

ETSI TS 138 522 V17.10.0 (2023-10)



**5G;
NR;**

**User Equipment (UE) conformance specification;
Applicability of radio transmission, radio reception and radio
resource management test cases
(3GPP TS 38.522 version 17.10.0 Release 17)**



Reference

RTS/TSGR-0538522vha0

Keywords

5G

ETSI

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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:

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 - 1 presented to TSG for information;
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- 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_nCC: $DL_nCC(table_index)$ includes all supported n -carrier CA/DC configurations in Table $table_index$ in TS 38.508-2 [8].

DL_NR_nCC: $DL_NR_nCC(table_index)$ 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 a 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_nCC: $UL_nCC(table_index)$ 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_nCC: UL_NR_nCC(*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 |
| 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 |
| 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 |
| 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 |
| 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 |
| 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. 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.

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 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 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. |
| 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

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 ICS proformas used in Table 4.0-1, Table 4.0-2 and Table 4.0-3 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 |
| 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 OR A.4.3.2-1/15) 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 |
| 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 |
| C006za | 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 |
| C006zb | 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 |
| 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 |

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| 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 |
| 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 |
| C012za | 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 |
| C012xx | 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 |
| C012yy | 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 |
| C012zz | 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 |
| C012zx | 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 |
| 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 |
| 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 |
| 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.4.3.2-1/20 AND A.4.3.2-1/33 AND A.4.3.2-1/68 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 |
| 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 |

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| 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 |
| 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 |
| 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 |

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| 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 |
| 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 AND NOT A.4.3.2-1/84 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 |

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| 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 OR A.4.3.2-1/15) 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 |

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| 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 |
| 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 |
| 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.4.3.5-1/1 THEN 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 |
| 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 |

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| 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 AND NOT A.4.3.2-1/84 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 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 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 (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.4.3.1-7a/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 |

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| 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 |
| 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 | 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 OR A.4.3.2-1/15) THEN R ELSE N/A |
| 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 |

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| 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.4.3.2-1/46 THEN 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 |
| 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 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 |
| 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 |
| 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 |
| 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 |
| C185 | IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-3/1 AND A.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 A.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 |

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| 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.4.3.2/9) 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.4.3.2/9) 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 |
| 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 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 |
| 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 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 |
| 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 |

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| 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.4.1-1/1 OR 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.4.1-1/1 OR 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 |

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| 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.4.1-4/1 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.4.3.2-1/129 THEN R ELSE N/A |
| C269 | 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.4.3.2-1/128 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.4.3.2A.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 AND 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 |
| NOTE 1: | Cxxxx applicability is defined for enhanced type 1 receiver for NR related tests (A.4.3.9-1/1). |
| NOTE 2: | Cxxxx 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 | |
| <p>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:</p> <p>AND: Set intersection (\cap). $\{n1, n2\} \text{ AND } \{n2, n3\} = \{n2\}$</p> <p>OR: Set union ($\cup$). $\{n1, n2\} \text{ OR } \{n2, n3\} = \{n1, n2, n3\}$</p> <p>NOT: Set complement (\setminus), full set being all bands. $\text{NOT}\{n1\} = \{\text{All bands except } n1\}$</p> <p>Also note that this is set without repetitions so $\{n1\} \text{ AND } \{n1\} = \{n1\}$</p> <p>The following basic sets are used:</p> <p>$\{n1, n2\}$: Explicitly given band set</p> <p>10MHz: All bands supporting 10 MHz</p> <p>FDD: All bands in FDD mode</p> | | |

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 | ULTxSwitching(A.4.3.2A.4.1-3) | All supported FR1 2UL CA configurations with 1Tx-2Tx ULTxSwitching capability |
| E019a | 2Tx_ULTxSwitching(A.4.3.2A.4.1-3) | All supported FR1 2UL 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) |
| <p>NOTE 1: UL(<i>table_index</i>) 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 <i>table_index</i> in TS 38.508-2 [8].</p> <p>NOTE 2: UL_nCC(<i>table_index</i>) 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 <i>table_index</i> in TS 38.508-2 [8].</p> <p>NOTE 3: UL_NR_nCC(<i>table_index</i>) 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 <i>table_index</i> in TS 38.508-2 [8].</p> <p>NOTE 4: DL_nCC(<i>table_index</i>) includes all supported n-carrier CA/DC Configurations in Table <i>table_index</i> in TS 38.508-2 [8].</p> <p>NOTE 5: DL_NR_nCC(<i>table_index</i>) includes all supported DC Configurations with n-carrier NR DL CA configuration in Table <i>table_index</i> in TS 38.508-2 [8].</p> <p>NOTE 6: ULTxSwitching(<i>table_index</i>) includes all supported CA/DC/SUL Configurations where at least one uplink band pair was declared in column "Supported ULTxSwitching Band Pair" in Table <i>table_index</i> in TS 38.508-2 [8]. 2Tx_ULTxSwitching(<i>table_index</i>) 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 <i>table_index</i> in TS 38.508-2 [8].</p> | | |

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 | |
| 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. |
| 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. |
| 6.2.4 | Configured transmitted power | Rel-15 | C001h | UEs supporting 5GS FR1 not supporting txDiversity-r16 | D001 | PC1 PC2 PC3 | |
| 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 | |

| Clause | TC Title | Release | Applicability | | Tested Bands/CA-Configurations Selection | Branch | Additional Information |
|----------|--|---------|---------------|--|--|---|---|
| | | | Condition | Comment | | | |
| 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 | 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 | |
| 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 |

| Clause | TC Title | Release | Applicability | | Tested Bands/CA-Configurations Selection | Branch | Additional Information |
|----------|---|---------|---------------|---|--|------------------------------|---|
| | | | Condition | Comment | | | |
| 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 | 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.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 | | | |

| Clause | TC Title | Release | Applicability | | Tested Bands/CA-Configurations Selection | Branch | Additional Information |
|----------|---|---------|---------------|--|--|---------------------|---|
| | | | Condition | Comment | | | |
| 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 | | |
| 6.2F.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 | | |
| 6.2G.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 | |
| 6.2I.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 | | | | | | |
| 6.3.1 | Minimum output power | Rel-15 | C001h | UEs supporting 5GS FR1 not supporting txDiversity-r16 | D001 | | |

| Clause | TC Title | Release | Applicability | | Tested Bands/CA-Configurations Selection | Branch | Additional Information |
|------------|--|---------|---------------|---|--|--------|---|
| | | | Condition | Comment | | | |
| 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. |
| 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. |
| 6.3.3.6 | SRS time mask | Rel-15 | C001h | UEs supporting 5GS FR1 not supporting txDiversity-r16 | D001 | | |
| 6.3.4.2 | Absolute power tolerance | Rel-15 | C001h | UEs supporting 5GS FR1 not supporting txDiversity-r16 | D001 | | |
| 6.3.4.3 | Relative power tolerance | Rel-15 | C001h | UEs supporting 5GS FR1 not supporting txDiversity-r16 | D001 | | |
| 6.3.4.4 | Aggregate power tolerance | Rel-15 | C001h | UEs supporting 5GS FR1 not supporting txDiversity-r16 | D001 | | |
| 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.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 |

| Clause | TC Title | Release | Applicability | | Tested Bands/CA-Configurations Selection | Branch | Additional Information |
|------------|---|---------|---------------|--|--|--------|------------------------|
| | | | Condition | Comment | | | |
| 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 Tx switching | D003 | | NOTE 2 |
| 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 |

| Clause | TC Title | Release | Applicability | | Tested Bands/CA-Configurations Selection | Branch | Additional Information |
|----------|--|---------|---------------|--|--|---------------------|---|
| | | | Condition | Comment | | | |
| 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 | |
| 6.4.1 | 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. |
| 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. |
| 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 |

| Clause | TC Title | Release | Applicability | | Tested Bands/CA-Configurations Selection | Branch | Additional Information |
|------------|---|---------|---------------|---|--|---------------------------|---|
| | | | Condition | Comment | | | |
| 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. |
| 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. |
| 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. |
| 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 and not supporting txDiversity-r16 | D017 | PC3 | |
| | | Rel-16 | C111 | UEs supporting 5GS FR1 and pi/2-BPSK modulation scheme and low PAPR DMRS and not supporting txDiversity-r16 | D001 | | |
| 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 | |
| 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 | |
| 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 | |
| 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 | |
| 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 |

| Clause | TC Title | Release | Applicability | | Tested Bands/CA-Configurations Selection | Branch | Additional Information |
|------------|---|---------|---------------|--|--|--------|------------------------|
| | | | Condition | Comment | | | |
| 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 |

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| 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 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 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 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 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 and supporting txDiversity-r16 | D001 | PC1.5 PC2 PC3 | |
| 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. |

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| 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. |
| 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. |
| 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. |
| 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. |
| 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 has been executed. |
| 6.5.3.2 | Spurious emissions for UE co-existence | Rel-15 | C001h | UEs supporting 5GS FR1 not supporting txDiversity-r16 | D001 | | |
| 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. |
| 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. |

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| 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 | |
| 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 | |
| 6.5C.1 | Occupied bandwidth for SUL | Rel-15 | C002 | UEs supporting 5GS FR1 and SUL | D003 | | NOTE 2 |

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| 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 | | |

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| 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 | | NOTE 1 |
| 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 | | NOTE 1 |

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| 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.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 | |

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| 6.5G.4 | Transmit intermodulation for Tx Diversity | Rel-15 | C001g | UEs supporting 5GS FR1 and supporting txDiversity-r16 | D001 | PC1.5 PC2 PC3 | |
| 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 | FFS | C036 | UEs supporting 5GS FR1 and CA (4DL CA) | E018 | | NOTE 1 |
| 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) | FFS | FFS | FFS | FFS | | NOTE 1 |

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| 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 | | |
| 7.5 | 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) | FFS | FFS | FFS | FFS | | NOTE 1 |
| 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 | | |
| 7.6.2 | 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 | | |

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| | | | Condition | Comment | | | |
| 7.6A.2.3 | In-band blocking for CA (4DL CA) | Rel-16 | C036 | UEs supporting 5GS FR1 and CA (4DL CA) | E018 | | NOTE 1 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-16 | 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-16 | C033 | UEs supporting 5GS FR1 and CA (3DL CA) | E017 | | |
| 7.6A.4.3 | Narrow band blocking for CA (4DL CA) | Rel-16 | 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 | | |

| Clause | TC Title | Release | Applicability | | Tested Bands/CA-Configurations Selection | Branch | Additional Information |
|----------|--|---------|---------------|--|--|--------|---|
| | | | Condition | Comment | | | |
| 7.6D.4_1 | Narrow band blocking for SUL with UL MIMO | Rel-17 | C179a | UEs supporting 5GS FR1 and SUL and UL MIMO | D024 | | |
| 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 | | |
| 7.7 | 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-16 | FFS | UEs supporting 5GS FR1 and CA (4DL CA) | FFS | | NOTE 1 |
| 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 | | |
| 7.8.2 | 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-16 | 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 | | |

| Clause | TC Title | Release | Applicability | | Tested Bands/CA-Configurations Selection | Branch | Additional Information |
|---|------------------------------------|---------|---------------|--|--|--------|---|
| | | | Condition | Comment | | | |
| 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 | | |
| <p>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.</p> <p>NOTE 2: The test case is optional for Rel-17 RedCap UE implementing SUL.</p> | | | | | | | |

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 <i>modifiedMPRbehaviour</i> 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 | C006za | UEs supporting 5GS FR2 and supporting <i>modifiedMPRbehaviour</i> bit 0. | D005 | PC3 | Skip TC 6.2.2_1 if UE supports NSA and TS 38.521-3 TC 6.2B.2.4_2 has been executed. |
| | | Rel-17 | C006 | UEs supporting 5GS FR2 | | | |

| Clause | TC Title | Release | Applicability | | Tested Bands/CA-Configurations Selection | Branch | Additional Information |
|------------|--|---------|---------------|--|--|---|--|
| | | | Condition | Comment | | | |
| 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) | 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 <i>mpr-PowerBoost-FR2-r16</i> | 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. |

| Clause | TC Title | Release | Applicability | | Tested Bands/CA-Configurations Selection | Branch | Additional Information |
|------------|--|---------|---------------|--|--|---|--|
| | | | Condition | Comment | | | |
| 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 | C151 | UEs supporting 5GS FR2 and UL-MIMO | D023 | PC1 PC2 PC3 PC4 | NOTE 1 |
| 6.2D.1.2 | UE maximum output power - Spherical coverage for UL MIMO | Rel-15 | C151 | UEs supporting 5GS FR2 and UL-MIMO | D023 | PC1 PC2 PC3 PC4 | NOTE 1 |
| 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) | 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. |

| Clause | TC Title | Release | Applicability | | Tested Bands/CA-Configurations Selection | Branch | Additional Information |
|----------|--------------------------------------|---------|---------------|--|--|---|--|
| | | | Condition | Comment | | | |
| 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) | |

| Clause | TC Title | Release | Applicability | | Tested Bands/CA-Configurations Selection | Branch | Additional Information |
|------------|---|---------|---------------|--|--|--|------------------------|
| | | | Condition | Comment | | | |
| 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) | |
| 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) | |
| 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) | |
| 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 |

| Clause | TC Title | Release | Applicability | | Tested Bands/CA-Configurations Selection | Branch | Additional Information |
|------------|---|---------|---------------|---|--|--------------------------|--|
| | | | Condition | Comment | | | |
| 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 PC2 PC3 PC4 | NOTE 1 |
| 6.3D.2 | Transmit OFF power for UL MIMO | Rel-15 | C060 | UEs supporting 5GS FR2 and UL MIMO | D023 | | NOTE 1 |
| 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 <i>mpr-PowerBoost-FR2-r16</i> | 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. |

| Clause | TC Title | Release | Applicability | | Tested Bands/CA-Configurations Selection | Branch | Additional Information |
|------------|---|---------|---------------|---|--|---|---|
| | | | Condition | Comment | | | |
| 6.4.2.2 | Carrier leakage | Rel-15 | C006 | UEs supporting 5GS FR2 | D005 | PC1 (NOTE 1) PC2 (NOTE 1) PC3 PC4 (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 | 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 | FFS | UEs supporting 5GS FR2 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 | 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 |

| Clause | TC Title | Release | Applicability | | Tested Bands/CA-Configurations Selection | Branch | Additional Information |
|------------|--|---------|---------------|--|--|--------------------------|------------------------|
| | | | Condition | Comment | | | |
| 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 |

| Clause | TC Title | Release | Applicability | | Tested Bands/CA-Configurations Selection | Branch | Additional Information |
|------------|-----------------------------------|---------|---------------|--|--|--------------------------|------------------------|
| | | | Condition | Comment | | | |
| 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 |

| Clause | TC Title | Release | Applicability | | Tested Bands/CA-Configurations Selection | Branch | Additional Information |
|-----------|---|---------|---------------|---|--|---|--|
| | | | Condition | Comment | | | |
| 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 <i>mpr-PowerBoost-FR2-r16</i> | 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 <i>mpr-PowerBoost-FR2-r16</i> | 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. |

| Clause | TC Title | Release | Applicability | | Tested Bands/CA-Configurations Selection | Branch | Additional Information |
|-----------|---|---------|---------------|---|--|---|--|
| | | | Condition | Comment | | | |
| 6.5.3.2_1 | Spurious emission band UE co-existence with Power Boost | Rel-16 | C006w | UEs supporting 5GS FR2 and supporting <i>mpr-PowerBoost-FR2-r16</i> | 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 <i>mpr-PowerBoost-FR2-r16</i> | 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 |

| Clause | TC Title | Release | Applicability | | Tested Bands/CA-Configurations Selection | Branch | Additional Information |
|------------|--|---------|---------------|--|--|--------|--|
| | | | Condition | Comment | | | |
| 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. |

| Clause | TC Title | Release | Applicability | | Tested Bands/CA-Configurations Selection | Branch | Additional Information |
|------------|--|---------|---------------|--|--|---|--|
| | | | Condition | Comment | | | |
| 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. |

| Clause | TC Title | Release | Applicability | | Tested Bands/CA-Configurations Selection | Branch | Additional Information |
|------------|--|---------|---------------|--|--|---|--|
| | | | Condition | Comment | | | |
| 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. |

| Clause | TC Title | Release | Applicability | | Tested Bands/CA-Configurations Selection | Branch | Additional Information |
|------------|--|---------|---------------|--|--|---|--|
| | | | Condition | Comment | | | |
| 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. |

| Clause | TC Title | Release | Applicability | | Tested Bands/CA-Configurations Selection | Branch | Additional Information |
|------------|--|---------|---------------|---|--|--------|--|
| | | | Condition | Comment | | | |
| 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. |

| Clause | TC Title | Release | Applicability | | Tested Bands/CA-Configurations Selection | Branch | Additional Information |
|----------|---|---------|---------------|--|--|--|---|
| | | | Condition | Comment | | | |
| 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 |

| Clause | TC Title | Release | Applicability | | Tested Bands/CA-Configurations Selection | Branch | Additional Information |
|----------|---|---------|---------------|--|--|--------------------------|---|
| | | | Condition | Comment | | | |
| 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 |

| Clause | TC Title | Release | Applicability | | Tested Bands/CA-Configurations Selection | Branch | Additional Information |
|--|-------------------------------------|---------|---------------|---|--|--------------------------|---|
| | | | Condition | Comment | | | |
| 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. |
| <p>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.</p> <p>NOTE 2: Void.</p> <p>NOTE 3: Void.</p> <p>NOTE 4: Void.</p> | | | | | | | |

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. |

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| | | | Condition | Comment | | | |
| 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 | FFS | FFS | FFS | FFS | | NOTE 1 |
| 6.2B.1.4D.2 | UE Maximum Output Power for Inter-Band EN-DC including FR2 for UL MIMO - Spherical Coverage | FFS | FFS | FFS | FFS | | NOTE 1 |
| 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. |

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| | | | Condition | Comment | | | |
| 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 | C012za | 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) | | | | | | |

| Clause | TC Title | Release | Applicability | | Tested Bands/CA/DC-Configurations Selection | Branch | Additional Information |
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| | | | Condition | Comment | | | |
| 6.2B.2.4_1.1 | UE Maximum Output Power reduction for Inter-Band EN-DC including FR2 (2 NR CCs) | Rel-15 | FFS | FFS | FFS | | 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.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 | | |

| Clause | TC Title | Release | Applicability | | Tested Bands/CA/DC-Configurations Selection | Branch | Additional Information |
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| | | | Condition | Comment | | | |
| 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 <i>mpr-PowerBoost-FR2-r16</i> | 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) | | | | | | |

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| | | | Condition | Comment | | | |
| 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 | FFS | FFS | FFS | FFS | | NOTE 1 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.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. |

| Clause | TC Title | Release | Applicability | | Tested Bands/CA/DC-Configurations Selection | Branch | Additional Information |
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| | | | Condition | Comment | | | |
| 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. |

| Clause | TC Title | Release | Applicability | | Tested Bands/CA/DC-Configurations Selection | Branch | Additional Information |
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| | | | Condition | Comment | | | |
| 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. |

| Clause | TC Title | Release | Applicability | | Tested Bands/CA/DC-Configurations Selection | Branch | Additional Information |
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| | | | Condition | Comment | | | |
| 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. |

| Clause | TC Title | Release | Applicability | | Tested Bands/CA/DC-Configurations Selection | Branch | Additional Information |
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| | | | Condition | Comment | | | |
| 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. |

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| | | | Condition | Comment | | | |
| 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. |

| Clause | TC Title | Release | Applicability | | Tested Bands/CA/DC-Configurations Selection | Branch | Additional Information |
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| | | | Condition | Comment | | | |
| 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 6.4.2.2 has 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. |

| Clause | TC Title | Release | Applicability | | Tested Bands/CA/DC-Configurations Selection | Branch | Additional Information |
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| | | | Condition | Comment | | | |
| 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 <i>mpr-PowerBoost-FR2-r16</i> | 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. |

| Clause | TC Title | Release | Applicability | | Tested Bands/CA/DC-Configurations Selection | Branch | Additional Information |
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| | | | Condition | Comment | | | |
| 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 |

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| | | | Condition | Comment | | | |
| 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 |

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| | | | Condition | Comment | | | |
| 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. |

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| | | | Condition | Comment | | | |
| 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. |

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| 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 <i>mpr-PowerBoost-FR2-r16</i> | 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. |

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| 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. |

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| 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 | | |

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| 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. |

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| | | | Condition | Comment | | | |
| 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 <i>mpr-PowerBoost-FR2-r16</i> | 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. |

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| 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 <i>mpr-PowerBoost-FR2-r16</i> | 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) | | | | | | |

| Clause | TC Title | Release | Applicability | | Tested Bands/CA/DC-Configurations Selection | Branch | Additional Information |
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| | | | Condition | Comment | | | |
| 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. |

| Clause | TC Title | Release | Applicability | | Tested Bands/CA/DC-Configurations Selection | Branch | Additional Information |
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| | | | Condition | Comment | | | |
| 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 <i>mpr-PowerBoost-FR2-r16</i> | 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. |

| Clause | TC Title | Release | Applicability | | Tested Bands/CA/DC-Configurations Selection | Branch | Additional Information |
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| | | | Condition | Comment | | | |
| 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 | | |

| Clause | TC Title | Release | Applicability | | Tested Bands/CA/DC-Configurations Selection | Branch | Additional Information |
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| | | | Condition | Comment | | | |
| 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. |

| Clause | TC Title | Release | Applicability | | Tested Bands/CA/DC-Configurations Selection | Branch | Additional Information |
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| | | | Condition | Comment | | | |
| 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. |

| Clause | TC Title | Release | Applicability | | Tested Bands/CA/DC-Configurations Selection | Branch | Additional Information |
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| | | | Condition | Comment | | | |
| 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 TC 7.4B.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 |

| Clause | TC Title | Release | Applicability | | Tested Bands/CA/DC-Configurations Selection | Branch | Additional Information |
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| | | | Condition | Comment | | | |
| 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) | | | | | | |

| Clause | TC Title | Release | Applicability | | Tested Bands/CA/DC-Configurations Selection | Branch | Additional Information |
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| | | | Condition | Comment | | | |
| 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 | | | | | | |

| Clause | TC Title | Release | Applicability | | Tested Bands/CA/DC-Configurations Selection | Branch | Additional Information |
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| | | | Condition | Comment | | | |
| 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) | | | | | | |

| Clause | TC Title | Release | Applicability | | Tested Bands/CA/DC-Configurations Selection | Branch | Additional Information |
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| | | | Condition | Comment | | | |
| 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. |

| Clause | TC Title | Release | Applicability | | Tested Bands/CA/DC-Configurations Selection | Branch | Additional Information |
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| | | | Condition | Comment | | | |
| 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 |

| Clause | TC Title | Release | Applicability | | Tested Bands/CA/DC-Configurations Selection | Branch | Additional Information |
|-------------------|--|---------|---------------|--|---|--------|---|
| | | | Condition | Comment | | | |
| 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) | | | | | | |

| Clause | TC Title | Release | Applicability | | Tested Bands/CA/DC-Configurations Selection | Branch | Additional Information |
|--|---|---------|---------------|--|---|--------|--|
| | | | Condition | Comment | | | |
| 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. |
| <p>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.</p> <p>NOTE 2: Void.</p> <p>NOTE 3: Void.</p> <p>NOTE 4: Void.</p> <p>NOTE 5: Test only one EN-DC combination per 5G NR band as LTE anchor agnostic approach is applied.</p> | | | | | | | |

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 |
|-------------|---|---------|---------------|---|------------------------|------------------------|
| | | | 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 |
| 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 | |
| 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 | |
| 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 additional DMRS for coexistence with LTE CRS but not supporting FDD bands with 4Rx UE capability | D008 | |
| 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 but not supporting FDD bands with 4Rx UE capability | D008 | NOTE 1 |
| 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 | |

| Clause | TC Title | Release | Applicability | | Tested Bands Selection | Additional Information |
|--------------|--|---------|---------------|---|------------------------|------------------------|
| | | | Condition | Comment | | |
| 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 FDM Scheme A, 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 | |
| 5.2.2.1.15_1 | 2Rx FDD FR1 PDSCH with inter-cell interference - 2x2 MIMO for both SA and NSA | Rel-15 | C015d | UEs supporting 5GS FDD FR1 and MMSE-IRC receiver 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 | C015d | UEs supporting 5GS FDD FR1 and MMSE-IRC receiver 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 |

| Clause | TC Title | Release | Applicability | | Tested Bands Selection | Additional Information |
|-------------|---|---------|---------------|---|------------------------|---|
| | | | Condition | Comment | | |
| 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 | |
| 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 additional DMRS for coexistence with LTE CRS but not supporting TDD bands with 4Rx UE capability | D019 | |
| 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 but not supporting TDD bands with 4Rx UE capability | D010 | NOTE 1 |

| Clause | TC Title | Release | Applicability | | Tested Bands Selection | Additional Information |
|--------------|---|---------|---------------|--|------------------------|------------------------|
| | | | Condition | Comment | | |
| 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 | |
| 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 | C016d | UEs supporting 5GS TDD FR1 and MMSE-IRC receiver 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 | C016d | UEs supporting 5GS TDD FR1 and MMSE-IRC receiver 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 |

| Clause | TC Title | Release | Applicability | | Tested Bands Selection | Additional Information |
|-------------|---|---------|---------------|---|------------------------|---|
| | | | Condition | Comment | | |
| 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 | |
| 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 LTE-NR coexistence | D008 | |
| 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 4Rx antenna ports | D008 | NOTE 1 |
| 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 | |

| Clause | TC Title | Release | Applicability | | Tested Bands Selection | Additional Information |
|--------------|--|---------|---------------|---|------------------------|---|
| | | | Condition | Comment | | |
| 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 FDM Scheme A 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 | |
| 5.2.3.1.15_1 | 4Rx FDD FR1 PDSCH with inter-cell interference - 2x4 MIMO for both SA and NSA | Rel-15 | C017d | UEs supporting 5GS FDD FR1 and 4Rx antenna ports and MMSE-IRC receiver | D008 | |
| 5.2.3.1.16_1 | 4Rx FDD FR1 for PDSCH with intra cell inter user interference performance – 2x4 and 4x4 MIMO for both NSA and SA | Rel-15 | C017d | UEs supporting 5GS FDD FR1 and 4Rx antenna ports and MMSE-IRC receiver | 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 | |
| 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 |

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| 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 LTE-NR coexistence | D009 | |
| 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 4Rx antenna ports | D010 | NOTE 1 |
| 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 | |

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| 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 | C019d | UEs supporting 5GS TDD FR1 and 4Rx antenna ports and MMSE-IRC receiver | 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 | C019d | UEs supporting 5GS TDD FR1 and 4Rx antenna ports and MMSE-IRC receiver | 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 | |

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| 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 | C2054 | 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 | |

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| 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 FR1 and 2Rx 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 | |
| 5.3.3.1.1 | 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 | |
| 5.3.3.2.1 | 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 | |
| 5.5.1 | 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 | |

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| 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 | |
| 6.2.1.2.1.1 | 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 | |
| 6.2.2.2.1.1 | 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 | |

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| 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 | |
| 6.2.3.2.1.1 | 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 | |
| 6.2A.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 | |
| 6.3.2.1.1 | 2Rx FDD FR1 Single PMI with 4Tx 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 | |
| 6.3.2.1.2 | 2Rx FDD FR1 Single PMI with 8Tx 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 | |
| 6.3.2.1.3 | 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 | |

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| 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 | |
| 6.3.2.2.1 | 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 | |
| 6.3.3.1.1 | 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 | |

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| 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 | |
| 6.3.3.2.1 | 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 | |
| 6.4.2.1_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 | |
| 6.4.2.2_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 | |
| 6.4.3.1_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 aggregationFactorDL > 1 for PDSCH repetition multislots | D014 | NOTE 1 |

| Clause | TC Title | Release | Applicability | | Tested Bands Selection | Additional Information |
|---------------|---|---------|---------------|--|------------------------|---|
| | | | Condition | Comment | | |
| 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 | |
| 7.5.1.1 | 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 |

| Clause | TC Title | Release | Applicability | | Tested Bands Selection | Additional Information |
|--|---|---------|---------------|---|------------------------|---|
| | | | Condition | Comment | | |
| 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 Type1-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 |
|----------------|---|---------|---------------|---|---|------------|
| | | | 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 | C030 | UEs supporting EN-DC FR1 and CSI-RS based PRACH | Test execution not necessary if test 6.3.2.2.2 has been executed. | 2Rx 4Rx |
| 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 |
| 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 |

| Clause | TC Title | Release | Applicability | | Additional Information | Branch |
|--------------|--|---------|---------------|---|---|------------|
| | | | Condition | Comment | | |
| 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 |
| 4.5.3 | 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 | NOTE 1 | 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 | NOTE 1 | 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 | | | | | |

| Clause | TC Title | Release | Applicability | | Additional Information | Branch |
|----------------|---|---------|---------------|--|---|------------|
| | | | Condition | Comment | | |
| 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 |
| 4.5.6 | 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 | | | | | |

| Clause | TC Title | Release | Applicability | | Additional Information | Branch |
|---------------|---|---------|---------------|--|---|------------|
| | | | Condition | Comment | | |
| 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 |
| 4.5.11 | 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 | NOTE 1 | 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-15 | 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 |

| Clause | TC Title | Release | Applicability | | Additional Information | Branch |
|--------------|---|---------|---------------|---|--|------------|
| | | | Condition | Comment | | |
| 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-16 | 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-16 | 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 |
| 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-15 | 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 |

| Clause | TC Title | Release | Applicability | | Additional Information | Branch |
|----------------|---|---------|---------------|--|---|------------|
| | | | Condition | Comment | | |
| 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 |

| Clause | TC Title | Release | Applicability | | Additional Information | Branch |
|--|--|---------|---------------|--|---|------------|
| | | | Condition | Comment | | |
| 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 |
|----------------|---|---------|---------------|---|------------------------|------------|
| | | | 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 4Rx |
| 5.3.2.2.2 | EN-DC FR2 non-contention based random access | Rel-16 | C030a | UEs supporting EN-DC FR2 and CSI-RS based PRACH | | 2Rx 4Rx |
| 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 4Rx |
| 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 4Rx |
| 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 |
| 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 | FFS | FFS | FFS | NOTE 1 | 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 | FFS | FFS | FFS | NOTE 1 | 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 | FFS | FFS | FFS | NOTE 1 | 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 | FFS | FFS | FFS | NOTE 1 | 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 | FFS | FFS | FFS | 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 | FFS | FFS | FFS | 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 | FFS | FFS | FFS | NOTE 1 | 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 | FFS | FFS | FFS | NOTE 1 | 2Rx |

| Clause | TC Title | Release | Applicability | | Additional Information | Branch |
|--------------|--|---------|---------------|---|------------------------|------------|
| | | | Condition | Comment | | |
| 5.5.1.9 | EN-DC FR2 radio link monitoring UE scheduling restrictions | FFS | FFS | FFS | 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 4Rx |
| 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 | FFS | FFS | FFS | NOTE 1 | 2Rx |
| 5.5.2.2 | EN-DC FR2 interruptions at transitions between active and non-active during DRX in asynchronous EN-DC | FFS | FFS | FFS | NOTE 1 | 2Rx |
| 5.5.2.3 | EN-DC FR2 interruptions during measurements on deactivated NR SCC in synchronous EN-DC | FFS | FFS | FFS | NOTE 1 | 2Rx |
| 5.5.2.4 | EN-DC FR2 interruptions during measurements on deactivated NR SCC in asynchronous EN-DC | FFS | FFS | FFS | NOTE 1 | 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 | 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 | | 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 | | |

| Clause | TC Title | Release | Applicability | | Additional Information | Branch |
|----------------|--|---------|---------------|--|------------------------|--------|
| | | | Condition | Comment | | |
| 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 | | |
| 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 | FFS | UEs supporting EN-DC FR2 and long DRX cycle and BFD relaxation criteria <i>bfd-Relaxation-r17</i> | | |
| 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 | FFS | FFS | FFS | 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 | PSCell addition and release delay | | | | | |
| 5.5.7.1 | 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 |
| 5.5.11.2 | 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 |

| Clause | TC Title | Release | Applicability | | Additional Information | Branch |
|--------------|--|---------|---------------|--|------------------------|--------|
| | | | Condition | Comment | | |
| 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 | NOTE 1 | 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 | NOTE 1 | 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 |
| 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 |
| 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 |
| 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 |
| 5.6.2.5 | EN-DC FR1-FR2 event-triggered reporting in non-DRX | Rel-15 | C023 | UEs supporting EN-DC FR1 and FR2 | NOTE 1 | 2Rx |
| 5.6.2.6 | EN-DC FR1-FR2 event-triggered reporting in DRX | Rel-15 | C023a | UEs supporting EN-DC FR1 and FR2 and long DRX cycle | NOTE 1 | 2Rx |
| 5.6.2.7 | EN-DC FR1-FR2 event-triggered reporting in non-DRX with SSB time index detection | Rel-15 | C023 | UEs supporting EN-DC FR1 and FR2 | NOTE 1 | 2Rx |
| 5.6.2.8 | EN-DC FR1-FR2 event-triggered reporting in DRX with SSB time index detection | Rel-15 | C023a | UEs supporting EN-DC FR1 and FR2 and long DRX cycle | 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 |

| Clause | TC Title | Release | Applicability | | Additional Information | Branch |
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| | | | Condition | Comment | | |
| 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 4Rx |
| 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 4Rx |
| 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 4Rx |
| 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 | NOTE 1 | 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 | NOTE 1 | 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 |

| Clause | TC Title | Release | Applicability | | Additional Information | Branch |
|---|---|---------|---------------|---|------------------------|--------|
| | | | Condition | Comment | | |
| 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 |
| <p>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.</p> <p>NOTE 2: Void.</p> <p>NOTE 3: Void.</p> | | | | | | |

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 |
|--------------|---|---------|---------------|--|------------------------|------------|
| | | | 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-15 | 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-16 | 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-15 | 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 | | | | | |
| 6.3 | 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 |

| Clause | TC Title | Release | Applicability | | Additional Information | Branch |
|----------------|---|---------|---------------|---|---|------------|
| | | | Condition | Comment | | |
| 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 |

| Clause | TC Title | Release | Applicability | | Additional Information | Branch |
|----------------|---|---------|---------------|---|---|------------|
| | | | Condition | Comment | | |
| 6.3.2.2.2 | NR SA FR1 non-contention based random access | Rel-15 | C029 | UEs supporting 5GS NR SA FR1 and CSI-RS based PRACH | Test execution not necessary if test 4.3.2.2.2 has been executed. | 2Rx 4Rx |
| 6.3.2.2.3 | NR SA FR1 2-step contention based random access | Rel-16 | C159 | UEs supporting 5GS NR SA FR1 and 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 FR1 and 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 |
| 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 |

| Clause | TC Title | Release | Applicability | | Additional Information | Branch |
|--------------|---|---------|---------------|--|---|------------|
| | | | Condition | Comment | | |
| 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 PSCell configured with CSI-RS-based RLM for UE fulfilling relaxed measurement criterion | Rel-17 | FFS | UEs supporting 5GS NR SA FR1 and long DRX cycle and CSI-RS-based RLM and RLM relaxation criteria <i>rlm-Relaxation-r17</i> | | 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 | NOTE 1 | 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 | NOTE 1 | 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 | | | | | |

| Clause | TC Title | Release | Applicability | | Additional Information | Branch |
|----------------|--|---------|---------------|--|---|------------|
| | | | Condition | Comment | | |
| 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 |
| 6.5.6 | 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 | | | | | |

| Clause | TC Title | Release | Applicability | | Additional Information | Branch |
|--------------|---|---------|---------------|---|---|------------|
| | | | Condition | Comment | | |
| 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.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.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 | NOTE 1 | 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 | NOTE 1 | 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 |

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|--------------|---|---------|---------------|---|---|------------|
| | | | Condition | Comment | | |
| 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-15 | 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-16 | 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 |
| 6.6.2.12 | NR SA FR1-FR1 event triggered reporting tests without SSB time index detection in DRX for UE configured with highSpeedMeasInterFreq-r17 | Rel-16 | 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 |
| 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-15 | 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 |

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|---------------|---|---------|---------------|---|---|------------|
| | | | Condition | Comment | | |
| 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-15 | 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 | | | | | |

| Clause | TC Title | Release | Applicability | | Additional Information | Branch |
|---------------|--|---------|---------------|---|------------------------|------------|
| | | | Condition | Comment | | |
| 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 | NOTE 1 | 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 | NOTE 1 | 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 |

| Clause | TC Title | Release | Applicability | | Additional Information | Branch |
|----------------|---|---------|---------------|---|---|------------|
| | | | Condition | Comment | | |
| | | | 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 | | | | | |

| Clause | TC Title | Release | Applicability | | Additional Information | Branch |
|--------------|--|---------|---------------|---|---|------------|
| | | | Condition | Comment | | |
| 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 |

| Clause | TC Title | Release | Applicability | | Additional Information | Branch |
|--|--|---------|---------------|--|---|------------|
| | | | Condition | Comment | | |
| 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 |
|----------------|--|---------|---------------|--|------------------------|--------|
| | | | 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 <i>highSpeedMeasFlagFR2-r17</i> | 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 | C103 | UEs supporting 5GS NR SA FR1 and 5GS NR SA FR2 and inter-frequency DAPS handover and supporting different SCSSs in source Pcell and inter-frequency target Pcell | NOTE 1 | 2Rx |
| 7.3.1.5 | NR SA FR1-FR2 asynchronous DAPS handover | Rel-16 | C104 | UEs supporting 5GS NR SA FR1 and 5GS NR SA FR2 and inter-frequency async DAPS handover and supporting different SCSSs in source Pcell and inter-frequency target Pcell | 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 | FFS | FFS | FFS | NOTE 1 | 2Rx |
| 7.3.2.2.2 | NR SA FR2 non-contention based random access | FFS | FFS | FFS | NOTE 1 | 2Rx |
| 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 | | | | | |

| Clause | TC Title | Release | Applicability | | Additional Information | Branch |
|--------------|--|---------|---------------|---|------------------------|--------|
| | | | Condition | Comment | | |
| 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 |
| 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 | | | | | |
| 7.5.1.5 | 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 | NOTE 1 | 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 | NOTE 1 | 2Rx |
| 7.5.1.9 | NR SA FR2 radio link monitoring UE scheduling restrictions | Rel-15 | C006 | UEs supporting 5GS NR SA FR2 | 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 | FFS | FFS | FFS | 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 |

| Clause | TC Title | Release | Applicability | | Additional Information | Branch |
|----------------|--|---------|---------------|---|------------------------|--------|
| | | | Condition | Comment | | |
| 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 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 |
| 7.5.6 | 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 | FFS | FFS | FFS | 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 | FFS | FFS | FFS | NOTE 1 | 2Rx |
| 7.5.7.2 | NR SA FR2 addition and release delay of unknown PSCell | FFS | FFS | FFS | 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 | | | | | |

| Clause | TC Title | Release | Applicability | | Additional Information | Branch |
|----------------|--|---------|---------------|---|------------------------|--------|
| | | | Condition | Comment | | |
| 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 |
| 7.5.13 | 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 |
| 7.6 | 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 |

| Clause | TC Title | Release | Applicability | | Additional Information | Branch |
|--------------|---|---------|---------------|---|------------------------|------------|
| | | | Condition | Comment | | |
| 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 |
| 7.6.2 | 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 | C006zb | UEs supporting 5GS NR SA FR2 and Inter-band CA (2UL CA) | 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 |

| Clause | TC Title | Release | Applicability | | Additional Information | Branch |
|----------------|---|---------|---------------|--|------------------------|------------|
| | | | Condition | Comment | | |
| 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 |
| 7.7 | 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 | C006 | UEs supporting 5GS NR SA FR2 | 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 |

| Clause | TC Title | Release | Applicability | | Additional Information | Branch |
|--|---|---------|---------------|---|------------------------|--------|
| | | | Condition | Comment | | |
| 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 |
| <p>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.</p> <p>NOTE 2: Void.</p> <p>NOTE 3: Void.</p> <p>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.</p> | | | | | | |

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 |
|--------------|--|---------|---------------|---|------------------------|------------|
| | | | 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-15 | 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 |
| 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 |
| 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 |
| 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 |

| Clause | TC Title | Release | Applicability | | Additional Information | Branch |
|--|--|---------|---------------|--|------------------------|------------|
| | | | Condition | Comment | | |
| 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-15 | 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 |
|---------------|--|---------|---------------|---|------------------------|--------|
| | | | 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 | NOTE 1 | 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 | NOTE 1 | 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 | NOTE 1 | 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 | NOTE 1 | 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 | NOTE 1 | 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 | NOTE 1 | 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 | NOTE 1 | 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 | NOTE 1 | 2Rx |
| 16.2 | RRC_INACTIVE state mobility for RedCap | | | | | |
| 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 |

| Clause | TC Title | Release | Applicability | | Additional Information | Branch |
|-----------------|---|---------|---------------|--|------------------------|--------|
| | | | Condition | Comment | | |
| 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 | NOTE 1 | 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 | NOTE 1 | 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 | NOTE 1 | 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 | NOTE 1 | 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 | NOTE 1 | 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 | NOTE 1 | 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 | C185 | 1Rx RedCap UEs supporting 5GS NR SA FR1 and CSI-RS based PRACH | NOTE 1 | 1Rx |
| 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 | C186 | 2Rx RedCap UEs supporting 5GS NR SA FR1 and CSI-RS based PRACH | | 2Rx |

| Clause | TC Title | Release | Applicability | | Additional Information | Branch |
|-----------------|---|---------|---------------|---|------------------------|--------|
| | | | Condition | Comment | | |
| 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 | NOTE 1 | 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 | NOTE 1 | 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 | NOTE 1 | 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 | NOTE 1 | 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 |
| 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 |
| 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 |

| Clause | TC Title | Release | Applicability | | Additional Information | Branch |
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| | | | Condition | Comment | | |
| 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 | NOTE 1 | 1Rx |

| Clause | TC Title | Release | Applicability | | Additional Information | Branch |
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| | | | Condition | Comment | | |
| 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 | NOTE 1 | 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 | NOTE 1 | 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 |

| Clause | TC Title | Release | Applicability | | Additional Information | Branch |
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| | | | Condition | Comment | | |
| 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 | | | | | |

| Clause | TC Title | Release | Applicability | | Additional Information | Branch |
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| | | | Condition | Comment | | |
| 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 | TBD | | NOTE 1 | 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 | TBD | | NOTE 1 | 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 | TBD | | NOTE 1 | 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 | TBD | | NOTE 1 | 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 | TBD | | NOTE 1 | 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 | TBD | | NOTE 1 | 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 | TBD | | NOTE 1 | 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 | TBD | | NOTE 1 | 2Rx |
| 16.6.2.9 | NR SA FR1-FR1 Event triggered reporting tests with additional mandatory gap pattern for 1 Rx UE | Rel-17 | TBD | | NOTE 1 | 1Rx |
| 16.6.2.10 | NR SA FR1-FR1 Event triggered reporting tests with additional mandatory gap pattern for 2 Rx UE | Rel-17 | TBD | | NOTE 1 | 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 | TBD | | NOTE 1 | 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 | TBD | | NOTE 1 | 2Rx |
| 16.6.3 | Inter-RAT measurements for RedCap | | | | | |
| 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 |

| Clause | TC Title | Release | Applicability | | Additional Information | Branch |
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| | | | Condition | Comment | | |
| 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 |
| 16.6.7 | NR measurements with autonomous gaps | | | | | |
| 16.6.7.1 | NR SA FR1 intra-frequency CGI identification of NR neighbour cell in FR1 for 1 Rx UE | Rel-17 | C183 | 1Rx RedCap UEs supporting 5GS NR SA FR1 | NOTE 1 | 1Rx |
| 16.6.7.2 | NR SA FR1 intra-frequency CGI identification of NR neighbour cell in FR1 for 2 Rx UE | Rel-17 | C184 | 2Rx RedCap UEs supporting 5GS NR SA FR1 | 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. | | | | | | |
| 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 |
|-----------------|---|---------|---------------|---|------------------------|--------|
| | | | 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 | NOTE 1 | 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 | NOTE 1 | 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 | NOTE 1 | 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 | NOTE 1 | 2Rx |
| 17.2 | RRC_INACTIVE state mobility for RedCap | | | | | |
| 17.3 | RRC_CONNECTED state mobility for RedCap | | | | | |
| 17.3.1 | Handover for RedCap | | | | | |
| 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 | C224 | RedCap UEs supporting 5GS NR SA FR2 and CSI-RS based PRACH | NOTE 1 | 2Rx |
| 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 |
| 17.4 | Timing for RedCap | | | | | |
| 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 |

| Clause | TC Title | Release | Applicability | | Additional Information | Branch |
|---------------|--|---------|---------------|---|------------------------|--------|
| | | | Condition | Comment | | |
| 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 |
| 17.5.1.9 | 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 |
| 17.6 | 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 |
| 17.6.3 | 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 |

| Clause | TC Title | Release | Applicability | | Additional Information | Branch |
|--|----------|---------|---------------|---------|------------------------|--------|
| | | | Condition | Comment | | |
| 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 |
|---------------|--|---------|---------------|---|------------------------|--------|
| | | | 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 |
| 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 |
| 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 |
| 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 |
| 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 |

| Clause | TC Title | Release | Applicability | | Additional Information | Branch |
|--|---|---------|---------------|---|------------------------|--------|
| | | | Condition | Comment | | |
| 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 test cases, ref. TS 38.533 [5]

| Clause | TC Title | Release | Applicability | | Additional Information | Branch |
|--|---|---------|---------------|---|------------------------|--------|
| | | | 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 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 |
| 10.3.1.4 | EN-DC FR1 Radio link monitoring out-of-sync test for PSCell under CCA configured with SSB-based RLM RS in DRX mode | Rel-16 | C206a | 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 and long DRX | | |
| 10.3.1.5 | EN-DC FR1 Radio link monitoring in-sync test for PSCell under CCA configured with SSB-based RLM RS in DRX mode | Rel-16 | C206a | 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 and long DRX | 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 | C207 | 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 | C207a | 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 |
| 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. | | | | | | |

Annex A (informative): Change history

| Change history | | | | | | | |
|----------------|--------------------|-----------|------|------|-----|--|-------------|
| Date | Meeting | TDoc | CR | R ev | 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 : - 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 4.1.3 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 |

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| 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 CAD 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 |

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| 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 repoeing 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 |

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|---------|--------|-----------|------|---|---|---|--------|
| 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 |

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| 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 |

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| 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 |

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|---------|---------|-----------|------|---|---|--|---------|
| 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 applicability 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 |

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| 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 |

History

| Document history | | |
|-------------------------|--------------|-------------|
| V17.4.0 | May 2022 | Publication |
| V17.5.0 | August 2022 | Publication |
| V17.6.0 | October 2022 | Publication |
| V17.7.0 | January 2023 | Publication |
| V17.8.0 | May 2023 | Publication |
| V17.9.0 | July 2023 | Publication |
| V17.10.0 | October 2023 | Publication |