a | UEs supporting 5GS TDD FR1 and single-DCI based inter-slot TDM, but not supporting TDD bands with 4Rx UE capability | D009 | Test execution not necessary if 5.2.2.2.6\_1 is executed. |  |
| 5.2.2.2.15 | 2Rx TDD FR1 PDSCH mapping type A performance on band with shared spectrum access | Rel-16 | C204 | UEs supporting 5GS TDD FR1 and NR-U | D025 | NOTE 1 |  |
| 5.2.2.2.16\_1 | 2Rx TDD FR1 for PDSCH with inter-cell interference performance – 2x2 MIMO for both NSA and SA | Rel-15, Rel-16 | C016d | UEs supporting 5GS TDD FR1 and MMSE-IRC receiver but not supporting TDD bands with 4Rx UE capability | D010 |  |  |
|  |  | Rel-17 | C016 | UEs supporting 5GS TDD FR1 but not supporting TDD bands with 4Rx UE capability | D010 |  |  |
| 5.2.2.2.17\_1 | 2Rx TDD FR1 for PDSCH with intra cell inter user interference performance – 2x2 MIMO for both NSA and SA | Rel-15, Rel-16 | C016d | UEs supporting 5GS TDD FR1 and MMSE-IRC receiver but not supporting TDD bands with 4Rx UE capability | D010 |  |  |
|  |  | Rel-17 | C016 | UEs supporting 5GS TDD FR1 but not supporting TDD bands with 4Rx UE capability | D010 |  |  |
| 5.2.2.2.18 | 2Rx TDD FR1 PDSCH performance for RedCap | Rel-17 | C177b | RedCap UEs supporting 5GS TDD FR1 and 2Rx UE capability | D009 | NOTE 1 | Subtest 1-2: Fxx2->F023 |
| 5.2.2.2.21 | 2Rx TDD FR1 PDSCH HST-SFN Scheme A performance - 2x2 MIMO for both SA and NSA | Rel-17 | C247 | UEs supporting 5GS TDD FR1 and SFN scheme A for PDCCH scheduling SFN Scheme A PDSCH, but not supporting TDD bands with 4Rx UE capability | D010 | NOTE 1 |  |
| 5.2.2.2.22 | 2Rx TDD FR1 PDSCH HST-SFN Scheme B performance - 2x2 MIMO for both SA and NSA | Rel-17 | C248 | UEs supporting 5GS TDD FR1 and SFN scheme B for PDCCH scheduling SFN Scheme B PDSCH, but not supporting TDD bands with 4Rx UE capability | D010 | NOTE 1  Test execution is not necessary if TC 5.2.2.2.21 is executed. |  |
| 5.2.3.1.1\_1 | 4Rx FDD FR1 PDSCH mapping Type A performance - 2x4 MIMO with baseline receiver for both SA and NSA | Rel-15 | C017 | UEs supporting 5GS FDD FR1 and 4Rx antenna ports | D008 |  | Subtest 1-3: Fxx2->F023 |
| 5.2.3.1.1\_2 | 4Rx FDD FR1 PDSCH mapping Type A performance - 4x4 MIMO with baseline receiver for both SA and NSA | Rel-15 | C017 | UEs supporting 5GS FDD FR1 and 4Rx antenna ports | D008 |  |  |
| 5.2.3.1.1\_4 | 4Rx FDD FR1 PDSCH mapping Type A performance - 4x4 MIMO with enhanced receiver type 1 for both SA and NSA | Rel-15 | C017x | UEs supporting 5GS FDD FR1 and 4Rx antenna ports and Enhanced Receiver Type 1 | D008 |  |  |
| 5.2.3.1.1\_5 | 4Rx FDD FR1 PDSCH mapping Type A performance - 2x4 MIMO with baseline receiver for DL1024QAM for both SA and NSA | Rel-17 | C202 | UEs supporting 5GS FDD FR1 and 4Rx antenna ports and DL1024QAM | D008 | NOTE 1 |  |
| 5.2.3.1.2\_1 | 4Rx FDD FR1 PDSCH mapping Type A and CSI-RS overlapped with PDSCH performance - 4x4 MIMO with baseline receiver for both SA and NSA | Rel-15 | C017 | UEs supporting 5GS FDD FR1 and 4Rx antenna ports | D008 |  |  |
| 5.2.3.1.3\_1 | 4Rx FDD FR1 PDSCH mapping Type B performance - 2x4 MIMO with baseline receiver for both SA and NSA | Rel-15 | C017b | UEs supporting 5GS FDD FR1 and 4Rx antenna ports and PDSCH mapping Type B | D008  D011 |  |  |
| 5.2.3.1.4\_1 | 4Rx FDD FR1 PDSCH Mapping Type A and LTE-NR coexistence performance - 4x4 MIMO with baseline receiver for both SA and NSA | Rel-15 | C017y | UEs supporting 5GS FDD FR1 and 4Rx antenna ports and receiving PDSCH with resource mapping that excludes the REs determined by the higher layer configuration LTE-carrier configuring common RS | D008 | Subtest 1-1 execution not necessary if subtest 1-2 is executed. | Subtest 1-2: Fxx1->F022 |
| 5.2.3.1.5\_1 | 4Rx FDD FR1 PDSCH 0.001% BLER performance - 1x4 MIMO with baseline receiver for both SA and NSA | Rel-16 | C076 | UEs supporting 5GS FDD FR1 and alternative 64QAM MCS table for PDSCH and CQI table with target BLER of 10^-5 and 4Rx antenna ports | D008 |  |  |
| 5.2.3.1.6\_1 | 4Rx FDD FR1 PDSCH repetitions over multiple slots performance - 2x4 MIMO with baseline receiver for both SA and NSA | Rel-16 | C124 | UEs supporting 5GS FDD FR1 and aggregationFactorDL > 1 for PDSCH repetition multislots and alternative 64QAM MCS table for PDSCH and 4Rx antenna ports | D008 |  |  |
| 5.2.3.1.7\_1 | 4Rx FDD FR1 PDSCH Mapping Type B and UE processing capability 2 performance - 2x4 MIMO with baseline receiver for both SA and NSA | Rel-16 | C118 | UEs supporting 5GS FDD FR1 and PDSCH processing capability 2 and PDSCH mapping type B and 4Rx antenna ports | D008 |  |  |
| 5.2.3.1.8\_1 | 4Rx FDD FR1 PDSCH pre-emption performance - 2x4 MIMO with baseline receiver for both SA and NSA | Rel-16 | C169 | UEs supporting 5GS FDD FR1 and PDSCH pre-emption indication and 4Rx antenna ports | D008 |  |  |
| 5.2.3.1.9\_1 | 4Rx FDD FR1 HST-SFN performance - 2x4 MIMO with baseline receiver for both SA and NSA | Rel-15 | C127 | UEs supporting 5GS FDD FR1 and enhanced demodulation processing for HST-SFN joint transmission scheme and 4Rx antenna ports | D008 |  |  |
| 5.2.3.1.10\_1 | 4Rx FDD FR1 HST-DPS performance - 2x4 MIMO with baseline receiver for both SA and NSA | Rel-15 | C154 | UEs supporting 5GS FDD FR1 and number of active TCI states per BWP per CC and 4Rx antenna ports | D008 |  |  |
| 5.2.3.1.11\_1 | 4Rx FDD FR1 PDSCH Single-DCI based SDM scheme performance - 2x4 MIMO for both SA and NSA | Rel-16 | C072 | UEs supporting 5GS FDD FR1 and single DCI based spatial division multiplexing scheme and 4Rx antenna ports | D008 |  |  |
| 5.2.3.1.12\_1 | 4Rx FDD FR1 PDSCH Multiple-DCI based transmission scheme performance - 2x4 MIMO for both SA and NSA | Rel-16 | C113b | UEs supporting 5GS FDD FR1 and multi-DCI based multi-TRP and 4Rx antenna ports | D008 |  |  |
| 5.2.3.1.13\_1 | 4Rx FDD FR1 PDSCH Single-DCI based FDM scheme A performance - 2x4 MIMO for both SA and NSA | Rel-16 | C114b | UEs supporting 5GS FDD FR1 and single DCI based FDMSchemeA and 4Rx antenna ports | D008 |  |  |
| 5.2.3.1.14\_1 | 4Rx FDD FR1 PDSCH Single-DCI based Inter-slot TDM scheme performance - 2x4 MIMO for both SA and NSA | Rel-16 | C115b | UEs supporting 5GS FDD FR1 and single-DCI based inter-slot TDM and 4Rx antenna ports | D008 | Test execution not necessary if 5.2.3.1.6\_1 is executed. |  |
| 5.2.3.1.15\_1 | 4Rx FDD FR1 PDSCH with inter-cell interference - 2x4 MIMO for both SA and NSA | Rel-15, Rel-16 | C017d | UEs supporting 5GS FDD FR1 and 4Rx antenna ports and MMSE-IRC receiver | D008 |  |  |
|  |  | Rel-17 | C017 | UEs supporting 5GS FDD FR1 and 4Rx antenna ports | D008 |  |  |
| 5.2.3.1.16\_1 | 4Rx FDD FR1 for PDSCH with intra cell inter user interference performance – 2x4 MIMO for both NSA and SA | Rel-15, Rel-16 | C017d | UEs supporting 5GS FDD FR1 and 4Rx antenna ports and MMSE-IRC receiver | D008 |  |  |
|  |  | Rel-17 | C017 | UEs supporting 5GS FDD FR1 and 4Rx antenna ports | D008 |  |  |
| 5.2.3.1.16\_2 | 4Rx FDD FR1 for PDSCH with intra cell inter user interference performance – 4x4 MIMO for both NSA and SA | Rel-15, Rel-16 | C017d | UEs supporting 5GS FDD FR1 and 4Rx antenna ports and MMSE-IRC receiver | D008 |  |  |
|  |  | Rel-17 | C017 | UEs supporting 5GS FDD FR1 and 4Rx antenna ports | D008 |  |  |
| 5.2.3.1.19 | 4Rx FDD FR1 PDSCH HST-SFN Scheme A performance - 2x4 MIMO for both SA and NSA | Rel-17 | C249 | UEs supporting 5GS FDD FR1 and SFN scheme A for PDCCH scheduling SFN Scheme A PDSCH, and 4Rx antenna ports | D008 | NOTE 1 |  |
| 5.2.3.1.20 | 4Rx FDD FR1 PDSCH HST-SFN Scheme B performance - 2x4 MIMO for both SA and NSA | Rel-17 | C250 | UEs supporting 5GS FDD FR1 and SFN scheme B for PDCCH scheduling SFN Scheme B PDSCH, and 4Rx antenna ports | D008 | NOTE 1  Test execution is not necessary if TC 5.2.3.1.19 is executed. |  |
| 5.2.3.2.1\_1 | 4Rx TDD FR1 PDSCH mapping Type A performance - 2x4 MIMO with baseline receiver for both SA and NSA | Rel-15 | C019 | UEs supporting 5GS TDD FR1 and 4Rx antenna ports | D009  D010 |  | Subtest 1-3: Fxx2->F023 |
| 5.2.3.2.1\_2 | 4Rx TDD FR1 PDSCH mapping Type A performance - 4x4 MIMO with baseline receiver for both SA and NSA | Rel-15 | C019 | UEs supporting 5GS TDD FR1 and 4Rx antenna ports | D010 |  |  |
| 5.2.3.2.1\_4 | 4Rx TDD FR1 PDSCH mapping Type A performance - 4x4 MIMO with enhanced receiver type 1 for both SA and NSA | Rel-15 | C019x | UEs supporting 5GS TDD FR1 and Enhanced Receiver Type 1 and 4Rx antenna ports | D010 |  |  |
| 5.2.3.2.1\_5 | 4Rx TDD FR1 PDSCH mapping Type A performance - 2x4 MIMO with baseline receiver for DL1024QAM for both SA and NSA | Rel-17 | C203 | UEs supporting 5GS TDD FR1 and 4Rx antenna ports and DL 1024QAM | D010 | NOTE 1 |  |
| 5.2.3.2.2\_1 | 4Rx TDD FR1 PDSCH mapping Type A and CSI-RS overlapped with PDSCH performance - 2x4 MIMO with baseline receiver for both SA and NSA | Rel-15 | C019 | UEs supporting 5GS TDD FR1 and 4Rx antenna ports | D009  D010 |  |  |
| 5.2.3.2.3\_1 | 4Rx TDD FR1 PDSCH mapping Type B performance - 2x4 MIMO with baseline receiver for both SA and NSA | Rel-15 | C019b | UEs supporting 5GS TDD FR1 and 4Rx antenna ports and PDSCH mapping Type B | D009  D011 |  |  |
| 5.2.3.2.4\_1 | 4Rx TDD FR1 PDSCH Mapping Type A and LTE-NR coexistence performance - 4x4 MIMO with baseline receiver for both SA and NSA | Rel-15 | C017z | UEs supporting 5GS TDD FR1 and 4Rx antenna ports and receiving PDSCH with resource mapping that excludes the REs determined by the higher layer configuration LTE-carrier configuring common RS | D009 | Subtest 1-1 execution not necessary if subtest 1-2 is executed. | Subtest 1-2: Fxx1->F022 |
| 5.2.3.2.5\_1 | 4Rx TDD FR1 PDSCH 0.001% BLER performance - 1x4 MIMO with baseline receiver for both SA and NSA | Rel-16 | C077 | UEs supporting 5GS TDD FR1 and alternative 64QAM MCS table for PDSCH and CQI table with target BLER of 10^-5 and 4Rx antenna ports | D009 |  |  |
| 5.2.3.2.6\_1 | 4Rx TDD FR1 PDSCH repetitions over multiple slots performance - 2x4 MIMO with baseline receiver for both SA and NSA | Rel-16 | C125 | UEs supporting 5GS TDD FR1 and aggregationFactorDL > 1 for PDSCH repetition multislots and alternative 64QAM MCS table for PDSCH and 4Rx antenna ports | D010 |  |  |
| 5.2.3.2.7\_1 | 4Rx TDD FR1 PDSCH Mapping Type B and UE processing capability 2 performance - 2x4 MIMO with baseline receiver for both SA and NSA | Rel-16 | C119 | UEs supporting 5GS TDD FR1 and PDSCH processing capability 2 and PDSCH mapping type B and 4Rx antenna ports | D010 |  |  |
| 5.2.3.2.8\_1 | 4Rx TDD FR1 PDSCH pre-emption performance - 2x4 MIMO with baseline receiver for both SA and NSA | Rel-16 | C170 | UEs supporting 5GS TDD FR1 and PDSCH pre-emption indication and 4Rx antenna ports | D010 |  |  |
| 5.2.3.2.9\_1 | 4Rx TDD FR1 HST-SFN performance - 2x4 MIMO with baseline receiver for both SA and NSA | Rel-15 | C019y | UEs supporting 5GS TDD FR1 and 4Rx antenna ports and enhanced demodulation processing for HST-SFN joint transmission scheme | D010  D011 |  |  |
| 5.2.3.2.10\_1 | 4Rx TDD FR1 HST DPS performance - 2x4 MIMO with baseline receiver for both SA and NSA | Rel-15 | C019 | UEs supporting 5GS TDD FR1 and 4Rx antenna ports | D010  D011 | NOTE 1 |  |
| 5.2.3.2.11\_1 | 4Rx TDD FR1 PDSCH Single-DCI based SDM scheme performance - 2x4 MIMO for both SA and NSA | Rel-16 | C073 | UEs supporting 5GS TDD FR1 and single DCI based spatial division multiplexing scheme and 4Rx antenna ports | D009 |  |  |
| 5.2.3.2.12\_1 | 4Rx TDD FR1 PDSCH Multiple-DCI based transmission scheme performance - 2x4 MIMO for both SA and NSA | Rel-16 | C113c | UEs supporting 5GS TDD FR1 and multi-DCI based multi-TRP and 4Rx antenna ports | D009 |  |  |
| 5.2.3.2.13\_1 | 4Rx TDD FR1 PDSCH Single-DCI based FDM scheme A performance - 2x4 MIMO for both SA and NSA | Rel-16 | C114c | UEs supporting 5GS TDD FR1 and single DCI based FDMSchemeA and 4Rx antenna ports | D009 |  |  |
| 5.2.3.2.14\_1 | 4Rx TDD FR1 PDSCH Single-DCI based Inter-slot TDM scheme performance - 2x4 MIMO for both SA and NSA | Rel-16 | C115c | UEs supporting 5GS TDD FR1 and single-DCI based inter-slot TDM and 4Rx antenna ports | D009 | Test execution not necessary if 5.2.3.2.6\_1 is executed. |  |
| 5.2.3.2.15 | 4Rx TDD FR1 PDSCH mapping type A performance on band with shared spectrum access | Rel-16 | C205 | UEs supporting 5GS FDD FR1 and NR-U | D025 | NOTE 1 |  |
| 5.2.3.2.16\_1 | 4Rx TDD FR1 for PDSCH with inter-cell interference performance – 2x4 MIMO for both NSA and SA | Rel-15, Rel-16 | C019d | UEs supporting 5GS TDD FR1 and 4Rx antenna ports and MMSE-IRC receiver | D010 |  |  |
|  |  | Rel-17 | C019 | UEs supporting 5GS TDD FR1 and 4Rx antenna ports | D010 |  |  |
| 5.2.3.2.17\_1 | 4Rx TDD FR1 for PDSCH with intra cell inter user interference performance – 2x4 MIMO for both NSA and SA | Rel-15, Rel-16 | C019d | UEs supporting 5GS TDD FR1 and 4Rx antenna ports and MMSE-IRC receiver | D010 |  |  |
|  |  | Rel-17 | C019 | UEs supporting 5GS TDD FR1 and 4Rx antenna ports | D010 |  |  |
| 5.2.3.2.17\_2 | 4Rx TDD FR1 for PDSCH with intra cell inter user interference performance – 4x4 MIMO for both NSA and SA | Rel-15, Rel-16 | C019d | UEs supporting 5GS TDD FR1 and 4Rx antenna ports and MMSE-IRC receiver | D010 |  |  |
|  |  | Rel-17 | C019 | UEs supporting 5GS TDD FR1 and 4Rx antenna ports | D010 |  |  |
| 5.2.3.2.20 | 4Rx TDD FR1 PDSCH HST-SFN Scheme A performance - 2x4 MIMO for both SA and NSA | Rel-17 | C251 | UEs supporting 5GS TDD FR1 and SFN scheme A for PDCCH scheduling SFN Scheme A PDSCH, and 4Rx antenna ports | D010 | NOTE 1 |  |
| 5.2.3.2.21 | 4Rx TDD FR1 PDSCH HST-SFN Scheme B performance - 2x4 MIMO for both SA and NSA | Rel-17 | C252 | UEs supporting 5GS TDD FR1 and SFN scheme B for PDCCH scheduling SFN Scheme B PDSCH, and 4Rx antenna ports | D010 | NOTE 1  Test execution is not necessary if TC 5.2.3.2.20 is executed. |  |
| 5.2A.2.1.1 | 2Rx Normal PDSCH Demodulation Performance for CA (2DL CA) for both SA and NSA | Rel-15 | C261 | UEs supporting 5GS FR1 AND 2DL CA but not supporting 4Rx UE capability on any CCs | E016 |  |  |
| 5.2A.2.1.2 | 2Rx Normal PDSCH Demodulation Performance for CA (3DL CA) for both SA and NSA | Rel-15 | C262 | UEs supporting 5GS FR1 AND 3DL CA but not supporting 4Rx UE capability on any CCs | E017 |  |  |
| 5.2A.2.1.3 | 2Rx Normal PDSCH Demodulation Performance for CA (4DL CA) for both SA and NSA | Rel-15 | C263 | UEs supporting 5GS FR1 AND 4DL CA but not supporting 4Rx UE capability on any CCs | E018 |  |  |
| 5.2A.2.2.1 | 2Rx PDSCH Demodulation Performance for CA with power imbalance (2DL CA) | Rel-15 | C261 | UEs supporting 5GS FR1 AND 2DL CA but not supporting 4Rx UE capability on any CCs | E003a |  |  |
| 5.2A.2.2.2 | 2Rx PDSCH Demodulation Performance for CA with power imbalance (3DL CA) | Rel-15 | FFS | UEs supporting 5GS FR1 AND 3DL CA but not supporting 4Rx UE capability on any CCs | E033 | NOTE 1 |  |
| 5.2A.2.2.3 | 2Rx PDSCH Demodulation Performance for CA with power imbalance (4DL CA) | Rel-15 | FFS | UEs supporting 5GS FR1 and 4D LCA but not supporting 4Rx UE capability on any 4CCs | E034 | NOTE 1 |  |
| 5.2A.2.3 | 2Rx TDD FR1 PDSCH mapping type A performance of Scell on band with shared spectrum access | Rel-16 | C204 | UEs supporting 5GS TDD FR1 and NR-U | D025 | NOTE 1 |  |
| 5.2A.2.4.1 | 2RX PDSCH Demodulation Performance for HST-SFN CA | Rel-16 | C152b | UEs supporting 5GS FR1 AND enhanced demodulation processing for carrier aggregation for HST-SFN joint transmission but not supporting 4Rx UE capability on any CCs | E016 |  |  |
| 5.2A.2.5.1 | 2RX PDSCH Demodulation Performance for HST-DPS CA | Rel-15 | C152a | UEs supporting 5GS FR1 AND 2DL CA AND number of active TCI | E016 |  |  |
| 5.2A.3.1.1 | 4Rx Normal PDSCH Demodulation Performance for CA (2DL CA) | Rel-15 | C017g | UEs supporting 5GS FR1 AND 2DL CA AND supporting 4Rx antenna ports on all CCs | E016 |  |  |
| 5.2A.3.1.2 | 4Rx Normal PDSCH Demodulation Performance for CA (3DL CA) | Rel-15 | C017h | UEs supporting 5GS FR1 AND 3DL CA AND supporting 4Rx antenna ports on all CCs | E017 |  |  |
| 5.2A.3.1.3 | 4Rx Normal PDSCH Demodulation Performance for CA (4DL CA) | Rel-15 | C017i | UEs supporting 5GS FR1 AND 4DL CA AND supporting 4Rx antenna ports on all CCs | E018 |  |  |
| 5.2A.3.2.1 | 4Rx PDSCH Demodulation Performance for CA with power imbalance (2DL CA) | Rel-15 | C017g | UEs supporting 5GS FR1 AND 2DL CA AND supporting 4Rx antenna ports on all CCs | E003a |  |  |
| 5.2A.3.3 | 4Rx TDD FR1 PDSCH mapping type A performance of Scell on band with shared spectrum access | Rel-16 | C205 | UEs supporting 5GS TDD FR1 and NR-U | D025 | NOTE 1 |  |
| 5.2A.3.4.1 | 4RX PDSCH Demodulation Performance for HST-SFN CA | Rel-16 | C127a | UEs supporting 5GS FR1 AND enhanced demodulation processing for carrier aggregation for HST-SFN joint transmission AND supporting 4Rx TDD and FDD UE capability on any CCs | E016 |  |  |
| 5.2A.3.5.1 | 4RX PDSCH Demodulation Performance for HST-DPS CA | Rel-15 | C154a | UEs supporting 5GS FR1 AND 2DL CA AND number of active TCI AND supporting 4Rx TDD and FDD UE capability on any CCs | E016 |  |  |
| 5.2A.3A.1.1 | 2Rx-4Rx Normal PDSCH Demodulation Performance for CA (2DL CA) | Rel-15 | C017g | UEs supporting 5GS FR1 and 2DL CA AND supporting 4Rx UE capability on some of the CCs | E016 |  |  |
| 5.2A.3A.1.2 | 2Rx-4Rx Normal PDSCH Demodulation Performance for CA (3DL CA) | Rel-15 | C017h | UEs supporting 5GS FR1 and 3DL CA AND supporting 4Rx UE capability on some of the CCs | E017 |  |  |
| 5.2A.3A.1.3 | 2Rx-4Rx Normal PDSCH Demodulation Performance for CA (4DL CA) | Rel-15 | C017i | UEs supporting 5GS FR1 and 4DL CA AND supporting 4Rx UE capability on some of the CCs | E018 |  |  |
| 5.3.1.1.1 | 1Rx FDD FR1 PDCCH performance for RedCap | Rel-17 | C177a | RedCap UEs supporting 5GS FDD FR1 and 1Rx UE capability | D008 |  |  |
| 5.3.2.1.1 | 2Rx FDD FR1 PDCCH 1 Tx antenna performance for both SA and NSA | Rel-15 | C015 | UEs supporting 5GS FDD FR1 but not supporting FDD bands with 4Rx UE capability | D008 |  |  |
| 5.3.2.1.2 | 2Rx FDD FR1 PDCCH 2 Tx antenna performance for both SA and NSA | Rel-15 | C015 | UEs supporting 5GS FDD FR1 but not supporting FDD bands with 4Rx UE capability | D008 |  |  |
| 5.3.2.1.3 | 2Rx FDD FR1 PDCCH 1 Tx antenna performance for power saving | Rel-16 | C088 | UEs supporting 5GS FDD FR1 and Long DRX Cycle and DRX adaptation but not supporting FDD bands with 4Rx UE capability | D008 |  |  |
| 5.3.2.1.4 | 2Rx FDD FR1 PDCCH performance for RedCap | Rel-17 | C177b | RedCap UEs supporting 5GS FDD FR1and 2Rx UE capability | D008 |  |  |
| 5.3.2.1.5 | 2RX FDD Minimum requirements for PDCCH with intra-slot repetition | Rel-17 | C015e | UEs supporting 5GS FDD FR1 but not supporting FDD bands with 4Rx UE capability | D008 |  |  |
| 5.3.2.2.1 | 2Rx TDD FR1 PDCCH 1 Tx antenna performance for both SA and NSA | Rel-15 | C016 | UEs supporting 5GS TDD FR1 but not supporting TDD bands with 4Rx UE capability | D010 |  |  |
| 5.3.2.2.2 | 2Rx TDD FR1 PDCCH 2 Tx antenna performance for both SA and NSA | Rel-15 | C016 | UEs supporting 5GS TDD FR1 but not supporting TDD bands with 4Rx UE capability | D010 |  |  |
| 5.3.2.2.3 | 2Rx TDD FR1 PDCCH 1 Tx antenna performance for power saving | Rel-16 | C089 | UEs supporting 5GS TDD FR1 and Long DRX Cycle and DRX adaptation but not supporting TDD bands with 4Rx UE capability | D010 |  |  |
| 5.3.2.2.4 | 2Rx TDD FR1 PDCCH performance for RedCap | Rel-17 | C177d | RedCap UEs supporting 5GS TDD FR1 and 2Rx UE capability | D009 |  |  |
| 5.3.2.2.5 | 2RX TDD Minimum requirements for PDCCH with intra-slot repetition | Rel-17 | C016e | UEs supporting 5GS TDD FR1 but not supporting TDD bands with 4Rx UE capability | D0094 |  |  |
| 5.3.3.1.1 | 4Rx FDD FR1 PDCCH 1 Tx antenna performance for both SA and NSA | Rel-15 | C017 | UEs supporting 5GS FDD FR1 and 4Rx antenna ports | D008 |  |  |
| 5.3.3.1.2 | 4Rx FDD FR1 PDCCH 2 Tx antenna performance for both SA and NSA | Rel-15 | C017 | UEs supporting 5GS FDD FR1 and 4Rx antenna ports | D008 |  |  |
| 5.3.3.1.3 | 4Rx FDD FR1 PDCCH 1 Tx antenna performance for power saving | Rel-16 | C090 | UEs supporting 5GS FDD FR1 and 4Rx antenna ports and Long DRX Cycle and DRX adaptation | D008 |  |  |
| 5.3.3.1.4 | 4RX FDD Minimum requirements for PDCCH with intra-slot repetition | Rel-17 | C017e | UEs supporting 5GS FDD FR1 and 4Rx antenna ports | D008 |  |  |
| 5.3.3.2.1 | 4Rx TDD FR1 PDCCH 1 Tx antenna performance for both SA and NSA | Rel-15 | C019 | UEs supporting 5GS TDD FR1 and 4Rx antenna ports | D010 |  |  |
| 5.3.3.2.2 | 4Rx TDD FR1 PDCCH 2 Tx antenna performance for both SA and NSA | Rel-15 | C019 | UEs supporting 5GS TDD FR1 and 4Rx antenna ports | D010 |  |  |
| 5.3.3.2.3 | 4Rx TDD FR1 PDCCH 1 Tx antenna performance for power saving | Rel-16 | C091 | UEs supporting 5GS TDD FR1 and 4Rx antenna ports and Long DRX Cycle and DRX adaptation | D010 |  |  |
| 5.3.3.2.4 | 4RX TDD Minimum requirements for PDCCH with intra-slot repetition | Rel-17 | C019e | UEs supporting 5GS TDD FR1 and 4Rx antenna ports | D010 |  |  |
| 5.5.1 | FR1 Sustained downlink data rate performance for single carrier | Rel-15 | C001 | UEs supporting 5GS FDD FR1 or TDD FR1 (SA) | D008  D009  D010 |  |  |
| 5.5A.1.1 | FR1 SDR performance for CA (2DL CA) | Rel-15 | C001e | UEs supporting 5GS FDD FR1 or TDD FR1 (SA) and supporting 2DL CA | E016 |  |  |
| 5.5A.1.2 | FR1 SDR performance for CA (3DL CA) | Rel-15 | C001i | UEs supporting 5GS FDD FR1 or TDD FR1 (SA) and supporting 3DL CA | E017 |  |  |
| 5.5A.1.3 | FR1 SDR performance for CA (4DL CA) | Rel-15 | C001j | UEs supporting 5GS FDD FR1 or TDD FR1 (SA) and supporting 4DL CA | E018 |  |  |
| 5.5A.1.4 | FR1 SDR performance for CA (5DL CA) | Rel-15 | C001k | UEs supporting 5GS FDD FR1 or TDD FR1 (SA) and supporting 5DL CA | E019 |  |  |
| **6** | **CSI reporting requirements (Conducted requirements)** |  |  |  |  |  |  |
| 6.2.1.1.1.1 | 1Rx FDD FR1 periodic CQI reporting under AWGN conditions for RedCap | Rel-17 | C177a | RedCap UEs supporting 5GS FDD FR1 and 1Rx UE capability | D008 |  |  |
| 6.2.1.1.2.1 | 1Rx FDD FR1 periodic wideband CQI reporting under fading conditions for RedCap | Rel-17 | C177a | RedCap UEs supporting 5GS FDD FR1 and 1Rx UE capability | D008 |  |  |
| 6.2.1.2.1.1 | 1Rx TDD FR1 periodic CQI reporting under AWGN conditions for RedCap | Rel-17 | C177c | RedCap UEs supporting 5GS TDD FR1 and 1Rx UE capability | D009 |  |  |
| 6.2.1.2.2.1 | 1Rx TDD FR1 periodic wideband CQI reporting under fading conditions for RedCap | Rel-17 | C177c | RedCap UEs supporting 5GS TDD FR1 and 1Rx UE capability | D009 |  |  |
| 6.2.2.1.1.1 | 2Rx FDD FR1 periodic CQI reporting under AWGN conditions for both SA and NSA | Rel-15 | C015 | UEs supporting 5GS FDD FR1 but not supporting FDD bands with 4Rx UE capability | D008 |  |  |
| 6.2.2.1.1.2 | 2Rx FDD FR1 periodic CQI reporting with Table 3 under AWGN conditions for both SA and NSA | Rel-16 | C074 | UEs supporting 5GS FDD FR1 and alternative 64QAM MCS table for PDSCH and CQI table with target BLER of 10^-5, but not supporting FDD bands with 4Rx UE capability | D008 |  |  |
| 6.2.2.1.1.4 | 2Rx FDD FR1 periodic CQI reporting under AWGN conditions for RedCap for SA | Rel-17 | C177b | RedCap UEs supporting 5GS FDD FR1 and 2Rx UE capability | D008 |  |  |
| 6.2.2.1.2.1 | 2Rx FDD FR1 periodic wideband CQI reporting under fading conditions for both SA and NSA | Rel-15 | C015 | UEs supporting 5GS FDD FR1 but not supporting FDD bands with 4Rx UE capability | D008 |  |  |
| 6.2.2.1.2.2 | 2Rx FDD FR1 aperiodic subband CQI reporting under fading conditions for both SA and NSA | Rel-15 | C015 | UEs supporting 5GS FDD FR1 but not supporting FDD bands with 4Rx UE capability | D008 |  |  |
| 6.2.2.1.2.3 | 2Rx FDD FR1 Wideband CQI reporting with inter-cell intereference | Rel-15 | C015d | UEs supporting 5GS FDD FR1 and MMSE-IRC receiver but not supporting FDD bands with 4Rx UE capability | D008 | NOTE 1. |  |
| 6.2.2.1.2.4 | 2Rx FDD FR1 periodic wideband CQI reporting under fading conditions for RedCap | Rel-17 | C177b | RedCap UEs supporting 5GS FDD FR1 and 2Rx UE capability | D008 |  |  |
| 6.2.2.2.1.1 | 2Rx TDD FR1 periodic CQI reporting under AWGN conditions for both SA and NSA | Rel-15 | C016 | UEs supporting 5GS TDD FR1 but not supporting TDD bands with 4Rx UE capability | D010 |  |  |
| 6.2.2.2.1.2 | 2Rx TDD FR1 periodic CQI reporting with Table 3 under AWGN conditions for both SA and NSA | Rel-16 | C075 | UEs supporting 5GS TDD FR1 and alternative 64QAM MCS table for PDSCH and CQI table with target BLER of 10^-5, but not supporting TDD bands with 4Rx UE capability | D010 |  |  |
| 6.2.2.2.1.5 | 2Rx TDD FR1 periodic CQI reporting under AWGN conditions for RedCap | Rel-17 | C177d | RedCap UEs supporting 5GS TDD FR1 and 2Rx UE capability | D009 |  |  |
| 6.2.2.2.2.1 | 2Rx TDD FR1 periodic wideband CQI reporting under fading conditions for both SA and NSA | Rel-15 | C016 | UEs supporting 5GS TDD FR1 but not supporting TDD bands with 4Rx UE capability | D010 |  |  |
| 6.2.2.2.2.2 | 2Rx TDD FR1 aperiodic subband CQI reporting under fading conditions for both SA and NSA | Rel-15 | C016 | UEs supporting 5GS TDD FR1 but not supporting TDD bands with 4Rx UE capability | D010 |  |  |
| 6.2.2.2.2.3 | 2Rx TDD FR1 Wideband CQI reporting with inter-cell intereference | Rel-15 | C016d | UEs supporting 5GS TDD FR1 and MMSE-IRC receiver but not supporting TDD bands with 4Rx UE capability | D010 | NOTE 1. |  |
| 6.2.3.1.1.1 | 4Rx FDD FR1 periodic CQI reporting under AWGN conditions for both SA and NSA | Rel-15 | C017 | UEs supporting 5GS FDD FR1 and 4Rx antenna ports | D008 |  |  |
| 6.2.2.2.2.4 | 2Rx TDD FR1 periodic wideband CQI reporting under fading conditions for RedCap | Rel-17 | C177d | RedCap UEs supporting 5GS TDD FR1 and 2Rx UE capability | D009 |  |  |
| 6.2.3.1.1.2 | 4Rx FDD FR1 periodic CQI reporting with Table 3 under AWGN conditions for both SA and NSA | Rel-16 | C076 | UEs supporting 5GS FDD FR1 and alternative 64QAM MCS table for PDSCH and CQI table with target BLER of 10^-5 and 4Rx antenna ports | D008 |  |  |
| 6.2.3.1.2.1 | 4Rx FDD FR1 periodic wideband CQI reporting under fading conditions for both SA and NSA | Rel-15 | C017 | UEs supporting 5GS FDD FR1 and 4Rx antenna ports | D008 |  |  |
| 6.2.3.1.2.2 | 4Rx FDD FR1 aperiodic subband CQI reporting under fading conditions for both SA and NSA | Rel-15 | C017 | UEs supporting 5GS FDD FR1 and 4Rx antenna ports | D008 |  |  |
| 6.2.3.1.2.3 | 4Rx FDD FR1 Wideband CQI reporting with inter-cell intereference | Rel-15 | C017d | UEs supporting 5GS FDD FR1 and 4Rx antenna ports and MMSE-IRC receiver | D008 | NOTE 1. |  |
| 6.2.3.2.1.1 | 4Rx TDD FR1 periodic CQI reporting under AWGN conditions for both SA and NSA | Rel-15 | C019 | UEs supporting 5GS TDD FR1 and 4Rx antenna ports | D010 |  |  |
| 6.2.3.2.1.2 | 4Rx TDD FR1 periodic CQI reporting with Table 3 under AWGN conditions for both SA and NSA | Rel-16 | C077 | UEs supporting 5GS TDD FR1 and alternative 64QAM MCS table for PDSCH and CQI table with target BLER of 10^-5 and 4Rx antenna ports | D010 |  |  |
| 6.2.3.2.2.1 | 4Rx TDD FR1 periodic wideband CQI reporting under fading conditions for both SA and NSA | Rel-15 | C019 | UEs supporting 5GS TDD FR1 and 4Rx antenna ports | D010 |  |  |
| 6.2.3.2.2.2 | 4Rx TDD FR1 aperiodic subband CQI reporting under fading conditions for both SA and NSA | Rel-15 | C019 | UEs supporting 5GS TDD FR1 and 4Rx antenna ports | D010 |  |  |
| 6.2.3.2.2.3 | 4Rx TDD FR1 Wideband CQI reporting with inter-cell intereference | Rel-15 | C019d | UEs supporting 5GS TDD FR1 and 4Rx antenna ports and MMSE-IRC receiver | D010 | NOTE 1. |  |
| 6.2A.3.1.1 | CQI reporting accuracy under AWGN conditions for CA (2DL CA) | Rel-15 | C031 | UEs supporting 5GS FR1 and CA (2DL CA) | E016 | Test execution not necessary if 6.2A.3.1.2 is executed. |  |
| 6.2A.3.1.2 | CQI reporting accuracy under AWGN conditions for CA (3DL CA) | Rel-15 | C033 | UEs supporting 5GS FR1 and CA (3DL CA) | E017 | Test execution not necessary if 6.2A.3.1.3 is executed. |  |
| 6.2A.3.1.3 | CQI reporting accuracy under AWGN conditions for CA (4DL CA) | Rel-15 | C036 | UEs supporting 5GS FR1 and CA (4DL CA) | E018 |  |  |
| 6.2A.4.1.1 | 4Rx FR1 CQI reporting under AWGN for Scell on band with shared spectrum access for CA (2DLCA) | Rel-16 | C204 | UEs supporting 5GS TDD FR1 and NR-U | D025 | NOTE 1 |  |
| 6.3.1.1.1 | 1Rx FDD Single PMI with 4TX TypeI-SinglePanel Codebook for RedCap | Rel-17 | C177a | RedCap UEs supporting 5GS FDD FR1 and 1Rx UE capability | D008 |  |  |
| 6.3.1.2.1 | 1Rx TDD Single PMI with 4TX TypeI-SinglePanel Codebook for RedCap | Rel-17 | C177c | RedCap UEs supporting 5GS TDD FR1 and 1Rx UE capability | D009 |  |  |
| 6.3.2.1.1 | 2Rx FDD FR1 Single PMI with 4TX TypeI-SinglePanel codebook for both SA and NSA | Rel-15 | C015 | UEs supporting 5GS FDD FR1 but not supporting FDD bands with 4Rx UE capability | D008 |  |  |
| 6.3.2.1.2 | 2Rx FDD FR1 Single PMI with 8TX TypeI-SinglePanel codebook for both SA and NSA | Rel-15 | C015 | UEs supporting 5GS FDD FR1 but not supporting FDD bands with 4Rx UE capability | D008 |  |  |
| 6.3.2.1.3 | 2Rx FDD FR1 Multiple PMI with 16Tx Type I – SinglePanel Codebook for both SA and NSA | Rel-15 | C015 | UEs supporting 5GS FDD FR1 but not supporting FDD bands with 4Rx UE capability | D008 |  |  |
| 6.3.2.1.4 | 2Rx FDD FR1 Single PMI with 32Tx Type1 – SinglePanel Codebook for both SA and NSA | Rel-15 | C015 | UEs supporting 5GS FDD FR1 but not supporting FDD bands with 4Rx UE capability | D008 |  |  |
| 6.3.2.1.5 | 2Rx FDD FR1 Multiple PMI with 16Tx TypeII codebook for both SA and NSA | Rel-15 | C015c | UEs supporting 5GS FDD FR1 and supporting Type II codebook but not supporting FDD bands with 4Rx UE capability | D008 |  |  |
| 6.3.2.1.6 | 2Rx FDD FR1 Multiple PMI with 16Tx Enhanced TypeII codebook for both SA and NSA | Rel-16 | C128 | UEs supporting 5GS FDD FR1 and Enhanced Type II codebook with at least 16 ports per CSI-RS resource, but not supporting FDD bands with 4Rx UE capability | D008 |  |  |
| 6.3.2.1.7 | 2Rx FDD FR1 Single PMI with 8 ports TypeI-SinglePanel Codebook for Single-DCI based transmission scheme for both SA and NSA | Rel-17 | C070 | UEs supporting 5GS FDD FR1 and single DCI based spatial division multiplexing scheme | D008 | Note1 |  |
| 6.3.2.2.1 | 2Rx TDD FR1 Single PMI with 4TX TypeI-SinglePanel codebook for both SA and NSA | Rel-15 | C016 | UEs supporting 5GS TDD FR1 but not supporting TDD bands with 4Rx UE capability | D010 |  |  |
| 6.3.2.2.2 | 2Rx TDD FR1 Single PMI with 8TX TypeI-SinglePanel codebook for both SA and NSA | Rel-15 | C016 | UEs supporting 5GS TDD FR1 but not supporting TDD bands with 4Rx UE capability | D010 |  |  |
| 6.3.2.2.3 | 2Rx TDD FR1 Multiple PMI with 16Tx Type1 - SinglePanel codebook for both SA and NSA | Rel-15 | C016 | UEs supporting 5GS TDD FR1 but not supporting TDD bands with 4Rx UE capability | D010 |  |  |
| 6.3.2.2.4 | 2Rx TDD FR1 Single PMI with 32Tx Type1 - SinglePanel codebook for both SA and NSA | Rel-15 | C016 | UEs supporting 5GS TDD FR1 but not supporting TDD bands with 4Rx UE capability | D010 |  |  |
| 6.3.2.2.5 | 2Rx TDD FR1 Multiple PMI with 16Tx TypeII codebook for both SA and NSA | Rel-15 | C016c | UEs supporting 5GS TDD FR1 and supporting Type II codebook but not supporting TDD bands with 4Rx UE capability | D010 |  |  |
| 6.3.2.2.6 | 2Rx TDD FR1 Multiple PMI with 16Tx Enhanced TypeII codebook for both SA and NSA | Rel-16 | C129 | UEs supporting 5GS TDD FR1 and Enhanced Type II codebook with at least 16 ports per CSI-RS resource, but not supporting TDD bands with 4Rx UE capability | D010 |  |  |
| 6.3.2.2.7 | 2Rx TDD Single PMI with 4TX TypeI-SinglePanel Codebook for RedCap | Rel-17 | C177b | RedCap UEs supporting 5GS TDD FR1 and 2Rx UE capability | D009 |  |  |
| 6.3.2.2.8 | 2Rx TDD FR1 Single PMI with 8 ports TypeI-SinglePanel Codebook for Single-DCI based transmission scheme for both SA and NSA | Rel-17 | C071 | UEs supporting 5GS TDD FR1 and single DCI based spatial division multiplexing scheme, but not supporting TDD bands with 4Rx UE capability | D010 |  |  |
| 6.3.3.1.1 | 4Rx FDD FR1 Single PMI with 4TX TypeI-SinglePanel codebook for both SA and NSA | Rel-15 | C017 | UEs supporting 5GS FDD FR1 and 4Rx antenna ports | D008  D011 |  |  |
| 6.3.3.1.2 | 4Rx FDD FR1 Single PMI with 8TX TypeI-SinglePanel codebook for both SA and NSA | Rel-15 | C017 | UEs supporting 5GS FDD FR1 and 4Rx antenna ports | D008  D011 |  |  |
| 6.3.3.1.3 | 4Rx FDD FR1 Multiple PMI with 16Tx Type I – SinglePanel Codebook for both SA and NSA | Rel-15 | C017 | UEs supporting 5GS FDD FR1 and 4Rx antenna ports | D008  D011 |  |  |
| 6.3.3.1.4 | 4Rx FDD FR1 Single PMI with 32Tx Type1 – SinglePanel Codebook for both SA and NSA | Rel-15 | C017 | UEs supporting 5GS FDD FR1 and 4Rx antenna ports | D008  D011 |  |  |
| 6.3.3.1.5 | 4Rx FDD FR1 Multiple PMI with 16Tx TypeII codebook for both SA and NSA | Rel-15 | C017c | UEs supporting 5GS FDD FR1 and supporting Type II codebook and 4Rx antenna ports | D008  D011 |  |  |
| 6.3.3.1.6 | 4Rx FDD FR1 Multiple PMI with 16Tx Enhanced TypeII codebook for both SA and NSA | Rel-16 | C130 | UEs supporting 5GS FDD FR1 and Enhanced Type II codebook with at least 16 ports per CSI-RS resource, and 4Rx antenna ports | D008  D011 |  |  |
| 6.3.3.1.7 | 4Rx FDD FR1 Single PMI with 8 ports TypeI-SinglePanel Codebook for Single-DCI based transmission scheme for both SA and NSA | Rel-17 | C072 | UEs supporting 5GS FDD FR1 and single DCI based spatial division multiplexing scheme and 4Rx antenna ports | D008  D011 |  |  |
| 6.3.3.2.1 | 4Rx TDD FR1 Single PMI with 4TX TypeI-SinglePanel codebook for both SA and NSA | Rel-15 | C019 | UEs supporting 5GS FDD FR1 and 4Rx antenna ports | D010  D011 |  |  |
| 6.3.3.2.2 | 4Rx TDD FR1 Single PMI with 8TX TypeI-SinglePanel codebook for both SA and NSA | Rel-15 | C019 | UEs supporting 5GS FDD FR1 and 4Rx antenna ports | D010  D011 |  |  |
| 6.3.3.2.3 | 4Rx TDD FR1 Multiple PMI with 16Tx Type1 - SinglePanel codebook for both SA and NSA | Rel-15 | C019 | UEs supporting 5GS TDD FR1 and 4Rx antenna ports | D010 |  |  |
| 6.3.3.2.4 | 4Rx TDD FR1 Single PMI with 32Tx Type1 - SinglePanel codebook for both SA and NSA | Rel-15 | C019 | UEs supporting 5GS TDD FR1 and 4Rx antenna ports | D010 |  |  |
| 6.3.3.2.5 | 4Rx TDD FR1 Multiple PMI with 16Tx TypeII codebook for both SA and NSA | Rel-15 | C019c | UEs supporting 5GS TDD FR1 and supporting Type II codebook and 4Rx antenna ports | D010 |  |  |
| 6.3.3.2.6 | 4Rx TDD FR1 Multiple PMI with 16Tx Enhanced TypeII codebook for both SA and NSA | Rel-16 | C131 | UEs supporting 5GS TDD FR1 and Enhanced Type II codebook with at least 16 ports per CSI-RS resource, and 4Rx antenna ports | D010 |  |  |
| 6.3.3.2.7 | 4Rx TDD FR1 Single PMI with 8 ports TypeI-SinglePanel Codebook for Single-DCI based transmission scheme for both SA and NSA | Rel-17 | C073 | UEs supporting 5GS FDD FR1 and single DCI based spatial division multiplexing scheme and 4Rx antenna ports | D010 |  |  |
| 6.4.2.1\_1 | 2Rx FDD FR1 RI reporting for both SA and NSA | Rel-15 | C015 | UEs supporting 5GS FDD FR1 but not supporting FDD bands with 4Rx UE capability | D008 |  |  |
| 6.4.2.1.1 | 2Rx FDD FR1 RI reporting for RedCap | Rel-17 | C177b | RedCap UEs supporting 5GS FDD FR1 and 2Rx UE capability | D008 |  |  |
| 6.4.2.2\_1 | 2Rx TDD FR1 RI reporting for both SA and NSA | Rel-15 | C016 | UEs supporting 5GS TDD FR1 but not supporting TDD bands with 4Rx UE capability | D010 |  |  |
| 6.4.2.2.1 | 2Rx TDD FR1 RI reporting for RedCap | Rel-17 | C177d | RedCap UEs supporting 5GS TDD FR1 and 2Rx UE capability | D009 |  |  |
| 6.4.3.1\_1 | 4Rx FDD FR1 RI reporting for both SA and NSA | Rel-15 | C017 | UEs supporting 5GS FDD FR1 and 4Rx antenna ports | D008  D011 |  |  |
| 6.4.3.2\_1 | 4Rx TDD FR1 RI reporting for both SA and NSA | Rel-15 | C019 | UEs supporting 5GS TDD FR1 and 4Rx antenna ports | D010  D011 |  |  |
| **7** | **Demodulation performance requirements (Radiated requirements)** |  |  |  |  |  |  |
| 7.2.2.2.1\_1 | 2Rx TDD FR2 PDSCH mapping Type A performance - 2x2 MIMO with baseline receiver for SA and NSA | Rel-15 | C061 | UEs supporting 5GS TDD FR2 | D013  D014  D015 |  |  |
| 7.2.2.2.1\_2 | 2Rx TDD FR2 PDSCH mapping Type A performance - 2x2 MIMO with enhanced type 1 receiver for SA and NSA | Rel-15 | C062c | UEs supporting 5GS TDD FR2 and Enhanced Receiver Type 1 | D014 |  |  |
| 7.2.2.2.1\_3 | 2Rx TDD FR2 PDSCH mapping Type A performance - 2x2 MIMO with 256QAM for SA and NSA (Rel-16 and forward) | Rel-16 | C126 | UEs supporting 5GS TDD FR2 and PDSCH 256QAM for FR2 | D013 |  |  |
| 7.2.2.2.2\_1 | 2Rx TDD FR2 PDSCH repetitions over multiple slots - 2x2 MIMO with baseline receiver for SA and NSA | Rel-16 | C171 | UEs supporting 5GS TDD FR2 and alternative 64QAM MCS table for PDSCH and aggregationFactorDL > 1 for PDSCH repetition multislots | D014 |  |  |
| 7.2.2.2.3\_1 | 2Rx TDD FR2 PDSCH mapping Type B performance - 2x2 MIMO with baseline receiver for SA and NSA | Rel-16 | C172 | UEs supporting 5GS TDD FR2 and aggregationFactorDL > 1 for PDSCH repetition multislots | D014 |  |  |
| 7.2A.2.1 | 2Rx TDD FR2 CA requirements for normal PDSCH Demodulation Performance for both SA and NSA (2DLCA) | Rel-15 | C061a | UEs supporting 5GS TDD FR2 AND 2DL CA | E032 |  |  |
| 7.2A.2.2 | 2Rx TDD FR2 CA requirements for normal PDSCH Demodulation Performance for both SA and NSA (3DLCA) | Rel-15 | C061b | UEs supporting 5GS TDD FR2 AND 3DL CA | E033 |  |  |
| 7.3.2.2.1 | 2Rx TDD FR2 PDCCH 1 Tx antenna performance for both SA and NSA | Rel-15 | C061 | UEs supporting 5GS TDD FR2 | D014 |  |  |
| 7.3.2.2.2 | 2Rx TDD FR2 PDCCH 2 Tx antenna performance for both SA and NSA | Rel-15 | C061 | UEs supporting 5GS TDD FR2 | D014 |  |  |
| 7.3.2.2.3 | 2Rx TDD FR2 PDCCH 1 Tx antenna performance for power saving | Rel-16 | C092 | UEs supporting 5GS TDD FR2 and Long DRX Cycle and DRX adaptation | D014 |  |  |
| 7.5.1 | FR2 Sustained downlink data rate performance for single carrier | Rel-15 | C061 | UEs supporting 5GS TDD FR2 | D014 |  |  |
| 7.5.2 | FR2 Sustained downlink data rate performance for RedCap | Rel-17 | C197 | RedCap UEs supporting 5GS TDD FR2 and 2Rx UE capability | D014 |  |  |
| 7.5.1.1 | FR2 SDR performance for CA (2DL CA) | Rel-15 | C061a | UEs supporting 5GS TDD FR2 and CA (2DL CA) | E032 |  |  |
| 7.5.1.2 | FR2 SDR performance for CA (3DL CA) | Rel-15 | C061b | UEs supporting 5GS TDD FR2 and CA (3DL CA) | E033 | NOTE 1 |  |
| 7.5.1.3 | FR2 SDR performance for CA (4DL CA) | Rel-15 | TBD | UEs supporting 5GS TDD FR2 and CA (4DL CA) | E034 | NOTE 1 |  |
| 7.5.1.4 | FR2 SDR performance for CA (5DL CA) | Rel-15 | TBD | UEs supporting 5GS TDD FR2 and CA (5DL CA) | E035 | NOTE 1 |  |
| 7.5.1.5 | FR2 SDR performance for CA (6DL CA) | Rel-15 | TBD | UEs supporting 5GS TDD FR2 and CA (6DL CA) | E036 | NOTE 1 |  |
| 7.5.1.6 | FR2 SDR performance for CA (7DL CA) | Rel-15 | TBD | UEs supporting 5GS TDD FR2 and CA (7DL CA) | E037 | NOTE 1 |  |
| 7.5.1.7 | FR2 SDR performance for CA (8DL CA) | Rel-15 | TBD | UEs supporting 5GS TDD FR2 and CA (8DL CA) | E038 |  |  |
| **8** | **CSI reporting requirements (Radiated requirements)** |  |  |  |  |  |  |
| 8.2.2.2.1.1 | 2Rx TDD FR2 periodic wideband CQI reporting under AWGN performance for both SA and NSA | Rel-15 | C061 | UEs supporting 5GS TDD FR2 | D014 |  |  |
| 8.2.2.2.2.1 | 2Rx TDD FR2 aperiodic wideband CQI reporting under fading performance for both SA and NSA | Rel-15 | C061F | UEs supporting 5GS TDD FR2 | D014 | Skip TC 8.2.2.2.2.1 if TS 38.521-4 TC 8.2.2.2.2.1\_1 has been executed and passed. |  |
| 8.2.2.2.2.1\_1 | 2Rx TDD FR2 aperiodic CQI wideband reporting under fading performance for both SA and NSA – 256QAM (Rel-16 and forward) | Rel-16 | C126 | UEs supporting 5GS TDD FR2 and DL 256QAM | D013 | NOTE 1 |  |
| 8.2A.3.1.1 | 2Rx CQI reporting accuracy under AWGN conditions for CA (2DL CA) | Rel-15 | C006c | UEs supporting 5GS FR2 and CA (2DL CA) | E032 | Test execution not necessary if 8.2A.3.1.2 is executed. |  |
| 8.2A.3.1.2 | 2Rx CQI reporting accuracy under AWGN conditions for CA (3DL CA) | Rel-15 | C006d | UEs supporting 5GS FR2 and CA (3DL CA) | E033 | Test execution not necessary if 8.2A.3.1.3 is executed. |  |
| 8.2A.3.1.3 | 2Rx CQI reporting accuracy under AWGN conditions for CA (4DL CA) | Rel-15 | C006e | UEs supporting 5GS FR2 and CA (4DL CA) | E034 |  |  |
| 8.3.2.2.1 | 2Rx TDD FR2 Single PMI with 2TX TypeI-SinglePanel codebook for both SA and NSA | Rel-15 | C061 | UEs supporting 5GS TDD FR2 | D014 |  |  |
| 8.4.2.2.1 | 2Rx TDD FR2 RI reporting for both SA and NSA | FFS | FFS | FFS | FFS | NOTE 1 |  |
| **9** | **Demodulation performance requirements for interworking** |  |  |  |  |  |  |
| 9.4B.1.1 | Sustained downlink data rate performance for EN-DC within FR1 | Rel-15 | C020 | UEs supporting 5GS FDD FR1 or TDD FR1 (NSA) | D008  D009  D010 |  |  |
| 9.4B.1.2 | Sustained downlink data rate performance for EN-DC including FR2 NR carrier | FFS | FFS | FFS | FFS | NOTE 1 |  |
| **10** | **CSI reporting requirements for interworking** |  |  |  |  |  |  |
| **11** | **V2X requirements** |  |  |  |  |  |  |
| 11.1.2.1.1\_1 | 2Rx FR1 PSSCH performance - single active PSSCH link | Rel-16 | C079 | UEs supporting 5GS FR1 and NR sidelink | D016 |  |  |
| 11.1.3.1.1\_1 | 2Rx FR1 PSCCH performance - single active PSSCH link | Rel-16 | C079 | UEs supporting 5GS FR1 and NR sidelink | D016 |  |  |
| 11.1.5.1.1\_1 | 2Rx FR1 PSCCH performance - single active PSSCH link | Rel-16 | C079 | UEs supporting 5GS FR1 and NR sidelink | D016 |  |  |
| 11.1.6.1.1\_1 | 2Rx FR1 Power imbalance performance - two active PSSCH link | Rel-16 | C079 | UEs supporting 5GS FR1 and NR sidelink | D016 |  |  |
| 11.1.7.1.1\_1 | 2Rx FR1 HARQ buffer soft combining performance - maximum number of HARQ processes | Rel-16 | C079 | UEs supporting 5GS FR1 and NR sidelink | D016 |  |  |
| 11.1.8.1.1\_1 | 2Rx FR1 PSCCH decoding capability - maximum number of received PSCCHs | Rel-16 | C079 | UEs supporting 5GS FR1 and NR sidelink | D016 |  |  |
| 11.1.9.1.1\_1 | 2Rx FR1 PSFCH decoding capability - maximum number of received PSFCHs | Rel-16 | C079 | UEs supporting 5GS FR1 and NR sidelink | D016 |  |  |
| NOTE 1: The test case/branch is incomplete for any Band/CA/DC Configuration but has basic test configurations already. NOTE 1 can be removed only when the test case/branch is complete for at least one Band / CA/DC Configuration for at least one feature included in the test case/branch. Detailed completion status can be found in the corresponding test case section in 38.521-4.  NOTE 2: Void.  NOTE 3: Void. | | | | | | |  |

Table 4.1.4-1a: Void

Table 4.1.4-1b: Void

Table 4.1.4-1c: Void

## 4.2 RRM conformance test cases

Table 4.2-1: Applicability of RRM EN-DC FR1 conformance test cases, ref. TS 38.533 [5]

| Clause | TC Title | Release | Applicability | | Additional Information | Branch | Subtest Selection Criteria |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  |  |  | Condition | Comment |  |  |  |
| **4.3** | **RRC\_CONNECTED state mobility** |  |  |  |  |  |  |
| **4.3.2** | **RRC connection mobility control** |  |  |  |  |  |  |
| **4.3.2.2** | **Random access** |  |  |  |  |  |  |
| 4.3.2.2.1 | EN-DC FR1 contention based random access | Rel-15 | C021 | UEs supporting EN-DC FR1 | Test execution not necessary if test 6.3.2.2.1 has been executed. | 2Rx  4Rx |  |
| 4.3.2.2.2 | EN-DC FR1 non-contention based random access | Rel-15 | C021 | UEs supporting EN-DC FR1 | Test execution not necessary if test 6.3.2.2.2 has been executed. | 2Rx  4Rx | Subtest 2: F001 |
| 4.3.2.2.3 | EN-DC FR1 2-step contention based random access | Rel-16 | C157 | UEs supporting EN-DC FR1 and 2-step RACH | Test execution not necessary if test 6.3.2.2.3 has been executed. | 2Rx  4Rx |  |
| 4.3.2.2.4 | EN-DC FR1 2-step non-contention based random access | Rel-16 | C158 | UEs supporting EN-DC FR1 and 2-step RACH | Test execution not necessary if test 6.3.2.2.4 has been executed. | 2Rx  4Rx |  |
| **4.4** | **Timing** |  |  |  |  |  |  |
| **4.4.1** | **UE Transmit Timing** |  |  |  |  |  |  |
| 4.4.1.1 | EN-DC FR1 UE transmit timing accuracy | Rel-15 | C021 | UEs supporting EN-DC FR1 | Test execution not necessary if test 6.4.1.1 has been executed. | 2Rx  4Rx | Subtest 2: F002 |
| **4.4.2** | **UE timer accuracy** |  |  |  |  |  |  |
| **4.4.3** | **Timing Advance** |  |  |  |  |  |  |
| 4.4.3.1 | EN-DC FR1 timing advance adjustment accuracy | Rel-15 | C021 | UEs supporting EN-DC FR1 | Test execution not necessary if test 6.4.3.1 has been executed. | 2Rx  4Rx |  |
| **4.5** | **Signalling characteristics** |  |  |  |  |  |  |
| **4.5.1** | **Radio link monitoring** |  |  |  |  |  |  |
| 4.5.1.1 | EN-DC FR1 radio link monitoring out-of-sync test for PSCell configured with SSB-based RLM RS in non-DRX mode | Rel-15 | C021 | UEs supporting EN-DC FR1 | Test execution not necessary if test 6.5.1.1 has been executed. | 2Rx  4Rx |  |
| 4.5.1.2 | EN-DC FR1 radio link monitoring in-sync test for PSCell configured with SSB-based RLM RS in non-DRX mode | Rel-15 | C021 | UEs supporting EN-DC FR1 | Test execution not necessary if test 6.5.1.2 has been executed. | 2Rx  4Rx |  |
| 4.5.1.3 | EN-DC FR1 radio link monitoring out-of-sync test for PSCell configured with SSB-based RLM RS in DRX mode | Rel-15 | C021a | UEs supporting EN-DC FR1 and long DRX cycle | Test execution not necessary if test 6.5.1.3 has been executed. | 2Rx  4Rx |  |
| 4.5.1.4 | EN-DC FR1 radio link monitoring in-sync test for PSCell configured with SSB-based RLM RS in DRX mode | Rel-15 | C021a | UEs supporting EN-DC FR1 and long DRX cycle | Test execution not necessary if test 6.5.1.4 has been executed. | 2Rx  4Rx |  |
| 4.5.1.5 | EN-DC FR1 radio link monitoring out-of-sync test for PSCell configured with CSI-RS-based RLM RS in non-DRX mode | Rel-15 | C038 | UEs supporting EN-DC FR1 and CSI-RS-based RLM | Test execution not necessary if test 6.5.1.5 has been executed. | 2Rx  4Rx |  |
| 4.5.1.6 | EN-DC FR1 radio link monitoring in-sync test for PSCell configured with CSI-RS-based RLM RS in non-DRX mode | Rel-15 | C038 | UEs supporting EN-DC FR1 and CSI-RS-based RLM | Test execution not necessary if test 6.5.1.6 has been executed. | 2Rx  4Rx |  |
| 4.5.1.7 | EN-DC FR1 radio link monitoring out-of-sync test for PSCell configured with CSI-RS-based RLM RS in DRX mode | Rel-15 | C038a | UEs supporting EN-DC FR1, CSI-RS-based RLM and long DRX cycle | Test execution not necessary if test 6.5.1.7 has been executed. | 2Rx  4Rx |  |
| 4.5.1.8 | EN-DC FR1 radio link monitoring in-sync test for PSCell configured with CSI-RS-based RLM RS in DRX mode | Rel-15 | C038a | UEs supporting EN-DC FR1, CSI-RS-based RLM and long DRX cycle | Test execution not necessary if test 6.5.1.8 has been executed. | 2Rx  4Rx |  |
| 4.5.1.9 | EN-DC FR1 Radio Link Monitoring Out-of-sync Test for PSCell configured with SSB-based RLM RS for UE fulfilling relaxed measurement criterion | Rel-17 | C021e | UEs supporting EN-DC FR1, long DRX cycle and RLM relaxed measurements |  | 2Rx  4Rx |  |
| **4.5.2** | **Interruption** |  |  |  |  |  |  |
| 4.5.2.1 | EN-DC FR1 interruptions at transitions between active and non-active during DRX in synchronous EN-DC | Rel-15 | C021a | UEs supporting EN-DC FR1 and long DRX cycle |  | 2Rx  4Rx |  |
| 4.5.2.2 | EN-DC FR1 interruptions at transitions between active and non-active during DRX in asynchronous EN-DC | Rel-15 | C021a | UEs supporting EN-DC FR1 and long DRX cycle |  | 2Rx  4Rx |  |
| 4.5.2.3 | EN-DC FR1 interruptions during measurements on deactivated NR SCC in synchronous EN-DC | Rel-15 | C067 | UEs supporting EN-DC FR1 and 2DL CA in NR |  | 2Rx  4Rx |  |
| 4.5.2.4 | EN-DC FR1 interruptions during measurements on deactivated NR SCC in asynchronous EN-DC | Rel-15 | C067 | UEs supporting EN-DC FR1 and 2DL CA in NR |  | 2Rx  4Rx |  |
| 4.5.2.5 | EN-DC FR1 interruptions during measurements on deactivated E-UTRAN SCC in synchronous EN-DC | Rel-15 | C068 | UEs supporting EN-DC FR1 and 2DL CA in E-UTRA |  | 2Rx  4Rx |  |
| 4.5.2.6 | EN-DC FR1 interruptions during measurements on deactivated E-UTRAN SCC in asynchronous EN-DC | Rel-15 | C068 | UEs supporting EN-DC FR1 and 2DL CA in E-UTRA |  | 2Rx  4Rx |  |
| 4.5.2.10 | EN-DC FR1 interruptions due to RRM and RLM/BFD measurements on deactivated NR PSCell | Rel-17 | C288 | UEs supporting EN-DC FR1 and activation and deactivation on SCG |  | 2Rx  4Rx |  |
| **4.5.3** | **Scell activation and deactivation delay** |  |  |  |  |  |  |
| 4.5.3.1 | EN-DC FR1 SCell activation and deactivation of known SCell in non-DRX for 160ms Scell measurement cycle | Rel-15 | C067 | UEs supporting EN-DC FR1 and 2DL CA in NR |  | 2Rx  4Rx |  |
| 4.5.3.2 | EN-DC FR1 SCell activation and deactivation of known SCell in non-DRX for 640ms Scell measurement cycle | Rel-15 | C067 | UEs supporting EN-DC FR1 and 2DL CA in NR |  | 2Rx  4Rx |  |
| 4.5.3.3 | EN-DC FR1 SCell activation and deactivation of unknown SCell in non-DRX | Rel-15 | C067 | UEs supporting EN-DC FR1 and 2DL CA in NR |  | 2Rx  4Rx |  |
| 4.5.3.5 | EN-DC FR1 direct SCell activation at SCell addition of known SCell | Rel-16 | C243 | UEs supporting EN-DC FR1 and 2DL CA in NR and direct SCell activation |  | 2Rx  4Rx |  |
| 4.5.3.6 | EN-DC FR1 fast SCell Activation of known SCell in non-DRX for 160ms SCell measurement cycle | Rel-17 | C267 | UEs supporting EN-DC FR1 and 2DL CA in NR and fast SCell activation |  | 2Rx  4Rx |  |
| 4.5.3.7 | EN-DC FR1 fast SCell Activation of known SCell for 640 ms SCell measurement cycle | Rel-17 | C267 | UEs supporting EN-DC FR1 and 2DL CA in NR and fast SCell activation |  | 2Rx  4Rx |  |
| **4.5.4** | **UE UL carrier RRC reconfiguration delay** |  |  |  |  |  |  |
| 4.5.4.1 | EN-DC FR1 UE UL carrier RRC reconfiguration delay | Rel-15 | C032 | UEs supporting EN-DC FR1 and SUL | Test execution not necessary if test 6.5.4.1 has been executed. | 2Rx  4Rx |  |
| **4.5.5** | **Beam failure detection and link recovery procedures** |  |  |  |  |  |  |
| 4.5.5.1 | EN-DC FR1 SSB-based beam failure detection and link recovery in non-DRX | Rel-15 | C082 | UEs supporting EN-DC FR1 and link recovery | Test execution not necessary if test 6.5.5.1 has been executed. | 2Rx  4Rx |  |
| 4.5.5.2 | EN-DC FR1 SSB-based beam failure detection and link recovery in DRX | Rel-15 | C082a | UEs supporting EN-DC FR1 and long DRX cycle and link recovery | Test execution not necessary if test 6.5.5.2 has been executed. | 2Rx  4Rx |  |
| 4.5.5.3 | EN-DC FR1 CSI-RS-based beam failure detection and link recovery in non-DRX | Rel-15 | C083 | UEs supporting EN-DC FR1 and CSI-RS-based RLM and link recovery | Test execution not necessary if test 6.5.5.3 has been executed. | 2Rx  4Rx |  |
| 4.5.5.4 | EN-DC FR1 CSI-RS-based beam failure detection and link recovery in DRX | Rel-15 | C083a | UEs supporting EN-DC FR1 and long DRX cycle and CSI-RS-based RLM and link recovery | Test execution not necessary if test 6.5.5.4 has been executed. | 2Rx  4Rx |  |
| 4.5.5.5 | EN-DC FR1 Scell CSI-RS-based beam failure detection and SSB-based link recovery in non-DRX | Rel-16 | C175 | UEs supporting EN-DC FR1 and CSI-RS-based RLM and SSB link recovery | Test execution not necessary if test 6.5.5.5 has been executed. | 2Rx  4Rx |  |
| 4.5.5.6 | EN-DC FR1 Scell CSI-RS-based beam failure detection and SSB-based link recovery in DRX | Rel-16 | C176 | UEs supporting EN-DC FR1 and long DRX cycle and CSI-RS-based RLM and SSB link recovery | Test execution not necessary if test 6.5.5.6 has been executed. | 2Rx  4Rx |  |
| 4.5.5.7 | EN-DC FR1 PSCell TRP specific SSB-based beam failure detection and link recovery in non-DRX | Rel-17 | C082b | UEs supporting TRP specific EN-DC FR1 and link recovery |  | 2Rx  4Rx |  |
| 4.5.5.8 | EN-DC FR1 SCell TRP specific CSI-RS-based beam failure detection and SSB-based link recovery in non-DRX | Rel-17 | C175a | UEs supporting TRP specific EN-DC FR1 and CSI-RS-based RLM and SSB link recovery |  | 2Rx  4Rx |  |
| **4.5.6** | **Active BWP switch delay** |  |  |  |  |  |  |
| **4.5.6.1** | **DCI-based and timer-based active BWP switch** |  |  |  |  |  |  |
| 4.5.6.1.1 | EN-DC FR1 DCI-based DL active BWP switch in non-DRX in synchronous EN-DC | Rel-15 | C065 | UEs supporting EN-DC FR1 and (DCI and timer based active BWP switching delay Type1 or Type2) and (Support of BWP adaptation upto2 or upto4) |  | 2Rx  4Rx |  |
| 4.5.6.1.2 | EN-DC FR1 DCI-based DL active BWP switch with SCell in non-DRX in synchronous EN-DC | Rel-15 | C065a | UEs supporting EN-DC FR1 and (DCI and timer based active BWP switching delay Type1 or Type2) and (Support of BWP adaptation upto2 or upto4) and 2DL CA |  | 2Rx  4Rx |  |
| **4.5.6.2** | **RRC-based active BWP switch** |  |  |  |  |  |  |
| 4.5.6.2.1 | EN-DC FR1 RRC-based DL active BWP switch in non-DRX in synchronous EN-DC | Rel-15 | C065b | UEs supporting EN-DC FR1 and (Support of BWP adaptation upto2 or upto4) |  | 2Rx  4Rx |  |
| **4.5.6.3** | **Simultaneous DCI-based and Timer-based Active BWP Switch on multiple CCs** |  |  |  |  |  |  |
| 4.5.6.3.1 | Simultaneous E-UTRAN – NR PSCell FR1 DL active BWP switch in non-DRX in EN-DC on multiple CCs | Rel-16 | C065d | UEs supporting EN-DC FR1, incremental delay for DCI and timer based active BWP switching on multiple CCs simultaneously and 2DL CA | NOTE 1 | 2Rx  4Rx |  |
| **4.5.6.4** |  |  |  |  |  |  |  |
| **4.5.6.5** | **Simultaneous RRC-based Active BWP Switch on multiple CCs** |  |  |  |  |  |  |
| 4.5.6.5.1 | E-UTRAN – NR PSCell FR1 DL active BWP switch in non-DRX in synchronous EN-DC on multiple CCs | Rel-16 | C065d | UEs supporting EN-DC FR1, incremental delay for DCI and timer based active BWP switching on multiple CCs simultaneously and 2DL CA | NOTE 1 | 2Rx  4Rx |  |
| **4.5.7** | **PSCell addition and release delay** |  |  |  |  |  |  |
| 4.5.7.1 | EN-DC FR1 addition and release delay of known PSCell | Rel-15 | C021 | UEs supporting EN-DC FR1 |  | 2Rx  4Rx |  |
| **4.5.8** | **UL switching** |  |  |  |  |  |  |
| 4.5.8.1 | EN-DC FR1 interruptions at switching between two uplink carriers | Rel-16 | C126a | UEs supporting EN-DC and dynamic UL Tx switching in case of inter-band EN-DC |  | 2Rx  4Rx |  |
| **4.5.10** | **PSCell activation and deactivation delay** |  |  |  |  |  |  |
| 4.5.10.1 | EN-DC FR1 PSCell activation and deactivation delay | Rel-17 | C288 | UEs supporting EN-DC FR1 and activation and deactivation on SCG |  | 2Rx  4Rx |  |
| **4.5.11** | **Conditional PSCell addition and release delay (FR1 EN-DC)** |  |  |  |  |  |  |
| 4.5.11.1 | EN-DC FR1 Addition and Release Delay of PSCell | Rel-17 | C268 | UEs supporting EN-DC FR1 and conditional PSCell addition in EN-DC |  | 2Rx  4Rx |  |
| **4.6** | **Measurement procedures** |  |  |  |  |  |  |
| **4.6.1** | **Intra-frequency measurements** |  |  |  |  |  |  |
| 4.6.1.1 | EN-DC FR1 event-triggered reporting without gap in non-DRX | Rel-15 | C021 | UEs supporting EN-DC FR1 | Test execution not necessary if test 6.6.1.1 has been executed. | 2Rx  4Rx |  |
| 4.6.1.2 | EN-DC FR1 event-triggered reporting without gap in DRX | Rel-15 | C021a | UEs supporting EN-DC FR1 and long DRX cycle | Test execution not necessary if test 6.6.1.2 has been executed. | 2Rx  4Rx |  |
| 4.6.1.3 | EN-DC FR1 event-triggered reporting with gap in non-DRX | Rel-15 | C042 | UEs supporting EN-DC FR1 and CSI-RS-based RLM and BWP operation without bandwidth restriction | Test execution not necessary if test 6.6.1.3 has been executed. | 2Rx  4Rx |  |
| 4.6.1.4 | EN-DC FR1 event-triggered reporting with gap in DRX | Rel-15 | C042a | UEs supporting EN-DC FR1, CSI-RS-based RLM, BWP operation without bandwidth restriction and long DRX cycle | Test execution not necessary if test 6.6.1.4 has been executed. | 2Rx  4Rx |  |
| 4.6.1.5 | EN-DC FR1 event-triggered reporting without gap in non-DRX with SSB time index detection | Rel-15 | C021b | UEs supporting EN-DC FDD FR1 | Test execution not necessary if test 6.6.1.5 has been executed. | 2Rx  4Rx |  |
| 4.6.1.6 | EN-DC FR1 event-triggered reporting with gap in non-DRX with SSB time index detection | Rel-15 | C042b | UEs supporting EN-DC FDD FR1 and CSI-RS based RLM and BWP operation without bandwidth restriction | Test execution not necessary if test 6.6.1.6 has been executed. | 2Rx  4Rx |  |
| 4.6.1.7 | EN-DC FR1 event-triggered reporting without gap in DRX for UE configured with highSpeedMeasFlag-r16 | Rel-16 | C097 | UEs supporting EN-DC FR1 and long DRX cycle and measurement enhancements in HST | Test execution not necessary if test 6.6.1.7 has been executed. | 2Rx  4Rx |  |
| 4.6.1.8 | EN-DC FR1 event triggered reporting cell without SSB time index detection in DRX for UE configured with highSpeedMeasCA-Scell-r17 | Rel-17 | C021c | UEs supporting EN-DC FR1 and CA measurement enhancements in HST | Test execution not necessary if test 6.6.1.8 has been executed. | 2Rx  4Rx |  |
| **4.6.2** | **Inter-frequency measurements** |  |  |  |  |  |  |
| 4.6.2.1 | EN-DC FR1-FR1 event-triggered reporting in non-DRX | Rel-15 | C021 | UEs supporting EN-DC FR1 | Test execution not necessary if test 6.6.2.1 has been executed. | 2Rx  4Rx |  |
| 4.6.2.2 | EN-DC FR1-FR1 event-triggered reporting in DRX | Rel-15 | C021a | UEs supporting EN-DC FR1 and long DRX cycle | Test execution not necessary if test 6.6.2.2 has been executed. | 2Rx  4Rx |  |
| 4.6.2.5 | EN-DC FR1-FR1 event-triggered reporting in non-DRX with SSB time index detection | Rel-15 | C021 | UEs supporting EN-DC FR1 | Test execution not necessary if test 6.6.2.5 has been executed. | 2Rx  4Rx |  |
| 4.6.2.6 | EN-DC FR1-FR1 event-triggered reporting in DRX with SSB time index detection | Rel-15 | C021a | UEs supporting EN-DC FR1 and long DRX cycle | Test execution not necessary if test 6.6.2.6 has been executed. | 2Rx  4Rx |  |
| 4.6.2.9 | EN-DC FR1-FR1 event triggered reporting without SSB time index detection in DRX for UE configured with highSpeedMeasInterFreq-r17 | Rel-17 | C021d | UEs supporting EN-DC FR1 and inter-frequency measurement enhancements in HST | Test execution not necessary if test 6.6.2.12 has been executed. | 2Rx  4Rx | Subtest 2: F016 |
| **4.6.4** | **L1-RSRP for beam reporting** |  |  |  |  |  |  |
| 4.6.4.1 | EN-DC FR1 SSB-based L1-RSRP measurement in non-DRX | Rel-15 | C021 | UEs supporting EN-DC FR1 | Test execution not necessary if test 6.6.4.1 has been executed. | 2Rx  4Rx |  |
| 4.6.4.2 | EN-DC FR1 SSB-based L1-RSRP measurement in DRX | Rel-15 | C021a | UEs supporting EN-DC FR1 and long DRX cycle | Test execution not necessary if test 6.6.4.2 has been executed. | 2Rx  4Rx |  |
| 4.6.4.3 | EN-DC FR1 CSI-RS-based L1-RSRP measurement in non-DRX | Rel-15 | C021 | UEs supporting EN-DC FR1 | Test execution not necessary if test 6.6.4.3 has been executed. | 2Rx  4Rx |  |
| 4.6.4.4 | EN-DC FR1 CSI-RS-based L1-RSRP measurement in DRX | Rel-15 | C021a | UEs supporting EN-DC FR1 and long DRX cycle | Test execution not necessary if test 6.6.4.4 has been executed. | 2Rx  4Rx |  |
| 4.6.4.5 | EN-DC FR1 SSB-based L1-RSRP measurement in DRX for UE configured with highSpeedMeasFlag-r16 | Rel-16 | C098 | UEs supporting EN-DC FR1, long DRX cycle and intra-NR measurement enhancement in HST | Test execution not necessary if test 6.6.4.5 has been executed. | 2Rx  4Rx |  |
| **4.6.7** | **L1-SINR for beam reporting** |  |  |  |  |  |  |
| 4.6.7.1 | EN-DC FR1 CSI-RS based CMR and no dedicated IMR L1-SINR measurement in non-DRX | Rel-16 | C141 | UEs supporting EN-DC FR1 and L1-SINR measurement based on CSI-RS as CMR without dedicated IMR configured |  | 2Rx  4Rx |  |
| 4.6.7.2 | EN-DC FR1 SSB based CMR and dedicated IMR L1-SINR measurement in DRX | Rel-16 | C142 | UEs supporting EN-DC FR1 and long DRX cycle and L1-SINR measurement based on SSB as CMR and dedicated CSI-IM as IMR |  | 2Rx  4Rx |  |
| 4.6.7.3 | EN-DC FR1 CSI-RS based CMR and dedicated IMR L1-SINR measurement in DRX | Rel-16 | C143 | UEs supporting EN-DC FR1 and long DRX cycle and L1-SINR measurement based on CSI-RS as CMR and dedicated CSI-RS as IMR |  | 2Rx  4Rx |  |
| **4.7** | **Measurement performance requirements** |  |  |  |  |  |  |
| **4.7.1** | **SS-RSRP** |  |  |  |  |  |  |
| **4.7.1.1** | **Intra-frequency measurements** |  |  |  |  |  |  |
| 4.7.1.1.1 | EN-DC FR1 SS-RSRP absolute measurement accuracy | Rel-15 | C021 | UEs supporting EN-DC FR1 | Test execution not necessary if test 6.7.1.1.1 has been executed. | 2Rx  4Rx |  |
| 4.7.1.1.2 | EN-DC FR1 SS-RSRP relative measurement accuracy | Rel-15 | C021 | UEs supporting EN-DC FR1 | Test execution not necessary if test 6.7.1.1.2 has been executed. | 2Rx  4Rx |  |
| **4.7.1.2** | **Inter-frequency measurements** |  |  |  |  |  |  |
| 4.7.1.2.1 | EN-DC FR1-FR1 SS-RSRP absolute measurement accuracy | Rel-15 | C021 | UEs supporting EN-DC FR1 | Test execution not necessary if test 6.7.1.2.1 has been executed. | 2Rx  4Rx |  |
| 4.7.1.2.2 | EN-DC FR1-FR1 SS-RSRP relative measurement accuracy | Rel-15 | C021 | UEs supporting EN-DC FR1 | Test execution not necessary if test 6.7.1.2.2 has been executed. | 2Rx  4Rx |  |
| **4.7.2** | **SS-RSRQ** |  |  |  |  |  |  |
| 4.7.2.1 | EN-DC FR1 SS-RSRQ measurement accuracy | Rel-15 | C021 | UEs supporting EN-DC FR1 | Test execution not necessary if test 6.7.2.1 has been executed. | 2Rx  4Rx |  |
| 4.7.2.2.1 | EN-DC FR1-FR1 SS-RSRQ absolute measurement accuracy | Rel-15 | C021 | UEs supporting EN-DC FR1 | Test execution not necessary if test 6.7.2.2.1 has been executed. | 2Rx  4Rx |  |
| 4.7.2.2.2 | EN-DC FR1-FR1 SS-RSRQ relative measurement accuracy | Rel-15 | C021 | UEs supporting EN-DC FR1 | Test execution not necessary if test 6.7.2.2.2 has been executed. | 2Rx  4Rx |  |
| **4.7.3** | **SS-SINR** |  |  |  |  |  |  |
| 4.7.3.1 | EN-DC FR1 SS-SINR measurement accuracy | Rel-15 | C035 | UEs supporting EN-DC FR1 and SS-SINR-meas | Test execution not necessary if test 6.7.3.1 has been executed. | 2Rx  4Rx |  |
| 4.7.3.2.1 | EN-DC FR1-FR1 SS-SINR absolute measurement accuracy | Rel-15 | C035 | UEs supporting EN-DC FR1 and SS-SINR-meas | Test execution not necessary if test 6.7.3.2.1 has been executed. | 2Rx  4Rx |  |
| 4.7.3.2.2 | EN-DC FR1-FR1 SS-SINR relative measurement accuracy | Rel-15 | C035 | UEs supporting EN-DC FR1 and SS-SINR-meas | Test execution not necessary if test 6.7.3.2.2 has been executed. | 2Rx  4Rx |  |
| **4.7.4** | **L1-RSRP** |  |  |  |  |  |  |
| 4.7.4.1.1 | EN-DC FR1 SSB-based L1-RSRP absolute measurement accuracy | Rel-15 | C021 | UEs supporting EN-DC FR1 | Test execution not necessary if test 6.7.4.1.1 has been executed. | 2Rx  4Rx |  |
| 4.7.4.1.2 | EN-DC FR1 SSB-based L1-RSRP relative measurement accuracy | Rel-15 | C021 | UEs supporting EN-DC FR1 | Test execution not necessary if test 6.7.4.1.2 has been executed. | 2Rx  4Rx |  |
| 4.7.4.2.1 | EN-DC FR1 CSI-RS-based L1-RSRP absolute measurement accuracy | Rel-15 | C021 | UEs supporting EN-DC FR1 | Test execution not necessary if test 6.7.4.2.1 has been executed. | 2Rx  4Rx |  |
| 4.7.4.2.2 | EN-DC FR1 CSI-RS-based L1-RSRP relative measurement accuracy | Rel-15 | C021 | UEs supporting EN-DC FR1 | Test execution not necessary if test 6.7.4.2.2 has been executed. | 2Rx  4Rx |  |
| **4.7.5** | **SFTD** |  |  |  |  |  |  |
| 4.7.5.1 | EN-DC FR1 SFTD measurement accuracy | Rel-15 | C043 | UEs supporting EN-DC FR1 and SFTD measurements between E-UTRA Pcell and NR PSCell |  | 2Rx  4Rx |  |
| **4.7.7** | **L1-SINR** |  |  |  |  |  |  |
| 4.7.7.1.1 | EN-DC FR1 CSI-RS based CMR and no dedicated IMR configured and CSI-RS resource set with repetition off L1-SINR absolute measurement accuracy | Rel-16 | C135 | UEs supporting EN-DC FR1 and L1-SINR-measurement based on CSI-RS as CMR without dedicated IMR configured | Test execution not necessary if test 6.7.9.1.1 has been executed. | 2Rx  4Rx |  |
| 4.7.7.1.2 | EN-DC FR1 CSI-RS based CMR and no dedicated IMR configured and CSI-RS resource set with repetition off L1-SINR relative measurement accuracy | Rel-16 | C135 | UEs supporting EN-DC FR1 and L1-SINR-measurement based on CSI-RS as CMR without dedicated IMR configured | Test execution not necessary if test 6.7.9.1.2 has been executed. | 2Rx  4Rx |  |
| 4.7.7.2 | EN-DC FR1 SSB based CMR and dedicated IMR L1-SINR absolute measurement accuracy | Rel-16 | C136 | UEs supporting EN-DC FR1 and L1-SINR-measurement based on SSB as CMR and dedicated CSI-IM as IMR | Test execution not necessary if test 6.7.9.2 has been executed. | 2Rx  4Rx |  |
| 4.7.7.3.1 | EN-DC FR1 CSI-RS based CMR and dedicated IMR L1-SINR absolute measurement accuracy | Rel-16 | C137 | UEs supporting 5GS NR SA FR1 and L1-SINR-measurement based on CSI-RS as CMR and dedicated CSI-IM as IMR | Test execution not necessary if test 6.7.9.3.1 has been executed. | 2Rx  4Rx |  |
| 4.7.7.3.2 | EN-DC FR1 CSI-RS based CMR and dedicated IMR L1-SINR relative measurement accuracy | Rel-16 | C137 | UEs supporting 5GS NR SA FR1 and L1-SINR-measurement based on CSI-RS as CMR and dedicated CSI-IM as IMR | Test execution not necessary if test 6.7.9.3.2 has been executed. | 2Rx  4Rx |  |
| **4A** | **NE-DC with all NR cells in FR1** |  |  |  |  |  |  |
| **4A.1** | **Signalling characteristics** |  |  |  |  |  |  |
| **4A.1.1** | **E-UTRA PSCell addition** |  |  |  |  |  |  |
| 4A.1.1.1 | NE-DC FR1 addition and release delay of known PSCell | Rel-15 | FFS | FFS | NOTE 1 | 2Rx  4Rx |  |
| NOTE 1: The test case/branch is incomplete for any Band/CA/DC Configuration but has basic test configurations already. NOTE 1 can be removed only when the test case/branch is complete for at least one Band / CA/DC Configuration for at least one feature included in the test case/branch. Detailed completion status can be found in the corresponding test case section in 38.533.  NOTE 2: Test X refers to the corresponding Sub-Test as defined in TS 38.533 [5]. | | | | | | |  |

Table 4.2-1a: Void

Table 4.2-2: Applicability of RRM EN-DC FR2 conformance test cases, ref. TS 38.533 [5]

| Clause | TC Title | Release | Applicability | | Additional Information | Branch | Subtest Selection Criteria |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  |  |  | Condition | Comment |  |  |  |
| **5.3** | **RRC\_CONNECTED state mobility** |  |  |  |  |  |  |
| **5.3.2** | **RRC connection mobility control** |  |  |  |  |  |  |
| **5.3.2.2** | **Random access** |  |  |  |  |  |  |
| 5.3.2.2.1 | EN-DC FR2 contention based random access | Rel-16 | C022 | UEs supporting EN-DC FR2 |  | 2Rx |  |
| 5.3.2.2.2 | EN-DC FR2 non-contention based random access | Rel-16 | C022 | UEs supporting EN-DC FR2 |  | 2Rx | Subtest 2: F003 |
| 5.3.2.2.3 | EN-DC FR2 2-step contention based random access | Rel-16 | C158 | UEs supporting EN-DC FR2 and 2-step RACH | NOTE 1 | 2Rx |  |
| 5.3.2.2.4 | EN-DC FR2 2-step non-contention based random access | Rel-16 | C158 | UEs supporting EN-DC FR2 and 2-step RACH | NOTE 1 | 2Rx |  |
| **5.4** | **Timing** |  |  |  |  |  |  |
| **5.4.1** | **UE transmit timing** |  |  |  |  |  |  |
| 5.4.1.1 | EN-DC FR2 UE transmit timing accuracy | Rel-15 | C022 | UEs supporting EN-DC FR2 |  | 2Rx | Subtest 2: F004 |
| **5.4.2** | **UE timer accuracy** |  |  |  |  |  |  |
| **5.4.3** | **Timing advance** |  |  |  |  |  |  |
| 5.4.3.1 | EN-DC FR2 timing advance adjustment accuracy | Rel-15 | C022 | UEs supporting EN-DC FR2 |  | 2Rx |  |
| **5.5** | **Signalling characteristics** |  |  |  |  |  |  |
| **5.5.1** | **Radio link monitoring** |  |  |  |  |  |  |
| 5.5.1.1 | EN-DC FR2 radio link monitoring out-of-sync test for PSCell configured with SSB-based RLM RS in non-DRX mode | Rel-15 | C022 | UEs supporting EN-DC FR2 |  | 2Rx |  |
| 5.5.1.2 | EN-DC FR2 radio link monitoring in-sync test for PSCell configured with SSB-based RLM RS in non-DRX mode | Rel-15 | C022 | UEs supporting EN-DC FR2 |  | 2Rx |  |
| 5.5.1.3 | EN-DC FR2 radio link monitoring out-of-sync test for PSCell configured with SSB-based RLM RS in DRX mode | Rel-15 | C022a | UEs supporting EN-DC FR2 and long DRX cycle |  | 2Rx |  |
| 5.5.1.4 | EN-DC FR2 radio link monitoring in-sync test for PSCell configured with SSB-based RLM RS in DRX mode | Rel-15 | C022a | UEs supporting EN-DC FR2 and long DRX cycle |  | 2Rx |  |
| 5.5.1.5 | EN-DC FR2 radio link monitoring out-of-sync test for PSCell configured with CSI-RS-based RLM RS in non-DRX mode | Rel-15 | C161 | UEs supporting EN-DC FR2 and CSI-RS based RLM | NOTE 1 | 2Rx |  |
| 5.5.1.6 | EN-DC FR2 radio link monitoring in-sync test for PSCell configured with CSI-RS-based RLM RS in non-DRX mode | Rel-15 | C161 | UEs supporting EN-DC FR2 and CSI-RS based RLM | NOTE 1 | 2Rx |  |
| 5.5.1.7 | EN-DC FR2 radio link monitoring out-of-sync test for PSCell configured with CSI-RS-based RLM RS in DRX mode | Rel-15 | C162 | UEs supporting EN-DC FR2, CSI-RS-based RLM and long DRX cycle |  | 2Rx |  |
| 5.5.1.8 | EN-DC FR2 radio link monitoring in-sync test for PSCell configured with CSI-RS-based RLM RS in DRX mode | Rel-15 | C162 | UEs supporting EN-DC FR2, CSI-RS-based RLM and long DRX cycle |  | 2Rx |  |
| 5.5.1.9 | EN-DC FR2 radio link monitoring UE scheduling restrictions | Rel-15 | C022n | UEs supporting EN-DC FR2 and PDCCH monitoring in any symbol of the slot (with or without span gap) | NOTE 1 | 2Rx |  |
| 5.5.1.10 | EN-DC FR2 Radio Link Monitoring Out-of-sync Test for PSCell configured with SSB-based RLM RS for UE fulfilling relaxed measurement criterion | Rel-17 | C022e | UEs supporting EN-DC FR2, long DRX cycle and RLM relaxed measurements |  | 2Rx |  |
| **5.5.2** | **Interruption** |  |  |  |  |  |  |
| 5.5.2.1 | EN-DC FR2 interruptions at transitions between active and non-active during DRX in synchronous EN-DC | Rel-15 | C022a | UEs supporting EN-DC FR2 and long DRX cycle |  | 2Rx |  |
| 5.5.2.2 | EN-DC FR2 interruptions at transitions between active and non-active during DRX in asynchronous EN-DC | Rel-15 | C022a | UEs supporting EN-DC FR2 and long DRX cycle |  | 2Rx |  |
| 5.5.2.3 | EN-DC FR2 interruptions during measurements on deactivated NR SCC in synchronous EN-DC | Rel-15 | C180 | UEs supporting EN-DC FR2 and 2DL CA in NR |  | 2Rx |  |
| 5.5.2.4 | EN-DC FR2 interruptions during measurements on deactivated NR SCC in asynchronous EN-DC | Rel-15 | C180 | UEs supporting EN-DC FR2 and 2DL CA in NR |  | 2Rx |  |
| 5.5.2.5 | EN-DC FR2 interruptions during measurements on deactivated E-UTRAN SCC in synchronous EN-DC | FFS | FFS | FFS | NOTE 1 | 2Rx |  |
| 5.5.2.6 | EN-DC FR2 interruptions during measurements on deactivated E-UTRAN SCC in asynchronous EN-DC | FFS | FFS | FFS | NOTE 1 | 2Rx |  |
| **5.5.3** | **Scell activation and deactivation delay** |  |  |  |  |  |  |
| 5.5.3.1 | EN-DC FR2 SCell activation and deactivation intra-band in non-DRX | Rel-15 | C180 | UEs supporting EN-DC FR2 and 2DL CA in NR |  | 2Rx |  |
| 5.5.3.7 | EN-DC FR2 direct SCell activation at SCell addition of known SCell | Rel-16 | C242 | UEs supporting EN-DC FR2 and 2DL CA in NR and direct SCell activation |  | 2Rx |  |
| 5.5.3.8 | EN-DC FR2 fast SCell Activation of SCell in FR2 intra-band | Rel-17 | C269 | UEs supporting EN-DC FR2 and 2DL CA in NR and direct SCell activation |  | 2Rx |  |
| 5.5.3.13 | EN-DC FR2 Addition and Release Delay of NR PSCell | Rel-17 | C268a | UEs supporting EN-DC FR2 and conditional PSCell addition in EN-DC | NOTE 1 | 2Rx |  |
| **5.5.4** | **UE UL carrier RRC reconfiguration delay** |  |  |  |  |  |  |
| **5.5.5** | **Beam failure detection and link recovery procedures** |  |  |  |  |  |  |
| 5.5.5.1 | EN-DC FR2 SSB-based beam failure detection and link recovery in non-DRX | Rel-15 | C022 | UEs supporting EN-DC FR2 |  | 2Rx |  |
| 5.5.5.2 | EN-DC FR2 SSB-based beam failure detection and link recovery in DRX | Rel-15 | C022a | UEs supporting EN-DC FR2 and long DRX cycle |  | 2Rx |  |
| 5.5.5.3 | EN-DC FR2 CSI-RS-based beam failure detection and link recovery in non-DRX | Rel-15 | C161 | UEs supporting EN-DC FR2 and CSI-RS-based RLM |  | 2Rx |  |
| 5.5.5.4 | EN-DC FR2 CSI-RS-based beam failure detection and link recovery in DRX | Rel-15 | C162 | UEs supporting EN-DC FR2 and long DRX cycle and CSI-RS-based RLM |  | 2Rx |  |
| 5.5.5.5 | EN-DC FR2 scheduling available restriction during SSB-based beam failure detection and link recovery in non-DRX | Rel-15 | C022 | UEs supporting EN-DC FR2 |  | 2Rx |  |
| 5.5.5.6 | EN-DC FR2 CSI-RS-based BFD and LR for SCell in non-DRX | Rel-16 | C149 | UEs supporting EN-DC FR2 and CSI-RS based BFR on Scell |  | 2Rx |  |
| 5.5.5.7 | EN-DC FR2 SCell CSI-RS-based beam failure detection and link recovery in DRX | Rel-16 | C150 | UEs supporting EN-DC FR2 and long DRX cycle and CSI-RS based BFR on Scell |  | 2Rx |  |
| 5.5.5.8 | EN-DC FR2 CSI-RS-based PSCell TRP specific Beam Failure Detection and Link Recovery in DRX mode | Rel-17 | C162a | UEs supporting TRP specific EN-DC FR2 and long DRX cycle and CSI-RS-based RLM |  | 2Rx |  |
| 5.5.5.9 | EN-DC FR2 SSB-based beam failure detection and link recovery in DRX mode for UE fulfilling relaxed measurement criterion | Rel-17 | C320 | UEs supporting EN-DC FR2 and long DRX cycle and BFD relaxation criteria *bfd-Relaxation-r17* |  | 2Rx |  |
| **5.5.6** | **Active BWP switch delay** |  |  |  |  |  |  |
| **5.5.6.1** | **DCI-based and timer-based active BWP switch** |  |  |  |  |  |  |
| 5.5.6.1.1 | EN-DC FR2 DCI-based DL active BWP switch in non-DRX in synchronous EN-DC | FFS | FFS | FFS | NOTE 1 | 2Rx |  |
| 5.5.6.1.2 | EN-DC FR2 DCI-based DL active BWP switch with SCell in non-DRX in synchronous EN-DC | Rel-15 | N/A | Not recommended due to LTE – FR2 testability issue | NOTE 1 | 2Rx |  |
| **5.5.6.2** | **RRC-based active BWP switch** |  |  |  |  |  |  |
| 5.5.6.2.1 | EN-DC FR2 RRC-based DL active BWP switch in non-DRX in synchronous EN-DC | Rel-15 | C065c | UEs supporting EN-DC FR2 and (Support of BWP adaptation upto2 or upto4) |  | 2Rx |  |
| **5.5.7** | **Void** |  |  |  |  |  |  |
| **5.5.8** | **Active TCI state switch delay** |  |  |  |  |  |  |
| 5.5.8.1 | EN-DC FR2 MAC-CE based active TCI state switch | Rel-15 | C022m | UEs supporting EN-DC FR2, maximum number of active TCI states per BWP greater than 1, and maximum number of simultaneously trackable TRS resource sets per CC greater than 1 | NOTE 1 | 2Rx |  |
| 5.5.8.2 | EN-DC FR2 RRC based active TCI state switch | Rel-15 | C022m | UEs supporting EN-DC FR2, maximum number of active TCI states per BWP greater than 1, and maximum number of simultaneously trackable TRS resource sets per CC greater than 1 | NOTE 1 | 2Rx |  |
| **5.5.11** | **Unified TCI state switch delay** |  |  |  |  |  |  |
| 5.5.11.1 | EN-DC FR2 MAC-CE based active joint TCI state switch | Rel-17 | C278 | UEs supporting EN-DC FR2, and unified TCI state operation with joint DL/UL TCI update for intra-cell beam management | NOTE 1 | 2Rx |  |
| **5.5.12** | **PSCell activation and deactivation delay** |  |  |  |  |  |  |
| 5.5.12.1 | EN-DC FR2 PSCell activation and deactivation delay | Rel-17 | C289 | UEs supporting EN-DC FR2 and activation and deactivation on SCG |  | 2RX |  |
| 5.5.11.2 | EN-DC FR2 MAC-CE based active uplink TCI state switch | Rel-17 | C279 | UEs supporting EN-DC FR2, and unified TCI state operation with separate DL/UL TCI update for intra-cell beam management | NOTE 1 | 2Rx |  |
| 5.5.11.3 | EN-DC FR2 MAC-CE based active downlink TCI state switch |  | C280 | UEs supporting EN-DC FR2, and unified TCI state operation with separate DL/UL TCI update for intra-cell beam management, and supporting RRC configuration of additional PCI different from serving cell associated with the TCI state and/or QCL-info, and unified TCI with separate DL/UL TCI update for inter-cell beam management | NOTE 1 | 2Rx |  |
| **5.6** | **Measurement procedures** |  |  |  |  |  |  |
| **5.6.1** | **Intra-frequency measurements** |  |  |  |  |  |  |
| 5.6.1.1 | EN-DC FR2 event-triggered reporting without gap in non-DRX | Rel-15 | C022 | UEs supporting EN-DC FR2 |  | 2Rx |  |
| 5.6.1.2 | EN-DC FR2 event-triggered reporting without gap in DRX | Rel-15 | C022a | UEs supporting EN-DC FR2 and long DRX cycle |  | 2Rx |  |
| 5.6.1.3 | EN-DC FR2 event-triggered reporting with gap in non-DRX | Rel-15 | C163 | UEs supporting EN-DC FR2, CSI-RS-based RLM and BWP operation without bandwidth restriction |  | 2Rx |  |
| 5.6.1.4 | EN-DC FR2 event-triggered reporting with gap in DRX | Rel-15 | C043a | UEs supporting EN-DC FR2, long DRX cycle, CSI-RS based RLM and BWP operation without BW restriction |  | 2Rx |  |
| **5.6.2** | **Inter-frequency measurements** |  |  |  |  |  |  |
| 5.6.2.1 | EN-DC FR2-FR2 event-triggered reporting in non-DRX | Rel-15 | C022 | UEs supporting EN-DC FR2 |  | 2Rx | Subtest 2: F014 |
| 5.6.2.2 | EN-DC FR2-FR2 event-triggered reporting in DRX | Rel-15 | C022a | UEs supporting EN-DC FR2 and long DRX cycle |  | 2Rx | Subtests 3,4: F015 |
| 5.6.2.3 | EN-DC FR2-FR2 event-triggered reporting in non-DRX with SSB time index detection | Rel-15 | C022 | UEs supporting EN-DC FR2 |  | 2Rx | Subtest 2: F014 |
| 5.6.2.4 | EN-DC FR2-FR2 event-triggered reporting in DRX with SSB time index detection | Rel-15 | C022a | UEs supporting EN-DC FR2 and long DRX cycle |  | 2Rx | Subtests 3,4: F015 |
| 5.6.2.5 | EN-DC FR1-FR2 event-triggered reporting in non-DRX | Rel-15 | N/A | Not recommended due to FR1 – FR2 testability issue | NOTE 1 | 2Rx |  |
| 5.6.2.6 | EN-DC FR1-FR2 event-triggered reporting in DRX | Rel-15 | N/A | Not recommended due to FR1 – FR2 testability issue | NOTE 1 | 2Rx |  |
| 5.6.2.7 | EN-DC FR1-FR2 event-triggered reporting in non-DRX with SSB time index detection | Rel-15 | N/A | Not recommended due to FR1 – FR2 testability issue | NOTE 1 | 2Rx |  |
| 5.6.2.8 | EN-DC FR1-FR2 event-triggered reporting in DRX with SSB time index detection | Rel-15 | N/A | Not recommended due to FR1 – FR2 testability issue | NOTE 1 | 2Rx |  |
| **5.6.3** | **L1-RSRP for beam reporting** |  |  |  |  |  |  |
| 5.6.3.1 | EN-DC FR2 SSB-based L1-RSRP measurement in non-DRX | Rel-15 | C022 | UEs supporting EN-DC FR2 |  | 2Rx |  |
| 5.6.3.2 | EN-DC FR2 SSB-based L1-RSRP measurement in DRX | Rel-15 | C022a | UEs supporting EN-DC FR2 and long DRX cycle |  | 2Rx |  |
| 5.6.3.3 | EN-DC FR2 CSI-RS-based L1-RSRP measurement in non-DRX | Rel-15 | C022 | UEs supporting EN-DC FR2 |  | 2Rx |  |
| 5.6.3.4 | EN-DC FR2 CSI-RS-based L1-RSRP measurement in DRX | Rel-15 | C022a | UEs supporting EN-DC FR2 and long DRX cycle |  | 2Rx |  |
| 5.6.4.1 | EN-DC FR2 SRS-RSRP measurement in non-DRX | Rel-16 | C022b | UEs supporting EN-DC FR2 and SRS-RSRP measurements |  | 2Rx |  |
| **5.6.3** | **L1-SINR measurement for beam reporting** |  |  |  |  |  |  |
| 5.6.6.1 | EN-DC FR2 CSI-RS based CMR and no dedicated IMR L1-SINR measurement in DRX | Rel-16 | C141a | UEs supporting EN-DC FR2 and long DRX cycle and L1-SINR measurement based on CSI-RS as CMR without dedicated IMR configured |  | 2Rx |  |
| 5.6.6.2 | EN-DC FR2 SSB based CMR and dedicated IMR L1-SINR measurement in non-DRX | Rel-16 | C142a | UEs supporting EN-DC FR2 and L1-SINR measurement based on SSB as CMR and dedicated CSI-RS as IMR |  | 2Rx |  |
| 5.6.6.3 | EN-DC FR2 CSI-RS based CMR and dedicated IMR L1-SINR measurement in non-DRX | Rel-16 | C143a | UEs supporting EN-DC FR2 and L1-SINR measurement based on CSI-RS as CMR and dedicated CSI-IM as IMR |  | 2Rx |  |
| **5.7** | **Measurement performance requirements** |  |  |  |  |  |  |
| **5.7.1** | **SS-RSRP** |  |  |  |  |  |  |
| 5.7.1.1 | EN-DC FR2 SS-RSRP measurement accuracy | Rel-15 | C022 | UEs supporting EN-DC FR2 |  | 2Rx |  |
| 5.7.1.2 | EN-DC FR2-FR2 SS-RSRP measurement accuracy | Rel-15 | C022 | UEs supporting EN-DC FR2 |  | 2Rx |  |
| 5.7.1.3 | EN-DC FR1-FR2 SS-RSRP measurement accuracy | Rel-15 | N/A | Not recommended due to E-UTRA/FR1 – FR2 testability issue | NOTE 1 | 2Rx |  |
| **5.7.2** | **SS-RSRQ** |  |  |  |  |  |  |
| 5.7.2.1 | EN-DC FR2 SS-RSRQ measurement accuracy | Rel-15 | C022 | UEs supporting EN-DC FR2 |  | 2Rx |  |
| 5.7.2.2 | EN-DC FR2-FR2 SS-RSRQ measurement accuracy | Rel-15 | C022 | UEs supporting EN-DC FR2 |  | 2Rx |  |
| **5.7.3** | **SS-SINR** |  |  |  |  |  |  |
| 5.7.3.1 | EN-DC FR2 SS-SINR measurement accuracy | Rel-15 | C069 | UEs supporting EN-DC FR2 and SS-SINR-meas |  | 2Rx |  |
| 5.7.3.2 | EN-DC FR2-FR2 SS-SINR measurement accuracy | Rel-15 | C069 | UEs supporting EN-DC FR2 and SS-SINR-meas |  | 2Rx |  |
| **5.7.4** | **L1-RSRP** |  |  |  |  |  |  |
| 5.7.4.1 | EN-DC FR2 SSB based L1-RSRP measurement accuracy | Rel-15 | C022 | UEs supporting EN-DC FR2 |  | 2Rx |  |
| 5.7.4.2 | EN-DC FR2 CSI-RS based L1-RSRP measurement accuracy | Rel-15 | C022 | UEs supporting EN-DC FR2 |  | 2Rx |  |
| 5.7.5.1 | EN-DC FR2 SRS-RSRP measurement accuracy | Rel-16 | C022b | UEs supporting EN-DC FR2 and SRS-RSRP measurements |  | 2Rx |  |
| **5.7.6** | **L1-SINR measurement for beam reporting** |  |  |  |  |  |  |
| 5.7.6.1 | EN-DC FR2 CSI-RS based CMR and no dedicated IMR configured and CSI-RS resource set with repetition off L1-SINR measurement accuracy | Rel-16 | C141b | UEs supporting EN-DC FR2 and L1-SINR measurement based on CSI-RS as CMR without dedicated IMR configured |  | 2Rx |  |
| 5.7.6.2 | EN-DC FR2 SSB based CMR and dedicated IMR L1-SINR absolute measurement accuracy | Rel-16 | C142a | UEs supporting EN-DC FR2 and L1-SINR measurement based on SSB as CMR and dedicated CSI-RS as IMR |  | 2Rx |  |
| 5.7.6.3 | EN-DC FR2 CSI-RS based CMR and dedicated IMR L1-SINR measurement accuracy | Rel-16 | C143a | UEs supporting EN-DC FR2 and L1-SINR measurement based on CSI-RS as CMR and dedicated CSI-IM as IMR |  | 2Rx |  |
| NOTE 1: The test case/branch is incomplete for any Band/CA/DC Configuration but has basic test configurations already. NOTE 1 can be removed only when the test case/branch is complete for at least one Band / CA/DC Configuration for at least one feature included in the test case/branch. Detailed completion status can be found in the corresponding test case section in 38.533.  NOTE 2: Void.  NOTE 3: Void. | | | | | | |  |

Table 4.2-2a: Void

Table 4.2-3: Applicability of RRM NR SA FR1 conformance test cases, ref. TS 38.533 [5]

| Clause | TC Title | Release | Applicability | | Additional Information | Branch | Subtest Selection Criteria |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  |  |  | Condition | Comment |  |  |  |
| **6.1** | **RRC\_IDLE state mobility** |  |  |  |  |  |  |
| **6.1.1** | **NR cell re-selection** |  |  |  |  |  |  |
| 6.1.1.1 | NR SA FR1 cell re-selection | Rel-15 | C001 | UEs supporting 5GS NR SA FR1 |  | 2Rx  4Rx |  |
| 6.1.1.2 | NR SA FR1-FR1 cell re-selection | Rel-15 | C001 | UEs supporting 5GS NR SA FR1 |  | 2Rx  4Rx |  |
| 6.1.1.3 | NR SA FR1 cell re-selection for UE fulfilling low mobility relaxed measurement criterion | Rel-16 | C093 | UEs supporting 5GS NR SA FR1 and relaxed RRM measurement |  | 2Rx  4Rx |  |
| 6.1.1.4 | NR SA FR1 cell re-selection for UE fulfilling not-at-cell edge relaxed measurement criterion | Rel-16 | C093 | UEs supporting 5GS NR SA FR1 and relaxed RRM measurement |  | 2Rx  4Rx |  |
| 6.1.1.5 | NR SA FR1-FR1 cell re-selection for UE fulfilling low mobility relaxed measurement criterion | Rel-16 | C093 | UEs supporting 5GS NR SA FR1 and relaxed RRM measurement |  | 2Rx  4Rx |  |
| 6.1.1.6 | NR SA FR1-FR1 cell re-selection for UE fulfilling not-at-cell edge relaxed measurement criterion | Rel-16 | C093 | UEs supporting 5GS NR SA FR1 and relaxed RRM measurement |  | 2Rx  4Rx |  |
| 6.1.1.7 | NR SA FR1 cell re-selection for UE configured with highSpeedMeasFlag-r16 | Rel-16 | C052 | UEs supporting 5GS NR SA FR1 and measurement enhancements in HST |  | 2Rx  4Rx |  |
| 6.1.1.8 | NR SA FR1-FR1 Cell reselection for UE configured with highSpeedMeasInterFreq-r17 | Rel-17 | C052a | UEs supporting 5GS NR SA FR1 and inter-freq measurement enhancements in HST |  | 2Rx  4Rx |  |
| **6.1.2** | **NR – E-UTRA cell re-selection** |  |  |  |  |  |  |
| 6.1.2.1 | NR SA FR1 – E-UTRA cell re-selection to higher priority E-UTRA | Rel-15 | C025 | UEs supporting 5GS NR SA FR1 and E-UTRA |  | 2Rx  4Rx |  |
| 6.1.2.2 | NR SA FR1 – E-UTRA cell re-selection to lower priority E-UTRA | Rel-15 | C025 | UEs supporting 5GS NR SA FR1 and E-UTRA |  | 2Rx  4Rx |  |
| 6.1.2.3 | NR SA FR1 – E-UTRA cell re-selection to lower priority E-UTRAN for UE fulfilling low mobility relaxed measurement criterion | Rel-16 | C094 | UEs supporting 5GS NR SA FR1 and E-UTRA and relaxed RRM measurement |  | 2Rx  4Rx |  |
| 6.1.2.4 | NR SA FR1 – E-UTRA cell re-selection to lower priority E-UTRAN for UE fulfilling not-at-cell edge relaxed measurement criterion | Rel-16 | C094 | UEs supporting 5GS NR SA FR1 and E-UTRA and relaxed RRM measurement |  | 2Rx  4Rx |  |
| 6.1.2.5 | NR SA FR1 – E-UTRA cell re-selection to lower priority E-UTRA for UE configured with highSpeedMeasFlag-r16 | Rel-16 | C025b | UEs supporting 5GS NR SA FR1 and E-UTRA and E-UTRA inter-RAT measurement enhancements in HST |  | 2Rx  4Rx |  |
| **6.2** | **RRC\_INACTIVE state mobility** |  |  |  |  |  |  |
| 6.2.1 | NR SA FR1 Configured Grant based Small Data Transmissions (CG-SDT) | Rel-17 | C001m | UEs supporting 5GS NR SA FR1, CG-SDT and long DRX cycle |  | 2Rx  4Rx |  |
| **6.3** | **RRC\_CONNECTED state mobility** |  |  |  |  |  |  |
| **6.3.1** | **Handover** |  |  |  |  |  |  |
| 6.3.1.1 | NR SA FR1 handover with known target cell | Rel-15 | C001 | UEs supporting 5GS NR SA FR1 |  | 2Rx  4Rx |  |
| 6.3.1.2 | NR SA FR1 handover with unknown target cell | Rel-15 | C001 | UEs supporting 5GS NR SA FR1 |  | 2Rx  4Rx |  |
| 6.3.1.3 | NR SA FR1-FR1 handover with unknown target cell | Rel-15 | C001 | UEs supporting 5GS NR SA FR1 |  | 2Rx  4Rx |  |
| 6.3.1.4 | NR SA FR1 – E-UTRA handover with known target cell | Rel-15 | C025 | UEs supporting 5GS NR SA FR1 and E-UTRA |  | 2Rx  4Rx |  |
| 6.3.1.5 | NR SA FR1 – E-UTRA handover with unknown target cell | Rel-15 | C025 | UEs supporting 5GS NR SA FR1 and E-UTRA |  | 2Rx  4Rx |  |
| 6.3.1.6 | NR SA FR1 – UTRAN FDD handover with known target cell | Rel-16 | C096 | UEs supporting 5GS NR SA FR1 and UTRAN FDD |  | 2Rx  4Rx |  |
| 6.3.1.7 | NR SA FR1 synchronous DAPS handover | Rel-16 | C101 | UEs supporting 5GS NR SA FR1 and intra-frequency DAPS handover |  | 2Rx  4Rx |  |
| 6.3.1.8 | NR SA FR1 asynchronous DAPS handover | Rel-16 | C102 | UEs supporting 5GS NR SA FR1 and intra-frequency async DAPS handover |  | 2Rx  4Rx |  |
| 6.3.1.9 | NR SA FR1 Intra-band inter-frequency synchronous DAPS handover | Rel-16 | C107 | UEs supporting 5GS NR SA FR1 and inter-frequency DAPS handover |  | 2Rx  4Rx |  |
| 6.3.1.10 | NR SA FR1 Intra-band inter-frequency asynchronous DAPS handover | Rel-16 | C108 | UEs supporting 5GS NR SA FR1 and inter-frequency async DAPS handover |  | 2Rx  4Rx |  |
| 6.3.1.11 | NR SA FR1 Inter-band inter-frequency synchronous DAPS handover | Rel-16 | C107 | UEs supporting 5GS NR SA FR1 and inter-frequency DAPS handover | For test configuration 1, 2, 4, 5, 9 | 2Rx  4Rx |  |
|  |  |  | C109 | UEs supporting 5GS NR SA FR1 and inter-frequency DAPS handover and supporting different SCSs in source Pcell and inter-frequency target Pcell | For test configuration 3, 6, 7, 8 | 2Rx  4Rx |  |
| 6.3.1.12 | NR SA FR1 Inter-band inter-frequency asynchronous DAPS handover | Rel-16 | C108 | UEs supporting 5GS NR SA FR1 and inter-frequency async DAPS handover | For test configuration 1, 2, 4, 5, 9 | 2Rx  4Rx |  |
|  |  |  | C110 | UEs supporting 5GS NR SA FR1 and inter-frequency async DAPS handover and supporting different SCSs in source Pcell and inter-frequency target Pcell | For test configuration 3, 6, 7, 8 | 2Rx  4Rx |  |
| **6.3.2** | **RRC connection mobility control** |  |  |  |  |  |  |
| **6.3.2.1** | **RRC re-establishment** |  |  |  |  |  |  |
| 6.3.2.1.1 | NR SA FR1 RRC re-establishment | Rel-15 | C001 | UEs supporting 5GS NR SA FR1 |  | 2Rx  4Rx |  |
| 6.3.2.1.2 | NR SA FR1 - FR1 RRC re-establishment | Rel-15 | C001 | UEs supporting 5GS NR SA FR1 |  | 2Rx  4Rx |  |
| 6.3.2.1.3 | NR SA FR1 RRC re-establishment without serving cell timing | Rel-15 | C001 | UEs supporting 5GS NR SA FR1 |  | 2Rx  4Rx |  |
| **6.3.2.2** | **Random access** |  |  |  |  |  |  |
| 6.3.2.2.1 | NR SA FR1 contention based random access | Rel-15 | C001 | UEs supporting 5GS NR SA FR1 | Test execution not necessary if test 4.3.2.2.1 has been executed. | 2Rx  4Rx |  |
| 6.3.2.2.2 | NR SA FR1 non-contention based random access | Rel-15 | C001 | UEs supporting 5GS NR SA FR1 | Test execution not necessary if test 4.3.2.2.2 has been executed. | 2Rx  4Rx | Subtest 2: F005 |
| 6.3.2.2.3 | NR SA FR1 2-step contention based random access | Rel-16 | C159 | UEs supporting 5GS NR SA FR1and 2-step RACH | Test execution not necessary if test 4.3.2.2.3 has been executed. | 2Rx  4Rx |  |
| 6.3.2.2.4 | NR SA FR1 2-step non-contention based random access | Rel-16 | C159 | UEs supporting 5GS NR SA FR1and 2-step RACH | Test execution not necessary if test 4.3.2.2.4 has been executed. | 2Rx  4Rx |  |
| **6.3.2.3** | **RRC connection release with redirection** |  |  |  |  |  |  |
| 6.3.2.3.1 | NR SA FR1 RRC connection release with redirection | Rel-15 | C001 | UEs supporting 5GS NR SA FR1 |  | 2Rx  4Rx |  |
| 6.3.2.3.2 | NR SA FR1 - E-UTRA RRC connection release with redirection | Rel-15 | C025 | UEs supporting 5GS NR SA FR1 and E-UTRA |  | 2Rx  4Rx |  |
| **6.3.3** | **Conditional handover** |  |  |  |  |  |  |
| 6.3.3.1 | NR SA FR1 conditional handover | Rel-16 | C105 | UEs supporting 5GS NR SA FR1 and Conditional handover |  | 2Rx  4Rx |  |
| 6.3.3.2 | NR SA FR1-FR1 conditional handover | Rel-16 | C105 | UEs supporting 5GS NR SA FR1 and Conditional handover |  | 2Rx  4Rx |  |
| **6.4** | **Timing** |  |  |  |  |  |  |
| **6.4.1** | **UE transmit timing** |  |  |  |  |  |  |
| 6.4.1.1 | NR SA FR1 UE transmit timing accuracy | Rel-15 | C001 | UEs supporting 5GS NR SA FR1 | Test execution not necessary if test 4.4.1.1 has been executed. | 2Rx  4Rx | Subtest 2: F006 |
| **6.4.2** | **UE timer accuracy** |  |  |  |  |  |  |
| **6.4.3** | **Timing advance** |  |  |  |  |  |  |
| 6.4.3.1 | NR SA FR1 timing advance adjustment accuracy | Rel-15 | C001 | UEs supporting 5GS NR SA FR1 | Test execution not necessary if test 4.4.3.1 has been executed. | 2Rx  4Rx |  |
| **6.5** | **Signalling characteristics** |  |  |  |  |  |  |
| **6.5.1** | **Radio Link Monitoring** |  |  |  |  |  |  |
| 6.5.1.1 | NR SA FR1 radio link monitoring out-of-sync test for PCell configured with SSB-based RLM RS in non-DRX mode | Rel-15 | C001 | UEs supporting 5GS NR SA FR1 | Test execution not necessary if test 4.5.1.1 has been executed. | 2Rx  4Rx |  |
| 6.5.1.2 | NR SA FR1 radio link monitoring in-sync test for PCell configured with SSB-based RLM RS in non-DRX mode | Rel-15 | C001 | UEs supporting 5GS NR SA FR1 | Test execution not necessary if test 4.5.1.2 has been executed. | 2Rx  4Rx |  |
| 6.5.1.3 | NR SA FR1 radio link monitoring out-of-sync test for PCell configured with SSB-based RLM RS in DRX mode | Rel-15 | C001b | UEs supporting 5GS NR SA FR1 and long DRX cycle | Test execution not necessary if test 4.5.1.3 has been executed. | 2Rx  4Rx |  |
| 6.5.1.4 | NR SA FR1 radio link monitoring in-sync test for PCell configured with SSB-based RLM RS in DRX mode | Rel-15 | C001b | UEs supporting 5GS NR SA FR1 and long DRX cycle | Test execution not necessary if test 4.5.1.4 has been executed. | 2Rx  4Rx |  |
| 6.5.1.5 | NR SA FR1 radio link monitoring out-of-sync test for PCell configured with CSI-RS-based RLM RS in non-DRX mode | Rel-15 | C037 | UEs supporting 5GS NR SA FR1 and CSI-RS-based RLM | Test execution not necessary if test 4.5.1.5 has been executed. | 2Rx  4Rx |  |
| 6.5.1.6 | NR SA FR1 radio link monitoring in-sync test for PCell configured with CSI-RS-based RLM RS in non-DRX mode | Rel-15 | C037 | UEs supporting 5GS NR SA FR1 and CSI-RS-based RLM | Test execution not necessary if test 4.5.1.6 has been executed. | 2Rx  4Rx |  |
| 6.5.1.7 | NR SA FR1 radio link monitoring out-of-sync test for PCell configured with CSI-RS-based RLM RS in DRX mode | Rel-15 | C037a | UEs supporting 5GS NR SA FR1, CSI-RS-based RLM and long DRX cycle | Test execution not necessary if test 4.5.1.7 has been executed. | 2Rx  4Rx |  |
| 6.5.1.8 | NR SA FR1 radio link monitoring in-sync test for PCell configured with CSI-RS-based RLM RS in DRX mode | Rel-15 | C037a | UEs supporting 5GS NR SA FR1, CSI-RS-based RLM and long DRX cycle | Test execution not necessary if test 4.5.1.8 has been executed. | 2Rx  4Rx |  |
| 6.5.1.9 | SA FR1 radio link monitoring out-of-sync Test for PCell configured with CSI-RS-based RLM for UE fulfilling relaxed measurement criterion | Rel-17 | C037b | UEs supporting 5GS NR SA FR1 and long DRX cycle and CSI-RS-based RLM and RLM relaxation criteria *rlm-Relaxation-r17* |  | 2Rx  4Rx |  |
| **6.5.2** | **Interruption** |  |  |  |  |  |  |
| 6.5.2.1 | NR SA FR1 interruptions during measurements on deactivated NR SCC | Rel-15 | C031 | UEs supporting 5GS NR SA FR1 and CA (2DL CA) |  | 2Rx  4Rx |  |
| **6.5.3** | **Scell activation and deactivation delay** |  |  |  |  |  |  |
| 6.5.3.1 | NR SA FR1 SCell activation and deactivation of known SCell in non-DRX for 160ms SCell measurement cycle | Rel-15 | C031 | UEs supporting 5GS NR SA FR1 and CA (2DL CA) |  | 2Rx  4Rx |  |
| 6.5.3.2 | NR SA FR1 SCell activation and deactivation of known SCell in non-DRX for 640ms SCell measurement cycle | Rel-15 | C031 | UEs supporting 5GS NR SA FR1 and CA (2DL CA) |  | 2Rx  4Rx |  |
| 6.5.3.3 | NR SA FR1 SCell activation and deactivation of unknown SCell in non-DRX | Rel-15 | C031 | UEs supporting 5GS NR SA FR1 and CA (2DL CA) |  | 2Rx  4Rx |  |
| 6.5.3.4 | NR SA FR1 direct SCell activation at SCell addition of known SCell | Rel-16 | C244 | UEs supporting 5GS NR SA FR1 and CA (2DL CA) and direct SCell activation |  | 2Rx  4Rx |  |
| 6.5.3.5 | NR SA FR1 direct SCell activation at handover with known SCell | Rel-16 | C244 | UEs supporting 5GS NR SA FR1 and CA (2DL CA) and direct SCell activation |  | 2Rx  4Rx |  |
| 6.5.3.10 | NR SA FR1 fast SCell Activation of known SCell in non-DRX for 160ms SCell measurement cycle | Rel-17 | C270 | UEs supporting 5GS NR SA FR1 and CA (2DL CA) and fast SCell activation |  | 2Rx  4Rx |  |
| 6.5.3.11 | NR SA FR1 fast SCell Activation of known SCell in non-DRX for 640ms SCell measurement cycle | Rel-17 | C270 | UEs supporting 5GS NR SA FR1 and CA (2DL CA) and fast SCell activation |  | 2Rx  4Rx |  |
| **6.5.4** | **UE UL carrier RRC reconfiguration delay** |  |  |  |  |  |  |
| 6.5.4.1 | NR SA FR1 UE UL carrier RRC reconfiguration delay | Rel-15 | C002 | UEs supporting 5GS NR SA FR1 and SUL | Test execution not necessary if test 4.5.4.1 has been executed. | 2Rx  4Rx |  |
| **6.5.5** | **Link recovery procedures** |  |  |  |  |  |  |
| 6.5.5.1 | NR SA FR1 SSB-based beam failure detection and link recovery in non-DRX | Rel-15 | C084 | UEs supporting 5GS NR SA FR1 and link recovery | Test execution not necessary if test 4.5.5.1 has been executed. | 2Rx  4Rx |  |
| 6.5.5.2 | NR SA FR1 SSB-based beam failure detection and link recovery in DRX | Rel-15 | C084a | UEs supporting 5GS NR SA FR1 and long DRX cycle and link recovery | Test execution not necessary if test 4.5.5.2 has been executed. | 2Rx  4Rx |  |
| 6.5.5.3 | NR SA FR1 CSI-RS-based beam failure detection and link recovery in non-DRX | Rel-15 | C085 | UEs supporting 5GS NR SA FR1 and CSI-RS-based RLM and link recovery | Test execution not necessary if test 4.5.5.3 has been executed. | 2Rx  4Rx |  |
| 6.5.5.4 | NR SA FR1 CSI-RS-based beam failure detection and link recovery in DRX | Rel-15 | C085a | UEs supporting 5GS NR SA FR1 and long DRX cycle and CSI-RS-based RLM and link recovery | Test execution not necessary if test 4.5.5.4 has been executed. | 2Rx  4Rx |  |
| 6.5.5.5 | NR SA FR1 Scell CSI-RS-based beam failure detection and SSB-based link recovery in non-DRX | Rel-16 | C173 | UEs supporting 5GS NR SA FR1 and CSI-RS-based RLM and SSB-based link recovery on Scell | Test execution not necessary if test 4.5.5.5 has been executed. | 2Rx  4Rx |  |
| 6.5.5.6 | NR SA FR1 Scell CSI-RS-based beam failure detection and SSB-based link recovery in DRX | Rel-16 | C174 | UEs supporting 5GS NR SA FR1 and CSI-RS-based RLM and SSB-based link recovery on Scell and long DRX cycle | Test execution not necessary if test 4.5.5.6 has been executed. | 2Rx  4Rx |  |
| 6.5.5.7 | NR SA FR1 PCell TRP Specific CSI-RS-based Beam Failure Detection and Link Recovery in DRX | Rel-17 | C085b | UEs supporting TRP specific 5GS NR SA FR1 and long DRX cycle and CSI-RS-based RLM and link recovery |  | 2Rx  4Rx |  |
| **6.5.6** | **Active BWP switch delay** |  |  |  |  |  |  |
| **6.5.6.1** | **DCI-based and timer-based active BWP switch** |  |  |  |  |  |  |
| 6.5.6.1.1 | NR SA FR1-FR1 DCI-based DL active BWP switch in non-DRX | Rel-15 | C066a | UEs supporting 5GS NR SA FR1 and (DCI and timer based active BWP switching delay type1 or type2) and (Support of BWP adaptation upto2 or upto4) and 2DL CA |  | 2Rx  4Rx |  |
| 6.5.6.1.2 | NR SA FR1 DCI-based DL active BWP switch in non-DRX | Rel-15 | C066 | UEs supporting 5GS NR SA FR1 and (DCI and timer based active BWP switching delay type1 or type2) and (Support of BWP adaptation upto2 or upto4) |  | 2Rx  4Rx |  |
| **6.5.6.2** | **RRC-based active BWP switch** |  |  |  |  |  |  |
| 6.5.6.2.1 | NR SA FR1 RRC-based DL active BWP switch in non-DRX | Rel-15 | C066b | UEs supporting 5GS NR SA FR1 and (Support of BWP adaptation upto2 or upto4) |  | 2Rx  4Rx |  |
| **6.5.6.3** | **Simultaneous DCI-based and Timer-based Active BWP Switch on multiple CCs** |  |  |  |  |  |  |
| 6.5.6.3.1 | NR SA FR1-FR1 DCI-based DL active BWP switch in non-DRX | Rel-16 | C066e | UEs supporting 5GS NR SA FR1, incremental delay for DCI and timer based active BWP switching on multiple CCs and 3DL CA | NOTE 1 | 2Rx  4Rx |  |
| **6.5.6.4** |  |  |  |  |  |  |  |
| **6.5.6.5** | **Simultaneous RRC-based Active BWP Switch on multiple CCs** |  |  |  |  |  |  |
| 6.5.6.5.1 | RRC based BWP switch on multiple CCs | Rel-16 | C066d | UEs supporting 5GS NR SA FR1, incremental delay for DCI and timer based active BWP switching on multiple CCs and 2DL CA | NOTE 1 | 2Rx  4Rx |  |
| **6.5.7** | **DL interruptions at switching between two uplink carriers** |  |  |  |  |  |  |
| 6.5.7.1 | NR SA FR1 DL Interruptions at switching between two uplink carriers in FDD-TDD CA | Rel-16 | C051 | UEs supporting 5GS NR SA FR1 and Inter-band CA (2UL CA) and dynamic UL Tx switching |  | 2Rx  4Rx |  |
| 6.5.7.2 | NR SA FR1 DL Interruptions at switching between two uplink carriers in TDD-TDD CA | Rel-16 | C051a | UEs supporting 5GS NR SA FR1 and Inter-band CA (2UL CA) and dynamic UL Tx switching |  | 2Rx  4Rx |  |
| 6.5.7A.1 | NR SA FR1 DL interruptions at switching between two uplink carriers in FDD-TDD CA | Rel-17 | C051b | UEs supporting 5GS NR SA FR1 and Inter-band CA (2UL CA) and dynamic UL Tx switching |  | 2Rx  4Rx |  |
| 6.5.7A.2 | NR SA FR1 DL interruptions at switching between two uplink carriers in TDD-TDD CA | Rel-17 | C051c | UEs supporting 5GS NR SA FR1 and Inter-band CA (2UL CA) and dynamic UL Tx switching |  | 2Rx  4Rx |  |
| 6.5.7B.1 | NR SA FR1 DL interruptions at switching between two uplink bands in FDD-TDD CA | Rel-17 | C051d | UEs supporting 5GS NR SA FR1 and Inter-band/intra-band CA (3UL CA) and dynamic UL Tx switching |  | 2Rx  4Rx |  |
| 6.5.7B.2 | NR SA FR1 DL interruptions at switching between two uplink bands in TDD-TDD CA | Rel-17 | C051e | UEs supporting 5GS NR SA FR1 and Inter-band/intra-band CA (3UL CA) and dynamic UL Tx switching |  | 2Rx  4Rx |  |
| 6.5.7C.1 | NR SA FR1 DL interruptions at switching between two uplink bands with two transmit antenna connectors in FDD-TDD CA | Rel-17 | C051f | UEs supporting 5GS NR SA FR1 and Inter-band/intra-band CA (3UL CA) and dynamic UL Tx switching |  | 2Rx  4Rx |  |
| 6.5.7C.2 | NR SA FR1 DL interruptions at switching between two uplink bands with two transmit antenna connectors in TDD-TDD CA | Rel-17 | C051g | UEs supporting 5GS NR SA FR1 and Inter-band/intra-band CA (3UL CA) and dynamic UL Tx switching |  | 2Rx  4Rx |  |
| **6.5.8** | **UE specific CBW change** |  |  |  |  |  |  |
| 6.5.8.1 | UE specific CBW change on PCell in FR1 in non-DRX | Rel-16 | C001 | UEs supporting 5GS NR SA FR1 |  | 2Rx  4Rx |  |
| **6.6** | **Measurement procedures** |  |  |  |  |  |  |
| **6.6.1** | **Intra-frequency measurements** |  |  |  |  |  |  |
| 6.6.1.1 | NR SA FR1 event-triggered reporting without gap in non-DRX | Rel-15 | C001 | UEs supporting 5GS NR SA FR1 | Test execution not necessary if test 4.6.1.1 has been executed. | 2Rx  4Rx |  |
| 6.6.1.2 | NR SA FR1 event-triggered reporting without gap in DRX | Rel-15 | C001b | UEs supporting 5GS NR SA FR1 and long DRX cycle | Test execution not necessary if test 4.6.1.2 has been executed. | 2Rx  4Rx |  |
| 6.6.1.3 | NR SA FR1 event-triggered reporting with gap in non-DRX | Rel-15 | C041 | UEs supporting 5GS NR SA FR1 and CSI-RS-based RLM and BWP operation without bandwidth restriction | Test execution not necessary if test 4.6.1.3 has been executed. | 2Rx  4Rx |  |
| 6.6.1.4 | NR SA FR1 event-triggered reporting with gap in DRX | Rel-15 | C041a | UEs supporting 5GS NR SA FR1, CSI-RS-based RLM, BWP operation without bandwidth restriction and long DRX cycle | Test execution not necessary if test 4.6.1.4 has been executed. | 2Rx  4Rx |  |
| 6.6.1.5 | NR SA FR1 event-triggered reporting without gap in non-DRX with SSB index reading | Rel-15 | C024 | UEs supporting 5GS NR FDD SA FR1 | Test execution not necessary if test 4.6.1.5 has been executed. | 2Rx  4Rx |  |
| 6.6.1.6 | NR SA FR1 event-triggered reporting with gap in non-DRX with SSB index reading | Rel-15 | C041b | UEs supporting 5GS NR FDD SA FR1 and CSI-RS-based RLM and BWP operation without bandwidth restriction | Test execution not necessary if test 4.6.1.6 has been executed. | 2Rx  4Rx |  |
| 6.6.1.7 | NR SA FR1 event-triggered reporting without gap in DRX for UE configured with highSpeedMeasFlag-r16 | Rel-16 | C052 | UEs supporting 5GS NR SA FR1 and measurement enhancements in HST | Test execution not necessary if test 4.6.1.7 has been executed. | 2Rx  4Rx |  |
| 6.6.1.8 | NR SA FR1 event triggered reporting without gap in DRX for UE configured with highSpeedMeasCA-Scell-r17 | Rel-17 | C052b | UEs supporting 5GS NR SA FR1 and CA measurement enhancements in HST | Test execution not necessary if test 4.6.1.8 has been executed. | 2Rx  4Rx |  |
| **6.6.2** | **Inter-frequency measurements** |  |  |  |  |  |  |
| 6.6.2.1 | NR SA FR1-FR1 event-triggered reporting in non-DRX | Rel-15 | C001 | UEs supporting 5GS NR SA FR1 | Test execution not necessary if test 4.6.2.1 has been executed. | 2Rx  4Rx |  |
| 6.6.2.2 | NR SA FR1-FR1 event-triggered reporting in DRX | Rel-15 | C001b | UEs supporting 5GS NR SA FR1 and long DRX cycle | Test execution not necessary if test 4.6.2.2 has been executed. | 2Rx  4Rx |  |
| 6.6.2.5 | NR SA FR1-FR1 event-triggered reporting in non-DRX with SSB time index detection | Rel-15 | C001 | UEs supporting 5GS NR SA FR1 | Test execution not necessary if test 4.6.2.5 has been executed. | 2Rx  4Rx |  |
| 6.6.2.6 | NR SA FR1-FR1 event-triggered reporting in DRX with SSB time index detection | Rel-15 | C001b | UEs supporting 5GS NR SA FR1 and long DRX cycle | Test execution not necessary if test 4.6.2.6 has been executed. | 2Rx  4Rx |  |
| 6.6.2.9 | NR SA FR1-FR1 event triggered reporting tests with additional mandatory gap pattern | Rel-16 | C001 | UEs supporting 5GS NR SA FR1 | NOTE 1 | 2Rx  4Rx |  |
| 6.6.2.10 | NR SA FR1-FR1 event triggered reporting tests for FR1 without gap when DRX is used | Rel-16 | C287 | UEs supporting 5GS NR SA FR1 and long DRX cycle and inter-frequency SSB based measurements without measurement gaps | NOTE 1 | 2Rx  4Rx |  |
| 6.6.2.11 | NR SA FR1-FR1 event triggered reporting tests for FR1 without gap when DRX is not used | Rel-16 | C286 | UEs supporting 5GS NR SA FR1 and inter-frequency SSB based measurements without measurement gaps | NOTE 1 | 2Rx  4Rx |  |
| 6.6.2.12 | NR SA FR1-FR1 event triggered reporting tests without SSB time index detection in DRX for UE configured with highSpeedMeasInterFreq-r17 | Rel-17 | C052c | UEs supporting 5GS NR SA FR1 and inter-freq measurement enhancements in HST | Test execution not necessary if test 4.6.2.9 has been executed. | 2Rx  4Rx | Subtest 2: F017 |
| **6.6.3** | **Inter-RAT measurements** |  |  |  |  |  |  |
| 6.6.3.1 | NR SA FR1 – E-UTRAN event-triggered reporting in non-DRX | Rel-15 | C025 | UEs supporting 5GS NR SA FR1 and E-UTRAN |  | 2Rx  4Rx |  |
| 6.6.3.2 | NR SA FR1 – E-UTRAN event-triggered reporting in DRX | Rel-15 | C025a | UEs supporting 5GS NR SA FR1, E-UTRAN and long DRX cycle |  | 2Rx  4Rx |  |
| 6.6.3.3 | NR SA FR1 – E-UTRAN event-triggered reporting in DRX for UE configured with highSpeedMeasFlag-r16 | Rel-16 | C025c | UEs supporting 5GS NR SA FR1 and E-UTRAN, long DRX cycle and E-UTRA inter-RAT measurement enhancements in HST |  | 2Rx  4Rx |  |
| **6.6.4** | **L1-RSRP measurement for beam reporting** |  |  |  |  |  |  |
| 6.6.4.1 | NR SA FR1 SSB-based L1-RSRP measurement in non-DRX | Rel-15 | C001 | UEs supporting 5GS NR SA FR1 | Test execution not necessary if test 4.6.4.1 has been executed. | 2Rx  4Rx |  |
| 6.6.4.2 | NR SA FR1 SSB-based L1-RSRP measurement in DRX | Rel-15 | C001b | UEs supporting 5GS NR SA FR1 and long DRX cycle | Test execution not necessary if test 4.6.4.2 has been executed. | 2Rx  4Rx |  |
| 6.6.4.3 | NR SA FR1 CSI-RS-based L1-RSRP measurement in non-DRX | Rel-15 | C001 | UEs supporting 5GS NR SA FR1 | Test execution not necessary if test 4.6.4.3 has been executed. | 2Rx  4Rx |  |
| 6.6.4.4 | NR SA FR1 CSI-RS-based L1-RSRP measurement in DRX | Rel-15 | C001b | UEs supporting 5GS NR SA FR1 and long DRX cycle | Test execution not necessary if test 4.6.4.4 has been executed. | 2Rx  4Rx |  |
| 6.6.4.5 | NR SA FR1 SSB-based L1-RSRP measurement in DRX for UE configured with highSpeedMeasFlag-r16 | Rel-16 | C001f | UEs supporting 5GS NR SA FR1, long DRX cycle and intra-NR measurement enhancements in HST | Test execution not necessary if test 4.6.4.5 has been executed. | 2Rx  4Rx |  |
| **6.6.5** | **FFS** |  |  |  |  |  |  |
| 6.6.5.1 | NR SA FR1 – UTRAN event-triggered reporting in non-DRX | Rel-16 | C096 | UEs supporting 5GS NR SA FR1 and UTRAN FDD |  | 2Rx  4Rx |  |
| **6.6.8** | **L1-SINR measurement for beam reporting** |  |  |  |  |  |  |
| 6.6.8.1 | NR SA FR1 CSI-RS based CMR and no dedicated IMR L1-SINR measurement in DRX | Rel-16 | C144 | UEs supporting 5GS NR SA FR1 and long DRX cycle and L1-SINR measurement based on CSI-RS as CMR without dedicated IMR configured |  | 2Rx  4Rx |  |
| 6.6.8.2 | NR SA FR1 SSB based CMR and dedicated IMR L1-SINR measurement in non-DRX | Rel-16 | C145 | UEs supporting 5GS NR SA FR1 and L1-SINR measurement based on SSB as CMR and dedicated CSI-RS as IMR |  | 2Rx  4Rx |  |
| 6.6.8.3 | NR SA FR1 CSI-RS based CMR and dedicated IMR L1-SINR measurement in non-DRX | Rel-16 | C146 | UEs supporting 5GS NR SA FR1 and L1-SINR measurement based on CSI-RS as CMR and dedicated CSI-IM as IMR |  | 2Rx  4Rx |  |
| **6.6.9** | **Idle Mode CA/DC Measurements** |  |  |  |  |  |  |
| 6.6.9.1 | NR SA FR1 Idle mode CA/DC measurement for FR1 | Rel-16 | C031a | UEs supporting 5GS NR SA FR1 and CA (2DL CA) and NR SSB measurements in RRC\_IDLE/RRC\_INACTIVE |  |  |  |
| **6.6.15** | **Idle Mode inter-RAT CA/DC Measurements** |  |  |  |  |  |  |
| 6.6.15.1 | NR SA FR1 Idle Mode measurements of inter-RAT CA candidate cells for early reporting | Rel-16 | C031b | UEs supporting NE-DC FR1 and E-UTRA measurements in RRC\_IDLE/RRC\_INACTIVE |  |  |  |
| **6.6.17** | **SA event triggered reporting tests with Pre-MG** |  |  |  |  |  |  |
| 6.6.17.1 | NR SA FR1 event triggered reporting tests with autonomous activation/deactivation Pre-MG | Rel-17 | C259 | UEs supporting 5GS NR SA FR1, BWP adaptation of at least 2 BWPs, BWP operation without bandwidth restriction, DCI and timer-based active BWP switching delay Type1 or Type2, CSI-RS-based RLM and preconfiguredUE-AutonomousMeasGap-r17 |  | 2Rx  4Rx |  |
| 6.6.17.2 | NR SA FR1 event triggered reporting tests with pre-configured measurement gaps and network-controlled activation/deactivation | Rel-17 | C260 | UEs supporting 5GS NR SA FR1, BWP adaptation of at least 2 BWPs, BWP operation without bandwidth restriction, DCI and timer-based active BWP switching delay Type1 or Type2, CSI-RS-based RLM and preconfiguredNW-ControlledMeasGap-r17 |  | 2Rx  4Rx |  |
| **6.6.18** | **SA event triggered reporting tests with concurrent gaps** |  |  |  |  |  |  |
| 6.6.18.1 | NR SA FR1 event-triggered reporting for concurrent gaps non-overlap with SSB-based measurements in both inter-frequency layers | Rel-17 | C264 | UEs supporting 5GS NR SA FR1 and more than 1 per-UE measurement gap configurations |  | 2Rx  4Rx |  |
| 6.6.18.2 | NR SA FR1 event-triggered reporting for concurrent gaps partially-overlap with SSB-based measurements in both inter-frequency layers | Rel-17 | C264 | UEs supporting 5GS NR SA FR1 and more than 1 per-UE measurement gap configurations |  | 2Rx  4Rx |  |
| 6.6.18.3 | NR SA FR1 NR - E-UTRAN and NR FR1 concurrent event-triggered reporting in non-DRX in FR1 | Rel-17 | C265 | UEs supporting 5GS NR SA FR1 and E-UTRA and more than 1 per-UE measurement gap configurations and the configurations of E-UTRAN measurement objectives associated with more than 1 concurrent measurement gaps |  | 2Rx  4Rx |  |
| 6.6.18.4 | NR SA FR1 event triggered reporting tests for PRS and SSB measurement in FR1 without SSB time index detection when DRX is not used | Rel-17 | C266 | UEs supporting 5GS NR SA FR1 and more than 1 per-UE measurement gap configurations and two independent measurement gap configurations for FR1 and FR2 for PRS measurement |  | 2Rx  4Rx |  |
| **6.6.19** | **SA event triggered reporting tests with NCSG** |  |  |  |  |  |  |
| 6.6.19.1 | NR SA FR1 event-triggered reporting tests with NCSG under non-DRX in FR1 | Rel-17 | C253 | UEs supporting 5GS NR SA FR1, CSI-RS-based RLM, BWP operation without bandwidth restriction, NR only NCSG patterns and reporting of NCSG requirement information but don’t support per-FR NCSG | For sub-test 1 | 2Rx  4Rx |  |
| C254 | UEs supporting 5GS NR SA FR1, CSI-RS-based RLM, BWP operation without bandwidth restriction, per-FR NCSG, reporting of NCSG requirement information and NR only NCSG patterns | For sub-test 2 | 2Rx  4Rx |  |
| 6.6.19.2 | NR SA FR1 event-triggered reporting tests for FR1 with NCSG for inter-frequency measurement | Rel-17 | C255 | UEs supporting 5GS NR SA FR1, NR only NCSG patterns and reporting of NCSG requirement information but don’t support per-FR NCSG | For sub-test 1 | 2Rx  4Rx |  |
| C256 | UEs supporting 5GS NR SA FR1, per-FR NCSG, reporting of NCSG requirement information and NR only NCSG patterns | For sub-test 2 | 2Rx  4Rx |  |
| 6.6.19.3 | NR SA FR1 NR - E-UTRAN event-triggered reporting in non-DRX in FR1 with NCSG | Rel-17 | C257 | UEs supporting 5GS NR SA FR1, E-UTRAN, reporting of NCSG requirement information for E-UTRA and NCSG patterns |  | 2Rx  4Rx |  |
| 6.6.19.4 | NR SA FR1 Event triggered reporting on SCC with deactivated SCell test with per-UE NCSG under non-DRX | Rel-17 | C258 | UEs supporting 5GS NR SA FR1, CA (2DL CA), reporting of NCSG requirement information and NR only NCSG patterns |  | 2Rx  4Rx |  |
| **6.6.20** | **UE Rx-Tx time difference measurement for propagation delay compensation** |  |  |  |  |  |  |
| 6.6.20.1 | UE Rx-Tx time difference measurement with PRS for RTT-based PDC in FR1 SA | Rel-17 | C212 | UEs supporting 5GS NR SA FR1 and RTT-based PDC for Rx-Tx measurement with PRS |  | 2Rx |  |
| **6.6.21** | **UE Rx-Tx time difference measurement for propagation delay compensation with TRS** |  |  |  |  |  |  |
| 6.6.21.1 | UE Rx-Tx time difference measurement with TRS for RTT-based PDC in FR1 SA | Rel-17 | C213 | UEs supporting 5GS NR SA FR1 and RTT-based PDC for Rx-Tx measurement with TRS |  | 2Rx |  |
| **6.7** | **Measurement performance requirements** |  |  |  |  |  |  |
| **6.7.1** | **SS-RSRP** |  |  |  |  |  |  |
| **6.7.1.1** | **Intra-frequency measurements** |  |  |  |  |  |  |
| 6.7.1.1.1 | NR SA FR1 SS-RSRP absolute measurement accuracy | Rel-15 | C001 | UEs supporting 5GS NR SA FR1 | Test execution not necessary if test 4.7.1.1.1 has been executed. | 2Rx  4Rx |  |
| 6.7.1.1.2 | NR SA FR1 SS-RSRP relative measurement accuracy | Rel-15 | C001 | UEs supporting 5GS NR SA FR1 | Test execution not necessary if test 4.7.1.1.2 has been executed. | 2Rx  4Rx |  |
| **6.7.1.2** | **Inter-frequency measurements** |  |  |  |  |  |  |
| 6.7.1.2.1 | NR SA FR1-FR1 SS-RSRP absolute measurement accuracy | Rel-15 | C001 | UEs supporting 5GS NR SA FR1 | Test execution not necessary if test 4.7.1.2.1 has been executed. | 2Rx  4Rx |  |
| 6.7.1.2.2 | NR SA FR1-FR1 SS-RSRP relative measurement accuracy | Rel-15 | C001 | UEs supporting 5GS NR SA FR1 | Test execution not necessary if test 4.7.1.2.2 has been executed. | 2Rx  4Rx |  |
| **6.7.2** | **SS-RSRQ** |  |  |  |  |  |  |
| 6.7.2.1 | NR SA FR1 SS-RSRQ measurement accuracy | Rel-15 | C001 | UEs supporting 5GS NR SA FR1 | Test execution not necessary if test 4.7.2.1 has been executed. | 2Rx  4Rx |  |
| 6.7.2.2.1 | NR SA FR1-FR1 SS-RSRQ absolute measurement accuracy | Rel-15 | C001 | UEs supporting 5GS NR SA FR1 | Test execution not necessary if test 4.7.2.2.1 has been executed. | 2Rx  4Rx |  |
| 6.7.2.2.2 | NR SA FR1-FR1 SS-RSRQ relative measurement accuracy | Rel-15 | C001 | UEs supporting 5GS NR SA FR1 | Test execution not necessary if test 4.7.2.2.2 has been executed. | 2Rx  4Rx |  |
| **6.7.3** | **SS-SINR** |  |  |  |  |  |  |
| 6.7.3.1 | NR SA FR1 SS-SINR measurement accuracy | Rel-15 | C034 | UEs supporting 5GS NR SA FR1 and SS-SINR-meas | Test execution not necessary if test 4.7.3.1 has been executed. | 2Rx  4Rx |  |
| 6.7.3.2.1 | NR SA FR1-FR1 SS-SINR absolute measurement accuracy | Rel-15 | C034 | UEs supporting 5GS NR SA FR1 and SS-SINR-meas | Test execution not necessary if test 4.7.3.2.1 has been executed. | 2Rx  4Rx |  |
| 6.7.3.2.2 | NR SA FR1-FR1 SS-SINR relative measurement accuracy | Rel-15 | C034 | UEs supporting 5GS NR SA FR1 and SS-SINR-meas | Test execution not necessary if test 4.7.3.2.2 has been executed. | 2Rx  4Rx |  |
| **6.7.4** | **L1-RSRP for beam reporting** |  |  |  |  |  |  |
| 6.7.4.1.1 | NR SA FR1 SSB based L1-RSRP absolute measurement accuracy | Rel-15 | C001 | UEs supporting 5GS NR SA FR1 | Test execution not necessary if test 4.7.4.1.1 has been executed. | 2Rx  4Rx |  |
| 6.7.4.1.2 | NR SA FR1 SSB based L1-RSRP relative measurement accuracy | Rel-15 | C001 | UEs supporting 5GS NR SA FR1 | Test execution not necessary if test 4.7.4.1.2 has been executed. | 2Rx  4Rx |  |
| 6.7.4.2.1 | NR SA FR1 CSI-RS based L1-RSRP absolute measurement accuracy | Rel-15 | C001 | UEs supporting 5GS NR SA FR1 | Test execution not necessary if test 4.7.4.2.1 has been executed. | 2Rx  4Rx |  |
| 6.7.4.2.2 | NR SA FR1 CSI-RS based L1-RSRP relative measurement accuracy | Rel-15 | C001 | UEs supporting 5GS NR SA FR1 | Test execution not necessary if test 4.7.4.2.2 has been executed. | 2Rx  4Rx |  |
| **6.7.5** | **E-UTRAN RSRP** |  |  |  |  |  |  |
| 6.7.5.1 | NR SA FR1 – E-UTRAN RSRP absolute measurement accuracy | Rel-15 | C001 | UEs supporting 5GS NR SA FR1 |  | 2Rx  4Rx |  |
| **6.7.6** | **E-UTRAN RSRQ** |  |  |  |  |  |  |
| 6.7.6.1 | NR SA FR1 – E-UTRAN RSRQ absolute measurement accuracy | Rel-15 | C001 | UEs supporting 5GS NR SA FR1 |  | 2Rx  4Rx |  |
| **6.7.7** | **E-UTRAN RS-SINR** |  |  |  |  |  |  |
| 6.7.7.1 | NR SA FR1 – E-UTRAN RS-SINR absolute measurement accuracy | Rel-15 | C168 | UEs supporting 5GS NR SA FR1 and E-UTRA RS-SINR measurements |  | 2Rx  4Rx |  |
| **6.7.9** | **L1-SINR** |  |  |  |  |  |  |
| 6.7.9.1.1 | NR SA FR1 CSI-RS based CMR and no dedicated IMR configured and CSI-RS resource set with repetition off L1-SINR absolute measurement accuracy | Rel-16 | C132 | UEs supporting 5GS NR SA FR1 and L1-SINR-measurement based on CSI-RS as CMR without dedicated IMR configured | Test execution not necessary if test 4.7.7.1.1 has been executed. | 2Rx  4Rx |  |
| 6.7.9.1.2 | NR SA FR1 CSI-RS based CMR and no dedicated IMR configured and CSI-RS resource set with repetition off L1-SINR relative measurement accuracy | Rel-16 | C132 | UEs supporting 5GS NR SA FR1 and L1-SINR-measurement based on CSI-RS as CMR without dedicated IMR configured | Test execution not necessary if test 4.7.7.1.2 has been executed. | 2Rx  4Rx |  |
| 6.7.9.2 | NR SA FR1 SSB based CMR and dedicated IMR L1-SINR absolute measurement accuracy | Rel-16 | C133 | UEs supporting 5GS NR SA FR1 and L1-SINR-measurement based on SSB as CMR and dedicated CSI-IM as IMR | Test execution not necessary if test 4.7.7.2 has been executed. | 2Rx  4Rx |  |
| 6.7.9.3.1 | NR SA FR1 CSI-RS based CMR and dedicated IMR L1-SINR absolute measurement accuracy | Rel-16 | C134 | UEs supporting 5GS NR SA FR1 and L1-SINR-measurement based on CSI-RS as CMR and dedicated CSI-IM as IMR | Test execution not necessary if test 4.7.7.3.1 has been executed. | 2Rx  4Rx |  |
| 6.7.9.3.2 | NR SA FR1 CSI-RS based CMR and dedicated IMR L1-SINR relative measurement accuracy | Rel-16 | C134 | UEs supporting 5GS NR SA FR1 and L1-SINR-measurement based on CSI-RS as CMR and dedicated CSI-IM as IMR | Test execution not necessary if test 4.7.7.3.2 has been executed. | 2Rx  4Rx |  |
| NOTE 1: The test case/branch is incomplete for any Band/CA/DC Configuration but has basic test configurations already. NOTE 1 can be removed only when the test case/branch is complete for at least one Band / CA/DC Configuration for at least one feature included in the test case/branch. Detailed completion status can be found in the corresponding test case section in 38.533.  NOTE 2: Test X refers to the corresponding Sub-Test as defined in TS 38.533 [5].  NOTE 3: Test cases in TS 38.533 [5] clause 6 only apply to FR1 non-RedCap UEs. For FR1 RedCap UEs, Test cases in TS 38.533 [5] clause 16 apply. | | | | | | |  |

Table 4.2-3a: Void

Table 4.2-4: Applicability of RRM NR SA FR2 conformance test cases, ref. TS 38.533 [5]

| Clause | TC Title | Release | Applicability | | Additional Information | Branch | Test Selection Criteria |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  |  |  | Condition | Comment |  |  |  |
| **7.1** | **RRC\_IDLE state mobility** |  |  |  |  |  |  |
| **7.1.1** | **NR cell re-selection** |  |  |  |  |  |  |
| 7.1.1.1 | NR SA FR2 cell re-selection | FFS | FFS | FFS |  | 2Rx |  |
| 7.1.1.2 | NR SA FR2-FR2 cell re-selection | FFS | FFS | FFS |  | 2Rx |  |
| 7.1.1.3 | NR SA FR2 cell re-selection for UE fulfilling low mobility relaxed measurement criterion | Rel-16 | C095 | UEs supporting 5GS NR SA FR2 and relaxed RRM measurement |  | 2Rx |  |
| 7.1.1.4 | NR SA FR2 cell re-selection for UE fulfilling not-at-cell edge relaxed measurement criterion | Rel-16 | C095 | UEs supporting 5GS NR SA FR2 and relaxed RRM measurement |  | 2Rx |  |
| 7.1.1.5 | NR SA FR2-FR2 cell re-selection for UE fulfilling low mobility relaxed measurement criterion | Rel-16 | C095 | UEs supporting 5GS NR SA FR2 and relaxed RRM measurement |  | 2Rx |  |
| 7.1.1.6 | NR SA FR2-FR2 cell re-selection for UE fulfilling not-at-cell edge relaxed measurement criterion | Rel-16 | C095 | UEs supporting 5GS NR SA FR2 and relaxed RRM measurement |  | 2Rx |  |
| 7.1.1.7 | NR SA FR2 cell re-selection for power class 6 UE configured with *highSpeedMeasFlagFR2-r17* | Rel-17 | C240 | UEs supporting 5GS NR SA FR2 and intra-frequency RRC\_IDLE measurements in HST | NOTE 1 | 2Rx |  |
| **7.2** | **RRC\_INACTIVE state mobility** |  |  |  |  |  |  |
| **7.2.1** | **Small Data Transmission** |  |  |  |  |  |  |
| 7.2.1.1 | TA Validation for CG-SDT in FR2 | Rel-17 | C095a | UEs supporting 5GS NR SA FR2 and TA Validation for CG-SDT in FR2 | NOTE 1 | 2RX |  |
| **7.3** | **RRC\_CONNECTED state mobility** |  |  |  |  |  |  |
| **7.3.1** | **Handover** |  |  |  |  |  |  |
| 7.3.1.4 | NR SA FR1-FR2 synchronous DAPS handover | Rel-16 | N/A | Not recommended due to FR1 – FR2 testability issue | NOTE 1 | 2Rx |  |
| 7.3.1.5 | NR SA FR1-FR2 asynchronous DAPS handover | Rel-16 | N/A | Not recommended due to FR1 – FR2 testability issue | NOTE 1 | 2Rx |  |
| **7.3.2** | **RRC connection mobility control** |  |  |  |  |  |  |
| **7.3.2.1** | **RRC re-establishment** |  |  |  |  |  |  |
| 7.3.2.1.1 | NR SA FR2 RRC re-establishment | Rel-15 | C006 | UEs supporting 5GS NR SA FR2 |  | 2Rx |  |
| 7.3.2.1.2 | NR SA FR2 - FR2 RRC re-establishment | Rel-15 | C006 | UEs supporting 5GS NR SA FR2 |  | 2Rx |  |
| 7.3.2.1.3 | NR SA FR2 RRC re-establishment without serving cell timing | Rel-15 | C006 | UEs supporting 5GS NR SA FR2 | NOTE 1 | 2Rx |  |
| **7.3.2.2** | **Random access** |  |  |  |  |  |  |
| 7.3.2.2.1 | NR SA FR2 contention based random access | Rel-15 | C006 | UEs supporting 5GS NR SA FR2 | NOTE 1 | 2Rx |  |
| 7.3.2.2.2 | NR SA FR2 non-contention based random access | Rel-15 | C006 | UEs supporting 5GS NR SA FR2 | NOTE 1 | 2Rx | Subtest 2: F007 |
| 7.3.2.2.4 | NR SA FR2 2-step non-contention based random access | Rel-16 | C160 | UEs supporting 5GS NR SA FR2 and 2-step RACH | NOTE 1 | 2Rx |  |
| **7.3.2.3** | **RRC connection release with redirection** |  |  |  |  |  |  |
| 7.3.2.3.1 | NR SA FR2-FR2 RRC connection release with redirection | FFS | FFS | FFS |  | 2Rx |  |
| **7.3.3** | **Conditional Handover** |  |  |  |  |  |  |
| 7.3.3.1 | NR SA FR2 conditional handover | Rel-16 | C106 | UEs supporting 5GS NR SA FR2 and conditional handover |  | 2Rx |  |
| 7.3.3.2 | NR SA FR2-FR2 conditional handover | Rel-16 | C106 | UEs supporting 5GS NR SA FR2 and conditional handover | NOTE 1 | 2Rx |  |
| **7.4** | **Timing** |  |  |  |  |  |  |
| **7.4.1** | **UE transmit timing** |  |  |  |  |  |  |
| 7.4.1.1 | NR SA FR2 UE transmit timing accuracy | Rel-15 | C006 | UEs supporting 5GS NR SA FR2 |  | 2Rx | Subtest 2: F008 |
| **7.4.2** | **UE timer accuracy** |  |  |  |  |  |  |
| **7.4.3** | **Timing advance** |  |  |  |  |  |  |
| 7.4.3.1 | NR SA FR2 timing advance adjustment accuracy | Rel-15 | C006 | UEs supporting 5GS NR SA FR2 |  | 2Rx |  |
| **7.5** | **Signalling characteristics** |  |  |  |  |  |  |
| **7.5.1** | **Radio Link Monitoring** |  |  |  |  |  |  |
| 7.5.1.1 | Radio Link Monitoring Out-of-sync Test for FR2 PCell configured with SSBbased RLM RS in non-DRX mode | Rel-15 | C006 | UEs supporting 5GS NR SA FR2 |  | 2Rx |  |
| 7.5.1.2 | Radio Link Monitoring In-sync Test for FR2 PCell configured with SSB-based RLM RS in non-DRX mode | Rel-15 | C006 | UEs supporting 5GS NR SA FR2 |  | 2Rx |  |
| 7.5.1.3 | Radio Link Monitoring Out-of-sync Test for FR2 PCell configured with SSBbased RLM RS in DRX mode | Rel-15 | C006a | UEs supporting 5GS NR SA FR2 and long DRX cycle |  | 2Rx |  |
| 7.5.1.4 | Radio Link Monitoring In-sync Test for FR2 PCell configured with SSB-based RLM RS in DRX mode | Rel-15 | C006a | UEs supporting 5GS NR SA FR2 and long DRX cycle |  | 2Rx |  |
| 7.5.1.5 | NR SA FR2 Radio Link Monitoring Out-of-sync Test for PCell configured with CSI-RS-based RLM RS in non-DRX mode | Rel-15 | C164 | UEs supporting 5GS NR SA FR2 and CSI-RS based RLM | NOTE 1 | 2Rx |  |
| 7.5.1.6 | NR SA FR2 Radio Link Monitoring In-sync Test for FR2 PCell configured with CSI-RS-based RLM in non-DRX mode | Rel-15 | C164 | UEs supporting 5GS NR SA FR2 and CSI-RS based RLM | NOTE 1 | 2Rx |  |
| 7.5.1.7 | NR SA FR2 Radio Link Monitoring Out-of-sync Test for FR2 PCell configured with CSI-RS-based RLM RS in DRX mode | Rel-15 | C165 | UEs supporting 5GS NR SA FR2 and CSI-RS based RLM and log DRX cycle |  | 2Rx |  |
| 7.5.1.8 | NR SA FR2 Radio Link Monitoring In-sync Test for FR2 PCell configured with CSI-RS-based RLM in DRX mode | Rel-15 | C165 | UEs supporting 5GS NR SA FR2 and CSI-RS based RLM and log DRX cycle |  | 2Rx |  |
| 7.5.1.9 | NR SA FR2 radio link monitoring UE scheduling restrictions | Rel-15 | C006n | UEs supporting 5GS NR SA FR2 and PDCCH monitoring in any symbol of the slot (with or without span gap) | NOTE 1 | 2Rx |  |
| **7.5.2** | **Interruption** |  |  |  |  |  |  |
| 7.5.2.1 | NR SA FR2 interruptions during measurements on deactivated NR SCC | Rel-15 | C006b | UEs supporting 5GS NR SA FR2 and 2DL CA in NR |  | 2Rx |  |
| **7.5.3** | **Scell activation and deactivation delay** |  |  |  |  |  |  |
| 7.5.3.1 | NR SA FR2-FR2 intra-band SCell activation and deactivation delay | FFS | FFS | FFS | NOTE 1 | 2Rx |  |
| 7.5.3.2 | NR SA FR1-FR2 inter-band SCell activation and deactivation delay | Rel-15 | N/A | Not recommended due to FR1 – FR2 testability issue | NOTE 1 | 2Rx |  |
| 7.5.3.3 | SCell Activation and deactivation for SCell in FR2 inter-band in non-DRX | Rel-17 | C031c | UEs supporting 5GS NR SA FR2 and 2DL CA in NR |  | 2Rx |  |
| 7.5.3.4 | NR SA FR2 direct SCell activation at SCell addition of known SCell | Rel-16 | C241 | UEs supporting 5GS NR SA FR2 and 2DL CA in NR and direct SCell activation |  | 2Rx |  |
| 7.5.3.5 | NR SA FR2 direct SCell activation at handover with known SCell | Rel-16 | C241 | UEs supporting 5GS NR SA FR2 and 2DL CA in NR and direct SCell activation |  | 2Rx |  |
| 7.5.3.13 | NR SA FR2 SCell Activation for SCell in FR2 intra-band in non-DRX | Rel-17 | C271 | UEs supporting 5GS NR SA intra-band FR2 and 2DL CA in NR and fast SCell activation |  | 2Rx |  |
| 7.5.3.14 | NR SA FR2 SCell Activation for known SCell in FR2 inter-band | Rel-17 | C271a | UEs supporting 5GS NR SA inter-band FR2 and 2DL CA in NR and fast SCell activation | NOTE 1 | 2Rx |  |
| **7.5.5** | **Beam failure detection and link recovery procedures** |  |  |  |  |  |  |
| 7.5.5.1 | NR SA FR2 SSB-based beam failure detection and link recovery in non-DRX | Rel-15 | C006 | UEs supporting 5GS NR SA FR2 |  | 2Rx |  |
| 7.5.5.2 | NR SA FR2 SSB-based beam failure detection and link recovery in DRX | Rel-15 | C006a | UEs supporting 5GS NR SA FR2 and long DRX cycle |  | 2Rx |  |
| 7.5.5.3 | NR SA FR2 CSI-RS-based beam failure detection and link recovery in non-DRX | Rel-15 | C164 | UEs supporting 5GS NR SA FR2 and CSI-RS based RLM |  | 2Rx |  |
| 7.5.5.4 | NR SA FR2 CSI-RS-based beam failure detection and link recovery in DRX | Rel-15 | C165 | UEs supporting 5GS NR SA FR2, long DRX cycle and CSI-RS based RLM |  | 2Rx |  |
| 7.5.5.5 | NR SA FR2 scheduling availability restriction during SSB-based beam failure detection and link recovery in non-DRX | Rel-15 | C006 | UEs supporting 5GS NR SA FR2 |  | 2Rx |  |
| 7.5.5.6 | NR SA FR2 Scell CSI-RS-based beam failure detection and link recovery in non-DRX | Rel-16 | C147 | UEs supporting 5GS NR SA FR2 and CSI-RS based BFR on Scell |  | 2Rx |  |
| 7.5.5.7 | NR SA FR2 Scell CSI-RS-based beam failure detection and link recovery in DRX | Rel-16 | C148 | UEs supporting 5GS NR SA FR2 and long DRX cycle and CSI-RS based BFR on Scell |  | 2Rx |  |
| 7.5.5.9 | NR SA FR2 SCell TRP specific CSI-RS-based Beam Failure Detection and Link Recovery in DRX | Rel-17 | C148a | UEs supporting 5GS NR TRP specific SA FR2 and long DRX cycle and CSI-RS based BFR on Scell |  | 2Rx |  |
| 7.5.5.10 | NR SA FR2 PCell TRP specific SSB-based Beam Failure Detection and Link Recovery in non-DRX | Rel-17 | C006x | UEs supporting 5GS NR TRP specific SA FR2 SSB based BFR |  | 2Rx |  |
| **7.5.6** | **Active BWP switch delay** |  |  |  |  |  |  |
| **7.5.6.1** | **Intra-frequency measurements** |  |  |  |  |  |  |
| 7.5.6.1.1 | NR SA FR2 DCI-based DL active BWP switch in non-DRX | FFS | FFS | FFS | NOTE 1 | 2Rx |  |
| 7.5.6.1.2 | NR SA FR1-FR2 DCI-based DL active BWP switch in non-DRX | Rel-15 | N/A | Not recommended due to FR1 – FR2 testability issue | NOTE 1 | 2Rx |  |
| 7.5.6.1.3 | NR SA FR2 DCI-based DL active BWP switch in non-DRX | Rel-15 | C006 | UEs supporting 5GS NR SA FR2 | NOTE 1 | 2Rx |  |
| **7.5.6.2** | **RRC-based active BWP switch** |  |  |  |  |  |  |
| 7.5.6.2.1 | NR SA FR2 RRC-based DL active BWP switch in non-DRX | FFS | FFS | FFS | NOTE 1 | 2Rx |  |
| **7.5.7** | **PSCell addition and release delay** |  |  |  |  |  |  |
| 7.5.7.1 | NR SA FR2 addition and release delay of known PSCell | Rel-15 | N/A | Not recommended due to FR1 – FR2 testability issue | NOTE 1 | 2Rx |  |
| 7.5.7.2 | NR SA FR2 addition and release delay of unknown PSCell | Rel-15 | N/A | Not recommended due to FR1 – FR2 testability issue | NOTE 1 | 2Rx |  |
| **7.5.8** | **Active TCI state switch delay** |  |  |  |  |  |  |
| **7.5.8.1** | **NR SA FR2 MAC-CE based active TCI state switch** |  |  |  |  |  |  |
| 7.5.8.1.1 | NR SA PCell FR2 MAC-CE based active TCI state switch for a known TCI state | Rel-15 | C006m | UEs supporting 5GS NR SA FR2, maximum number of active TCI states per BWP greater than 1, and maximum number of simultaneously trackable TRS resource sets per CC greater than 1 |  | 2Rx |  |
| **7.5.8.2** | **NR SA FR2 RRC based active TCI state switch** |  |  |  |  |  |  |
| 7.5.8.2.1 | NR SA Pcell FR2 RRC based active TCI state switch for a known TCI state | Rel-15 | C006m | UEs supporting 5GS NR SA FR2, maximum number of active TCI states per BWP greater than 1, and maximum number of simultaneously trackable TRS resource sets per CC greater than 1 |  | 2Rx |  |
| **7.5.8.3** | **MAC-CE based active TCI state switch for HST FR2 scenario** |  |  |  |  |  |  |
| 7.5.8.3.1 | NR PCell FR2 HST active TCI state switch for a known TCI state | Rel-17 | C240a | UEs supporting 5GS NR SA FR2 and one-shot large UL timing adjustment.in HST | NOTE 1 | 2Rx |  |
| **7.5.11** | **UE UL carrier RRC reconfiguration delay** |  |  |  |  |  |  |
| 7.5.11.1 | UE UL carrier RRC reconfiguration delay | Rel-17 | C006 | UEs supporting 5GS NR SA FR2 |  | 2Rx |  |
| **7.5.12** | **Conditional PSCell addition and release delay** |  |  |  |  |  |  |
| 7.5.12.1 | Addition and Release Delay of PSCell | Rel-17 | C268b | UEs supporting Inter-band NR-DC between FR1 and FR2 and conditional PSCell addition in NR-DC |  |  |  |
| **7.5.13** | **Unified TCI state switch delay** |  |  |  |  |  |  |
| 7.5.13.1 | NR SA FR2 MAC-CE based active joint TCI state switch | Rel-17 | C281 | UEs supporting 5GS NR SA FR2, and unified TCI state operation with joint DL/UL TCI update for intra-cell beam management | NOTE 1 | 2Rx |  |
| 7.5.13.2 | NR SA FR2 MAC-CE based active uplink TCI state switch | Rel-17 | C282 | UEs supporting 5GS NR SA FR2, and unified TCI state operation with separate DL/UL TCI update for intra-cell beam management | NOTE 1 | 2Rx |  |
| 7.5.13.3 | NR SA FR2 MAC-CE based active downlink TCI state switch | Rel-17 | C283 | UEs supporting 5GS NR SA FR2, and supporting RRC configuration of additional PCI different from serving cell associated with the TCI state and/or QCL-info, and unified TCI with separate DL/UL TCI update for inter-cell beam management | NOTE 1 | 2Rx |  |
| 7.5.14 | NR SA FR2 PSCell RACH-less based Activation and deactivation for FR1+FR2 inter-band with target PSCell in FR2 | Rel-17 | C284 | UEs supporting Inter-band NR-DC between FR1 and FR2 and activation and deactivation on SCG in NR-DC |  |  |  |
| **7.6** | **Measurement procedures** |  |  |  |  |  |  |
| **7.6.1** | **Intra-frequency measurements** |  |  |  |  |  |  |
| 7.6.1.1 | NR SA FR2 event-triggered reporting without gap in non-DRX | Rel-15 | C006 | UEs supporting 5GS NR SA FR2 |  | 2Rx |  |
| 7.6.1.2 | NR SA FR2 event-triggered reporting without gap in DRX | Rel-15 | C006a | UEs supporting 5GS NR SA FR2 and long DRX cycle |  | 2Rx |  |
| 7.6.1.3 | NR SA FR2 event-triggered reporting with gap in non-DRX | Rel-15 | C166 | UEs supporting 5GS NR SA FR2, CSI-RS-based RLM and BWP operation without bandwidth restriction |  | 2Rx |  |
| 7.6.1.4 | NR SA FR2 event-triggered reporting with gap in DRX | Rel-15 | C167 | UEs supporting 5GS NR SA FR2 long DRX cycle, CSI-RS-based RLM and BWP operation without bandwidth restriction |  | 2Rx |  |
| 7.6.1.5 | NR SA FR2 event-triggered reporting without gap in non-DRX for UE configured with *highSpeedMeasFlagFR2-r17* | Rel-17 | C240 | UEs supporting 5GS NR SA FR2 and intra-frequency measurements in HST | NOTE 1 | 2Rx |  |
| **7.6.2** | **Inter-frequency measurements** |  |  |  |  |  |  |
| 7.6.2.1 | NR SA FR2-FR2 event-triggered reporting in non-DRX | Rel-15 | C006 | UEs supporting 5GS NR SA FR2 |  | 2Rx |  |
| 7.6.2.2 | NR SA FR2-FR2 event-triggered reporting in DRX | Rel-15 | C006a | UEs supporting 5GS NR SA FR2 and long DRX cycle |  | 2Rx |  |
| 7.6.2.3 | NR SA FR2-FR2 event-triggered reporting in non-DRX with SSB time index detection | Rel-15 | C006 | UEs supporting 5GS NR SA FR2 |  | 2Rx |  |
| 7.6.2.4 | NR SA FR2-FR2 event-triggered reporting in DRX with SSB time index detection | Rel-15 | C006a | UEs supporting 5GS NR SA FR2 and long DRX cycle |  | 2Rx |  |
| 7.6.2.5 | NR SA FR1-FR2 event-triggered reporting in non-DRX | Rel-15 | N/A | Not recommended due to FR1 – FR2 testability issue | NOTE 1 | 2Rx |  |
| 7.6.2.6 | NR SA FR1-FR2 event-triggered reporting in DRX | Rel-15 | N/A | Not recommended due to FR1 – FR2 testability issue | NOTE 1 | 2Rx |  |
| 7.6.2.7 | NR SA FR1-FR2 event-triggered reporting in non-DRX with SSB time index detection | Rel-15 | N/A | Not recommended due to FR1 – FR2 testability issue | NOTE 1 | 2Rx |  |
| 7.6.2.8 | NR SA FR1-FR2 event-triggered reporting in DRX with SSB time index detection | Rel-15 | N/A | Not recommended due to FR1 – FR2 testability issue | NOTE 1 | 2Rx |  |
| **7.6.3** | **L1-RSRP for beam reporting** |  |  |  |  |  |  |
| 7.6.3.1 | NR SA FR2 SSB-based L1-RSRP measurement in non-DRX | Rel-15 | C006 | UEs supporting 5GS NR SA FR2 |  | 2Rx |  |
| 7.6.3.2 | NR SA FR2 SSB-based L1-RSRP measurement in DRX | Rel-15 | C006a | UEs supporting 5GS NR SA FR2 and long DRX cycle |  | 2Rx |  |
| 7.6.3.3 | NR SA FR2 CSI-RS-based L1-RSRP measurement in non-DRX | Rel-15 | C006 | UEs supporting 5GS NR SA FR2 |  | 2Rx |  |
| 7.6.3.4 | NR SA FR2 CSI-RS-based L1-RSRP measurement in DRX | Rel-15 | C006a | UEs supporting 5GS NR SA FR2 and long DRX cycle |  | 2Rx |  |
| 7.6.3.6 | NR SA FR2 Inter-cell SSB based L1-RSRP measurements on FR2 SCell when DRX is not used | Rel-17 | C006p | UEs supporting 5GS NR SA FR2 and Inter-band CA (2UL CA) |  | 2Rx |  |
| 7.6.3.5 | NR SA FR2 SSB based L1-RSRP measurement test when DRX is used for power class 6 UE configured with *highSpeedMeasFlagFR2-r17* | Rel-17 | C240 | power class 6 UEs supporting 5GS NR SA FR2 configured and HST intra-frequency measurements | NOTE 1 | 2Rx |  |
| 7.6.4.1 | NR SA FR2 SRS-RSRP measurement in non-DRX | Rel-16 | C006l | UEs supporting 5GS NR SA FR2 and SRS-RSRP measurements |  | 2Rx |  |
| **7.6.6** | **L1-SINR measurement for beam reporting** |  |  |  |  |  |  |
| 7.6.6.1 | NR SA FR2 CSI-RS based CMR and no dedicated IMR L1-SINR measurement in non-DRX | Rel-16 | C144a | UEs supporting 5GS NR SA FR2 and L1-SINR measurement based on CSI-RS as CMR without dedicated IMR configured |  | 2Rx  4Rx |  |
| 7.6.6.2 | NR SA FR2 SSB based CMR and dedicated IMR L1-SINR measurement in DRX | Rel-16 | C145a | UEs supporting 5GS NR SA FR2 and long DRX cycle and L1-SINR measurement based on SSB as CMR and dedicated CSI-IM as IMR |  | 2Rx  4Rx |  |
| 7.6.6.3 | NR SA FR2 CSI-RS based CMR and dedicated IMR L1-SINR measurement in DRX | Rel-16 | C146a | UEs supporting 5GS NR SA FR2 and long DRX cycle and L1-SINR measurement based on CSI-RS as CMR and dedicated CSI-RS as IMR |  | 2Rx  4Rx |  |
| **7.6.13** | **UE Rx-Tx time difference measurements for PDC** |  |  |  |  |  |  |
| 7.6.13.1 | NR SA FR2 UE Rx-Tx time difference measurement for propagation delay compensation using PRS | Rel-17 | C212 | UEs supporting 5GS NR SA FR2 and RTT-based PDC for Rx-Tx measurement with PRS |  | 2Rx |  |
| 7.6.13.2 | NR SA FR2 UE Rx-Tx time difference measurement for propagation delay compensation using TRS | Rel-17 | C213 | UEs supporting 5GS NR SA FR2 and RTT-based PDC for Rx-Tx measurement with TRS | NOTE 1 | 2Rx |  |
| **7.6.14** | **SA event triggered reporting tests with Pre-MG** |  |  |  |  |  |  |
| 7.6.14.1 | NR SA FR2 Intra-frequency measurement test with SA event triggered reporting tests: with autonomous activation/deactivation of Pre-MG in FR2 | Rel-17 | C290 | UEs supporting 5GS NR SA FR2, BWP adaptation of at least 2 BWPs, BWP operation without bandwidth restriction, DCI and timer-based active BWP switching delay Type1 or Type2, CSI-RS-based RLM and preconfiguredUE-AutonomousMeasGap-r17 | NOTE 1 | 2RX |  |
| 7.6.14.2 | NR SA FR2 Intra-frequency measurement test with SA event triggered reporting tests: with network-controlled activation/deactivation of Pre-MG in FR2 | Rel-17 | C291 | UEs supporting 5GS NR SA FR2, BWP adaptation of at least 2 BWPs, BWP operation without bandwidth restriction, DCI and timer-based active BWP switching delay Type1 or Type2, CSI-RS-based RLM and preconfiguredNW-ControlledMeasGap-r17 | NOTE 1 | 2RX |  |
| **7.6.15** | **SA event triggered reporting tests with concurrent gaps** |  |  |  |  |  |  |
| 7.6.15.1 | NR SA FR2 event triggered reporting tests For FR2 with fully non-overlapping concurrent MGs for SSB-based inter-frequency measurements | Rel-17 | C292 | UEs supporting 5GS NR SA FR2 and more than 1 per-UE measurement gap configurations | NOTE 1 | 2RX |  |
| 7.6.15.2 | NR SA FR2 event triggered reporting tests For FR2 with concurrent measurement gaps without SSB time index detection when DRX is not used (PCell in FR2) | Rel-17 | C292 | UEs supporting 5GS NR SA FR2 and more than 1 per-UE measurement gap configurations | NOTE 1 | 2RX |  |
| 7.6.15.3 | NR SA FR2 event triggered reporting tests for FR2 concurrent gap with partially overlapping scenario for SSB-based measurements and PRS-based measurement | Rel-17 | C293 | UEs supporting 5GS NR SA FR2 and more than 1 per-UE measurement gap configurations and two independent measurement gap configurations for FR1 and FR2 for PRS measurement | NOTE 1 | 2RX |  |
| **7.6.16** | **SA event triggered reporting tests with NCSG** |  |  |  |  |  |  |
| 7.6.16.1 | NR SA FR2 event triggered reporting test with per-UE NCSG under non-DRX | Rel-17 | C294 | UEs supporting 5GS NR SA FR2, CSI-RS-based RLM, BWP operation without bandwidth restriction, per-FR NCSG, reporting of NCSG requirement information and NR only NCSG patterns | NOTE 1 | 2RX |  |
| 7.6.16.2 | NR SA FR2 event triggered reporting tests on inter-frequency measurement with NCSG for FR2 when DRX is not used (PCell in FR2) | Rel-17 | C295 | UEs supporting 5GS NR SA FR2, reporting of NCSG requirement information and NR only NCSG patterns but not supporting ncsg-MeasGapPerFR-r17 | For sub-test 1  NOTE 1 | 2RX |  |
|  |  |  | C296 | UEs supporting 5GS NR SA FR2, per-FR NCSG, reporting of NCSG requirement information and NR only NCSG patterns | For sub-test 2  NOTE 1 | 2RX |  |
| 7.6.16.3 | NR SA FR2 Event triggered reporting test on deactivated Scell measurement via NCSG in FR2 in non-DRX | Rel-17 | C297 | UEs supporting 5GS NR SA FR2, CA (2DL CA), reporting of NCSG requirement information and NR only NCSG patterns | NOTE 1 | 2RX |  |
| **7.7** | **Measurement performance requirements** |  |  |  |  |  |  |
| **7.7.1** | **SS-RSRP** |  |  |  |  |  |  |
| 7.7.1.1 | NR SA FR2 SS-RSRP measurement accuracy | Rel-15 | C006 | UEs supporting 5GS NR SA FR2 |  | 2Rx |  |
| 7.7.1.2 | NR SA FR2-FR2 SS-RSRP measurement accuracy | Rel-15 | C006 | UEs supporting 5GS NR SA FR2 |  | 2Rx |  |
| **7.7.1.3** | **Inter-frequency measurements between FR1 and FR2** |  |  |  |  |  |  |
| 7.7.1.3.1 | NR SA FR1-FR2 SS-RSRP measurement accuracy | Rel-15 | N/A | Not recommended due to FR1 – FR2 testability issue | NOTE 1 | 2Rx |  |
| **7.7.2** | **SS-RSRQ** |  |  |  |  |  |  |
| 7.7.2.1 | NR SA FR2 SS-RSRQ measurement accuracy | Rel-15 | C006 | UEs supporting 5GS NR SA FR2 |  | 2Rx |  |
| 7.7.2.2 | NR SA FR2-FR2 SS-RSRQ measurement accuracy | Rel-15 | C006 | UEs supporting 5GS NR SA FR2 |  | 2Rx |  |
| **7.7.3** | **SS-SINR** |  |  |  |  |  |  |
| 7.7.3.1 | NR SA FR2 SS-SINR measurement accuracy | Rel-15 | C006 | UEs supporting 5GS NR SA FR2 |  | 2Rx |  |
| 7.7.3.2 | NR SA FR2-FR2 SS-SINR measurement accuracy | Rel-16 | C006 | UEs supporting 5GS NR SA FR2 |  | 2Rx |  |
| **7.7.4** | **L1-RSRP for beam reporting** |  |  |  |  |  |  |
| 7.7.4.1 | NR SA FR2 SSB based L1-RSRP measurement accuracy | Rel-15 | C006 | UEs supporting 5GS NR SA FR2 |  | 2Rx |  |
| 7.7.4.2 | NR SA FR2 CSI-RS based L1-RSRP measurement accuracy | Rel-15 | C006 | UEs supporting 5GS NR SA FR2 |  | 2Rx |  |
| **7.7.5** |  |  |  |  |  |  |  |
| 7.7.5.1 | NR SA FR2 SRS-RSRP measurement accuracy | Rel-16 | C006l | UEs supporting 5GS NR SA FR2 and SRS-RSRP measurements |  | 2Rx |  |
| **7.7.6** | **L1-SINR** |  |  |  |  |  |  |
| 7.7.6.1 | NR SA FR2 CSI-RS based CMR and no dedicated IMR configured and CSI-RS resource set with repetition off L1-SINR measurement accuracy | Rel-16 | C138 | UEs supporting 5GS NR SA FR2 and L1-SINR-measurement based on CSI-RS as CMR without dedicated IMR configured |  | 2Rx |  |
| 7.7.6.2 | NR SA FR2 SSB based CMR and dedicated IMR L1-SINR measurement accuracy | Rel-16 | C139 | UEs supporting 5GS NR SA FR2 and L1-SINR-measurement based on SSB as CMR and dedicated CSI-IM as IMR |  | 2Rx |  |
| 7.7.6.3 | NR SA FR2 CSI-RS based CMR and dedicated IMR L1-SINR measurement accuracy | Rel-16 | C140 | UEs supporting 5GS NR SA FR2 and L1-SINR-measurement based on CSI-RS as CMR and dedicated CSI-IM as IMR |  | 2Rx |  |
| NOTE 1: The test case/branch is incomplete for any Band/CA/DC Configuration but has basic test configurations already. NOTE 1 can be removed only when the test case/branch is complete for at least one Band / CA/DC Configuration for at least one feature included in the test case/branch. Detailed completion status can be found in the corresponding test case section in 38.533.  NOTE 2: Void.  NOTE 3: Void.  NOTE 4: Test cases in TS 38.533 [5] clause 7 only apply to FR2 non-RedCap UEs. For FR2 RedCap UEs, Test cases in TS 38.533 [5] clause 17 apply. | | | | | | |  |

Table 4.2-4a: Void

Table 4.2-5: Applicability of E-UTRA – NR Inter-RAT conformance test cases, ref. TS 38.533 [5]

| Clause | TC Title | Release | Applicability | | Additional Information | Branch | Subtest Selection Criteria |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  |  |  | Condition | Comment |  |  |  |
| **8.2** | **RRC\_IDLE state mobility** |  |  |  |  |  |  |
| **8.2.1** | **Inter-RAT cell re-selection** |  |  |  |  |  |  |
| 8.2.1.1 | E-UTRA – NR FR1 cell re-selection to higher priority NR target cell | Rel-15 | C025 | UEs supporting 5GS NR SA FR1 and E-UTRA |  | 2Rx  4Rx |  |
| 8.2.1.2 | E-UTRA – NR FR1 Cell reselection to lower priority NR target Cell in FR1 for UE configured with highSpeedInterRAT-NR-r16 | Rel-16 | C025d | UEs supporting 5GS NR SA FR1 and E-UTRAN and NR inter-RAT measurement enhancement in HST |  | 2Rx  4Rx |  |
| **8.2.2** | **E-UTRA - NR Inter-RAT Early Measurement Reporting** |  |  |  |  |  |  |
| 8.2.2.1 | E-UTRA – NR FR1 Early Measurement Reporting | Rel-16 | C025f | UEs supporting 5GS NR SA FR1 and E-UTRA and NR FR1 SSB measurements in RRC\_IDLE/RRC\_INACTIVE | NOTE 1 | 2Rx  4Rx |  |
| 8.2.2.2 | E-UTRA – NR FR2 Early Measurement Reporting | Rel-16 | N/A | not recommended due to E-UTRA/FR1 – FR2 testability issue | NOTE 1 | 2Rx  4Rx |  |
| **8.3** | **RRC\_CONNECTED state mobility** |  |  |  |  |  |  |
| **8.3.1** | **Inter-RAT cell handover** |  |  |  |  |  |  |
| 8.3.1.1 | E-UTRA – NR FR1 handover with known target cell | Rel-15 | C025 | UEs supporting 5GS NR SA FR1 and E-UTRA |  | 2Rx  4Rx |  |
| **8.4** | **Measurement procedures** |  |  |  |  |  |  |
| **8.4.1** | **SFTD measurement delay** |  |  |  |  |  |  |
| 8.4.1.1 | E-UTRA – NR FR1 SFTD measurement delay in non-DRX | Rel-15 | C081 | UEs supporting EN-DC and E-UTRA and SFTD measurements between E-UTRA Pcell and NR neighbour cell |  | 2Rx  4Rx |  |
| 8.4.1.2 | E-UTRA – NR FR1 SFTD measurement delay in DRX | Rel-15 | C081a | UEs supporting EN-DC and E-UTRA and long DRX cycle and SFTD measurements between E-UTRA Pcell and NR neighbour cell |  | 2Rx  4Rx |  |
| **8.4.2** | **Inter-RAT measurements** |  |  |  |  |  |  |
| 8.4.2.1 | E-UTRA event-triggered reporting of a NR FR1 neighbour cell without SSB time index detection in non-DRX | Rel-15 | C086 | UEs supporting E-UTRA and NR FR1 measurement |  | 2Rx  4Rx | Subtest 2: F018 |
| 8.4.2.2 | E-UTRA event-triggered reporting of a NR FR1 neighbour cell without SSB time index detection in DRX | Rel-15 | C086a | UEs supporting E-UTRA and NR FR1 measurement and long DRX cycle |  | 2Rx  4Rx | Subtests 3,4: F019 |
| 8.4.2.3 | E-UTRA event-triggered reporting of a NR FR1 neighbour cell with SSB time index detection in non-DRX | Rel-15 | C086 | UEs supporting E-UTRA and NR FR1 measurement |  | 2Rx  4Rx | Subtest 2: F018 |
| 8.4.2.4 | E-UTRA event-triggered reporting of a NR FR1 neighbour cell with SSB time index detection in DRX | Rel-15 | C086a | UEs supporting E-UTRA and NR FR1 measurement and long DRX cycle |  | 2Rx  4Rx | Subtests 3,4: F019 |
| 8.4.2.5 | E-UTRA event-triggered reporting of a NR FR2 neighbour cell without SSB time index detection in non-DRX | Rel-15 | N/A | not recommended due to E-UTRA – FR2 testability issue |  | 2Rx |  |
| 8.4.2.6 | E-UTRA event-triggered reporting of a NR FR2 neighbour cell without SSB time index detection in DRX | Rel-15 | N/A | not recommended due to E-UTRA – FR2 testability issue |  | 2Rx |  |
| 8.4.2.7 | E-UTRA event-triggered reporting of a NR FR2 neighbour cell with SSB time index detection in non-DRX | Rel-15 | N/A | not recommended due to E-UTRA – FR2 testability issue |  | 2Rx |  |
| 8.4.2.8 | E-UTRA event-triggered reporting of a NR FR2 neighbour cell with SSB time index detection in DRX | Rel-15 | N/A | not recommended due to E-UTRA – FR2 testability issue |  | 2Rx |  |
| 8.4.2.9 | E-UTRA event triggered reporting of a NR FR1 neighbour cell with SSB time index detection in DRX for UE configured with highSpeedInterRAT-NR-r16 | Rel-16 | C025e | UEs supporting 5GS NR SA FR1 and E-UTRAN, long DRX cycle and NR inter-RAT measurement enhancement in HST |  | 2Rx  4Rx |  |
| **8.5** | **Measurement performance requirements** |  |  |  |  |  |  |
| **8.5.1** | **SFTD measurement accuracy** |  |  |  |  |  |  |
| 8.5.1.1 | E-UTRA – NR FR1 SFTD measurement accuracy | Rel-15 | C081 | UEs supporting EN-DC and E-UTRA and SFTD measurements between E-UTRA Pcell and NR neighbour cell | NOTE 1 | 2Rx  4Rx |  |
| **8.5.2** | **Inter-RAT** |  |  |  |  |  |  |
| **8.5.2.1** | **SS-RSRP** |  |  |  |  |  |  |
| 8.5.2.1.1.1 | E-UTRA SS-RSRP absolute measurement accuracy of a NR FR1 neighbour cell | Rel-15 | C086 | UEs supporting E-UTRA and NR FR1 measurement |  | 2Rx  4Rx |  |
| 8.5.2.1.2 | E-UTRA SS-RSRP absolute measurement accuracy of a NR FR2 neighbour cell | Rel-15 | C080 | UEs supporting E-UTRA and NR FR2 measurement |  | 2Rx |  |
| **8.5.2.2** | **SS-RSRQ** |  |  |  |  |  |  |
| 8.5.2.2.1 | E-UTRA SS-RSRQ absolute measurement accuracy of a NR FR1 neighbour cell | Rel-15 | C086 | UEs supporting E-UTRA and NR FR1 measurement |  | 2Rx  4Rx |  |
| 8.5.2.2.2 | E-UTRA SS-RSRQ absolute measurement accuracy of a NR FR2 neighbour cell | Rel-15 | C080 | UEs supporting E-UTRA and NR FR2 measurement |  | 2Rx |  |
| **8.5.2.3** | **SS-SINR** |  |  |  |  |  |  |
| 8.5.2.3.1 | E-UTRA SS-SINR absolute measurement accuracy of a NR FR1 neighbour cell | Rel-15 | C086 | UEs supporting E-UTRA and NR FR1 measurement |  | 2Rx  4Rx |  |
| 8.5.2.3.2 | E-UTRA SS-SINR absolute measurement accuracy of a NR FR2 neighbour cell | Rel-15 | C080 | UEs supporting E-UTRA and NR FR2 measurement |  | 2Rx |  |
| NOTE 1: The test case/branch is incomplete for any Band/CA/DC Configuration but has basic test configurations already. NOTE 1 can be removed only when the test case/branch is complete for at least one Band / CA/DC Configuration for at least one feature included in the test case/branch. Detailed completion status can be found in the corresponding test case section in 38.533.  NOTE 2: Test cases in TS 38.533 [5] clause 8 only apply to non-RedCap UEs. For RedCap UEs, Test cases in TS 38.533 [5] clause 18 apply. | | | | | | |  |

Table 4.2-6: Applicability of NR sidelink FR1 conformance test cases, ref. TS 38.533 [5]

| Clause | TC Title | Release | Applicability | | Additional Information | Branch |
| --- | --- | --- | --- | --- | --- | --- |
|  |  |  | Condition | Comment |  |  |
| **9.1.1** | **UE transmit timing** |  |  |  |  |  |
| 9.1.1.1 | NR SA FR1 UE transmit timing accuracy for GNSS as synchronization reference source | Rel-16 | C079 | UEs supporting 5GS FR1 and NR sidelink | NOTE 1 | 2Rx |
| 9.1.1.2 | NR SA FR1 UE transmit timing accuracy for SyncRef UE as synchronization reference source | Rel-16 | C079 | UEs supporting 5GS FR1 and NR sidelink | NOTE 1 | 2Rx |
| 9.1.1.3 | NR SA FR1 UE transmit timing accuracy for FR1 NR cell as synchronization reference source | Rel-16 | C079a | UE supporting 5GS FR1 and NR Uu and NR sidelink. | NOTE 1 | 2Rx |
| **9.1.2** | **Initiation/Cease of S-SSB transmission** |  |  |  |  |  |
| 9.1.2.1 | NR SA FR1 initiation/cease of S-SSB transmission for FR1 NR cell as synchronization reference source | Rel-16 | C079a | UE supporting 5GS FR1 and NR Uu and NR sidelink. | NOTE 1 | 2Rx |
| 9.1.2.2 | NR SA FR1 initiation/cease of S-SSB transmission for SyncRef UE as synchronization reference source | Rel-16 | C079 | UEs supporting 5GS FR1 and NR sidelink | NOTE 1 | 2Rx |
| **9.1.3** | **Synchronization reference selection/reselection** |  |  |  |  |  |
| 9.1.3.1 | NR SA FR1 synchronization reference selection/reselection for GNSS configured as the highest priority synchronization reference source | Rel-16 | C079 | UEs supporting 5GS FR1 and NR sidelink | NOTE 1 | 2Rx |
| 9.1.3.2 | NR SA FR1 synchronization reference selection/reselection for FR1 NR Cell configured as the highest priority synchronization reference source | Rel-16 | C079a | UE supporting 5GS FR1 and NR Uu and NR sidelink. | NOTE 1 | 2Rx |
| **9.1.4** | **L1 SL-RSRP measurements** |  |  |  |  |  |
| 9.1.4.1 | NR SA FR1 L1 SL-RSRP measurement for autonomous resource selection/reselection | Rel-16 | C079 | UEs supporting 5GS FR1 and NR sidelink | NOTE 1 | 2Rx |
| 9.1.4.2 | NR SA FR1 L1 SL-RSRP measurement for resource pre-emption | Rel-16 | C079 | UEs supporting 5GS FR1 and NR sidelink | NOTE 1 | 2Rx |
| 9.1.4.3 | NR SA FR1 L1 SL-RSRP measurement for resource re-evaluation | Rel-16 | C079 | UEs supporting 5GS FR1 and NR sidelink | NOTE 1 | 2Rx |
| **9.1.5** | **Congestion control measurement** |  |  |  |  |  |
| 9.1.5.1 | NR SA FR1 congestion control measurement for concurrent operation | Rel-16 | C079a | UE supporting 5GS FR1 and NR Uu and NR sidelink. | NOTE 1 | 2Rx |
| 9.1.5.2 | NR SA FR1 congestion control measurement for PC5-only operation | Rel-16 | C079 | UEs supporting 5GS FR1 and NR sidelink | NOTE 1 | 2Rx |
| **9.1.6** | **Interruption** |  |  |  |  |  |
| 9.1.6.1 | NR SA FR1 interruption to WAN due to NR sidelink communication | Rel-16 | C079a | UE supporting 5GS FR1 and NR Uu and NR sidelink. | NOTE 1 | 2Rx |
| NOTE 1: The test case/branch is incomplete for any Band/CA/DC Configuration but has basic test configurations already. NOTE 1 can be removed only when the test case/branch is complete for at least one Band / CA/DC Configuration for at least one feature included in the test case/branch. Detailed completion status can be found in the corresponding test case section in 38.533. | | | | | | |

Table 4.2-7: Applicability of RRM NR SA FR1 conformance test cases for RedCap, ref. TS 38.533 [5]

| Clause | TC Title | Release | Applicability | | Additional Information | Branch | Test Selection Criteria |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  |  |  | Condition | Comment |  |  |  |
| **16.1** | **RRC\_IDLE state mobility for RedCap** |  |  |  |  |  |  |
| **16.1.1** | **NR cell re-selection** |  |  |  |  |  |  |
| 16.1.1.1 | NR SA FR1 Cell reselection to FR1 intra-frequency NR case for 1 Rx UE | Rel-17 | C183 | 1Rx RedCap UEs supporting 5GS NR SA FR1 |  | 1Rx |  |
| 16.1.1.2 | NR SA FR1 Cell reselection to FR1 intra-frequency NR case for 2 Rx UE | Rel-17 | C184 | 2Rx RedCap UEs supporting 5GS NR SA FR1 |  | 2Rx |  |
| 16.1.1.3 | NR SA FR1-FR1 Cell reselection to FR1 inter-frequency NR case for 1 Rx UE | Rel-17 | C183 | 1Rx RedCap UEs supporting 5GS NR SA FR1 |  | 1Rx |  |
| 16.1.1.4 | NR SA FR1-FR1 Cell reselection to FR1 inter-frequency NR case for 2 Rx UE | Rel-17 | C184 | 2Rx RedCap UEs supporting 5GS NR SA FR1 |  | 2Rx |  |
| 16.1.1.5 | NR SA FR1 Cell reselection to FR1 intra-frequency NR case for UE fulfilling stationary relaxed measurement criterion for 1 Rx UE | Rel-17 | C208 | 1Rx RedCap UEs supporting 5GS NR SA FR1 and relaxed RRM measurements |  | 1Rx |  |
| 16.1.1.6 | NR SA FR1 Cell reselection to FR1 intra-frequency NR case for UE fulfilling stationary relaxed measurement criterion for 2 Rx UE | Rel-17 | C209 | 2Rx RedCap UEs supporting 5GS NR SA FR1 and relaxed RRM measurements |  | 2Rx |  |
| 16.1.1.7 | NR SA FR1-FR1 Cell reselection to FR1 inter-frequency NR case for UE fulfilling stationary relaxed measurement criterion for 1 Rx UE | Rel-17 | C208 | 1Rx RedCap UEs supporting 5GS NR SA FR1 and relaxed RRM measurements |  | 1Rx |  |
| 16.1.1.8 | NR SA FR1-FR1 Cell reselection to FR1 inter-frequency NR case for UE fulfilling stationary relaxed measurement criterion for 2 Rx UE | Rel-17 | C209 | 2Rx RedCap UEs supporting 5GS NR SA FR1 and relaxed RRM measurements |  | 2Rx |  |
| **16.1.2** | **NR - E-UTRA cell re-selection** |  |  |  |  |  |  |
| 16.1.2.1 | NR SA FR1 - E-UTRA Cell reselection to higher priority E-UTRA for 1RX | Rel-17 | C181 | 1Rx RedCap UEs supporting 5GS NR SA FR1 and E-UTRA |  | 1Rx |  |
| 16.1.2.2 | NR SA FR1 - E-UTRA Cell reselection to higher priority E-UTRA for 2RX | Rel-17 | C182 | 2Rx RedCap UEs supporting 5GS NR SA FR1 and E-UTRA |  | 2Rx |  |
| 16.1.2.3 | NR SA FR1 - E-UTRA Cell reselection to lower priority E-UTRA for 1RX | Rel-17 | C181 | 1Rx RedCap UEs supporting 5GS NR SA FR1 and E-UTRA |  | 1Rx |  |
| 16.1.2.4 | NR SA FR1 - E-UTRA Cell reselection to lower priority E-UTRA for 2RX | Rel-17 | C182 | 2Rx RedCap UEs supporting 5GS NR SA FR1 and E-UTRA |  | 2Rx |  |
| 16.1.2.5 | NR SA FR1 - E-UTRA Cell reselection to lower priority E-UTRA for UE fulfilling stationary relaxed measurement criterion for 1 Rx UE | Rel-17 | C210 | 1Rx RedCap UEs supporting 5GS NR SA FR1 and E-UTRA and relaxed RRM measurements |  | 1Rx |  |
| 16.1.2.6 | NR SA FR1 - E-UTRA Cell reselection to lower priority E-UTRA for UE fulfilling stationary relaxed measurement criterion for 2 Rx UE | Rel-17 | C211 | 2Rx RedCap UEs supporting 5GS NR SA FR1 and E-UTRA and relaxed RRM measurements |  | 2Rx |  |
| **16.2** | **RRC\_INACTIVE state mobility for RedCap** |  |  |  |  |  |  |
| **16.2.1** | **Configured Grant based Small Data Transmissions for RedCap** |  |  |  |  |  |  |
| 16.2.1.1 | NR SA FR1 CG-SDT for 1Rx UE | Rel-17 | C300 | 1Rx RedCap UEs supporting 5GS NR SA FR1, CG-based small data transmission and long DRX cycle |  | 1Rx |  |
| 16.2.1.2 | NR SA FR1 CG-SDT for 2Rx UE | Rel-17 | C301 | 2Rx RedCap UEs supporting 5GS NR SA FR1, CG-based small data transmission and long DRX cycle |  | 2Rx |  |
| **16.3** | **RRC\_CONNECTED state mobility for RedCap** |  |  |  |  |  |  |
| **16.3.1** | **Handover for RedCap** |  |  |  |  |  |  |
| 16.3.1.1 | NR SA FR1 Intra-frequency handover from FR1 to FR1 with known target cell for 1 Rx UE | Rel-17 | C183 | 1Rx RedCap UEs supporting 5GS NR SA FR1 |  | 1Rx |  |
| 16.3.1.2 | NR SA FR1 Intra-frequency handover from FR1 to FR1 with known target cell for 2 Rx UE | Rel-17 | C184 | 2Rx RedCap UEs supporting 5GS NR SA FR1 |  | 2Rx |  |
| 16.3.1.3 | NR SA FR1 Intra-frequency handover from FR1 to FR1 with unknown target cell for 1 Rx UE | Rel-17 | C183 | 1Rx RedCap UEs supporting 5GS NR SA FR1 |  | 1Rx |  |
| 16.3.1.4 | NR SA FR1 Intra-frequency handover from FR1 to FR1 with unknown target cell for 2 Rx UE | Rel-17 | C184 | 2Rx RedCap UEs supporting 5GS NR SA FR1 |  | 2Rx |  |
| 16.3.1.5 | NR SA FR1-FR1 Inter-frequency handover from FR1 to FR1 with unknown target cell for 1 Rx UE | Rel-17 | C183 | 1Rx RedCap UEs supporting 5GS NR SA FR1 |  | 1Rx |  |
| 16.3.1.6 | NR SA FR1-FR1 Inter-frequency handover from FR1 to FR1 with unknown target cell for 2 Rx UE | Rel-17 | C184 | 2Rx RedCap UEs supporting 5GS NR SA FR1 |  | 2Rx |  |
| 16.3.1.7 | NR - E-UTRA handover for 1Rx UE | Rel-17 | C181 | 1Rx RedCap UEs supporting 5GS NR SA FR1 and E-UTRA |  | 1Rx |  |
| 16.3.1.8 | NR - E-UTRA handover for 2Rx UE | Rel-17 | C182 | 2Rx RedCap UEs supporting 5GS NR SA FR1 and E-UTRA |  | 2Rx |  |
| 16.3.1.9 | NR - E-UTRA handover with unknown target cell for 1 Rx UE | Rel-17 | C181 | 1Rx RedCap UEs supporting 5GS NR SA FR1 and E-UTRA |  | 1Rx |  |
| 16.3.1.10 | NR - E-UTRA handover with unknown target cell for 2 Rx UE | Rel-17 | C182 | 2Rx RedCap UEs supporting 5GS NR SA FR1 and E-UTRA |  | 2Rx |  |
| **16.3.2** | **RRC connection mobility control for RedCap** |  |  |  |  |  |  |
| **16.3.2.1** | **RRC re-establishment for RedCap** |  |  |  |  |  |  |
| 16.3.2.1.1 | NR SA FR1 Intra-frequency RRC Re-establishment in FR1 for 1 Rx UE | Rel-17 | C183 | 1Rx RedCap UEs supporting 5GS NR SA FR1 |  | 1Rx |  |
| 16.3.2.1.2 | NR SA FR1 Intra-frequency RRC Re-establishment in FR1 for 2 Rx UE | Rel-17 | C184 | 2Rx RedCap UEs supporting 5GS NR SA FR1 |  | 2Rx |  |
| 16.3.2.1.3 | NR SA FR1-FR1 Inter-frequency RRC Re-establishment in FR1 for 1 Rx UE | Rel-17 | C183 | 1Rx RedCap UEs supporting 5GS NR SA FR1 |  | 1Rx |  |
| 16.3.2.1.4 | NR SA FR1-FR1 Inter-frequency RRC Re-establishment in FR1 for 2 Rx UE | Rel-17 | C184 | 2Rx RedCap UEs supporting 5GS NR SA FR1 |  | 2Rx |  |
| 16.3.2.1.5 | NR SA FR1 Intra-frequency RRC Re-establishment in FR1 for 1 Rx UE without serving cell timing | Rel-17 | C183 | 1Rx RedCap UEs supporting 5GS NR SA FR1 |  | 1Rx |  |
| 16.3.2.1.6 | NR SA FR1 Intra-frequency RRC Re-establishment in FR1 for 2 Rx UE without serving cell timing | Rel-17 | C184 | 2Rx RedCap UEs supporting 5GS NR SA FR1 |  | 2Rx |  |
| **16.3.2.2** | **Random access for RedCap** |  |  |  |  |  |  |
| 16.3.2.2.1 | NR SA FR1 4-step RA type contention based random access test in FR1 for NR standalone for 1 Rx UE | Rel-17 | C183 | 1Rx RedCap UEs supporting 5GS NR SA FR1 |  | 1Rx |  |
| 16.3.2.2.2 | NR SA FR1 4-step RA type contention based random access test in FR1 for NR standalone for 2 Rx UE | Rel-17 | C184 | 2Rx RedCap UEs supporting 5GS NR SA FR1 |  | 2Rx |  |
| 16.3.2.2.3 | NR SA FR1 4-step RA type non-contention based random access test in FR1 for NR standalone for 1 Rx UE | Rel-17 | C183 | 1Rx RedCap UEs supporting 5GS NR SA FR1 |  | 1Rx | Subtest 2: F009 |
| 16.3.2.2.4 | NR SA FR1 4-step RA type non-contention based random access test in FR1 for NR standalone for 2 Rx UE | Rel-17 | C184 | 2Rx RedCap UEs supporting 5GS NR SA FR1 |  | 2Rx | Subtest 2: F010 |
| 16.3.2.2.5 | NR SA FR1 2-step RA type contention based random access test in FR1 for NR standalone for 1 Rx UE | Rel-17 | C187 | 1Rx RedCap UEs supporting 5GS NR SA FR1 and 2-step RACH |  | 1Rx |  |
| 16.3.2.2.6 | NR SA FR1 2-step RA type contention based random access test in FR1 for NR standalone for 2 Rx UE | Rel-17 | C188 | 2Rx RedCap UEs supporting 5GS NR SA FR1 and 2-step RACH |  | 2Rx |  |
| 16.3.2.2.7 | NR SA FR1 2-step RA type non-contention based test in FR1 for NR standalone for 1 RX UE | Rel-17 | C187 | 1Rx RedCap UEs supporting 5GS NR SA FR1 and 2-step RACH |  | 1Rx |  |
| 16.3.2.2.8 | NR SA FR1 2-step RA type non-contention based test in FR1 for NR standalone for 2 RX UE | Rel-17 | C188 | 2Rx RedCap UEs supporting 5GS NR SA FR1 and 2-step RACH |  | 2Rx |  |
| **16.3.2.3** | **RRC connection release with redirection for RedCap** |  |  |  |  |  |  |
| 16.3.2.3.1 | NR SA FR1-FR1 Redirection from NR in FR1 to NR in FR1 for 1 Rx UE | Rel-17 | C183 | 1Rx RedCap UEs supporting 5GS NR SA FR1 |  | 1Rx |  |
| 16.3.2.3.2 | NR SA FR1-FR1 Redirection from NR in FR1 to NR in FR1 for 2 Rx UE | Rel-17 | C184 | 2Rx RedCap UEs supporting 5GS NR SA FR1 |  | 2Rx |  |
| 16.3.2.3.3 | NR SA FR1-FR1 Redirection from NR in FR1 to E-UTRAN for 1 Rx UE | Rel-17 | C181 | 1Rx RedCap UEs supporting 5GS NR SA FR1 and E-UTRA |  | 1Rx |  |
| 16.3.2.3.4 | NR SA FR1-FR1 Redirection from NR in FR1 to E-UTRAN for 2 Rx UE | Rel-17 | C182 | 2Rx RedCap UEs supporting 5GS NR SA FR1 and E-UTRA |  | 2Rx |  |
| **16.4** | **Timing for RedCap** |  |  |  |  |  |  |
| **16.4.1** | **UE transmit timing for RedCap** |  |  |  |  |  |  |
| 16.4.1.1 | NR SA FR1 NR UE Transmit Timing Test for FR1 for 1Rx RedCap UE | Rel-17 | C183 | 1Rx RedCap UEs supporting 5GS NR SA FR1 |  | 1Rx | Subtest 2: F011 |
| 16.4.1.2 | NR SA FR1 NR UE Transmit Timing Test for FR1 for 2Rx RedCap UE | Rel-17 | C184 | 2Rx RedCap UEs supporting 5GS NR SA FR1 |  | 2Rx | Subtest 2: F012 |
| **16.4.2** | **UE timer accuracy for RedCap** |  |  |  |  |  |  |
| **16.4.3** | **Timing advance for RedCap** |  |  |  |  |  |  |
| 16.4.3.1 | NR SA FR1 SA FR1 timing advance adjustment accuracy for 1 Rx UE | Rel-17 | C183 | 1Rx RedCap UEs supporting 5GS NR SA FR1 |  | 1Rx |  |
| 16.4.3.2 | NR SA FR1 SA FR1 timing advance adjustment accuracy for 2 Rx UE | Rel-17 | C184 | 2Rx RedCap UEs supporting 5GS NR SA FR1 |  | 2Rx |  |
| **16.5** | **Signalling characteristics for RedCap** |  |  |  |  |  |  |
| **16.5.1** | **Radio Link Monitoring for RedCap** |  |  |  |  |  |  |
| 16.5.1.1 | NR SA FR1 Radio Link Monitoring Out-of-sync Test for FR1 PCell configured with SSB-based RLM RS in non-DRX mode for 1 Rx UE | Rel-17 | C183 | 1Rx RedCap UEs supporting 5GS NR SA FR1 |  | 1Rx |  |
| 16.5.1.2 | NR SA FR1 Radio Link Monitoring Out-of-sync Test for FR1 PCell configured with SSB-based RLM RS in non-DRX mode for 2 Rx UE | Rel-17 | C184 | 2Rx RedCap UEs supporting 5GS NR SA FR1 |  | 2Rx |  |
| 16.5.1.3 | NR SA FR1 Radio Link Monitoring In-sync Test for FR1 PCell configured with SSB-based RLM RS in non-DRX mode for 1 Rx UE | Rel-17 | C183 | 1Rx RedCap UEs supporting 5GS NR SA FR1 |  | 1Rx |  |
| 16.5.1.4 | NR SA FR1 Radio Link Monitoring In-sync Test for FR1 PCell configured with SSB-based RLM RS in non-DRX mode for 2 Rx UE | Rel-17 | C184 | 2Rx RedCap UEs supporting 5GS NR SA FR1 |  | 2Rx |  |
| 16.5.1.5 | NR SA FR1 Radio Link Monitoring Out-of-sync Test for FR1 PCell configured with SSB-based RLM RS in DRX mode for 1 Rx UE | Rel-17 | C188 | 1Rx RedCap UEs supporting 5GS NR SA FR1 and long DRX cycle |  | 1Rx |  |
| 16.5.1.6 | NR SA FR1 Radio Link Monitoring Out-of-sync Test for FR1 PCell configured with SSB-based RLM RS in DRX mode for 2 Rx UE | Rel-17 | C190 | 2Rx RedCap UEs supporting 5GS NR SA FR1 and long DRX cycle |  | 2Rx |  |
| 16.5.1.7 | NR SA FR1 Radio Link Monitoring In-sync Test for FR1 PCell configured with SSB-based RLM RS in DRX mode for 1 Rx UE | Rel-17 | C188 | 1Rx RedCap UEs supporting 5GS NR SA FR1 and long DRX cycle |  | 1Rx |  |
| 16.5.1.8 | NR SA FR1 Radio Link Monitoring In-sync Test for FR1 PCell configured with SSB-based RLM RS in DRX mode for 2 Rx UE | Rel-17 | C190 | 2Rx RedCap UEs supporting 5GS NR SA FR1 and long DRX cycle |  | 2Rx |  |
| 16.5.1.9 | NR SA FR1 Radio Link Monitoring Out-of-sync Test for FR1 PCell configured with CSI-RS-based RLM in non-DRX mode for 1 Rx UE | Rel-17 | C214 | 1Rx RedCap UEs supporting 5GS NR SA FR1 and CSI-RS-based RLM |  | 1Rx |  |
| 16.5.1.10 | NR SA FR1 Radio Link Monitoring Out-of-sync Test for FR1 PCell configured with CSI-RS-based RLM in non-DRX mode for 2 Rx UE | Rel-17 | C215 | 2Rx RedCap UEs supporting 5GS NR SA FR1 and CSI-RS-based RLM |  | 2Rx |  |
| 16.5.1.11 | NR SA FR1 Radio Link Monitoring In-sync Test for FR1 PCell configured with CSI-RS-based RLM in non-DRX mode for 1 Rx UE | Rel-17 | C214 | 1Rx RedCap UEs supporting 5GS NR SA FR1 and CSI-RS-based RLM |  | 1Rx |  |
| 16.5.1.12 | NR SA FR1 Radio Link Monitoring In-sync Test for FR1 PCell configured with CSI-RS-based RLM in non-DRX mode for 2 Rx UE | Rel-17 | C215 | 2Rx RedCap UEs supporting 5GS NR SA FR1 and CSI-RS-based RLM |  | 2Rx |  |
| 16.5.1.13 | NR SA FR1 Radio Link Monitoring Out-of-sync Test for FR1 PCell configured with CSI-RS-based RLM in DRX mode for 1 Rx UE | Rel-17 | C216 | 1Rx RedCap UEs supporting 5GS NR SA FR1, CSI-RS-based RLM and long DRX cycle |  | 1Rx |  |
| 16.5.1.14 | NR SA FR1 Radio Link Monitoring Out-of-sync Test for FR1 PCell configured with CSI-RS-based RLM in DRX mode for 2 Rx UE | Rel-17 | C217 | 2Rx RedCap UEs supporting 5GS NR SA FR1, CSI-RS-based RLM and long DRX cycle |  | 2Rx |  |
| 16.5.1.15 | NR SA FR1 Radio Link Monitoring In-sync Test for FR1 PCell configured with CSI-RS-based RLM in DRX mode for 1 Rx UE | Rel-17 | C216 | 1Rx RedCap UEs supporting 5GS NR SA FR1, CSI-RS-based RLM and long DRX cycle |  | 1Rx |  |
| 16.5.1.16 | NR SA FR1 Radio Link Monitoring In-sync Test for FR1 PCell configured with CSI-RS-based RLM in DRX mode for 2 Rx UE | Rel-17 | C217 | 2Rx RedCap UEs supporting 5GS NR SA FR1, CSI-RS-based RLM and long DRX cycle |  | 2Rx |  |
| **16.5.2** | **Beam Failure Detection and Link recovery procedures for RedCap** |  |  |  |  |  |  |
| 16.5.2.1 | NR SA FR1 Beam Failure Detection and Link Recovery Test for FR1 PCell configured with SSB-based BFD and LR in non-DRX mode for 1 Rx UE | Rel-17 | C191 | 1Rx RedCap UEs supporting 5GS NR SA FR1 and link recovery |  | 1Rx |  |
| 16.5.2.2 | NR SA FR1 Beam Failure Detection and Link Recovery Test for FR1 PCell configured with SSB-based BFD and LR in non-DRX mode for 2 Rx UE | Rel-17 | C192 | 2Rx RedCap UEs supporting 5GS NR SA FR1 and link recovery |  | 2Rx |  |
| 16.5.2.3 | NR SA FR1 SSB-based beam failure detection and link recovery in DRX mode for 1 Rx UE | Rel-17 | C272 | 1Rx RedCap UEs supporting 5GS NR SA FR1, SSB-based RLM, long DRX cycle and link recovery |  | 1Rx |  |
| 16.5.2.4 | NR SA FR1 SSB-based beam failure detection and link recovery in DRX mode for 2 Rx UE | Rel-17 | C273 | 2Rx RedCap UEs supporting 5GS NR SA FR1, SSB-based RLM, long DRX cycle and link recovery |  | 2Rx |  |
| 16.5.2.5 | NR SA FR1 Beam Failure Detection and Link Recovery Test for FR1 PCell configured with CSI-RS-based BFD and LR in non-DRX mode for 1 Rx UE | Rel-17 | C218 | 1Rx RedCap UEs supporting 5GS NR SA FR1, CSI-RS-based RLM and link recovery |  | 1Rx |  |
| 16.5.2.6 | NR SA FR1 Beam Failure Detection and Link Recovery Test for FR1 PCell configured with CSI-RS-based BFD and LR in non-DRX mode for 2 Rx UE | Rel-17 | C219 | 2Rx RedCap UEs supporting 5GS NR SA FR1, CSI-RS-based RLM and link recovery |  | 2Rx |  |
| 16.5.2.7 | NR SA FR1 Beam Failure Detection and Link Recovery Test for FR1 PCell configured with CSI-RS-based BFD and LR in DRX mode for 1 Rx UE | Rel-17 | C220 | 1Rx RedCap UEs supporting 5GS NR SA FR1, CSI-RS-based RLM, long DRX cycle and link recovery |  | 1Rx |  |
| 16.5.2.8 | NR SA FR1 Beam Failure Detection and Link Recovery Test for FR1 PCell configured with CSI-RS-based BFD and LR in DRX mode for 2 Rx UE | Rel-17 | C221 | 1Rx RedCap UEs supporting 5GS NR SA FR1, CSI-RS-based RLM, long DRX cycle and link recovery |  | 2Rx |  |
| **16.5.3** | **Active BWP switch delay for RedCap** |  |  |  |  |  |  |
| **16.5.3.1** | **DCI-based and time-based active BWP switch for RedCap** |  |  |  |  |  |  |
| 16.5.3.1.1 | NR SA FR1 DCI-based DL active BWP switch in non-DRX for 1 Rx UE | Rel-17 | C274 | 1Rx RedCap UEs supporting 5GS NR SA FR1 and (DCI and timer based active BWP switching delay type1 or type2) and (Support of BWP adaptation upto2 or upto4) |  | 1Rx |  |
| 16.5.3.1.2 | NR SA FR1 DCI-based DL active BWP switch in non-DRX for 2 Rx UE | Rel-17 | C275 | 2Rx RedCap UEs supporting 5GS NR SA FR1 and (DCI and timer based active BWP switching delay type1 or type2) and (Support of BWP adaptation upto2 or upto4) |  | 2Rx |  |
| **16.5.3.2** | **RRC-based active BWP switch for RedCap** |  |  |  |  |  |  |
| 16.5.3.2.1 | NR SA FR1 RRC-based DL active BWP switch in non-DRX for 1 Rx UE | Rel-17 | C276 | 1Rx RedCap UEs supporting 5GS NR SA FR1 and (Support of BWP adaptation upto2 or upto4) |  | 1Rx |  |
| 16.5.3.2.2 | NR SA FR1 RRC-based DL active BWP switch in non-DRX for 2 Rx UE | Rel-17 | C277 | 2Rx RedCap UEs supporting 5GS NR SA FR1 and (Support of BWP adaptation upto2 or upto4) |  | 2Rx |  |
| **16.5.4** | **UE specific CBW change for RedCap** |  |  |  |  |  |  |
| 16.5.4.1 | NR SA FR1 UE specific CBW change on PCell in non-DRX for 1 Rx UE | Rel-17 | C183 | 1Rx RedCap UEs supporting 5GS NR SA FR1 |  | 1Rx |  |
| 16.5.4.2 | NR SA FR1 UE specific CBW change on PCell in non-DRX for 2 Rx UE | Rel-17 | C184 | 2Rx RedCap UEs supporting 5GS NR SA FR1 |  | 2Rx |  |
| **16.6** | **Measurement procedure for RedCap** |  |  |  |  |  |  |
| **16.6.1** | **Intra-frequency Measurements for RedCap** |  |  |  |  |  |  |
| 16.6.1.1 | NR SA FR1 Event triggered reporting tests without gap under non-DRX for 1 Rx UE | Rel-17 | C183 | 1Rx RedCap UEs supporting 5GS NR SA FR1 |  | 1Rx |  |
| 16.6.1.2 | NR SA FR1 Event triggered reporting tests without gap under non-DRX for 2 Rx UE | Rel-17 | C184 | 2Rx RedCap UEs supporting 5GS NR SA FR1 |  | 2Rx |  |
| 16.6.1.3 | NR SA FR1 Event triggered reporting tests without gap under DRX for 1 Rx UE | Rel-17 | C189 | 1Rx RedCap UEs supporting 5GS NR SA FR1 and long DRX cycle |  | 1Rx |  |
| 16.6.1.4 | NR SA FR1 Event triggered reporting tests without gap under DRX for 2 Rx UE | Rel-17 | C190 | 2Rx RedCap UEs supporting 5GS NR SA FR1 and long DRX cycle |  | 2Rx |  |
| 16.6.1.5 | NR SA FR1 Event triggered reporting tests with per-UE gaps under non-DRX for 1 Rx UE | Rel-17 | C222 | 1Rx RedCap UEs supporting 5GS NR SA FR1, CSI-RS-based RLM and BWP operation without bandwidth restriction |  | 1Rx |  |
| 16.6.1.6 | NR SA FR1 Event triggered reporting tests with per-UE gaps under non-DRX for 2 Rx UE | Rel-17 | C223 | 2Rx RedCap UEs supporting 5GS NR SA FR1, CSI-RS-based RLM and BWP operation without bandwidth restriction |  | 2Rx |  |
| 16.6.1.7 | NR SA FR1 Event triggered reporting tests with per-UE gaps under DRX for 1 Rx UE | Rel-17 | C193 | 1Rx RedCap UEs supporting 5GS NR SA FR1, CSI-RS-based RLM, BWP operation without bandwidth restriction and long DRX cycle |  | 1Rx |  |
| 16.6.1.8 | NR SA FR1 Event triggered reporting tests with per-UE gaps under DRX for 2 Rx UE | Rel-17 | C194 | 2Rx RedCap UEs supporting 5GS NR SA FR1, CSI-RS-based RLM, BWP operation without bandwidth restriction and long DRX cycle |  | 2Rx |  |
| 16.6.1.9 | NR SA FR1 Event triggered reporting tests without gap under non-DRX with SSB index reading for 1 Rx UE | Rel-17 | C183 | 1Rx RedCap UEs supporting 5GS NR SA FR1 |  | 1Rx |  |
| 16.6.1.10 | NR SA FR1 Event triggered reporting tests without gap under non-DRX with SSB index reading for 2 Rx UE | Rel-17 | C184 | 2Rx RedCap UEs supporting 5GS NR SA FR1 |  | 2Rx |  |
| 16.6.1.11 | NR SA FR1 Event triggered reporting tests with per-UE gaps under non-DRX with SSB index reading for 1 Rx UE | Rel-17 | C195 | 1Rx RedCap UEs supporting 5GS NR FDD SA FR1 and CSI-RS-based RLM and BWP operation without bandwidth restriction |  | 1Rx |  |
| 16.6.1.12 | NR SA FR1 Event triggered reporting tests with per-UE gaps under non-DRX with SSB index reading for 2 Rx UE | Rel-17 | C196 | 2Rx RedCap UEs supporting 5GS NR FDD SA FR1 and CSI-RS-based RLM and BWP operation without bandwidth restriction |  | 2Rx |  |
| **16.6.2** | **Inter-frequency measurements for RedCap** |  |  |  |  |  |  |
| 16.6.2.1 | NR SA FR1-FR1 Event triggered reporting tests for FR1 without SSB time index detection when DRX is used for 1 Rx UE | Rel-17 | C189 | 1Rx RedCap UEs supporting 5GS NR SA FR1 and long DRX cycle |  | 1Rx |  |
| 16.6.2.2 | NR SA FR1-FR1 Event triggered reporting tests for FR1 without SSB time index detection when DRX is used for 2 Rx UE | Rel-17 | C190 | 2Rx RedCap UEs supporting 5GS NR SA FR1 and long DRX cycle |  | 2Rx |  |
| 16.6.2.3 | NR SA FR1-FR1 Event triggered reporting tests for FR1 without SSB time index detection when DRX is used for 1 Rx UE | Rel-17 | C183 | 1Rx RedCap UEs supporting 5GS NR SA FR1 |  | 1Rx |  |
| 16.6.2.4 | NR SA FR1-FR1 Event triggered reporting tests for FR1 without SSB time index detection when DRX is used for 2 Rx UE | Rel-17 | C184 | 2Rx RedCap UEs supporting 5GS NR SA FR1 |  | 2Rx |  |
| 16.6.2.5 | NR SA FR1-FR1 Event triggered reporting tests for FR1 with SSB time index detection when DRX is not used for 1 Rx UE | Rel-17 | C183 | 1Rx RedCap UEs supporting 5GS NR SA FR1 |  | 1Rx |  |
| 16.6.2.6 | NR SA FR1-FR1 Event triggered reporting tests for FR1 with SSB time index detection when DRX is not used for 2 Rx UE | Rel-17 | C184 | 2Rx RedCap UEs supporting 5GS NR SA FR1 |  | 2Rx |  |
| 16.6.2.7 | NR SA FR1-FR1 Event triggered reporting tests for FR1 with SSB time index detection when DRX is used for 1 Rx UE | Rel-17 | C189 | 1Rx RedCap UEs supporting 5GS NR SA FR1 and long DRX cycle |  | 1Rx |  |
| 16.6.2.8 | NR SA FR1-FR1 Event triggered reporting tests for FR1 with SSB time index detection when DRX is used for 2 Rx UE | Rel-17 | C190 | 2Rx RedCap UEs supporting 5GS NR SA FR1 and long DRX cycle |  | 2Rx |  |
| 16.6.2.9 | NR SA FR1-FR1 Event triggered reporting tests with additional mandatory gap pattern for 1 Rx UE | Rel-17 | C183a | 1Rx RedCap UEs supporting 5GS NR SA FR1 and Gap Pattern 3 |  | 1Rx |  |
| 16.6.2.10 | NR SA FR1-FR1 Event triggered reporting tests with additional mandatory gap pattern for 2 Rx UE | Rel-17 | C184a | 2Rx RedCap UEs supporting 5GS NR SA FR1 and Gap Pattern 3 |  | 2Rx |  |
| 16.6.2.11 | NR SA FR1-FR1 Event triggered reporting tests for FR1 when DRX is used for 1 Rx UE | Rel-17 | C298 | 1Rx RedCap UEs supporting 5GS NR SA FR1 and long DRX cycle and inter-frequency SSB based measurements without measurement gaps |  | 1Rx |  |
| 16.6.2.12 | NR SA FR1-FR1 Event triggered reporting tests for FR1 when DRX is used for 2 Rx UE | Rel-17 | C299 | 2Rx RedCap UEs supporting 5GS NR SA FR1 and long DRX cycle and inter-frequency SSB based measurements without measurement gaps |  | 2Rx |  |
| **16.6.3** | **Inter-RAT measurements for RedCap** |  |  |  |  |  |  |
| 16.6.3.1 | NR - E-UTRA event-triggered reporting in non-DRX in FR1 for 1 Rx UE | Rel-17 | C181 | 1Rx RedCap UEs supporting 5GS NR SA FR1 and E-UTRA |  | 1Rx |  |
| 16.6.3.2 | NR - E-UTRA event-triggered reporting in non-DRX in FR1 for 2 Rx UE | Rel-17 | C182 | 2Rx RedCap UEs supporting 5GS NR SA FR1 and E-UTRA |  | 2Rx |  |
| 16.6.3.3 | NR - E-UTRA event-triggered reporting in DRX in FR1 for 1 Rx UE | Rel-17 | C318 | 1Rx RedCap UEs supporting 5GS NR SA FR1 and E-UTRA and long DRX cycle |  | 1Rx |  |
| 16.6.3.3 | NR - E-UTRA event-triggered reporting in DRX in FR1 for 1 Rx UE | Rel-17 | C319 | 1Rx RedCap UEs supporting 5GS NR SA FR1 and E-UTRA and long DRX cycle |  | 1Rx |  |
| **16.6.4** | **L1-RSRP measurement for beam reporting for RedCap** |  |  |  |  |  |  |
| 16.6.4.1 | NR SA FR1 SSB based L1-RSRP measurement when DRX is not used for 1 Rx UE | Rel-17 | C183 | 1Rx RedCap UEs supporting 5GS NR SA FR1 |  | 1Rx |  |
| 16.6.4.2 | NR SA FR1 SSB based L1-RSRP measurement when DRX is not used for 2 Rx UE | Rel-17 | C184 | 2Rx RedCap UEs supporting 5GS NR SA FR1 |  | 2Rx |  |
| 16.6.4.3 | NR SA FR1 SSB based L1-RSRP measurement when DRX is used for 1 Rx UE | Rel-17 | C189 | 1Rx RedCap UEs supporting 5GS NR SA FR1 and long DRX cycle |  | 1Rx |  |
| 16.6.4.4 | NR SA FR1 SSB based L1-RSRP measurement when DRX is used for 2 Rx UE | Rel-17 | C190 | 2Rx RedCap UEs supporting 5GS NR SA FR1 and long DRX cycle |  | 2Rx |  |
| 16.6.4.5 | NR SA FR1 CSI-RS based L1-RSRP measurement when DRX is not used for 1 Rx UE | Rel-17 | C183 | 1Rx RedCap UEs supporting 5GS NR SA FR1 |  | 1Rx |  |
| 16.6.4.6 | NR SA FR1 CSI-RS based L1-RSRP measurement when DRX is not used for 2 Rx UE | Rel-17 | C184 | 2Rx RedCap UEs supporting 5GS NR SA FR1 |  | 2Rx |  |
| 16.6.4.7 | NR SA FR1 CSI-RS based L1-RSRP measurement when DRX is used for 1 Rx UE | Rel-17 | C189 | 1Rx RedCap UEs supporting 5GS NR SA FR1 and long DRX cycle |  | 1Rx |  |
| 16.6.4.8 | NR SA FR1 CSI-RS based L1-RSRP measurement when DRX is used for 2 Rx UE | Rel-17 | C190 | 2Rx RedCap UEs supporting 5GS NR SA FR1 and long DRX cycle |  | 2Rx |  |
| **16.6.5** | **NR measurements with autonomous gaps** |  |  |  |  |  |  |
| 16.6.5.1 | NR SA FR1 intra-frequency CGI identification of NR neighbour cell in FR1 for 1 Rx UE | Rel-17 | C302 | 1Rx RedCap UEs supporting 5GS NR SA FR1 and NR CGI reading using autonomous gap |  | 1Rx |  |
| 16.6.5.2 | NR SA FR1 intra-frequency CGI identification of NR neighbour cell in FR1 for 2 Rx UE | Rel-17 | C303 | 2Rx RedCap UEs supporting 5GS NR SA FR1 and NR CGI reading using autonomous gap |  | 2Rx |  |
| 16.6.5.3 | NR SA FR1 Identification of a new CGI of inter-RAT E-UTRA cell using autonomous gaps in NR SA for 1 Rx UE | Rel-17 | C304 | 1Rx RedCap UEs supporting 5GS NR SA FR1 and EUTRA CGI reading using autonomous gap |  | 1Rx |  |
| 16.6.5.4 | NR SA FR1 Identification of a new CGI of inter-RAT E-UTRA cell using autonomous gaps in NR SA for 2 Rx UE | Rel-17 | C305 | 2Rx RedCap UEs supporting 5GS NR SA FR1 and EUTRA CGI reading using autonomous gap |  | 2Rx |  |
| **16.7** | **Measurement Performance requirements for RedCap** |  |  |  |  |  |  |
| **16.7.1** | **SS-RSRP** |  |  |  |  |  |  |
| **16.7.2** | **SS-RSRQ** |  |  |  |  |  |  |
| 16.7.2.1 | NR SA FR1 SS-RSRQ measurement accuracy for 1 Rx UE | Rel-17 | C183 | 1Rx RedCap UEs supporting 5GS NR SA FR1 |  | 1Rx |  |
| 16.7.2.2 | NR SA FR1 SS-RSRQ measurement accuracy for 2 Rx UE | Rel-17 | C184 | 2Rx RedCap UEs supporting 5GS NR SA FR1 |  | 2Rx |  |
| 16.7.2.3.1 | NR SA FR1-FR1 Inter-frequency absolute measurement accuracy with FR1 serving cell and FR1 target cell for 1 Rx UE | Rel-17 | C183 | 1Rx RedCap UEs supporting 5GS NR SA FR1 |  | 1Rx |  |
| 16.7.2.3.2 | NR SA FR1-FR1 Inter-frequency relative measurement accuracy with FR1 serving cell and FR1 target cell for 1 Rx UE | Rel-17 | C183 | 1Rx RedCap UEs supporting 5GS NR SA FR1 |  | 1Rx |  |
| 16.7.2.4.1 | NR SA FR1-FR1 Inter-frequency absolute measurement accuracy with FR1 serving cell and FR1 target cell for 2 Rx UE | Rel-17 | C184 | 2Rx RedCap UEs supporting 5GS NR SA FR1 |  | 2Rx |  |
| 16.7.2.4.2 | NR SA FR1-FR1 Inter-frequency relative measurement accuracy with FR1 serving cell and FR1 target cell for 2 Rx UE | Rel-17 | C184 | 2Rx RedCap UEs supporting 5GS NR SA FR1 |  | 2Rx |  |
| **16.7.3** | **SS-SINR** |  |  |  |  |  |  |
| 16.7.3.1 | NR SA FR1 Intra-frequency measurement accuracy with FR1 serving cell and FR1 target cell for 1 Rx UE | Rel-17 | C306 | 1Rx RedCap UEs supporting 5GS NR SA FR1 and SS-SINR measurement |  | 1Rx |  |
| 16.7.3.2 | NR SA FR1 Intra-frequency measurement accuracy with FR1 serving cell and FR1 target cell for 2 Rx UE | Rel-17 | C307 | 2Rx RedCap UEs supporting 5GS NR SA FR1 and SS-SINR measurement |  | 2Rx |  |
| 16.7.3.3.1 | NR SA FR1-FR1 Inter-frequency absloute measurement accuracy with FR1 serving cell and FR1 target cell for 1 Rx UE | Rel-17 | C306 | 1Rx RedCap UEs supporting 5GS NR SA FR1 and SS-SINR measurement |  | 1Rx |  |
| 16.7.3.3.2 | NR SA FR1-FR1 Inter-frequency relative measurement accuracy with FR1 serving cell and FR1 target cell for 1 Rx UE | Rel-17 | C306 | 1Rx RedCap UEs supporting 5GS NR SA FR1 and SS-SINR measurement |  | 1Rx |  |
| 16.7.3.4.1 | NR SA FR1-FR1 Inter-frequency absolute measurement accuracy with FR1 serving cell and FR1 target cell for 2 Rx UE | Rel-17 | C307 | 2Rx RedCap UEs supporting 5GS NR SA FR1 and SS-SINR measurement |  | 2Rx |  |
| 16.7.3.4.2 | NR SA FR1-FR1 Inter-frequency relative measurement accuracy with FR1 serving cell and FR1 target cell for 2 Rx UE | Rel-17 | C307 | 2Rx RedCap UEs supporting 5GS NR SA FR1 and SS-SINR measurement |  | 2Rx |  |
| **16.7.4** | **L1-RSRP measurement for beam reporting** |  |  |  |  |  |  |
| 16.7.4.1.1 | NR SA FR1 SSB based L1-RSRP absolute measurement for 1 Rx UE | Rel-17 | C183 | 1Rx RedCap UEs supporting 5GS NR SA FR1 |  | 1Rx |  |
| 16.7.4.1.2 | NR SA FR1 SSB based L1-RSRP relative measurement for 1 Rx UE | Rel-17 | C183 | 1Rx RedCap UEs supporting 5GS NR SA FR1 |  | 1Rx |  |
| 16.7.4.2.1 | NR SA FR1 SSB based L1-RSRP absolute measurement for 2 Rx UE | Rel-17 | C184 | 2Rx RedCap UEs supporting 5GS NR SA FR1 |  | 2Rx |  |
| 16.7.4.2.2 | NR SA FR1 SSB based L1-RSRP relative measurement for 2 Rx UE | Rel-17 | C184 | 2Rx RedCap UEs supporting 5GS NR SA FR1 |  | 2Rx |  |
| 16.7.4.3.1 | NR SA FR1 CSI-RS based L1-RSRP absolute measurement on resource set with repetition off for 1 Rx UE | Rel-17 | C183 | 1Rx RedCap UEs supporting 5GS NR SA FR1 |  | 1Rx |  |
| 16.7.4.3.2 | NR SA FR1 CSI-RS based L1-RSRP relative measurement on resource set with repetition off for 1 Rx UE | Rel-17 | C183 | 1Rx RedCap UEs supporting 5GS NR SA FR1 |  | 1Rx |  |
| 16.7.4.4.1 | NR SA FR1 CSI-RS based L1-RSRP absolute measurement on resource set with repetition off for 2 Rx UE | Rel-17 | C184 | 2Rx RedCap UEs supporting 5GS NR SA FR1 |  | 2Rx |  |
| 16.7.4.4.2 | NR SA FR1 CSI-RS based L1-RSRP relative measurement on resource set with repetition off for 2 Rx U | Rel-17 | C184 | 2Rx RedCap UEs supporting 5GS NR SA FR1 |  | 2Rx |  |
| **16.7.5** | **E-UTRAN RSRP** |  |  |  |  |  |  |
| 16.7.5.1 | NR SA FR1 - E-UTRA Measurement accuracy with FR1 serving cell for 1 Rx UE | Rel-17 | C183 | 1Rx RedCap UEs supporting 5GS NR SA FR1 |  | 1Rx |  |
| 16.7.5.2 | NR SA FR1 - E-UTRA Measurement accuracy with FR1 serving cell for 2 Rx UE | Rel-17 | C184 | 2Rx RedCap UEs supporting 5GS NR SA FR1 |  | 2Rx |  |
| **16.7.6** | **E-UTRAN RSRQ** |  |  |  |  |  |  |
| 16.7.6.1 | NR SA FR1 - E-UTRA Measurement accuracy with FR1 serving cell for 1 Rx UE | Rel-17 | C183 | 1Rx RedCap UEs supporting 5GS NR SA FR1 |  | 1Rx |  |
| 16.7.6.2 | NR SA FR1 - E-UTRA Measurement accuracy with FR1 serving cell for 2 Rx UE | Rel-17 | C184 | 2Rx RedCap UEs supporting 5GS NR SA FR1 |  | 2Rx |  |
| NOTE 1: The test case/branch is incomplete for any Band/CA/DC Configuration but has basic test configurations already. NOTE 1 can be removed only when the test case/branch is complete for at least one Band / CA/DC Configuration for at least one feature included in the test case/branch. Detailed completion status can be found in the corresponding test case section in 38.533.  NOTE 2: Test X refers to the corresponding Sub-Test as defined in TS 38.533 [5]. | | | | | | |  |

Table 4.2-8: Applicability of RRM NR SA FR2 conformance test cases for RedCap, ref. TS 38.533 [5]

| Clause | TC Title | Release | Applicability | | Additional Information | Branch | Test Selection Criteria |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  |  |  | Condition | Comment |  |  |  |
| **17.1** | **RRC\_IDLE state mobility for RedCap** |  |  |  |  |  |  |
| **17.1** | **NR cell re-selection** |  |  |  |  |  |  |
| 17.1.1.1 | NR SA FR2 Cell reselection to FR2 intra-frequency NR case for 2 Rx | Rel-17 | C197 | RedCap UEs supporting 5GS NR SA FR2 |  | 2Rx |  |
| 17.1.1.2 | NR SA FR2-FR2 Cell reselection to FR2 inter-frequency NR case | Rel-17 | C197 | RedCap UEs supporting 5GS NR SA FR2 |  | 2Rx |  |
| 17.1.1.3 | NR SA FR2 Cell reselection to FR2 intra-frequency NR case for UE fulfilling stationary relaxed measurement criterion for 2 Rx UE | Rel-17 | C239 | RedCap UEs supporting 5GS NR SA FR2 and Rel-17 relaxed RRM measurements of neighbour cells in RRC\_IDLE/RRC\_INACTIVE |  | 2Rx |  |
| 17.1.1.4 | NR SA FR2-FR2 Cell reselection to FR2 inter-frequency NR case for UE fulfilling stationary mobility relaxed measurement criterion for 2 Rx UE | Rel-17 | C239 | RedCap UEs supporting 5GS NR SA FR2 and Rel-17 relaxed RRM measurements of neighbour cells in RRC\_IDLE/RRC\_INACTIVE |  | 2Rx |  |
| **17.2** | **RRC\_INACTIVE state mobility for RedCap** |  |  |  |  |  |  |
| **17.2.1** | **Configured Grant based Small Data Transmissions for RedCap** |  |  |  |  |  |  |
| 17.2.1.1 | NR SA FR2 TA validation for CG-SDT for 2 Rx | Rel-17 | C308 | RedCap UEs supporting 5GS NR SA FR2, CG-based small data transmission and long DRX cycle | NOTE 1 | 2Rx |  |
| **17.3** | **RRC\_CONNECTED state mobility for RedCap** |  |  |  |  |  |  |
| **17.3.1** | **Handover for RedCap** |  |  |  |  |  |  |
| 17.3.1.1 | NR SA FR2 Intra-frequency handover from FR2 to FR2; unknown target cell for 2 Rx | Rel-17 | C197 | RedCap UEs supporting 5GS NR SA FR2 | NOTE 1 | 2Rx |  |
| 17.3.1.2 | NR SA FR2-FR2 Inter-frequency handover from FR2 to FR2; unknown target cell for 2 Rx | Rel-17 | C197 | RedCap UEs supporting 5GS NR SA FR2 | NOTE 1 | 2Rx |  |
| **17.3.2** | **RRC connection mobility control for RedCap** |  |  |  |  |  |  |
| **17.3.2.1** | **RRC re-establishment for RedCap** |  |  |  |  |  |  |
| 17.3.2.1.1 | NR SA FR2 Intra-frequency RRC Re-establishment in FR2 | Rel-17 | C197 | RedCap UEs supporting 5GS NR SA FR2 |  | 2Rx |  |
| 17.3.2.1.2 | NR SA FR2-FR2 Inter-frequency RRC Re-establishment in FR2 | Rel-17 | C197 | RedCap UEs supporting 5GS NR SA FR2 |  | 2Rx |  |
| 17.3.2.1.3 | NR SA FR2 Intra-frequency RRC Re-establishment in FR2 without serving cell timing | Rel-17 | C197 | RedCap UEs supporting 5GS NR SA FR2 | NOTE 1 | 2Rx |  |
| **17.3.2.2** | **Random Access for RedCap** |  |  |  |  |  |  |
| 17.3.2.2.1 | NR SA FR2 4-step RA type contention based random access test in FR2 for NR Standalone | Rel-17 | C197 | RedCap UEs supporting 5GS NR SA FR2 | NOTE 1 | 2Rx |  |
| 17.3.2.2.2 | NR SA FR2 4-step RA type non-contention based random access test in FR2 for NR Standalone | Rel-17 | C197 | RedCap UEs supporting 5GS NR SA FR2 | NOTE 1 | 2Rx | Subtest 2: F013 |
| 17.3.2.2.3 | NR SA FR2 2-step RA type contention based random access test in FR2 for NR Standalone | Rel-17 | C225 | RedCap UEs supporting 5GS NR SA FR2 and 2-step RACH | NOTE 1 | 2Rx |  |
| 17.3.2.2.4 | NR SA FR2 2-step RA type non-contention based random access test in FR2 for NR Standalone | Rel-17 | C225 | RedCap UEs supporting 5GS NR SA FR2 and 2-step RACH | NOTE 1 | 2Rx |  |
| **17.3.2.3** | **SA: RRC Connection Release with Redirection for RedCap** |  |  |  |  |  |  |
| 17.3.2.3.1 | NR SA FR2-FR2 Redirection from NR in FR2 to NR in FR2 | Rel-17 | C197 | RedCap UEs supporting 5GS NR SA FR2 | NOTE 1 | 2Rx |  |
| **17.4** | **Timing for RedCap** |  |  |  |  |  |  |
| **17.4.1** | **UE transmit timing for RedCap** |  |  |  |  |  |  |
| 17.4.1.1 | NR SA FR2 NR UE Transmit Timing Test for FR2 | Rel-17 | C197 | RedCap UEs supporting 5GS NR SA FR2 | NOTE 1 | 2Rx |  |
| **17.4.2** | **UE timer accuracy for RedCap** |  |  |  |  |  |  |
| **17.4.3** | **Timing advance for RedCap** |  |  |  |  |  |  |
| 17.4.3.1 | NR SA FR2 SA FR2 timing advance adjustment accuracy | Rel-17 | C197 | RedCap UEs supporting 5GS NR SA FR2 | NOTE 1 | 2Rx |  |
| **17.5** | **Signalling characteristics for RedCap** |  |  |  |  |  |  |
| **17.5.1** | **Radio Link Monitoring for RedCap** |  |  |  |  |  |  |
| 17.5.1.1 | NR SA FR2 Radio Link Monitoring Out-of-sync Test for FR2 PCell configured with SSB-based RLM RS in non-DRX mode | Rel-17 | C197 | RedCap UEs supporting 5GS NR SA FR2 |  | 2Rx |  |
| 17.5.1.2 | NR SA FR2 Radio Link Monitoring In-sync Test for FR2 PCell configured with SSB-based RLM RS in non-DRX mode | Rel-17 | C197 | RedCap UEs supporting 5GS NR SA FR2 |  | 2Rx |  |
| 17.5.1.4 | NR SA FR2 Radio Link Monitoring In-sync Test for FR2 PCell configured with SSB-based RLM RS in DRX mode | Rel-17 | C198 | RedCap UEs supporting 5GS NR SA FR2 and long DRX cycle |  | 2Rx |  |
| 17.5.1.5 | NR SA FR2 Radio Link Monitoring Out-of-sync Test for FR2 PCell configured with CSI-RS-based RLM in non-DRX mode | Rel-17 | C309 | RedCap UEs supporting 5GS NR SA FR2 and CSI-RS-based RLM | NOTE 1 | 2Rx |  |
| 17.5.1.6 | NR SA FR2 Radio Link Monitoring In-sync Test for FR2 PCell configured with CSI-RS-based RLM in non-DRX mode | Rel-17 | C309 | RedCap UEs supporting 5GS NR SA FR2 and CSI-RS-based RLM | NOTE 1 | 2Rx |  |
| 17.5.1.7 | NR SA FR2 Radio Link Monitoring Out-of-sync Test for FR2 PCell configured with CSI-RS-based RLM in DRX mode | Rel-17 | C310 | RedCap UEs supporting 5GS NR SA FR2 and CSI-RS-based RLM and long DRX cycle | NOTE 1 | 2Rx |  |
| 17.5.1.8 | NR SA FR2 Radio Link Monitoring In-sync Test for FR2 PCell configured with CSI-RS-based RLM in DRX mode | Rel-17 | C310 | RedCap UEs supporting 5GS NR SA FR2 and CSI-RS-based RLM and long DRX cycle | NOTE 1 | 2Rx |  |
| 17.5.1.9 | NR SA FR2 UE Radio Link Monitoring Scheduling Restrictions on FR2 | Rel-17 | C197 | RedCap UEs supporting 5GS NR SA FR2 | NOTE 1 | 2Rx |  |
| **17.5.2** | **Beam Failure Detection and Link recovery procedures for RedCap** |  |  |  |  |  |  |
| 17.5.2.3 | NR SA FR2 Beam Failure Detection and Link Recovery Test for FR2 PCell configured with CSI-RS-based BFD and LR in non-DRX mode | Rel-17 | C227 | RedCap UEs supporting 5GS NR SA FR2, CSI-RS based RLM and link recovery |  | 2Rx |  |
| 17.5.2.4 | NR SA FR2 Beam Failure Detection and Link Recovery Test for FR2 PCell configured with CSI-RS-based BFD and LR in DRX mode | Rel-17 | C228 | RedCap UEs supporting 5GS NR SA FR2, long DRX cycle, CSI-RS based RLM and link recovery |  | 2Rx |  |
| 17.5.2.5 | NR SA FR2 Scheduling availability restriction during Beam Failure Detection and Link Recovery for FR2 PCell configured with SSB-based BFD and LR in non-DRX mode | Rel-17 | C226 | RedCap UEs supporting 5GS NR SA FR2 and SSB based link recovery |  | 2Rx |  |
| **17.5.3** | **Active BWP switch for RedCap** |  |  |  |  |  |  |
| **17.5.3.1** | **DCI-based and time-based active BWP switch for RedCap** |  |  |  |  |  |  |
| 17.5.3.1.1 | NR SA FR2 DCI-based and Timer-based DL active BWP switch with non-DRX | Rel-17 | C315 | RedCap UEs supporting 5GS NR SA FR2 and (DCI and timer based active BWP switching delay type1 or type2) and (Support of BWP adaptation upto2 or upto4) | NOTE 1 | 2Rx |  |
| **17.5.3.2** | **RRC-based active BWP switch for RedCap** |  |  |  |  |  |  |
| 17.5.3.2.1 | NR SA FR2 RRC-based DL active BWP switch with non-DRX | Rel-17 | C316 | RedCap UEs supporting 5GS NR SA FR2 and (Support of BWP adaptation upto2 or upto4) | NOTE 1 | 2Rx |  |
| **17.5.4** | **Active TCI state switch delay for RedCap** |  |  |  |  |  |  |
| **17.5.4.1** | **MAC-CE based active TCI state switch for RedCap** |  |  |  |  |  |  |
| 17.5.4.1.1 | NR SA FR2 NR PCell FR2 active TCI state switch for a known TCI state | Rel-17 | C311 | RedCap UEs supporting 5GS NR SA FR2, maximum number of active TCI states per BWP greater than 1, and maximum number of simultaneously trackable TRS resource sets per CC greater than 1 | NOTE 1 | 2Rx |  |
| **17.5.4.2** | **RRC based active TCI state switch for RedCap** |  |  |  |  |  |  |
| 17.5.4.2.1 | NR SA FR2 NR PCell FR2 active TCI state switch for a known TCI state | Rel-17 | C311 | RedCap UEs supporting 5GS NR SA FR2, maximum number of active TCI states per BWP greater than 1, and maximum number of simultaneously trackable TRS resource sets per CC greater than 1 | NOTE 1 | 2Rx |  |
| **17.5.5** | **Uplink spatial relation switch delay for RedCap** |  |  |  |  |  |  |
| **17.5.5.1** | **MAC-CE based Spatial Relation switch for RedCap** |  |  |  |  |  |  |
| 17.5.5.1.1 | NR SA FR2 PCell MAC-CE based spatial relation switch associated with known DL-RS | Rel-17 | C197 | RedCap UEs supporting 5GS NR SA FR2 | NOTE 1 | 2Rx |  |
| **17.5.5.2** | **RRC based spatial relation switch for RedCap** |  |  |  |  |  |  |
| 17.5.5.2.1 | NR SA FR2 PCell RRC-based spatial relation switch associated with a known DL-RS | Rel-17 | C197 | RedCap UEs supporting 5GS NR SA FR2 | NOTE 1 | 2Rx |  |
| **17.5.6** | **UE specific CBW change for RedCap** |  |  |  |  |  |  |
| 17.5.6.1 | NR SA FR2 UE specific CBW change of PCell with non-DRX | Rel-17 | C197 | RedCap UEs supporting 5GS NR SA FR2 | NOTE 1 | 2Rx |  |
| **17.6** | **Measurement procedure for RedCap** |  |  |  |  |  |  |
| **17.6.1** | **Intra-frequency Measurements for RedCap** |  |  |  |  |  |  |
| 17.6.1.1 | NR SA FR2 Event triggered reporting test without gap under non-DRX | Rel-17 | C197 | RedCap UEs supporting 5GS NR SA FR2 |  | 2Rx |  |
| 17.6.1.2 | NR SA FR2 Event triggered reporting test without gap under DRX | Rel-17 | C198 | RedCap UEs supporting 5GS NR SA FR2 and long DRX cycle |  | 2Rx |  |
| 17.6.1.3 | NR SA FR2 Event triggered reporting test with per-UE gaps under non-DRX | Rel-17 | C238 | RedCap UEs supporting 5GS NR SA FR2, CSI-RS-based RLM and BWP operation without bandwidth restriction |  | 2Rx |  |
| 17.6.1.4 | NR SA FR2 Event triggered reporting test with per-UE gaps under DRX | Rel-17 | C229 | RedCap UEs supporting 5GS NR SA FR2, long DRX cycle, CSI-RS-based RLM and BWP operation without bandwidth restriction |  | 2Rx |  |
| **17.6.2** | **Inter-frequency Measurements for RedCap** |  |  |  |  |  |  |
| 17.6.2.1 | NR SA FR2-FR2 Event triggered reporting tests For FR2 without SSB time index detection when DRX is not used |  |  |  |  |  |  |
| 17.6.2.2 | NR SA FR2-FR2 Event triggered reporting tests For FR2 without SSB time index detection when DRX is used |  |  |  |  |  |  |
| 17.6.2.3 | NR SA FR2-FR2 Event triggered reporting tests For FR2 with SSB time index detection when DRX is not used |  | C182 | 2Rx RedCap UEs supporting 5GS NR SA FR1 and E-UTRA |  |  |  |
| 17.6.2.4 | NR SA FR2-FR2 Event triggered reporting tests For FR2 with SSB time index detection when DRX is used |  |  |  |  |  |  |
| **17.6.3** | **L1-RSRP measurement for beam reporting for RedCap** |  |  |  |  |  |  |
| 17.6.3.1 | NR SA FR2 SSB based L1-RSRP measurement when DRX is not used | Rel-17 | C197 | RedCap UEs supporting 5GS NR SA FR2 |  | 2Rx |  |
| 17.6.3.2 | NR SA FR2 SSB based L1-RSRP measurement when DRX is used | Rel-17 | C198 | RedCap UEs supporting 5GS NR SA FR2 and long DRX cycle |  | 2Rx |  |
| 17.6.3.3 | NR SA FR2 CSI-RS based L1-RSRP measurement when DRX is not used | Rel-17 | C197 | RedCap UEs supporting 5GS NR SA FR2 |  | 2Rx |  |
| 17.6.3.4 | NR SA FR2 CSI-RS based L1-RSRP measurement when DRX is used | Rel-17 | C198 | RedCap UEs supporting 5GS NR SA FR2 and long DRX cycle |  | 2Rx |  |
| **17.6.4** | **NR Measurements with autonomous gaps for RedCap** |  |  |  |  |  |  |
| 17.6.4.1 | NR SA FR2 Interfrequency CGI reporting in autonomous gaps test (PCell in FR2) | Rel-17 | C312 | RedCap UEs supporting 5GS NR SA FR2 and NR CGI reading using autonomous gap | NOTE 1 | 2Rx |  |
| **17.7** | **Measurement performance requirements for RedCap** |  |  |  |  |  |  |
| **17.7.1** | **SS-RSRP for RedCap** |  |  |  |  |  |  |
| 17.7.1.1 | Intra-frequency measurement accuracy with FR2 serving cell and FR2 target cell | Rel-17 | C197 | RedCap UEs supporting 5GS NR SA FR2 | NOTE 1 | 2Rx |  |
| 17.7.1.2 | Inter-frequency measurement accuracy with FR2 serving cell and FR2 target cell | Rel-17 | C197 | RedCap UEs supporting 5GS NR SA FR2 | NOTE 1 | 2Rx |  |
| **17.7.2** | **SS-RSRQ for RedCap** |  |  |  |  |  |  |
| 17.7.2.1 | Intra-frequency measurement accuracy with FR2 serving cell and FR2 target cell | Rel-17 | C197 | RedCap UEs supporting 5GS NR SA FR2 | NOTE 1 | 2Rx |  |
| 17.7.2.2 | Inter-frequency measurement accuracy with FR2 serving cell and FR2 target cell | Rel-17 | C197 | RedCap UEs supporting 5GS NR SA FR2 | NOTE 1 | 2Rx |  |
| **17.7.3** | **L1-RSRP measurement for beam reporting for RedCap** |  |  |  |  |  |  |
| 17.7.3.1 | NR SA FR2 SSB based L1-RSRP measurement accuracy | Rel-17 | C197 | RedCap UEs supporting 5GS NR SA FR2 | NOTE 1 | 2Rx |  |
| 17.7.3.2 | NR SA FR2 CSI-RS based L1-RSRP measurement on resource set with repetition off | Rel-17 | C197 | RedCap UEs supporting 5GS NR SA FR2 | NOTE 1 | 2Rx |  |
| **17.7.4** | **SS-SINR for RedCap** |  |  |  |  |  |  |
| 17.7.4.1 | Intra-frequency measurement accuracy with FR2 serving cell and FR2 target cell | Rel-17 | C317 | RedCap UEs supporting 5GS NR SA FR2 and SS-SINR measurement | NOTE 1 | 2Rx |  |
| NOTE 1: The test case/branch is incomplete for any Band/CA/DC Configuration but has basic test configurations already. NOTE 1 can be removed only when the test case/branch is complete for at least one Band / CA/DC Configuration for at least one feature included in the test case/branch. Detailed completion status can be found in the corresponding test case section in 38.533. | | | | | | |  |

Table 4.2-9: Applicability of E-UTRA – NR Inter-RAT conformance test cases for RedCap, ref. TS 38.533 [5]

| Clause | TC Title | Release | Applicability | | Additional Information | Branch | Subtest Selection Criteria |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  |  |  | Condition | Comment |  |  |  |
| **18.1** | **RRC\_IDLE state mobility for RedCap** |  |  |  |  |  |  |
| **18.1.1** | **Inter-RAT NR cell re-selection** |  |  |  |  |  |  |
| 18.1.1.1 | E-UTRA - NR SA FR1 E-UTRA Cell reselection to higher priority NR target Cell in FR1 | Rel-17 | TBD |  | NOTE 1 | 2Rx |  |
| **18.2** | **RRC\_CONNECTED state mobility for RedCap** |  |  |  |  |  |  |
| **18.2.1** | **Inter-RAT cell handover for RedCap** |  |  |  |  |  |  |
| 18.2.1.1 | E-UTRA - NR SA FR1 E-UTRAN - NR handover in FR1 | Rel-17 | C182 | 2Rx RedCap UEs supporting 5GS NR SA FR1 and E-UTRA |  | 2RX |  |
| **18.2.2** | **RRC connection release with redirection for RedCap** |  |  |  |  |  |  |
| 18.2.2.1 | E-UTRA - NR SA FR1 Redirection from E-UTRA to NR SA FR1 for redcap UE | Rel-17 | C182 | 2Rx RedCap UEs supporting 5GS NR SA FR1 and E-UTRA |  | 2RX |  |
| **18.3** | **Measurement procedure for RedCap** |  |  |  |  |  |  |
| **18.3.1** | **E-UTRA - NR Measurements for RedCap** |  |  |  |  |  |  |
| 18.3.1.1 | E-UTRA - NR SA FR1 Event triggered reporting tests for FR1 without SSB time index detection when DRX is not used | Rel-17 | C230 | 2Rx RedCap UEs supporting 5GS NR SA FR1 and E-UTRA but don’t support per-FR gap | For sub-test 1 | 2RX |  |
| C231 | 2Rx RedCap UEs supporting 5GS NR SA FR1, E-UTRA, per-FR gap and gap pattern #4 | For sub-test 2 | 2RX | Subtest 2: F020 |
| 18.3.1.2 | E-UTRA - NR SA FR1 Event triggered reporting tests for FR1 without SSB time index detection when DRX is used | Rel-17 | C232 | 2Rx RedCap UEs supporting 5GS NR SA FR1, E-UTRA and long DRX cycle but don’t support per-FR gap | For sub-test 1,2 | 2RX |  |
| C233 | 2Rx RedCap UEs supporting 5GS NR SA FR1, E-UTRA, long DRX cycle, per-FR gap and gap pattern #4 | For sub-test 3,4 | 2RX | Subtests 3,4: F021 |
| 18.3.1.3 | E-UTRA - NR SA FR1 Event triggered reporting tests for FR1 with SSB time index detection when DRX is not used | Rel-17 | C230 | 2Rx RedCap UEs supporting 5GS NR SA FR1 and E-UTRA but don’t support per-FR gap | For sub-test 1 | 2RX |  |
| C231 | 2Rx RedCap UEs supporting 5GS NR SA FR1, E-UTRA, per-FR gap and gap pattern #4 | For sub-test 2 | 2RX | Subtest 2: F020 |
| 18.3.1.4 | E-UTRA - NR SA FR1 Event triggered reporting tests for FR1 with SSB time index detection when DRX is used | Rel-17 | C232 | 2Rx RedCap UEs supporting 5GS NR SA FR1, E-UTRA and long DRX cycle but don’t support per-FR gap | For sub-test 1,2 | 2RX |  |
| C233 | 2Rx RedCap UEs supporting 5GS NR SA FR1, E-UTRA, long DRX cycle, per-FR gap and gap pattern #4 | For sub-test 3,4 | 2RX | Subtests 3,4: F021 |
| 18.3.1.5 | E-UTRA - NR SA FR2 Event triggered reporting tests for FR2 without SSB time index detection when DRX is not used | Rel-17 | N/A | not recommended due to E-UTRA – FR2 testability issue | NOTE 1 | 2RX |  |
| 18.3.1.6 | E-UTRA - NR SA FR2 Event triggered reporting tests for FR2 without SSB time index detection when DRX is used | Rel-17 | N/A | not recommended due to E-UTRA – FR2 testability issue | NOTE 1 | 2RX |  |
| 18.3.1.7 | E-UTRA - NR SA FR2 Event triggered reporting tests for FR2 with SSB time index detection when DRX is not used | Rel-17 | N/A | not recommended due to E-UTRA – FR2 testability issue | NOTE 1 | 2RX |  |
| 18.3.1.8 | E-UTRA - NR SA FR2 Event triggered reporting tests for FR2 with SSB time index detection when DRX is used | Rel-17 | N/A | not recommended due to E-UTRA – FR2 testability issue | NOTE 1 | 2RX |  |
| NOTE 1: The test case/branch is incomplete for any Band/CA/DC Configuration but has basic test configurations already. NOTE 1 can be removed only when the test case/branch is complete for at least one Band / CA/DC Configuration for at least one feature included in the test case/branch. Detailed completion status can be found in the corresponding test case section in 38.533. | | | | | | | |

Table 4.2-10: Applicability of NR-U EN-DC FR1 conformance test cases, ref. TS 38.533 [5]

| Clause | TC Title | Release | Applicability | | Additional Information | Branch | Subtest Selection Criteria |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  |  |  | Condition | Comment |  |  |  |
| **10.3** | **Signalling characteristics** |  |  |  |  |  |  |
| **10.3.1** | **Radio link monitoring** |  |  |  |  |  |  |
| 10.3.1.2 | EN-DC FR1 Radio link monitoring out-of-sync test for PSCell under CCA configured with SSB-based RLM RS in non-DRX mode | Rel-16 | C206 | UE supporting EN-DC TDD FR1 and NR-U (scenario B) and MIB acquisition on shared spectrum and (RRM, UL and RLM) in dynamic channel access or in semi-static channel access | NOTE 1 | 2Rx |  |
| 10.3.1.3 | EN-DC FR1 Radio link monitoring in-sync test for PSCell under CCAconfigured with SSB-based RLM RS in non-DRX mode | Rel-16 | C206 | UE supporting EN-DC TDD FR1 and NR-U (scenario B) and MIB acquisition on shared spectrum and (RRM, UL and RLM) in dynamic channel access or in semi-static channel access | NOTE 1 | 2Rx |  |
| **10.3.4** | **Beam failure detection and link recovery procedures** |  |  | **UE supporting 5GS FR1 and NR-U** |  |  |  |
| 10.3.4.1 | EN-DC FR1 EN-DC Beam Failure Detection and Link Recovery Test for FR1 PSCell under CCA configured with SSB-based BFD and LR in non-DRX mode | Rel-16 | C206b | UE supporting EN-DC TDD FR1 and NR-U (scenario B) and MIB acquisition on shared spectrum and (RRM, UL, RLM and BFR/CBD) in dynamic channel access or in semi-static channel access | NOTE 1 | 2Rx |  |
| 10.3.4.2 | EN-DC FR1 EN-DC Beam Failure Detection and Link Recovery Test for FR1 PSCell under CCA configured with SSB-based BFD and LR in DRX mode | Rel-16 | C206c | UE supporting EN-DC TDD FR1 and NR-U (scenario B) and MIB acquisition on shared spectrum and (RRM, UL, RLM and BFR/CBD) in dynamic channel access or in semi-static channel access and long DRX | NOTE 1 | 2Rx |  |
| **10.3.5** | **Active BWP switching** |  |  |  |  |  |  |
| 10.3.5.1 | EN-DC FR1 UL active BWP switch delay with consistent UL LBT failure on PSCell subject to UL CCA in EN-DC | Rel-16 | C207g | UE supporting EN-DC TDD FR1 and NR-U (scenario B) and MIB acquisition on shared spectrum and (RRM, UL) in dynamic channel access or in semi-static channel access and (DCI and timer based active BWP switching delay Type1 or Type2) and (Support of BWP adaptation upto2 or upto4) and UL LBT detection and recovery | NOTE 1 | 2Rx |  |
| **10.3.5.2** | **DCI-based and timer-based active BWP switch** |  |  |  |  |  |  |
| 10.3.5.2.1 | EN-DC FR1 DCI-based DL active BWP switch in non-DRX in synchronous EN-DC under CCA | Rel-16 | C207 | UE supporting EN-DC TDD FR1 and NR-U (scenario B) and MIB acquisition on shared spectrum and (RRM, UL) in dynamic channel access or in semi-static channel access and (DCI and timer based active BWP switching delay Type1 or Type2) and (Support of BWP adaptation upto2 or upto4) | NOTE 1  Test execution not necessary if test 10.3.5.2.2 has been executed. | 2Rx |  |
| 10.3.5.2.2 | EN-DC FR1 DCI-based DL active BWP switch with SCell in non-DRX in synchronous EN-DC under CCA | Rel-16 | C207a | UE supporting EN-DC TDD FR1 and NR-U (scenario B) and MIB acquisition on shared spectrum and (RRM, UL) in dynamic channel access or in semi-static channel access and (DCI and timer based active BWP switching delay Type1 or Type2) and (Support of BWP adaptation upto2 or upto4) and 2DL CA | NOTE 1 | 2Rx |  |
| **10.3.5.3** | **RRC-based Active BWP Switch** |  |  |  |  |  |  |
| 10.3.5.3.1 | EN-DC FR1 RRC-based DL active BWP switch in non-DRX in synchronous EN-DC under CCA | Rel-16 | C207b | UE supporting EN-DC TDD FR1 and NR-U (scenario B) and MIB acquisition on shared spectrum and (RRM, UL) in dynamic channel access or in semi-static channel access and (Support of BWP adaptation upto2 or upto4) | NOTE 1 | 2Rx |  |
| **10.3.6** | **PSCell addition and release delay** |  |  |  |  |  |  |
| 10.3.6.1 | Addition and Release Delay of known NR PSCell on the carrier under CCA | Rel-16 | C207c | UE supporting EN-DC TDD FR1 and NR-U (scenario B) and MIB acquisition on shared spectrum and (RRM, UL) in dynamic channel access or in semi-static channel access | NOTE 1 | 2Rx |  |
| **10.4** | **Measurement Procedures** |  |  |  |  |  |  |
| **10.4.1** | **Intra-Frequency Measurements** |  |  |  |  |  |  |
| 10.4.1.1 | EN-DC FR1 Event-triggered reporting tests on PSCC without gaps under non-DRX and CCA | Rel-16 | C207d | UE supporting EN-DC TDD FR1 and NR-U (scenario B) and MIB acquisition on shared spectrum and RRM measurements in dynamic channel access or in semi-static channel access | NOTE 1 | 2Rx |  |
| 10.4.1.2 | EN-DC FR1 Event-triggered reporting tests on PSCC without gaps under DRX and CCA | Rel-16 | C207e | UE supporting EN-DC TDD FR1 and NR-U (scenario B) and MIB acquisition on shared spectrum and RRM measurements in dynamic channel access or in semi-static channel access and long DRX cycle | NOTE 1 | 2Rx |  |
| 10.4.1.3 | EN-DC FR1 Event-triggered reporting tests on PSCC with per-UE gaps under non-DRX and CCA | Rel-16 | C207d | UE supporting EN-DC TDD FR1 and NR-U (scenario B) and MIB acquisition on shared spectrum and RRM measurements in dynamic channel access or in semi-static channel access | NOTE 1 | 2Rx |  |
| 10.4.1.4 | EN-DC FR1 Event-triggered reporting tests on PSCC with per-UE gaps under DRX and CCA | Rel-16 | C207e | UE supporting EN-DC TDD FR1 and NR-U (scenario B) and MIB acquisition on shared spectrum and RRM measurements in dynamic channel access or in semi-static channel access and long DRX cycle | NOTE 1 | 2Rx |  |
| **10.4.2** | **Inter-Frequency Measurements** |  |  |  |  |  |  |
| 10.4.2.1 | Void | Rel-16 | FFS |  | NOTE 1 | 2Rx |  |
| 10.4.2.2 | Void | Rel-16 | FFS |  | NOTE 1 | 2Rx |  |
| 10.4.2.3 | EN-DC FR1-FR1 Event-triggered reporting for FR1 cell with CCA without SSB time index detection when DRX is not used | Rel-16 | C207d | UE supporting EN-DC TDD FR1 and NR-U (scenario B) and MIB acquisition on shared spectrum and RRM measurements in dynamic channel access or in semi-static channel access | NOTE 1 | 2Rx |  |
| 10.4.2.4 | EN-DC FR1-FR1 Event triggered reporting for FR1 cell with CCA without SSB time index detection when DRX is used | Rel-16 | C207e | UE supporting EN-DC TDD FR1 and NR-U (scenario B) and MIB acquisition on shared spectrum and RRM measurements in dynamic channel access or in semi-static channel access and long DRX cycle | NOTE 1 | 2Rx |  |
| 10.4.2.5 | EN-DC FR1-FR1 Event-triggered reporting for FR1 cell with CCA with SSB time index detection when DRX is not used | Rel-16 | C207d | UE supporting EN-DC TDD FR1 and NR-U (scenario B) and MIB acquisition on shared spectrum and RRM measurements in dynamic channel access or in semi-static channel access | NOTE 1 | 2Rx |  |
| 10.4.2.6 | EN-DC FR1-FR1 Event triggered reporting for FR1 cell with CCA with SSB time index detection when DRX is used | Rel-16 | C207e | UE supporting EN-DC TDD FR1 and NR-U (scenario B) and MIB acquisition on shared spectrum and RRM measurements in dynamic channel access or in semi-static channel access and long DRX cycle | NOTE 1 | 2Rx |  |
| 10.4.2.7 | EN-DC FR1-FR1 Event-triggered reporting for FR1 cell without SSB time index detection when DRX is not used | Rel-16 | C207d | UE supporting EN-DC TDD FR1 and NR-U (scenario B) and MIB acquisition on shared spectrum and RRM measurements in dynamic channel access or in semi-static channel access | NOTE 1 | 2Rx |  |
| 10.4.2.8 | EN-DC FR1-FR1 Event triggered reporting for FR1 cell without SSB time index detection when DRX is used | Rel-16 | C207e | UE supporting EN-DC TDD FR1 and NR-U (scenario B) and MIB acquisition on shared spectrum and RRM measurements in dynamic channel access or in semi-static channel access and long DRX cycle | NOTE 1 | 2Rx |  |
| 10.4.2.9 | EN-DC FR1-FR1 Event-triggered reporting for FR1 cell with SSB time index detection when DRX is not used | Rel-16 | C207d | UE supporting EN-DC TDD FR1 and NR-U (scenario B) and MIB acquisition on shared spectrum and RRM measurements in dynamic channel access or in semi-static channel access | NOTE 1 | 2Rx |  |
| 10.4.2.10 | EN-DC FR1-FR1 Event triggered reporting for FR1 cell with SSB time index detection when DRX is used | Rel-16 | C207e | UE supporting EN-DC TDD FR1 and NR-U (scenario B) and MIB acquisition on shared spectrum and RRM measurements in dynamic channel access or in semi-static channel access and long DRX cycle | NOTE 1 | 2Rx |  |
| **10.5** | **Measurement Performance** |  |  |  |  |  |  |
| **10.5.1** | **SS-RSRP** |  |  |  |  |  |  |
| 10.5.1.1 | EN-DC FR1 intra-frequency SS-RSRP measurement accuracy on a CCA serving cell | Rel-16 | C207d | UE supporting EN-DC TDD FR1 and NR-U (scenario B) and MIB acquisition on shared spectrum and RRM measurements in dynamic channel access or in semi-static channel access | NOTE 1 | 2Rx |  |
| 10.5.1.2 | EN-DC FR1-FR1 inter-frequency SS-RSRP measurement accuracy with CCA serving cell and CCA target cell | Rel-16 | C207d | UE supporting EN-DC TDD FR1 and NR-U (scenario B) and MIB acquisition on shared spectrum and RRM measurements in dynamic channel access or in semi-static channel access | NOTE 1 | 2Rx |  |
| **10.5.2** | **SS-RSRQ** |  |  |  |  |  |  |
| 10.5.2.1 | EN-DC FR1 intra-frequency SS-RSRQ measurement accuracy with serving cell and target cell under CCA | Rel-16 | C207d | UE supporting EN-DC TDD FR1 and NR-U (scenario B) and MIB acquisition on shared spectrum and RRM measurements in dynamic channel access or in semi-static channel access | NOTE 1 | 2Rx |  |
| 10.5.2.2 | EN-DC FR1-FR1 inter-frequency SS-RSRQ measurement accuracy with serving cell and target cell under CCA | Rel-16 | C207d | UE supporting EN-DC TDD FR1 and NR-U (scenario B) and MIB acquisition on shared spectrum and RRM measurements in dynamic channel access or in semi-static channel access | NOTE 1 | 2Rx |  |
| **10.5.3** | **SS-SINR** |  |  |  |  |  |  |
| 10.5.3.1 | EN-DC FR1 intra-frequency SS-SINR measurement accuracy on PSCC under CCA | Rel-16 | C207f | UE supporting EN-DC TDD FR1 and NR-U (scenario B) and MIB acquisition on shared spectrum and RRM measurements in dynamic channel access or in semi-static channel access and SS-SINR measurements on shared spectrum | NOTE 1 | 2Rx |  |
| 10.5.3.2 | EN-DC FR1-FR1 inter-frequency SS-SINR measurement accuracy on PSCC under CCA | Rel-16 | C207f | UE supporting EN-DC TDD FR1 and NR-U (scenario B) and MIB acquisition on shared spectrum and RRM measurements in dynamic channel access or in semi-static channel access and SS-SINR measurements on shared spectrum | NOTE 1 | 2Rx |  |
| 10.5.3.3 | EN-DC FR1 intra-frequency SS-SINR measurement accuracy on SCC under CCA | Rel-16 | FFS | FFS | NOTE 1 | 2Rx |  |
| NOTE 1: The test case/branch is incomplete for any Band/CA/DC Configuration but has basic test configurations already. NOTE 1 can be removed only when the test case/branch is complete for at least one Band / CA/DC Configuration for at least one feature included in the test case/branch. Detailed completion status can be found in the corresponding test case section in 38.533. | | | | | | |  |

Table 4.2-11: Applicability of NR-U SA FR1 conformance test cases, ref. TS 38.533 [5]

| Clause | TC Title | Release | Applicability | | Additional Information | Branch | Subtest Selection Criteria |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  |  |  | Condition | Comment |  |  |  |
| **11.1** | **RRC\_IDLE state mobility** |  |  |  |  |  |  |
| **11.2** | **RRC\_CONNECTED state mobility** |  |  |  |  |  |  |
| **11.2.2** | **RRC connection mobility control** |  |  |  |  |  |  |
| **11.2.2.3** | **RRC connection release with redirection** |  |  |  |  |  |  |
| **11.2.2.3.1** | NR SA FR1 Redirection from NR FR1 carrier under CCA to NR FR1 carrier under CCA | Rel-16 | C321 | UE supporting SA TDD FR1 in unlicensed band (scenario C) and (MIB, SIB1) acquisition on shared spectrum and (RRM and UL) in dynamic channel access or in semi-static channel access | NOTE 1 | 2Rx |  |
| **11.2.2.3.2** | NR SA FR1 Redirection from NR FR1 carrier without CCA to NR FR1 carrier with CCA | Rel-16 | C321 | UE supporting SA TDD FR1 in unlicensed band (scenario C) and (MIB, SIB1) acquisition on shared spectrum and (RRM and UL) in dynamic channel access or in semi-static channel access | NOTE 1 | 2Rx |  |
| **11.3** | **Timing** |  |  |  |  |  |  |
| **11.4** | **Signalling characteristics** |  |  |  |  |  |  |
| **11.4.1** | **Radio link monitoring** |  |  |  |  |  |  |
| 11.4.1.2 | EN-DC FR1 Radio link monitoring out-of-sync test for PSCell under CCA configured with SSB-based RLM RS in non-DRX mode | Rel-16 | C322 | UE supporting SA TDD FR1 in unlicensed band (scenario C) and (MIB, SIB1) acquisition on shared spectrum and (RRM, UL and RLM) in dynamic channel access or in semi-static channel access | NOTE 1 | 2Rx |  |
| 11.4.1.3 | EN-DC FR1 Radio link monitoring in-sync test for PSCell under CCAconfigured with SSB-based RLM RS in non-DRX mode | Rel-16 | C322 | UE supporting SA TDD FR1 in unlicensed band (scenario C) and (MIB, SIB1) acquisition on shared spectrum and (RRM, UL and RLM) in dynamic channel access or in semi-static channel access | NOTE 1 | 2Rx |  |
| **11.4.4** | **Beam failure detection and link recovery procedures** |  |  |  |  |  |  |
| 11.4.4.1 | EN-DC FR1 EN-DC Beam Failure Detection and Link Recovery Test for FR1 PSCell under CCA configured with SSB-based BFD and LR in non-DRX mode | Rel-16 | C323 | UE supporting SA TDD FR1 in unlicensed band (scenario C) and (MIB, SIB1) acquisition on shared spectrum and (RRM, UL, RLM and BFR/CBD) in dynamic channel access or in semi-static channel access | NOTE 1 | 2Rx |  |
| 11.4.4.2 | EN-DC FR1 EN-DC Beam Failure Detection and Link Recovery Test for FR1 PSCell under CCA configured with SSB-based BFD and LR in DRX mode | Rel-16 | C324 | UE supporting SA TDD FR1 in unlicensed band (scenario C) and (MIB, SIB1) acquisition on shared spectrum and (RRM, UL, RLM and BFR/CBD) in dynamic channel access or in semi-static channel access and long DRX | NOTE 1 | 2Rx |  |
| **11.4.5** | **Active BWP switching** |  |  |  |  |  |  |
| 11.4.5.1 | NR SA FR1 UL active BWP switch delay with consistent UL LBT failure on PCell subject to UL CCA | Rel-16 | C325 | UE supporting SA TDD FR1 in unlicensed band (scenario C) and (MIB, SIB1) acquisition on shared spectrum and (RRM and UL) in dynamic channel access or in semi-static channel access and (DCI and timer based active BWP switching delay Type1 or Type2) and (Support of BWP adaptation upto2 or upto4) and UL LBT detection and recovery | NOTE 1 | 2Rx |  |
| **11.4.5.2** | **DCI-based and Timer-based Active BWP Switch** |  |  |  |  |  |  |
| 11.4.5.2.1 | NR SA FR1 - NR FR1 DL active BWP switch of PCell under CCA with non-DRX | Rel-16 | C326 | UE supporting SA TDD FR1 in unlicensed band (scenario C) and (MIB, SIB1) acquisition on shared spectrum and (RRM and UL) in dynamic channel access or in semi-static channel access and (DCI and timer based active BWP switching delay Type1 or Type2) and (Support of BWP adaptation upto2 or upto4) | NOTE 1 | 2Rx |  |
| **11.4.5.3** | **RRC-based Active BWP Switch** |  |  |  |  |  |  |
| 11.4.5.3.1 | NR SA FR1 DL active BWP switch of Cell with non-DRX | Rel-16 | C327 | UE supporting SA TDD FR1 in unlicensed band (scenario C) and (MIB, SIB1) acquisition on shared spectrum and (RRM and UL) in dynamic channel access or in semi-static channel access and (Support of BWP adaptation upto2 or upto4) | NOTE 1 | 2Rx |  |
| **11.5** | **Measurement procedure** |  |  |  |  |  |  |
| **11.5.1** | **Intra-frequency measurements** |  |  |  |  |  |  |
| 11.5.1.1 | NR SA FR1 Event-triggered reporting tests on PCC under CCA without gaps under non-DRX | Rel-16 | C206d | UE supporting SA TDD FR1 in unlicensed band (scenario C) and (MIB, SIB1) acquisition on shared spectrum and (RRM, UL) in dynamic channel access or in semi-static channel access | NOTE 1 | 2Rx |  |
| 11.5.1.2 | NR SA FR1 Event-triggered reporting tests on PCC under CCA without gaps under DRX | Rel-16 | C206e | UE supporting SA TDD FR1 in unlicensed band (scenario C) and (MIB, SIB1) acquisition on shared spectrum and (RRM, UL) in dynamic channel access or in semi-static channel access and long DRX | NOTE 1 | 2Rx |  |
| 11.5.1.3 | NR SA FR1 Event-triggered reporting tests on PCC under CCA with per-UE gaps under non-DRX | Rel-16 | C206d | UE supporting SA TDD FR1 in unlicensed band (scenario C) and (MIB, SIB1) acquisition on shared spectrum and (RRM, UL) in dynamic channel access or in semi-static channel access | NOTE 1 | 2Rx |  |
| 11.5.1.4 | NR SA FR1 Event-triggered reporting tests on PCC under CCA with per-UE gaps under DRX | Rel-16 | C206e | UE supporting SA TDD FR1 in unlicensed band (scenario C) and (MIB, SIB1) acquisition on shared spectrum and (RRM, UL) in dynamic channel access or in semi-static channel access and long DRX | NOTE 1 | 2Rx |  |
| 11.5.1.5 | NR SA FR1 Event-triggered reporting tests on SCC under CCA without gaps under non-DRX | Rel-16 | FFS |  | NOTE 1 | 2Rx |  |
| 11.5.1.6 | NR SA FR1 Event-triggered reporting tests on SCC under CCA without gaps under DRX | Rel-16 | FFS |  | NOTE 1 | 2Rx |  |
| 11.5.1.7 | NR SA FR1 Event-triggered reporting tests on SCC under CCA with per-UE gaps under non-DRX | Rel-16 | FFS |  | NOTE 1 | 2Rx |  |
| 11.5.1.8 | NR SA FR1 Event-triggered reporting tests on SCC under CCA with per-UE gaps under DRX | Rel-16 | FFS |  | NOTE 1 | 2Rx |  |
| 11.5.1.9 | NR SA FR1 RSSI measurement reporting on PCC | Rel-16 | C206f | UE supporting SA TDD FR1 in unlicensed band (scenario C) and (MIB, SIB1) acquisition on shared spectrum and (RRM, UL) in dynamic channel access or in semi-static channel access and RSSI measurements and channel occupancy measurement reporting | NOTE 1 | 2Rx |  |
| 11.5.1.10 | NR SA FR1 Channel occupancy measurement reporting on PCC | Rel-16 | FFS |  | NOTE 1 | 2Rx |  |
| 11.5.1.11 | NR SA FR1 RSSI measurement reporting on SCC | Rel-16 | FFS |  | NOTE 1 | 2Rx |  |
| 11.5.1.12 | NR SA FR1 Channel occupancy measurement reporting on SCC | Rel-16 | FFS |  | NOTE 1 | 2Rx |  |
| **11.5.2** | **Inter-frequency measurements** |  |  |  |  |  |  |
| 11.5.2.1 | NR SA FR1 RSSI measurement reporting | Rel-16 | FFS |  | NOTE 1 | 2Rx |  |
| 11.5.2.2 | NR SA FR1 Channel occupancy measurement reporting | Rel-16 | FFS |  | NOTE 1 | 2Rx |  |
| 11.5.2.3 | NR SA FR1 Event triggered reporting tests for FR1 with CCA without SSB time index detection when DRX is not used | Rel-16 | FFS |  | NOTE 1 | 2Rx |  |
| 11.5.2.4 | NR SA FR1 Event triggered reporting tests for FR1 with CCA without SSB time index detection when DRX is used | Rel-16 | FFS |  | NOTE 1 | 2Rx |  |
| 11.5.2.5 | NR SA FR1 Event triggered reporting tests for FR1 with CCA with SSB time index detection when DRX is not used | Rel-16 | FFS |  | NOTE 1 | 2Rx |  |
| 11.5.2.6 | NR SA FR1 Event triggered reporting tests for FR1 with CCA with SSB time index detection when DRX is used | Rel-16 | FFS |  | NOTE 1 | 2Rx |  |
| 11.5.2.7 | NR SA FR1 Event triggered reporting tests for FR1 without SSB time index detection when DRX is not used | Rel-16 | FFS |  | NOTE 1 | 2Rx |  |
| 11.5.2.8 | NR SA FR1 Event triggered reporting tests for FR1 without SSB time index detection when DRX is used | Rel-16 | FFS |  | NOTE 1 | 2Rx |  |
| 11.5.2.9 | NR SA FR1 Event triggered reporting tests for FR1 with SSB time index detection when DRX is not used | Rel-16 | FFS |  | NOTE 1 | 2Rx |  |
| 11.5.2.10 | NR SA FR1 Event triggered reporting tests for FR1 with SSB time index detection when DRX is used | Rel-16 | FFS |  | NOTE 1 | 2Rx |  |
| NOTE 1: The test case/branch is incomplete for any Band/CA/DC Configuration but has basic test configurations already. NOTE 1 can be removed only when the test case/branch is complete for at least one Band / CA/DC Configuration for at least one feature included in the test case/branch. Detailed completion status can be found in the corresponding test case section in 38.533. | | | | | | | |

## 4.3 RF conformance test cases for Satellite Access

NOTE: To determine applicability of a test case, supported CBW and SCS in the *RF-Parameters* IE (see TS 38.331 [11]) which conveys RF related capabilities for NR operation is taken into account.

### 4.3.1 FR1 standalone conformance test cases for Satellite Access

Table 4.3.1-1: Applicability of RF SA FR1 conformance test cases, ref. TS 38.521-5 [TBD]

| Clause | TC Title | Release | Applicability | | Tested Bands/CA-Configurations Selection | Branch | Additional Information |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  |  |  | Condition | Comment |  |  |  |
| **6** | **Transmitter Characteristics** |  |  |  |  |  |  |
| 6.2.1 | UE maximum output power | Rel-17 | C001o | UEs supporting 5GS FDD FR1 satellite access | D027 | PC3 | NOTE 1 |
| 6.3.1 | Minimum output power | Rel-17 | C001o | UEs supporting 5GS FDD FR1 satellite access | D027 | PC3 |  |
| 6.3.3 | Tx ON/OFF Time Mask | Rel-17 | C001o | UEs supporting 5GS FDD FR1 satellite access | D027 | PC3 | NOTE 1 |
| 6.4.1\_1 | Frequency error with GSO ephemeris | Rel-17 | C001p | UEs supporting 5GS FDD FR1 satellite access and only GSO or both GSO and NGSO | D027 | PC3 |  |
| 6.4.1\_2 | Frequency error with NGSO ephemeris | Rel-17 | C001q | UEs supporting 5GS FDD FR1 satellite access and only NGSO or both GSO and NGSO | D027 | PC3 |  |
| 6.5.2.2 | Spectrum Emissions Mask | Rel-17 | C001o | UEs supporting 5GS FDD FR1 satellite access | D027 | PC3 | NOTE 1 |
| 6.5.2.4 | Adjacent Channel Leakage Ratio | Rel-17 | C001o | UEs supporting 5GS FDD FR1 satellite access | D027 | PC3 | NOTE 1 |
| 6.5.3.1 | General Spurious | Rel-17 | C001o | UEs supporting 5GS FDD FR1 satellite access | D027 | PC3 |  |
| 6.5.3.2 | Spurious emissions for UE co-existence | Rel-17 | C001o | UEs supporting 5GS FDD FR1 satellite access | D027 | PC3 |  |
| 6.5.3.3 | Additional Spurious emissions | Rel-17 | C001o | UEs supporting 5GS FDD FR1 satellite access | D027 | PC3 | NOTE 1 |
| 6.5.4 | Transmit intermodulation | Rel-17 | C001o | UEs supporting 5GS FDD FR1 satellite access | D027 | PC3 |  |
| **7** | **Receiver Characteristics** |  | C001o |  |  |  |  |
| 7.3.2 | Reference sensitivity power level | Rel-17 | C001o | UEs supporting 5GS FDD FR1 satellite access | D027 | PC3 |  |
| 7.4 | Maximum input level | Rel-17 | C001o | UEs supporting 5GS FDD FR1 satellite access | D027 | PC3 |  |
| 7.5 | Adjacent channel selectivity | Rel-17 | C001o | UEs supporting 5GS FDD FR1 satellite access | D027 | PC3 |  |
| 7.7 | Spurious response | Rel-17 | C001o | UEs supporting 5GS FDD FR1 satellite access | D027 | PC3 |  |
| 7.8.2 | Wide band Intermodulation | Rel-17 | C001o | UEs supporting 5GS FDD FR1 satellite access | D027 | PC3 |  |
| 7.9 | Spurious emission | Rel-17 | C001o | UEs supporting 5GS FDD FR1 satellite access | D027 | PC3 |  |
| Note 1: Some aspect of the test case is incomplete. | | | | | | | |

### 4.3.2 Performance conformance test cases for Satellite Access

Table 4.3.2-1: Applicability of performance test cases, ref. TS 38.521-5 [TBD]

| Clause | TC Title | Release | Applicability | | Tested Bands Selection | Additional Information |
| --- | --- | --- | --- | --- | --- | --- |
|  |  |  | Condition | Comment |  |  |
| **8** | **Conducted performance requirements** |  |  |  |  |  |
| **8.2** | **Demodulation performance requirements** |  |  |  |  |  |
| 8.2.1.2.2.1.1\_1 | 2Rx FDD FR1 PDSCH Mapping Type A for Satellite Access | Rel-17 | C001o | UEs supporting 5GS FDD FR1 satellite access | D027 |  |
| Note 1: Some aspect of the test case is incomplete. | | | | | | |

Annex A (informative): Change history

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Change history** | | | | | | | |
| **Date** | **Meeting** | **TDoc** | **CR** | **Rev** | **Cat** | **Subject/Comment** | **New version** |
| 2017-08 | RAN5#76 | R5-173911 | - | - | - | Draft skeleton | 0.0.1 |
| 2018-01 | RAN5#1-5G-NR Adhoc | R5-180107 | - | - | - | Updated after [RAN5#1-5G-NR Adhoc](http://portal.3gpp.org/webapp/meetingCalendar/MeetingDetails.asp?m_id=33216):  - Foreword, scope, references, definitions, symbols and abbreviations, recommended test case applicability updated  - clause 4.1.1, 4.1.2, 4.1.3 and 4.1.4 added  - change history added | 0.1.0 |
| 2018-03 | RAN5 #78 | R5-181687 | - | - | - | TP for Clause 4.1.1 Range 1 standalone conformance test cases | 0.2.0 |
| 2018-03 | RAN5 #78 | R5-181688 | - | - | - | TP for Clause 4.1.2 Range 2 standalone conformance test cases | 0.2.0 |
| 2018-03 | RAN5 #78 | R5-181689 | - | - | - | TP for Clause 4.1.3 NR interworking between NR range1 and NR range2 and between NR and LTE conformance test cases | 0.2.0 |
| 2018-04 | RAN5#2-5G-NR Adhoc | R5-182013 | - | - | - | TP for Clause 3 Definitions, symbols and abbreviations | 0.3.0 |
| 2018-04 | RAN5#2-5G-NR Adhoc | R5-182047 | - | - | - | TP for Clause 4 Recommended test case applicability | 0.3.0 |
| 2018-08 | RAN5#80 | R5-185209 | - | - | - | TP for Clause 4.1.1 of TS 38.522 | 1.0.1 |
| 2018-08 | RAN5#80 | R5-185210 | - | - | - | TP for Clause 4.1.2 of TS 38.522 | 1.0.1 |
| 2018-08 | RAN5#80 | R5-185211 | - | - | - | TP for Clause 4.1.3 of TS 38.522 | 1.0.1 |
| 2018-09 | RAN#81 | - | - | - | - | raised to v15.0.0 with editorial changes only | 15.0.0 |
| 2018-12 | RAN#82 | R5-186501 | 0013 | - | F | Applicability rules implementation in 38.522 | 15.1.0 |
| 2018-12 | RAN#82 | R5-188223 | 0015 | - | F | Applicability for RRM NR tests | 15.1.0 |
| 2018-12 | RAN#82 | R5-187566 | 0016 | - | F | Update note in section 4.1 to include CBW and SCS in RF test applicability | 15.1.0 |
| 2018-12 | RAN#82 | R5-187849 | 0014 | 1 | F | Adding applicability for new 38.521-1 CA TCs | 15.1.0 |
| 2018-12 | RAN#82 | R5-187881 | 0008 | 1 | F | Update Clause 1 Scope of TS 38.522 | 15.1.0 |
| 2018-12 | RAN#82 | R5-187884 | 0011 | 1 | F | TP for Clause 4.1.2 of TS 38.522 | 15.1.0 |
| 2018-12 | RAN#82 | R5-187922 | 0017 | - | F | Removing FR2 test case 7.4 from TS 38.522 due to testability issue | 15.1.0 |
| 2019-01 | RAN#82 | R5-187882 | 0009 | 1 | F | Update Clause 3 of TS 38.522 | 15.1.1 |
| 2019-01 | RAN#82 | R5-187883 | 0010 | 1 | F | TP for Clause 4.1.1 of TS 38.522 | 15.1.1 |
| 2019-01 | RAN#82 | R5-187885 | 0012 | 1 | F | TP for Clause 4.1.3 of TS 38.522 | 15.1.1 |
| 2019-03 | RAN#83 | R5-191722 | 0021 | - | F | addition of applicability for BFD and measurement | 15.2.0 |
| 2019-03 | RAN#83 | R5-192507 | 0020 | 1 | F | TP for TS 38.522 | 15.2.0 |
| 2019-03 | RAN#83 | R5-192508 | 0022 | 1 | F | Addition of RRM Test Cases Applicability | 15.2.0 |
| 2019-06 | RAN#84 | R5-195444 | 0027 | 1 | F | TP for TS 38.522 | 15.3.0 |
| 2019-06 | RAN#84 | - | - | - | - | Administrative release upgrade to match the release of 3GPP TS 38.508-1 and TS 38.521-1 which were upgraded at RAN#84 to Rel-16 due to Rel-16 relevant CR(s) | 16.0.0 |
| 2019-06 | RAN#84 | - | - | - | - | Addition of missing Table part of R5-195444 and part of a note. | 16.0.1 |
| 2019-06 | RAN#84 | - | - | - | - | Formatted big tables to landscape | 16.0.2 |
| 2019-09 | RAN#85 | R5-197650 | 0030 | 1 | - | TP for TS 38.522 | 16.1.0 |
| 2019-09 | RAN#85 | R5-197650 | 0030 | 1 | - | Added missing changes of R5-197650 | 16.1.1 |
| 2019-12 | RAN#86 | R5-199089 | 0032 | 2 | - | TP for TS 38.522 | 16.2.0 |
| 2020-03 | RAN#87 | R5-201036 | 0033 | 1 | F | TP and format updated for TS 38.522 | 16.3.0 |
| 2020-06 | RAN#88 | R5-202958 | 0040 | 1 | F | R16 TDD ENDC PC2 TP for TS 38.522 | 16.4.0 |
| 2020-06 | RAN#88 | R5-203114 | 0037 | 2 | F | TP updated to applicability table | 16.4.0 |
| 2020-09 | RAN#89 | R5-204098 | 0046 | - | F | Correct applicability EN-DC event-triggered inter-frequency tests | 16.5.0 |
| 2020-09 | RAN#89 | R5-204099 | 0047 | - | F | Correct applicability NR SA event-triggered inter-frequency tests | 16.5.0 |
| 2020-09 | RAN#89 | R5-204939 | 0043 | 1 | F | TP for TS 38.522 | 16.5.0 |
| 2020-09 | RAN#89 | R5-204940 | 0044 | 1 | F | Correction of 38.522 | 16.5.0 |
| 2020-12 | RAN#90 | R5-206905 | 0051 | 1 | F | Update to applicability spec for 5G test cases | 16.6.0 |
| 2021-03 | RAN#91 | R5-210506 | 0055 | - | F | Correction of applicability definitions for long DRX cycle related test cases | 16.7.0 |
| 2021-03 | RAN#91 | R5-210792 | 0058 | - | F | Adding the test applicability of RF test cases for eMIMO | 16.7.0 |
| 2021-03 | RAN#91 | R5-211158 | 0060 | - | F | Addition of applicability new test case 6.3.2.1.3 in TS 38.521-4 | 16.7.0 |
| 2021-03 | RAN#91 | R5-211159 | 0061 | - | F | Addition of applicability new test case 6.3.3.1.3 in TS 38.521-4 | 16.7.0 |
| 2021-03 | RAN#91 | R5-211610 | 0067 | - | F | Applicability of Error Vector Magnitude for V2X for non-concurrent operation | 16.7.0 |
| 2021-03 | RAN#91 | R5-211720 | 0054 | 1 | F | Correction of applicability definitions for PUSCH HalfPi BPSK related test cases | 16.7.0 |
| 2021-03 | RAN#91 | R5-211853 | 0059 | 1 | F | Update to applicability spec for 5G test cases | 16.7.0 |
| 2021-03 | RAN#91 | R5-211913 | 0057 | 1 | F | Adding test applicability for switching test case | 16.7.0 |
| 2021-03 | RAN#91 | R5-211917 | 0066 | 1 | F | Addition of new RRM test cases to the applicability table in 4.2 | 16.7.0 |
| 2021-03 | RAN#91 | R5-211918 | 0068 | 1 | F | Applicability for RRM NR HST test case 6.1.1.7 and 6.6.1.7 | 16.7.0 |
| 2021-03 | RAN#91 | - | - | - | - | Administrative release upgrade to match the release of  TS 38.508-1, TS 38.508-2 and TS 38.521-1 which were upgraded at RAN#91 to Rel-17 due to Rel-17 relevant CRs | 17.0.0 |
| 2021-06 | RAN#92 | R5-212078 | 0069 | - | F | Addition of applicability for new test case 6.3.2.1.4 and 6.3.3.1.4 in TS 38.521-4 | 17.1.0 |
| 2021-06 | RAN#92 | R5-212932 | 0075 | - | F | Addition of test applicability for V2X RF test cases | 17.1.0 |
| 2021-06 | RAN#92 | R5-212939 | 0076 | - | F | Adding test applicability for eMIMO demod test cases | 17.1.0 |
| 2021-06 | RAN#92 | R5-212948 | 0077 | - | F | Adding test applicability for URLLC demod test cases | 17.1.0 |
| 2021-06 | RAN#92 | R5-213095 | 0078 | - | F | Adding test applicability for new test cases introduced in R17 | 17.1.0 |
| 2021-06 | RAN#92 | R5-214006 | 0074 | 1 | F | Addition of new V2X test cases to the applicability table in 4.1.1 | 17.1.0 |
| 2021-06 | RAN#92 | R5-214089 | 0073 | 1 | F | Update to applicability spec for 5G test cases | 17.1.0 |
| 2021-06 | RAN#92 | R5-214096 | 0071 | 1 | F | Update of Applicability for Inter-band EN-DC Including FR2 | 17.1.0 |
| 2021-09 | RAN#93 | R5-214480 | 0081 | - | F | 38.522 Jumbo CR for R16 CADC configurations | 17.2.0 |
| 2021-09 | RAN#93 | R5-214534 | 0082 | - | F | Addition of applicability for FR2 DL 256QAM demodulation test case | 17.2.0 |
| 2021-09 | RAN#93 | R5-214571 | 0083 | - | F | Adding test applicability for UE power saving test cases | 17.2.0 |
| 2021-09 | RAN#93 | R5-214609 | 0084 | - | F | Correction of condition C30 C37 C37a C41 C41a and introduction of condition C37b and C37c | 17.2.0 |
| 2021-09 | RAN#93 | R5-214834 | 0085 | - | F | Applicability for 5G-SRVCC | 17.2.0 |
| 2021-09 | RAN#93 | R5-215033 | 0092 | - | F | Addition of applicability for NR HST TCs | 17.2.0 |
| 2021-09 | RAN#93 | R5-215045 | 0093 | - | F | Addition of R16 FDD-TDD PC2 inter-band EN-DC baseline implementation capabilities into 38.522 | 17.2.0 |
| 2021-09 | RAN#93 | R5-215079 | 0095 | - | F | Addition of test applicability for V2X test cases | 17.2.0 |
| 2021-09 | RAN#93 | R5-215245 | 0099 | - | F | Addition of test applicability for RRM test case 6.6.4.5 | 17.2.0 |
| 2021-09 | RAN#93 | R5-215399 | 0102 | - | F | Add 2-Step PRACH test cases to Applicability spec | 17.2.0 |
| 2021-09 | RAN#93 | R5-215411 | 0103 | - | F | Correction of RRM HST test cases applicability | 17.2.0 |
| 2021-09 | RAN#93 | R5-215931 | 0090 | 1 | F | Addition of applicability for Mob\_Enh TCs | 17.2.0 |
| 2021-09 | RAN#93 | R5-215935 | 0096 | 1 | F | Adding test applicability for eMIMO test cases | 17.2.0 |
| 2021-09 | RAN#93 | R5-215960 | 0098 | 1 | F | Addition of applicability of URLLC demod test cases | 17.2.0 |
| 2021-09 | RAN#93 | R5-215981 | 0086 | 1 | F | FR2 standalone RF conformance test case applicability | 17.2.0 |
| 2021-09 | RAN#93 | R5-216077 | 0097 | 1 | F | Test applicability for FR2 256QAM CQI reporting | 17.2.0 |
| 2021-09 | RAN#93 | R5-216097 | 0101 | 1 | F | Update to applicability spec for 5G test cases | 17.2.0 |
| 2021-12 | RAN#94 | R5-216539 | 0105 | - | F | Addition of applicability for HST test case 5.2.3.1.9\_1 | 17.3.0 |
| 2021-12 | RAN#94 | R5-216540 | 0106 | - | F | Addition of applicability for HST test case 5.2.3.1.10\_1 | 17.3.0 |
| 2021-12 | RAN#94 | R5-216784 | 0109 | - | F | Correction to Test Bands Selection Criteria for performance test cases | 17.3.0 |
| 2021-12 | RAN#94 | R5-216852 | 0110 | - | F | Correction to applicability of RLM TCs | 17.3.0 |
| 2021-12 | RAN#94 | R5-216870 | 0111 | - | F | Correction to applicability of Mob\_enh RRM TCs | 17.3.0 |
| 2021-12 | RAN#94 | R5-216911 | 0112 | - | F | Correction to applicability of HST TCs | 17.3.0 |
| 2021-12 | RAN#94 | R5-217219 | 0114 | - | F | Correct of condition for RRM Test Cases with BWP switch | 17.3.0 |
| 2021-12 | RAN#94 | R5-217319 | 0116 | - | F | Addition of applicability for new type II PMI repoering test cases | 17.3.0 |
| 2021-12 | RAN#94 | R5-217349 | 0118 | - | F | Update of 3.1 for definitions of CA and DC configurations | 17.3.0 |
| 2021-12 | RAN#94 | R5-217381 | 0120 | - | F | Addition of test applicability for URLLC test cases | 17.3.0 |
| 2021-12 | RAN#94 | R5-217529 | 0122 | - | F | Jumbo CR for updating applicability of NR perf enh WI test cases | 17.3.0 |
| 2021-12 | RAN#94 | R5-217568 | 0123 | - | F | Correction of RRM HST test cases applicability | 17.3.0 |
| 2021-12 | RAN#94 | R5-217569 | 0124 | - | F | Correction of RRM test cases applicability - Note 1 removal | 17.3.0 |
| 2021-12 | RAN#94 | R5-217597 | 0125 | - | F | Update applicability for Tx modulation quality test cases | 17.3.0 |
| 2021-12 | RAN#94 | R5-217729 | 0129 | - | F | 38.522 applicability updates for Rel.16 FR2 RF enhancements | 17.3.0 |
| 2021-12 | RAN#94 | R5-218249 | 0115 | 1 | F | Update of MPR applicability for intra-band contiguous EN-DC | 17.3.0 |
| 2021-12 | RAN#94 | R5-218370 | 0107 | 1 | F | Addition of content for FR2 standalone RF conformance test case applicability | 17.3.0 |
| 2021-12 | RAN#94 | R5-218371 | 0128 | 1 | F | NR U test case applicability | 17.3.0 |
| 2021-12 | RAN#94 | R5-218390 | 0108 | 1 | F | Addition of Power Class 1.5 into applicability of RF SA FR1 conformance test cases | 17.3.0 |
| 2021-12 | RAN#94 | R5-218437 | 0113 | 1 | F | 6.2B.2.2 MPR IBNC EN-DC applicability correction if 6.5B.2.2.3 ACLR IBNC EN-DC is executed | 17.3.0 |
| 2021-12 | RAN#94 | R5-218438 | 0127 | 1 | F | Update to applicability spec for 5G test cases | 17.3.0 |
| 2021-12 | RAN#94 | R5-218460 | 0117 | 1 | F | Adding test applicability for switching time mask for inter-band EN-DC | 17.3.0 |
| 2021-12 | RAN#94 | R5-218463 | 0119 | 1 | F | Addition of test applicability e-MIMO test cases | 17.3.0 |
| 2022-03 | RAN#95 | R5-220041 | 0131 | - | F | Addition of the TDD DSS NR bands n34, n39 | 17.4.0 |
| 2022-03 | RAN#95 | R5-220163 | 0133 | - | F | Add 2-Step RACH test cases to Applicability spec | 17.4.0 |
| 2022-03 | RAN#95 | R5-220166 | 0134 | - | F | Update of RRM test case applicability - Note 1 removal | 17.4.0 |
| 2022-03 | RAN#95 | R5-220663 | 0140 | - | F | Update of HST Demod test case applicability - Note 1 removal | 17.4.0 |
| 2022-03 | RAN#95 | R5-220673 | 0142 | - | F | Correcting applicability of HST test cases in 38.522 | 17.4.0 |
| 2022-03 | RAN#95 | R5-220757 | 0143 | - | F | Addition of new performance enhancement test case in 38.522 | 17.4.0 |
| 2022-03 | RAN#95 | R5-220787 | 0144 | - | F | Update to test applicability for V2X test cases | 17.4.0 |
| 2022-03 | RAN#95 | R5-220823 | 0145 | - | F | Update to test applicability for URLLC test cases | 17.4.0 |
| 2022-03 | RAN#95 | R5-220965 | 0147 | - | F | Addition of applicability for test cases for EN-DC with 3 uplink | 17.4.0 |
| 2022-03 | RAN#95 | R5-221004 | 0149 | - | F | Correction to applicability of FR2 intra-frequency measurement without DRX and BFD TCs | 17.4.0 |
| 2022-03 | RAN#95 | R5-221048 | 0150 | - | F | Correction of 4.0 for tested DC configuration selection criteria | 17.4.0 |
| 2022-03 | RAN#95 | R5-221213 | 0152 | - | F | Addition of applicability for CADC MPR TC 6.2B.2.4\_1.1 | 17.4.0 |
| 2022-03 | RAN#95 | R5-221295 | 0154 | - | F | Correction of RRM test cases applicability - Note 1 removal | 17.4.0 |
| 2022-03 | RAN#95 | R5-221296 | 0155 | - | F | Addition of Idle Mode CA/DC Measurements test cases applicability | 17.4.0 |
| 2022-03 | RAN#95 | R5-221371 | 0158 | - | F | Adding new HST test cases | 17.4.0 |
| 2022-03 | RAN#95 | R5-221711 | 0132 | 1 | F | Correction of Additional Information for 6.2.2, 6.2.3 and 6.5.2.4.1 of 38.521-1 and 6.2B.2.3 and 6.2B.3.3 of 38.521-3 | 17.4.0 |
| 2022-03 | RAN#95 | R5-221712 | 0139 | 1 | F | Correction to Applicability and Additional information for EN-DC TC and RRM TC | 17.4.0 |
| 2022-03 | RAN#95 | R5-221797 | 0153 | 1 | F | Addition of FR1 DL Interruptions test cases applicability | 17.4.0 |
| 2022-03 | RAN#95 | R5-221831 | 0146 | 1 | F | Addition of test applicability for UE Enhancements on MIMO | 17.4.0 |
| 2022-03 | RAN#95 | R5-221832 | 0148 | 1 | F | Addition of test applicability for L1-SINR measurement cases | 17.4.0 |
| 2022-03 | RAN#95 | R5-221849 | 0130 | 1 | F | Updated the Test case conditions and selection criteria for TDD DSS NR bands n38, n48, n90 | 17.4.0 |
| 2022-03 | RAN#95 | R5-221850 | 0137 | 1 | F | Addition of FR1 CA CQI test cases applicability | 17.4.0 |
| 2022-03 | RAN#95 | R5-221851 | 0138 | 1 | F | Addition of FR2 CA CQI test cases applicability | 17.4.0 |
| 2022-03 | RAN#95 | R5-221852 | 0151 | 1 | F | Applicability of NR perf enh WI test cases | 17.4.0 |
| 2022-03 | RAN#95 | R5-221858 | 0135 | 1 | F | Correction of HST test case applicability | 17.4.0 |
| 2022-03 | RAN#95 | R5-221891 | 0136 | 1 | F | Correction of FR2 standalone Enhanced Beam correspondence - EIRP RF conformance test case applicability | 17.4.0 |
| 2022-03 | RAN#95 | R5-221913 | 0156 | 1 | F | New EVM test case applicability | 17.4.0 |
| 2022-06 | RAN#96 | R5-222190 | 0159 | - | F | Correction of test applicability for 6.4.2.5 of 38.521-1 | 17.5.0 |
| 2022-06 | RAN#96 | R5-222191 | 0160 | - | F | Separation of 6.2B.1.4D of 38.521-3 into two test cases | 17.5.0 |
| 2022-06 | RAN#96 | R5-222562 | 0162 | - | F | Addition of applicability for CADC MOP TC | 17.5.0 |
| 2022-06 | RAN#96 | R5-222631 | 0164 | - | F | Addition of test applicability for NR SL Demod TCs | 17.5.0 |
| 2022-06 | RAN#96 | R5-222632 | 0165 | - | F | Addition of test applicability for NR SL RRM TCs | 17.5.0 |
| 2022-06 | RAN#96 | R5-222736 | 0169 | - | F | Add 7.5F.1 and 7.6F.2 | 17.5.0 |
| 2022-06 | RAN#96 | R5-222914 | 0172 | - | F | Removing test case 6.5D.1\_1 Occupied bandwidth for UL MIMO (Rel-16 onward) from 38.522 | 17.5.0 |
| 2022-06 | RAN#96 | R5-222992 | 0176 | - | F | Removal of NOTE1 for test case 5.2.2.2.9\_1, 5.2.2.2.10\_1, 5.2.3.2.9\_1 | 17.5.0 |
| 2022-06 | RAN#96 | R5-222994 | 0177 | - | F | Update of applicability of FR2 performance test | 17.5.0 |
| 2022-06 | RAN#96 | R5-223123 | 0181 | - | F | Test case 6.3.2.2.3, 6.3.2.2.4 and 6.3.3.2.3 in 38.522 | 17.5.0 |
| 2022-06 | RAN#96 | R5-223701 | 0189 | 1 | F | Correction of FR1 DL Interruptions test cases applicability | 17.5.0 |
| 2022-06 | RAN#96 | R5-223706 | 0178 | 1 | F | Addition of test applicability for eMIMO test cases | 17.5.0 |
| 2022-06 | RAN#96 | R5-223720 | 0163 | 1 | F | Applicability update for NR perf enh WI test cases | 17.5.0 |
| 2022-06 | RAN#96 | R5-223725 | 0166 | 1 | F | Correction to applicability of HST RRM TCs | 17.5.0 |
| 2022-06 | RAN#96 | R5-223753 | 0179 | 1 | F | 38.522 applicability updates for Rel.16 FR2 RF enhancements | 17.5.0 |
| 2022-06 | RAN#96 | R5-223783 | 0170 | 1 | F | Jumbo Applicability CR for NR\_RF\_TxD WI | 17.5.0 |
| 2022-06 | RAN#96 | R5-223791 | 0171 | 1 | F | Addition of test applicability for RedCap test cases | 17.5.0 |
| 2022-06 | RAN#96 | R5-223842 | 0161 | 1 | F | Correction to applicability for 6.2D.1.1 and 6.2D.1.2 of 38.521-2 | 17.5.0 |
| 2022-06 | RAN#96 | R5-223843 | 0167 | 1 | F | Correction to test bands selection criteria for UL MIMO capabilities | 17.5.0 |
| 2022-06 | RAN#96 | R5-223844 | 0168 | 1 | F | Correction to applicability of 5G test cases | 17.5.0 |
| 2022-06 | RAN#96 | R5-223845 | 0180 | 1 | F | Correction on test condition for FR2 DL 256QAM test cases | 17.5.0 |
| 2022-06 | RAN#96 | R5-223846 | 0185 | 1 | F | Addition to 3.3 for new abbreviations in TS 38.522 | 17.5.0 |
| 2022-06 | RAN#96 | R5-223847 | 0186 | 1 | F | Correction to 4.0 on Tested CA DC configuration selection criteria for E005a, E010 and E010a | 17.5.0 |
| 2022-06 | RAN#96 | R5-223848 | 0187 | 1 | F | Editorial correction to A.4.0 for Tested bands selection criteria | 17.5.0 |
| 2022-06 | RAN#96 | R5-223849 | 0188 | 1 | F | Update of applicability of FR2 RF test cases | 17.5.0 |
| 2022-09 | RAN#97 | R5-223968 | 0190 | - | F | Applicability for 5.7.1.3 and 7.7.1.3 | 17.6.0 |
| 2022-09 | RAN#97 | R5-224381 | 0199 | - | F | Update of clause and description for eMIMO RRM Test Cases according to WP updated | 17.6.0 |
| 2022-09 | RAN#97 | R5-224438 | 0200 | - | F | Addition of applicability for CADC MOP TC | 17.6.0 |
| 2022-09 | RAN#97 | R5-224504 | 0201 | - | F | Correction to applicability of NR SL Demod TCs | 17.6.0 |
| 2022-09 | RAN#97 | R5-224634 | 0202 | - | F | Correction to applicability of C097 | 17.6.0 |
| 2022-09 | RAN#97 | R5-224839 | 0205 | - | F | Update to test applicability of CA test cases to support PC2 | 17.6.0 |
| 2022-09 | RAN#97 | R5-224903 | 0206 | - | F | Update applicability for NR-U test cases | 17.6.0 |
| 2022-09 | RAN#97 | R5-224968 | 0207 | - | F | Editorial, putting C003a and C003b in correct order | 17.6.0 |
| 2022-09 | RAN#97 | R5-224998 | 0208 | - | F | Correction to applicability of 5G test cases | 17.6.0 |
| 2022-09 | RAN#97 | R5-225077 | 0209 | - | F | Adding new test condition and applicability for new test case 6.3C.3.2 | 17.6.0 |
| 2022-09 | RAN#97 | R5-225710 | 0197 | 1 | F | Addition of test applicability for FR2 EN-DC TX Test Cases 5CC to 8CCs | 17.6.0 |
| 2022-09 | RAN#97 | R5-225724 | 0203 | 1 | F | Addition of test applicability for eMIMO test cases | 17.6.0 |
| 2022-09 | RAN#97 | R5-225747 | 0191 | 1 | F | Applicability for 2-step RACH test cases | 17.6.0 |
| 2022-09 | RAN#97 | R5-225752 | 0196 | 1 | F | Update of inter-band CA PC2 test applicability | 17.6.0 |
| 2022-09 | RAN#97 | R5-225755 | 0210 | 1 | F | Adding applicability for new SUL and UL MIMO test cases | 17.6.0 |
| 2022-09 | RAN#97 | R5-225764 | 0194 | 1 | F | Correction of Applicability of conformance test cases conditions, Tested Bands Selection Criteria and Branch for the TxD test cases in 38.521-1 | 17.6.0 |
| 2022-09 | RAN#97 | R5-225765 | 0204 | 1 | F | Addition of test applicability for TxD test cases | 17.6.0 |
| 2022-09 | RAN#97 | R5-225814 | 0192 | 1 | F | Correction of Applicability of conformance test cases conditions and Tested Bands Selection Criteria for the R15 test cases in 38.521-1 | 17.6.0 |
| 2022-09 | RAN#97 | R5-225882 | 0211 | 1 | F | Addition of test case for additional spurious for FR2 | 17.6.0 |
| 2022-12 | RAN#98 | R5-225949 | 0213 |  | F | Adding applicability statements for UEs supporting 5GS FR1 and NR-DC | 17.7.0 |
| 2022-12 | RAN#98 | R5-226112 | 0214 |  | F | Addition of applicability for RedCap RRM TCs | 17.7.0 |
| 2022-12 | RAN#98 | R5-226335 | 0215 |  | F | Update to R16 NR CADC configuration test cases applicability | 17.7.0 |
| 2022-12 | RAN#98 | R5-226702 | 0223 |  | F | Addition of applicability for RedCap demod test cases | 17.7.0 |
| 2022-12 | RAN#98 | R5-226764 | 0226 |  | F | Correction to title of TC7.8F.2 | 17.7.0 |
| 2022-12 | RAN#98 | R5-226795 | 0227 |  | F | Update applicability for performance test case 5.2.3.2.9\_1 | 17.7.0 |
| 2022-12 | RAN#98 | R5-226936 | 0231 |  | F | Adding applicability for new test cases for SUL with UL MIMO | 17.7.0 |
| 2022-12 | RAN#98 | R5-226942 | 0232 |  | F | Applicability for new Rel-16 FR2 RF requirements enhancements test cases | 17.7.0 |
| 2022-12 | RAN#98 | R5-227117 | 0233 |  | F | Update of test applicability for RedCap test cases | 17.7.0 |
| 2022-12 | RAN#98 | R5-227248 | 0235 |  | F | Completion of test case 7.2.2.2.1\_3 | 17.7.0 |
| 2022-12 | RAN#98 | R5-227383 | 0237 |  | F | Applicability spec updates related to rel16 FR2 RF enhancements | 17.7.0 |
| 2022-12 | RAN#98 | R5-227871 | 0234 | 1 | F | Addition of CA\_DC enhancements test cases applicability | 17.7.0 |
| 2022-12 | RAN#98 | R5-227872 | 0221 | 1 | F | Applicability spec update for DL1024QAM test cases | 17.7.0 |
| 2022-12 | RAN#98 | R5-227874 | 0230 | 1 | F | Update to test applicability of SUL test cases | 17.7.0 |
| 2022-12 | RAN#98 | R5-227876 | 0224 | 1 | F | Add applicability of 6.4F.2.2 and 6.5F.4 | 17.7.0 |
| 2022-12 | RAN#98 | R5-227877 | 0236 | 1 | F | Addition of test applicability for NR-U Demod and RRM test cases | 17.7.0 |
| 2022-12 | RAN#98 | R5-227878 | 0218 | 1 | F | Update to R16 NR perf enh test cases applicability | 17.7.0 |
| 2022-12 | RAN#98 | R5-227879 | 0219 | 1 | F | Applicability of NSA CA test cases | 17.7.0 |
| 2022-12 | RAN#98 | R5-228030 | 0217 | 1 | F | Update to R17 NR HST FR1 enh test cases applicability | 17.7.0 |
| 2022-12 | RAN#98 | R5-228040 | 0229 | 1 | F | Updating test applicability for TxD test cases | 17.7.0 |
| 2022-12 | RAN#98 | R5-228049 | 0225 | 1 | F | Correction to applicability of 5G test cases | 17.7.0 |
| 2023-03 | RAN#99 | R5-230416 | 0240 | - | F | Update to R17 NR HST FR1 enh test cases applicability | 17.8.0 |
| 2023-03 | RAN#99 | R5-230458 | 0244 | - | F | Addition of Applicability for RedCap RRM TCs | 17.8.0 |
| 2023-03 | RAN#99 | R5-230526 | 0245 | - | F | Addition of Applicability for RRM enhancement TCs | 17.8.0 |
| 2023-03 | RAN#99 | R5-230576 | 0246 | - | F | Editorial correction for Applicability Comment of 6.2G.3 and 6.2G.4 in 4.1.1 | 17.8.0 |
| 2023-03 | RAN#99 | R5-230667 | 0249 | - | F | Addition of applicabilities for NR-U test cases | 17.8.0 |
| 2023-03 | RAN#99 | R5-230679 | 0251 | - | F | Addition of applicability for RedCap demod test cases | 17.8.0 |
| 2023-03 | RAN#99 | R5-231091 | 0258 | - | F | Adding applicability for new test cases for SUL with UL MIMO | 17.8.0 |
| 2023-03 | RAN#99 | R5-231658 | 0267 | - | F | Correction of test case title of 7.6D.2\_1 and 7.8D.2\_1 of 38.521-1 | 17.8.0 |
| 2023-03 | RAN#99 | R5-231806 | 0241 | 1 | F | Addition of applicability for DC\_CA test cases | 17.8.0 |
| 2023-03 | RAN#99 | R5-231808 | 0238 | 1 | F | Update to R16 NR CADC configuration test cases applicability | 17.8.0 |
| 2023-03 | RAN#99 | R5-231809 | 0263 | 1 | F | Update 38.522 for 7.3A.3 Reference sensitivity power level for 4DL CA | 17.8.0 |
| 2023-03 | RAN#99 | R5-231810 | 0265 | 1 | F | Addition of applicability for FR2 RF phase continuity test | 17.8.0 |
| 2023-03 | RAN#99 | R5-231812 | 0242 | 1 | F | Add applicability of new test cases for gap enhancement | 17.8.0 |
| 2023-03 | RAN#99 | R5-231814 | 0260 | 1 | F | Correction of applicability of the RedCap test cases | 17.8.0 |
| 2023-03 | RAN#99 | R5-231815 | 0256 | 1 | F | Adding test applicability for CA test cases | 17.8.0 |
| 2023-03 | RAN#99 | R5-231816 | 0248 | 1 | F | Adding applicability statement for UE UL carrier RRC reconfiguration delay for FR2 | 17.8.0 |
| 2023-03 | RAN#99 | R5-231817 | 0266 | 1 | F | Applicability updates to FR2 RF tests | 17.8.0 |
| 2023-03 | RAN#99 | R5-231818 | 0247 | 1 | F | Adding applicability statements for UEs supporting TA Validation for CG-SDT in FR2 | 17.8.0 |
| 2023-03 | RAN#99 | R5-231819 | 0254 | 1 | F | Introduction of abbreviation of CCA and clarification on FR1 band selection with CCA | 17.8.0 |
| 2023-03 | RAN#99 | R5-231821 | 0259 | 1 | F | Additional information note correction for RRM test cases | 17.8.0 |
| 2023-03 | RAN#99 | R5-231878 | 0252 | 1 | F | Addition of applicability for 5GS FR1 and FR2 PDC IIoT Test Cases | 17.8.0 |
| 2023-03 | RAN#99 | R5-231888 | 0261 | 1 | F | Correction to applicability of 5G test cases | 17.8.0 |
| 2023-03 | RAN#99 | R5-231894 | 0255 | 1 | F | Update to BWP adaptation applicability conditions | 17.8.0 |
| 2023-03 | RAN#99 | R5-231973 | 0262 | 2 | F | Update test condition for 7.3.2 and 6.2.x | 17.8.0 |
| 2023-06 | RAN#100 | R5-232129 | 0269 | - | F | Adding applicability statement for SCell Activation and deactivation for SCell in FR2 inter-band in non-DRX | 17.9.0 |
| 2023-06 | RAN#100 | R5-232274 | 0272 | - | F | Adding applicability UE Rx-Tx time difference measurement for propagation delay compensation using TRS in FR2 | 17.9.0 |
| 2023-06 | RAN#100 | R5-232458 | 0273 | - | F | Correction to applicability of RedCap RRM TCs | 17.9.0 |
| 2023-06 | RAN#100 | R5-232578 | 0275 | - | F | Addition of applicability for RedCap demod test cases | 17.9.0 |
| 2023-06 | RAN#100 | R5-232580 | 0276 | - | F | Addition of applicability for test case 6.5F.2.4.2 | 17.9.0 |
| 2023-06 | RAN#100 | R5-232742 | 0278 | - | F | Addition of test applicability for SUL test cases with UL MIMO | 17.9.0 |
| 2023-06 | RAN#100 | R5-232756 | 0279 | - | F | Correction to test applicability for UL MIMO test cases | 17.9.0 |
| 2023-06 | RAN#100 | R5-232812 | 0283 | - | F | Update to R17 NR HST FR1 enh test cases applicability | 17.9.0 |
| 2023-06 | RAN#100 | R5-232834 | 0284 | - | F | Adding applicability for MMSE-IRC test cases | 17.9.0 |
| 2023-06 | RAN#100 | R5-232928 | 0287 | - | F | Applicability of FR2 RedCap reselection test cases | 17.9.0 |
| 2023-06 | RAN#100 | R5-233032 | 0289 | - | F | Update to test applicability of beam correspondence | 17.9.0 |
| 2023-06 | RAN#100 | R5-233253 | 0298 | - | F | Applicability updates to FR2 RF tests | 17.9.0 |
| 2023-06 | RAN#100 | R5-233506 | 0270 | 1 | F | Addition of applicability for 5GS HST FR2 test case | 17.9.0 |
| 2023-06 | RAN#100 | R5-233685 | 0296 | 1 | F | Update to handle the test case applicability with different branches | 17.9.0 |
| 2023-06 | RAN#100 | R5-233686 | 0271 | 1 | F | Completion of applicability for DC\_CA test cases | 17.9.0 |
| 2023-06 | RAN#100 | R5-233687 | 0297 | 1 | F | Addition of applicability for FR2 RF phase continuity test | 17.9.0 |
| 2023-06 | RAN#100 | R5-233689 | 0291 | 1 | F | Addition of applicabiltiy for NR feMIMO test cases | 17.9.0 |
| 2023-06 | RAN#100 | R5-233690 | 0268 | 1 | F | Add applicability of new test cases for gap enhancement- Pre-MG and NCSG | 17.9.0 |
| 2023-06 | RAN#100 | R5-233691 | 0277 | 1 | F | Update to RRM applicability rules and test optimization - 38.522 | 17.9.0 |
| 2023-06 | RAN#100 | R5-233692 | 0280 | 1 | F | Correction to applicability for performance test cases | 17.9.0 |
| 2023-06 | RAN#100 | R5-233693 | 0299 | 1 | F | Applicability update for FR2 TCI state switch tests | 17.9.0 |
| 2023-06 | RAN#100 | R5-233710 | 0274 | 1 | F | Update of eMG case applicabilities | 17.9.0 |
| 2023-06 | RAN#100 | R5-233715 | 0290 | 1 | F | Update to test applicability of SUL test cases | 17.9.0 |
| 2023-06 | RAN#100 | R5-233727 | 0293 | 1 | F | Update of applicability for FR2 CA test cases | 17.9.0 |
| 2023-06 | RAN#100 | R5-233728 | 0295 | 1 | F | Correction to applicability of 5G test cases | 17.9.0 |
| 2023-06 | RAN#100 | R5-233731 | 0285 | 1 | F | Applicability update for CLI test cases | 17.9.0 |
| 2023-06 | RAN#100 | R5-233736 | 0281 | 1 | F | Update to R16 NR CADC configuration test cases applicability | 17.9.0 |
| 2023-06 | RAN#100 | R5-233778 | 0294 | 1 | F | Update applicability for in-band blocking FR2 CA test cases | 17.9.0 |
| 2023-09 | RAN#101 | R5-234067 | 0300 | - | F | Adding applicability rules for the remaining MMSE-IRC test cases | 17.10.0 |
| 2023-09 | RAN#101 | R5-234188 | 0302 | - | F | Set branch column to PC3 for Rel-15 in FR1 test case 6.4.2.5 | 17.10.0 |
| 2023-09 | RAN#101 | R5-234335 | 0303 | - | F | Addition of applicability for 5GS HST FR2 7.1.1.7 test case | 17.10.0 |
| 2023-09 | RAN#101 | R5-234359 | 0306 | - | F | Adding applicability statement for NR SA FR2 SSB based Inter-cell L1-RSRP measurement in non-DRX test case | 17.10.0 |
| 2023-09 | RAN#101 | R5-234368 | 0307 | - | F | Addition of applicability for MRDC test cases | 17.10.0 |
| 2023-09 | RAN#101 | R5-234427 | 0309 | - | F | Addition of applicability for RRM enh TCs | 17.10.0 |
| 2023-09 | RAN#101 | R5-234433 | 0310 | - | F | Correction to applicability for SFTD TCs | 17.10.0 |
| 2023-09 | RAN#101 | R5-234624 | 0312 | - | F | Update of applicability for MG enhancements cases | 17.10.0 |
| 2023-09 | RAN#101 | R5-234667 | 0315 | - | F | Update to applicability for RedCap RLM, BFR and BWP switch test cases | 17.10.0 |
| 2023-09 | RAN#101 | R5-234673 | 0316 | - | F | Update to applicability of stationary idle mode RedCap tests | 17.10.0 |
| 2023-09 | RAN#101 | R5-234675 | 0317 | - | F | Applicability update for RRM FR2 test cases | 17.10.0 |
| 2023-09 | RAN#101 | R5-234679 | 0318 | - | F | Update to applicability for FR2 TCI state switch tests | 17.10.0 |
| 2023-09 | RAN#101 | R5-234690 | 0319 | - | F | Adding applicability statements for RRM test cases 16.6.7.1 and 16.6.7.2 | 17.10.0 |
| 2023-09 | RAN#101 | R5-234711 | 0320 | - | F | Update of applicability for inter-band PC2 CA test cases | 17.10.0 |
| 2023-09 | RAN#101 | R5-234735 | 0322 | - | F | Update to R17 NR CADC configuration test cases applicability | 17.10.0 |
| 2023-09 | RAN#101 | R5-234826 | 0325 | - | F | Updates of applicability for RedCap demod test cases | 17.10.0 |
| 2023-09 | RAN#101 | R5-234862 | 0327 | - | F | Addition of applicability for test cases of unified TCI state | 17.10.0 |
| 2023-09 | RAN#101 | R5-234931 | 0328 | - | F | Addition of new NR-U test case 6.2F.2 in 38.522 | 17.10.0 |
| 2023-09 | RAN#101 | R5-235039 | 0329 | - | F | Removing NOTE 1 for test case 6.5D.2.2\_1 in table 4.1.1-1 | 17.10.0 |
| 2023-09 | RAN#101 | R5-235105 | 0331 | - | F | Addition applicability for Power saving Enh test cases 6.5.1.9 and 5.5.5.9 | 17.10.0 |
| 2023-09 | RAN#101 | R5-235220 | 0334 | - | F | Update to applicability for FR2 RF phase continuity test | 17.10.0 |
| 2023-09 | RAN#101 | R5-235797 | 0321 | 1 | F | Update to R16 NR CADC configuration test cases applicability | 17.10.0 |
| 2023-09 | RAN#101 | R5-235798 | 0314 | 1 | F | Update to NR-U test applicability | 17.10.0 |
| 2023-09 | RAN#101 | R5-235799 | 0308 | 1 | F | Correction to applicability for RedCap RRM TCs | 17.10.0 |
| 2023-09 | RAN#101 | R5-235800 | 0313 | 1 | F | Update to applicability for power savings tests | 17.10.0 |
| 2023-09 | RAN#101 | R5-235801 | 0305 | 1 | F | Adding applicability statement for NR SA FR1 DL interruptions at switching between two uplink carriers test cases | 17.10.0 |
| 2023-09 | RAN#101 | R5-235802 | 0326 | 1 | F | Addition of test applicability for 2Tx switching | 17.10.0 |
| 2023-09 | RAN#101 | R5-235803 | 0311 | 1 | F | Update to applicability of 5G test cases | 17.10.0 |
| 2023-09 | RAN#101 | R5-235804 | 0333 | 1 | F | Corrections on the note for operator NOT in Table 4.0-2 | 17.10.0 |
| 2023-09 | RAN#101 | R5-235962 | 0301 | 1 | F | Correction of Additional Information for 6.5B.3.3.1, 6.5B.3.3.2 and 7.3B.2.3 of 38.521-3 | 17.10.0 |
| 2023-09 | RAN#101 | R5-234751 | 0324 | - | F | Update of RF UL MIMO test case applicability | 18.0.0 |
| 2023-12 | RAN#102 | R5-236503 | 0340 | - | F | Adding applicability for newly introduced NR-U test cases | 18.1.0 |
| 2023-12 | RAN#102 | R5-236516 | 0341 | - | F | Adding applicability for newly introduced RedCap test cases | 18.1.0 |
| 2023-12 | RAN#102 | R5-236631 | 0343 | - | F | Updating to test applicability of URLLC test cases | 18.1.0 |
| 2023-12 | RAN#102 | R5-236875 | 0349 | - | F | Addition of test applicability for MR-DC enhancement test cases | 18.1.0 |
| 2023-12 | RAN#102 | R5-236912 | 0350 | - | F | Addition of applicability of FR1 CA with UL MIMO test cases | 18.1.0 |
| 2023-12 | RAN#102 | R5-237024 | 0352 | - | F | Applicability of RRM enhancement test cases | 18.1.0 |
| 2023-12 | RAN#102 | R5-237217 | 0361 | - | F | Update on 6.5.1.9 applicability | 18.1.0 |
| 2023-12 | RAN#102 | R5-237259 | 0363 | - | F | Applicability update for FR2 UL MIMO test cases | 18.1.0 |
| 2023-12 | RAN#102 | R5-237301 | 0365 | - | F | Removal of NOTE 1 from applicability of FR1 CA with UL Tx switching test cases | 18.1.0 |
| 2023-12 | RAN#102 | R5-237469 | 0364 | 2 | F | Update to applicability spec for NTN test cases | 18.1.0 |
| 2023-12 | RAN#102 | R5-237772 | 0356 | 1 | F | Addition of test applicability and condition for RRM MR-DC Rel-17 Test Cases | 18.1.0 |
| 2023-12 | RAN#102 | R5-237773 | 0344 | 1 | F | Update to R16 NR CADC configuration test cases applicability | 18.1.0 |
| 2023-12 | RAN#102 | R5-237774 | 0362 | 1 | F | Applicability updates for Phase continuity tests | 18.1.0 |
| 2023-12 | RAN#102 | R5-237775 | 0336 | 1 | F | Addition of applicability of HST FR2 test cases | 18.1.0 |
| 2023-12 | RAN#102 | R5-237776 | 0335 | 1 | F | Update of applicability for MG enhancements TC | 18.1.0 |
| 2023-12 | RAN#102 | R5-237777 | 0342 | 1 | F | Correction to applicability of 5G test cases | 18.1.0 |
| 2023-12 | RAN#102 | R5-237778 | 0351 | 1 | F | Applicability of RedCap test cases | 18.1.0 |
| 2023-12 | RAN#102 | R5-237779 | 0354 | 1 | F | Updating FR1 test case branches for intra-band UL CA testing | 18.1.0 |
| 2023-12 | RAN#102 | R5-237780 | 0357 | 1 | F | Update to FR1 SDT test case applicability | 18.1.0 |
| 2023-12 | RAN#102 | R5-237781 | 0358 | 1 | F | Applicability update for NR-U RRM test cases | 18.1.0 |
| 2023-12 | RAN#102 | R5-237782 | 0360 | 1 | F | Addition of Test Selection Criteria for RRM | 18.1.0 |
| 2023-12 | RAN#102 | R5-237913 | 0347 | 1 | F | Correction to applicability for RedCap RRM TCs | 18.1.0 |
| 2023-12 | RAN#102 | R5-237933 | 0338 | 1 | F | Addition of MMSE-IRC CQI reporting test applicability rule | 18.1.0 |
| 2024-03 | RAN#103 | R5-240212 | 0370 | - | F | Editorial Correction to HST TCs on release information | 18.2.0 |
| 2024-03 | RAN#103 | R5-240368 | 0373 | - | F | Applicability statement for DL interruptions test cases 6.5.7A.1 and 6.5.7B.1 | 18.2.0 |
| 2024-03 | RAN#103 | R5-240508 | 0376 | - | F | Addition of applicability for HST FR2 test cases | 18.2.0 |
| 2024-03 | RAN#103 | R5-240520 | 0377 | - | F | Removal of NOTE 1 from applicability of FR2 feMIMO test case | 18.2.0 |
| 2024-03 | RAN#103 | R5-240771 | 0378 | - | F | Correction to applicability for NR-U test cases | 18.2.0 |
| 2024-03 | RAN#103 | R5-240783 | 0379 | - | F | Removal of NOTE 1 from applicability of FR1 and FR2 MRDC test cases | 18.2.0 |
| 2024-03 | RAN#103 | R5-240831 | 0382 | - | F | Addition of applicability for RedCap test case 6.2.2.1.2.4 | 18.2.0 |
| 2024-03 | RAN#103 | R5-240857 | 0383 | - | F | Addition of applicability for NR-U test cases | 18.2.0 |
| 2024-03 | RAN#103 | R5-240932 | 0385 | - | F | Correction to applicability of 5G test cases | 18.2.0 |
| 2024-03 | RAN#103 | R5-241004 | 0386 | - | F | Adding test applicability for V2X test cases | 18.2.0 |
| 2024-03 | RAN#103 | R5-241131 | 0388 | - | F | Adding applicability for newly introduced NR-U test cases | 18.2.0 |
| 2024-03 | RAN#103 | R5-241140 | 0389 | - | F | Update to applicability spec for Redcap Demod test case | 18.2.0 |
| 2024-03 | RAN#103 | R5-241239 | 0392 | - | F | Correction to applicability notes for FR2 RRM RLM test cases | 18.2.0 |
| 2024-03 | RAN#103 | R5-241302 | 0395 | - | F | Applicability update for several RedCap tests | 18.2.0 |
| 2024-03 | RAN#103 | R5-241305 | 0396 | - | F | Update to Applicability General Section | 18.2.0 |
| 2024-03 | RAN#103 | R5-241348 | 0398 | - | F | Alignment of status of FR2 UL MIMO test cases | 18.2.0 |
| 2024-03 | RAN#103 | R5-241379 | 0401 | - | F | Add subtest selection criteria to RedCap Performance test cases | 18.2.0 |
| 2024-03 | RAN#103 | R5-241675 | 0375 | 2 | F | Addition of applicability for FeMIMO test cases | 18.2.0 |
| 2024-03 | RAN#103 | R5-241841 | 0397 | 1 | F | Update to test selection criteria for RRM tests | 18.2.0 |
| 2024-03 | RAN#103 | R5-241842 | 0366 | 1 | F | Addition of TC applicability statements for ATG UE | 18.2.0 |
| 2024-03 | RAN#103 | R5-241843 | 0367 | 1 | F | Update to R16 NR CADC configuration test cases applicability | 18.2.0 |
| 2024-03 | RAN#103 | R5-241844 | 0404 | 1 | F | Applicability updates for Phase continuity tests | 18.2.0 |
| 2024-03 | RAN#103 | R5-241845 | 0371 | 1 | F | Addition of MMSE-IRC CQI reporting test applicability rule | 18.2.0 |
| 2024-03 | RAN#103 | R5-241846 | 0390 | 1 | F | Applicability update for PDSCH interference test cases | 18.2.0 |
| 2024-03 | RAN#103 | R5-241848 | 0406 | 1 | F | Addition of applicability for RedCap Demod and RRM test cases | 18.2.0 |
| 2024-03 | RAN#103 | R5-241849 | 0380 | 1 | F | Addition of event triggered reporting test cases applicability | 18.2.0 |
| 2024-03 | RAN#103 | R5-241850 | 0384 | 1 | F | Update to RRM Power saving enhancement 5.5.5.9 test case applicability | 18.2.0 |
| 2024-03 | RAN#103 | R5-241851 | 0394 | 1 | F | Update to NR-U test applicability | 18.2.0 |
| 2024-03 | RAN#103 | R5-241873 | 0391 | 1 | F | Add information to non-TXD test cases with UE supports TXD | 18.2.0 |
| 2024-03 | RAN#103 | R5-241910 | 0374 | 1 | F | Update of Applicability and Additional Information of RF conformance test cases for Satellite Access | 18.2.0 |
| 2024-03 | RAN#103 | R5-241946 | 0399 | 1 | F | Update of applicability for FR1 4DL CA test cases | 18.2.0 |
| 2024-03 | RAN#103 | R5-241962 | 0393 | 1 | F | Addition of missing applicability to new SS-RSRQ RedCap test cases | 18.2.0 |
| 2024-03 | RAN#103 | R5-241988 | 0387 | 1 | F | Update to test applicability for R17 FR1 enhancement | 18.2.0 |
| 2024-03 | RAN#103 | R5-241993 | 0372 | 1 | F | Update of Additional Information for 6.5.3.1 in 38.521-1 and 6.5B.3.3.2 in 38.521-3 | 18.2.0 |