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**User Equipment (UE) conformance specification;
Applicability of radio transmission, radio reception and radio
resource management test cases
(3GPP TS 38.522 version 19.1.1 Release 19)**



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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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- 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 38.521-5 [12]: NR; User Equipment (UE) conformance specification; Radio transmission and reception; Part 5: Satellite access Radio Frequency (RF) and 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], TS 38.521-5 [12] 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
- [12] 3GPP TS 38.521-5: NR; User Equipment (UE) conformance specification; Radio transmission and reception; Part 5: Satellite access Radio Frequency (RF) and performance

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 an UEUT which contains or references all of the information (in addition to that given in the ICS) related to the UEUT and its testing environment, which will enable the test laboratory to run an appropriate test suite against the UEUT

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

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

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

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

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

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

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

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

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

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

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

UL_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
BFD	Beam Failure Detection
BPSK	Binary Phase Shift Keying
BWP	Bandwidth Part
CA	Carrier Aggregation
CBW	Channel Bandwidth
CC	Component Carrier
CCA	Clear Channel Assessment
CMR	Channel Measurement Resource
CQI	Channel Quality Indicator
CSI	Channel State Information
CSI-RS	CSI Reference Signal
DAPS	Dual Active Protocol Stack
DC	Dual Connectivity
DCI	Downlink Control Information
DL	Downlink
DRX	Discontinuous Reception
EIRP	Effective Isotropic Radiated Power
E-UTRA	Evolved UTRA
EVM	Error Vector Magnitude
FDD	Frequency Division Duplex
EN-DC	E-UTRA/NR Dual Connectivity
FR1	Frequency Range 1 (410 MHz - 7125 MHz)
FR2	Frequency Range 2 (24250 MHz - 52600 MHz)
HST	High Speed Train
ICS	Implementation Conformance Statement
IMR	Interference Measurement Resource
IXIT	Implementation eXtra Information for Testing
L1	Layer 1
L1-RSRP	Layer 1 RSRP
L1 SL-RSRP	Layer 1 Sidelink RSRP which corresponds to PSCCH-RSRP and/or PSSCH-RSRP
MAC	Medium Access Control
MCG	Master Cell Group
MPR	Allowed maximum power reduction
NR	New Radio
NSA	Non-Standalone, a mode of operation where operation of another radio is assisted with another radio
NTN	Non-Terrestrial Network

PCell	Primary Cell
PDCCH	Physical Downlink Control Channel
PDSCH	Physical Downlink Shared Channel
PIXIT	Protocol Implementation eXtra Information for Testing
PMI	Pre-coding Matrix Indicator
PRACH	Physical Random Access Channel
PSCell	Primary SCG Cell
QAM	Quadrature Amplitude Modulation
RF	Radio Frequency
RLM	Radio Link Monitoring
RRC	Radio Resource Control
RRM	Radio Resource Management
RSRP	Reference Signal Received Power
RSRQ	Reference Signal Received Quality
SA	Standalone
SC	Single Carrier
SCC	Secondary Component Carrier
SCell	Secondary Cell
SCG	Secondary Cell Group
SCS	System Conformance Statement / Subcarrier Spacing
SDL	Supplementary Downlink
SFN	System Frame Number
SFTD	SFN and Frame Timing Difference
SINR	Signal to Interference plus Noise Ratio
SL	Sidelink
SL-MIMO	Sidelink-Multiple Antenna Transmission
SRS	Sounding Reference Signal
SRS-RSRP	Sounding Reference Signal based Reference Signal Received Power
SSB	Synchronization Signal Block
SS-RSRP	Synchronization Signal based RSRP
SS-RSRQ	Synchronization Signal based RSRQ
SS-SINR	Synchronization Signal based SINR
SUL	Supplementary UpLink
TC	Test Case
TDD	Time Division Duplex
TRP	Total Radiated Power
TxD	Tx Diversity
UEUT	User Equipment Under Test
UL	Uplink
ULFPTx	Uplink Full Power Transmission
UL MIMO	Uplink Multiple Antenna transmission
UTRA	UMTS Terrestrial Radio Access
V2X	Vehicle to Everything

4 Recommended test case applicability

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

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

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

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

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

Clause

The clause column indicates the clause number in TS 38.521-1 [1], TS 38.521-2 [2], TS 38.521-3 [3], TS 38.521-4 [4], TS 38.521-5 [12] 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], TS 38.521-5 [12] and TS 38.533 [5] that contains the test body.

Release

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

Applicability - Condition

The following notations are used for the applicability column:

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

Applicability - Comment

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

Tested Bands / CA/DC Configurations / Subtest Selection

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

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

Di	Derive the set based on Band Selection Criteria Di defined in table 4.0-2.
Ei	Derive the set based on CA/DC Configurations Selection Criteria Ei defined in table 4.0-3.
Fi	Derive the set based on Subtest Selection Criteria Fi defined in table 4.0-4.
TBD	Band selection not defined at this time, in the meantime test all Bands / CA/DC Configurations
Text	For more complex selection criteria, or if the criteria are already specified somewhere else in the spec, text reference to the clause is given.

Branch

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

NOTE 1: Void.

NOTE 2: Void.

Additional Information

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

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

4.0 Test case conditions and selection criteria

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

Table 4.0-1: Applicability of conformance test cases conditions

C001	IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-2/7 AND A.4.1-3/1 THEN R ELSE N/A
C001a	IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-2/7 AND A.4.1-3/1 AND A.4.3.1-7/3 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 OR A.4.3.2-1/84A))) THEN R ELSE N/A
C001h	Void
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.4.3.12-1/2) THEN R ELSE N/A
C001m	IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-2/7 AND A.4.1-3/1 AND A.4.3.5-1/1 AND A.4.4-1/16 THEN R ELSE N/A
C001n	IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-2/7 AND A.4.1-3/1 AND A.4.3.7-1/65 THEN R ELSE N/A
C001o	IF A.4.1-1/1 AND A.4.1-2/9 AND A.4.1-3/1 AND A.4.4-1/17 THEN R ELSE N/A
C001p	IF A.4.1-1/1 AND A.4.1-2/9 AND A.4.1-3/1 AND A.4.4-1/17 AND A.4.3.2-1/91 THEN R ELSE N/A
C001q	IF A.4.1-1/1 AND A.4.1-2/9 AND A.4.1-3/1 AND A.4.4-1/17 AND A.4.3.2-1/92 THEN R ELSE N/A
C001r	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.4.3.2-1/104 OR A.4.3.2-1/105 OR A.4.3.2-1/106 OR A.4.3.2-1/107) THEN R ELSE N/A
C001s	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.4.3.6-1/114 THEN R ELSE N/A
C001w	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.4.3.2-1/187 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.4.3.2-1/14B 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.4.3.2-1/14B 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.4.3.2-1/232 AND A.4.3.2-1/233)) 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 AND (NOT A.4.3.2-1/84A) 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.4.3.6-1/56A 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 A.4.3.2-1/78 THEN R ELSE N/A
C006n	IF A.4.1-1/2 AND A.4.1-2/8 AND A.4.1-3/1 AND (A.4.3.2-1/130 OR A.4.3.2-1/131) THEN R ELSE N/A
C006o	IF A.4.1-1/2 AND A.4.1-2/8 AND A.4.1-3/1 AND A.4.3.2-1/25A THEN R ELSE N/A
C006p	IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-2/7 AND A.4.1-2/8 AND A.4.1-3/1 AND A.4.1-4A/7 AND A.4.3.2A.1-1/1 THEN R ELSE N/A
C006q	IF A.4.1-1/2 AND A.4.1-2/8 AND A.4.1-3/2 THEN R ELSE N/A
C006r	IF A.4.1-1/2 AND A.4.1-2/8 AND A.4.1-3/1 AND A.4.3.6-1/92 THEN R ELSE N/A
C006s	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.4.3.6-1/92 THEN R ELSE N/A
C006w	IF A.4.1-1/2 AND A.4.1-2/8 AND A.4.1-3/1 AND A.4.3.2-1/38 THEN R ELSE N/A

C006x	IF A.4.1-1/2 AND A.4.1-2/8 AND A.4.1-3/1 AND A.4.3.2-1/139 THEN R ELSE N/A
C007	IF A.4.1-1/2 AND A.4.1-2/8 AND A.4.1-3/1 AND A.4.3.2-1/22 THEN R ELSE N/A
C008	IF A.4.1-1/2 AND A.4.1-2/8 AND A.4.1-3/1 AND NOT A.4.3.2-1/22 AND NOT (A.4.3.2-1/22A OR A.4.3.2-1/22B) THEN R ELSE N/A
C008a	IF A.4.1-1/2 AND A.4.1-2/8 AND A.4.1-3/1 AND NOT A.4.3.2-1/22 AND (A.4.3.2-1/22A OR A.4.3.2-1/22B) THEN R ELSE N/A
C009	IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-3/2 AND A.4.1-4/1 AND A.4.3.2B.2.0-2/1 THEN R ELSE N/A
C009a	IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-3/2 AND A.4.1-4/1 AND A.4.3.2B.2.0-1/1 THEN R ELSE N/A
C009z	IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-3/2 AND A.4.1-4/1 AND A.4.3.2B.2.0-2/1 AND A.4.3.2-1/25 THEN R ELSE N/A
C010	IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-3/2 AND A.4.1-4/2 AND A.4.3.2B.2.0-2/1 THEN R ELSE N/A
C010a	IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-3/2 AND A.4.1-4/2 AND A.4.3.2B.2.0-1/1 THEN R ELSE N/A
C010z	Void
C011	IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-3/2 AND A.4.1-4/3 AND A.4.3.2B.2.0-2/1 THEN R ELSE N/A
C011a	IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-3/2 AND A.4.1-4/3 AND A.4.3.2B.2.0-1/1 THEN R ELSE N/A
C011b	IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-3/2 AND A.4.1-4/3 AND A.4.3.2B.2.0-2A/1 THEN R ELSE N/A
C011c	IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-3/2 AND A.4.1-4/3 AND A.4.3.2B.2.0-1A/1 THEN R ELSE N/A
C011d	IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-3/2 AND A.4.1-4/3 AND A.4.3.2B.2.0-2/2 AND A.4.3.2B.2.0-2A/1 THEN R ELSE N/A
C011z	IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-3/2 AND A.4.1-4/3 AND A.4.3.2B.2.0-2A/1 AND A.4.3.2-1/25 THEN R ELSE N/A
C012	IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-3/2 AND A.4.1-4/4 AND A.4.3.2B.2.0-2/1 THEN R ELSE N/A
C012a	IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-3/2 AND A.4.1-4/4 AND A.4.3.2B.2.0-1A/1 THEN R ELSE N/A
C012b	IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-3/2 AND A.4.1-4/4 AND A.4.3.2B.2.0-2A/2 THEN R ELSE N/A
C012c	IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-3/2 AND A.4.1-4/4 AND A.4.3.2B.2.0-2A/3 THEN R ELSE N/A
C012d	IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-3/2 AND A.4.1-4/4 AND A.4.3.2B.2.0-2A/4 THEN R ELSE N/A
C012e	IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-3/2 AND A.4.1-4/4 AND A.4.3.2B.2.0-1A/2 THEN R ELSE N/A
C012f	IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-3/2 AND A.4.1-4/4 AND A.4.3.2B.2.0-2/1 AND A.4.3.2-1/31a THEN R ELSE N/A
C012g	IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-3/2 AND A.4.1-4/4 AND A.4.3.2B.2.0-1A/3 THEN R ELSE N/A
C012h	IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-3/2 AND A.4.1-4/4 AND A.4.3.2B.2.0-1A/4 THEN R ELSE N/A
C012i	IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-3/2 AND A.4.1-4/4 AND A.4.3.2B.2.0-2A/5 THEN R ELSE N/A
C012j	IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-3/2 AND A.4.1-4/4 AND A.4.3.2B.2.0-2A/6 THEN R ELSE N/A
C012k	IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-3/2 AND A.4.1-4/4 AND A.4.3.2B.2.0-2A/7 THEN R ELSE N/A
C012l	IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-3/2 AND A.4.1-4/4 AND A.4.3.2B.2.0-2A/8 THEN R ELSE N/A
C012m	IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-3/2 AND A.4.1-4/4 AND A.4.3.2B.2.0-2A/2 AND A.4.3.2-1/25 THEN R ELSE N/A
C012n	IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-3/2 AND A.4.1-4/4 AND A.4.3.2B.2.0-2A/3 AND A.4.3.2-1/25 THEN R ELSE N/A
C012o	IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-3/2 AND A.4.1-4/4 AND A.4.3.2B.2.0-2A/4 AND A.4.3.2-1/25 THEN R ELSE N/A
C012p	IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-3/2 AND A.4.1-4/4 AND A.4.3.2B.2.0-2/1 AND A.4.3.2-1/14B THEN R ELSE N/A
C012q	IF A.4.1-1/2 AND A.4.1-3/2 AND A.4.1-4/4 AND A.4.3.2B.2.0-2A/1 AND A.4.3.2-1/25A THEN R ELSE N/A
C012w	IF A.4.1-1/2 AND A.4.1-3/2 AND A.4.1-4/4 AND A.4.3.2B.2.0-2A/1 AND A.4.3.2-1/38 THEN R ELSE N/A
C012z	IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-3/2 AND A.4.1-4/4 AND A.4.3.2B.2.0-2A/1 AND A.4.3.2-1/25 THEN R ELSE N/A
C013	IF (A.4.1-1/1 OR A.4.1-1/2) AND (A.4.1-3/2 OR A.4.1-3/3 OR A.4.1-3/5) AND (A.4.1-4/3 OR A.4.1-4/4) THEN R ELSE N/A
C014	IF (A.4.1-1/1 OR A.4.1-1/2) AND (A.4.1-3/2 OR A.4.1-3/3 OR A.4.1-3/5) AND (A.4.1-4/1 OR A.4.1-4/2 OR A.4.1-4/3 OR A.4.1-4/4) THEN R ELSE N/A
C015	IF A.4.1-1/1 AND (A.4.1-3/1 OR A.4.1-3/2 OR A.4.1-3/3 OR A.4.1-3/5) AND A.4.3.1-7a/1 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 A.4.3.1-7a/1 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 A.4.3.1-7a/1 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 A.4.3.1-7a/1 AND NOT A.4.3.1-7a/2 THEN R ELSE N/A
C015e	IF A.4.1-1/1 AND (A.4.1-3/1 OR A.4.1-3/2 OR A.4.1-3/3 OR A.4.1-3/5) AND A.4.3.1-7a/1 AND NOT A.4.3.1-7a/2 AND A.4.3.2-1/140 THEN R ELSE N/A
C015f	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.4.3.2-1/242 AND A.4.3.1-7a/1 AND NOT A.4.3.1-7a/2 THEN R ELSE N/A
C015g	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.4.3.2-1/243 AND A.4.3.1-7a/1 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 A.4.3.1-7a/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 A.4.3.1-7a/1 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 A.4.3.1-7a/1 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 A.4.3.1-7a/1 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 A.4.3.1-7a/1 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 A.4.3.1-7a/1 AND NOT A.4.3.1-7a/3 THEN R ELSE N/A
C016e	IF A.4.1-1/2 AND (A.4.1-3/1 OR A.4.1-3/2 OR A.4.1-3/3 OR A.4.1-3/5) AND A.4.3.1-7a/1 AND NOT A.4.3.1-7a/3 AND A.4.3.2-1/140 THEN R ELSE N/A
C016f	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.4.3.2-1/242 AND A.4.3.1-7a/1 AND NOT A.4.3.1-7a/3 THEN R ELSE N/A
C016g	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.4.3.2-1/243 AND A.4.3.1-7a/1 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 A.4.3.1-7a/1 AND NOT A.4.3.1-7a/3 THEN R ELSE N/A
C016y	IF A.4.1-1/2 AND (A.4.1-3/1 OR A.4.1-3/2 OR A.4.1-3/3 OR A.4.1-3/5) AND A.4.3.2-1/33 AND A.4.3.1-7a/1 AND NOT A.4.3.1-7a/3 THEN R ELSE N/A
C017	IF A.4.1-1/1 AND (A.4.1-3/1 OR A.4.1-3/2 OR A.4.1-3/3 OR A.4.1-3/5) AND (NOT A.4.3.9-1/2 AND A.4.3.1-7a/2) THEN R ELSE N/A
C017b	IF A.4.1-1/1 AND (A.4.1-3/1 OR A.4.1-3/2 OR A.4.1-3/3 OR A.4.1-3/5) AND (NOT A.4.3.9-1/2 AND A.4.3.1-7a/2) AND A.4.3.2-1/6 THEN R ELSE N/A
C017c	IF A.4.1-1/1 AND (A.4.1-3/1 OR A.4.1-3/2 OR A.4.1-3/3 OR A.4.1-3/5) AND (NOT A.4.3.9-1/2 AND A.4.3.1-7a/2) AND A.4.3.2-1/66 THEN R ELSE N/A
C017d	IF A.4.1-1/1 AND (A.4.1-3/1 OR A.4.1-3/2 OR A.4.1-3/3 OR A.4.1-3/5) AND (NOT A.4.3.9-1/2 AND A.4.3.1-7a/2) AND A.4.3.9-1/3 THEN R ELSE N/A
C017e	IF A.4.1-1/1 AND (A.4.1-3/1 OR A.4.1-3/2 OR A.4.1-3/3 OR A.4.1-3/5) AND (NOT A.4.3.9-1/2 AND A.4.3.1-7a/2) AND A.4.3.2-1/140 THEN R ELSE N/A
C017g	IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-2/7 AND A.4.1-3/1 AND A.4.3.2A.1-1/1 AND (NOT A.4.3.9-1/2 AND (A.4.3.1-7a/2 OR A.4.3.1-7a/3)) THEN R ELSE N/A
C017h	IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-2/7 AND A.4.1-3/1 AND A.4.3.2A.1-1/2 AND (NOT A.4.3.9-1/2 AND (A.4.3.1-7a/2 OR A.4.3.1-7a/3)) THEN R ELSE N/A
C017i	IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-2/7 AND A.4.1-3/1 AND A.4.3.2A.1-1/3 AND (NOT A.4.3.9-1/2 AND (A.4.3.1-7a/2 OR A.4.3.1-7a/3)) THEN R ELSE N/A
C017j	Void
C017k	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.4.3.2-1/242 THEN R ELSE N/A
C017l	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.4.3.2-1/243 THEN R ELSE N/A
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 A.4.3.2-1/9 THEN R ELSE N/A
C019	IF A.4.1-1/2 AND (A.4.1-3/1 OR A.4.1-3/2 OR A.4.1-3/3 OR A.4.1-3/5) AND (NOT A.4.3.9-1/2 AND A.4.3.1-7a/3) THEN R ELSE N/A
C019b	IF A.4.1-1/2 AND (A.4.1-3/1 OR A.4.1-3/2 OR A.4.1-3/3 OR A.4.1-3/5) AND (NOT A.4.3.9-1/2 AND A.4.3.1-7a/3) AND A.4.3.2-1/6 THEN R ELSE N/A
C019c	IF A.4.1-1/2 AND (A.4.1-3/1 OR A.4.1-3/2 OR A.4.1-3/3 OR A.4.1-3/5) AND (NOT A.4.3.9-1/2 AND A.4.3.1-7a/3) AND A.4.3.2-1/66 THEN R ELSE N/A
C019d	IF A.4.1-1/2 AND (A.4.1-3/1 OR A.4.1-3/2 OR A.4.1-3/3 OR A.4.1-3/5) AND (NOT A.4.3.9-1/2 AND (A.4.3.9-4b/38 OR A.4.3.9-4b/41 OR A.4.3.9-4b/48 OR A.4.3.9-4b/77 OR A.4.3.9-4b/78 OR A.4.3.9-4b/79 OR A.4.3.9-4b/34 OR A.4.3.9-4b/39 OR A.4.3.9-4b/40)) AND A.4.3.9-1/3 THEN R ELSE N/A
C019e	IF A.4.1-1/2 AND (A.4.1-3/1 OR A.4.1-3/2 OR A.4.1-3/3 OR A.4.1-3/5) AND (NOT A.4.3.9-1/2 AND A.4.3.1-7a/3) AND A.4.3.2-1/140 THEN R ELSE N/A
C019f	IF A.4.1-1/2 AND (A.4.1-3/1 OR A.4.1-3/2 OR A.4.1-3/3 OR A.4.1-3/5) AND A.4.3.2-1/41 AND A.4.3.2-1/140 AND (NOT A.4.3.9-1/2 AND A.4.3.1-7a/3) THEN R ELSE N/A
C019g	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.4.3.2-1/242 THEN R ELSE N/A
C019h	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.4.3.2-1/243 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.4.1-2/7 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.4.3.6-1/56A 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 A.4.3.2-1/78 THEN R ELSE N/A
C022n	IF (A.4.1-4/4 OR A.4.1-4/5) AND A.4.1-3/2 AND (A.4.3.2-1/130 OR A.4.3.2-1/131) THEN R ELSE N/A
C023	IF A.4.1-4/5 AND A.4.1-3/2 THEN R ELSE N/A
C023a	IF A.4.1-4/5 AND A.4.1-3/2 AND A.4.3.5-1/1 THEN R ELSE N/A
C024	IF A.4.1-1/1 AND A.4.1-2/7 AND A.4.1-3/1 THEN R ELSE N/A
C025	IF ((A.4.1-1/1 AND [10]A.4.1-1/1) OR (A.4.1-1/1 AND [10]A.4.1-1/2) OR (A.4.1-1/2 AND [10]A.4.1-1/1) OR (A.4.1-1/2 AND [10]A.4.1-1/2)) AND A.4.1-3/1 THEN R ELSE N/A
C025a	IF ((A.4.1-1/1 AND [10]A.4.1-1/1) OR (A.4.1-1/1 AND [10]A.4.1-1/2) OR (A.4.1-1/2 AND [10]A.4.1-1/1) OR (A.4.1-1/2 AND [10]A.4.1-1/2)) AND A.4.1-3/1 AND A.4.3.5-1/1 THEN R ELSE N/A
C025b	IF ((A.4.1-1/1 AND [10]A.4.1-1/1) OR (A.4.1-1/1 AND [10]A.4.1-1/2) OR (A.4.1-1/2 AND [10]A.4.1-1/1) OR (A.4.1-1/2 AND [10]A.4.1-1/2)) AND A.4.1-3/1 AND (A.4.3.11-1/1 OR A.4.3.11-1/4) THEN R ELSE N/A
C025c	IF ((A.4.1-1/1 AND [10]A.4.1-1/1) OR (A.4.1-1/1 AND [10]A.4.1-1/2) OR (A.4.1-1/2 AND [10]A.4.1-1/1) OR (A.4.1-1/2 AND [10]A.4.1-1/2)) AND A.4.1-3/1 AND A.4.3.5-1/1 AND (A.4.3.11-1/1 OR A.4.3.11-1/4) THEN R ELSE N/A
C025d	IF ((A.4.1-1/1 AND [10]A.4.1-1/1) OR (A.4.1-1/1 AND [10]A.4.1-1/2) OR (A.4.1-1/2 AND [10]A.4.1-1/1) OR (A.4.1-1/2 AND [10]A.4.1-1/2)) AND A.4.1-3/1 AND A.4.3.11-1/5 THEN R ELSE N/A
C025e	IF ((A.4.1-1/1 AND [10]A.4.1-1/1) OR (A.4.1-1/1 AND [10]A.4.1-1/2) OR (A.4.1-1/2 AND [10]A.4.1-1/1) OR (A.4.1-1/2 AND [10]A.4.1-1/2)) AND A.4.1-3/1 AND A.4.3.5-1/1 AND A.4.3.11-1/5 THEN R ELSE N/A
C025f	IF ((A.4.1-1/1 AND [10]A.4.1-1/1) OR (A.4.1-1/1 AND [10]A.4.1-1/2) OR (A.4.1-1/2 AND [10]A.4.1-1/1) OR (A.4.1-1/2 AND [10]A.4.1-1/2)) AND A.4.1-3/1 AND A.4.1-2/7 AND A.4.3.6-1/61 THEN R ELSE N/A
C025g	IF ((A.4.1-1/1 AND [10]A.4.1-1/1) OR (A.4.1-1/1 AND [10]A.4.1-1/2) OR (A.4.1-1/2 AND [10]A.4.1-1/1) OR (A.4.1-1/2 AND [10]A.4.1-1/2)) AND A.4.1-3/1 AND A.4.1-2/8 AND A.4.3.6-1/62 THEN R ELSE N/A
C026	IF (A.4.1-4/1 OR A.4.1-4/2 OR A.4.1-4/3 OR A.4.1-4/5) AND A.4.1-3/2 AND A.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 A.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 A.4.3.2-1/9 THEN R ELSE N/A
C030	IF (A.4.1-4/1 OR A.4.1-4/2 OR A.4.1-4/3 OR A.4.1-4/5) AND A.4.1-3/2 AND A.4.3.2-1/9 THEN R ELSE N/A
C030a	IF (A.4.1-4/4 OR A.4.1-4/5) AND A.4.1-3/2 AND A.4.3.2-1/9 THEN R ELSE N/A
C031	IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-2/7 AND A.4.1-3/1 AND (A.4.1-4A/1 OR A.4.1-4A/2 OR A.4.1-4A/5) AND A.4.3.2A.1-1/1 THEN R ELSE N/A
C031a	IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-2/7 AND A.4.1-3/1 AND (A.4.1-4A/1 OR A.4.1-4A/2 OR A.4.1-4A/5) AND A.4.3.2A.1-1/1 AND A.4.3.6-1/54 THEN R ELSE N/A
C031b	IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-2/7 AND A.4.1-3/3 AND A.4.1-4/7 AND A.4.3.6-1/55 THEN R ELSE N/A
C031c	IF A.4.1-1/2 AND A.4.1-2/8 AND A.4.1-3/1 AND A.4.1-4A/6 AND A.4.3.2A.1-1/1 THEN R ELSE N/A
C031d	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.4.3.2-1/157 THEN R ELSE N/A
C031e	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 AND A.4.3.2-1/245 THEN R ELSE N/A
C031f	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.4.3.2-1/246 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
C034a	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 AND A.4.3.7-1/65 THEN R ELSE N/A
C035	IF (A.4.1-4/1 OR A.4.1-4/2 OR A.4.1-4/3 OR A.4.1-4/5) AND A.4.1-3/2 AND A.4.3.6-1/6 THEN R ELSE N/A

C036	IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-2/7 AND A.4.1-3/1 AND (A.4.1-4A/1 OR A.4.1-4A/2 OR A.4.1-4A/5) AND A.4.3.2A.1-1/3 THEN R ELSE N/A
C037	IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-2/7 AND A.4.1-3/1 AND A.4.3.6-1/41 THEN R ELSE N/A
C037a	IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-2/7 AND A.4.1-3/1 AND A.4.3.6-1/41 AND A.4.3.5-1/1 THEN R ELSE N/A
C037b	IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-2/7 AND A.4.1-3/1 AND A.4.3.6-1/41 AND A.4.3.5-1/1 AND A.4.3.6-1/79 THEN R ELSE N/A
C037c	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.4.3.7-1/6 THEN R ELSE N/A
C038	IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-2/7 AND A.4.1-3/2 AND (A.4.1-4/1 OR A.4.1-4/2 OR A.4.1-4/3 OR A.4.1-4/5) AND A.4.3.6-1/41 THEN R ELSE N/A
C038a	IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-2/7 AND A.4.1-3/2 AND (A.4.1-4/1 OR A.4.1-4/2 OR A.4.1-4/3 OR A.4.1-4/5) AND A.4.3.6-1/41 AND A.4.3.5-1/1 THEN R ELSE N/A
C039	IF A.4.1-1/1 AND A.4.1-2/7 AND A.4.1-3/1 AND (A.4.1-4A/1 OR A.4.1-4A/2 OR A.4.1-4/5 OR A.4.1-4/7) AND A.4.1-5/1 AND A.4.3.6-1/41 THEN R ELSE N/A
C040	IF A.4.1-1/1 AND A.4.1-2/7 AND A.4.1-3/2 AND (A.4.1-4/1 OR A.4.1-4/2 OR A.4.1-4/3 OR A.4.1-4/5) AND A.4.3.6-1/41 THEN R ELSE N/A
C041	IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-2/7 AND A.4.1-3/1 AND A.4.1-5/1 AND A.4.3.2-1/34 AND A.4.3.6-1/41 THEN R ELSE N/A
C041a	IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-2/7 AND A.4.1-3/1 AND A.4.1-5/1 AND A.4.3.2-1/34 AND A.4.3.6-1/41 AND A.4.3.5-1/1 THEN R ELSE N/A
C041b	IF A.4.1-1/1 AND A.4.1-2/7 AND A.4.1-3/1 AND A.4.1-5/1 AND A.4.3.2-1/34 AND A.4.3.6-1/41 AND A.4.3.5-1/1 THEN R ELSE N/A
C042	IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-2/7 AND A.4.1-3/2 AND (A.4.1-4/1 OR A.4.1-4/2 OR A.4.1-4/3 OR A.4.1-4/5) AND A.4.3.2-1/34 AND A.4.3.6-1/41 THEN R ELSE N/A
C042a	IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-2/7 AND A.4.1-3/2 AND (A.4.1-4/1 OR A.4.1-4/2 OR A.4.1-4/3 OR A.4.1-4/5) AND A.4.3.2-1/34 AND A.4.3.6-1/41 AND A.4.3.5-1/1 THEN R ELSE N/A
C042b	IF A.4.1-1/1 AND A.4.1-2/7 AND A.4.1-3/2 AND (A.4.1-4/1 OR A.4.1-4/2 OR A.4.1-4/3 OR A.4.1-4/5) AND A.4.3.2-1/34 AND A.4.3.6-1/41 AND A.4.3.5-1/1 THEN R ELSE N/A
C043	IF (A.4.1-4/1 OR A.4.1-4/2 OR A.4.1-4/3 OR A.4.1-4/5) AND A.4.1-3/2 AND (A.4.3.6-1/43 OR A.4.3.6-1/44) THEN R ELSE N/A
C043a	IF (A.4.1-4/4 OR A.4.1-4/5) AND A.4.1-3/2 AND A.4.3.2-1/34 AND A.4.3.6-1/41a AND A.4.3.5-1/1 THEN R ELSE N/A
C044	IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-2/7 AND A.4.1-3/1 AND A.4.3.6-1/42 THEN R ELSE N/A
C045	IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-3/2 AND A.4.3.2B.2.0-1/2 AND (A.4.1-4/1 OR A.4.1-4/2 OR A.4.1-4/3) THEN R ELSE N/A
C046	IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-3/2 AND A.4.3.2B.2.0-1/3 AND (A.4.1-4/1 OR A.4.1-4/2 OR A.4.1-4/3) THEN R ELSE N/A
C047	IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-3/2 AND A.4.3.2B.2.0-1/4 AND (A.4.1-4/1 OR A.4.1-4/2 OR A.4.1-4/3) THEN R ELSE N/A
C048	IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-3/2 AND A.4.3.2B.2.0-1/2 AND A.4.1-4/1 THEN R ELSE N/A
C049	IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-3/2 AND A.4.3.2B.2.0-1/3 AND A.4.1-4/1 THEN R ELSE N/A
C050	IF A.4.1-1/2 AND A.4.1-2/7 AND A.4.1-3/1 AND A.4.3.1-7/3 AND A.4.3.2-1/36 THEN R ELSE N/A
C051	IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-2/7 AND A.4.1-3/1 AND A.4.1-4A/5 AND A.4.3.2A.1-2/1 AND A.4.3.2-1/37 THEN R ELSE N/A
C051a	IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-2/7 AND A.4.1-3/1 AND A.4.1-4A/5 AND A.4.3.2A.1-2/1 AND A.4.3.2-1/37 AND A.4.3.6-1/80 THEN R ELSE N/A
C051b	IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-2/7 AND A.4.1-3/1 AND A.4.1-4A/5 AND A.4.3.2A.1-2/1 AND A.4.3.2-1/127 THEN R ELSE N/A
C051c	IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-2/7 AND A.4.1-3/1 AND A.4.1-4A/5 AND A.4.3.2A.1-2/1 AND A.4.3.2-1/127 AND A.4.3.6-1/80 THEN R ELSE N/A
C051d	IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-2/7 AND A.4.1-3/1 AND (A.4.1-4A/1 OR A.4.1-4A/5) AND A.4.3.2A.1-2/2 AND A.4.3.2-1/37 THEN R ELSE N/A
C051e	IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-2/7 AND A.4.1-3/1 AND (A.4.1-4A/1 OR A.4.1-4A/5) AND A.4.3.2A.1-2/2 AND A.4.3.2-1/37 AND A.4.3.6-1/80 THEN R ELSE N/A
C051f	IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-2/7 AND A.4.1-3/1 AND (A.4.1-4A/1 OR A.4.1-4A/5) AND A.4.3.2A.1-2/2 AND A.4.3.2-1/127 THEN R ELSE N/A
C051g	IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-2/7 AND A.4.1-3/1 AND (A.4.1-4A/1 OR A.4.1-4A/5) AND A.4.3.2A.1-2/2 AND A.4.3.2-1/127 AND A.4.3.6-1/80 THEN R ELSE N/A
C052	IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-2/7 AND A.4.1-3/1 AND (A.4.3.11-1/1 OR A.4.3.11-1/3) THEN R ELSE N/A
C052a	IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-2/7 AND A.4.1-3/1 AND A.4.3.11-1/8 THEN R ELSE N/A
C052b	IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-2/7 AND A.4.1-3/1 AND A.4.3.11-1/6 THEN R ELSE N/A
C052c	IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-2/7 AND A.4.1-3/1 AND A.4.3.11-1/7 THEN R ELSE N/A
C053	IF A.4.1-1/2 AND A.4.1-2/8 AND A.4.1-3/1 AND (A.4.1-4A/3 OR A.4.1-4A/4) AND A.4.3.2A.1-2/1 THEN R ELSE N/A

C054	IF A.4.1-1/2 AND A.4.1-2/8 AND A.4.1-3/1 AND (A.4.1-4A/3 OR A.4.1-4A/4) AND A.4.3.2A.1-2/2 THEN R ELSE N/A
C055	IF A.4.1-1/2 AND A.4.1-2/8 AND A.4.1-3/1 AND (A.4.1-4A/3 OR A.4.1-4A/4) AND A.4.3.2A.1-2/3 THEN R ELSE N/A
C056	IF A.4.1-1/2 AND A.4.1-2/8 AND A.4.1-3/1 AND (A.4.1-4A/3 OR A.4.1-4A/4) AND A.4.3.2A.1-2/4 THEN R ELSE N/A
C057	IF A.4.1-1/2 AND A.4.1-2/8 AND A.4.1-3/1 AND (A.4.1-4A/3 OR A.4.1-4A/4) AND A.4.3.2A.1-2/5 THEN R ELSE N/A
C058	IF A.4.1-1/2 AND A.4.1-2/8 AND A.4.1-3/1 AND (A.4.1-4A/3 OR A.4.1-4A/4) AND A.4.3.2A.1-2/6 THEN R ELSE N/A
C059	IF A.4.1-1/2 AND A.4.1-2/8 AND A.4.1-3/1 AND (A.4.1-4A/3 OR A.4.1-4A/4) AND A.4.3.2A.1-2/7 THEN R ELSE N/A
C060	IF A.4.1-1/2 AND A.4.1-2/8 AND A.4.1-3/1 AND A.4.3.2-1/14B 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.1-1/1 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.1-1/2 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
C066f	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.4.3.7-1/65 THEN R ELSE N/A
C066g	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.4.3.7-1/65 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
C067a	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.4.3.2-1/157 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
C068a	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 AND A.4.3.2-1/158 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 A.4.3.1-7a/1 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 A.4.3.1-7a/1 AND NOT A.4.3.1-7a/3 THEN R ELSE N/A

C072	IF A.4.1-1/1 AND (A.4.1-3/1 OR A.4.1-3/2 OR A.4.1-3/3 OR A.4.1-3/5) AND A.4.3.2-1/41 AND (NOT A.4.3.9-1/2 AND A.4.3.1-7a/2) THEN R ELSE N/A
C073	IF A.4.1-1/2 AND (A.4.1-3/1 OR A.4.1-3/2 OR A.4.1-3/3 OR A.4.1-3/5) AND A.4.3.2-1/41 AND A.4.3.1-7a/3 THEN R ELSE N/A
C074	IF A.4.1-1/1 AND (A.4.1-3/1 OR A.4.1-3/2 OR A.4.1-3/3 OR A.4.1-3/5) AND A.4.3.2-1/39 AND A.4.3.2-1/40 AND A.4.3.1-7a/1 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 A.4.3.1-7a/1 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 AND A.4.3.2E.1-1/2 THEN R ELSE N/A
C079b	IF A.4.1-1/3 AND A.4.1-2/7 AND A.4.3.10-1/25 THEN R ELSE N/A
C079c	IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-1/3 AND A.4.1-2/7 AND (A.4.3.2E.1-1/2 OR A.4.3.2E.1-1/3) THEN R ELSE N/A
C079d	IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-1/3 AND A.4.1-2/7 AND A.4.3.2E.1-1/3 THEN R ELSE N/A
C079e	IF (((A.4.1-1/1 OR A.4.1-1/2) AND [10]A.4.1-1/10) OR (([10]A.4.1-1/1 OR [10]A.4.1-1/2) AND A.4.1-1/3)) AND A.4.1-2/7 AND A.4.3.2E.1-1/5 THEN R ELSE N/A
C080	IF ([10]A.4.1-1/1 OR [10]A.4.1-1/2) AND A.4.1-1/2 AND A.4.1-2/8 THEN R ELSE N/A
C080a	IF ([10]A.4.1-1/1 OR [10]A.4.1-1/2) AND A.4.1-1/2 AND A.4.1-2/8 AND A.4.3.5-1/1 THEN R ELSE N/A
C081	IF ([10]A.4.1-1/1 OR [10]A.4.1-1/2) AND (A.4.1-3/2 OR A.4.1-3/5) AND (A.4.3.6-1/46 OR A.4.3.6-1/47) THEN R ELSE N/A
C081a	IF ([10]A.4.1-1/1 OR [10]A.4.1-1/2) AND (A.4.1-3/2 OR A.4.1-3/5) AND ([10]A.4.4-1a/5 OR [10]A.4.4-1b/5) AND (A.4.3.6-1/46 OR A.4.3.6-1/47) THEN R ELSE N/A
C082	IF (A.4.1-4/1 OR A.4.1-4/2 OR A.4.1-4/3 OR A.4.1-4/5) AND A.4.1-3/2 AND A.4.3.2-1/63 AND A.4.3.2-1/65 THEN R ELSE N/A
C082a	IF (A.4.1-4/1 OR A.4.1-4/2 OR A.4.1-4/3 OR A.4.1-4/5) AND A.4.1-3/2 AND A.4.3.2-1/63 AND A.4.3.2-1/65 AND A.4.3.5-1/1 THEN R ELSE N/A
C082b	IF (A.4.1-4/1 OR A.4.1-4/2 OR A.4.1-4/3 OR A.4.1-4/5) AND A.4.1-3/2 AND A.4.3.2-1/63 AND A.4.3.2-1/65 AND A.4.3.2-1/139 THEN R ELSE N/A
C083	IF (A.4.1-4/1 OR A.4.1-4/2 OR A.4.1-4/3 OR A.4.1-4/5) AND A.4.1-3/2 AND A.4.3.6-1/41 AND A.4.3.2-1/64 AND A.4.3.2-1/65 THEN R ELSE N/A
C083a	IF (A.4.1-4/1 OR A.4.1-4/2 OR A.4.1-4/3 OR A.4.1-4/5) AND A.4.1-3/2 AND A.4.3.6-1/41 AND A.4.3.2-1/64 AND A.4.3.2-1/65 AND A.4.3.5-1/1 THEN R ELSE N/A
C084	IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-2/7 AND A.4.1-3/1 AND A.4.3.2-1/63 AND A.4.3.2-1/65 THEN R ELSE N/A
C084a	IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-2/7 AND A.4.1-3/1 AND A.4.3.2-1/63 AND A.4.3.2-1/65 AND A.4.3.5-1/1 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
C085b	IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-2/7 AND A.4.1-3/1 AND A.4.3.6-1/41 AND A.4.3.2-1/64 AND A.4.3.2-1/65 AND A.4.3.5-1/1 AND A.4.3.2-1/139 THEN R ELSE N/A
C086	IF ((A.4.1-1/1 AND [10]A.4.1-1/1) OR (A.4.1-1/1 AND [10]A.4.1-1/2) OR (A.4.1-1/2 AND [10]A.4.1-1/1) OR (A.4.1-1/2 AND [10]A.4.1-1/2)) AND A.4.1-2/7 THEN R ELSE N/A
C086a	IF ((A.4.1-1/1 AND [10]A.4.1-1/1) OR (A.4.1-1/1 AND [10]A.4.1-1/2) OR (A.4.1-1/2 AND [10]A.4.1-1/1) OR (A.4.1-1/2 AND [10]A.4.1-1/2)) AND A.4.1-2/7 AND A.4.3.5-1/1 THEN R ELSE N/A
C086b	IF ((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.4.1-2/6 AND A.4.1-2/7 AND (A.4.3.2-2/10 OR A.4.3.2-2/11) THEN R ELSE N/A
C086c	IF ((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.4.1-2/6 AND A.4.1-2/7 AND (A.4.3.2-2/10 OR A.4.3.2-2/11) AND A.4.3.5-1/1 THEN R ELSE N/A
C086d	IF ((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.4.1-2/6 AND (A.4.3.2-2/10 OR A.4.3.2-2/11) AND A.4.3.6-1/47 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 A.4.3.1-7a/1 AND (NOT A.4.3.9-1/2 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.4.1-1/2 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.4.3.1-7a/1 AND (NOT A.4.3.9-1/2 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
C090	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
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 AND [10]A.4.1-1/3) OR (A.4.1-1/2 AND [10]A.4.1-1/3)) AND A.4.1-2/7 AND A.4.1-3/1 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
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 A.4.3.1-7a/1 AND NOT A.4.3.1-7a/2 THEN R ELSE N/A
C099a	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.4.3.11-1/2 AND A.4.3.1-7a/1 AND NOT A.4.3.1-7a/3 THEN R ELSE N/A
C100	IF A.4.1-1/3 AND A.4.1-2/7 AND A.4.3.10-1/3 THEN R ELSE N/A
C101	IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-2/7 AND A.4.1-3/1 AND A.4.3.8-1/9 THEN R ELSE N/A
C102	IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-2/7 AND A.4.1-3/1 AND A.4.3.8-1/16 THEN R ELSE N/A
C103	IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-2/7 AND A.4.1-2/8 AND A.4.1-3/1 AND A.4.3.8-1/15 AND A.4.3.8-1/18 THEN R ELSE N/A
C104	IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-2/7 AND A.4.1-2/8 AND A.4.1-3/1 AND A.4.3.8-1/17 AND A.4.3.8-1/18 THEN R ELSE N/A
C105	IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-2/7 AND A.4.1-3/1 AND A.4.3.8-1/11 THEN R ELSE N/A
C105a	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.4.3.2-1/207 THEN R ELSE N/A
C105b	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 AND A.4.3.8-1/26 AND A.4.3.6-1/76 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
C106a	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 AND A.4.3.2-1/207 THEN R ELSE N/A
C107	IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-2/7 AND A.4.1-3/1 AND A.4.3.8-1/15 THEN R ELSE N/A
C108	IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-2/7 AND A.4.1-3/1 AND A.4.3.8-1/17 THEN R ELSE N/A
C109	IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-2/7 AND A.4.1-3/1 AND A.4.3.8-1/15 AND A.4.3.8-1/18 THEN R ELSE N/A
C110	IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-2/7 AND A.4.1-3/1 AND A.4.3.8-1/17 AND A.4.3.8-1/18 THEN R ELSE N/A
C111	IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-2/7 AND A.4.1-3/1 AND A.4.3.2-1/31 AND A.4.3.2-1/57 THEN R ELSE N/A
C111a	IF A.4.1-1/1 AND A.4.1-2/9 AND A.4.1-3/1 AND A.4.4-1/17 AND A.4.3.2-1/31 AND A.4.3.2-1/57 THEN R ELSE N/A
C112	IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-2/7 AND A.4.1-3/1 AND A.4.3.2-1/31 AND A.4.3.2-1/57 AND (A.4.1-2/3 OR A.4.1-2/5) THEN R ELSE N/A
C113	IF A.4.1-1/1 AND (A.4.1-3/1 OR A.4.1-3/2 OR A.4.1-3/3 OR A.4.1-3/5) AND A.4.3.2-1/53 AND A.4.3.2-1/56 AND A.4.3.1-7a/1 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 A.4.3.1-7a/1 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 NOT A.4.3.9-1/2 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 A.4.3.1-7a/1 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 A.4.3.1-7a/1 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 NOT A.4.3.9-1/2 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 A.4.3.1-7a/1 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 A.4.3.1-7a/1 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 NOT A.4.3.9-1/2 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 A.4.3.1-7a/1 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 A.4.3.1-7a/1 AND NOT A.4.3.1-7a/3 THEN R ELSE N/A
C118	IF A.4.1-1/1 AND (A.4.1-3/1 OR A.4.1-3/2 OR A.4.1-3/3 OR A.4.1-3/5) AND A.4.3.2-1/61 AND (NOT A.4.3.9-1/2 AND A.4.3.1-7a/2) THEN R ELSE N/A
C119	IF A.4.1-1/2 AND (A.4.1-3/1 OR A.4.1-3/2 OR A.4.1-3/3 OR A.4.1-3/5) AND A.4.3.2-1/61 AND A.4.3.1-7a/3 THEN R ELSE N/A
C120	IF A.4.1-1/1 AND (A.4.1-3/1 OR A.4.1-3/2 OR A.4.1-3/3 OR A.4.1-3/5) AND A.4.3.2-1/12 AND A.4.3.2-1/39 AND A.4.3.1-7a/1 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 A.4.3.1-7a/1 AND NOT A.4.3.1-7a/2 THEN R ELSE N/A
C122	IF A.4.1-1/2 AND (A.4.1-3/1 OR A.4.1-3/2 OR A.4.1-3/3 OR A.4.1-3/5) AND A.4.3.2-1/12 AND A.4.3.2-1/39 AND A.4.3.1-7a/1 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 A.4.3.1-7a/1 AND NOT A.4.3.1-7a/3 THEN R ELSE N/A
C124	IF A.4.1-1/1 AND (A.4.1-3/1 OR A.4.1-3/2 OR A.4.1-3/3 OR A.4.1-3/5) AND A.4.3.2-1/12 AND A.4.3.2-1/39 AND (NOT A.4.3.9-1/2 AND A.4.3.1-7a/2) THEN R ELSE N/A
C125	IF A.4.1-1/2 AND (A.4.1-3/1 OR A.4.1-3/2 OR A.4.1-3/3 OR A.4.1-3/5) AND A.4.3.2-1/12 AND A.4.3.2-1/39 AND A.4.3.1-7a/3 THEN R ELSE N/A
C126	IF A.4.1-1/2 AND A.4.1-2/8 AND (A.4.1-3/1 OR A.4.1-3/2 OR A.4.1-3/3 OR A.4.1-3/5) AND A.4.3.2-1/3 THEN R ELSE N/A
C126a	IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-2/7 AND A.4.1-3/2 AND A.4.1-4/3 AND A.4.3.2B.2.0-2A/1 AND A.4.3.2-1/37 THEN R ELSE N/A
C127	IF A.4.1-1/1 AND (A.4.1-3/1 OR A.4.1-3/2 OR A.4.1-3/3 OR A.4.1-3/5) AND A.4.3.11-1/2 AND (NOT A.4.3.9-1/2 AND A.4.3.1-7a/2) THEN R ELSE N/A
C127a	IF (A.4.1-1/1 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.4.3.2A.1-1/1 AND A.4.3.11-1/12 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 A.4.3.1-7a/1 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 A.4.3.1-7a/1 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
C132a	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 AND A.4.3.7-1/65 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
C133a	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 AND A.4.3.7-1/65 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
C134a	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 AND A.4.3.7-1/65 THEN R ELSE N/A
C135	IF (A.4.1-4/1 OR A.4.1-4/2 OR A.4.1-4/3) AND A.4.1-3/2 AND A.4.3.2-1/71 AND A.4.3.2-1/76 THEN R ELSE N/A
C136	IF (A.4.1-4/1 OR A.4.1-4/2 OR A.4.1-4/3) AND A.4.1-3/2 AND A.4.3.2-1/73 THEN R ELSE N/A
C137	IF (A.4.1-4/1 OR A.4.1-4/2 OR A.4.1-4/3) AND A.4.1-3/2 AND A.4.3.2-1/71 AND A.4.3.2-1/75 THEN R ELSE N/A
C138	IF A.4.1-1/2 AND A.4.1-2/8 AND A.4.1-3/1 AND A.4.3.2-1/71 AND A.4.3.2-1/76 THEN R ELSE N/A
C139	IF A.4.1-1/2 AND A.4.1-2/8 AND A.4.1-3/1 AND A.4.3.2-1/74 THEN R ELSE N/A
C140	IF A.4.1-1/2 AND A.4.1-2/8 AND A.4.1-3/1 AND A.4.3.2-1/71 AND A.4.3.2-1/72 THEN R ELSE N/A
C141	IF (A.4.1-1/1 OR A.4.1-1/2) AND (A.4.1-4/1 OR A.4.1-4/2 OR A.4.1-4/3) AND A.4.1-3/2 AND A.4.3.2-1/71 AND A.4.3.2-1/76 THEN R ELSE N/A
C141a	IF (A.4.1-1/1 OR A.4.1-1/2) AND (A.4.1-4/4 OR A.4.1-4/5) AND A.4.1-3/2 AND A.4.3.5-1/1 AND A.4.3.2-1/71 AND A.4.3.2-1/76 THEN R ELSE N/A
C141b	IF (A.4.1-1/1 OR A.4.1-1/2) AND (A.4.1-4/4 OR A.4.1-4/5) AND A.4.1-3/2 AND A.4.3.2-1/71 AND A.4.3.2-1/76 THEN R ELSE N/A
C142	IF (A.4.1-1/1 OR A.4.1-1/2) AND (A.4.1-4/1 OR A.4.1-4/2 OR A.4.1-4/3) AND A.4.1-3/2 AND A.4.3.5-1/1 AND A.4.3.2-1/73 THEN R ELSE N/A

C142a	IF (A.4.1-1/1 OR A.4.1-1/2) AND (A.4.1-4/4 OR A.4.1-4/5) AND A.4.1-3/2 AND A.4.3.2-1/74 THEN R ELSE N/A
C143	IF (A.4.1-1/1 OR A.4.1-1/2) AND (A.4.1-4/1 OR A.4.1-4/2 OR A.4.1-4/3) AND A.4.1-3/2 AND A.4.3.5-1/1 AND A.4.3.2-1/71 AND A.4.3.2-1/75 THEN R ELSE N/A
C143a	IF (A.4.1-1/1 OR A.4.1-1/2) AND (A.4.1-4/4 OR A.4.1-4/5) AND A.4.1-3/2 AND A.4.3.2-1/71 AND A.4.3.2-1/75 THEN R ELSE N/A
C144	IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-2/7 AND A.4.1-3/1 AND A.4.3.5-1/1 AND A.4.3.2-1/71 AND A.4.3.2-1/76 THEN R ELSE N/A
C144a	IF A.4.1-1/2 AND A.4.1-2/8 AND A.4.1-3/1 AND A.4.3.2-1/71 AND A.4.3.2-1/76 THEN R ELSE N/A
C145	IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-2/7 AND A.4.1-3/1 AND A.4.3.2-1/74 THEN R ELSE N/A
C145a	IF A.4.1-1/2 AND A.4.1-2/8 AND A.4.1-3/1 AND A.4.3.5-1/1 AND A.4.3.2-1/73 THEN R ELSE N/A
C146	IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-2/7 AND A.4.1-3/1 AND A.4.3.2-1/71 AND A.4.3.2-1/72 THEN R ELSE N/A
C146a	IF A.4.1-1/1 AND A.4.1-2/8 AND A.4.1-3/1 AND A.4.3.5-1/1 AND A.4.3.2-1/71 AND A.4.3.2-1/75 THEN R ELSE N/A
C147	IF A.4.1-1/2 AND A.4.1-2/8 AND A.4.1-3/1 AND A.4.3.2-1/64 AND A.4.3.2-1/77 THEN R ELSE N/A
C148	IF A.4.1-1/2 AND A.4.1-2/8 AND A.4.1-3/1 AND A.4.3.5-1/1 AND A.4.3.2-1/64 AND A.4.3.2-1/77 THEN R ELSE N/A
C148a	IF A.4.1-1/2 AND A.4.1-2/8 AND A.4.1-3/1 AND A.4.3.5-1/1 AND A.4.3.2-1/64 AND A.4.3.2-1/77 AND A.4.3.2-1/139 THEN R ELSE N/A
C149	IF (A.4.1-4/4 OR A.4.1-4/5) AND A.4.1-3/2 AND A.4.3.2-1/64 AND A.4.3.2-1/77 THEN R ELSE N/A
C150	IF (A.4.1-4/4 OR A.4.1-4/5) AND A.4.1-3/2 AND A.4.3.5-1/1 AND A.4.3.2-1/64 AND A.4.3.2-1/77 THEN R ELSE N/A
C151	Void
C152	Void
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.4.3.2A.1-1/1 AND A.4.3.11-1/12 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	Void
C154	Void
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 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
C159a	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.4.3.7-1/65 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
C162a	IF (A.4.1-4/4 OR A.4.1-4/5) AND A.4.1-3/2 AND A.4.3.6-1/41a AND A.4.3.5-1/1 AND A.4.3.2-1/139 THEN R ELSE N/A
C163	IF (A.4.1-4/4 OR A.4.1-4/5) AND A.4.1-3/2 AND A.4.3.6-1/41a AND A.4.3.2-1/34 THEN R ELSE N/A
C164	IF A.4.1-1/2 AND A.4.1-2/8 AND A.4.1-3/1 AND A.4.3.6-1/41a THEN R ELSE N/A
C165	IF A.4.1-1/2 AND A.4.1-2/8 AND A.4.1-3/1 AND A.4.3.6-1/41a AND A.4.3.5-1/1 THEN R ELSE N/A
C166	IF A.4.1-1/2 AND A.4.1-2/8 AND A.4.1-3/1 AND A.4.3.6-1/41a AND A.4.3.2-1/34 THEN R ELSE N/A
C167	IF A.4.1-1/2 AND A.4.1-2/8 AND A.4.1-3/1 AND A.4.3.6-1/41a AND A.4.3.6-1/41a AND A.4.3.2-1/34 THEN R ELSE N/A
C168	IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-2/7 AND A.4.1-3/1 AND A.4.3.6-1/42 THEN R ELSE N/A
C169	IF A.4.1-1/1 AND (A.4.1-3/1 OR A.4.1-3/2 OR A.4.1-3/3 OR A.4.1-3/5) AND A.4.3.2-1/62 AND (NOT A.4.3.9-1/2 AND A.4.3.1-7a/2) THEN R ELSE N/A
C170	IF A.4.1-1/2 AND (A.4.1-3/1 OR A.4.1-3/2 OR A.4.1-3/3 OR A.4.1-3/5) AND A.4.3.2-1/62 AND (NOT A.4.3.9-1/2 AND A.4.3.1-7a/3) THEN R ELSE N/A
C171	IF A.4.1-1/2 AND A.4.1-2/8 AND (A.4.1-3/1 OR A.4.1-3/2 OR A.4.1-3/3 OR A.4.1-3/5) AND A.4.3.2-1/12 AND A.4.3.2-1/39 THEN R ELSE N/A
C172	IF A.4.1-1/2 AND A.4.1-2/8 AND (A.4.1-3/1 OR A.4.1-3/2 OR A.4.1-3/3 OR A.4.1-3/5) AND A.4.3.2-1/6 THEN R ELSE N/A
C173	IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-2/7 AND A.4.1-3/1 AND A.4.3.2-1/64 AND A.4.3.2-1/65 AND A.4.3.2-1/77 THEN R ELSE N/A

C174	IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-2/7 AND A.4.1-3/1 AND A.4.3.5-1/1 AND A.4.3.2-1/64 AND A.4.3.2-1/65 AND A.4.3.2-1/77 THEN R ELSE N/A
C175	IF (A.4.1-4/1 OR A.4.1-4/2 OR A.4.1-4/3 OR A.4.1-4/5) AND A.4.1-3/2 AND A.4.3.2-1/64 AND A.4.3.2-1/65 AND A.4.3.2-1/77 THEN R ELSE N/A
C175a	IF (A.4.1-4/1 OR A.4.1-4/2 OR A.4.1-4/3 OR A.4.1-4/5) AND A.4.1-3/2 AND A.4.3.2-1/64 AND A.4.3.2-1/65 AND A.4.3.2-1/77 AND A.4.3.2-1/139 THEN R ELSE N/A
C176	IF (A.4.1-4/1 OR A.4.1-4/2 OR A.4.1-4/3 OR A.4.1-4/5) AND A.4.1-3/2 AND A.4.3.5-1/1 AND A.4.3.2-1/64 AND A.4.3.2-1/65 AND A.4.3.2-1/77 THEN R ELSE N/A
C177	IF (A.4.1-1/1 OR A.4.1-1/2 OR A.4.3.12-1/5) AND A.4.1-2/7 AND A.4.1-3/1 AND A.4.3.12-1/2 THEN R ELSE N/A
C177a	IF A.4.1-1/1 AND A.4.1-2/7 AND A.4.1-3/1 AND A.4.3.12-1/2 AND A.4.3.1-7a/4 THEN R ELSE N/A
C177b	IF A.4.1-1/1 AND A.4.1-2/7 AND A.4.1-3/1 AND A.4.3.12-1/2 AND A.4.3.1-7a/1 THEN R ELSE N/A
C177c	IF A.4.1-1/2 AND A.4.1-2/7 AND A.4.1-3/1 AND A.4.3.12-1/2 AND A.4.3.1-7a/4 THEN R ELSE N/A
C177d	IF A.4.1-1/2 AND A.4.1-2/7 AND A.4.1-3/1 AND A.4.3.12-1/2 AND A.4.3.1-7a/1 THEN R ELSE N/A
C178	IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-2/7 AND A.4.1-3/1 AND (A.4.1-2/3 OR A.4.1-2/5) AND A.4.3.2-1/37 THEN R ELSE N/A
C178a	IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-2/7 AND A.4.1-3/1 AND (A.4.1-2/3 OR A.4.1-2/5) AND A.4.3.2-1/127 THEN R ELSE N/A
C178b	IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-2/7 AND A.4.1-3/1 AND (A.4.1-2/3 OR A.4.1-2/5) AND A.4.1-4A/1 AND A.4.3.2-1/37 THEN R ELSE N/A
C178c	IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-2/7 AND A.4.1-3/1 AND (A.4.1-2/3 OR A.4.1-2/5) AND A.4.1-4A/1 AND A.4.3.2-1/127 THEN R ELSE N/A
C179	IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-2/7 AND A.4.1-3/1 AND (A.4.1-2/3 OR A.4.1-2/5) AND (A.4.3.2-1/14B) 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.4.3.2-1/14B THEN R ELSE N/A
C179b	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.4.3.2-1/58 OR A.4.3.2-1/59 OR (A.4.3.2-1/232 AND A.4.3.2-1/233)) 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 OR A.4.3.12A-1/1) 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 OR A.4.3.12A-1/1) 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 OR A.4.3.12A-1/1) AND A.4.3.1-7a/4 THEN R ELSE N/A
C183a	IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-2/7 AND A.4.1-3/1 AND (A.4.3.12-1/2 OR A.4.3.12A-1/1) AND A.4.3.1-7a/4 AND A.4.3.6-1/114 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 OR A.4.3.12A-1/1) AND A.4.3.1-7a/1 THEN R ELSE N/A
C184a	IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-2/7 AND A.4.1-3/1 AND (A.4.3.12-1/2 OR A.4.3.12A-1/1) AND A.4.3.1-7a/1 AND A.4.3.6-1/114 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 OR A.4.3.12A-1/1) 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 OR A.4.3.12A-1/1) 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 OR A.4.3.12A-1/1) AND A.4.3.1-7a/4 THEN R ELSE N/A
C190	IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-2/7 AND A.4.1-3/1 AND A.4.3.5-1/1 AND (A.4.3.12-1/2 OR A.4.3.12A-1/1) 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 OR A.4.3.12A-1/1) 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 OR A.4.3.12A-1/1) 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 OR A.4.3.12A-1/1) 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 OR A.4.3.12A-1/1) 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 OR A.4.3.12A-1/1) AND A.4.3.1-7a/4 THEN R ELSE N/A

[illegible]

C207f	IF A.4.1-1/2 AND A.4.1-2/7 AND A.4.1-3/2 AND (A.4.1-4/1 OR A.4.1-4/2 OR A.4.1-4/3) AND A.4.3.2-2/2 AND A.4.3.2-2/6 AND (A.4.3.2-2/10 OR A.4.3.2-2/11) AND A.4.3.2-2/20 THEN R ELSE N/A
C207g	IF A.4.1-1/2 AND A.4.1-2/7 AND A.4.1-3/2 AND (A.4.1-4/1 OR A.4.1-4/2 OR A.4.1-4/3) AND A.4.3.2-2/2 AND A.4.3.2-2/6 AND ((A.4.3.2-2/8 AND A.4.3.2-2/10) OR (A.4.3.2-2/9 AND A.4.3.2-2/11)) AND (A.4.3.2-1/42a OR A.4.3.2-1/43a OR A.4.3.2-1/44a) AND (A.4.3.2-1/24 OR A.4.3.2-1/24A) AND A.4.3.5-1/17 THEN R ELSE N/A
C207h	IF A.4.1-1/2 AND A.4.1-2/7 AND A.4.1-3/2 AND (A.4.1-4/1 OR A.4.1-4/2 OR A.4.1-4/3) AND A.4.3.2-2/2 AND A.4.3.2-2/6 AND ((A.4.3.2-2/8 AND A.4.3.2-2/10) OR (A.4.3.2-2/9 AND A.4.3.2-2/11)) AND A.4.3.2A.1-1/1 THEN R ELSE N/A
C207i	IF A.4.1-1/2 AND A.4.1-2/7 AND A.4.1-3/2 AND (A.4.1-4/1 OR A.4.1-4/2 OR A.4.1-4/3) AND A.4.3.2-2/2 AND A.4.3.2-2/6 AND ((A.4.3.2-2/8 AND A.4.3.2-2/10) OR (A.4.3.2-2/9 AND A.4.3.2-2/11)) AND A.4.3.5-1/1 THEN R ELSE N/A
C207j	IF A.4.1-1/2 AND A.4.1-2/7 AND A.4.1-3/2 AND (A.4.1-4/1 OR A.4.1-4/2 OR A.4.1-4/3) AND A.4.3.2-2/2 AND A.4.3.2-2/6 AND (A.4.3.2-2/10 OR A.4.3.2-2/11) AND A.4.3.2-2/20 AND A.4.3.2A.1-1/1 THEN R ELSE N/A
C207k	IF A.4.1-1/2 AND A.4.1-2/7 AND A.4.1-3/2 AND (A.4.1-4/1 OR A.4.1-4/2 OR A.4.1-4/3) AND A.4.3.2-2/2 AND A.4.3.2-2/6 AND (A.4.3.2-2/10 OR A.4.3.2-2/11) AND A.4.3.2-2/19 THEN R ELSE N/A
C207l	IF A.4.1-1/2 AND A.4.1-2/7 AND A.4.1-3/2 AND (A.4.1-4/1 OR A.4.1-4/2 OR A.4.1-4/3) AND A.4.3.2-2/2 AND A.4.3.2-2/6 AND (A.4.3.2-2/10 OR A.4.3.2-2/11) AND A.4.3.2-2/19 AND A.4.3.2A.1-1/1 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 OR A.4.3.12A-1/1) 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 OR A.4.3.12A-1/1) 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 OR A.4.3.12A-1/1) 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 OR A.4.3.12A-1/1) 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 OR A.4.3.12A-1/1) AND 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 OR A.4.3.12A-1/1) AND 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 OR A.4.3.12A-1/1) AND 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 OR A.4.3.12A-1/1) AND 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.4.3.12-1/2 OR A.4.3.12A-1/1) AND A.4.3.2-1/65 AND A.4.3.1-7a/4 THEN R ELSE N/A
C219	IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-2/7 AND A.4.1-3/1 AND A.4.1-5/1 AND A.4.3.6-1/41 AND A.4.3.2-1/64 AND (A.4.3.12-1/2 OR A.4.3.12A-1/1) AND A.4.3.2-1/65 AND 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.4.3.12-1/2 OR A.4.3.12A-1/1) AND A.4.3.2-1/65 AND A.4.3.5-1/1 AND 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.4.3.12-1/2 OR A.4.3.12A-1/1) AND A.4.3.2-1/65 AND A.4.3.5-1/1 AND 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 OR A.4.3.12A-1/1) AND 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 OR A.4.3.12A-1/1) AND 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 A.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
C226a	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 AND A.4.3.5-1/1 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 OR A.4.3.12A-1/1) AND 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 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 OR A.4.3.12A-1/1) AND 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 A.4.3.1-7a/1 AND A.4.3.6-1/2 AND A.4.3.6-1/11 AND A.4.3.5-1/1 THEN R ELSE N/A
C234	IF ([10]A.4.1-1/1 OR [10]A.4.1-1/2) AND A.4.1-1/2 AND A.4.1-2/8 AND A.4.1-3/1 AND A.4.3.12-1/2 AND (NOT A.4.3.6-1/2) THEN R ELSE N/A
C235	IF ([10]A.4.1-1/1 OR [10]A.4.1-1/2) AND A.4.1-1/2 AND A.4.1-2/8 AND A.4.1-3/1 AND A.4.3.12-1/2 AND A.4.3.6-1/2 THEN R ELSE N/A
C236	IF ([10]A.4.1-1/1 OR [10]A.4.1-1/2) AND A.4.1-1/2 AND A.4.1-2/8 AND A.4.1-3/1 AND A.4.3.12-1/2 AND (NOT A.4.3.6-1/2) AND A.4.3.5-1/1 THEN R ELSE N/A
C237	IF ([10]A.4.1-1/1 OR [10]A.4.1-1/2) AND A.4.1-1/2 AND A.4.1-2/8 AND A.4.1-3/1 AND A.4.3.12-1/2 AND A.4.3.6-1/2 AND A.4.3.5-1/1 THEN R ELSE N/A
C238	IF A.4.1-1/2 AND A.4.1-2/8 AND A.4.1-3/1 AND A.4.3.12-1/2 AND A.4.3.6-1/41a AND A.4.3.2-1/34 THEN R ELSE N/A
C239	IF A.4.1-1/2 AND A.4.1-2/8 AND A.4.1-3/1 AND A.4.3.12-1/2 AND A.4.3.12-1/8 THEN R ELSE N/A
C240	IF A.4.1-1/2 AND A.4.1-2/8 AND A.4.1-3/1 AND A.4.3.11-1/10 THEN R ELSE N/A
C240a	IF A.4.1-1/2 AND A.4.1-2/8 AND A.4.1-3/1 AND A.4.3.11-1/10 AND A.4.3.11-1/9 THEN R ELSE N/A
C241	IF A.4.1-1/2 AND A.4.1-2/8 AND A.4.1-3/1 AND A.4.3.2A.1-1/1 AND A.4.3.5-1/13 THEN R ELSE N/A
C242	IF A.4.1-4/1 OR A.4.1-4/2 OR A.4.1-4/3 OR A.4.1-4/5) AND (A.4.1-4A/3 OR A.4.1-4A/4 OR A.4.1-4A/6) AND A.4.1-3/2 AND A.4.3.2B.2.0-1A/2 AND A.4.3.5-1/12 THEN R ELSE N/A
C243	IF (A.4.1-4/1 OR A.4.1-4/2 OR A.4.1-4/3 OR A.4.1-4/5) AND (A.4.1-4A/1 OR A.4.1-4A/2 OR A.4.1-4A/5) AND A.4.1-3/2 AND A.4.3.2B.2.0-1A/2 AND A.4.3.5-1/12 THEN R ELSE N/A
C244	IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-2/7 AND A.4.1-3/1 AND (A.4.1-4A/1 OR A.4.1-4A/2 OR A.4.1-4A/5) AND A.4.3.2A.1-1/1 AND A.4.3.5-1/13 THEN R ELSE N/A
C244a	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 AND A.4.3.2-1/231 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 A.4.3.1-7a/1 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 A.4.3.1-7a/1 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 A.4.3.1-7a/1 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 A.4.3.1-7a/1 AND NOT A.4.3.1-7a/3 THEN R ELSE N/A
C249	IF A.4.1-1/1 AND (A.4.1-3/1 OR A.4.1-3/2 OR A.4.1-3/3 OR A.4.1-3/5) AND A.4.3.2-1/119 AND (NOT A.4.3.9-1/2 AND A.4.3.1-7a/2) THEN R ELSE N/A
C250	IF A.4.1-1/1 AND (A.4.1-3/1 OR A.4.1-3/2 OR A.4.1-3/3 OR A.4.1-3/5) AND A.4.3.2-1/120 AND (NOT A.4.3.9-1/2 AND A.4.3.1-7a/2) THEN R ELSE N/A
C251	IF A.4.1-1/2 AND (A.4.1-3/1 OR A.4.1-3/2 OR A.4.1-3/3 OR A.4.1-3/5) AND A.4.3.2-1/119 AND (NOT A.4.3.9-1/2 AND A.4.3.1-7a/3) THEN R ELSE N/A
C252	IF A.4.1-1/2 AND (A.4.1-3/1 OR A.4.1-3/2 OR A.4.1-3/3 OR A.4.1-3/5) AND A.4.3.2-1/120 AND (NOT A.4.3.9-1/2 AND A.4.3.1-7a/3) THEN R ELSE N/A
C253	IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-2/7 AND A.4.1-3/1 AND A.4.1-5/1 AND A.4.3.2-1/34 AND A.4.3.6-1/41 AND A.4.3.6-1/68 AND A.4.3.6-1/72 THEN R ELSE N/A
C254	Void
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 THEN R ELSE N/A
C256	Void
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.1-1/1 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
C267a	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 AND A.4.3.2-1/231 THEN R ELSE N/A
C268	IF (A.4.1-1/1 OR A.4.1-1/2) AND (A.4.1-4/1 OR A.4.1-4/2 OR A.4.1-4/3) AND A.4.1-3/2 AND A.4.3.2-1/129 THEN R ELSE N/A
C268a	IF A.4.1-1/2 AND A.4.1-2/8 AND A.4.1-3/2 AND A.4.1-4A/4 AND A.4.3.2-1/129 THEN R ELSE N/A
C268b	IF A.4.1-1/2 AND A.4.1-2/8 AND A.4.1-3/1 AND A.4.1-4/6 AND A.4.3.2-1/130 THEN R ELSE N/A
C269	IF A.4.1-1/2 AND A.4.1-4/5 AND A.4.1-3/2 AND A.4.3.2B.2.0-1A/2 AND A.4.3.2-1/128 THEN R ELSE N/A
C270	IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-2/7 AND A.4.1-3/1 AND (A.4.1-4A/1 OR A.4.1-4A/2 OR A.4.1-4A/5) AND A.4.3.2A.1-1/1 AND A.4.3.2-1/128 THEN R ELSE N/A
C270a	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) AND A.4.1-4A/5 AND A.4.3.2A.1-1/1 AND A.4.3.2-1/128 AND A.4.3.2-1/231 THEN R ELSE N/A
C271	IF A.4.1-1/2 AND A.4.1-2/8 AND A.4.1-3/1 AND A.4.1-4A/3 AND A.4.3.2A.1-1/1 AND A.4.3.2-1/128 THEN R ELSE N/A
C271a	IF A.4.1-1/2 AND A.4.1-2/8 AND A.4.1-3/1 AND A.4.1-4A/6 AND A.4.3.2A.1-1/1 AND A.4.3.2-1/128 THEN R ELSE N/A
C272	IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-2/7 AND A.4.1-3/1 AND A.4.3.2-1/63 AND A.4.3.2-1/65 AND A.4.3.5-1/1 AND (A.4.3.12-1/2 OR A.4.3.12A-1/1) 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 OR A.4.3.12A-1/1) 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 OR A.4.3.12A-1/1) 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 OR A.4.3.12A-1/1) 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 OR A.4.3.12A-1/1) 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 OR A.4.3.12A-1/1) 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
C284	IF A.4.1-1/2 AND A.4.1-2/8 AND A.4.1-3/1 AND A.4.1-4/6 AND A.4.3.2-1/132 THEN R ELSE N/A
C285	IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-2/7 AND A.4.1-3/1 AND A.4.1-4A/1 AND A.4.3.2-1/14B AND A.4.3.2A.1-2/1 THEN R ELSE N/A
C286	IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-2/7 AND A.4.1-3/1 AND A.4.3.6-1/81 THEN R ELSE N/A
C287	IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-2/7 AND A.4.1-3/1 AND A.4.3.5-1/1 AND A.4.3.6-1/81 THEN R ELSE N/A
C288	IF (A.4.1-1/1 OR A.4.1-1/2) AND (A.4.1-4/1 OR A.4.1-4/2 OR A.4.1-4/3 OR A.4.1-4/5) AND A.4.1-3/2 AND A.4.3.2B.2.0-1A/1 AND A.4.3.2-1/132 THEN R ELSE N/A
C289	IF A.4.1-1/2 AND A.4.1-4/4 AND A.4.1-3/2 AND A.4.3.2B.2.0-1A/1 AND A.4.3.2-1/132 THEN R ELSE N/A
C290	IF A.4.1-1/2 AND A.4.1-2/8 AND A.4.1-3/1 AND A.4.3.2-1/34 AND A.4.3.6-1/41a AND (A.4.3.2-1/42b OR A.4.3.2-1/43b OR A.4.3.2-1/44b) AND A.4.3.6-1/73 THEN R ELSE N/A
C291	IF A.4.1-1/2 AND A.4.1-2/8 AND A.4.1-3/1 AND A.4.3.2-1/34 AND A.4.3.6-1/41a AND (A.4.3.2-1/42b OR A.4.3.2-1/43b OR A.4.3.2-1/44b) AND A.4.3.6-1/74 THEN R ELSE N/A
C292	IF A.4.1-1/2 AND A.4.1-2/8 AND A.4.1-3/1 AND A.4.3.6-1/63 THEN R ELSE N/A
C293	IF A.4.1-1/2 AND A.4.1-2/8 AND A.4.1-3/1 AND A.4.3.6-1/63 AND A.4.3.6-1/67 THEN R ELSE N/A
C294	IF A.4.1-1/2 AND A.4.1-2/8 AND A.4.1-3/1 AND A.4.3.2-1/34 AND A.4.3.6-1/41a AND A.4.3.6-1/68 AND A.4.3.6-1/70 AND A.4.3.6-1/72 THEN R ELSE N/A
C295	IF A.4.1-1/2 AND A.4.1-2/8 AND A.4.1-3/1 AND A.4.3.6-1/68 AND NOT A.4.3.6-1/70 AND A.4.3.6-1/72 THEN R ELSE N/A
C296	IF A.4.1-1/2 AND A.4.1-2/8 AND A.4.1-3/1 AND A.4.3.6-1/68 AND A.4.3.6-1/70 AND A.4.3.6-1/72 THEN R ELSE N/A

C297	IF A.4.1-1/2 AND A.4.1-2/8 AND A.4.1-3/1 AND (A.4.1-4A/3 OR A.4.1-4A/4 OR A.4.1-4A/6) AND A.4.3.2A.1-1/1 AND A.4.3.6-1/68 AND A.4.3.6-1/72 THEN R ELSE N/A
C298	IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-2/7 AND A.4.1-3/1 AND A.4.3.5-1/1 AND (A.4.3.12-1/2 OR A.4.3.12A-1/1) AND A.4.3.1-7a/4 AND A.4.3.6-1/81 THEN R ELSE N/A
C299	IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-2/7 AND A.4.1-3/1 AND A.4.3.5-1/1 AND (A.4.3.12-1/2 OR A.4.3.12A-1/1) AND A.4.3.1-7a/1 AND A.4.3.6-1/81 THEN R ELSE N/A
C300	IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-2/7 AND A.4.1-3/1 AND (A.4.3.12-1/2 OR A.4.3.12A-1/1) AND A.4.3.1-7a/4 AND A.4.4-1/16 AND A.4.3.5-1/1 THEN R ELSE N/A
C301	IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-2/7 AND A.4.1-3/1 AND (A.4.3.12-1/2 OR A.4.3.12A-1/1) AND A.4.3.1-7a/1 AND A.4.4-1/16 AND A.4.3.5-1/1 THEN R ELSE N/A
C302	IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-2/7 AND A.4.1-3/1 AND (A.4.3.12-1/2 OR A.4.3.12A-1/1) AND A.4.3.1-7a/4 AND A.4.3.6-1/8a THEN R ELSE N/A
C302a	IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-2/7 AND A.4.1-3/1 AND A.4.3.7-1/65 AND A.4.3.6-1/8a THEN R ELSE N/A
C303	IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-2/7 AND A.4.1-3/1 AND (A.4.3.12-1/2 OR A.4.3.12A-1/1) AND A.4.3.1-7a/1 AND A.4.3.6-1/8a THEN R ELSE N/A
C304	IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-2/7 AND A.4.1-3/1 AND (A.4.3.12-1/2 OR A.4.3.12A-1/1) AND A.4.3.1-7a/4 AND A.4.3.6-1/7a THEN R ELSE N/A
C305	IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-2/7 AND A.4.1-3/1 AND (A.4.3.12-1/2 OR A.4.3.12A-1/1) AND A.4.3.1-7a/1 AND A.4.3.6-1/7a THEN R ELSE N/A
C306	IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-2/7 AND A.4.1-3/1 AND (A.4.3.12-1/2 OR A.4.3.12A-1/1) AND A.4.3.1-7a/4 AND A.4.3.6-1/6 THEN R ELSE N/A
C307	IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-2/7 AND A.4.1-3/1 AND (A.4.3.12-1/2 OR A.4.3.12A-1/1) AND A.4.3.1-7a/1 AND A.4.3.6-1/6 THEN R ELSE N/A
C308	IF A.4.1-1/2 AND A.4.1-2/8 AND A.4.1-3/1 AND A.4.3.12-1/2 AND A.4.4-1/16 AND A.4.3.5-1/1 THEN R ELSE N/A
C309	IF A.4.1-1/2 AND A.4.1-2/8 AND A.4.1-3/1 AND A.4.3.12-1/2 AND A.4.3.6-1/41a THEN R ELSE N/A
C310	IF A.4.1-1/2 AND A.4.1-2/8 AND A.4.1-3/1 AND A.4.3.12-1/2 AND A.4.3.6-1/41a AND A.4.3.5-1/1 THEN R ELSE N/A
C311	IF A.4.1-1/2 AND A.4.1-2/8 AND A.4.1-3/1 AND A.4.3.12-1/2 AND A.4.3.2-1/56 AND A.4.3.2-1/78 THEN R ELSE N/A
C312	IF A.4.1-1/2 AND A.4.1-2/8 AND A.4.1-3/1 AND A.4.3.12-1/2 AND A.4.3.6-1/8a THEN R ELSE N/A
C313	IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-2/7 AND A.4.1-3/1 AND (A.4.1-4A/1 OR A.4.1-4A/2 OR A.4.1-4A/5) AND A.4.3.2A.1-1/4 THEN R ELSE N/A
C314	IF A.4.1-1/2 AND A.4.1-2/8 AND A.4.1-3/1 AND A.4.3.2-1/147 AND A.4.3.2-1/148 OR A.4.3.2-1/149 OR A.4.3.2-1/150 THEN R ELSE N/A
C315	IF A.4.1-1/2 AND A.4.1-2/8 AND A.4.1-3/1 AND (A.4.3.2-1/42 OR A.4.3.2-1/43 OR A.4.3.2-1/44 OR A.4.3.2-1/42a OR A.4.3.2-1/43a OR A.4.3.2-1/44a) AND (A.4.3.2-1/24 OR A.4.3.2-1/24A) AND A.4.3.12-1/2 THEN R ELSE N/A
C316	IF A.4.1-1/2 AND A.4.1-2/8 AND A.4.1-3/1 AND (A.4.3.2-1/42 OR A.4.3.2-1/43 OR A.4.3.2-1/44 OR A.4.3.2-1/42a OR A.4.3.2-1/43a OR A.4.3.2-1/44a) AND A.4.3.12-1/2 THEN R ELSE N/A
C317	IF A.4.1-1/2 AND A.4.1-2/8 AND A.4.1-3/1 AND A.4.3.12-1/2 AND A.4.3.6-1/6 THEN R ELSE N/A
C318	IF ((A.4.1-1/1 AND [10]A.4.1-1/1) OR (A.4.1-1/1 AND [10]A.4.1-1/2) OR (A.4.1-1/2 AND [10]A.4.1-1/1) OR (A.4.1-1/2 AND [10]A.4.1-1/2)) AND A.4.1-3/1 AND (A.4.3.12-1/2 OR A.4.3.12A-1/1) AND A.4.3.1-7a/4 AND A.4.3.5-1/1 THEN R ELSE N/A
C319	IF ((A.4.1-1/1 AND [10]A.4.1-1/1) OR (A.4.1-1/1 AND [10]A.4.1-1/2) OR (A.4.1-1/2 AND [10]A.4.1-1/1) OR (A.4.1-1/2 AND [10]A.4.1-1/2)) AND A.4.1-3/1 AND (A.4.3.12-1/2 OR A.4.3.12A-1/1) AND A.4.3.1-7a/1 AND A.4.3.5-1/1 THEN R ELSE N/A
C320	IF (A.4.1-4/4 OR A.4.1-4/5) AND A.4.1-3/2 AND A.4.3.5-1/1 AND A.4.3.6-1/78 THEN R ELSE N/A
C321	IF A.4.1-1/2 AND A.4.1-2/7 AND A.4.1-3/1 AND A.4.3.2-2/3 AND A.4.3.2-2/6 AND A.4.3.2-2/7 AND ((A.4.3.2-2/8 AND A.4.3.2-2/10) OR (A.4.3.2-2/9 AND A.4.3.2-2/11)) THEN R ELSE N/A
C321a	IF A.4.1-1/2 AND A.4.1-2/7 AND A.4.1-3/1 AND A.4.3.2-2/3 AND A.4.3.2-2/6 AND A.4.3.2-2/7 AND ((A.4.3.2-2/8 AND A.4.3.2-2/10) OR (A.4.3.2-2/9 AND A.4.3.2-2/11)) AND A.4.3.2A.1-1/1 THEN R ELSE N/A
C321b	IF A.4.1-1/2 AND A.4.1-2/7 AND A.4.1-3/1 AND ([10]A.4.1-1/1 OR [10]A.4.1-1/2) AND A.4.3.2-2/3 AND A.4.3.2-2/6 AND A.4.3.2-2/7 AND ((A.4.3.2-2/8 AND A.4.3.2-2/10) OR (A.4.3.2-2/9 AND A.4.3.2-2/11)) THEN R ELSE N/A
C321c	IF A.4.1-1/2 AND A.4.1-2/7 AND A.4.1-3/1 AND A.4.3.2-2/3 AND A.4.3.2-2/6 AND A.4.3.2-2/7 AND ((A.4.3.2-2/8 AND A.4.3.2-2/10) OR (A.4.3.2-2/9 AND A.4.3.2-2/11)) AND A.4.3.2-1/46 THEN R ELSE N/A
C321d	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.4.3.2-2/1 AND A.4.3.2-2/6 AND A.4.3.2A.1-1/1 THEN R ELSE N/A
C321e	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.4.3.2-2/1 AND A.4.3.2-2/6 AND (A.4.3.2-2/10 OR A.4.3.2-2/11) AND A.4.3.2A.1-1/1 THEN R ELSE N/A
C321f	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.4.3.2-2/1 AND A.4.3.2-2/6 AND (A.4.3.2-2/10 OR A.4.3.2-2/11) AND A.4.3.2A.1-1/1 AND A.4.3.5-1/1 THEN R ELSE N/A
C321g	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.4.3.2-2/1 AND A.4.3.2-2/6 AND (A.4.3.2-2/10 OR A.4.3.2-2/11) AND A.4.3.2-2/20 AND A.4.3.2A.1-1/1 THEN R ELSE N/A

C321h	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.4.3.2-2/1 AND A.4.3.2-2/6 AND (A.4.3.2-2/10 OR A.4.3.2-2/11) AND A.4.3.2-2/19 AND A.4.3.2A.1-1/1 THEN R ELSE N/A
C321i	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.4.3.2-2/1 AND A.4.3.2-2/6 AND (A.4.3.2-2/10 OR A.4.3.2-2/11) AND A.4.3.2A.1-1/1 AND (A.4.3.2-1/42a OR A.4.3.2-1/43a OR A.4.3.2-1/44a) THEN R ELSE N/A
C321j	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.4.3.2-2/1 AND A.4.3.2-2/6 AND (A.4.3.2-2/10 OR A.4.3.2-2/11) AND A.4.3.2A.1-1/1 AND (A.4.3.2-1/42a OR A.4.3.2-1/43a OR A.4.3.2-1/44a) AND A.4.3.5-1/1 THEN R ELSE N/A
C322	IF A.4.1-1/2 AND A.4.1-2/7 AND A.4.1-3/1 AND A.4.3.2-2/3 AND A.4.3.2-2/6 AND A.4.3.2-2/7 AND ((A.4.3.2-2/8 AND A.4.3.2-2/10 AND A.4.3.2-2/12) OR (A.4.3.2-2/9 AND A.4.3.2-2/11 AND A.4.3.2-2/13)) THEN R ELSE N/A
C323	IF A.4.1-1/2 AND A.4.1-2/7 AND A.4.1-3/1 AND A.4.3.2-2/3 AND A.4.3.2-2/6 AND A.4.3.2-2/7 AND ((A.4.3.2-2/8 AND A.4.3.2-2/10 AND A.4.3.2-2/12 AND A.4.3.2-2/14) OR (A.4.3.2-2/9 AND A.4.3.2-2/11 AND A.4.3.2-2/13 AND A.4.3.2-2/15)) THEN R ELSE N/A
C324	IF A.4.1-1/2 AND A.4.1-2/7 AND A.4.1-3/1 AND A.4.3.2-2/3 AND A.4.3.2-2/6 AND A.4.3.2-2/7 AND ((A.4.3.2-2/8 AND A.4.3.2-2/10 AND A.4.3.2-2/12 AND A.4.3.2-2/14) OR (A.4.3.2-2/9 AND A.4.3.2-2/11 AND A.4.3.2-2/13 AND A.4.3.2-2/15)) AND A.4.3.5-1/1 THEN R ELSE N/A
C325	IF A.4.1-1/2 AND A.4.1-2/7 AND A.4.1-3/1 AND A.4.3.2-2/3 AND A.4.3.2-2/6 AND A.4.3.2-2/7 AND ((A.4.3.2-2/8 AND A.4.3.2-2/10) OR (A.4.3.2-2/9 AND A.4.3.2-2/11)) AND (A.4.3.2-1/42a OR A.4.3.2-1/43a OR A.4.3.2-1/44a) AND (A.4.3.2-1/24 OR A.4.3.2-1/24A) AND A.4.3.5-1/17 THEN R ELSE N/A
C326	IF A.4.1-1/2 AND A.4.1-2/7 AND A.4.1-3/1 AND A.4.3.2-2/3 AND A.4.3.2-2/6 AND A.4.3.2-2/7 AND ((A.4.3.2-2/8 AND A.4.3.2-2/10) OR (A.4.3.2-2/9 AND A.4.3.2-2/11)) AND (A.4.3.2-1/42a OR A.4.3.2-1/43a OR A.4.3.2-1/44a) AND (A.4.3.2-1/24 OR A.4.3.2-1/24A) THEN R ELSE N/A
C326a	IF A.4.1-1/2 AND A.4.1-2/7 AND A.4.1-3/1 AND A.4.3.2-2/3 AND A.4.3.2-2/6 AND A.4.3.2-2/7 AND ((A.4.3.2-2/8 AND A.4.3.2-2/10) OR (A.4.3.2-2/9 AND A.4.3.2-2/11)) AND (A.4.3.2-1/42a OR A.4.3.2-1/43a OR A.4.3.2-1/44a) AND (A.4.3.2-1/24 OR A.4.3.2-1/24A) AND A.4.3.2A.1-1/1 THEN R ELSE N/A
C327	IF A.4.1-1/2 AND A.4.1-2/7 AND A.4.1-3/1 AND A.4.3.2-2/3 AND A.4.3.2-2/6 AND A.4.3.2-2/7 AND ((A.4.3.2-2/8 AND A.4.3.2-2/10) OR (A.4.3.2-2/9 AND A.4.3.2-2/11)) AND (A.4.3.2-1/42a OR A.4.3.2-1/43a OR A.4.3.2-1/44a) THEN R ELSE N/A
C328	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.4.3.2-1/14B AND A.4.3.2A.1-2/1 THEN R ELSE N/A
C329	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.4.3.2-1/84A AND A.4.3.2A.1-2/1 THEN R ELSE N/A
C330	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 AND A.4.3.2-1/14B THEN R ELSE N/A
C331	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 AND A.4.3.2-1/84A THEN R ELSE N/A
C332	IF A.4.1-1/1 AND A.4.1-2/9 AND A.4.1-3/1 AND (A.4.3.2-1/91 OR A.4.3.2-1/92) AND A.4.4-1/17 THEN R ELSE N/A
C332a	IF A.4.1-1/1 AND A.4.1-2/9 AND A.4.1-3/1 AND (A.4.3.2-1/91 OR A.4.3.2-1/92) AND A.4.4-1/17 AND A.4.3.5-1/1 THEN R ELSE N/A
C332b	IF A.4.1-1/1 AND A.4.1-2/9 AND A.4.1-3/1 AND (A.4.3.2-1/91 OR A.4.3.2-1/92) AND A.4.4-1/17 AND A.4.3.6-1/41 THEN R ELSE N/A
C332c	IF A.4.1-1/1 AND A.4.1-2/9 AND A.4.1-3/1 AND (A.4.3.2-1/91 OR A.4.3.2-1/92) AND A.4.4-1/17 AND A.4.3.5-1/1 AND A.4.3.6-1/41 THEN R ELSE N/A
C332d	IF A.4.1-1/1 AND A.4.1-2/9 AND A.4.1-3/1 AND (A.4.3.2-1/91 OR A.4.3.2-1/92) AND A.4.4-1/17 AND A.4.3.2-1/63 AND A.4.3.2-1/65 THEN R ELSE N/A
C332e	IF A.4.1-1/1 AND A.4.1-2/9 AND A.4.1-3/1 AND (A.4.3.2-1/91 OR A.4.3.2-1/92) AND A.4.4-1/17 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
C332f	IF A.4.1-1/1 AND A.4.1-2/9 AND A.4.1-3/1 AND (A.4.3.2-1/91 OR A.4.3.2-1/92) AND A.4.4-1/17 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
C332g	IF A.4.1-1/1 AND A.4.1-2/9 AND A.4.1-3/1 AND (A.4.3.2-1/91 OR A.4.3.2-1/92) AND A.4.4-1/17 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
C332h	IF A.4.1-1/1 AND A.4.1-2/9 AND A.4.1-3/1 AND (A.4.3.2-1/91 OR A.4.3.2-1/92) AND A.4.4-1/17 AND A.4.3.8-1/11 AND A.4.3.8-1/27 THEN R ELSE N/A
C332i	IF A.4.1-1/1 AND A.4.1-2/9 AND A.4.1-3/1 AND (A.4.3.2-1/91 OR A.4.3.2-1/92) AND A.4.4-1/17 AND A.4.3.8-1/11 AND A.4.3.8-1/26 AND A.4.3.6-1/76 AND A.4.3.6-1/91 THEN R ELSE N/A
C332j	IF A.4.1-1/1 AND A.4.1-2/9 AND A.4.1-3/1 AND (A.4.3.2-1/91 OR A.4.3.2-1/92) AND A.4.4-1/17 AND A.4.3.6-1/83 THEN R ELSE N/A
C332k	IF A.4.1-1/1 AND A.4.1-2/9 AND A.4.1-3/1 AND (A.4.3.2-1/91 OR A.4.3.2-1/92) AND A.4.4-1/17 AND A.4.3.6-1/84 THEN R ELSE N/A
C332l	IF A.4.1-1/1 AND A.4.1-2/9 AND A.4.1-3/1 AND (A.4.3.2-1/91 OR A.4.3.2-1/92) AND A.4.4-1/17 AND A.4.3.6-1/85 THEN R ELSE N/A
C332m	IF A.4.1-1/1 AND A.4.1-2/9 AND A.4.1-3/1 AND (A.4.3.2-1/91 OR A.4.3.2-1/92) AND A.4.4-1/17 AND A.4.3.6-1/45 THEN R ELSE N/A
C332n	IF A.4.1-1/1 AND A.4.1-2/9 AND A.4.1-3/1 AND (A.4.3.2-1/91 OR A.4.3.2-1/92) AND A.4.4-1/17 AND (A.4.3.7-1/73 OR A.4.3.7-1/74) THEN R ELSE N/A

C332o	IF A.4.1-1/1 AND A.4.1-2/9 AND A.4.1-3/1 AND (A.4.3.2-1/91 OR A.4.3.2-1/92) AND A.4.4-1/17 AND A.4.3.7-1/74 THEN R ELSE N/A
C332p	IF A.4.1-1/1 AND A.4.1-2/9 AND A.4.1-3/1 AND (A.4.3.2-1/91 OR A.4.3.2-1/92) AND A.4.4-1/17 AND A.4.3.6-1/6 THEN R ELSE N/A
C332q	IF A.4.1-1/1 AND A.4.1-2/9 AND A.4.1-3/1 AND (A.4.3.2-1/91 OR A.4.3.2-1/92) AND A.4.4-1/17 AND (A.4.3.8-1/54 OR A.4.3.8-1/55) THEN R ELSE N/A
C332r	FFS
C332s	IF A.4.1-1/1 AND A.4.1-2/9 AND A.4.1-3/1 AND (A.4.3.2-1/91 OR A.4.3.2-1/92) AND A.4.4-1/17 AND A.4.3.6-1/41 AND A.4.3.6-1/82 THEN R ELSE N/A
C332t	IF A.4.1-1/1 AND A.4.1-2/9 AND A.4.1-3/1 AND (A.4.3.2-1/91 OR A.4.3.2-1/92) AND A.4.4-1/17 AND A.4.3.6-1/41 AND A.4.3.6-1/82 AND A.4.3.5-1/1 THEN R ELSE N/A
C332u	IF A.4.1-1/1 AND A.4.1-2/9 AND A.4.1-3/1 AND (A.4.3.2-1/91 OR A.4.3.2-1/92) AND A.4.4-1/17 AND A.4.3.6-1/82 THEN R ELSE N/A
C332v	IF A.4.1-1/1 AND A.4.1-2/9 AND A.4.1-3/1 AND (A.4.3.2-1/91 OR A.4.3.2-1/92) AND A.4.4-1/17 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
C332w	IF A.4.1-1/1 AND A.4.1-2/9 AND A.4.1-3/1 AND (A.4.3.2-1/91 OR A.4.3.2-1/92) AND A.4.4-1/17 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
C333	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.4.3.11-1/78 THEN R ELSE N/A
C334	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.4.3.6-1/81 THEN R ELSE N/A
C335	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.4.3.5-1/1 AND A.4.3.6-1/81 THEN R ELSE N/A
C336	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.4.3.6-1/4 THEN R ELSE N/A
C337	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.4.3.2-1/147 AND (A.4.3.2-1/148 OR A.4.3.2-1/149 OR A.4.3.2-1/150) THEN R ELSE N/A
C338	IF 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.1-2/2 AND A.4.3.2A.4.2-2/1 AND A.4.3.2-1/127a AND A.4.3.6-1/80 THEN R ELSE N/A
C339	IF A.4.1-1/1 AND 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.1-2/3 AND A.4.3.2A.4.3-2/1 AND A.4.3.2-1/127a AND A.4.3.6-1/80 THEN R ELSE N/A
C340	IF A.4.1-1/1 AND 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.1-2/2 AND A.4.3.2A.4.2-2/1 AND A.4.3.2-1/127a AND A.4.3.6-1/80 AND A.4.3.2-1/142 THEN R ELSE N/A
C341	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.4.3.1-7a/1 AND NOT A.4.3.1-7a/2 AND A.4.3.2-1/172 THEN R ELSE N/A
C342	IF A.4.1-1/1 AND A.4.1-2/7 AND A.4.1-3/1 AND A.4.3.2-1/152 THEN R ELSE N/A
C343	IF A.4.1-1/1 AND A.4.1-2/7 AND A.4.1-3/1 AND A.4.3.2-1/151 THEN R ELSE N/A
C343a	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.4.3.1-7a/1 AND A.4.3.2-1/151 AND NOT A.4.3.1-7a/2 THEN R ELSE N/A
C343b	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.4.3.2-1/151 AND A.4.3.1-7a/2 THEN R ELSE N/A
C344	IF A.4.1-1/1 AND A.4.1-2/7 AND A.4.1-3/1 AND A.4.3.5-1/1 AND A.4.3.2-1/152 THEN R ELSE N/A
C345	IF A.4.1-1/2 AND A.4.1-1/8 AND A.4.1-3/1 AND A.4.1-5/1 AND A.4.3.1-7/6 AND A.4.3.11-1/10 THEN R ELSE N/A
C345a	IF A.4.1-1/2 AND A.4.1-1/8 AND A.4.1-3/1 AND A.4.1-5/1 AND A.4.3.1-7/6 AND A.4.3.11-1/9 AND A.4.3.11-1/10 AND A.4.3.11-1/11 THEN R ELSE N/A
C346	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.4.1-4B/3 AND A.4.3.2C.1-1/2 AND A.4.3.2-1/127a THEN R ELSE N/A
C347	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.4.1-4B/3 AND A.4.3.2C.1-1/3 AND A.4.3.2-1/127a THEN R ELSE N/A
C348	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 AND A.4.3.2-1/221 THEN R ELSE N/A
C349	IF A.4.1-1/2 AND A.4.1-2/8 AND A.4.1-3/1 AND A.4.3.2-1/174 THEN R ELSE N/A
C350	IF (A.4.1-4/4 OR A.4.1-4/5) AND A.4.1-3/2 AND A.4.3.6-1/4 THEN R ELSE N/A
C351	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.4.3.6-1/4 THEN R ELSE N/A
C351a	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 OR A.4.3.1-7a/4) THEN R ELSE N/A
C351b	IF A.4.1-1/2 AND A.4.1-2/8 AND A.4.1-3/1 AND A.4.3.13-1/6 THEN R ELSE N/A
C352	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 THEN R ELSE N/A
C353	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 A.4.3.2-1/212 AND A.4.3.1-7a/1 AND NOT A.4.3.1-7a/2 THEN R ELSE N/A
C354	IF A.4.1-1/2 AND (A.4.1-3/1 OR A.4.1-3/2 OR A.4.1-3/3 OR A.4.1-3/5) AND A.4.3.2-1/33 AND A.4.3.2-1/212 AND A.4.3.1-7a/1 AND NOT A.4.3.1-7a/3 THEN R ELSE N/A
C355	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 A.4.3.2-1/212 AND (NOT A.4.3.9-1/2 AND A.4.3.1-7a/2) THEN R ELSE N/A
C356	IF A.4.1-1/2 AND (A.4.1-3/1 OR A.4.1-3/2 OR A.4.1-3/3 OR A.4.1-3/5) AND A.4.3.2-1/33 AND A.4.3.2-1/212 AND (NOT A.4.3.9-1/2 AND A.4.3.1-7a/3) THEN R ELSE N/A

C357	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.4.3.2-1/191 AND A.4.3.2-1/181 AND A.4.3.6-1/102 AND A.4.3.2-1/196 THEN R ELSE N/A
C358	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.4.3.2-1/191 AND A.4.3.2-1/181 AND A.4.3.6-1/102 THEN R ELSE N/A
C359	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.4.3.2-1/196 THEN R ELSE N/A
C360	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.4.3.6-1/97 THEN R ELSE N/A
C361	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.4.3.2-1/195 THEN R ELSE N/A
C361a	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.4.3.2-1/195 THEN R ELSE N/A
C362	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.4.3.2-1/191 AND A.4.3.2-1/196 THEN R ELSE N/A
C362a	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.4.3.2-1/192 AND A.4.3.2-1/196 THEN R ELSE N/A
C363	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.4.3.6-1/100 AND A.4.3.6-1/97 THEN R ELSE N/A
C364	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.4.3.2-1/191 AND A.4.3.2-1/178 AND A.4.3.2-1/183 AND A.4.3.2-1/186 AND A.4.3.6-1/102 AND A.4.3.2-1/196 THEN R ELSE N/A
C364a	IF A.4.1-1/2 AND A.4.1-2/8 AND A.4.1-3/1 AND A.4.3.2-1/191 AND A.4.3.2-1/175 AND A.4.3.2-1/183 AND A.4.3.2-1/186 AND A.4.3.6-1/102 AND A.4.3.2-1/196 THEN R ELSE N/A
C365	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.4.3.2-1/183 AND A.4.3.2-1/186 AND A.4.3.2-1/191 AND A.4.3.2-1/178 AND A.4.3.6-1/102 THEN R ELSE N/A
C366	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.4.3.2-1/178 AND A.4.3.2-1/183 AND A.4.3.2-1/184 AND A.4.3.2-1/185 AND A.4.3.2-1/186 AND A.4.3.6-1/102 AND A.4.3.2-1/194 THEN R ELSE N/A
C366a	IF A.4.1-1/2 AND A.4.1-2/8 AND A.4.1-3/1 AND A.4.3.2-1/183 AND A.4.3.2-1/184 AND A.4.3.2-1/185 AND A.4.3.6-1/102 AND A.4.3.2-1/194 THEN R ELSE N/A
C367	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.4.3.13-1/6 THEN R ELSE N/A
C368	IF A.4.1-1/1 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 A.4.3.2-1/208 THEN R ELSE N/A
C369	IF A.4.1-1/1 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/2 AND A.4.3.2-1/208 THEN R ELSE N/A
C370	IF 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 A.4.3.2-1/172 THEN R ELSE N/A
C371	IF A.4.1-1/1 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/2 AND A.4.3.2-1/172 THEN R ELSE N/A
C372	IF (A.4.1-1/1 OR A.4.1-1/2 OR A.4.3.12-1/5) AND A.4.1-2/7 AND A.4.1-3/1 AND A.4.3.12A-1/1 THEN R ELSE N/A
C372a	IF A.4.1-1/1 AND A.4.1-2/7 AND A.4.1-3/1 AND A.4.3.1-7a/4 AND A.4.3.12A-1/1 THEN R ELSE N/A
C372b	IF A.4.1-1/1 AND A.4.1-2/7 AND A.4.1-3/1 AND A.4.3.1-7a/4 AND A.4.3.12A-1/1 AND A.4.3.12A-1/2 THEN R ELSE N/A
C372c	IF A.4.1-1/1 AND A.4.1-2/7 AND A.4.1-3/1 AND A.4.3.1-7a/1 AND A.4.3.12A-1/1 THEN R ELSE N/A
C372d	IF A.4.1-1/1 AND A.4.1-2/7 AND A.4.1-3/1 AND A.4.3.1-7a/1 AND A.4.3.12A-1/1 AND A.4.3.12A-1/2 THEN R ELSE N/A
C372e	IF A.4.1-1/2 AND A.4.1-2/7 AND A.4.1-3/1 AND A.4.3.1-7a/4 AND A.4.3.12A-1/1 THEN R ELSE N/A
C372f	IF A.4.1-1/2 AND A.4.1-2/7 AND A.4.1-3/1 AND A.4.3.1-7a/4 AND A.4.3.12A-1/1 AND A.4.3.12A-1/2 THEN R ELSE N/A
C372g	IF A.4.1-1/2 AND A.4.1-2/7 AND A.4.1-3/1 AND A.4.3.1-7a/1 AND A.4.3.12A-1/1 THEN R ELSE N/A
C372h	IF A.4.1-1/2 AND A.4.1-2/7 AND A.4.1-3/1 AND A.4.3.1-7a/1 AND A.4.3.12A-1/1 AND A.4.3.12A-1/2 THEN R ELSE N/A
C373	IF A.4.1-1/1 AND A.4.1-2/7 AND A.4.1-3/1 AND A.4.3.9-1/6 AND (A.4.3.1-7a/1 AND NOT A.4.3.1-7a/2) THEN R ELSE N/A
C374	IF A.4.1-1/2 AND A.4.1-2/7 AND A.4.1-3/1 AND A.4.3.9-1/6 AND (A.4.3.1-7a/1 AND NOT A.4.3.1-7a/3) THEN R ELSE N/A
C375	IF A.4.1-1/1 AND A.4.1-2/7 AND A.4.1-3/1 AND A.4.3.9-1/6 AND (NOT A.4.3.9-1/2 AND A.4.3.1-7a/2) THEN R ELSE N/A
C376	IF A.4.1-1/2 AND A.4.1-2/7 AND A.4.1-3/1 AND A.4.3.9-1/6 AND (NOT A.4.3.9-1/2 AND A.4.3.1-7a/3) THEN R ELSE N/A
C377	IF A.4.1-1/2 AND A.4.1-2/8 AND A.4.1-3/1 AND A.4.3.9-1/6 THEN R ELSE N/A
C378	IF A.4.1-1/2 AND A.4.1-2/8 AND A.4.1-3/1 AND A.4.3.2-1/227 THEN R ELSE N/A
C379	IF A.4.1-1/2 AND A.4.1-2/8 AND A.4.1-3/1 AND A.4.3.2-1/53 AND A.4.3.2-1/56 AND A.4.3.2-1/78 AND A.4.3.2-1/226 AND A.4.3.2-1/227 THEN R ELSE N/A
C380	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 A.4.3.2-1/78 AND A.4.3.2-1/226 AND A.4.3.2-1/227 AND A.4.3.2-1/41 THEN R ELSE N/A
C381	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.4.3.2-1/191 AND A.4.3.2-1/196 THEN R ELSE N/A
C382	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.4.3.2-1/191 AND A.4.3.2-1/181 AND A.4.3.6-1/102 AND A.4.3.2-1/196 THEN R ELSE N/A

C383	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.4.3.6-1/100 AND A.4.3.6-1/97 THEN R ELSE N/A
C384	IF A.4.1-1/2 AND A.4.1-2/8 AND A.4.1-3/1 AND A.4.3.2-1/196 THEN R ELSE N/A
C385	IF A.4.1-1/2 AND A.4.1-2/8 AND A.4.1-3/1 AND A.4.3.6-1/97 THEN R ELSE N/A
C386	IF A.4.1-1/1 AND A.4.1-2/7 AND A.4.1-3/1 AND A.4.3.2-1/151 AND A.4.3.5-1/1 THEN R ELSE N/A
C387	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/2 AND A.4.3.2B.2.3.1-1/1 AND A.4.3.2-1/231 THEN R ELSE N/A
C388	IF (A.4.1-4/4 OR A.4.1-4/5) AND A.4.1-3/2 AND A.4.3.2-1/174 THEN R ELSE N/A
C389	IF 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.1-2/3 AND A.4.3.2A.4.3-2/1 AND A.4.3.2-1/127a AND A.4.3.6-1/80 AND A.4.3.2-1/142 THEN R ELSE N/A
C390	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.4.3.2-1/172 THEN R ELSE N/A
C391	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.4.3.6-1/105 AND A.4.3.6-1/106 THEN R ELSE N/A
C392	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.4.3.6-1/105 AND A.4.3.6-1/106 THEN R ELSE N/A
C393	IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-2/7 AND A.4.1-3/1 AND A.4.3.7-1/65 AND A.4.3.6-1/4 THEN R ELSE N/A
C394	IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-2/7 AND A.4.1-3/1 AND A.4.3.7-1/65 AND A.4.3.6-1/6a THEN R ELSE N/A
C395	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 4.3.8-1/11 AND 4.3.8-1/52 THEN R ELSE N/A
C396	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 4.3.8-1/11 AND 4.3.8-1/19 AND 4.3.8-1/52 THEN R ELSE N/A
C397	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.4.3.2-1/240 AND A.4.3.2-1/174 and A.4.3.2-1/YP1 THEN R ELSE N/A
C398	IF A.4.1-1/2 AND A.4.1-2/8 AND A.4.1-3/1 AND A.4.3.2-1/241 AND (NOT A.4.3.2-1/221) THEN R ELSE N/A
C399	IF A.4.1-1/2 AND A.4.1-2/8 AND A.4.1-3/1 AND A.4.3.2-1/221 THEN R ELSE N/A
C400	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 AND A.4.3.2-1/14A THEN R ELSE N/A
C401	IF A.4.1-1/1 AND A.4.1-2/7 AND A.4.1-3/1 AND A.4.3.1-7/5 AND A.4.3.2-1/14A THEN R ELSE N/A
C402	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 AND (A.4.3.2-1/14A OR (A.4.3.2-1/59 OR (A.4.3.2-1/232 AND A.4.3.2-1/233))) THEN R ELSE N/A
C403	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 AND A.4.3.2-1/84B THEN R ELSE N/A
C404	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.4.3.6-1/109 THEN R ELSE N/A
C405	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.4.3.6-1/108 THEN R ELSE N/A
C406	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.4.3.6-1/108 THEN R ELSE N/A
C407	IF ((A.4.1-1/1 AND [10]A.4.1-1/1) OR (A.4.1-1/1 AND [10]A.4.1-1/2) OR (A.4.1-1/2 AND [10]A.4.1-1/1) OR (A.4.1-1/2 AND [10]A.4.1-1/2)) AND A.4.1-2/7 AND A.4.3.6-1/105A THEN R ELSE N/A
C408	IF A.4.1-1/2 AND A.4.1-2/8 AND A.4.3.2-1/226 AND A.4.3.2-1/32 AND THEN R ELSE N/A
C409	IF A.4.1-1/2 AND A.4.1-2/8 AND A.4.3.2-1/226 AND A.4.3.2-1/32 AND A.4.3.2-1/228 THEN R ELSE N/A
C410	IF A.4.1-1/2 AND A.4.1-2/8 AND A.4.3.2-1/226 AND A.4.3.2-1/41 THEN R ELSE N/A
C411	IF (A.4.1-1/1 OR A.4.1-1/2) AND A.4.1-2/7 AND (A.4.1-3/2 OR A.4.1-3/3 OR A.4.1-3/5) AND (A.4.3.2-1/104 OR A.4.3.2-1/105 OR A.4.3.2-1/106 OR A.4.3.2-1/107) THEN R ELSE N/A
C412	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.1-2/2 and A.4.3.2-1/127a THEN R ELSE N/A
C413	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) AND A.4.1-4A/5) and A.4.3.2A.1-2/3 and A.4.3.2-1/127a THEN R ELSE N/A
C414	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.1-2/3 and A.4.3.2-1/127a THEN R ELSE N/A
C415	IF A.4.1-1/2 AND A.4.3.2-1/226 AND A.4.3.2-1/41 OR A.4.3.2-1/32 AND A.4.3.2-1/228 OR A.4.3.2-1/229 THEN R ELSE N/A
C416	IF A.4.1-1/1 AND A.4.3.1-7a/2 OR A.4.3.1-7a/1 AND A.4.3.2-1/161 THEN R ELSE N/A
C417	IF A.4.1-1/1 AND ([10]A.4.1-1/1 or [10]A.4.1-1/2) AND A.4.1-2/9 AND A.4.1-3/1 AND (A.4.3.2-1/91 OR A.4.3.2-1/92) AND A.4.4-1/17 THEN R ELSE N/A
C418	IF A.4.1-1/1 AND A.4.1-2/7 AND A.4.1-2/9 AND A.4.1-3/1 AND (A.4.3.2-1/91 OR A.4.3.2-1/92) AND A.4.4-1/17 THEN R ELSE N/A
NOTE 1: Cxxxx applicability is defined for enhanced type 1 receiver for NR related tests (A.4.3.9-1/1).	
NOTE 2: Cxxxy applicability is defined for alternative additional DMRS position for co-existence with LTE CRS related tests (A.4.3.2-1/20).	
NOTE 3: Cxxxz applicability is defined for modified MPR behaviour related test (A.4.3.2-1/25).	
NOTE 4: Cxxxw applicability is defined for mpr Power Boost related test (A.4.3.2-1/38).	

Table 4.0-2: Tested Bands Selection Criteria

Code	Tested Bands Selection Criteria	Comment
D001	A.4.3.1-1 OR A.4.3.1-2	All supported FDD or TDD FR1 bands
D001 a	(A.4.3.1-1 OR A.4.3.1-2) AND NOT A.4.3.9-14	All supported FDD or TDD FR1 bands without Tx Diversity capability
D001 b	A.4.3.1-1 OR A.4.3.1-2 OR A.4.3.1-12	All supported FDD or TDD or HD-FDD 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
D008 a	ANY((A.4.3.1-1) AND 3MHz)	Any FDD FR1 band within the set supporting 3 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	2Tx(A.4.3.9-12) AND FDD	All supported FDD FR1 band with 2Tx UL MIMO capabilities
D012 a	4Tx(A.4.3.9-12) AND FDD	All supported FDD FR1 band with 4Tx 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
D017 a	{n40, n41, n77, n78, n79} AND NOT A.4.3.9-14	All supported TDD bands among n40, n41, n77, n78, n79 and without Tx Diversity capability
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	2Tx(A.4.3.9-12) AND NOT A.4.3.1-5	All supported FDD or TDD FR1 Bands with 2Tx UL MIMO capabilities
D022 a	4Tx(A.4.3.9-12) AND NOT A.4.3.1-5	All supported FDD or TDD FR1 Bands with 4Tx UL MIMO capabilities
D023	A.4.3.9-13	All supported FR2 Bands with UL MIMO capabilities
D024	A.4.3.9-12 AND A.4.3.1-5	All supported FR1 Bands with UL MIMO capabilities and SUL bands
D025	{n46, n96, n102} AND CCA	All supported TDD FR1 bands with CCA
D026	Void	
D027	A.4.3.1-11	All supported NR NTN satellite bands in FR1-NTN
D028	{n1, n3, n34, n39, n41, n78, n79}	All supported ATG bands among n1, n3, n34, n39, n41, n78, n79
D029	A.4.3.9-4c	All bands supporting 2Rx antenna ports capabilities
D030	2Tx(A.4.3.9-14)	All supported FDD or TDD FR1 bands with 2Tx Tx Diversity capability
D030 a	4Tx(A.4.3.9-14)	All supported FDD or TDD FR1 bands with 4Tx Tx Diversity capability

NOTE 1: Band Selection is based on set theory. For each feature, item number shall correspond to the Band number. The result is the set of bands for which the test shall be conducted. The following operators are used:

AND: Set intersection (\cap). $\{n1,n2\} \text{ AND } \{n2,n3\} = \{n2\}$

OR: Set union (\cup). $\{n1,n2\} \text{ OR } \{n2,n3\} = \{n1,n2,n3\}$

NOT: Set complement (\setminus), full set being all bands. $\text{NOT}\{n1\} = \{\text{All bands except } n1\}$

Also note that this is set without repetitions so $\{n1\} \text{ AND } \{n1\} = \{n1\}$

The following basic sets are used:

$\{n1,n2\}$: Explicitly given band set

10MHz: All bands supporting 10 MHz

FDD: All bands in FDD mode

NOTE 2: 2Tx(table_index) includes all supported Bands where 2Tx capability was declared in column "2Tx" in Table table_index in TS 38.508-2 [8].

NOTE 3: 4Tx(table_index) includes all supported Bands where 4Tx capability was declared in column "4Tx" in Table table_index in TS 38.508-2 [8].

Table 4.0-3: Tested CA/DC or V2X 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 DL_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) AND DL_2CC(A.4.3.2B.2.3.1-2) 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) AND 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.1-2/1	All supported FR1 2UL CA configurations with DL CA
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 OR A.4.3.2A.4.3-3) 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 OR A.4.3.2A.4.3-3) AND A.4.3.2A.1-1/4	All supported FR1 5DL CA configurations
E019	UL_2CC(ULTxSwitching(A.4.3.2A.4.1-3))	All supported FR1 2UL CA configurations with 1Tx-2Tx ULTxSwitching capability
E019a	UL_2CC(2Tx_ULTxSwitching(A.4.3.2A.4.1-3))	All supported FR1 2UL CA configurations with 2Tx-2Tx ULTxSwitching capability
E019b	UL_3CC(ULTxSwitching(A.4.3.2A.4.1-3))	All supported FR1 3UL CA configurations with 1Tx-2Tx ULTxSwitching capability
E019c	UL_3CC(2Tx_ULTxSwitching(A.4.3.2A.4.1-3))	All supported FR1 3UL CA configurations with 2Tx-2Tx ULTxSwitching capability
E020	UL_2CC(A.4.3.2A.2.2-3 OR A.4.3.2A.3.2-3 OR A.4.3.2A.3.2-3a) AND A.4.3.2A.1-2/1	All supported FR2 2UL CA configurations
E021	UL_3CC(A.4.3.2A.2.2-3 OR A.4.3.2A.3.2-3 OR A.4.3.2A.3.2-3a) AND A.4.3.2A.1-2/2	All supported FR2 3UL CA configurations
E022	UL_4CC(A.4.3.2A.2.2-3 OR A.4.3.2A.3.2-3 OR A.4.3.2A.3.2-3a) AND A.4.3.2A.1-2/3	All supported FR2 4UL CA configurations
E023	UL_5CC(A.4.3.2A.2.2-3) AND A.4.3.2A.1-2/4	All supported FR2 5UL CA configurations
E024	UL_6CC(A.4.3.2A.2.2-3) AND A.4.3.2A.1-2/5	All supported FR2 6UL CA configurations
E025	UL_7CC(A.4.3.2A.2.2-3) AND A.4.3.2A.1-2/6	All supported FR2 7UL CA configurations
E026	UL_8CC(A.4.3.2A.2.2-3) AND A.4.3.2A.1-2/7	All supported FR2 8UL CA configurations
E027	DL_NR_2CC(A.4.3.2B.2.2-2) AND A.4.3.2B.2.0-1A/2	All supported Intra-band non-contiguous EN-DC configurations in FR1 (2DL NR CCs)
E028	DL_NR_3CC(A.4.3.2B.2.2-2) AND A.4.3.2B.2.0-1A/3	All supported Intra-band non-contiguous EN-DC configurations in FR1 (3DL NR CCs)
E028a	DL_NR_4CC(A.4.3.2B.2.2-2) AND A.4.3.2B.2.0-1A/4	All supported Intra-band non-contiguous EN-DC configurations in FR1 (4DL NR CCs)
E028b	DL_NR_5CC(A.4.3.2B.2.2-2) AND A.4.3.2B.2.0-1A/5	All supported Intra-band non-contiguous EN-DC configurations in FR1 (5DL NR CCs)
E029	DL_NR_2CC(A.4.3.2B.2.3.1-2 OR A.4.3.2B.2.3.2-2 OR A.4.3.2B.2.3.3-2 OR A.4.3.2B.2.3.4-2 OR A.4.3.2B.2.3.5-2) AND A.4.3.2B.2.0-1A/2	All supported Inter-band EN-DC configurations within FR1 (2DL NR CCs)
E030	DL_NR_3CC(A.4.3.2B.2.3.1-2 OR A.4.3.2B.2.3.2-2 OR A.4.3.2B.2.3.3-2 OR A.4.3.2B.2.3.4-2 OR A.4.3.2B.2.3.5-2) AND A.4.3.2B.2.0-1A/3	All supported Inter-band EN-DC configurations within FR1 (3DL NR CCs)
E030a	DL_NR_4CC(A.4.3.2B.2.3.1-2 OR A.4.3.2B.2.3.2-2 OR A.4.3.2B.2.3.3-2 OR A.4.3.2B.2.3.4-2 OR A.4.3.2B.2.3.5-2) AND A.4.3.2B.2.0-1A/4	All supported Inter-band EN-DC configurations within FR1 (4DL NR CCs)
E030b	DL_NR_5CC(A.4.3.2B.2.3.1-2 OR A.4.3.2B.2.3.2-2 OR A.4.3.2B.2.3.3-2 OR A.4.3.2B.2.3.4-2 OR A.4.3.2B.2.3.5-2) AND A.4.3.2B.2.0-1A/5	All supported Inter-band EN-DC configurations within FR1 (5DL NR CCs)
E031	A.4.3.2C.3-2	All supported FR1 intra-band contiguous 2DL CA with SUL in uplink Configurations

E031b	ULTxSwitching(A.4.3.2B.2.3.1-2)	All supported FR1 2UL inter-band EN-DC configurations with ULTxSwitching capability
E032	DL_2CC(A.4.3.2A.2.2-3 OR A.4.3.2A.3.2-3 OR A.4.3.2A.3.2-3a) AND A.4.3.2A.1-1/1	All supported FR2 2DL CA configurations
E033	DL_3CC(A.4.3.2A.2.2-3 OR A.4.3.2A.3.2-3 OR A.4.3.2A.3.2-3a) AND A.4.3.2A.1-1/2	All supported FR2 3DL CA configurations
E034	DL_4CC(A.4.3.2A.2.2-3 OR A.4.3.2A.3.2-3 OR A.4.3.2A.3.2-3a) AND A.4.3.2A.1-1/3	All supported FR2 4DL CA configurations
E035	DL_5CC(A.4.3.2A.2.2-3 OR A.4.3.2A.3.2-3 OR A.4.3.2A.3.2-3a) AND A.4.3.2A.1-1/4	All supported FR2 5DL CA configurations
E036	DL_6CC(A.4.3.2A.2.2-3 OR A.4.3.2A.3.2-3 OR A.4.3.2A.3.2-3a) AND A.4.3.2A.1-1/5	All supported FR2 6DL CA configurations
E037	DL_7CC(A.4.3.2A.2.2-3 OR A.4.3.2A.3.2-3 OR A.4.3.2A.3.2-3a) AND A.4.3.2A.1-1/6	All supported FR2 7DL CA configurations
E038	DL_8CC(A.4.3.2A.2.2-3 OR A.4.3.2A.3.2-3 OR A.4.3.2A.3.2-3a) AND A.4.3.2A.1-1/7	All supported FR2 8DL CA configurations
E039	UL_NR_6CC(A.4.3.2B.2.3.6-2 OR A.4.3.2B.2.3.7-2 OR A.4.3.2B.2.3.8-2 OR A.4.3.2B.2.3.9-2) AND A.4.3.2B.2.0-2/4 AND A.4.3.2B.2.0-2A/6	All supported Inter-band EN-DC configurations including FR2 (6UL NR CCs)
E039a	DL_NR_6CC(A.4.3.2B.2.3.6-2 OR A.4.3.2B.2.3.7-2 OR A.4.3.2B.2.3.8-2 OR A.4.3.2B.2.3.9-2) AND A.4.3.2B.2.0-1/5 AND A.4.3.2B.2.0-1A/5	All supported Inter-band EN-DC configurations including FR2 (6DL NR CCs)
E040	UL_NR_7CC(A.4.3.2B.2.3.6-2 OR A.4.3.2B.2.3.7-2 OR A.4.3.2B.2.3.8-2 OR A.4.3.2B.2.3.9-2) AND A.4.3.2B.2.0-2/4 AND A.4.3.2B.2.0-2A/7	All supported Inter-band EN-DC configurations including FR2 (7UL NR CCs)
E040a	DL_NR_7CC(A.4.3.2B.2.3.6-2 OR A.4.3.2B.2.3.7-2 OR A.4.3.2B.2.3.8-2 OR A.4.3.2B.2.3.9-2) AND A.4.3.2B.2.0-1/5 AND A.4.3.2B.2.0-1A/7	All supported Inter-band EN-DC configurations including FR2 (7DL NR CCs)
E041	UL_NR_8CC(A.4.3.2B.2.3.6-2 OR A.4.3.2B.2.3.7-2 OR A.4.3.2B.2.3.8-2 OR A.4.3.2B.2.3.9-2) AND A.4.3.2B.2.0-2/4 AND A.4.3.2B.2.0-2A/8	All supported Inter-band EN-DC configurations including FR2 (8UL NR CCs)
E041a	DL_NR_8CC(A.4.3.2B.2.3.6-2 OR A.4.3.2B.2.3.7-2 OR A.4.3.2B.2.3.8-2 OR A.4.3.2B.2.3.9-2) AND A.4.3.2B.2.0-1/5 AND A.4.3.2B.2.0-1A/8	All supported Inter-band EN-DC configurations including FR2 (8DL NR CCs)
E042	Table A.4.3.2A.2.1-3a	All supported FR1 intra-band contiguous CA configuration with UL MIMO capabilities
E043	UL_NR_1CC(A.4.3.2B.2.3.6-2 OR A.4.3.2B.2.3.7-2 OR A.4.3.2B.2.3.8-2 OR A.4.3.2B.2.3.9-2) AND A.4.3.2B.2.0-2A/1 AND A.4.3.9-13	All supported Inter-band EN-DC configurations including FR2 (1UL NR CC) and UL MIMO
E044	ULTxSwitching(A.4.3.2C.2-1)	All supported FR1 SUL configurations with 1Tx-2Tx ULTxSwitching capability
E044a	2Tx_ULTxSwitching(A.4.3.2C.2-1)	All supported FR1 SUL configurations with 2Tx-2Tx ULTxSwitching capability
E044b	ULTxSwitching(A.4.3.2C.3-2)	All supported FR1 SUL/intra-band CA configurations with 1Tx-2Tx ULTxSwitching capability
E044c	2Tx_ULTxSwitching(A.4.3.2C.3-2)	All supported FR1 SUL/intra-band CA configurations with 2Tx-2Tx ULTxSwitching capability
E045	Table A.4.3.2A.4.1-5	All supported FR1 inter-band CA configuration with UL MIMO capability (2UL CCs)
E046	Table A.4.3.2A.4.1-6	All supported FR1 inter-band CA configuration with Tx Diversity capability (2UL CCs)
E047	Table A.4.3.2B.2.3.1-5	All supported FR1 inter-band EN-DC configuration with UL MIMO capability (2UL CCs)
E048	Table A.4.3.2B.2.3.1-6	All supported FR1 inter-band EN-DC configuration with Tx Diversity capability (2UL CCs)
E049	3bandsULTxSwitching(Table A.4.3.2C.3-3)	All supported FR1 SUL operation with inter-band CA with ULTxSwitchingBandPair-r18 capability
E050	Table A.4.3.2E.2-2	All supported NR V2X inter-band concurrent operation
E051	Table A.4.3.2E.2-2 OR Table A.4.3.2E.2-1	All supported NR V2X inter-band concurrent operation and NR V2X intra-band concurrent operation

E052	Table A.4.3.2E.2-1	All supported NR V2X intra-band concurrent operation
E053	A.4.3.2E.3-3	All supported inter-band V2X operation in FR1
E054	3BandsULTxSwitching (Table A.4.3.2A.4.2-3)	All supported FR1 inter-band CA configurations with ULTxSwitchingBandPair-r18 capability
E055	4BandsULTxSwitching (Table A.4.3.2A.4.3-3)	All supported FR1 inter-band CA configurations with ULTxSwitchingBandPair-r18 capability
<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]. 3bandsULTxSwitching(<i>table_index</i>) includes all supported CA/DC/SUL Configurations where at least one uplink band pair was declared in column "Supported R18 dynamic UL Tx switching band pair" in Table <i>table_index</i> in TS 38.508-2 [8]. 4bandsULTxSwitching(<i>table_index</i>) includes all supported CA/DC/SUL Configurations where at least one uplink band pair was declared in column "Supported R18 dynamic UL Tx switching band pair" in Table <i>table_index</i> in TS 38.508-2 [8].</p>		

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

Code	Tested Bands Selection Criteria	Comment
F001	A.4.3.2-1/9	UEs supporting CSI-RS based PRACH
F002	A.4.3.5-1/1	UEs supporting long DRX cycle
F003 to F013	Void	
F014	A.4.3.6-1/2A AND A.4.3.6-1/92	UEs supporting independentGapConfig for MRDC and Gap Pattern 13
F015	A.4.3.5-1/1 AND A.4.3.6-1/2A AND A.4.3.6-1/92	UEs supporting independentGapConfig for MRDC and long DRX cycle and Gap Pattern 13
F016	A.4.3.6-1/2 AND A.4.3.6-1/21	UEs supporting per-FR gap and Gap Pattern 4
F017	Void	
F018	Void	
F019	A.4.3.5-1/1 AND A.4.3.6-1/2 AND A.4.3.6-1/21	UEs supporting per-FR gap and long DRX cycle and Gap Pattern 4
F020	Void	
F021	Void	
F022	A.4.3.2-1/20	UE supporting alternative additional DMRS position for co-existence with LTE CRS
F023	A.4.3.2-1/2	UE supporting 256QAM for PDSCH for FR1
F024	A.4.3.6-1/70	UE supporting per-FR NCSG
F025	A.4.3.2-1/213	UE supporting crs-IM-nonDSS-15kHzSCS-r17
F026	A.4.3.2-1/214	UE supporting crs-IM-nonDSS-NWA-15kHzSCS-r17
F027	A.4.3.2-1/213 OR A.4.3.2-1/215	UE supporting crs-IM-nonDSS-15kHzSCS-r17 OR crs-IM-nonDSS-30kHzSCS-r17
F028	A.4.3.2-1/214 OR A.4.3.2-1/216	UE supporting crs-IM-nonDSS-NWA-15kHzSCS-r17 OR crs-IM-nonDSS-NWA-30kHzSCS-r17
F029	A.4.3.2-1/203	UEs supporting simultaneous L1-RSRP measurements for more than one cell when the max RTD among the cells is larger than CP length
F030	Void	
F031	A.4.3.2-1/179 AND NOT (A.4.3.2-1/178)	UEs supporting MAC-CE activated separate LTM TCI states and do not support MAC-CE activated joint LTM TCI states
F032	A.4.3.2-1/175 AND NOT (A.4.3.2-1/178)	UEs supporting unified TCI with joint DL/UL LTM TCI-state indication for LTM procedure and do not support MAC-CE activated jointstates.
F033	A.4.3.2-1/176 AND NOT (A.4.3.2-1/175 OR A.4.3.2-1/178 OR A.4.3.2-1/179)	UEs supporting unified TCI with separate DL/UL LTM TCI-state indication for LTM procedure and do not support MAC-CE activated joint or separate LTM TCI states and do not support unified TCI with joint DL/UL LTM TCI-state indication for LTM procedure
F034 - F042	Void	
F043	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.4.3.2-1/191 AND A.4.3.2-1/179 AND A.4.3.2-1/183 AND A.4.3.2-1/186 AND NOT (A.4.3.2-1/178) AND A.4.3.6-1/102 AND A.4.3.2-1/196 THEN R ELSE N/A	UEs supporting 5GS NR SA FR1, intra-frequency LTM for MCG with RACH, MAC-CE activated separate LTM TCI states, RACH-less LTM with dynamic grant, intra-frequency L1-RSRP measurement, reporting based on SSB(s) of candidate cell(s) and do not support MAC-CE activated joint LTM TCI states, interruptions caused by PDCCH order
F044	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.4.3.2-1/183 AND A.4.3.2-1/186 AND A.4.3.2-1/191 AND A.4.3.6-1/102 AND A.4.3.2-1/196 THEN R ELSE N/A	UEs supporting 5GS NR SA FR1, intra-frequency LTM for MCG with RACH, RACH-less LTM with dynamic grant, intra-frequency L1-RSRP measurement and reporting based on SSB(s) of candidate cell(s) , interruptions caused by PDCCH order
F045	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.4.3.2-1/183 AND A.4.3.2-1/186 AND A.4.3.2-1/191 AND A.4.3.2-1/179 AND NOT (A.4.3.2-1/178) AND A.4.3.6-1/102 THEN R ELSE N/A	UEs supporting 5GS NR SA FR1, intra-frequency LTM for MCG with RACH, MAC-CE activated separate LTM TCI states, RACH-less LTM with dynamic grant and do not support MAC-CE activated joint LTM TCI states, interruptions caused by PDCCH order
F046	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.4.3.2-1/183 AND A.4.3.2-1/186 AND A.4.3.2-1/191 AND A.4.3.6-1/102 THEN R ELSE N/A	UEs supporting 5GS NR SA FR1, intra-frequency LTM for MCG with RACH, RACH-less LTM with dynamic grant, interruptions caused by PDCCH order

F047	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.4.3.2-1/183 AND A.4.3.2-1/184 AND A.4.3.2-1/185 AND A.4.3.2-1/186 AND A.4.3.6-1/102 AND A.4.3.2-1/194 THEN R ELSE N/A	UEs supporting 5GS NR SA FR1, intra-frequency LTM for MCG with RACH, RACH-less LTM with dynamic grant and intra-frequency L1-RSRP measurement and reporting based on SSB(s) of candidate cell(s) , interruptions caused by PDCCH order and Support simultaneous transmission to handle the overlap between UL transmission on serving cell(s) and PRACH on candidate cell(s)
F048	IF A.4.3.2-1/224 THEN R ELSE N/A	UE supporting max-HARQ-ProcessNumber-r17 with 32 HARQ processes
F049	IF A.4.3.5-1/18 THEN R ELSE N/A	UE supporting harq-FeedbackDisabled-r17
F050	A.4.3.2-1/78 AND A.4.3.2-1/56	UE supporting maxNumberActiveTCI-PerBWP other than n1 and maxSimultaneousResourceSetsPerCC atleast 2
F051	A.4.3.2-1/178	UEs supporting MAC-CE activated joint LTM TCI states

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 and not supporting RedCap and not supporting eRedCap	D001a	PC1 PC2 PC3	TC 6.2.1 is skipped if TC 6.2G.1 is executed.
6.2.2	UE maximum output power reduction	Rel-15	C001	UEs supporting 5GS FR1	D001a	PC1 PC2 PC3	Test execution is not necessary if TS 38.521-1 TC 6.5.2.4.1 is executed. Skip TC 6.2.2 if UE supports NSA and TS 38.521-3 TC 6.2B.2.3 or 6.5B.2.3.3.1 has been executed. TC 6.2.2 is skipped if TC 6.2G.2 is executed.
6.2.3	UE additional maximum output power reduction	Rel-15	C001	UEs supporting 5GS FR1	D001a	PC1 PC2 PC3 PC1.5	Test execution is not necessary if TS 38.521-1 TC 6.5.2.3, 6.5.2.4.2 and 6.5.3.3 are executed. Skip TC 6.2.3 if UE supports NSA and TS 38.521-3 TC 6.2B.3.3 has been executed or TS 38.521-3 TCs 6.5B.2.3.2, 6.5B.2.3.3.2 and 6.5B.4.3 have been executed. TC 6.2.3 is skipped if TC 6.2G.3 is executed.
6.2.4	Configured transmitted power	Rel-15	C001	UEs supporting 5GS FR1	D001a	PC1 PC2 PC3 PC1.5	TC 6.2.4 is skipped if TC 6.2G.4 is executed.

Clause	TC Title	Release	Applicability		Tested Bands/CA-Configurations Selection	Branch	Additional Information
			Condition	Comment			
6.2A.1.1	UE maximum output power for CA (2UL CA)	Rel-15	C004	UEs supporting 5GS FR1 and CA (2UL CA) and not supporting Tx Diversity	E015 E015a	Inter-band CA: PC2, PC3 Intra-band contiguous CA (NOTE 1) Intra-band non-contiguous CA (NOTE 1)	
6.2A.2.1	UE maximum output power reduction for CA (2UL CA)	Rel-15	C004	UEs supporting 5GS FR1 and CA (2UL CA) and not supporting Tx Diversity	E015 E015a	Inter-band CA: PC2, PC3 Intra-band contiguous CA: PC2, PC3 Intra-band non-contiguous CA: PC2 (NOTE 1), PC3 (NOTE 1)	Test execution is not necessary if TS 38.521-1 TC 6.5A.2.4.1.1 is executed.
6.2A.3.1	UE additional maximum output power reduction for CA (2UL CA)	Rel-15	C004	UEs supporting 5GS FR1 and CA (2UL CA) and not supporting Tx Diversity	E015 E015a	Inter-band CA: PC2, PC3 Intra-band contiguous CA: PC2, PC3 Intra-band non-contiguous CA (NOTE 1)	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) and not supporting Tx Diversity	E015 E015a	Inter-band CA: PC2, PC3 Intra-band contiguous CA: PC2, PC3 Intra-band non-contiguous CA (NOTE 1)	
6.2B.1.1	UE maximum output power for NR-DC	Rel-16	C004a	UEs supporting 5GS FR1 and NR-DC	E015b		
6.2B.2.1	UE maximum output power reduction for NR-DC	Rel-16	C004a	UEs supporting 5GS FR1 and NR-DC	E015b	PC1 PC2 PC3	Test execution is not necessary if TS 38.521-1 TC 6.5B.2.4 is executed.

Clause	TC Title	Release	Applicability		Tested Bands/CA-Configurations Selection	Branch	Additional Information
			Condition	Comment			
6.2B.3.1	UE additional maximum output power reduction for NR-DC	Rel-16	N/A	No requirements in TS 38.521-1 TC 6.5B.2.3 Additional Spectrum Emission mask for NR-DC and TS 38.521-1 TC 6.5B.3.3 Additional Spurious Emissions for NR-DC.			
6.2B.4.1	Configured transmitted power level for NR-DC	Rel-16	C004a	UEs supporting 5GS FR1 and NR-DC	E015b		
6.2C.1	Configured transmitted power for SUL	Rel-15	C002	UEs supporting 5GS FR1 and SUL	D003		NOTE 2
6.2C.3	UE maximum output power for SUL	Rel-15	C002	UEs supporting 5GS FR1 and SUL	D003		NOTE 2
6.2C.4	UE maximum output power reduction for SUL	Rel-15	C002	UEs supporting 5GS FR1 and SUL	D003		NOTE 2 Test execution is not necessary if TS 38.521-1 TC 6.5C.2.4.1 is executed.
6.2C.5	UE additional maximum output power reduction for SUL	Rel-15	C002	UEs supporting 5GS FR1 and SUL	D003		NOTE 2
6.2D.1	UE maximum output power for UL MIMO	Rel-15	N/A	No test point applicable to Rel-15 UE	D022	PC1.5 PC2 PC3	
		Rel-16	C003b	UEs supporting 5GS FR1 and ULFPTx			
6.2D.1_1	UE maximum output power for SUL with UL MIMO	Rel-17	C179b	UEs supporting 5GS FR1 and SUL and ULFPTx	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	PC2 PC3	Test execution is not necessary if TS 38.521-1 TC 6.5D.2.4.1_1 is executed.
6.2D.2_2	UE maximum output power reduction for UL MIMO for UE supporting 4Tx	Rel-18	C402	UEs supporting 5GS FR1 and (4-layer codebook based UL MIMO or ULFPTx)	D022a		

Clause	TC Title	Release	Applicability		Tested Bands/CA-Configurations Selection	Branch	Additional Information
			Condition	Comment			
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 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.
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	PC2 PC3	
6.2D.3_2	UE additional maximum output power reduction for UL MIMO for UE supporting 4Tx	Rel-18	C402	UEs supporting 5GS FR1 and (4-layer codebook based UL MIMO or ULFPTx)	D022a		
6.2D.4	Configured transmitted power for UL MIMO	Rel-15	C003	UEs supporting 5GS FR1 and 2-layer codebook based UL MIMO	D022	PC1.5 PC2 PC3	
		Rel-16	C003b	UEs supporting 5GS FR1 and ULFPTx			
6.2D.4_1	Configured transmitted power for SUL with UL MIMO	Rel-17	C179	UEs supporting 5GS FR1 and SUL and UL MIMO	D024		
		Rel-17	C179b	UEs supporting 5GS FR1 and SUL and ULFPTx			
6.2D.4_2	Configured transmitted power for UL MIMO for UE supporting 4Tx	Rel-18	C402	UEs supporting 5GS FR1 and (4-layer codebook based UL MIMO or ULFPTx)	D022a		
6.2E.1.2	UE maximum output power for V2X / concurrent operation	Rel-16	C079a	UEs supporting 5GS FR1 and NR sidelink and NR V2X inter-band concurrent operation	E050		
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	PC3 PC2	Test execution is not necessary if TS 38.521-1 TC 6.5E.2.4.1 is executed.
6.2E.2.1D	UE maximum output power reduction for V2X / non-concurrent operation / SL-MIMO	Rel-16	C079b	UEs supporting 5GS FR1 and NR sidelink and SL-MIMO	D016	PC3 PC2	
6.2E.2.2	UE maximum output power reduction for V2X / concurrent operation	Rel-16	C079c	UEs supporting 5GS FR1 and NR sidelink and UEs supporting 5GS FR1 and NR sidelink and NR V2X inter-band concurrent operation or NR V2X intra-band concurrent operation	E051	Inter-band concurrent operation Intra-band concurrent operation: PC3 , PC2	

Clause	TC Title	Release	Applicability		Tested Bands/CA-Configurations Selection	Branch	Additional Information
			Condition	Comment			
6.2E.3.1	UE additional maximum output power reduction for V2X / non-concurrent operation	Rel-16	C079	UEs supporting 5GS FR1 and NR sidelink	D016	PC3 PC2	Test execution is not necessary if TS 38.521-1 TC 6.5E.2.3.1 is executed.
6.2E.3.1D	UE additional maximum output power reduction for V2X / non-concurrent operation / SL-MIMO	Rel-16	C079b	UEs supporting 5GS FR1 and NR sidelink and SL-MIMO	D016	PC3 PC2	Test execution is not necessary if TS 38.521-1 TC 6.5E.2.3.1D is executed.
6.2E.3.2	UE additional maximum output power reduction for V2X / concurrent operation	Rel-16	N/A	No test case details are specified in TS 38.521-1.			
6.2E.4.1	Configured transmitted power for V2X / non-concurrent operation	Rel-16	C079	UEs supporting 5GS FR1 and NR sidelink	D016	PC3 PC2	
6.2E.4.1D	Configured transmitted power for V2X / non-concurrent operation / SL-MIMO	Rel-16	C079b	UEs supporting 5GS FR1 and NR sidelink and SL-MIMO	D016	PC3 PC2	
6.2E.4.2	Configured transmitted power for V2X / concurrent operation	Rel-16	C079c	UEs supporting 5GS FR1 and NR sidelink and UEs supporting 5GS FR1 and NR sidelink and NR V2X inter-band concurrent operation or NR V2X intra-band concurrent operation	E051	Inter-band concurrent operation Intra-band concurrent operation: PC3, PC2	
6.2F.1	Void						
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		
6.2F.3	UE additional maximum output power reduction for shared spectrum access	Rel-16	C001c	UEs supporting 5GS FR1 and operation with shared spectrum channel access	D018		
6.2F.4	Configured transmitted power for shared spectrum access	Rel-16	C001c	UEs supporting 5GS FR1 and operation with shared spectrum channel access	D018		
6.2G.1	UE maximum output power for Tx Diversity	Rel-15	C001g	UEs supporting 5GS FR1 and supporting Tx Diversity	D030	PC1.5 PC2 PC3	
6.2G.2	UE maximum output power reduction for Tx Diversity	Rel-15	C001g	UEs supporting 5GS FR1 and supporting Tx Diversity	D030	PC1.5 PC2 PC3	Test execution is not necessary if TS 38.521-1 TC 6.5G.2.3.1 is executed.

Clause	TC Title	Release	Applicability		Tested Bands/CA-Configurations Selection	Branch	Additional Information
			Condition	Comment			
6.2G.2_1	UE maximum output power reduction for Tx Diversity for UE supporting 4Tx	Rel-18	C403	UEs supporting 5GS FR1 and supporting 4Tx Diversity	D030a		
6.2G.3	UE additional maximum output power reduction for Tx Diversity	Rel-15	C001g	UEs supporting 5GS FR1 and supporting Tx Diversity	D030	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.3_1	UE additional maximum output power reduction for Tx Diversity for UE supporting 4Tx	Rel-18	C403	UEs supporting 5GS FR1 and supporting 4Tx Diversity	D030a		
6.2G.4	Configured transmitted power for Tx Diversity	Rel-15	C001g	UEs supporting 5GS FR1 and supporting Tx Diversity	D030	PC1.5 PC2 PC3	
6.2G.4_1	Configured transmitted power for Tx Diversity for UE supporting 4Tx	Rel-18	C403	UEs supporting 5GS FR1 and supporting 4Tx Diversity	D030a		
6.2H.1.2	UE maximum output power reduction for intra-band UL contiguous CA with UL MIMO	Rel-15	C285	UEs supporting 5GS FR1 and intra-band contiguous CA (2UL CA) and MIMO.	E042	PC2 PC3	Test execution is not necessary if TS 38.521-1 TC 6.5H.1.2.1 is executed.
6.2H.1.3	UE additional maximum output power reduction for intra-band UL contiguous CA with UL MIMO	Rel-15	C285	UEs supporting 5GS FR1 and intra-band contiguous CA (2UL CA) and MIMO.	E042	PC2 PC3	Test execution is not necessary if TS 38.521-1 TC 6.5H.1.2.3 is executed.
6.2H.1.4	Configured transmitted power for intra-band UL contiguous CA with UL MIMO	Rel-15	C285	UEs supporting 5GS FR1 and intra-band contiguous CA (2UL CA) and MIMO.	E042	PC2 PC3	
6.2H.3.1	UE maximum output power for inter-band UL CA with UL MIMO	Rel-17	C328	UEs supporting 5GS FR1 and inter-band CA (2UL CA) with UL MIMO.	E045	PC1.5 PC2 PC3	
6.2I.1	UE maximum output power for RedCap	Rel-17	C177	RedCap UEs supporting 5GS FR1	D001b		
6.2I.2	UE maximum output power for eRedCap	Rel-18	C372	eRedCap UEs supporting 5GS FR1	D001b		
6.2I.3	Void						
6.2I.4	Void						
6.2J.1	UE maximum output power for ATG	Rel-18	C001n	UEs supporting 5GS FR1 ATG	D028		NOTE 1
6.2J.2	Configured transmitted power for ATG	Rel-18	C001n	UEs supporting 5GS FR1 ATG	D028		NOTE 1
6.2L.3.1	UE maximum output power for inter-band UL CA with Tx Diversity	Rel-17	C329	UEs supporting 5GS FR1 and inter-band CA (2UL CA) with Tx Diversity.	E046	PC1.5 PC2 PC3	

Clause	TC Title	Release	Applicability		Tested Bands/CA-Configurations Selection	Branch	Additional Information
			Condition	Comment			
6.3.1	Minimum output power	Rel-15	C001	UEs supporting 5GS FR1	D001a		TC 6.3.1 is skipped if TC 6.3G.1 is executed.
6.3.3.2	General ON/OFF time mask	Rel-15	C001	UEs supporting 5GS FR1	D001a		Skip TC 6.3.3.2 if UE supports NSA and TS 38.521-3 TC 6.3B.3.1 or 6.3B.3.2 or 6.3B.3.3 has been executed. TC 6.3.3.2 is skipped if TC 6.3G.3.1 is executed.
6.3.3.4	PRACH time mask	Rel-15	C001	UEs supporting 5GS FR1	D001a		Skip TC 6.3.3.4 if UE supports NSA and TS 38.521-3 TC 6.3B.4.1 or 6.3B.4.2 or 6.3B.4.3 has been executed. TC 6.3.3.4 is skipped if TC 6.3G.3.2 is executed.
6.3.3.6	SRS time mask	Rel-15	C001	UEs supporting 5GS FR1	D001a		TC 6.3.3.6 is skipped if TC 6.3G.3.3 is executed.
6.3.4.2	Absolute power tolerance	Rel-15	C001	UEs supporting 5GS FR1	D001a		TC 6.3.4.2 is skipped if TC 6.3G.4.1 is executed.
6.3.4.3	Relative power tolerance	Rel-15	C001	UEs supporting 5GS FR1	D001a		TC 6.3.4.3 is skipped if TC 6.3G.4.2 is executed.
6.3.4.4	Aggregate power tolerance	Rel-15	C001	UEs supporting 5GS FR1	D001a		TC 6.3.4.4 is skipped if TC 6.3G.4.3 is executed.
6.3A.1.1	Minimum output power for CA (2UL CA)	Rel-15	C004	UEs supporting 5GS FR1 and CA (2UL CA) and not supporting Tx Diversity	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) and not supporting Tx Diversity	E015		

Clause	TC Title	Release	Applicability		Tested Bands/CA-Configurations Selection	Branch	Additional Information
			Condition	Comment			
6.3A.3.2	Time mask for switching between two uplink carriers	Rel-16	C051	UEs supporting 5GS FR1 and Inter-band CA (2UL CA) and dynamic 1Tx-2Tx UL Tx switching	E019		
6.3A.3.3	Time mask for switching between two uplink carriers with two transmit antenna connectors	Rel-17	C051b	UEs supporting 5GS FR1 and Inter-band CA (2UL CA) and dynamic 2Tx-2Tx UL Tx switching	E019a		
6.3A.3.4	Time mask for switching between one uplink band with one transmit antenna connector and one uplink band with two transmit antenna connectors (3UL CA)	Rel-17	C051d	UEs supporting 5GS FR1 and inter-band/intra-band CA (3UL CA) and dynamic 1Tx-2Tx UL Tx switching.	E019b		
6.3A.3.5	Time mask for switching between two uplink bands with two transmit antenna connectors (3UL CA)	Rel-17	C051f	UEs supporting 5GS FR1 and inter-band/intra-band CA (3UL CA) and dynamic 2Tx-2Tx UL Tx switching.	E019c		
6.3A.3.6	Time mask for switching across three uplink bands	Rel-18	C412	UEs supporting 5GS FR1 and inter-band CA and dynamic UL Tx switching across three bands.	E054		
6.3A.3.6_1	Time mask for switching across three uplink bands (more than 3CC)	Rel-18	C413	UEs supporting 5GS FR1 and inter-band + intra-band CA and dynamic UL Tx switching across three bands.	E054		
6.3A.3.7	Time mask for switching across four uplink bands	Rel-18	C414	UEs supporting 5GS FR1 and inter-band CA and dynamic UL Tx switching across four bands.	E055		
6.3A.4.1.1	Absolute power tolerance for CA (2UL CA)	Rel-15	C004	UEs supporting 5GS FR1 and CA (2UL CA) and not supporting Tx Diversity	E015		
6.3A.4.2.1	Relative power tolerance for CA (2UL CA)	Rel-15	C004	UEs supporting 5GS FR1 and CA (2UL CA) and not supporting Tx Diversity	E015		
6.3A.4.3.1	Aggregate power tolerance for CA (2UL CA)	Rel-15	C004	UEs supporting 5GS FR1 and CA (2UL CA) and not supporting Tx Diversity	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 1Tx-2Tx switching	E044		NOTE 2
6.3C.3.3	Time mask for switching between two uplink carriers with two transmit antenna connectors	Rel-17	C178a	UEs supporting 5GS FR1 and SUL and dynamic UL 2Tx-2Tx switching	E044a		
6.3C.3.4	Time mask for switching between one uplink band with one transmit antenna connector and one uplink band with two transmit antenna connectors	Rel-17	C178b	UEs supporting 5GS FR1 and SUL with intra-band contiguous CA and dynamic UL 1Tx-2Tx switching	E044b		
6.3C.3.5	Time mask for switching between two uplink bands with two transmit antenna connectors	Rel-17	C178c	UEs supporting 5GS FR1 and SUL with intra-band contiguous CA and dynamic UL 2Tx-2Tx switching	E044c		
6.3C.3.6	Time mask for switching across three uplink bands (3CC)	Rel-18	C346	UEs supporting 5GS FR1 and SUL with inter-band CA and dynamic UL switching across three bands	E049		
6.3C.3.6_1	Time mask for switching across three uplink bands (more than 3CC)	Rel-18	C347	UEs supporting 5GS FR1 and SUL with intra-band + inter-band CA and dynamic UL switching across three bands	E049		
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.1_2	Minimum output power UL MIMO for UE supporting 4Tx	Rel-18	C400	UEs supporting 5GS FR1 and 4-layer codebook based UL MIMO	D022a		NOTE 1
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		

Clause	TC Title	Release	Applicability		Tested Bands/CA-Configurations Selection	Branch	Additional Information
			Condition	Comment			
6.3D.3_2	Transmit ON/OFF time mask for UL MIMO for UE supporting 4Tx	Rel-18	C400	UEs supporting 5GS FR1 and 4-layer codebook based UL MIMO	D022a		
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.4.1_2	Absolute power tolerance for UL MIMO for UE supporting 4Tx	Rel-18	C400	UEs supporting 5GS FR1 and 4-layer codebook based UL MIMO	D022a		
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.4.2_2	Relative power tolerance for UL MIMO for UE supporting 4Tx	Rel-18	C400	UEs supporting 5GS FR1 and 4-layer codebook based UL MIMO	D022a		NOTE 1
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	PC1.5 PC2 PC3	
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		
6.3D.4.3_2	Aggregate power tolerance for UL MIMO for UE supporting 4Tx	Rel-18	C400	UEs supporting 5GS FR1 and 4-layer codebook based UL MIMO	D022a		
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	C079b	UEs supporting 5GS FR1 and NR sidelink and SL-MIMO	D016		
6.3E.3.1	Transmit ON/OFF time mask for V2X / non-concurrent operation	Rel-16	C079	UEs supporting 5GS FR1 and NR sidelink	D016		
6.3E.3.1D	Transmit ON/OFF time mask for V2X / non-concurrent operation / SL-MIMO	Rel-16	C079b	UEs supporting 5GS FR1 and NR sidelink and SL-MIMO	D016		
6.3E.4.1.1	Absolute power tolerance for V2X / non-concurrent operation	Rel-16	C079	UEs supporting 5GS FR1 and NR sidelink	D016		
6.3E.4.1.1D	Absolute power tolerance for V2X / non-concurrent operation / SL-MIMO	Rel-16	C079	UEs supporting 5GS FR1 and NR sidelink and SL-MIMO	D016		

Clause	TC Title	Release	Applicability		Tested Bands/CA-Configurations Selection	Branch	Additional Information
			Condition	Comment			
6.3F.1	Minimum output power	Rel-16	C001c	UEs supporting 5GS FR1 and operation with shared spectrum channel access	D018		NOTE 1
6.3F.3.2	General ON/OFF time mask	Rel-16	C001c	UEs supporting 5GS FR1 and operation with shared spectrum channel access	D018		
6.3F.4.2	Absolute power tolerance for shared spectrum access	Rel-16	C001c	UEs supporting 5GS FR1 and operation with shared spectrum channel access	D018		
6.3F.4.3	Relative power tolerance for shared spectrum channel access	Rel-16	C001c	UEs supporting 5GS FR1 and operation with shared spectrum channel access	D018		
6.3F.4.4	Aggregate power tolerance for shared spectrum channel access	Rel-16	C001c	UEs supporting 5GS FR1 and operation with shared spectrum channel access	D018		
6.3G.1	Minimum output power for Tx Diversity	Rel-15	C001g	UEs supporting 5GS FR1 and supporting Tx Diversity	D030	PC1.5 PC2 PC3	
6.3G.1_1	Minimum output power for Tx Diversity for UE supporting 4Tx	Rel-18	C403	UEs supporting 5GS FR1 and supporting 4Tx Diversity	D030a		NOTE 1
6.3G.3.1	General ON/OFF time mask for Tx Diversity	Rel-15	C001g	UEs supporting 5GS FR1 and supporting Tx Diversity	D030	PC1.5 PC2 PC3	
6.3G.3.1_1	General ON/OFF time mask for Tx Diversity for UE supporting 4Tx	Rel-18	C403	UEs supporting 5GS FR1 and supporting 4Tx Diversity	D030a		
6.3G.3.2	PRACH time mask for Tx Diversity	Rel-15	C001g	UEs supporting 5GS FR1 and supporting Tx Diversity	D030	PC1.5 PC2 PC3	
6.3G.3.3	SRS time mask for Tx Diversity	Rel-15	C001g	UEs supporting 5GS FR1 and supporting Tx Diversity	D030	PC1.5 PC2 PC3	
6.3G.4.1	Absolute power tolerance for Tx Diversity	Rel-15	C001g	UEs supporting 5GS FR1 and supporting Tx Diversity	D030	PC1.5 PC2 PC3	
6.3G.4.1_1	Absolute power tolerance for Tx Diversity for UE supporting 4Tx	Rel-18	C403	UEs supporting 5GS FR1 and supporting 4Tx Diversity	D030a		
6.3G.4.2	Relative power tolerance for Tx Diversity	Rel-15	C001g	UEs supporting 5GS FR1 and supporting Tx Diversity	D030	PC1.5 PC2 PC3	
6.3G.4.2_1	Relative power tolerance for Tx Diversity for UE supporting 4Tx	Rel-18	C403	UEs supporting 5GS FR1 and supporting 4Tx Diversity	D030a		NOTE 1

Clause	TC Title	Release	Applicability		Tested Bands/CA-Configurations Selection	Branch	Additional Information
			Condition	Comment			
6.3G.4.3	Aggregate power tolerance for Tx Diversity	Rel-15	C001g	UEs supporting 5GS FR1 and supporting Tx Diversity	D030	PC1.5 PC2 PC3	
6.3G.4.3_1	Aggregate power tolerance for Tx Diversity for UE supporting 4Tx	Rel-18	C403	UEs supporting 5GS FR1 and supporting 4Tx Diversity	D030a		
6.3H.1.1	Minimum output power for intra-band UL contiguous CA with UL MIMO	Rel-15	C285	UEs supporting 5GS FR1 and intra-band contiguous CA (2UL CA) and MIMO.	E042	PC2 PC3	
6.3H.1.3	Transmit ON/OFF time mask for intra-band UL contiguous CA with UL MIMO	Rel-15	C285	UEs supporting 5GS FR1 and intra-band contiguous CA (2UL CA) and MIMO.	E042	PC2 PC3	
6.3J.1	Minimum output power for ATG	Rel-18	C001n	UEs supporting 5GS FR1 ATG	D028		NOTE 1
6.3J.3.1	General ON/OFF time mask for ATG	Rel-18	C001n	UEs supporting 5GS FR1 ATG	D028		NOTE 1
6.3J.3.3	PRACH time mask for ATG	Rel-18	C001n	UEs supporting 5GS FR1 ATG	D028		NOTE 1
6.3J.3.4	SRS time mask for ATG	Rel-18	C001n	UEs supporting 5GS FR1 ATG	D028		NOTE 1
6.3J.4.1	Absolute power tolerance for ATG	Rel-18	C001n	UEs supporting 5GS FR1 ATG	D028		NOTE 1
6.3J.4.2	Relative power tolerance for ATG	Rel-18	C001n	UEs supporting 5GS FR1 ATG	D028		NOTE 1
6.3J.4.3	Aggregate power tolerance for ATG	Rel-18	C001n	UEs supporting 5GS FR1 ATG	D028		NOTE 1
6.4.1	Frequency error	Rel-15	C001	UEs supporting 5GS FR1	D001a		Skip TC 6.4.1 if UE supports NSA and TS 38.521-3 TC 6.4B.1.1 or 6.4B.1.2 or 6.4B.1.3 has been executed. TC 6.4.1 is skipped if TC 6.4G.1 is executed.
6.4.2.1	Error vector magnitude	Rel-15	C001	UEs supporting 5GS FR1	D001a		Skip TC 6.4.2.1 if UE supports NSA and TS 38.521-3 TC 6.4B.2.1.1 or 6.4B.2.2.1 or 6.4B.2.3.1 has been executed. TC 6.4.2.1 is skipped if TC 6.4G.2.1 is executed.
6.4.2.1a	Error Vector Magnitude including symbols with transient period	Rel-16	C156	UEs supporting 5GS FR1 AND Band supporting enhancedUL-TransientPeriod	D001a		

Clause	TC Title	Release	Applicability		Tested Bands/CA-Configurations Selection	Branch	Additional Information
			Condition	Comment			
6.4.2.2	Carrier leakage	Rel-15	C001	UEs supporting 5GS FR1	D001a		Skip TC 6.4.2.2 if UE supports NSA and TS 38.521-3 TC 6.4B.2.1.2 or 6.4B.2.2.2 or 6.4B.2.3.2 has been executed. TC 6.4.2.2 is skipped if TC 6.4G.2.2 is executed.
6.4.2.3	In-band emissions	Rel-15	C001	UEs supporting 5GS FR1	D001a		Skip TC 6.4.2.3 if UE supports NSA and TS 38.521-3 TC 6.4B.2.2.3 or 6.4B.2.3.3 has been executed. TC 6.4.2.3 is skipped if TC 6.4G.2.3 is executed.
6.4.2.4	EVM equalizer spectrum flatness	Rel-15	C001	UEs supporting 5GS FR1	D001a		Skip TC 6.4.2.4 if UE supports NSA and TS 38.521-3 TC 6.4B.2.1.4 or 6.4B.2.2.4 or 6.4B.2.3.4 has been executed. TC 6.4.2.4 is skipped if TC 6.4G.2.4 is executed.
6.4.2.5	EVM equalizer spectrum flatness for Pi/2 BPSK	Rel-15	C050	UEs supporting 5GS FR1 Power Class 3 and pi/2-BPSK modulation scheme for power boosting in FR1	D017a		
		Rel-16	C111	UEs supporting 5GS FR1 and pi/2-BPSK modulation scheme and low PAPR DMRS	D001a		

Clause	TC Title	Release	Applicability		Tested Bands/CA-Configurations Selection	Branch	Additional Information
			Condition	Comment			
6.4.2.6	Phase continuity requirements for DMRS bundling	Rel-17	C337	UEs supporting 5GS FR1, <i>dmrs-BundlingPUCCH-Rep-r17</i> and either <i>dmrs-BundlingPUSCH-multiSlot-r17</i> or <i>dmrs-BundlingPUSCH-RepTypeA-r17</i> or <i>dmrs-BundlingPUSCH-RepTypeB-r17</i>	D001a		NOTE 1
6.4A.1.1	Frequency error for CA (2UL CA)	Rel-15	C004	UEs supporting 5GS FR1 and CA (2UL CA and not supporting Tx Diversity)	E015	Inter-band CA Intra-band contiguous CA Intra-band non-contiguous CA	
6.4A.2.1.1	Error vector magnitude for CA (2UL CA)	Rel-15	C004	UEs supporting 5GS FR1 and CA (2UL CA and not supporting Tx Diversity)	E015	Inter-band CA Intra-band contiguous CA Intra-band non-contiguous CA	
6.4A.2.2.1	Carrier leakage for CA (2UL CA)	Rel-15	C004	UEs supporting 5GS FR1 and CA (2UL CA and not supporting Tx Diversity)	E015	Inter-band CA Intra-band contiguous CA Intra-band non-contiguous CA(NOTE 1)	
6.4A.2.3.1	In-band emissions for CA (2UL CA)	Rel-15	C004	UEs supporting 5GS FR1 and CA (2UL CA and not supporting Tx Diversity)	E015	Inter-band CA Intra-band contiguous CA Intra-band non-contiguous CA	
6.4C.1	Frequency error 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.2.1	Error vector magnitude for SUL	Rel-15	C002	UEs supporting 5GS FR1 and SUL	D003		NOTE 2
6.4C.2.2	Carrier leakage for SUL	Rel-15	C002	UEs supporting 5GS FR1 and SUL	D003		NOTE 2
6.4C.2.3	In-band emissions for SUL	Rel-15	C002	UEs supporting 5GS FR1 and SUL	D003		NOTE 2
6.4C.2.4	EVM equalizer spectrum flatness for SUL	Rel-15	C002	UEs supporting 5GS FR1 and SUL	D003		NOTE 2
6.4C.2.5	EVM equalizer spectrum flatness for Pi/2 BPSK for SUL	Rel-16	C112	UEs supporting 5GS FR1 and SUL and pi/2-BPSK modulation scheme and low PAPR DMRS	D003		NOTE 2
6.4D.1	Frequency error for UL MIMO	Rel-15	C003	UEs supporting 5GS FR1 and 2-layer codebook based UL MIMO	D022		
6.4D.1_1	Frequency error for SUL with UL MIMO	Rel-17	C179	UEs supporting 5GS FR1 and SUL and UL MIMO	D024		
6.4D.1_2	Frequency error for UL MIMO for UE supporting 4Tx	Rel-18	C400	UEs supporting 5GS FR1 and 4-layer codebook based UL MIMO	D022a		
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.2.1_2	Error Vector Magnitude for UL MIMO for UE supporting 4Tx	Rel-18	C400	UEs supporting 5GS FR1 and 4-layer codebook based UL MIMO	D022a		
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.2.2_2	Carrier leakage for UL MIMO for UE supporting 4Tx	Rel-18	C400	UEs supporting 5GS FR1 and 4-layer codebook based UL MIMO	D022a		
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		

Clause	TC Title	Release	Applicability		Tested Bands/CA-Configurations Selection	Branch	Additional Information
			Condition	Comment			
6.4D.2.3_2	In-band emissions for UL MIMO for UE supporting 4Tx	Rel-18	C400	UEs supporting 5GS FR1 and 4-layer codebook based UL MIMO	D022a		
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.2.4_2	EVM equalizer spectrum flatness for UL MIMO for UE supporting 4Tx	Rel-18	C400	UEs supporting 5GS FR1 and 4-layer codebook based UL MIMO	D022a		
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.3_2	Time alignment error for UL MIMO for UE supporting 4Tx	Rel-18	C400	UEs supporting 5GS FR1 and 4-layer codebook based UL MIMO	D022a		
6.4D.4	Requirements for coherent UL MIMO	FFS	FFS	FFS	FFS		NOTE 1
6.4E.1.1	Frequency error for V2X / non-concurrent operation	Rel-16	C079	UEs supporting 5GS FR1 and NR sidelink	D016		
6.4E.1.1D	Frequency error for V2X / non-concurrent operation / SL-MIMO	Rel-16	C079b	UEs supporting 5GS FR1 and NR sidelink and SL-MIMO	D016		
6.4E.2.2.1	Error Vector Magnitude for V2X / non-concurrent operation	Rel-16	C079	UEs supporting 5GS FR1 and NR sidelink	D016		
6.4E.2.2.1D	Error Vector Magnitude for V2X / non-concurrent operation / SL-MIMO	Rel-16	C079b	UEs supporting 5GS FR1 and NR sidelink and SL-MIMO	D016		
6.4E.2.3.1	Carrier leakage for V2X / non-concurrent operation	Rel-16	C079	UEs supporting 5GS FR1 and NR sidelink	D016		
6.4E.2.3.1D	Carrier leakage for V2X / non-concurrent operation / SL-MIMO	Rel-16	C079b	UEs supporting 5GS FR1 and NR sidelink and SL-MIMO	D016		
6.4E.2.4.1	In-band emissions for V2X / non-concurrent operation	Rel-16	C079	UEs supporting 5GS FR1 and NR sidelink	D016		
6.4E.2.4.1D	In-band emissions for V2X / non-concurrent operation / SL-MIMO	Rel-16	C079b	UEs supporting 5GS FR1 and NR sidelink and SL-MIMO	D016		
6.4E.2.5.1	EVM equalizer spectrum flatness for V2X / non-concurrent operation	Rel-16	C079	UEs supporting 5GS FR1 and NR sidelink	D016		
6.4E.2.5.1D	EVM equalizer spectrum flatness for V2X / non-concurrent operation / SL-MIMO	Rel-16	C079b	UEs supporting 5GS FR1 and NR sidelink and SL-MIMO	D016		

Clause	TC Title	Release	Applicability		Tested Bands/CA-Configurations Selection	Branch	Additional Information
			Condition	Comment			
6.4F.1	Frequency error	Rel-16	C001c	UEs supporting 5GS FR1 and operation with shared spectrum channel access	D018		NOTE 1
6.4F.2.1	Error Vector Magnitude	Rel-16	C001c	UEs supporting 5GS FR1 and operation with shared spectrum channel access	D018		NOTE 1
6.4F.2.2	Carrier leakage	Rel-16	C001c	UEs supporting 5GS FR1 and operation with shared spectrum channel access	D018		NOTE 1
6.4G.1	Frequency error for Tx Diversity	Rel-15	C001g	UEs supporting 5GS FR1 and supporting Tx Diversity	D030	PC1.5 PC2 PC3	
6.4G.1_1	Frequency error for Tx Diversity for UE supporting 4Tx	Rel-18	C403	UEs supporting 5GS FR1 and supporting 4Tx Diversity	D030a		
6.4G.2.1	Error vector magnitude for Tx Diversity	Rel-15	C001g	UEs supporting 5GS FR1 and supporting Tx Diversity	D030	PC1.5 PC2 PC3	
6.4G.2.1_1	Error Vector Magnitude for Tx Diversity for UE supporting 4Tx	Rel-18	C403	UEs supporting 5GS FR1 and supporting 4Tx Diversity	D030a		
6.4G.2.2	Carrier leakage for Tx Diversity	Rel-15	C001g	UEs supporting 5GS FR1 and supporting Tx Diversity	D030	PC1.5 PC2 PC3	
6.4G.2.2_1	Carrier leakage for Tx Diversity for UE supporting 4Tx	Rel-18	C403	UEs supporting 5GS FR1 and supporting 4Tx Diversity	D030a		
6.4G.2.3	In-band emissions for Tx Diversity	Rel-15	C001g	UEs supporting 5GS FR1 and supporting	D030	PC1.5 PC2 PC3	
6.4G.2.3_1	In-band emissions for Tx Diversity for UE supporting 4Tx	Rel-18	C403	UEs supporting 5GS FR1 and supporting 4Tx Diversity	D030a		
6.4G.2.4	EVM equalizer spectrum flatness for Tx Diversity	Rel-15	C001g	UEs supporting 5GS FR1 and supporting Tx Diversity	D030	PC1.5 PC2 PC3	
6.4G.2.4_1	EVM equalizer spectrum flatness for Tx Diversity for UE supporting 4Tx	Rel-18	C403	UEs supporting 5GS FR1 and supporting 4Tx Diversity	D030a		
6.4H.1.1	Frequency error for intra-band UL contiguous CA with UL MIMO	Rel-15	C285	UEs supporting 5GS FR1 and intra-band contiguous CA (2UL CA) and MIMO.	E042	PC2 PC3	
6.4H.1.2.1	Error Vector Magnitude for intra-band UL contiguous CA with UL MIMO	Rel-15	C285	UEs supporting 5GS FR1 and intra-band contiguous CA (2UL CA) and MIMO.	E042	PC2 PC3	

Clause	TC Title	Release	Applicability		Tested Bands/CA-Configurations Selection	Branch	Additional Information
			Condition	Comment			
6.4H.1.2.2	Carrier leakage for intra-band UL contiguous CA with UL MIMO	Rel-15	C285	UEs supporting 5GS FR1 and intra-band contiguous CA (2UL CA) and MIMO.	E042	PC2 PC3	
6.4H.1.2.3	In-band emissions for intra-band UL contiguous CA with UL MIMO	Rel-15	C285	UEs supporting 5GS FR1 and intra-band contiguous CA (2UL CA) and MIMO.	E042	PC2 PC3	
6.4H.1.3	Time alignment error for intra-band UL contiguous CA with UL MIMO	Rel-15	C285	UEs supporting 5GS FR1 and intra-band contiguous CA (2UL CA) and MIMO.	E042	PC2 PC3	
6.4H.1.4	Coherent UL MIMO for intra-band UL contiguous CA with UL MIMO	Rel-15	C285	UEs supporting 5GS FR1 and intra-band contiguous CA (2UL CA) and MIMO.	E042	PC2 PC3	NOTE 1
6.4J.1	Frequency error for ATG	Rel-18	C001n	UEs supporting 5GS FR1 ATG	D028		
6.4J.2.1	Error Vector Magnitude for ATG	Rel-18	C001n	UEs supporting 5GS FR1 ATG	D028		
6.4J.2.1a	Error Vector Magnitude including symbols with transient period for ATG	Rel-18	C001n	UEs supporting 5GS FR1 ATG	D028		
6.4J.2.4	EVM equalizer spectrum flatness for ATG	Rel-18	C001n	UEs supporting 5GS FR1 ATG	D028		
6.4J.2.5	EVM equalizer spectrum flatness for Pi/2 BPSK for ATG	Rel-18	C001n	UEs supporting 5GS FR1 ATG	D028		
6.5.1	Occupied bandwidth	Rel-15	C001	UEs supporting 5GS FR1	D001a		Skip TC 6.5.1 if UE supports NSA and TS 38.521-3 TC 6.5B.1.2 or 6.5B.1.3 has been executed. TC 6.5.1 is skipped if TC 6.5G.1 is executed.
6.5.2.2	Spectrum emission mask	Rel-15	C001	UEs supporting 5GS FR1	D001a	PC1 PC2 PC3	Skip TC 6.5.2.2 if UE supports NSA and TS 38.521-3 TC 6.5B.2.2.1 or 6.5B.2.3.1 has been executed. TC 6.5.2.2 is skipped if TC 6.5G.2.1 is executed.

Clause	TC Title	Release	Applicability		Tested Bands/CA-Configurations Selection	Branch	Additional Information
			Condition	Comment			
6.5.2.3	Additional spectrum emission mask	Rel-15	C001	UEs supporting 5GS FR1	D001a	PC1 PC2 PC3	Skip TC 6.5.2.3 if UE supports NSA and TS 38.521-3 TC 6.5B.2.3.2 has been executed. TC 6.5.2.3 is skipped if TC 6.5G.2.2 is executed.
6.5.2.4.1	NR ACLR	Rel-15	C001	UEs supporting 5GS FR1	D001a	PC1 PC2 PC3	Skip TC 6.5.2.4.1 if UE supports NSA and TS 38.521-3 TC 6.5B.2.3.3.1 has been executed. TC 6.5.2.4.1 is skipped if TC 6.5G.2.3.1 is executed.
6.5.2.4.2	UTRA ACLR	Rel-15	C001a	UEs supporting 5GS FR1 PC3	D001a		Skip TC 6.5.2.4.2 if UE supports NSA and TS 38.521-3 TC 6.5B.2.3.3.2 has been executed. TC 6.5.2.4.2 is skipped if TC 6.5G.2.3.2 is executed.
6.5.3.1	General spurious emissions	Rel-15	C001	UEs supporting 5GS FR1	D001a		Skip TC 6.5.3.1 if UE supports NSA and TS 38.521-3 TC 6.5B.3.1.1 or 6.5B.3.2.1 or 6.5B.3.3.1(non-exception requirements) has been executed. TC 6.5.3.1 is skipped if TC 6.5G.3.1 is executed.

Clause	TC Title	Release	Applicability		Tested Bands/CA-Configurations Selection	Branch	Additional Information
			Condition	Comment			
6.5.3.2	Spurious emissions for UE co-existence	Rel-15	C001	UEs supporting 5GS FR1	D001a		Skip TC 6.5.3.2 if UE supports NSA and TS 38.521-3 TC 6.5B.3.3.2 (non-exception requirements) has been executed.
6.5.3.3	Additional spurious emissions	Rel-15	C001	UEs supporting 5GS FR1	D001a		Skip TC 6.5.3.3 if UE supports NSA and TS 38.521-3 TC 6.5B.4.3 has been executed. TC 6.5.3.3 is skipped if TC 6.5G.3.3 is executed.
6.5.4	Transmit intermodulation	Rel-15	C001	UEs supporting 5GS FR1	D001a		Skip TC 6.5.4 if UE supports NSA and TS 38.521-3 TC 6.5B.5.3 has been executed. TC 6.5.4 is skipped if TC 6.5G.4 is executed.
6.5A.1.1	Occupied bandwidth for CA (2UL CA)	Rel-15	C004	UEs supporting 5GS FR1 and CA (2UL CA) and not supporting Tx Diversity	E015	Inter-band CA Intra-band contiguous CA Intra-band non-contiguous CA: PC2 (NOTE 1), PC3 (NOTE 1)	
6.5A.2.2.1	Spectrum emission mask for CA (2UL CA)	Rel-15	C004	UEs supporting 5GS FR1 and CA (2UL CA) and not supporting Tx Diversity	E015 E015a	Inter-band CA: PC2, PC3 Intra-band contiguous CA: PC2, PC3 Intra-band non-contiguous CA	

Clause	TC Title	Release	Applicability		Tested Bands/CA-Configurations Selection	Branch	Additional Information
			Condition	Comment			
6.5A.2.3.1	Additional spectrum emission mask for CA (2UL CA)	Rel-15	C004	UEs supporting 5GS FR1 and CA (2UL CA) and not supporting Tx Diversity	E015	Inter-band CA: PC2, PC3 Intra-band contiguous CA: PC2, PC3 Intra-band non-contiguous CA (NOTE 1)	
6.5A.2.4.1.1	NR ACLR for CA (2UL CA)	Rel-15	C004	UEs supporting 5GS FR1 and CA (2UL CA) and not supporting Tx Diversity	E015 E015a	Inter-band CA: PC2, PC3 Intra-band contiguous CA: PC2, PC3 Intra-band non-contiguous CA: PC2 (NOTE 1), PC3 (NOTE 1)	
6.5A.2.4.2.1	UTRA ACLR for CA (2UL CA)	Rel-15	C004	UEs supporting 5GS FR1 and CA (2UL CA) and not supporting Tx Diversity	E015		
6.5A.3.1.1	General spurious emissions for CA (2UL CA)	Rel-15	C004	UEs supporting 5GS FR1 and CA (2UL CA) and not supporting Tx Diversity	E015	Inter-band CA 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) and not supporting Tx Diversity	E015	Inter-band CA Intra-band contiguous CA: PC2, PC3 Intra-band non-contiguous CA	NOTE 3 Skip the testing if UE supports NSA and the same UL DC configuration and TS 38.521-3 TC 6.5B.3.3.2 has been executed
6.5A.3.3.1	Additional spurious emissions for CA (2UL CA)	Rel-15	C004	UEs supporting 5GS FR1 and CA (2UL CA) and not supporting Tx Diversity	E015	Inter-band CA: PC2, PC3 Intra-band contiguous CA: PC2, PC3 Intra-band non-contiguous CA (NOTE 1)	

Clause	TC Title	Release	Applicability		Tested Bands/CA-Configurations Selection	Branch	Additional Information
			Condition	Comment			
6.5A.4.1	Transmit intermodulation for CA (2UL CA)	Rel-15	C004	UEs supporting 5GS FR1 and CA (2UL CA) and not supporting Tx Diversity	E015	Inter-band CA Intra-band contiguous CA Intra-band non-contiguous CA	
6.5C.1	Occupied bandwidth for SUL	Rel-15	C002	UEs supporting 5GS FR1 and SUL	D003		NOTE 2
6.5C.2.2	Spectrum emission mask for SUL	Rel-15	C002	UEs supporting 5GS FR1 and SUL	D003		NOTE 2
6.5C.2.3	Additional spectrum emission mask for SUL	Rel-15	C002	UEs supporting 5GS FR1 and SUL	D003		NOTE 2
6.5C.2.4.1	NR ACLR for SUL	Rel-15	C002	UEs supporting 5GS FR1 and SUL	D003		NOTE 2
6.5C.2.4.2	UTRA ACLR for SUL	Rel-15	C002	UEs supporting 5GS FR1 and SUL	D003		NOTE 2
6.5C.3.1	General spurious emissions for SUL	Rel-15	C002	UEs supporting 5GS FR1 and SUL	D003		NOTE 2
6.5C.3.2	Spurious emissions for UE co-existence for SUL	Rel-15	C002	UEs supporting 5GS FR1 and SUL	D003		NOTE 2 NOTE 3 Skip the testing if UE supports NSA and the same UL DC configuration and TS 38.521-3 TC 6.5B.3.3.2 has been executed
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.1_3	Occupied bandwidth for UL MIMO for UE supporting 4Tx	Rel-18	C400	UEs supporting 5GS FR1 and 4-layer codebook based UL MIMO	D022a		

Clause	TC Title	Release	Applicability		Tested Bands/CA-Configurations Selection	Branch	Additional Information
			Condition	Comment			
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		
		Rel-17	C179b	UEs supporting 5GS FR1 and SUL and ULFPTx			
6.5D.2.2_2	Spectrum emission mask for UL MIMO for UE supporting 4Tx	Rel-18	C402	UEs supporting 5GS FR1 and (4-layer codebook based UL MIMO or ULFPTx)	D022a		NOTE 1
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		NOTE 1
6.5D.2.3_1	Additional spectrum emission mask for UL MIMO for UE supporting 4Tx	Rel-18	C402	UEs supporting 5GS FR1 and (4-layer codebook based UL MIMO or ULFPTx)	D022a		
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.2.4.1_2	NR ACLR for UL MIMO for UE supporting 4Tx	Rel-18	C402	UEs supporting 5GS FR1 and (4-layer codebook based UL MIMO or ULFPTx)	D022a		NOTE 1
6.5D.2.4.2	UTRA ACLR for UL MIMO	Rel-15	C003	UEs supporting 5GS FR1 and 2-layer codebook based UL MIMO	D022		
6.5D.2.4.2_1	UTRA ACLR for SUL with UL MIMO	Rel-17	C179	UEs supporting 5GS FR1 and SUL and UL MIMO	D024		
6.5D.2.4.2_2	UTRA ACLR for UL MIMO for UE supporting 4Tx	Rel-18	C402	UEs supporting 5GS FR1 and (4-layer codebook based UL MIMO or ULFPTx)	D022a		NOTE 1
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		

Clause	TC Title	Release	Applicability		Tested Bands/CA-Configurations Selection	Branch	Additional Information
			Condition	Comment			
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		
		Rel-16	C003b	UEs supporting 5GS FR1 and ULFPTx			
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		
		Rel-16	C003b	UEs supporting 5GS FR1 and ULFPTx			
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		
		Rel-16	C003b	UEs supporting 5GS FR1 and ULFPTx			
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.3_3.1	General spurious emissions for UL MIMO for UE supporting 4Tx	Rel-18	C402	UEs supporting 5GS FR1 and (4-layer codebook based UL MIMO or ULFPTx)	D022a		NOTE 1
6.5D.3_3.2	Spurious emissions for UE co-existence for UL MIMO for UE supporting 4Tx	Rel-18	C402	UEs supporting 5GS FR1 and (4-layer codebook based UL MIMO or ULFPTx)	D022a		NOTE 1
6.5D.3_3.3	Additional spurious emissions for UL MIMO for UE supporting 4Tx	Rel-18	C402	UEs supporting 5GS FR1 and (4-layer codebook based UL MIMO or ULFPTx)	D022a		NOTE 1
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		
6.5D.4_2	Transmit intermodulation for UL MIMO for UE supporting 4Tx	Rel-18	C400	UEs supporting 5GS FR1 and 4-layer codebook based UL MIMO	D022a		

Clause	TC Title	Release	Applicability		Tested Bands/CA-Configurations Selection	Branch	Additional Information
			Condition	Comment			
6.5E.1.1	Occupied bandwidth for V2X / non-concurrent operation	Rel-16	C079	UEs supporting 5GS FR1 and NR sidelink	D016		
6.5E.1.1D	Occupied bandwidth for V2X / non-concurrent operation / SL-MIMO	Rel-16	C079b	UEs supporting 5GS FR1 and NR sidelink and SL-MIMO	D016		
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.2.2.1D	Spectrum emission mask for V2X / non-concurrent operation / SL-MIMO	Rel-16	C079b	UEs supporting 5GS FR1 and NR sidelink and SL-MIMO	D016		
6.5E.2.2.2	Spectrum emission mask for V2X / concurrent operation	Rel-16	C079c	UEs supporting 5GS FR1 and NR sidelink and UEs supporting 5GS FR1 and NR V2X inter-band concurrent operation or NR V2X intra-band concurrent operation	E051	Inter-band concurrent operation: PC3 Intra-band concurrent operation: PC3, PC2	
6.5E.2.3.1	Additional Spectrum emission mask for V2X / non-concurrent operation	Rel-16	C079	UEs supporting 5GS FR1 and NR sidelink	D016		
6.5E.2.3.1D	Additional Spectrum emission mask for V2X / non-concurrent operation / SL-MIMO	Rel-16	C079b	UEs supporting 5GS FR1 and NR sidelink and SL-MIMO	D016		
6.5E.2.4.1	Adjacent channel leakage ratio for V2X / non-concurrent operation	Rel-16	C079	UEs supporting 5GS FR1 and NR sidelink	D016		
6.5E.2.4.1D	Adjacent channel leakage ratio for V2X / non-concurrent operation / SL-MIMO	Rel-16	C079b	UEs supporting 5GS FR1 and NR sidelink and SL-MIMO	D016		NOTE 1
6.5E.2.4.2	Adjacent channel leakage for V2X / concurrent operation	Rel-16	C079c	UEs supporting 5GS FR1 and NR sidelink and UEs supporting 5GS FR1 and NR V2X inter-band concurrent operation or NR V2X intra-band concurrent operation	E051	Inter-band concurrent operation: PC3 Intra-band concurrent operation: PC3, PC2	
6.5E.3.1.1	General spurious emissions for V2X / non-concurrent operation	Rel-16	C079	UEs supporting 5GS FR1 and NR sidelink	D016		
6.5E.3.1.1D	General spurious emissions for V2X / non-concurrent operation / SL-MIMO	Rel-16	C079b	UEs supporting 5GS FR1 and NR sidelink and SL-MIMO	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.3.2.1D	Spurious emissions for UE co-existence for V2X / non-concurrent operation / SL-MIMO	Rel-16	C079b	UEs supporting 5GS FR1 and NR sidelink and SL-MIMO	D016		

Clause	TC Title	Release	Applicability		Tested Bands/CA-Configurations Selection	Branch	Additional Information
			Condition	Comment			
6.5E.3.2.2	Spurious emissions for UE co-existence for V2X / concurrent operation	Rel-16	C079c	UEs supporting 5GS FR1 and NR sidelink and UEs supporting 5GS FR1 and NR V2X inter-band concurrent operation or NR V2X intra-band concurrent operation	E051	Inter-band concurrent operation: PC3 Intra-band concurrent operation: PC3, PC2	
6.5E.3.3.1	Additional spurious emissions requirements for V2X / non-concurrent operation	Rel-16	C079	UEs supporting 5GS FR1 and NR sidelink	D016		
6.5E.4.1	Transmit intermodulation for V2X / non-concurrent operation	Rel-16	C079	UEs supporting 5GS FR1 and NR sidelink	D016		
6.5E.4.1D	Transmit intermodulation for V2X / non-concurrent operation / SL-MIMO	Rel-16	C079b	UEs supporting 5GS FR1 and NR sidelink and SL-MIMO	D016		
6.5E.4.2	Transmit intermodulation for V2X con-current operation	Rel-16	C079d	UEs supporting 5GS FR1 and NR sidelink and UEs supporting 5GS FR1 and NR V2X intra-band concurrent operation	E052	Intra-band concurrent operation: PC3, PC2	
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		
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		
6.5F.3.1	General spurious emissions	Rel-16	C001c	UEs supporting 5GS FR1 and operation with shared spectrum channel access	D018		NOTE 1
6.5F.3.3	Additional spurious emissions for shared spectrum channel access	Rel-16	C001c	UEs supporting 5GS FR1 and operation with shared spectrum channel access	D018		
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	D030	PC1.5 PC2 PC3	

Clause	TC Title	Release	Applicability		Tested Bands/CA-Configurations Selection	Branch	Additional Information
			Condition	Comment			
6.5G.1_1	Occupied bandwidth for Tx Diversity for UE supporting 4Tx	Rel-18	C403	UEs supporting 5GS FR1 and supporting 4Tx Diversity	D030a		
6.5G.2.1	Spectrum emission mask for Tx Diversity	Rel-15	C001g	UEs supporting 5GS FR1 and supporting txDiversity-r16	D030	PC1.5 PC2 PC3	
6.5G.2.1_1	Spectrum emission mask for Tx Diversity for UE supporting 4Tx	Rel-18	C403	UEs supporting 5GS FR1 and supporting 4Tx Diversity	D030a		NOTE 1
6.5G.2.2	Additional spectrum emission mask for Tx Diversity	Rel-15	C001g	UEs supporting 5GS FR1 and supporting txDiversity-r16	D030	PC1.5 PC2 PC3	
6.5G.2.2_1	Additional spectrum emission mask for Tx Diversity for UE supporting 4Tx	Rel-18	C403	UEs supporting 5GS FR1 and supporting 4Tx Diversity	D030a		NOTE 1
6.5G.2.3.1	NR ACLR for Tx Diversity	Rel-15	C001g	UEs supporting 5GS FR1 and supporting txDiversity-r16	D030	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	D030	PC3	
6.5G.2.3.2_1	UTRA ACLR for Tx Diversity for UE supporting 4Tx	Rel-18	C403	UEs supporting 5GS FR1 and supporting 4Tx Diversity	D030a		NOTE 1
6.5G.2.3_1.1	NR ACLR for Tx Diversity for UE supporting 4Tx	Rel-18	C403	UEs supporting 5GS FR1 and supporting 4Tx Diversity	D030a		NOTE 1
6.5G.3.1	General spurious emissions for Tx Diversity	Rel-15	C001g	UEs supporting 5GS FR1 and supporting txDiversity-r16	D030	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	D030	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	D030	PC1.5 PC2 PC3	
6.5G.3.3_1	Additional Spurious emissions for Tx Diversity for UE supporting 4Tx	Rel-18	C403	UEs supporting 5GS FR1 and supporting 4Tx Diversity	D030a		NOTE 1
6.5G.3_1.1	General spurious emissions for Tx Diversity for UE supporting 4Tx	Rel-18	C403	UEs supporting 5GS FR1 and supporting 4Tx Diversity	D030a		NOTE 1
6.5G.3_1.2	Spurious emissions for UE co-existence for Tx Diversity for UE supporting 4Tx	Rel-18	C403	UEs supporting 5GS FR1 and supporting 4Tx Diversity	D030a		NOTE 1
6.5G.4	Transmit intermodulation for Tx Diversity	Rel-15	C001g	UEs supporting 5GS FR1 and supporting txDiversity-r16	D030	PC1.5 PC2 PC3	
6.5G.4_1	Transmit intermodulation for Tx Diversity for UE supporting 4Tx	Rel-18	C403	UEs supporting 5GS FR1 and supporting 4Tx Diversity	D030a		

Clause	TC Title	Release	Applicability		Tested Bands/CA-Configurations Selection	Branch	Additional Information
			Condition	Comment			
6.5H.1.1	Occupied bandwidth for intra-band UL contiguous CA for UL MIMO	Rel-15	C285	UEs supporting 5GS FR1 and intra-band contiguous CA (2UL CA) and MIMO.	E042	PC2 PC3	
6.5H.1.2.1	Spectrum emission mask for intra-band UL contiguous CA for UL MIMO	Rel-15	C285	UEs supporting 5GS FR1 and intra-band contiguous CA (2UL CA) and MIMO.	E042	PC2 PC3	
6.5H.1.2.2	Additional spectrum emission mask for intra-band UL contiguous CA for UL MIMO	Rel-15	C285	UEs supporting 5GS FR1 and intra-band contiguous CA (2UL CA) and MIMO.	E042	PC2 PC3	
6.5H.1.2.3	NR ACLR for intra-band UL contiguous CA for UL MIMO	Rel-15	C285	UEs supporting 5GS FR1 and intra-band contiguous CA (2UL CA) and MIMO.	E042	PC2 PC3	
6.5H.1.3.1	General spurious emissions for intra-band UL contiguous CA for UL MIMO	Rel-15	C285	UEs supporting 5GS FR1 and intra-band contiguous CA (2UL CA) and MIMO.	E042	PC2 PC3	
6.5H.1.3.2	Spurious emissions for UE co-existence for intra-band UL contiguous CA for UL MIMO	Rel-15	C285	UEs supporting 5GS FR1 and intra-band contiguous CA (2UL CA) and MIMO.	E042	PC2 PC3	
6.5H.1.3.3	Additional spurious emissions for intra-band UL contiguous CA for UL MIMO	Rel-15	C285	UEs supporting 5GS FR1 and intra-band contiguous CA (2UL CA) and MIMO.	E042	PC2 PC3	
6.5H.1.4	Transmit intermodulation for intra-band UL contiguous CA for UL MIMO	Rel-15	C285	UEs supporting 5GS FR1 and intra-band contiguous CA (2UL CA) and MIMO.	E042	PC2 PC3	
6.5H.3.3.1	General spurious emissions for inter-band UL CA with UL MIMO	Rel-17	C328	UEs supporting 5GS FR1 and inter-band CA (2UL CA) with UL MIMO.	E045	PC1.5 PC2 PC3	
6.5H.3.3.2	Spurious emissions for UE co-existence for inter-band UL CA with UL MIMO	Rel-17	C328	UEs supporting 5GS FR1 and inter-band CA (2UL CA) with UL MIMO.	E045	PC1.5 PC2 PC3	
6.5J.1	Occupied bandwidth for ATG	Rel-18	C001n	UEs supporting 5GS FR1 ATG	D028		NOTE 1
6.5J.2.2	Spectrum emissions mask for ATG	Rel-18	C001n	UEs supporting 5GS FR1 ATG	D028		NOTE 1
6.5J.3.1	General spurious emissions for ATG	Rel-18	C001n	UEs supporting 5GS FR1 ATG	D028		NOTE 1
6.5L.3.3.1	General spurious emissions for inter-band UL CA with Tx Diversity	Rel-17	C329	UEs supporting 5GS FR1 and inter-band CA (2UL CA) with Tx Diversity.	E046	PC1.5 PC2 PC3	
6.5L.3.3.2	Spurious emissions for UE co-existence for inter-band UL CA with Tx Diversity	Rel-17	C329	UEs supporting 5GS FR1 and inter-band CA (2UL CA) with Tx Diversity.	E046	PC1.5 PC2 PC3	
7	Receiver Characteristics						

Clause	TC Title	Release	Applicability		Tested Bands/CA-Configurations Selection	Branch	Additional Information
			Condition	Comment			
7.3.2	Reference sensitivity power level	Rel-15	C001l	UEs supporting 5GS FR1 and not supporting RedCap	D001	2Rx 4Rx 8Rx PC1.5 PC2 PC3	
7.3.2_1	Reference sensitivity power level for XR	Rel-18	C416	XR UEs supporting 5GS FR1 and supportOf2RxXR-r18 if 2Rx XR UE	D001	2Rx 4Rx	NOTE 1
7.3A.1	Reference sensitivity power level for 2DL CA without exception	Rel-15	C031	UEs supporting 5GS FR1 and CA (2DL CA)	E016	2Rx 4Rx 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 E015	2Rx 4Rx PC2 PC3	
7.3A.2	Reference sensitivity power level for 3DL CA without exceptions	Rel-15	C033	UEs supporting 5GS FR1 and CA (3DL CA)	E017	2Rx 4Rx PC2 PC3	
7.3A.2_1	Reference sensitivity power level for 3DL CA exceptions	Rel-15	C033	UEs supporting 5GS FR1 and CA (3DL CA)	E017 E015	2Rx 4Rx PC2 PC3	
7.3A.3	Reference sensitivity power level for 4DL CA	Rel-15	C036	UEs supporting 5GS FR1 and CA (4DL CA)	E018	2Rx 4Rx PC2 PC3	
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		
7.3D.2_3	Reference sensitivity power level for UL MIMO for UE supporting 4Tx	Rel-18	C401	UEs supporting 5GS FDD FR1 and 4-layer codebook based UL MIMO	D012a		
7.3E.2	Reference sensitivity for V2X / non-concurrent operation	Rel-16	C079	UEs supporting 5GS FR1 and NR sidelink	D016		NOTE 1

Clause	TC Title	Release	Applicability		Tested Bands/CA-Configurations Selection	Branch	Additional Information
			Condition	Comment			
7.3E.3	Reference sensitivity for V2X / Concurrent operation	Rel-16	C079a	UEs supporting 5GS FR1 and NR sidelink and UEs supporting 5GS FR1 and NR V2X inter-band concurrent operation	E050	Inter-band concurrent operation: PC3	
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		
7.3G.1	Reference sensitivity for Tx Diversity for UE supporting 4Tx	Rel-18	C403	UEs supporting 5GS FR1 and supporting 4Tx Diversity	D030a		
7.3I.2	Reference sensitivity power level for RedCap	Rel-17	C177	RedCap UEs supporting 5GS FR1	D001b		
7.3I.3	Reference sensitivity power level for eRedCap	Rel-18	C372	eRedCap UEs supporting 5GS FR1	D001b		
7.3J.2	Reference sensitivity power level for ATG	Rel-18	C001n	UEs supporting 5GS FR1 ATG	D028		NOTE 1
7.4	Maximum input level	Rel-15	C001	UEs supporting 5GS FR1	D001		Skip TC 7.4 if UE supports NSA and TS 38.521-3 TC 7.4B.2 or 7.4B.3 has been executed.
7.4A.1	Maximum input level for CA (2DL CA)	Rel-15	C031	UEs supporting 5GS FR1 and CA (2DL CA)	E016		
7.4A.2	Maximum input level for CA (3DL CA)	Rel-15	C033	UEs supporting 5GS FR1 and CA (3DL CA)	E017		
7.4A.3	Maximum input level for CA (4DL CA)	Rel-15	C036	UEs supporting 5GS FR1 and CA (4DL CA)	E018		
7.4A.4	Maximum input level for CA (5DL CA)	Rel-16	C313	UEs supporting 5GS FR1 and CA (5DL CA)	E018a		Skip TC 7.4A.4 if UE supports NSA and TS 38.521-3 TC 7.4B.3_1.4 has been executed.
7.4D	Maximum input level for UL MIMO	Rel-15	C003a	UEs supporting 5GS FDD FR1 and UL MIMO	D012		
7.4D_1	Maximum input level for SUL with UL MIMO	Rel-17	C179a	UEs supporting 5GS FR1 and SUL and UL MIMO	D024		
7.4D_2	Maximum input level for UL MIMO for UE supporting 4Tx	Rel-18	C401	UEs supporting 5GS FDD FR1 and 4-layer codebook based UL MIMO	D012a		
7.4E.1	Maximum input level for V2X / non-concurrent operation	Rel-16	C079	UEs supporting 5GS FR1 and NR sidelink	D016		

Clause	TC Title	Release	Applicability		Tested Bands/CA-Configurations Selection	Branch	Additional Information
			Condition	Comment			
7.4F	Maximum input level for shared spectrum channel access	Rel-16	C001c	UEs supporting 5GS FR1 and operation with shared spectrum channel access	D018		
7.4G.1	Maximum input level for Tx Diversity for UE supporting 4Tx	Rel-18	C403	UEs supporting 5GS FR1 and supporting 4Tx Diversity	D030a		
7.4J	Maximum input level for ATG	Rel-18	C001n	UEs supporting 5GS FR1 ATG	D028		NOTE 1
7.5	Adjacent channel selectivity	Rel-15	C001	UEs supporting 5GS FR1	D001		NOTE 1 Skip TC 7.5 if UE supports NSA and TS 38.521-3 TC 7.5B.2 or 7.5B.3 has been executed.
7.5A.1	Adjacent channel selectivity for CA (2DL CA)	Rel-15	C031	UEs supporting 5GS FR1 and CA (2DL CA)	E016		
7.5A.2	Adjacent channel selectivity for CA (3DL CA)	Rel-15	C033	UEs supporting 5GS FR1 and CA (3DL CA)	E017		
7.5A.3	Adjacent channel selectivity for CA (4DL CA)	Rel-15	C036	UEs supporting 5GS FR1 and CA (4DL CA)	E018		
7.5A.4	Adjacent channel selectivity for CA (5DL CA)	Rel-16	C313	UEs supporting 5GS FR1 and CA (5DL CA)	E018a		Skip TC 7.5A.4 if UE supports NSA and TS 38.521-3 TC [FFS] has been executed.
7.5D	Adjacent channel selectivity for UL MIMO	Rel-15	C003a	UEs supporting 5GS FDD FR1 and UL MIMO	D012		
7.5D_1	Adjacent channel selectivity for SUL with UL MIMO	Rel-17	C179a	UEs supporting 5GS FR1 and SUL and UL MIMO	D024		
7.5D_2	Adjacent channel selectivity for UL MIMO for UE supporting 4Tx	Rel-18	C401	UEs supporting 5GS FDD FR1 and 4-layer codebook based UL MIMO	D012a		
7.5E.1	Adjacent channel selectivity for V2X / non-concurrent operation	Rel-16	C079	UEs supporting 5GS FR1 and NR sidelink	D016		
7.5E.2	Adjacent channel selectivity for V2X / concurrent operation	Rel-16	C079a	UEs supporting 5GS FR1 and NR sidelink and UEs supporting 5GS FR1 and NR V2X inter-band concurrent operation	E050	Inter-band concurrent operation: PC3	
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		
7.5G.1	Adjacent channel selectivity for Tx Diversity for UE supporting 4Tx	Rel-18	C403	UEs supporting 5GS FR1 and supporting 4Tx Diversity	D030a		

Clause	TC Title	Release	Applicability		Tested Bands/CA-Configurations Selection	Branch	Additional Information
			Condition	Comment			
7.5J	Adjacent channel selectivity for ATG	Rel-18	C001n	UEs supporting 5GS FR1 ATG	D028		NOTE 1
7.6.2	In-band blocking	Rel-15	C001	UEs supporting 5GS FR1	D001		Skip TC 7.6.2 if UE supports NSA and TS 38.521-3 TC 7.6B.2.2 or 7.6B.2.3 has been executed.
7.6.3	Out-of-band blocking	Rel-15	C001	UEs supporting 5GS FR1	D001		
7.6.4	Narrow band blocking	Rel-15	C001	UEs supporting 5GS FR1	D004		Skip TC 7.6.4 if UE supports NSA and TS 38.521-3 TC 7.6B.4.2 or 7.6B.4.3 has been executed.
7.6A.2.1	In-band blocking for CA (2DL CA)	Rel-15	C031	UEs supporting 5GS FR1 and CA (2DL CA)	E016		
7.6A.2.2	In-band blocking for CA (3DL CA)	Rel-15	C033	UEs supporting 5GS FR1 and CA (3DL CA)	E017		
7.6A.2.3	In-band blocking for CA (4DL CA)	Rel-15	C036	UEs supporting 5GS FR1 and CA (4DL CA)	E018		Skip TC 7.6A.2.3 if UE supports NSA and TS 38.521-3 TC 7.6B.2.3_1.3 has been executed.
7.6A.2.4	In-band blocking for CA (5DL CA)	Rel-16	C313	UEs supporting 5GS FR1 and CA (5DL CA)	E018a		NOTE 1
7.6A.3.1	Out-of-band blocking for CA (2DL CA)	Rel-15	C031	UEs supporting 5GS FR1 and CA (2DL CA)	E016		
7.6A.3.2	Out-of-band blocking for CA (3DL CA)	Rel-15	C033	UEs supporting 5GS FR1 and CA (3DL CA)	E017		
7.6A.3.3	Out-of-band blocking for CA (4DL CA)	Rel-15	C036	UEs supporting 5GS FR1 and CA (4DL CA)	E018		
7.6A.3.4	Out-of-band blocking for CA (5DL CA)	Rel-15	C313	UEs supporting 5GS FR1 and CA (5DL CA)	E018a		NOTE 1
7.6A.4.1	Narrow band blocking for CA (2DL CA)	Rel-15	C031	UEs supporting 5GS FR1 and CA (2DL CA)	E016		
7.6A.4.2	Narrow band blocking for CA (3DL CA)	Rel-15	C033	UEs supporting 5GS FR1 and CA (3DL CA)	E017		
7.6A.4.3	Narrow band blocking for CA (4DL CA)	Rel-15	C036	UEs supporting 5GS FR1 and CA (4DL CA)	E018		Skip TC 7.6A.4.3 if UE supports NSA and TS 38.521-3 TC 7.6B.4.3_1.3 has been executed.
7.6A.4.4	Narrow band blocking for CA (5DL CA)	Rel-15	C313	UEs supporting 5GS FR1 and CA (5DL CA)	E018a		NOTE 1

Clause	TC Title	Release	Applicability		Tested Bands/CA-Configurations Selection	Branch	Additional Information
			Condition	Comment			
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.2_2	In-band blocking for UL MIMO for UE supporting 4Tx	Rel-18	C401	UEs supporting 5GS FDD FR1 and 4-layer codebook based UL MIMO	D012a		
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.3_2	Out-of-band blocking for UL MIMO for UE supporting 4Tx	Rel-18	C401	UEs supporting 5GS FDD FR1 and 4-layer codebook based UL MIMO	D012a		
7.6D.4	Narrow band blocking for UL MIMO	Rel-15	C003a	UEs supporting 5GS FDD FR1 and UL MIMO	D012		
7.6D.4_1	Void						
7.6D.4_3	Narrow band blocking for UL MIMO for UE supporting 4Tx	Rel-18	C401	UEs supporting 5GS FDD FR1 and 4-layer codebook based UL MIMO	D012a		
7.6E.2.1	In-band blocking for V2X / non-concurrent operation	Rel-16	C079	UEs supporting 5GS FR1 and NR sidelink	D016		
7.6E.3.1	Out-of-band blocking for V2X / non-concurrent operation	Rel-16	C079	UEs supporting 5GS FR1 and NR sidelink	D016		
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		

Clause	TC Title	Release	Applicability		Tested Bands/CA-Configurations Selection	Branch	Additional Information
			Condition	Comment			
7.6G.1	In-band blocking for Tx Diversity for UE supporting 4Tx	Rel-18	C403	UEs supporting 5GS FR1 and supporting 4Tx Diversity	D030a		
7.6G.2	Out-of-band blocking for Tx Diversity for UE supporting 4Tx	Rel-18	C403	UEs supporting 5GS FR1 and supporting 4Tx Diversity	D030a		
7.6G.3	Narrow band blocking for Tx Diversity for UE supporting 4Tx	Rel-18	C403	UEs supporting 5GS FR1 and supporting 4Tx Diversity	D030a		
7.6J.2	In-band blocking for ATG	Rel-18	C001n	UEs supporting 5GS FR1 ATG	D028		NOTE 1
7.6J.3	Out-of-band blocking for ATG	Rel-18	C001n	UEs supporting 5GS FR1 ATG	D028		NOTE 1
7.7	Spurious response	Rel-15	C001	UEs supporting 5GS FR1	D001		
7.7A.1	Spurious response for CA (2DL CA)	Rel-15	C031	UEs supporting 5GS FR1 and CA (2DL CA)	E016		
7.7A.2	Spurious response for CA (3DL CA)	Rel-15	C033	UEs supporting 5GS FR1 and CA (3DL CA)	E017		
7.7A.3	Spurious response for CA (4DL CA)	Rel-15	C036	UEs supporting 5GS FR1 and CA (4DL CA)	E018		
7.7A.4	Spurious response for CA (5DL CA)	Rel-15	C313	UEs supporting 5GS FR1 and CA (5DL CA)	E018a		NOTE 1
7.7C	Spurious response for SUL	Rel-15	C002	UEs supporting 5GS FR1 and SUL	D003		
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		
7.7D_2	Spurious response for UL MIMO for UE supporting 4Tx	Rel-18	C401	UEs supporting 5GS FDD FR1 and 4-layer codebook based UL MIMO	D012a		
7.7E.1	Spurious response for V2X / non-concurrent operation	Rel-16	C079	UEs supporting 5GS FR1 and NR sidelink	D016		
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		
7.7G.1	Spurious response for Tx Diversity for UE supporting 4Tx	Rel-18	C403	UEs supporting 5GS FR1 and supporting 4Tx Diversity	D030a		
7.7J	Spurious response for ATG	Rel-18	C001n	UEs supporting 5GS FR1 ATG	D028		NOTE 1
7.8.2	Wide band Intermodulation	Rel-15	C001	UEs supporting 5GS FR1	D001		Skip TC 7.8.2 if UE supports NSA and TS 38.521-3 TC 7.8B.2.2 or 7.8B.2.3 has been executed.
7.8A.2.1	Wide band Intermodulation for CA (2DL CA)	Rel-15	C031	UEs supporting 5GS FR1 and CA (2DL CA)	E016		

Clause	TC Title	Release	Applicability		Tested Bands/CA-Configurations Selection	Branch	Additional Information
			Condition	Comment			
7.8A.2.2	Wide band Intermodulation for CA (3DL CA)	Rel-15	C033	UEs supporting 5GS FR1 and CA (3DL CA)	E017		
7.8A.2.3	Wide band Intermodulation for CA (4DL CA)	Rel-15	C036	UEs supporting 5GS FR1 and CA (4DL CA)	E018		
7.8A.2.4	Wide band Intermodulation for CA (5DL CA)	Rel-16	C313	UEs supporting 5GS FR1 and CA (5DL CA)	E018a		NOTE 1
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		
7.8D.2_2	Wide band Intermodulation for UL MIMO for UE supporting 4Tx	Rel-18	C401	UEs supporting 5GS FDD FR1 and 4-layer codebook based UL MIMO	D012a		
7.8E.2.1	Wide band Intermodulation for V2X / non-concurrent operation	Rel-16	C079	UEs supporting 5GS FR1 and NR sidelink	D016		
7.8F.2	Wide band Intermodulation for shared spectrum channel access	Rel-16	C001c	UEs supporting 5GS FR1 and operation with shared spectrum channel access	D018		
7.8G.1	Intermodulation characteristics for Tx Diversity for UE supporting 4Tx	Rel-18	C403	UEs supporting 5GS FR1 and supporting 4Tx Diversity	D030a		
7.8J.2	Wide band intermodulation for ATG	Rel-18	C001n	UEs supporting 5GS FR1 ATG	D028		NOTE 1
7.9	Spurious emissions	Rel-15	C001	UEs supporting 5GS FR1	D001		Skip TC 7.9 if UE supports NSA and TS 38.521-3 TC 7.9B.1 or 7.9B.2 or 7.9B.3 has been executed.
7.9A.1	Spurious emissions for CA (2DL CA)	Rel-15	C005	UEs supporting 5GS FR1 and inter-band 2DL CA with a DL-only band	E002		
7.9J	Spurious emissions for ATG	Rel-18	C001n	UEs supporting 5GS FR1 ATG	D028		
<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> <p>NOTE 3: Uplink configurations CA_nA-nB, DC_A_nB, DC_B_nA, SUL_A-nD and SUL_B-nC can be noted as same UL CA configuration, where band nC and nD are the corresponding SUL bands with same UL frequency range of band (n)A and (n)B</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) PC5 PC6 PC7	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) PC5 PC7	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	PC1 PC2 (NOTE 1) PC3 PC4 (NOTE 1) PC5 PC6 PC7	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	PC1 PC2 (NOTE 1) PC3 PC4 (NOTE 1) PC5 PC7	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) PC5 PC6 PC7	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	C006o	UEs supporting 5GS FR2 and supporting <i>modifiedMPRbehaviour</i> bit 0.	D005		Skip TC 6.2.2_1 if UE supports NSA and TS 38.521-3 TC 6.2B.2.4a has been executed.

Clause	TC Title	Release	Applicability		Tested Bands/CA-Configurations Selection	Branch	Additional Information
			Condition	Comment			
		Rel-17	C006	UEs supporting 5GS FR2			
6.2.3	UE maximum output power with additional requirements	Rel-15	C006	UEs supporting 5GS FR2	D005	PC1 PC2 (NOTE 1) PC3 PC4 (NOTE 1) PC5 PC6 (NOTE 1) PC7	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 PC2 (NOTE 1) PC3 PC4 (NOTE 1) PC5 PC7 (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 PC2 (NOTE 1) PC3 PC4 (NOTE 1) PC5 PC7 (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 PC2 (NOTE 1) PC3 PC4 (NOTE 1) PC5 PC7 (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 PC2 (NOTE 1) PC3 PC4 (NOTE 1) PC5 PC7 (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 PC2 (NOTE 1) PC3 PC4 (NOTE 1) PC5 PC7 (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 PC2 (NOTE 1) PC3 PC4 (NOTE 1) PC5 PC7 (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 PC2 (NOTE 1) PC3 PC4 (NOTE 1) PC5	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.
6.2A.2.2	UE maximum output power reduction 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.2.2 if UE supports NSA and TS 38.521-3 TC 6.2B.2.4_1.2 has been executed.
6.2A.2.3	UE maximum output power reduction 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.2.3 if UE supports NSA and TS 38.521-3 TC 6.2B.2.4_1.3 has been executed.
6.2A.3.1	UE maximum output power with additional requirements for CA (2UL CA)	Rel-15	C053	UEs supporting 5GS FR2 and CA (2UL CA)	E020	PC1 PC2 (NOTE 1) PC3 PC4 (NOTE 1) PC5	Skip TC 6.2A.3.1 if UE supports NSA and TS 38.521-3 TC 6.2B.3.4_1.1 has been executed.
6.2A.3.2	UE maximum output power with additional requirements for CA (3UL CA)	Rel-15	C054	UEs supporting 5GS FR2 and CA (3UL CA)	E021	PC1 PC2 (NOTE 1) PC3 PC4 (NOTE 1) PC5	Skip TC 6.2A.3.2 if UE supports NSA and TS 38.521-3 TC 6.2B.3.4_1.2 has been executed.
6.2A.3.3	UE maximum output power with additional requirements for CA (4UL CA)	Rel-15	C055	UEs supporting 5GS FR2 and CA (4UL CA)	E022	PC1 PC2 (NOTE 1) PC3 PC4 (NOTE 1) PC5	Skip TC 6.2A.3.3 if UE supports NSA and TS 38.521-3 TC 6.2B.3.4_1.3 has been executed.

Clause	TC Title	Release	Applicability		Tested Bands/CA-Configurations Selection	Branch	Additional Information
			Condition	Comment			
6.2D.1.1	UE maximum output power - EIRP and TRP for UL MIMO	Rel-15	C060	UEs supporting 5GS FR2 and UL-MIMO	D023	PC1 PC2 (NOTE 1) PC3 PC4 (NOTE 1) PC5 PC6 (NOTE 1)	Skip TC 6.2D.1.1 if UE supports NSA and TS 38.521-3 TC 6.2B.1.4D.1 has been executed.
6.2D.1.2	UE maximum output power - Spherical coverage for UL MIMO	Rel-15	C060	UEs supporting 5GS FR2 and UL-MIMO	D023	PC1 PC2 (NOTE 1) PC3 PC4 (NOTE 1) PC5 PC6 (NOTE 1)	Skip TC 6.2D.1.2 if UE supports NSA and TS 38.521-3 TC 6.2B.1.4D.2 has been executed.
6.2D.2	UE maximum output power reduction for UL MIMO	Rel-15	C060	UEs supporting 5GS FR2 and UL-MIMO	D023	PC1 (NOTE 1) PC2 (NOTE 1) PC3 PC4 (NOTE 1) PC5 PC6 (NOTE 1)	Skip TC 6.2D.2 if UE supports NSA and TS 38.521-3 TC 6.2B.2.4D has been executed.
6.2D.3	UE maximum output power with additional requirements for UL MIMO	Rel-15	C060	UEs supporting 5GS FR2 and UL-MIMO	D023	PC1 (NOTE 1) PC2 (NOTE 1) PC3 PC4 (NOTE 1)	Skip TC 6.2D.3 if UE supports NSA and TS 38.521-3 TC 6.2B.3.4D has been executed.
6.2.5	UE maximum output power – EIRP with UL Gaps	Rel-17	FFS	FFS	FFS	PC1 (NOTE 1) PC2 (NOTE 1) PC3 PC4 (NOTE 1) PC5 (NOTE 1) PC6 (NOTE 1) PC7 (NOTE 1)	
6.3.1	Minimum output power	Rel-15	C006	UEs supporting 5GS FR2	D005	PC1 PC2 (NOTE 1) PC3 PC4 (NOTE 1) PC5 (NOTE 1) PC6 PC7	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	PC1 PC3 PC5 PC6	

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	C006	UEs supporting 5GS FR2	D005	PC1 (NOTE 1) PC2 (NOTE 1) PC3 PC4 (NOTE 1) PC6 (NOTE 1) PC7 (NOTE 1)	Skip TC 6.3.3.2 if UE supports NSA and TS 38.521-3 TC 6.3B.3.4 has been executed.
6.3.3.4	PRACH time mask	Rel-15	C006	UEs supporting 5GS FR2	D005		NOTE 1
6.3.4.2	Absolute power tolerance	Rel-15	C006	UEs supporting 5GS FR2	D005	PC1 (NOTE 1) PC2 (NOTE 1) PC3 PC4 (NOTE 1) PC6 (NOTE 1) PC7 (NOTE 1)	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	PC1 (NOTE 1) PC2 (NOTE 1) PC3 PC4 (NOTE 1) PC6 (NOTE 1) PC7 (NOTE 1)	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 PC2 (NOTE 1) PC3 PC4 (NOTE 1) PC5	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 PC2 (NOTE 1) PC3 PC4 (NOTE 1) PC5	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 PC2 (NOTE 1) PC3 PC4 (NOTE 1) PC5	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 PC2 (NOTE 1) PC3 PC4 (NOTE 1) PC5	Skip TC 6.3A.1.4 if UE supports NSA and TS 38.521-3 TC 6.3B.1.4_1.4 has been executed.

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 PC2 (NOTE 1) PC3 PC4 (NOTE 1) PC5	Skip TC 6.3A.1.5 if UE supports NSA and TS 38.521-3 TC 6.3B.1.4_1.5 has been executed.
6.3A.1.6	Minimum output power for CA (7UL CA)	Rel-15	C058	UEs supporting 5GS FR2 and CA (7UL CA)	E025	PC1 PC2 (NOTE 1) PC3 PC4 (NOTE 1) PC5	Skip TC 6.3A.1.6 if UE supports NSA and TS 38.521-3 TC 6.3B.1.4_1.6 has been executed.
6.3A.1.7	Minimum output power for CA (8UL CA)	Rel-15	C059	UEs supporting 5GS FR2 and CA (8UL CA)	E026	PC1 PC2 (NOTE 1) PC3 PC4 (NOTE 1) PC5	Skip TC 6.3A.1.7 if UE supports NSA and TS 38.521-3 TC 6.3B.1.4_1.7 has been executed.
6.3A.2.1	Void						
6.3A.2.2	Void						
6.3A.2.3	Void						
6.3A.3.1.1	General ON/OFF time mask for CA (2UL CA)	Rel-15	C053	UEs supporting 5GS FR2 and CA (2UL CA)	E020	PC1 (NOTE 1) PC2 (NOTE 1) PC3 PC4 (NOTE 1) PC5 (NOTE 1) PC6 (NOTE 1) PC7 (NOTE 1)	
6.3A.3.1.2	General ON/OFF time mask 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) PC5 (NOTE 1) PC6 (NOTE 1) PC7 (NOTE 1)	
6.3A.3.1.3	General ON/OFF time mask 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) PC5 (NOTE 1) PC6 (NOTE 1) PC7 (NOTE 1)	

Clause	TC Title	Release	Applicability		Tested Bands/CA-Configurations Selection	Branch	Additional Information
			Condition	Comment			
6.3A.4.2.1	Absolute power tolerance 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) PC5 (NOTE 1)	Skip TC 6.3A.4.2.1 if UE supports NSA and TS 38.521-3 TC 6.3B.8.1.4_1.1 has been executed.
6.3A.4.2.2	Absolute power tolerance 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) PC5 (NOTE 1)	Skip TC 6.3A.4.2.2 if UE supports NSA and TS 38.521-3 TC 6.3B.8.1.4_1.2 has been executed.
6.3A.4.2.3	Absolute power tolerance 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) PC5 (NOTE 1)	Skip TC 6.3A.4.2.3 if UE supports NSA and TS 38.521-3 TC 6.3B.8.1.4_1.3 has been executed.
6.3A.4.2.4	Absolute power tolerance for CA (5UL CA)	Rel-15	C056	UEs supporting 5GS FR2 and CA (5UL CA)	E023	PC1 (NOTE 1) PC2 (NOTE 1) PC3 (NOTE 1) PC4 (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	PC1 (NOTE 1) PC2 (NOTE 1) PC3 (NOTE 1) PC4 (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	PC1 (NOTE 1) PC2 (NOTE 1) PC3 (NOTE 1) PC4 (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	PC1 (NOTE 1) PC2 (NOTE 1) PC3 (NOTE 1) PC4 (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	PC1 (NOTE 1) PC2 (NOTE 1) PC3 PC4 (NOTE 1) PC5 (NOTE 1)	Skip TC 6.3A.4.4.1 if UE supports NSA and TS 38.521-3 TC 6.3B.8.3.4_1.1 has been executed.
6.3A.4.4.2	Aggregate power tolerance 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) PC5 (NOTE 1)	Skip TC 6.3A.4.4.2 if UE supports NSA and TS 38.521-3 TC 6.3B.8.3.4_1.2 has been executed.

Clause	TC Title	Release	Applicability		Tested Bands/CA-Configurations Selection	Branch	Additional Information
			Condition	Comment			
6.3A.4.4.3	Aggregate power tolerance 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) PC5 (NOTE 1)	Skip TC 6.3A.4.4.3 if UE supports NSA and TS 38.521-3 TC 6.3B.8.3.4_1.3 has been executed.
6.3A.4.4.4	Aggregate power tolerance for CA (5UL CA)	Rel-15	C056	UEs supporting 5GS FR2 and CA (5UL CA)	E023	PC1 (NOTE 1) PC2 (NOTE 1) PC3 (NOTE 1) PC4 (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	PC1 (NOTE 1) PC2 (NOTE 1) PC3 (NOTE 1) PC4 (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	PC1 (NOTE 1) PC2 (NOTE 1) PC3 (NOTE 1) PC4 (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	PC1 (NOTE 1) PC2 (NOTE 1) PC3 (NOTE 1) PC4 (NOTE 1)	
6.3D.1	Minimum output power for UL MIMO	Rel-15	C060	UEs supporting 5GS FR2 and UL MIMO	D023	PC1 PC2 (NOTE 1) PC3 PC4 (NOTE 1) PC5 PC6 (NOTE 1)	Skip TC 6.3D.1 if UE supports NSA and TS 38.521-3 TC 6.3B.1.4D has been executed.
6.3D.2	Transmit OFF power for UL MIMO	Rel-15	C060	UEs supporting 5GS FR2 and UL MIMO	D023	PC1 (NOTE 1) PC2 (NOTE 1) PC3 PC4 (NOTE 1) PC5 (NOTE 1) PC6 (NOTE 1)	Skip TC 6.3D.2 if UE supports NSA and TS 38.521-3 TC 6.3B.2.4D has been executed.
6.3D.3.1	General ON/OFF time mask for UL MIMO	Rel-15	C060	UEs supporting 5GS FR2 and UL MIMO	D023	PC1 (NOTE 1) PC2 (NOTE 1) PC3 (NOTE 1) PC4 (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.

Clause	TC Title	Release	Applicability		Tested Bands/CA-Configurations Selection	Branch	Additional Information
			Condition	Comment			
6.4.2.1	Error vector magnitude	Rel-15	C006	UEs supporting 5GS FR2	D005	PC1 PC2 (NOTE 1) PC3 PC4 (NOTE 1) PC5 PC6 PC7 (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 (NOTE 1) PC2 (NOTE 1) PC3 (NOTE 1) PC4 (NOTE 1) PC5 (NOTE 1) PC7 (NOTE 1)	Skip TC 6.4.2.1_1 if UE supports NSA and TS 38.521-3 TC 6.4B.2.4.1a has been executed.
6.4.2.2	Carrier leakage	Rel-15	C006	UEs supporting 5GS FR2	D005	PC1 (NOTE 1) PC2 (NOTE 1) PC3 PC4 (NOTE 1) PC6 (NOTE 1) PC7	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 (NOTE 1) PC2 (NOTE 1) PC3 (NOTE 1) PC4 (NOTE 1) PC6 (NOTE 1) PC7 (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.

Clause	TC Title	Release	Applicability		Tested Bands/CA-Configurations Selection	Branch	Additional Information
			Condition	Comment			
6.4.2.6	Phase continuity requirements for DMRS bundling	Rel-17	C314	UEs supporting 5GS FR2, <i>dmrs-BundlingPUCCH-Rep-r17</i> and either <i>dmrs-BundlingPUSCH-multiSlot-r17</i> or <i>dmrs-BundlingPUSCH-RepTypeA-r17</i> or <i>dmrs-BundlingPUSCH-RepTypeB-r17</i>	D005	PC1 (NOTE 1) PC2 (NOTE 1) PC3 (NOTE 1) PC4 (NOTE 1) PC6 (NOTE 1) PC7 (NOTE 1)	
6.4A.1.1	Frequency error for CA (2UL CA)	Rel-15	C053	UEs supporting 5GS FR2 and CA (2UL CA)	E020		NOTE 1
6.4A.1.2	Frequency error for CA (3UL CA)	Rel-15	C054	UEs supporting 5GS FR2 and CA (3UL CA)	E021		NOTE 1
6.4A.1.3	Frequency error for CA (4UL CA)	Rel-15	C055	UEs supporting 5GS FR2 and CA (4UL CA)	E022		NOTE 1
6.4A.1.4	Frequency error for CA (5UL CA)	Rel-15	C056	UEs supporting 5GS FR2 and CA (5UL CA)	E023		NOTE 1
6.4A.1.5	Frequency error for CA (6UL CA)	Rel-15	C057	UEs supporting 5GS FR2 and CA (6UL CA)	E024		NOTE 1
6.4A.1.6	Frequency error for CA (7UL CA)	Rel-15	C058	UEs supporting 5GS FR2 and CA (7UL CA)	E025		NOTE 1
6.4A.1.7	Frequency error for CA (8UL CA)	Rel-15	C059	UEs supporting 5GS FR2 and CA (8UL CA)	E026		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 (NOTE 1) PC2 (NOTE 1) PC3 (NOTE 1) PC4 (NOTE 1)	
6.4A.2.1.2	Error vector magnitude for CA (3UL CA)	Rel-15	C054	UEs supporting 5GS FR2 and CA (3UL CA)	E021	PC1 (NOTE 1) PC2 (NOTE 1) PC3 (NOTE 1) 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 (NOTE 1) PC2 (NOTE 1) PC3 (NOTE 1) 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 (NOTE 1) PC2 (NOTE 1) PC3 (NOTE 1) 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 (NOTE 1) PC2 (NOTE 1) PC3 (NOTE 1) PC4 (NOTE 1)	

Clause	TC Title	Release	Applicability		Tested Bands/CA-Configurations Selection	Branch	Additional Information
			Condition	Comment			
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 (NOTE 1) PC2 (NOTE 1) PC3 (NOTE 1) 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 (NOTE 1) PC2 (NOTE 1) PC3 (NOTE 1) 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 (NOTE 1) PC2 (NOTE 1) PC3 (NOTE 1) 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 (NOTE 1) PC2 (NOTE 1) PC3 (NOTE 1) 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 (NOTE 1) PC2 (NOTE 1) PC3 (NOTE 1) 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 (NOTE 1) PC2 (NOTE 1) PC3 (NOTE 1) PC4 (NOTE 1)	
6.4A.2.2.5	Carrier leakage for CA (6UL CA)	Rel-15	C057	UEs supporting 5GS FR2 and CA (6UL CA)	E024	PC1 (NOTE 1) PC2 (NOTE 1) PC3 (NOTE 1) 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 (NOTE 1) PC2 (NOTE 1) PC3 (NOTE 1) 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 (NOTE 1) PC2 (NOTE 1) PC3 (NOTE 1) 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 (NOTE 1) PC2 (NOTE 1) PC3 (NOTE 1) PC4 (NOTE 1)	

Clause	TC Title	Release	Applicability		Tested Bands/CA-Configurations Selection	Branch	Additional Information
			Condition	Comment			
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 (NOTE 1) PC2 (NOTE 1) PC3 (NOTE 1) 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 (NOTE 1) PC2 (NOTE 1) PC3 (NOTE 1) 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 (NOTE 1) PC2 (NOTE 1) PC3 (NOTE 1) 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 (NOTE 1) PC2 (NOTE 1) PC3 (NOTE 1) 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 (NOTE 1) PC2 (NOTE 1) PC3 (NOTE 1) 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 (NOTE 1) PC2 (NOTE 1) PC3 (NOTE 1) PC4 (NOTE 1)	
6.4A.2.4.1	EVM equalizer spectrum flatness for CA (2UL CA)	Rel-15	C053	UEs supporting 5GS FR2 and CA (2UL CA)	E020	PC1 (NOTE 1) PC2 (NOTE 1) PC3 (NOTE 1) PC4 (NOTE 1)	
6.4A.2.4.2	EVM equalizer spectrum flatness for CA (3UL CA)	Rel-15	C054	UEs supporting 5GS FR2 and CA (3UL CA)	E021	PC1 (NOTE 1) PC2 (NOTE 1) PC3 (NOTE 1) PC4 (NOTE 1)	
6.4A.2.4.3	EVM equalizer spectrum flatness for CA (4UL CA)	Rel-15	C055	UEs supporting 5GS FR2 and CA (4UL CA)	E022	PC1 (NOTE 1) PC2 (NOTE 1) PC3 (NOTE 1) PC4 (NOTE 1)	
6.4A.2.4.4	EVM equalizer spectrum flatness for CA (5UL CA)	Rel-15	C056	UEs supporting 5GS FR2 and CA (5UL CA)	E023	PC1 (NOTE 1) PC2 (NOTE 1) PC3 (NOTE 1) PC4 (NOTE 1)	

Clause	TC Title	Release	Applicability		Tested Bands/CA-Configurations Selection	Branch	Additional Information
			Condition	Comment			
6.4A.2.4.5	EVM equalizer spectrum flatness for CA (6UL CA)	Rel-15	C057	UEs supporting 5GS FR2 and CA (6UL CA)	E024	PC1 (NOTE 1) PC2 (NOTE 1) PC3 (NOTE 1) PC4 (NOTE 1)	
6.4A.2.4.6	EVM equalizer spectrum flatness for CA (7UL CA)	Rel-15	C058	UEs supporting 5GS FR2 and CA (7UL CA)	E025	PC1 (NOTE 1) PC2 (NOTE 1) PC3 (NOTE 1) PC4 (NOTE 1)	
6.4A.2.4.7	EVM equalizer spectrum flatness for CA (8UL CA)	Rel-15	C059	UEs supporting 5GS FR2 and CA (8UL CA)	E026	PC1 (NOTE 1) PC2 (NOTE 1) PC3 (NOTE 1) PC4 (NOTE 1)	
6.4D.1	Frequency error for UL MIMO	Rel-15	C060	UEs supporting 5GS FR2 and UL MIMO	D023		Skip TC 6.4D.1 if UE supports NSA and TS 38.521-3 6.4B.1.4D has been executed.
6.4D.2.1	Error vector magnitude for UL MIMO	Rel-15	C060	UEs supporting 5GS FR2 and UL MIMO	D023	PC1 (NOTE 1) PC2 (NOTE 1) PC3 (NOTE 1) PC4 (NOTE 1)	Skip TC 6.4D.2.1 if UE supports NSA and TS 38.521-3 6.4B.2.4.1D has been executed.
6.4D.2.2	Carrier leakage for UL MIMO	Rel-15	C060	UEs supporting 5GS FR2 and UL MIMO	D023	PC1 (NOTE 1) PC2 (NOTE 1) PC3 (NOTE 1) PC4 (NOTE 1) PC6 (NOTE 1)	Skip TC 6.4D.2.2 if UE supports NSA and TS 38.521-3 6.4B.2.4.2D has been executed.
6.4D.2.3	In-band emissions for UL MIMO	Rel-15	C060	UEs supporting 5GS FR2 and UL MIMO	D023	PC1 (NOTE 1) PC2 (NOTE 1) PC3 (NOTE 1) PC4 (NOTE 1)	Skip TC 6.4D.2.2 if UE supports NSA and TS 38.521-3 6.4B.2.4.3D has been executed.
6.4D.3	Time alignment error for UL MIMO	Rel-15	C060	UEs supporting 5GS FR2 and UL MIMO	D023	PC1 (NOTE 1) PC2 (NOTE 1) PC3 (NOTE 1) PC4 (NOTE 1)	
6.5.1	Occupied bandwidth	Rel-15	C006	UEs supporting 5GS FR2	D005	PC1 PC2 (NOTE 1) PC3 PC4 (NOTE 1) PC5 PC6	Skip TC 6.5.1 if UE supports NSA and TS 38.521-3 TC 6.5B.1.4 has been executed.

Clause	TC Title	Release	Applicability		Tested Bands/CA-Configurations Selection	Branch	Additional Information
			Condition	Comment			
6.5.2.1	Spectrum Emission Mask	Rel-15	C006	UEs supporting 5GS FR2	D005	PC1 PC2 (NOTE 1) PC3 PC4 (NOTE 1) PC5 PC6	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) PC6	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	PC1 PC2 (NOTE 1) PC3 PC4 (NOTE 1) PC5 PC6	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	PC1 PC2 (NOTE 1) PC3 PC4 (NOTE 1) PC5 PC6 PC7 (NOTE 1)	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 PC2 (NOTE 1) PC3 PC4 (NOTE 1) PC6 (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	PC1 PC2 (NOTE 1) PC3 PC4 (NOTE 1) PC5 PC6 PC7 (NOTE 1)	Skip TC 6.5.3.2 if UE supports NSA and TS 38.521-3 TC 6.5B.3.4.2 has been executed.
6.5.3.2_1	Spurious emission band UE co-existence with Power Boost	Rel-16	C006w	UEs supporting 5GS FR2 and supporting <i>mpr-PowerBoost-FR2-r16</i>	D005	PC1 PC2 (NOTE 1) PC3 PC4 (NOTE 1) PC6 (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.

Clause	TC Title	Release	Applicability		Tested Bands/CA-Configurations Selection	Branch	Additional Information
			Condition	Comment			
6.5.3.3	Additional spurious emissions	Rel-15	C006	UEs supporting 5GS FR2	D005	PC1 PC2 (NOTE 1) PC3 PC4 (NOTE 1) PC5 PC6	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 PC2 (NOTE 1) PC3 PC4 (NOTE 1) PC5 PC6	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	PC1 (NOTE 1) PC2 (NOTE 1) PC3 (NOTE 1) PC4 (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	PC1 (NOTE 1) PC2 (NOTE 1) PC3 (NOTE 1) PC4 (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	PC1 (NOTE 1) PC2 (NOTE 1) PC3 (NOTE 1) PC4 (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	PC1 (NOTE 1) PC2 (NOTE 1) PC3 (NOTE 1) PC4 (NOTE 1)	
6.5A.1.5	Occupied bandwidth for CA (6UL CA)	Rel-15	C057	UEs supporting 5GS FR2 and CA (6UL CA)	E024	PC1 (NOTE 1) PC2 (NOTE 1) PC3 (NOTE 1) PC4 (NOTE 1)	
6.5A.1.6	Occupied bandwidth for CA (7UL CA)	Rel-15	C058	UEs supporting 5GS FR2 and CA (7UL CA)	E025	PC1 (NOTE 1) PC2 (NOTE 1) PC3 (NOTE 1) PC4 (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	PC1 (NOTE 1) PC2 (NOTE 1) PC3 (NOTE 1) PC4 (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	PC1 PC2 (NOTE 1) PC3 PC4 (NOTE 1) PC5	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	PC1 PC2 (NOTE 1) PC3 PC4 (NOTE 1) PC5	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	PC1 PC2 (NOTE 1) PC3 PC4 (NOTE 1) PC5	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	PC1 (NOTE 1) PC2 (NOTE 1) PC3 (NOTE 1) PC4 (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	PC1 (NOTE 1) PC2 (NOTE 1) PC3 (NOTE 1) PC4 (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	PC1 (NOTE 1) PC2 (NOTE 1) PC3 (NOTE 1) PC4 (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	PC1 (NOTE 1) PC2 (NOTE 1) PC3 (NOTE 1) PC4 (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	PC1 PC2 (NOTE 1) PC3 PC4 (NOTE 1) PC5	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.

Clause	TC Title	Release	Applicability		Tested Bands/CA-Configurations Selection	Branch	Additional Information
			Condition	Comment			
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	PC1 PC2 (NOTE 1) PC3 PC4 (NOTE 1) PC5	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	PC1 PC2 (NOTE 1) PC3 PC4 (NOTE 1) PC5	Skip TC 6.5A.2.2.3 if UE supports NSA and TS 38.521-3 TC 6.5B.2.4.3_1.3 has been executed.
6.5A.2.2.4	Adjacent channel leakage ratio for CA (5UL CA)	Rel-15	C056	UEs supporting 5GS FR2 and CA (5UL CA)	E023	PC1 (NOTE 1) PC2 (NOTE 1) PC3 (NOTE 1) PC4 (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	PC1 (NOTE 1) PC2 (NOTE 1) PC3 (NOTE 1) PC4 (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	PC1 (NOTE 1) PC2 (NOTE 1) PC3 (NOTE 1) PC4 (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	PC1 (NOTE 1) PC2 (NOTE 1) PC3 (NOTE 1) PC4 (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.

Clause	TC Title	Release	Applicability		Tested Bands/CA-Configurations Selection	Branch	Additional Information
			Condition	Comment			
6.5A.3.1.4	General spurious emissions for CA (5UL CA)	Rel-15	C056	UEs supporting 5GS FR2 and CA (5UL CA)	E023	PC1 (NOTE 1) PC2 (NOTE 1) PC3 PC4 (NOTE 1)	Skip TC 6.5A.3.1.4 if UE supports NSA and TS 38.521-3 TC 6.5B.3.4.1_1.4 has been executed.
6.5A.3.1.5	General spurious emissions for CA (6UL CA)	Rel-15	C057	UEs supporting 5GS FR2 and CA (6UL CA)	E024	PC1 (NOTE 1) PC2 (NOTE 1) PC3 PC4 (NOTE 1)	Skip TC 6.5A.3.1.5 if UE supports NSA and TS 38.521-3 TC 6.5B.3.4.1_1.5 has been executed.
6.5A.3.1.6	General spurious emissions for CA (7UL CA)	Rel-15	C058	UEs supporting 5GS FR2 and CA (7UL CA)	E025	PC1 (NOTE 1) PC2 (NOTE 1) PC3 PC4 (NOTE 1)	Skip TC 6.5A.3.1.6 if UE supports NSA and TS 38.521-3 TC 6.5B.3.4.1_1.6 has been executed.
6.5A.3.1.7	General spurious emissions for CA (8UL CA)	Rel-15	C059	UEs supporting 5GS FR2 and CA (8UL CA)	E026	PC1 (NOTE 1) PC2 (NOTE 1) PC3 PC4 (NOTE 1)	Skip TC 6.5A.3.1.7 if UE supports NSA and TS 38.521-3 TC 6.5B.3.4.1_1.7 has been executed.
6.5A.3.2.1	Spurious emission band UE co-existence for CA (2UL CA)	Rel-15	C053	UEs supporting 5GS FR2 CA (2UL CA)	E020	PC1 (NOTE 1) PC2 (NOTE 1) PC3 PC4 (NOTE 1)	Skip TC 6.5A.3.2.1 if UE supports NSA and TS 38.521-3 TC 6.5B.3.4.2_1.1 has been executed.
6.5A.3.2.2	Spurious emission band UE co-existence for CA (3UL CA)	Rel-15	C054	UEs supporting 5GS FR2 and CA (3UL CA)	E021	PC1 (NOTE 1) PC2 (NOTE 1) PC3 PC4 (NOTE 1)	Skip TC 6.5A.3.2.2 if UE supports NSA and TS 38.521-3 TC 6.5B.3.4.2_1.2 has been executed.
6.5A.3.2.3	Spurious emission band UE co-existence for CA (4UL CA)	Rel-15	C055	UEs supporting 5GS FR2 and CA (4UL CA)	E022	PC1 (NOTE 1) PC2 (NOTE 1) PC3 PC4 (NOTE 1)	Skip TC 6.5A.3.2.3 if UE supports NSA and TS 38.521-3 TC 6.5B.3.4.2_1.3 has been executed.
6.5A.3.2.4	Spurious emission band UE co-existence for CA (5UL CA)	Rel-15	C056	UEs supporting 5GS FR2 and CA (5UL CA)	E023	PC1 (NOTE 1) PC2 (NOTE 1) PC3 PC4 (NOTE 1)	Skip TC 6.5A.3.2.4 if UE supports NSA and TS 38.521-3 TC 6.5B.3.4.2_1.4 has been executed.

Clause	TC Title	Release	Applicability		Tested Bands/CA-Configurations Selection	Branch	Additional Information
			Condition	Comment			
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 PC2 (NOTE 1) PC3 PC4 (NOTE 1) PC5	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 PC2 (NOTE 1) PC3 PC4 (NOTE 1) PC5	Skip TC 6.5A.3.3.2 if UE supports NSA and TS 38.521-3 TC 6.5B.4.4.1_1.2 has been executed.
6.5A.3.3.3	Additional spurious emissions for CA (4UL CA)	Rel-15	C055	UEs supporting 5GS FR2 and CA (4UL CA)	E022	PC1 PC2 (NOTE 1) PC3 PC4 (NOTE 1) PC5	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

Clause	TC Title	Release	Applicability		Tested Bands/CA-Configurations Selection	Branch	Additional Information
			Condition	Comment			
6.5D.1	Occupied bandwidth for UL MIMO	Rel-15	C060	UEs supporting 5GS FR2 and UL MIMO	D023	PC1 (NOTE 1) PC2 (NOTE 1) PC3 PC4 (NOTE 1) PC5 (NOTE 1)	Skip TC 6.5D.1 if UE supports NSA and TS 38.521-3 TC 6.5B.1.4D has been executed.
6.5D.2.1	Spectrum Emission Mask for UL MIMO	Rel-15	C060	UEs supporting 5GS FR2 and UL MIMO	D023	PC1 PC2 (NOTE 1) PC3 PC4 (NOTE 1)	Skip TC 6.5D.2.1 if UE supports NSA and TS 38.521-3 TC 6.5B.2.4.1D has been executed.
6.5D.2.2	Adjacent channel leakage ratio for UL MIMO	Rel-15	C060	UEs supporting 5GS FR2 and UL MIMO	D023	PC1 (NOTE 1) PC2 (NOTE 1) PC3 PC4 (NOTE 1)	Skip TC 6.5D.2.2 if UE supports NSA and TS 38.521-3 TC 6.5B.2.4D.3 has been executed.
6.5D.3.1	Transmitter Spurious emissions for UL MIMO	Rel-15	C060	UEs supporting 5GS FR2 and UL MIMO	D023	PC1 PC2 (NOTE 1) PC3 PC4 (NOTE 1) PC5 (NOTE 1)	Skip TC 6.5D.3.1 if UE supports NSA and TS 38.521-3 TC 6.5B.3.4.1D has been executed.
6.5D.3.2	Spurious emission band UE co-existence for UL MIMO	Rel-15	C060	UEs supporting 5GS FR2 and UL MIMO	D023	PC1 PC2 (NOTE 1) PC3 PC4 (NOTE 1) PC5 (NOTE 1)	Skip TC 6.5D.3.2 if UE supports NSA and TS 38.521-3 TC 6.5B.3.4.2D has been executed.
6.5D.3.3	Additional spurious emissions for UL MIMO	Rel-15	C060	UEs supporting 5GS FR2 and UL MIMO	D023	PC1 (NOTE 1) PC2 (NOTE 1) PC3 PC4 (NOTE 1)	Skip TC 6.5D.3.3 if UE supports NSA and TS 38.521-3 TC 6.5B.4.4D has been executed.
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 PC5 (NOTE 1) PC6 (NOTE 1) PC7 (NOTE 1)	Skip TC 6.6.1 if UE supports NSA and TS 38.521-3 TC 6.6B.4 has been executed.

Clause	TC Title	Release	Applicability		Tested Bands/CA-Configurations Selection	Branch	Additional Information
			Condition	Comment			
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		Skip TC 6.6.2 if UE supports NSA and TS 38.521-3 TC 6.6B.5 has been executed.
7	Receiver Characteristics						
7.3.2	Reference sensitivity power level	Rel-15	C006	UEs supporting 5GS FR2	D005	PC1 PC2 (NOTE 1) PC3 PC4 (NOTE 1) PC5 PC6 PC7	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 PC2 (NOTE 1) PC3 PC4 (NOTE 1) PC5	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 PC2 (NOTE 1) PC3 PC4 (NOTE 1) PC5	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 PC2 (NOTE 1) PC3 PC4 (NOTE 1) PC5	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 (NOTE 1) PC3 PC4 (NOTE 1) PC5	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 (NOTE 1) PC3 PC4 (NOTE 1) PC5	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 (NOTE 1) PC3 PC4 (NOTE 1) PC5	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 (NOTE 1) PC3 PC4 (NOTE 1) PC5	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		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		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		NOTE 1
7.3.4	EIS spherical coverage	Rel-15	C006	UEs supporting 5GS FR2	D005	PC1 PC2 (NOTE 1) PC3 PC4 (NOTE 1) PC5 PC6 (NOTE 1) PC7	Skip TC 7.3.4 if UE supports NSA and TS 38.521-3 TC 7.3B.4 has been executed.
7.3K.1.1	UE spherical coverage for simultaneous reception from multiple directions (2 AoAs)	Rel-18	C415	Release 18 and forward UEs supporting 5GS FR2, simultaneousReceptionDiffTypeD-r16 and either singleDCI-SDM-scheme-r16 OR multiDCI-MultiTRP-r16 AND either of overlapPDSCHsFullyFreqTime-r16 or overlapPDSCHsInTimePartiallyFreq-r16	D005	PC3 (NOTE 1) PC6 (NOTE 1)	
7.4	Maximum input level	Rel-15	N/A	Not recommended due to testability issues			NOTE 1
7.4A.1	Maximum input level for CA (2DL CA)	Rel-15	N/A	Not recommended due to testability issues			NOTE 1
7.4A.2	Maximum input level for CA (3DL CA)	Rel-15	N/A	Not recommended due to testability issues			NOTE 1
7.4A.3	Maximum input level for CA (4DL CA)	Rel-15	N/A	Not recommended due to testability issues			NOTE 1
7.4A.4	Maximum input level for CA (5DL CA)	Rel-15	N/A	Not recommended due to testability issues			NOTE 1

Clause	TC Title	Release	Applicability		Tested Bands/CA-Configurations Selection	Branch	Additional Information
			Condition	Comment			
7.4A.5	Maximum input level for CA (6DL CA)	Rel-15	N/A	Not recommended due to testability issues			NOTE 1
7.4A.6	Maximum input level for CA (7DL CA)	Rel-15	N/A	Not recommended due to testability issues			NOTE 1
7.4A.7	Maximum input level for CA (8DL CA)	Rel-15	N/A	Not recommended due to testability issues			NOTE 1
7.5	Adjacent channel selectivity	Rel-15	C006	UEs supporting 5GS FR2	D005	PC1 PC3 PC5 PC6 PC7 (NOTE 1)	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	PC1 PC3 PC5 PC6 PC7 (NOTE 1)	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	PC1 PC3 PC5 PC6 PC7 (NOTE 1)	Skip TC 7.9 if UE supports NSA and TS 38.521-3 TC 7.9B.4 has been executed.
NOTE 1: The test case/branch is incomplete for any Band/CA/DC Configuration but has basic test configurations already. NOTE 1 can be removed only when the test case/branch is complete for at least one Band/CA/DC Configuration for at least one feature included in the test case/branch. Detailed completion status can be found in the corresponding test case section in 38.521-2.							
NOTE 2: Void.							
NOTE 3: Void.							
NOTE 4: Void.							

Table 4.1.2-1a: Void

Table 4.1.2-1b: Void

Table 4.1.2-1c: Void

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

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

Clause	TC Title	Release	Applicability		Tested Bands/CA/DC-Configurations Selection	Branch	Additional Information
			Condition	Comment			
6	Transmitter characteristics						
6.2B	Transmitter power for DC						
6.2B.1.1	UE Maximum Output Power for Intra-Band Contiguous EN-DC	Rel-15	C009	UEs supporting Intra-Band Contiguous EN-DC (2UL CCs)	E003		
6.2B.1.2	UE Maximum Output Power for Intra-Band Non-Contiguous EN-DC	Rel-15	C010	UEs supporting Intra-Band non-contiguous EN-DC (2UL CCs)	E004		
6.2B.1.3	UE Maximum Output Power for Inter-Band EN-DC within FR1 (1 E-UTRA CC, 1 NR CC)	Rel-15	C011	UEs supporting Inter-Band EN-DC within FR1 (2UL CCs)	E005 E005d	PC3 PC2	
6.2B.1.3_1	UE Maximum Output Power for Inter-Band EN-DC within FR1 (2 E-UTRA CCs, 1 NR CC)	Rel-16	C011d	UEs supporting Inter-Band EN-DC within FR1 (2UL E-UTRA CCs, 1UL NR CC)	E005z		
6.2B.1.3a	UE Maximum Output Power for Inter-Band NE-DC within FR1	Rel-15	C352	UEs supporting Inter-Band NE-DC within FR1			
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) PC5 PC6 PC7	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) PC5 PC7	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) PC5 (NOTE 1) PC7 (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 PC2 (NOTE 1) PC3 PC4 (NOTE 1) PC7 (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.

Clause	TC Title	Release	Applicability		Tested Bands/CA/DC-Configurations Selection	Branch	Additional Information
			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) PC5 (NOTE 1) PC7 (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 PC2 (NOTE 1) PC3 PC4 (NOTE 1) PC7 (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) PC5 (NOTE 1) PC7 (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 PC2 (NOTE 1) PC3 PC4 (NOTE 1) PC7 (NOTE 1)	NOTE 5 Skip TC 6.2B.1.4_1.3.2 if UE supports SA and TS 38.521-2 TC 6.2A.1.2.3 has been executed.
6.2B.1.4D.1	UE Maximum Output Power for Inter-Band EN-DC including FR2 for UL MIMO - EIRP and TRP	Rel-15	C012p	UEs supporting Inter-Band EN-DC including FR2 and UL MIMO	E043	PC1 PC2 (NOTE 1) PC3 PC4 (NOTE 1) PC5 PC6 (NOTE 1)	NOTE 5 Skip TC 6.2B.1.4D.1 if UE supports SA and TS 38.521-2 TC 6.2D.1.1 has been executed.
6.2B.1.4D.2	UE Maximum Output Power for Inter-Band EN-DC including FR2 for UL MIMO - Spherical Coverage	Rel-15	C012p	UEs supporting Inter-Band EN-DC including FR2 and UL MIMO	E043	PC1 PC2 (NOTE 1) PC3 PC4 (NOTE 1) PC5 PC6 (NOTE 1)	NOTE 5 Skip TC 6.2B.1.4D.2 if UE supports SA and TS 38.521-2 TC 6.2D.1.2 has been executed.

Clause	TC Title	Release	Applicability		Tested Bands/CA/DC-Configurations Selection	Branch	Additional Information
			Condition	Comment			
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 (NOTE 1) PC2 (NOTE 1) PC3 PC4 (NOTE 1) PC5 (NOTE 1) PC6 (NOTE 1) PC7 (NOTE 1)	NOTE 5 Skip TC 6.2B.1.6 if UE supports SA and TS 38.521-2 TC 6.2.5 has been executed.
6.2B.2.1	UE Maximum Output Power reduction for Intra-Band Contiguous EN-DC	Rel-15	C009	UEs supporting Intra-Band Contiguous EN-DC (2UL CCs)	E003	PC2 PC3	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	PC2 PC3	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	PC1 PC2 (NOTE 1) PC3 PC4 (NOTE 1) PC5 PC6 PC7	NOTE 5 Skip TC 6.2B.2.4 if UE supports SA and TS 38.521-2 TC 6.2.2 has been executed.
6.2B.2.4a	UE maximum output power reduction enhancements for Inter-Band EN-DC including FR2 (1 NR CC)	Rel-16	C012q	UEs supporting Inter-Band EN-DC including FR2 with 1 NR UL CC and modified MPR behaviour bit 0.	E010		
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
			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	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.2.4_1.1 if UE supports SA and TS 38.521-2 TC 6.2A.2.1 has been executed.
6.2B.2.4_1.2	UE Maximum Output Power reduction for Inter-Band EN-DC including FR2 (3 NR CCs)	Rel-15	C012c	UEs supporting Inter-Band EN-DC including FR2 with 3 NR UL CCs	E012	PC1 (NOTE 1) PC2 (NOTE 1) PC3 PC4 (NOTE 1)	NOTE 1 NOTE 5 Skip TC 6.2B.2.4_1.1 if UE supports SA and TS 38.521-2 TC 6.2A.2.2 has been executed.
6.2B.2.4_1.3	UE Maximum Output Power reduction for Inter-Band EN-DC including FR2 (4 NR CCs)	Rel-15	C012d	UEs supporting Inter-Band EN-DC including FR2 with 4 NR UL CCs	E013	PC1 (NOTE 1) PC2 (NOTE 1) PC3 PC4 (NOTE 1)	NOTE 1 NOTE 5 Skip TC 6.2B.2.4_1.1 if UE supports SA and TS 38.521-2 TC 6.2A.2.3 has been executed.
6.2B.2.4D	UE Maximum Output Power reduction for Inter-Band EN-DC including FR2 for UL MIMO (1 NR CC)	Rel-15	C012p	UEs supporting Inter-Band EN-DC including FR2 and UL MIMO	E043	PC1 (NOTE 1) PC2 (NOTE 1) PC3 PC4 (NOTE 1) PC6 (NOTE 1) PC7 (NOTE 1)	NOTE 5 Skip TC 6.2B.2.4D if UE supports SA and TS 38.521-2 TC 6.2D.2 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	PC2 PC3	Test execution is not necessary if TS 38.521-3 TC 6.5B.2.1.2 has been executed.
6.2B.3.2	UE Additional Maximum Output Power reduction for Intra-Band Non-Contiguous EN-DC	Rel-15	FFS	FFS	FFS	PC2 (NOTE 1) PC3 (NOTE 1)	

Clause	TC Title	Release	Applicability		Tested Bands/CA/DC-Configurations Selection	Branch	Additional Information
			Condition	Comment			
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	PC1 PC2 (NOTE 1) PC3 PC4 (NOTE 1) PC5 PC6 (NOTE 1) PC7 (NOTE 1)	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.3.4_1	UE Additional Maximum Output power reduction for inter-band EN-DC including FR2 (> 1 NR CC)						
6.2B.3.4_1.1	UE Additional Maximum Output power reduction for inter-band EN-DC including FR2 (2 NR CCs)	Rel-15	C012b	UEs supporting Inter-Band EN-DC including FR2 with 2 NR UL CCs	E011	PC1 PC2 (NOTE 1) PC3 PC4 (NOTE 1) PC5	NOTE 5 Skip TC 6.2B.3.4_1.1 if UE supports SA and TS 38.521-2 TC 6.2A.3.1 has been executed.
6.2B.3.4_1.2	UE Additional Maximum Output power reduction for inter-band EN-DC including FR2 (3 NR CCs)	Rel-15	C012c	UEs supporting Inter-Band EN-DC including FR2 with 3 NR UL CCs	E012	PC1 PC2 (NOTE 1) PC3 PC4 (NOTE 1) PC5	NOTE 5 Skip TC 6.2B.3.4_1.2 if UE supports SA and TS 38.521-2 TC 6.2A.3.2 has been executed.
6.2B.3.4_1.3	UE Additional Maximum Output power reduction for inter-band EN-DC including FR2 (4 NR CCs)	Rel-15	C012d	UEs supporting Inter-Band EN-DC including FR2 with 4 NR UL CCs	E013	PC1 PC2 (NOTE 1) PC3 PC4 (NOTE 1) PC5	NOTE 5 Skip TC 6.2B.3.4_1.3 if UE supports SA and TS 38.521-2 TC 6.2A.3.3 has been executed.

Clause	TC Title	Release	Applicability		Tested Bands/CA/DC-Configurations Selection	Branch	Additional Information
			Condition	Comment			
6.2B.3.4D	UE Additional Maximum Output Power reduction for Inter-Band EN-DC including FR2 (1 NR CC) for UL MIMO	Rel-15	C012p	UEs supporting Inter-Band EN-DC including FR2 and UL MIMO	E043	PC1 (NOTE 1) PC2 (NOTE 1) PC3 PC4 (NOTE 1)	NOTE 5 Skip TC 6.2B.3.4D if UE supports SA and TS 38.521-2 TC 6.2D.3 has been executed.
6.2B.4.1.1	Configured Output Power Level for Intra-Band Contiguous EN-DC	Rel-15	C009	UEs supporting Intra-Band Contiguous EN-DC (2UL CCs)	E003		
6.2B.4.1.2	Configured Output Power for Intra-Band Non-Contiguous EN-DC	Rel-15	C010	UEs supporting Intra-Band Non-Contiguous EN-DC (2UL CCs)	E004		
6.2B.4.1.3	Configured Output Power for Inter-Band EN-DC within FR1 (1 E-UTRA CC, 1 NR CC)	Rel-15	C011	UEs supporting Inter-Band EN-DC within FR1 (2UL CCs)	E005		
6.2B.4.1.3_1	Configured Output Power for Inter-Band EN-DC within FR1 (2 E-UTRA CCs, 1 NR CC)	Rel-16	C011d	UEs supporting Inter-Band EN-DC within FR1 (2UL E-UTRA CCs, 1UL NR CC)	E005z		
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.
6.2H	Transmitter power for DC with UL MIMO						
6.2H.1.3	UE maximum output power for inter-band EN-DC with UL MIMO within FR1	Rel-17	C330	UEs supporting inter-band EN-DC (2UL CCs) with UL MIMO	E045	PC3 PC2	
6.2H.2.3	UE maximum output power reduction for inter-band EN-DC with UL MIMO within FR1	Rel-17	C330	UEs supporting inter-band EN-DC (2UL CCs) with UL MIMO	E045	PC3 PC2	NOTE 5 Skip TC 6.2H.2.3 if UE supports SA and TS 38.521-1 TC 6.2D.2 has been executed.
6.2H.3.3	UE additional maximum output power reduction for inter-band EN-DC with UL MIMO within FR1	Rel-17	C330	UEs supporting inter-band EN-DC (2UL CCs) with UL MIMO	E045	PC3 PC2	NOTE 5 Skip TC 6.2H.3.3 if UE supports SA and TS 38.521-1 TC 6.2D.3 has been executed.
6.2H.4.3	Configured output power level for inter-band EN-DC with UL MIMO within FR1	Rel-17	C330	UEs supporting inter-band EN-DC (2UL CCs) with UL MIMO	E045	PC3 PC2	NOTE 5 Skip TC 6.2H.4.3 if UE supports SA and TS 38.521-1 TC 6.2D.4 has been executed.
6.2L	Transmitter power for DC with Tx Diversity						

Clause	TC Title	Release	Applicability		Tested Bands/CA/DC-Configurations Selection	Branch	Additional Information
			Condition	Comment			
6.2L.1.3	UE maximum output power for inter-band EN-DC with Tx Diversity within FR1	Rel-17	C331	UEs supporting inter-band EN-DC (2UL CCs) with Tx Diversity	E046	PC3 PC2	
6.2L.2.3	UE maximum output power reduction for inter-band EN-DC with Tx Diversity within FR1	Rel-17	C332	UEs supporting inter-band EN-DC (2UL CCs) with Tx Diversity	E046	PC3 PC2	NOTE 5 Skip TC 6.2L.2.3 if UE supports SA and TS 38.521-1 TC 6.2G.2 has been executed.
6.2L.3.3	UE additional maximum output power reduction for inter-band EN-DC with Tx Diversity within FR1	Rel-17	C332	UEs supporting inter-band EN-DC (2UL CCs) with Tx Diversity	E046	PC3 PC2	NOTE 5 Skip TC 6.2L.3.3 if UE supports SA and TS 38.521-1 TC 6.2G.3 has been executed.
6.2L.4.3	Configured output power level for inter-band EN-DC with Tx Diversity within FR1	Rel-17	C332	UEs supporting inter-band EN-DC (2UL CCs) with Tx Diversity	E046	PC3 PC2	NOTE 5 Skip TC 6.2L.4.3 if UE supports SA and TS 38.521-1 TC 6.2G.4 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	PC1 PC2 (NOTE 1) PC3 PC4 (NOTE 1) PC5 (NOTE 1) PC6 (NOTE 1) PC7 (NOTE 1)	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)						

Clause	TC Title	Release	Applicability		Tested Bands/CA/DC-Configurations Selection	Branch	Additional Information
			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	PC1 (NOTE 1) PC2 (NOTE 1) PC3 PC4 (NOTE 1)	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	PC1 (NOTE 1) PC2 (NOTE 1) PC3 PC4 (NOTE 1)	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	PC1 (NOTE 1) PC2 (NOTE 1) PC3 PC4 (NOTE 1)	NOTE 5 Skip TC 6.3B.1.4_1.3 if UE supports SA and TS 38.521-2 TC 6.3A.1.3 has been executed.
6.3B.1.4D	Minimum output power for inter-band EN-DC including FR2 for UL MIMO	Rel-15	C012p	UEs supporting inter-band EN-DC including FR2 and UL MIMO	E043	PC1 PC2 (NOTE 1) PC3 PC4 (NOTE 1) PC5 PC6 (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	E010		NOTE 5 Skip TC 6.3B.2.4 if UE supports SA and TS 38.521-2 TC 6.3.2 has been executed.
6.3B.2.4_1	Void						
6.3B.2.4D	Transmit OFF Power for inter-band EN-DC including FR2 for UL-MIMO	Rel-15	C012p	UEs supporting inter-band EN-DC including FR2 and UL MIMO	E043	PC1 (NOTE 1) PC2 (NOTE 1) PC3 PC4 (NOTE 1) PC5 (NOTE 1) PC6 (NOTE 1)	NOTE 5 Skip TC 6.3B.2.4D if UE supports SA and TS 38.521-2 TC 6.3D.2 has been executed.
6.3B.3.1	Transmit ON/OFF time mask for intra-band contiguous EN-DC	Rel-15	C009	UEs supporting intra-band contiguous EN-DC (2UL CCs)	E003		NOTE 5 Skip TC 6.3B.3.1 if UE supports SA and TS 38.521-1 TC 6.3.3.2 has been executed.

Clause	TC Title	Release	Applicability		Tested Bands/CA/DC-Configurations Selection	Branch	Additional Information
			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	PC1 (NOTE 1) PC2 (NOTE 1) PC3 PC4 (NOTE 1) PC6 (NOTE 1) PC7 (NOTE 1)	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	PC1 (NOTE 1) PC2 (NOTE 1) PC3 PC4 (NOTE 1) PC5 (NOTE 1) PC6 (NOTE 1) PC7 (NOTE 1)	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.3.4_1.2	Transmit ON/OFF time 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	PC1 (NOTE 1) PC2 (NOTE 1) PC3 PC4 (NOTE 1) PC5 (NOTE 1) PC6 (NOTE 1) PC7 (NOTE 1)	NOTE 5 Skip TC 6.3B.3.4_1.2 if UE supports SA and TS 38.521-2 TC 6.3A.3.1.2 has been executed.
6.3B.3.4_1.3	Transmit ON/OFF time 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	PC1 (NOTE 1) PC2 (NOTE 1) PC3 PC4 (NOTE 1) PC5 (NOTE 1) PC6 (NOTE 1) PC7 (NOTE 1)	NOTE 5 Skip TC 6.3B.3.4_1.2 if UE supports SA and TS 38.521-2 TC 6.3A.3.1.3 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

Clause	TC Title	Release	Applicability		Tested Bands/CA/DC-Configurations Selection	Branch	Additional Information
			Condition	Comment			
6.3B.4.1	PRACH time mask for intra-band contiguous EN-DC	Rel-15	C009	UEs supporting intra-band contiguous EN-DC (2UL CCs)	E003		NOTE 5 Skip TC 6.3B.4.1 if UE supports SA and TS 38.521-1 TC 6.3.3.4 has been executed.
6.3B.4.2	PRACH Time Mask for intra-band non-contiguous EN-DC	Rel-15	C010	UEs supporting intra-band non-contiguous EN-DC (2UL CCs)	E004		NOTE 5 Skip TC 6.3B.4.2 if UE supports SA and TS 38.521-1 TC 6.3.3.4 has been executed.
6.3B.4.3	PRACH Time Mask for inter-band EN-DC within FR1 (1 NR CC)	Rel-15	C011b	UEs supporting inter-band EN-DC within FR1 with 1 NR UL CC	E005b		NOTE 5 Skip TC 6.3B.4.3 if UE supports SA and TS 38.521-1 TC 6.3.3.4 has been executed.
6.3B.4.4	PRACH Time Mask for inter-band EN-DC including FR2 (1 NR CC)	Rel-15	C012	UEs supporting Inter-Band EN-DC including FR2 with 1 NR UL CC	E010		NOTE 1 NOTE 5 Skip TC 6.3B.4.4 if UE supports SA and TS 38.521-2 TC 6.3.3.4 has been executed.
6.3B.8.1.1	Absolute Power Tolerance for intra-band contiguous EN-DC	Rel-15	C009	UEs supporting intra-band contiguous EN-DC (2 UL CCs)	E003		NOTE 5 Skip TC 6.3B.8.1.1 if UE supports SA and TS 38.521-1 TC 6.3.4.2 has been executed.
6.3B.8.1.2	Absolute Power Tolerance for intra-band non-contiguous EN-DC	Rel-15	C010	UEs supporting intra-band non-contiguous EN-DC (2 UL CCs)	E004		NOTE 5 Skip TC 6.3B.8.1.2 if UE supports SA and TS 38.521-1 TC 6.3.4.2 has been executed.
6.3B.8.1.3	Absolute Power Tolerance for inter-band EN-DC within FR1 (1 NR CC)	Rel-15	C011b	UEs supporting inter-band EN-DC within FR1 with 1 NR UL CC	E005b		NOTE 5 Skip TC 6.3B.8.1.3 if UE supports SA and TS 38.521-1 TC 6.3.4.2 has been executed.

Clause	TC Title	Release	Applicability		Tested Bands/CA/DC-Configurations Selection	Branch	Additional Information
			Condition	Comment			
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	PC1 (NOTE 1) PC2 (NOTE 1) PC3 PC4 (NOTE 1) PC6 (NOTE 1) PC7 (NOTE 1)	NOTE 5 Skip TC 6.3B.8.1.4 if UE supports SA and TS 38.521-2 TC 6.3.4.2 has been executed.
6.3B.8.1.4_1	Absolute power tolerance for inter-band EN-DC including FR2 (>1 NR CC)						
6.3B.8.1.4_1.1	Absolute power tolerance for inter-band EN-DC including FR2 (2 NR CC)	Rel-16	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) PC5 (NOTE 1)	NOTE 5 Skip TC 6.3B.8.1.4_1.1 if UE supports SA and TS 38.521-2 TC 6.3A.4.2.1 has been executed.
6.3B.8.1.4_1.2	Absolute power tolerance for inter-band EN-DC including FR2 (3 NR CC)	Rel-16	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) PC5 (NOTE 1)	NOTE 5 Skip TC 6.3B.8.1.4_1.2 if UE supports SA and TS 38.521-2 TC 6.3A.4.2.2 has been executed.
6.3B.8.1.4_1.3	Absolute power tolerance for inter-band EN-DC including FR2 (4 NR CC)	Rel-16	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) PC5 (NOTE 1)	NOTE 5 Skip TC 6.3B.8.1.4_1.3 if UE supports SA and TS 38.521-2 TC 6.3A.4.2.3 has been executed.
6.3B.8.2.1	Relative Power Tolerance for intra-band contiguous EN-DC	Rel-15	C009	UEs supporting intra-band contiguous EN-DC (2 UL CCs)	E003		NOTE 5 Skip TC 6.3B.8.2.1 if UE supports SA and TS 38.521-1 TC 6.3.4.3 has been executed.
6.3B.8.2.2	Relative Power Tolerance for intra-band non-contiguous EN-DC	Rel-15	C010	UEs supporting intra-band non-contiguous EN-DC (2 UL CCs)	E004		NOTE 5 Skip TC 6.3B.8.2.2 if UE supports SA and TS 38.521-1 TC 6.3.4.3 has been executed.

Clause	TC Title	Release	Applicability		Tested Bands/CA/DC-Configurations Selection	Branch	Additional Information
			Condition	Comment			
6.3B.8.2.3	Relative Power Tolerance for inter-band EN-DC within FR1 (1 NR CC)	Rel-15	C011b	UEs supporting inter-band EN-DC within FR1 with 1 NR UL CC	E005b		NOTE 5 Skip TC 6.3B.8.2.3 if UE supports SA and TS 38.521-1 TC 6.3.4.3 has been executed.
6.3B.8.2.4	Relative Power Tolerance for inter-band EN-DC including FR2 (1 NR CC)	Rel-15	FFS	FFS	FFS		NOTE 1
6.3B.8.3.1	Aggregate Power Tolerance for intra-band contiguous EN-DC	Rel-15	C009	UEs supporting intra-band contiguous EN-DC (2 UL CCs)	E003		NOTE 5 Skip TC 6.3B.8.3.1 if UE supports SA and TS 38.521-1 TC 6.3.4.4 has been executed.
6.3B.8.3.2	Aggregate Power Tolerance for intra-band non-contiguous EN-DC	Rel-15	C010	UEs supporting intra-band non-contiguous EN-DC (2 UL CCs)	E004		NOTE 5 Skip TC 6.3B.8.3.2 if UE supports SA and TS 38.521-1 TC 6.3.4.4 has been executed.
6.3B.8.3.3	Aggregate Power Tolerance for inter-band EN-DC within FR1 (1 NR CC)	Rel-15	C011b	UEs supporting inter-band EN-DC within FR1 with 1 NR UL CC	E005b		NOTE 5 Skip TC 6.3B.8.3.3 if UE supports SA and TS 38.521-1 TC 6.3.4.4 has been executed.
6.3B.8.3.4	Aggregate Power Tolerance for inter-band EN-DC including FR2 (1 NR CC)	Rel-15	C011b	UEs supporting inter-band EN-DC within FR1 with 1 NR UL CC	E005b	PC1 (NOTE 1) PC2 (NOTE 1) PC3 PC4 (NOTE 1) PC6 (NOTE 1) PC7 (NOTE 1)	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.
6.3B.8.3.4_1	Aggregate power tolerance for inter-band EN-DC including FR2 (>1 NR CC)						
6.3B.8.3.4_1.1	Aggregate power tolerance for inter-band EN-DC including FR2 (2 NR CC)	Rel-16	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) PC5 (NOTE 1)	NOTE 5 Skip TC 6.3B.8.3.4_1.1 if UE supports SA and TS 38.521-2 TC 6.3A.4.4.1 has been executed.

Clause	TC Title	Release	Applicability		Tested Bands/CA/DC-Configurations Selection	Branch	Additional Information
			Condition	Comment			
6.3B.8.3.4_1.2	Aggregate power tolerance for inter-band EN-DC including FR2 (3 NR CC)	Rel-16	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) PC5 (NOTE 1)	NOTE 5 Skip TC 6.3B.8.3.4_1.2 if UE supports SA and TS 38.521-2 TC 6.3A.4.4.2 has been executed.
6.3B.8.3.4_1.3	Aggregate power tolerance for inter-band EN-DC including FR2 (4 NR CC)	Rel-16	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) PC5 (NOTE 1)	NOTE 5 Skip TC 6.3B.8.3.4_1.3 if UE supports SA and TS 38.521-2 TC 6.3A.4.4.3 has been executed.
6.3H Output power dynamics for DC with UL MIMO							
6.3H.3.1	Minimum output power for inter-band EN-DC with UL MIMO within FR1	Rel-17	C330	UEs supporting inter-band EN-DC (2UL CCs) with UL MIMO	E045	PC3 PC2	NOTE 5 Skip TC 6.3H.3.1 if UE supports SA and TS 38.521-1 TC 6.3D.1 has been executed.
6.3H.3.3	Transmit ON/OFF time mask for inter-band EN-DC with UL MIMO within FR1	Rel-17	C330	UEs supporting inter-band EN-DC (2UL CCs) with UL MIMO	E045	PC3 PC2	NOTE 5 Skip TC 6.3H.3.3 if UE supports SA and TS 38.521-1 TC 6.3D.3 has been executed.
6.3H.3.4.1	Absolute power tolerance for inter-band EN-DC with UL MIMO within FR1	Rel-17	C330	UEs supporting inter-band EN-DC (2UL CCs) with UL MIMO	E045	PC3 PC2	NOTE 5 Skip TC 6.3H.3.4.1 if UE supports SA and TS 38.521-1 TC 6.3D.4.1 has been executed.
6.3H.3.4.2	Relative power tolerance for inter-band EN-DC with UL MIMO within FR1	Rel-17	C330	UEs supporting inter-band EN-DC (2UL CCs) with UL MIMO	E045	PC3 PC2	NOTE 5 Skip TC 6.3H.3.4.2 if UE supports SA and TS 38.521-1 TC 6.3D.4.2 has been executed.

Clause	TC Title	Release	Applicability		Tested Bands/CA/DC-Configurations Selection	Branch	Additional Information
			Condition	Comment			
6.3H.3.4.3	Aggregate power tolerance for inter-band EN-DC with UL MIMO within FR1	Rel-17	C330	UEs supporting inter-band EN-DC (2UL CCs) with UL MIMO	E045	PC3 PC2	NOTE 5 Skip TC 6.3H.3.4.3 if UE supports SA and TS 38.521-1 TC 6.3D.4.3 has been executed.
6.3L Output power dynamics for DC with Tx Diversity							
6.3L.3.1	Minimum output power for inter-band EN-DC with Tx Diversity within FR1	Rel-17	C332	UEs supporting inter-band EN-DC (2UL CCs) with Tx Diversity	E046	PC3 PC2	NOTE 5 Skip TC 6.3L.3.1 if UE supports SA and TS 38.521-1 TC 6.3G.1 has been executed.
6.3L.3.3.1	General ON/OFF time mask for inter-band EN-DC with Tx Diversity within FR1	Rel-17	C332	UEs supporting inter-band EN-DC (2UL CCs) with Tx Diversity	E046	PC3 PC2	NOTE 5 Skip TC 6.3L.3.3.1 if UE supports SA and TS 38.521-1 TC 6.3G.3.1 has been executed.
6.3L.3.3.2	PRACH time mask for inter-band EN-DC with Tx Diversity within FR1	Rel-17	C332	UEs supporting inter-band EN-DC (2UL CCs) with Tx Diversity	E046	PC3 PC2	NOTE 5 Skip TC 6.3L.3.3.2 if UE supports SA and TS 38.521-1 TC 6.3G.3.2 has been executed.
6.3L.3.3.3	SRS time mask for inter-band EN-DC with Tx Diversity within FR1	Rel-17	C332	UEs supporting inter-band EN-DC (2UL CCs) with Tx Diversity	E046	PC3 PC2	NOTE 5 Skip TC 6.3L.3.3.3 if UE supports SA and TS 38.521-1 TC 6.3G.3.3 has been executed.
6.3L.3.4.1	Absolute power tolerance for inter-band EN-DC with Tx Diversity within FR1	Rel-17	C332	UEs supporting inter-band EN-DC (2UL CCs) with Tx Diversity	E046	PC3 PC2	NOTE 5 Skip TC 6.3L.3.4.1 if UE supports SA and TS 38.521-1 TC 6.3G.4.1 has been executed.
6.3L.3.4.2	Relative power tolerance for inter-band EN-DC with Tx Diversity within FR1	Rel-17	C332	UEs supporting inter-band EN-DC (2UL CCs) with Tx Diversity	E046	PC3 PC2	NOTE 5 Skip TC 6.3L.3.4.2 if UE supports SA and TS 38.521-1 TC 6.3G.4.2 has been executed.

Clause	TC Title	Release	Applicability		Tested Bands/CA/DC-Configurations Selection	Branch	Additional Information
			Condition	Comment			
6.3L.3.4.3	Aggregate power tolerance for inter-band EN-DC with Tx Diversity within FR1	Rel-17	C332	UEs supporting inter-band EN-DC (2UL CCs) with Tx Diversity	E046	PC3 PC2	NOTE 5 Skip TC 6.3L.3.4.3 if UE supports SA and TS 38.521-1 TC 6.3G.4.3 has been executed.
6.4B	Transmit Signal Quality for DC						
6.4B.1.1	Frequency Error for intra-band contiguous EN-DC	Rel-15	C009	UEs supporting Intra-Band Contiguous EN-DC (2UL CCs)	E003		NOTE 5 Skip TC 6.4B.1.1 if UE supports SA and TS 38.521-1 TC 6.4.1 has been executed.
6.4B.1.2	Frequency Error for intra-band non-contiguous EN-DC	Rel-15	C010	UEs supporting intra-band non-contiguous EN-DC (2UL CCs)	E004		NOTE 5 Skip TC 6.4B.1.2 if UE supports SA and TS 38.521-1 TC 6.4.1 has been executed.
6.4B.1.3	Frequency error for Inter-band EN-DC within FR1 (1 NR CC)	Rel-15	C011b	UEs supporting inter-band EN-DC within FR1 with 1 NR UL CC	E005b		NOTE 5 Skip TC 6.4B.1.3 if UE supports SA and TS 38.521-1 TC 6.4.1 has been executed.
6.4B.1.4	Frequency Error for inter-band EN-DC including FR2 (1 NR CC)	Rel-15	C012	UEs supporting Inter-Band EN-DC including FR2 with 1 NR UL CC	E010		NOTE 5 Skip TC 6.4B.1.4 if UE supports SA and TS 38.521-2 TC 6.4.1 has been executed.
6.4B.1.4_1	Frequency Error for Inter-band EN-DC including FR2 (>1 NR CC)						
6.4B.1.4_1.1	Frequency Error for inter-band EN-DC including FR2 (2 NR CCs)	Rel-15	C012b	UEs supporting Inter-Band EN-DC including FR2 with 2 NR UL CCs	E011		NOTE 5 Skip TC 6.4B.1.4_1.1 if UE supports SA and TS 38.521-2 TC 6.4A.1.1 has been executed.
6.4B.1.4_1.2	Frequency Error for inter-band EN-DC including FR2 (3 NR CCs)	Rel-15	C012c	UEs supporting Inter-Band EN-DC including FR2 with 3 NR UL CCs	E012		NOTE 5 Skip TC 6.4B.1.4_1.2 if UE supports SA and TS 38.521-2 TC 6.4A.1.2 has been executed.

Clause	TC Title	Release	Applicability		Tested Bands/CA/DC-Configurations Selection	Branch	Additional Information
			Condition	Comment			
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.1.4_1.4	Frequency Error 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	PC1 (NOTE 1) PC2 (NOTE 1) PC3 (NOTE 1) PC4 (NOTE 1)	NOTE 5 Skip TC 6.4B.1.4_1.4 if UE supports SA and TS 38.521-2 TC 6.4A.1.4 has been executed.
6.4B.1.4_1.5	Frequency Error 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	PC1 (NOTE 1) PC2 (NOTE 1) PC3 (NOTE 1) PC4 (NOTE 1)	NOTE 5 Skip TC 6.4B.1.4_1.5 if UE supports SA and TS 38.521-2 TC 6.4A.1.5 has been executed.
6.4B.1.4_1.6	Frequency Error 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	PC1 (NOTE 1) PC2 (NOTE 1) PC3 (NOTE 1) PC4 (NOTE 1)	NOTE 5 Skip TC 6.4B.1.4_1.6 if UE supports SA and TS 38.521-2 TC 6.4A.1.6 has been executed.
6.4B.1.4_1.7	Frequency Error 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	PC1 (NOTE 1) PC2 (NOTE 1) PC3 (NOTE 1) PC4 (NOTE 1)	NOTE 5 Skip TC 6.4B.1.4_1.7 if UE supports SA and TS 38.521-2 TC 6.4A.1.7 has been executed.
6.4B.1.4D	Frequency error for inter-band EN-DC including FR2 for UL-MIMO	Rel-15	C012p	UEs supporting Inter-Band EN-DC including FR2 and UL MIMO	E043		NOTE 5 Skip TC 6.4B.1.4D if UE supports SA and TS 38.521-2 TC 6.4D.1 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.

Clause	TC Title	Release	Applicability		Tested Bands/CA/DC-Configurations Selection	Branch	Additional Information
			Condition	Comment			
6.4B.2.1.2	Carrier Leakage for intra-band contiguous EN-DC	Rel-15	C009	UEs supporting intra-band contiguous EN-DC (2UL CCs)	E003		NOTE 5 Skip TC 6.4B.2.1.2 if UE supports SA and TS 38.521-1 TC 6.4.2.2 has been executed.
6.4B.2.1.3	In-band Emissions for intra-band contiguous EN-DC	Rel-15	C009	UEs supporting intra-band contiguous EN-DC (2UL CCs)	E003		
6.4B.2.1.4	EVM Equalizer Flatness for intra-band contiguous EN-DC	Rel-15	C009	UEs supporting intra-band contiguous EN-DC (2UL CCs)	E003		NOTE 5 Skip TC 6.4B.2.1.4 if UE supports SA and TS 38.521-1 TC 6.4.2.4 has been executed.
6.4B.2.2.1	Error Vector Magnitude for intra-band non-contiguous EN-DC	Rel-15	C010	UEs supporting intra-band non-contiguous EN-DC (2UL CCs)	E004		NOTE 5 Skip TC 6.4B.2.2.1 if UE supports SA and TS 38.521-1 TC 6.4.2.1 has been executed.
6.4B.2.2.2	Carrier Leakage for intra-band non-contiguous EN-DC	Rel-15	C010	UEs supporting intra-band non-contiguous EN-DC (2UL CCs)	E004		NOTE 5 Skip TC 6.4B.2.2.2 if UE supports SA and TS 38.521-1 TC 6.4.2.2 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.

Clause	TC Title	Release	Applicability		Tested Bands/CA/DC-Configurations Selection	Branch	Additional Information
			Condition	Comment			
6.4B.2.3.1	Error Vector Magnitude for inter-band EN-DC within FR1 (1 NR CC)	Rel-15	C011b	UEs supporting inter-band EN-DC within FR1 with 1 NR UL CC	E005b		NOTE 5 Skip TC 6.4B.2.3.1 if UE supports SA and TS 38.521-1 TC 6.4.2.1 has been executed.
6.4B.2.3.2	Carrier Leakage for inter-band EN-DC within FR1 (1 NR CC)	Rel-15	C011b	UEs supporting inter-band EN-DC within FR1 with 1 NR UL CC	E005b		NOTE 5 Skip TC 6.4B.2.3.2 if UE supports SA and TS 38.521-1 TC 6.4.2.2 has been executed.
6.4B.2.3.3	In-band Emissions for inter-band EN-DC within FR1 (1 NR CC)	Rel-15	C011b	UEs supporting inter-band EN-DC within FR1 with 1 NR UL CC	E005b		NOTE 5 Skip TC 6.4B.2.3.3 if UE supports SA and TS 38.521-1 TC 6.4.2.3 has been executed.
6.4B.2.3.4	EVM Equalizer Flatness for inter-band EN-DC within FR1 (1 NR CC)	Rel-15	C011b	UEs supporting inter-band EN-DC within FR1 with 1 NR UL CC	E005b		NOTE 5 Skip TC 6.4B.2.3.4 if UE supports SA and TS 38.521-1 TC 6.4.2.4 has been executed.
6.4B.2.4.1	Error Vector Magnitude for inter-band EN-DC including FR2 (1 NR CC)	Rel-15	C012	UEs supporting Inter-band including FR2 with 1 NR UL CC	E010	PC1 PC2 (NOTE 1) PC3 PC4 (NOTE 1) PC5	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 (NOTE 1) PC2 (NOTE 1) PC3 (NOTE 1) PC4 (NOTE 1) PC5 (NOTE 1) PC7 (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)						

Clause	TC Title	Release	Applicability		Tested Bands/CA/DC-Configurations Selection	Branch	Additional Information
			Condition	Comment			
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	PC1 (NOTE 1) PC2 (NOTE 1) PC3 (NOTE 1) PC4 (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	PC1 (NOTE 1) PC2 (NOTE 1) PC3 (NOTE 1) PC4 (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	PC1 (NOTE 1) PC2 (NOTE 1) PC3 (NOTE 1) PC4 (NOTE 1)	NOTE 5 Skip TC 6.4B.2.4.1_1.3 if UE supports SA and TS 38.521-2 TC 6.4A.2.1.3 has been executed.
6.4B.2.4.1D	Error Vector Magnitude for inter-band EN-DC including FR2 for UL MIMO	FFS	FFS	FFS	FFS	PC1 (NOTE 1) PC2 (NOTE 1) PC3 (NOTE 1) PC4 (NOTE 1)	NOTE 5 Skip TC 6.4B.2.4.1D if UE supports SA and TS 38.521-2 TC 6.4D.2.1 has been executed.
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	PC1 (NOTE 1) PC2 (NOTE 1) PC3 PC4 (NOTE 1) PC6 (NOTE 1) PC7 (NOTE 1)	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	PC1 (NOTE 1) PC2 (NOTE 1) PC3 (NOTE 1) PC4 (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.

Clause	TC Title	Release	Applicability		Tested Bands/CA/DC-Configurations Selection	Branch	Additional Information
			Condition	Comment			
6.4B.2.4.2_1.2	Carrier Leakage for inter-band EN-DC including FR2 (3 NR CCs)	Rel-15	FFS	FFS	FFS	PC1 (NOTE 1) PC2 (NOTE 1) PC3 (NOTE 1) PC4 (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	PC1 (NOTE 1) PC2 (NOTE 1) PC3 (NOTE 1) PC4 (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	PC1 (NOTE 1) PC2 (NOTE 1) PC3 (NOTE 1) PC4 (NOTE 1) PC6 (NOTE 1)	NOTE 5 Skip TC 6.4B.2.4.2D if UE supports SA and TS 38.521-2 TC 6.4D.2.2 has been executed.
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	PC1 (NOTE 1) PC2 (NOTE 1) PC3 (NOTE 1) PC4 (NOTE 1) PC6 (NOTE 1) PC7 (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	PC1 (NOTE 1) PC2 (NOTE 1) PC3 (NOTE 1) PC4 (NOTE 1)	NOTE 5 Skip TC 6.4B.2.4.3D if UE supports SA and TS 38.521-2 TC 6.4D.2.3 has been executed.
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

Clause	TC Title	Release	Applicability		Tested Bands/CA/DC-Configurations Selection	Branch	Additional Information
			Condition	Comment			
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.
6.4H Transmit signal quality for DC with UL MIMO							
6.4H.1.3	Frequency error for inter-band EN-DC with UL MIMO within FR1	Rel-17	C330	UEs supporting inter-band EN-DC (2UL CCs) with UL MIMO	E045	PC3 PC2	NOTE 5 Skip TC 6.4H.1.3 if UE supports SA and TS 38.521-1 TC 6.4D.1 has been executed.
6.4H.2.3.1	Error Vector Magnitude for inter-band EN-DC with UL MIMO within FR1	Rel-17	C330	UEs supporting inter-band EN-DC (2UL CCs) with UL MIMO	E045	PC3 PC2	NOTE 5 Skip TC 6.4H.2.3.1 if UE supports SA and TS 38.521-1 TC 6.4D.2.1 has been executed.
6.4H.2.3.2	Carrier leakage for inter-band EN-DC with UL MIMO within FR1	Rel-17	C330	UEs supporting inter-band EN-DC (2UL CCs) with UL MIMO	E045	PC3 PC2	NOTE 5 Skip TC 6.4H.2.3.2 if UE supports SA and TS 38.521-1 TC 6.4D.2.2 has been executed.
6.4H.2.3.3	In-band emissions for inter-band EN-DC with UL MIMO within FR1	Rel-17	C330	UEs supporting inter-band EN-DC (2UL CCs) with UL MIMO	E045	PC3 PC2	NOTE 5 Skip TC 6.4H.2.3.3 if UE supports SA and TS 38.521-1 TC 6.4D.2.3 has been executed.
6.4L Transmit signal quality for DC with Tx Diversity							

Clause	TC Title	Release	Applicability		Tested Bands/CA/DC-Configurations Selection	Branch	Additional Information
			Condition	Comment			
6.4L.1.3	Frequency error for inter-band EN-DC with Tx Diversity within FR1	Rel-17	C332	UEs supporting inter-band EN-DC (2UL CCs) with Tx Diversity	E046	PC3 PC2	NOTE 5 Skip TC 6.4L.1.3 if UE supports SA and TS 38.521-1 TC 6.4G.1 has been executed.
6.4L.2.3.1	Error Vector Magnitude for inter-band EN-DC with Tx Diversity within FR1	Rel-17	C332	UEs supporting inter-band EN-DC (2UL CCs) with Tx Diversity	E046	PC3 PC2	NOTE 5 Skip TC 6.4L.2.3.1 if UE supports SA and TS 38.521-1 TC 6.4G.2.1 has been executed.
6.4L.2.3.2	Carrier leakage for inter-band EN-DC with Tx Diversity within FR1	Rel-17	C332	UEs supporting inter-band EN-DC (2UL CCs) with Tx Diversity	E046	PC3 PC2	NOTE 5 Skip TC 6.4L.2.3.2 if UE supports SA and TS 38.521-1 TC 6.4G.2.2 has been executed.
6.4L.2.3.3	In-band emissions for inter-band EN-DC with Tx Diversity within FR1	Rel-17	C332	UEs supporting inter-band EN-DC (2UL CCs) with Tx Diversity	E046	PC3 PC2	NOTE 5 Skip TC 6.4L.2.3.3 if UE supports SA and TS 38.521-1 TC 6.4G.2.3 has been executed.
6.5B	Output RF spectrum emissions for DC						
6.5B.1.1	Occupied bandwidth for Intra-Band Contiguous EN-DC	Rel-15	C009	UEs supporting intra-band contiguous EN-DC (2UL CCs)	E003		NOTE 1
6.5B.1.2	Occupied bandwidth for Intra-Band Non-Contiguous EN-DC	Rel-15	C010	UEs supporting intra-band non-contiguous EN-DC (2UL CCs)	E004		NOTE 1 NOTE 5 Skip TC 6.5B.1.2 if UE supports SA and TS 38.521-1 TC 6.5.1 has been executed.
6.5B.1.3	Occupied bandwidth for Inter-Band EN-DC within FR1 (1 NR CC)	Rel-15	C011b	UEs supporting inter-band EN-DC within FR1 with 1 NR UL CC	E005b		NOTE 5 Skip TC 6.5B.1.3 if UE supports SA and TS 38.521-1 TC 6.5.1 has been executed.
6.5B.1.4	Occupied bandwidth for Inter-Band EN-DC including FR2 (1 NR CC)	Rel-15	C012	UEs supporting Inter-band including FR2 with 1 NR UL CC	E010	PC1 PC2 (NOTE 1) PC3 PC4 (NOTE 1) PC5	NOTE 5 Skip TC 6.5B.1.4 if UE supports SA and TS 38.521-2 TC 6.5.1 has been executed.

Clause	TC Title	Release	Applicability		Tested Bands/CA/DC-Configurations Selection	Branch	Additional Information
			Condition	Comment			
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	C012b	UEs supporting Inter-Band EN-DC including FR2 with 2 NR UL CCs	E011	PC1 (NOTE 1) PC2 (NOTE 1) PC3 (NOTE 1) PC4 (NOTE 1) PC5 (NOTE 1) PC6 (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	C012c	UEs supporting Inter-Band EN-DC including FR2 with 3 NR UL CCs	E012	PC1 (NOTE 1) PC2 (NOTE 1) PC3 (NOTE 1) PC4 (NOTE 1) PC5 (NOTE 1) PC6 (NOTE 1)	NOTE 5 Skip TC 6.5B.1.4_1.2 if UE supports SA and TS 38.521-2 TC 6.5A.1.2 has been executed.
6.5B.1.4_1.3	Occupied bandwidth for inter-band EN-DC including FR2 (4 NR CCs)	Rel-15	C012d	UEs supporting Inter-Band EN-DC including FR2 with 4 NR UL CCs	E013	PC1 (NOTE 1) PC2 (NOTE 1) PC3 (NOTE 1) PC4 (NOTE 1) PC5 (NOTE 1) PC6 (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.1.4_1.4	Occupied bandwidth 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	PC1 (NOTE 1) PC2 (NOTE 1) PC3 (NOTE 1) PC4 (NOTE 1) PC5 (NOTE 1) PC6 (NOTE 1)	NOTE 5 Skip TC 6.5B.1.4_1.4 if UE supports SA and TS 38.521-2 TC 6.5A.1.4 has been executed.
6.5B.1.4_1.5	Occupied bandwidth 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	PC1 (NOTE 1) PC2 (NOTE 1) PC3 (NOTE 1) PC4 (NOTE 1) PC5 (NOTE 1) PC6 (NOTE 1)	NOTE 5 Skip TC 6.5B.1.4_1.5 if UE supports SA and TS 38.521-2 TC 6.5A.1.5 has been executed.
6.5B.1.4_1.6	Occupied bandwidth 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	PC1 (NOTE 1) PC2 (NOTE 1) PC3 (NOTE 1) PC4 (NOTE 1) PC5 (NOTE 1) PC6 (NOTE 1)	NOTE 5 Skip TC 6.5B.1.4_1.6 if UE supports SA and TS 38.521-2 TC 6.5A.1.6 has been executed.

Clause	TC Title	Release	Applicability		Tested Bands/CA/DC-Configurations Selection	Branch	Additional Information
			Condition	Comment			
6.5B.1.4_1.7	Occupied bandwidth 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	PC1 (NOTE 1) PC2 (NOTE 1) PC3 (NOTE 1) PC4 (NOTE 1) PC5 (NOTE 1) PC6 (NOTE 1)	NOTE 5 Skip TC 6.5B.1.4_1.7 if UE supports SA and TS 38.521-2 TC 6.5A.1.7 has been executed.
6.5B.1.4D	Occupied bandwidth for inter-band EN-DC including FR2 for UL MIMO	Rel-15	C012p	UEs supporting Inter-Band EN-DC including FR2 and UL MIMO	E043	PC1 (NOTE 1) PC2 (NOTE 1) PC3 PC4 (NOTE 1) PC5 (NOTE 1)	NOTE 5 Skip TC 6.5B.1.4D if UE supports SA and TS 38.521-2 TC 6.5D.1 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	PC2 (NOTE 1) PC3 (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.

Clause	TC Title	Release	Applicability		Tested Bands/CA/DC-Configurations Selection	Branch	Additional Information
			Condition	Comment			
6.5B.2.3.3.1	NR - Adjacent channel leakage ratio for inter-band EN-DC within FR1 (1 NR CC)	Rel-15	C011b	UEs supporting Inter-band EN-DC within FR1 with 1 NR UL CC	E005b		NOTE 5 Skip TC 6.5B.2.3.3.1 if UE supports SA and TS 38.521-1 TC 6.5.2.4.1 has been executed.
6.5B.2.3.3.2	UTRA - Adjacent channel leakage ratio for inter-band EN-DC within FR1 (1 NR CC)	Rel-15	C011b	UEs supporting Inter-band EN-DC within FR1 with 1 NR UL CC	E005b		NOTE 5 Skip TC 6.5B.2.3.3.2 if UE supports SA and TS 38.521-1 TC 6.5.2.4.2 has been executed.
6.5B.2.4.1	Spectrum emissions mask for Inter-band EN-DC including FR2 (1 NR CC)	Rel-15	C012	UEs supporting Inter-band including FR2 with 1 NR UL CC	E010	PC1 PC2 (NOTE 1) PC3 PC4 (NOTE 1) PC5	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) PC6 (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	PC1 PC2 (NOTE 1) PC3 PC4 (NOTE 1) PC5	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	PC1 PC2 (NOTE 1) PC3 PC4 (NOTE 1) PC5	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.

Clause	TC Title	Release	Applicability		Tested Bands/CA/DC-Configurations Selection	Branch	Additional Information
			Condition	Comment			
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	PC1 PC2 (NOTE 1) PC3 PC4 (NOTE 1) PC5	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.2.4.1_1.4	Spectrum emissions mask 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	PC1 (NOTE 1) PC2 (NOTE 1) PC3 (NOTE 1) PC4 (NOTE 1) PC5 (NOTE 1) PC6 (NOTE 1)	NOTE 5 Skip TC 6.5B.2.4.1_1.4 if UE supports SA and TS 38.521-2 TC 6.5A.2.1.4 has been executed.
6.5B.2.4.1_1.5	Spectrum emissions mask 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	PC1 (NOTE 1) PC2 (NOTE 1) PC3 (NOTE 1) PC4 (NOTE 1) PC5 (NOTE 1) PC6 (NOTE 1)	NOTE 5 Skip TC 6.5B.2.4.1_1.5 if UE supports SA and TS 38.521-2 TC 6.5A.2.1.5 has been executed.
6.5B.2.4.1_1.6	Spectrum emissions mask 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	PC1 (NOTE 1) PC2 (NOTE 1) PC3 (NOTE 1) PC4 (NOTE 1) PC5 (NOTE 1) PC6 (NOTE 1)	NOTE 5 Skip TC 6.5B.2.4.1_1.6 if UE supports SA and TS 38.521-2 TC 6.5A.2.1.6 has been executed.
6.5B.2.4.1_1.7	Spectrum emissions mask 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	PC1 (NOTE 1) PC2 (NOTE 1) PC3 (NOTE 1) PC4 (NOTE 1) PC5 (NOTE 1) PC6 (NOTE 1)	NOTE 5 Skip TC 6.5B.2.4.1_1.7 if UE supports SA and TS 38.521-2 TC 6.5A.2.1.7 has been executed.
6.5B.2.4.1D	Spectrum emissions mask for inter-band EN-DC including FR2 for UL MIMO	Rel-15	C012p	UEs supporting Inter-Band EN-DC including FR2 and UL MIMO	E043	PC1 PC2 (NOTE 1) PC3 PC4 (NOTE 1)	NOTE 5 Skip TC 6.5B.2.4.1D if UE supports SA and TS 38.521-2 TC 6.5D.2.1 has been executed.

Clause	TC Title	Release	Applicability		Tested Bands/CA/DC-Configurations Selection	Branch	Additional Information
			Condition	Comment			
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	PC1 PC2 (NOTE 1) PC3 PC4 (NOTE 1) PC5	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	PC1 PC2 (NOTE 1) PC3 PC4 (NOTE 1) PC5	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	PC1 PC2 (NOTE 1) PC3 PC4 (NOTE 1) PC5	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	PC1 PC2 (NOTE 1) PC3 PC4 (NOTE 1) PC5	NOTE 5 Skip TC 6.5B.2.4.3_1.3 if UE supports SA and TS 38.521-2 TC 6.5A.2.2.3 has been executed.
6.5B.2.4.3_1.4	Adjacent channel leakage ratio for Inter-band EN-DC including FR2 (5 NR CCs)	Rel-15	C012i	UEs supporting Inter-Band EN-DC including FR2 with 5 NR UL CCs	E014a	PC1 (NOTE 1) PC2 (NOTE 1) PC3 (NOTE 1) PC4 (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.

Clause	TC Title	Release	Applicability		Tested Bands/CA/DC-Configurations Selection	Branch	Additional Information
			Condition	Comment			
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	PC1 (NOTE 1) PC2 (NOTE 1) PC3 (NOTE 1) PC4 (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	PC1 (NOTE 1) PC2 (NOTE 1) PC3 (NOTE 1) PC4 (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	PC1 (NOTE 1) PC2 (NOTE 1) PC3 (NOTE 1) PC4 (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 executed.
6.5B.2.4D.3	Adjacent channel leakage ratio for inter-band EN-DC including FR2 for UL MIMO	Rel-15	C012p	UEs supporting Inter-Band EN-DC including FR2 and UL MIMO	E043	PC1 (NOTE 1) PC2 (NOTE 1) PC3 PC4 (NOTE 1)	NOTE 5 Skip TC 6.5B.2.4D.3 if UE supports SA and TS 38.521-2 TC 6.5D.2.2 has been executed.
6.5B.3.1.1	General spurious emissions for intra-band contiguous EN-DC	Rel-15	C009	UEs supporting intra-band contiguous EN-DC (2UL CCs)	E003		NOTE 5 Skip TC 6.5B.3.1.1 if UE supports SA and TS 38.521-1 TC 6.5.3.1 has been executed.
6.5B.3.1.2	Spurious emission band UE co-existence for intra-band contiguous EN-DC	Rel-15	C009	UEs supporting intra-band contiguous EN-DC (2UL CCs)	E003		
6.5B.3.2.1	General spurious emissions for intra-band non-contiguous EN-DC	Rel-15	C010	UEs supporting intra-band non-contiguous EN-DC (2UL CCs)	E004		NOTE 5 Skip TC 6.5B.3.2.1 if UE supports SA and TS 38.521-1 TC 6.5.3.1 has been executed.
6.5B.3.2.2	Spurious emission band UE co-existence for intra-band non-contiguous EN-DC	Rel-15	C010	UEs supporting intra-band non-contiguous EN-DC (2UL CCs)	E004		

Clause	TC Title	Release	Applicability		Tested Bands/CA/DC-Configurations Selection	Branch	Additional Information
			Condition	Comment			
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. For exception requirements testing where LTE anchor agnostic approach not apply: 1. NOTE 6 2. Skip the testing if UE supports the same FR1 UL CA configuration and TS 38.521-1 TC 6.5A.3.2.1 has been executed, or UE supports the same SUL configuration and TS 38.521-1 TC 6.5C.3.2 has been executed

Clause	TC Title	Release	Applicability		Tested Bands/CA/DC-Configurations Selection	Branch	Additional Information
			Condition	Comment			
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	PC1 PC2 (NOTE 1) PC3 PC4 (NOTE 1) PC5 PC6 (NOTE 1) PC7 (NOTE 1)	NOTE 5 Skip TC 6.5B.3.4.1 if UE supports SA and TS 38.521-2 TC 6.5.3.1 has been executed.
6.5B.3.4.1a	General Spurious Emissions with Power Boost for Inter-band including FR2 (1 NR CC)	Rel-16	C012w	UEs supporting inter-band EN-DC including FR2 with 1 NR UL CC and <i>mpr-PowerBoost-FR2-r16</i>	E010	PC1 PC2 (NOTE 1) PC3 PC4 (NOTE 1) PC6 (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	PC1 (NOTE 1) PC2 (NOTE 1) PC3 PC4 (NOTE 1)	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	PC1 (NOTE 1) PC2 (NOTE 1) PC3 PC4 (NOTE 1)	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	PC1 (NOTE 1) PC2 (NOTE 1) PC3 PC4 (NOTE 1)	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.

Clause	TC Title	Release	Applicability		Tested Bands/CA/DC-Configurations Selection	Branch	Additional Information
			Condition	Comment			
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	PC1 (NOTE 1) PC2 (NOTE 1) PC3 PC4 (NOTE 1)	NOTE 5 Skip TC 6.5B.3.4.1_1.4 if UE supports SA and TS 38.521-2 TC 6.5A.3.1.4 has been executed.
6.5B.3.4.1_1.5	General Spurious Emissions for Inter-band EN-DC including FR2 (6 NR CCs)	Rel-15	C012j	UEs supporting Inter-Band EN-DC including FR2 with 6 NR UL CCs	E039	PC1 (NOTE 1) PC2 (NOTE 1) PC3 PC4 (NOTE 1)	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	PC1 (NOTE 1) PC2 (NOTE 1) PC3 PC4 (NOTE 1)	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	PC1 (NOTE 1) PC2 (NOTE 1) PC3 PC4 (NOTE 1)	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	Rel-15	C012p	UEs supporting Inter-Band EN-DC including FR2 and UL MIMO	E043	PC1 PC2 (NOTE 1) PC3 PC4 (NOTE 1) PC5 (NOTE 1)	NOTE 5 Skip TC 6.5B.3.4.1D if UE supports SA and TS 38.521-2 TC 6.5D.3.1 has been executed.
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	PC1 PC2 (NOTE 1) PC3 PC4 (NOTE 1) PC5 PC6 (NOTE 1) PC7 (NOTE 1)	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.

Clause	TC Title	Release	Applicability		Tested Bands/CA/DC-Configurations Selection	Branch	Additional Information
			Condition	Comment			
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 PC2 (NOTE 1) PC3 PC4 (NOTE 1) PC6 (NOTE 1)	NOTE 5 Skip TC 6.5B.3.4.2a if UE supports SA and TS 38.521-2 TC 6.5.3.2_1 has been executed.
6.5B.3.4.2_1	Spurious emission band UE co-existence for Inter-band including FR2 (>1 NR CC)						
6.5B.3.4.2_1.1	Spurious emission band UE co-existence for Inter-band EN-DC including FR2 (2NR CCs)	Rel-15	C012b	UEs supporting Inter-Band EN-DC including FR2 with 2 NR UL CCs	E011	PC1 (NOTE 1) PC2 (NOTE 1) PC3 PC4 (NOTE 1)	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	PC1 (NOTE 1) PC2 (NOTE 1) PC3 PC4 (NOTE 1)	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	PC1 (NOTE 1) PC2 (NOTE 1) PC3 PC4 (NOTE 1)	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	PC1 (NOTE 1) PC2 (NOTE 1) PC3 PC4 (NOTE 1)	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.

Clause	TC Title	Release	Applicability		Tested Bands/CA/DC-Configurations Selection	Branch	Additional Information
			Condition	Comment			
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	PC1 (NOTE 1) PC2 (NOTE 1) PC3 PC4 (NOTE 1)	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	PC1 (NOTE 1) PC2 (NOTE 1) PC3 PC4 (NOTE 1)	NOTE 5 Skip TC 6.5B.3.4.2_1.6 if UE supports SA and TS 38.521-2 TC 6.5A.3.2.6 has been executed.
6.5B.3.4.2_1.7	Spurious emission band UE co-existence for Inter-band EN-DC including FR2 (8 NR CCs)	Rel-15	C012l	UEs supporting Inter-Band EN-DC including FR2 with 8 NR UL CCs	E041	PC1 (NOTE 1) PC2 (NOTE 1) PC3 PC4 (NOTE 1)	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.3.4.2D	Spurious emission band UE co-existence for inter-band EN-DC including FR2 for UL MIMO	Rel-15	C012p	UEs supporting Inter-Band EN-DC including FR2 and UL MIMO	E043	PC1 PC2 (NOTE 1) PC3 PC4 (NOTE 1) PC5 (NOTE 1)	NOTE 5 Skip TC 6.5B.3.4.2D if UE supports SA and TS 38.521-2 TC 6.5D.3.2 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	PC1 PC2 (NOTE 1) PC3 PC4 (NOTE 1) PC5 PC6 (NOTE 1)	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.

Clause	TC Title	Release	Applicability		Tested Bands/CA/DC-Configurations Selection	Branch	Additional Information
			Condition	Comment			
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 PC2 (NOTE 1) PC3 PC4 (NOTE 1) PC5 PC6 (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		NOTE 5 Skip TC 6.5B.4.4_1.1 if UE supports SA and TS 38.521-2 TC 6.5A.3.3.1 has been executed.
6.5B.4.4_1.2	Additional Spurious Emissions for Inter-band including FR2 (3 NR CC)	Rel-15	C012c	UEs supporting Inter-Band EN-DC including FR2 with 3 NR UL CCs	E012		NOTE 5 Skip TC 6.5B.4.4_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		NOTE 5 Skip TC 6.5B.4.4_1.3 if UE supports SA and TS 38.521-2 TC 6.5A.3.3.3 has been executed.
6.5B.4.4D	Additional Spurious Emissions for Inter-band including FR2 for UL MIMO	Rel-15	C012p	UEs supporting Inter-Band EN-DC including FR2 and UL MIMO	E043	PC1 (NOTE 1) PC2 (NOTE 1) PC3 PC4 (NOTE 1)	NOTE 5 Skip TC 6.5B.4.4D if UE supports SA and TS 38.521-2 TC 6.5D.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.
6.5E.3.2	Spurious emission band UE co-existence for V2X						

Clause	TC Title	Release	Applicability		Tested Bands/CA/DC-Configurations Selection	Branch	Additional Information
			Condition	Comment			
6.5E.3.2.2	Spurious emission band UE co-existence for inter-band V2X	Rel-16	C079e	UEs supporting V2X inter-band operation in FR1 with transmission assigned to one E-UTRA band and one NR band	E053		
6.5H.1.3	Occupied bandwidth for inter-band EN-DC with UL MIMO within FR1	Rel-17	C330	UEs supporting inter-band EN-DC (2UL CCs) with UL MIMO	E045	PC3 PC2	NOTE 5 Skip TC 6.5H.1.3 if UE supports SA and TS 38.521-1 TC 6.5D.1 has been executed.
6.5H.2.3.1	Spectrum emission mask for inter-band EN-DC with UL MIMO within FR	Rel-17	C330	UEs supporting inter-band EN-DC (2UL CCs) with UL MIMO	E045	PC3 PC2	NOTE 5 Skip TC 6.5H.2.3.1 if UE supports SA and TS 38.521-1 TC 6.5D.2.2 has been executed.
6.5H.2.3.2	Additional spectrum emission mask for inter-band EN-DC with UL MIMO within FR1	Rel-17	C330	UEs supporting inter-band EN-DC (2UL CCs) with UL MIMO	E045	PC3 PC2	NOTE 5 Skip TC 6.5H.2.3.2 if UE supports SA and TS 38.521-1 TC 6.5D.2.3 has been executed.
6.5H.2.3.3	NR ACLR for inter-band EN-DC with UL MIMO within FR1	Rel-17	C330	UEs supporting inter-band EN-DC (2UL CCs) with UL MIMO	E045	PC3 PC2	NOTE 5 Skip TC 6.5H.2.3.3 if UE supports SA and TS 38.521-1 TC 6.5D.2.4 has been executed.
6.5H.3.3.1	General spurious emissions for inter-band EN-DC with UL MIMO within FR1	Rel-17	C330	UEs supporting inter-band EN-DC (2UL CCs) with UL MIMO	E045	PC3 PC2	
6.5H.3.3.2	Spurious emissions for UE co-existence for inter-band EN-DC with UL MIMO within FR1	Rel-17	C330	UEs supporting inter-band EN-DC (2UL CCs) with UL MIMO	E045	PC3 PC2	
6.5H.4.3	Additional spurious emissions for inter-band EN-DC with UL MIMO within FR1	Rel-17	C330	UEs supporting inter-band EN-DC (2UL CCs) with UL MIMO	E045	PC3 PC2	NOTE 5 Skip TC 6.5H.4.3 if UE supports SA and TS 38.521-1 TC 6.5D.3.3 has been executed.
6.5H.5.3	Transmit intermodulation for inter-band EN-DC with UL MIMO within FR1	Rel-17	C330	UEs supporting inter-band EN-DC (2UL CCs) with UL MIMO	E045	PC3 PC2	NOTE 5 Skip TC 6.5H.5.3 if UE supports SA and TS 38.521-1 TC 6.5D.4 has been executed.

Clause	TC Title	Release	Applicability		Tested Bands/CA/DC-Configurations Selection	Branch	Additional Information
			Condition	Comment			
6.5L.1.3	Occupied bandwidth for inter-band EN-DC with Tx Diversity within FR1	Rel-17	C332	UEs supporting inter-band EN-DC (2UL CCs) with Tx Diversity	E046	PC3 PC2	NOTE 5 Skip TC 6.5L.1.3 if UE supports SA and TS 38.521-1 TC 6.5G.1 has been executed.
6.5L.2.3.1	Spectrum emission mask for inter-band EN-DC with Tx Diversity within FR1	Rel-17	C332	UEs supporting inter-band EN-DC (2UL CCs) with Tx Diversity	E046	PC3 PC2	NOTE 5 Skip TC 6.5L.2.3.1 if UE supports SA and TS 38.521-1 TC 6.5G.2.2 has been executed.
6.5L.2.3.2	Additional spectrum emission mask for inter-band EN-DC with Tx Diversity within FR1	Rel-17	C332	UEs supporting inter-band EN-DC (2UL CCs) with Tx Diversity	E046	PC3 PC2	NOTE 5 Skip TC 6.5L.2.3.2 if UE supports SA and TS 38.521-1 TC 6.5G.2.3 has been executed.
6.5L.2.3.3	NR ACLR for inter-band EN-DC with Tx Diversity within FR1	Rel-17	C332	UEs supporting inter-band EN-DC (2UL CCs) with Tx Diversity	E046	PC3 PC2	NOTE 5 Skip TC 6.5L.2.3.3 if UE supports SA and TS 38.521-1 TC 6.5G.2.4 has been executed.
6.5L.3.3.1	General spurious emissions for inter-band EN-DC with Tx Diversity within FR1	Rel-17	C331	UEs supporting inter-band EN-DC (2UL CCs) with Tx Diversity	E046	PC3 PC2	
6.5L.3.3.2	Spurious emissions for UE co-existence for inter-band EN-DC with Tx Diversity within FR1	Rel-17	C331	UEs supporting inter-band EN-DC (2UL CCs) with Tx Diversity	E046	PC3 PC2	
6.5L.4.3	Additional spurious emissions for inter-band EN-DC with Tx Diversity within FR1	Rel-17	C332	UEs supporting inter-band EN-DC (2UL CCs) with Tx Diversity	E046	PC3 PC2	NOTE 5 Skip TC 6.5L.4.3 if UE supports SA and TS 38.521-1 TC 6.5G.3.3 has been executed.
6.5L.5.3	Transmit intermodulation for inter-band EN-DC with Tx Diversity within FR1	Rel-17	C332	UEs supporting inter-band EN-DC (2UL CCs) with Tx Diversity	E046	PC3 PC2	NOTE 5 Skip TC 6.5L.5.3 if UE supports SA and TS 38.521-1 TC 6.5G.4 has been executed.

Clause	TC Title	Release	Applicability		Tested Bands/CA/DC-Configurations Selection	Branch	Additional Information
			Condition	Comment			
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	E010	PC3 PC5 (NOTE 1) PC6 (NOTE 1) PC7 (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	E010		NOTE 1 NOTE 5 Skip TC 6.6B.5 if UE supports SA and TS 38.521-2 TC 6.6.2 has been executed.
7	Receiver Characteristics						
7.3B	Reference sensitivity level for DC						
7.3B.2.1	Reference sensitivity for intra-band contiguous EN-DC (2 CCs)	Rel-15	C009a	UEs supporting intra-band contiguous EN-DC (2DL CCs)	E003a		
7.3B.2.2	Reference sensitivity for Intra-band non-contiguous EN-DC (2 CCs)	Rel-15	C010a	UEs supporting intra-band non-contiguous EN-DC (2DL CCs)	E004a		NOTE 5 Skip TC 7.3B.2.2 if UE supports SA and TS 38.521-1 TC 7.3.2 has been executed.
7.3B.2.3	Reference sensitivity for Inter-band EN-DC within FR1 (2 CCs)	Rel-15	C011a	UEs supporting inter-band EN-DC within FR1 (2DL CCs)	E005a E005d	PC2 PC3	For LTE anchor agnostic approach testing in TC 7.3B.2.3: 1. NOTE 5 applied. 2. Skip the testing if UE supports SA and TS 38.521-1 TC 7.3.2 has been executed.
7.3B.2.3_1	Reference sensitivity for EN-DC within FR1 (>2 CCs)						
7.3B.2.3_1.1	Reference sensitivity for EN-DC within FR1 (3 CCs)	Rel-15	C045	UEs supporting EN-DC within FR1 (3DL CCs)	E006		
7.3B.2.3_1.2	Reference sensitivity for EN-DC within FR1 (4 CCs)	Rel-15	C046	UEs supporting EN-DC within FR1 (4DL CCs)	E007		
7.3B.2.3_1.3	Reference sensitivity for EN-DC within FR1 (5 CCs)	Rel-15	C047	UEs supporting EN-DC within FR1 (5DL CCs)	E008		

Clause	TC Title	Release	Applicability		Tested Bands/CA/DC-Configurations Selection	Branch	Additional Information
			Condition	Comment			
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	PC1 PC2 (NOTE 1) PC3 PC4 (NOTE 1) PC5 PC6 PC7 (NOTE 1)	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	PC1 (NOTE 1) PC2 (NOTE 1) PC3 PC4 (NOTE 1)	NOTE 5 Skip TC 7.3B.2.4_1.1 if UE supports SA and TS 38.521-2 TC 7.3A.2.1 has been executed.
7.3B.2.4_1.2	Reference sensitivity for Inter-band EN-DC including FR2 (3 NR CCs)	Rel-15	C012g	UEs supporting inter-band EN-DC including FR2 with 3 NR DL CCs	E012a	PC1 (NOTE 1) PC2 (NOTE 1) PC3 PC4 (NOTE 1)	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	PC1 (NOTE 1) PC2 (NOTE 1) PC3 PC4 (NOTE 1)	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	PC1 (NOTE 1) PC2 (NOTE 1) PC3 (NOTE 1) PC4 (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	PC1 (NOTE 1) PC2 (NOTE 1) PC3 (NOTE 1) PC4 (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.

Clause	TC Title	Release	Applicability		Tested Bands/CA/DC-Configurations Selection	Branch	Additional Information
			Condition	Comment			
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	PC1 (NOTE 1) PC2 (NOTE 1) PC3 (NOTE 1) PC4 (NOTE 1)	NOTE 5 Skip TC 7.3B.2.4_1.6 if UE supports SA and TS 38.521-2 TC 7.3A.2.6 has been executed.
7.3B.2.4_1.7	Reference sensitivity for Inter-band EN-DC including FR2 (8 NR CCs)	Rel-15	FFS	UEs supporting inter-band EN-DC including FR2 with 8 NR DL CCs	FFS	PC1 (NOTE 1) PC2 (NOTE 1) PC3 (NOTE 1) PC4 (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	Rel-15	N/A	No test case details are specified in TS 38.521-3.			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	PC1 PC2 (NOTE 1) PC3 PC4 (NOTE 1) PC5 PC6 (NOTE 1) PC7 (NOTE 1)	NOTE 5 Skip TC 7.3B.4 if UE supports SA and TS 38.521-2 TC 7.3.4 has been executed.
7.3E.2	Reference sensitivity for V2X						
7.3E.2.3	Reference sensitivity for Inter-band V2X	Rel-16	C079e	UEs supporting V2X inter-band operation in FR1 with transmission assigned to one E-UTRA band and one NR band	E053		
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)						

Clause	TC Title	Release	Applicability		Tested Bands/CA/DC-Configurations Selection	Branch	Additional Information
			Condition	Comment			
7.4B.3_1.1	Maximum Input Level for EN-DC within FR1 (3 CCs)	Rel-15	C045	UEs supporting EN-DC within FR1 (3DL CCs)	E006		
7.4B.3_1.2	Maximum Input Level for EN-DC within FR1 (4 CCs)	Rel-15	C046	UEs supporting EN-DC within FR1 (4DL CCs)	E007		
7.4B.3_1.3	Maximum Input Level for EN-DC within FR1 (5 CCs)	Rel-15	C047	UEs supporting EN-DC within FR1 (5DL CCs)	E008		
7.4B.3_1.4	Maximum Input Level for EN-DC within FR1 (6 CCs)	Rel-15	FFS	FFS	FFS		NOTE 1
7.4B.4	Maximum Input Level for inter-band EN-DC including FR2 (1 NR CC)	Rel-15	N/A	Not recommended due to testability issues	N/A		NOTE 1
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)	Rel-15	N/A	Not recommended due to testability issues Not recommended due to testability issues			NOTE 1
7.4B.4_1.2	Maximum Input Level for inter-band EN-DC including FR2 (3 NR CCs)	Rel-15	N/A	Not recommended due to testability issues			NOTE 1
7.4B.4_1.3	Maximum Input Level for inter-band EN-DC including FR2 (4 NR CCs)	Rel-15	N/A	Not recommended due to testability issues			NOTE 1
7.4B.4_1.4	Maximum Input Level for inter-band EN-DC including FR2 (5 NR CCs)	Rel-15	N/A	Not recommended due to testability issues			NOTE 1
7.4B.4D	Maximum Input Level for inter-band EN-DC including FR2 for UL MIMO	Rel-15	N/A	No test case details are specified in TS 38.521-3.			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
			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	C012a	UEs supporting inter-band EN-DC including FR2 with 1 NR DL CC	E010a	PC1 PC3 PC5 PC7 (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
7.5B.4_1.2	Void						
7.5B.4_1.3	Void						
7.5B.4_1.4	Void						
7.5B.4D	Adjacent Channel Selectivity for inter-band EN-DC including FR2 for UL MIMO	Rel-15	N/A	No test case details are specified in TS 38.521-3.			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		

Clause	TC Title	Release	Applicability		Tested Bands/CA/DC-Configurations Selection	Branch	Additional Information
			Condition	Comment			
7.6B.2.2	Inband blocking for intra-band non-contiguous EN-DC (2 CCs)	Rel-15	C010a	UEs supporting Intra-Band Non-Contiguous EN-DC (2DL CCs)	E004a		NOTE 5 Skip TC 7.6B.2.2 if UE supports SA and TS 38.521-1 TC 7.6.2 has been executed.
7.6B.2.3	Inband blocking for inter-band EN-DC within FR1 (1 NR CC)	Rel-15	C011c	UEs supporting Inter-band EN-DC within FR1 with 1 NR DL CC	E005c		NOTE 5 Skip TC 7.6B.2.3 if UE supports SA and TS 38.521-1 TC 7.6.2 has been executed.
7.6B.2.3_1	Inband blocking for EN-DC within FR1 (>2 CCs)						
7.6B.2.3_1.1	Inband blocking for EN-DC within FR1 (3 CCs)	Rel-15	C045	UEs supporting EN-DC within FR1 (3DL CCs)	E006		
7.6B.2.3_1.2	Inband blocking for EN-DC within FR1 (4 CCs)	Rel-16	C046	UEs supporting EN-DC within FR1 (4DL CCs)	E007		
7.6B.2.3_1.3	Inband blocking for EN-DC within FR1 (5 CCs)	Rel-16	C047	UEs supporting EN-DC within FR1 (5DL CCs)	E008		Skip TC 7.6B.2.3_1.3 if UE supports SA and TS 38.521-1 TC 7.6A.2.3 has been executed.
7.6B.2.4	Inband blocking for inter-band EN-DC including FR2 (1 NR CC)	Rel-15	C012a	UEs supporting Inter-band EN-DC including FR2 with 1 NR DL CC	E010a		NOTE 5 Skip TC 7.6B.2.4 if UE supports SA and TS 38.521-2 TC 7.6.2 has been executed.
7.6B.2.4_1	Inband blocking for inter-band EN-DC including FR2 (>1 NR CC)						
7.6B.2.4_1.1	Inband blocking for inter-band EN-DC including FR2 (2 NR CCs)	Rel-15	FFS	FFS	FFS		NOTE 1 NOTE 5 Skip TC 7.6B.2.4_1.1 if UE supports SA and TS 38.521-2 TC 7.6A.2.1 has been executed.
7.6B.2.4_1.2	Void						
7.6B.2.4_1.3	Void						
7.6B.2.4_1.4	Void						
7.6B.2.4D	Inband blocking for inter-band EN-DC including FR2 for UL MIMO	Rel-15	N/A	No test case details are specified in TS 38.521-3.			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		

Clause	TC Title	Release	Applicability		Tested Bands/CA/DC-Configurations Selection	Branch	Additional Information
			Condition	Comment			
7.6B.3.2	Out-of-band blocking for intra-band non-contiguous EN-DC (2 CCs)	Rel-15	C010a	UEs supporting Intra-Band Non-Contiguous EN-DC (2DL CCs)	E004a		NOTE 5 Skip TC 7.6B.3.2 if UE supports SA and TS 38.521-1 TC 7.6.3 has been executed.
7.6B.3.3	Out-of-band blocking for inter-band EN-DC within FR1 (2 CCs)	Rel-15	C011a	UEs supporting Inter-band EN-DC within FR1 (2DL CCs)	E005a		
7.6B.3.3_1	Out-of-band blocking for EN-DC within FR1 (>2 CCs)						
7.6B.3.3_1.1	Out-of-band blocking for EN-DC within FR1 (3 CCs)	Rel-15	C048	UEs supporting intra-band contiguous EN-DC within FR1 with 3 DL CCs	E006		
7.6B.3.3_1.2	Out-of-band blocking for EN-DC within FR1 (4 CCs)	Rel-16	C049	UEs supporting intra-band contiguous EN-DC within FR1 with 4 DL CCs	E007		
7.6B.4.1	Narrow band blocking for intra-band contiguous EN-DC (2 CCs)	Rel-15	C009a	UEs supporting Intra-Band Contiguous EN-DC (2DL CCs)	E003a		
7.6B.4.2	Narrow band blocking for intra-band non-contiguous EN-DC (2 CCs)	Rel-15	C010a	UEs supporting Intra-Band Non-Contiguous EN-DC (2DL CCs)	E004a		NOTE 5 Skip TC 7.6B.4.2 if UE supports SA and TS 38.521-1 TC 7.6.4 has been executed.
7.6B.4.3	Narrow band blocking for inter-band EN-DC within FR1 (1 NR CC)	Rel-15	C011c	UEs supporting Inter-band EN-DC within FR1 with 1 NR DL CC	E005c		NOTE 5 Skip TC 7.6B.4.3 if UE supports SA and TS 38.521-1 TC 7.6.4 has been executed.
7.6B.4.3_1	Narrow band blocking for EN-DC within FR1 (>2 CCs)						
7.6B.4.3_1.1	Narrow band blocking for EN-DC within FR1 (3 CCs)	Rel-15	C045	UEs supporting EN-DC within FR1 (3DL CCs)	E006		
7.6B.4.3_1.2	Narrow band blocking for EN-DC within FR1 (4 CCs)	Rel-16	C046	UEs supporting EN-DC within FR1 (4DL CCs)	E007		
7.6B.4.3_1.3	Narrow band blocking for EN-DC within FR1 (5 CCs)	Rel-16	C047	UEs supporting EN-DC within FR1 (5DL CCs)	E008		Skip TC 7.6B.4.3_1.3 if UE supports SA and TS 38.521-1 TC 7.6A.4.3 has been executed.
7.7B	Spurious response for DC						
7.7B.1	Spurious Response for intra-band contiguous EN-DC (2 CCs)	Rel-15	C009a	UEs supporting Intra-Band Contiguous EN-DC (2DL CCs)	E003a		

Clause	TC Title	Release	Applicability		Tested Bands/CA/DC-Configurations Selection	Branch	Additional Information
			Condition	Comment			
7.7B.2	Spurious Response for intra-band non-contiguous EN-DC (2 CCs)	Rel-15	C010a	UEs supporting Intra-Band Non-Contiguous EN-DC (2DL CCs)	E004a		NOTE 5 Skip TC 7.7B.2 if UE supports SA and TS 38.521-1 TC 7.7 has been executed.
7.7B.3	Spurious Response for inter-band EN-DC within FR1 (2 CCs)	Rel-15	C011a	UEs supporting Inter-band EN-DC within FR1 (2DL CCs)	E005a		
7.7B.3_1	Spurious Response for EN-DC within FR1 (>2 CCs)						
7.7B.3_1.1	Spurious Response for EN-DC within FR1 (3 CCs)	Rel-15	C048	UEs supporting intra-band contiguous EN-DC within FR1 with 3 DL CCs	E006		
7.7B.3_1.2	Spurious Response for EN-DC within FR1 (4 CCs)	Rel-16	C049	UEs supporting intra-band contiguous EN-DC within FR1 with 4 DL CCs	E007		
7.8B	Intermodulation characteristics for DC						
7.8B.2.1	Wideband Intermodulation for intra-band contiguous EN-DC (2 CCs)	Rel-15	C009a	UEs supporting Intra-Band Contiguous EN-DC (2DL CCs)	E003a		NOTE 1
7.8B.2.2	Wideband Intermodulation for intra-band non-contiguous EN-DC (2 CCs)	Rel-15	C010a	UEs supporting Intra-Band non-contiguous EN-DC (2DL CCs)	E004a		NOTE 5 Skip TC 7.8B.2.2 if UE supports SA and TS 38.521-1 TC 7.8.2 has been executed.
7.8B.2.3	Wideband Intermodulation for inter-band EN-DC within FR1 (2 CCs)	Rel-15	C011a	UEs supporting inter-band EN-DC within FR1 (2DL CCs)	E005c		NOTE 5 Skip TC 7.8B.2.3 if UE supports SA and TS 38.521-1 TC 7.8.2 has been executed.
7.8B.2.3_1	Wideband Intermodulation for EN-DC within FR1 (>2 CCs)						
7.8B.2.3_1.1	Wideband Intermodulation for EN-DC within FR1 (3 CCs)	Rel-15	C045	UEs supporting EN-DC within FR1 (3DL CCs)	E006		
7.8B.2.3_1.2	Wideband Intermodulation for EN-DC within FR1 (4 CCs)	Rel-15	C046	UEs supporting EN-DC within FR1 (4DL CCs)	E007		
7.8B.2.3_1.3	Wideband Intermodulation for EN-DC within FR1 (5 CCs)	Rel-15	FFS	FFS	FFS		NOTE 1
7.9B	Spurious emissions for DC						
7.9B.1	Spurious Emissions for intra-band contiguous EN-DC (2 CCs)	Rel-15	C009a	UEs supporting Intra-Band Contiguous EN-DC (2DL CCs)	E003a		NOTE 5 Skip TC 7.9B.1 if UE supports SA and TS 38.521-1 TC 7.9 has been executed.

Clause	TC Title	Release	Applicability		Tested Bands/CA/DC-Configurations Selection	Branch	Additional Information
			Condition	Comment			
7.9B.2	Spurious Emissions for intra-band non-contiguous EN-DC (2 CCs)	Rel-15	C010a	UEs supporting Intra-Band non-contiguous EN-DC (2DL CCs)	E004a		NOTE 5 Skip TC 7.9B.2 if UE supports SA and TS 38.521-1 TC 7.9 has been executed.
7.9B.3	Spurious Emissions for inter-band EN-DC within FR1 (1 NR CC)	Rel-15	C011c	UEs supporting inter-band EN-DC within FR1 with 1 NR DL CC	E005c		NOTE 5 Skip TC 7.9B.3 if UE supports SA and TS 38.521-1 TC 7.9 has been executed.
7.9B.3_1	Spurious Emissions for EN-DC within FR1 (>2 CCs)						
7.9B.3_1.1	Spurious Emissions for EN-DC within FR1 (3 CCs)	Rel-15	C048	UEs supporting EN-DC within FR1 with 1 LTE DL CC and 2 inter-band NR DL CCs with DL-only NR band	E006		
7.9B.4	Spurious Emissions for inter-band EN-DC including FR2 (1 NR CC)	Rel-15	C012a	UEs supporting Inter-band including FR2 with 1 NR DL CC	E010a	PC1 PC3 PC5 PC7 (NOTE 1)	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> <p>NOTE 6: Uplink configurations CA_nA-nB, DC_A_nB, DC_B_nA, SUL_A-nD and SUL_B-nC can be noted as same UL CA configuration, where band nC and nD are the corresponding SUL bands with same UL frequency range of band (n)A and (n)B</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	Branch	Subtest Selection Criteria
			Condition	Comment				
5	Demodulation performance requirements (Conducted requirements)							
5.2	PDSCH demodulation requirements							
5.2.1.1.1	1Rx FDD FR1 PDSCH performance for RedCap	Rel-17	C177a	RedCap UEs supporting 5GS FDD FR1 and 1Rx UE capability	D008			Subtest 1-4: F023
5.2.1.1.2	1Rx FDD FR1 PDSCH performance for eRedCap	Rel-18	TBD	eRedCap UEs supporting 5GS FDD FR1 and 1Rx UE capability	TBD	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			Subtest 1-4: F023
5.2.1.2.2	1Rx TDD FR1 PDSCH performance for eRedCap	Rel-18	TBD	eRedCap UEs supporting 5GS TDD FR1 and 1Rx UE capability	TBD	NOTE 1		
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 and 2Rx antenna ports, but not supporting FDD bands with 4Rx UE capability	D008 D029			Subtest 1-3: F023
5.2.2.1.1_2	2Rx FDD FR1 PDSCH mapping Type A performance - 2x2 MIMO with enhanced receiver type 1 for both SA and NSA	Rel-15	C015x	UEs supporting 5GS FDD FR1 and Enhanced Receiver Type 1 and 2Rx antenna ports, but not supporting FDD bands with 4Rx UE capability	D008 D029			
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 and 2Rx antenna ports, but not supporting FDD bands with 4Rx UE capability	D008 D029			
5.2.2.1.1_4	2Rx FDD FR1 PDSCH mapping Type A performance – 2x2 MIMO with enhanced DMRS for both SA and NSA	Rel-18	C341	UEs supporting 5GS FDD FR1 and Rel-18 enhanced DMRS and 2Rx antenna ports, but not supporting FDD bands with 4Rx UE capability	D008 D029			
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 and 2Rx antenna ports, but not supporting FDD bands with 4Rx UE capability	D008 D029			

Clause	TC Title	Release	Applicability		Tested Bands Selection	Additional Information	Branch	Subtest Selection Criteria
			Condition	Comment				
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 and 2Rx antenna ports, but not supporting FDD bands with 4Rx UE capability	D008 D029			
5.2.2.1.4_1	2Rx FDD FR1 PDSCH Mapping Type A and LTE-NR coexistence performance - 4x2 MIMO with baseline receiver for both SA and NSA	Rel-15	C015y	UEs supporting 5GS FDD FR1 and receiving PDSCH with resource mapping that excludes the REs determined by the higher layer configuration LTE-carrier configuring common RS and 2Rx antenna ports, but not supporting FDD bands with 4Rx UE capability	D008 D029	Subtest 1-1 execution not necessary if subtest 1-2 is executed.		Subtest 1-2: F022
5.2.2.1.5_1	2Rx FDD FR1 PDSCH 0.001% BLER performance - 1x2 MIMO with baseline receiver for both SA and NSA	Rel-16	C074	UEs supporting 5GS FDD FR1 and alternative 64QAM MCS table for PDSCH and CQI table with target BLER of 10^{-5} and 2Rx antenna ports, but not supporting FDD bands with 4Rx UE capability	D008 D029			
5.2.2.1.6_1	2Rx FDD FR1 PDSCH repetitions over multiple slots performance - 2x2 MIMO with baseline receiver for both SA and NSA	Rel-16	C120	UEs supporting 5GS FDD FR1 and aggregationFactorDL > 1 for PDSCH repetition multislots and alternative 64QAM MCS table for PDSCH and 2Rx antenna ports, but not supporting FDD bands with 4Rx UE capability	D008 D029			
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 and 2Rx antenna ports, but not supporting FDD bands with 4Rx UE capability	D008 D029			

Clause	TC Title	Release	Applicability		Tested Bands Selection	Additional Information	Branch	Subtest Selection Criteria
			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 and 2Rx antenna ports, but not supporting FDD bands with 4Rx UE capability	D008 D029			
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 and 2Rx antenna ports, but not supporting FDD bands with 4Rx UE capability	D008 D029			
5.2.2.1.10_1	2Rx FDD FR1 HST-DPS performance - 2x2 MIMO with baseline receiver for both SA and NSA	Rel-15	C015	UEs supporting 5GS FDD FR1 and 2Rx antenna ports, but not supporting FDD bands with 4Rx UE capability	D008 D029			Subtest 1-2: F050
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 and 2Rx antenna ports, but not supporting FDD bands with 4Rx UE capability	D008 D029			
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 and 2Rx antenna ports, but not supporting FDD bands with 4Rx UE capability	D008 D029			
5.2.2.1.13_1	2Rx FDD FR1 PDSCH Single-DCI based FDM scheme A performance - 2x2 MIMO for both SA and NSA	Rel-16	C114	UEs supporting 5GS FDD FR1 and single DCI based FDMSchemeA and 2Rx antenna ports, but not supporting FDD bands with 4Rx UE capability	D008 D029			
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 and 2Rx antenna ports, but not supporting FDD bands with 4Rx UE capability	D008 D029	Test execution not necessary if 5.2.2.1.6_1 is executed.		

Clause	TC Title	Release	Applicability		Tested Bands Selection	Additional Information	Branch	Subtest Selection Criteria
			Condition	Comment				
5.2.2.1.15_1	2Rx FDD FR1 PDSCH with inter-cell interference - 2x2 MIMO for both SA and NSA	Rel-15, Rel-16	C015d	UEs supporting 5GS FDD FR1 and MMSE-IRC receiver and 2Rx antenna ports, but not supporting FDD bands with 4Rx UE capability	D008 D029			
		Rel-17	C015	UEs supporting 5GS FDD FR1 and 2Rx antenna ports, but not supporting FDD bands with 4Rx UE capability	D008 D029			
5.2.2.1.16_1	2Rx FDD FR1 for PDSCH with intra cell inter user interference performance for baseline MMSE-IRC receiver – 2x2 MIMO for both NSA and SA	Rel-15, Rel-16	C015d	UEs supporting 5GS FDD FR1 and MMSE-IRC receiver and 2Rx antenna ports, but not supporting FDD bands with 4Rx UE capability	D008 D029			
		Rel-17	C015	UEs supporting 5GS FDD FR1 and 2Rx antenna ports, but not supporting FDD bands with 4Rx UE capability	D008 D029			
5.2.2.1.16_2	2Rx FDD FR1 for PDSCH with intra cell inter user interference performance for Enhanced Receiver Type 2 – 2x2 MIMO for both NSA and SA	Rel-18	FFS	FFS	D008 D029	NOTE 1		FFS
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			Subtest 1-3: F023
5.2.2.1.18_1	2Rx FDD FR1 for PDSCH CRS interference mitigation under NR-LTE coexistence scenario – 2x2 MIMO for both NSA and SA	Rel-17	C353	UEs supporting 5GS FDD FR1 but not supporting FDD bands with 4Rx UE capability and supporting <i>CRS-IM-DSS-15kHzSCS-r17</i>	D008			
5.2.2.1.19_1	2Rx FDD FR1 for PDSCH with inter cell CRS interference scenario – 4x2 MIMO for both NSA and SA	Rel-17	C015	UEs supporting 5GS FDD FR1 but not supporting FDD bands with 4Rx UE capability	D008	Subtest 1-1 execution not necessary if subtest 2-1 is executed.		Subtest 1-1: F026 Subtest 2-1: F025
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 and 2Rx antenna ports, but not supporting FDD bands with 4Rx UE capability	D008 D029			

Clause	TC Title	Release	Applicability		Tested Bands Selection	Additional Information	Branch	Subtest Selection Criteria
			Condition	Comment				
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 and 2Rx antenna ports, but not supporting FDD bands with 4Rx UE capability	D008 D029	Test execution is not necessary if TC 5.2.2.1.20 is executed.		
5.2.2.1.23	2Rx FDD FR1 PDSCH performance for eRedCap	Rel-18	C372c	eRedCap UEs supporting 5GS FDD FR1 and 2Rx UE capability	D008			
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 and 2Rx antenna ports, but not supporting TDD bands with 4Rx UE capability	D009 D010 D029			Subtest 1-3: F023
5.2.2.2.1_2	2Rx TDD FR1 PDSCH mapping Type A performance - 2x2 MIMO with enhanced receiver type 1 for both SA and NSA	Rel-15	C016x	UEs supporting 5GS TDD FR1 and Enhanced Receiver Type 1 and 2Rx antenna ports, but not supporting TDD bands with 4Rx UE capability	D010 D029			
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 and 2Rx antenna ports, but not supporting FDD bands with 4Rx UE capability	D010 D029			
5.2.2.2.1_4	2Rx TDD FR1 PDSCH mapping Type A performance - 2x2 MIMO with enhanced DMRS for both SA and NSA	Rel-18	C370	UEs supporting 5GS TDD FR1 and Rel-18 enhanced DMRS and 2Rx antenna ports, but not supporting FDD bands with 4Rx UE capability	D008 D029			
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 and 2Rx antenna ports, but not supporting TDD bands with 4Rx UE capability	D010 D029			
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 and 2Rx antenna ports, but not supporting TDD bands with 4Rx UE capability	D010 D029			

Clause	TC Title	Release	Applicability		Tested Bands Selection	Additional Information	Branch	Subtest Selection Criteria
			Condition	Comment				
5.2.2.2.4_1	2Rx TDD FR1 PDSCH Mapping Type A and LTE-NR coexistence performance - 4x2 MIMO with baseline receiver for both SA and NSA	Rel-15	C016y	UEs supporting 5GS TDD FR1 and receiving PDSCH with resource mapping that excludes the REs determined by the higher layer configuration LTE-carrier configuring common RS and 2Rx antenna ports, but not supporting TDD bands with 4Rx UE capability	D019 D029	Subtest 1-1 execution not necessary if subtest 1-2 is executed.		Subtest 1-2: F022
5.2.2.2.5_1	2Rx TDD FR1 PDSCH 0.001% BLER performance - 1x2 MIMO with baseline receiver for both SA and NSA	Rel-16	C075	UEs supporting 5GS TDD FR1 and alternative 64QAM MCS table for PDSCH and CQI table with target BLER of 10^{-5} and 2Rx antenna ports, but not supporting TDD bands with 4Rx UE capability	D009 D029			
5.2.2.2.6_1	2Rx TDD FR1 PDSCH repetitions over multiple slots performance - 2x2 MIMO with baseline receiver for both SA and NSA	Rel-16	C122	UEs supporting 5GS TDD FR1 and aggregationFactorDL > 1 for PDSCH repetition multislots and alternative 64QAM MCS table for PDSCH and 2Rx antenna ports, but not supporting TDD bands with 4Rx UE capability	D010 D029			
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 and 2Rx antenna ports, but not supporting TDD bands with 4Rx UE capability	D010 D029			
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 and 2Rx antenna ports, but not supporting TDD bands with 4Rx UE capability	D010 D029			

Clause	TC Title	Release	Applicability		Tested Bands Selection	Additional Information	Branch	Subtest Selection Criteria
			Condition	Comment				
5.2.2.2.9_1	2Rx TDD FR1 HST-SFN performance - 2x2 MIMO with baseline receiver for both SA and NSA	Rel-15	C099a	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 and 2Rx antenna ports, but not supporting TDD bands with 4Rx UE capability	D010 D029			Subtest 1-2: F050
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 and 2Rx antenna ports, but not supporting TDD bands with 4Rx UE capability	D009 D029			
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 and 2Rx antenna ports, but not supporting TDD bands with 4Rx UE capability	D009 D029			
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 and 2Rx antenna ports, but not supporting TDD bands with 4Rx UE capability	D009 D029			
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 and 2Rx antenna ports, but not supporting TDD bands with 4Rx UE capability	D009 D029	Test execution not necessary if 5.2.2.2.6_1 is executed.		
5.2.2.2.15_1	2Rx TDD FR1 PDSCH mapping type A performance on band with shared spectrum access – 2x2 MIMO for both NSA and SA	Rel-16	C204	UEs supporting 5GS TDD FR1 and NR-U	D025			
5.2.2.2.16_1	2Rx TDD FR1 for PDSCH with inter-cell interference performance – 2x2 MIMO for both NSA and SA	Rel-15, Rel-16	C016d	UEs supporting 5GS TDD FR1 and MMSE-IRC receiver and 2Rx antenna ports, but not supporting TDD bands with 4Rx UE capability	D010 D029			

Clause	TC Title	Release	Applicability		Tested Bands Selection	Additional Information	Branch	Subtest Selection Criteria
			Condition	Comment				
		Rel-17	C016	UEs supporting 5GS TDD FR1 and 2Rx antenna ports, but not supporting TDD bands with 4Rx UE capability	D010 D029			
5.2.2.2.17_1	2Rx TDD FR1 for PDSCH with intra cell inter user interference performance – 2x2 MIMO for both NSA and SA	Rel-15, Rel-16	C016d	UEs supporting 5GS TDD FR1 and MMSE-IRC receiver and 2Rx antenna ports, but not supporting TDD bands with 4Rx UE capability	D010 D029			
		Rel-17	C016	UEs supporting 5GS TDD FR1 and 2Rx antenna ports, but not supporting TDD bands with 4Rx UE capability	D010 D029			
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			Subtest 1-2: F023
5.2.2.2.19_1	2Rx TDD FR1 for PDSCH CRS interference mitigation under NR-LTE coexistence scenario – 4x2 MIMO for both NSA and SA	Rel-17	C354	UEs supporting 5GS TDD FR1 but not supporting TDD bands with 4Rx UE capability and supporting <i>CRS-IM-DSS-15kHzSCS-r17</i>	D009			
5.2.2.2.20_1	2Rx TDD FR1 for PDSCH with inter cell CRS interference scenario – 4x2 MIMO for both NSA and SA	Rel-17	C016	UEs supporting 5GS TDD FR1 but not supporting TDD bands with 4Rx UE capability	D009	Subtest 1-1 execution not necessary if subtest 2-1 is executed. Subtest 1-2 execution not necessary if subtest 2-2 is executed.		Subtests 1-1, 1-2: F028 Subtests 2-1, 2-2: F027
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 and 2Rx antenna ports, but not supporting TDD bands with 4Rx UE capability	D010 D029			

Clause	TC Title	Release	Applicability		Tested Bands Selection	Additional Information	Branch	Subtest Selection Criteria
			Condition	Comment				
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 and 2Rx antenna ports, but not supporting TDD bands with 4Rx UE capability	D010 D029	Test execution is not necessary if TC 5.2.2.2.21 is executed.		
5.2.3.1.1_1	4Rx FDD FR1 PDSCH mapping Type A performance - 2x4 MIMO with baseline receiver for both SA and NSA	Rel-15	C017	UEs supporting 5GS FDD FR1 and 4Rx antenna ports	D008			Subtest 1-3: F023
5.2.3.1.1_2	4Rx FDD FR1 PDSCH mapping Type A performance - 4x4 MIMO with baseline receiver for both SA and NSA	Rel-15	C017	UEs supporting 5GS FDD FR1 and 4Rx antenna ports	D008			
5.2.3.1.1_4	4Rx FDD FR1 PDSCH mapping Type A performance - 4x4 MIMO with enhanced receiver type 1 for both SA and NSA	Rel-15	C017x	UEs supporting 5GS FDD FR1 and 4Rx antenna ports and Enhanced Receiver Type 1	D008			
5.2.3.1.1_5	4Rx FDD FR1 PDSCH mapping Type A performance - 2x4 MIMO with baseline receiver for DL1024QAM for both SA and NSA	Rel-17	C202	UEs supporting 5GS FDD FR1 and 4Rx antenna ports and DL1024QAM	D008			
5.2.3.1.1_6	4Rx FDD FR1 PDSCH mapping Type A performance - 4x4 MIMO with enhanced DMRS for both SA and NSA	Rel-18	C371	UEs supporting 5GS FDD FR1 and Rel-18 enhanced DMRS and 4Rx antenna ports	D008 D029			
5.2.3.1.2_1	4Rx FDD FR1 PDSCH mapping Type A and CSI-RS overlapped with PDSCH performance - 4x4 MIMO with baseline receiver for both SA and NSA	Rel-15	C017	UEs supporting 5GS FDD FR1 and 4Rx antenna ports	D008			
5.2.3.1.3_1	4Rx FDD FR1 PDSCH mapping Type B performance - 2x4 MIMO with baseline receiver for both SA and NSA	Rel-15	C017b	UEs supporting 5GS FDD FR1 and 4Rx antenna ports and PDSCH mapping Type B	D008 D011			
5.2.3.1.4_1	4Rx FDD FR1 PDSCH Mapping Type A and LTE-NR coexistence performance - 4x4 MIMO with baseline receiver for both SA and NSA	Rel-15	C017y	UEs supporting 5GS FDD FR1 and 4Rx antenna ports and receiving PDSCH with resource mapping that excludes the REs determined by the higher layer configuration LTE-carrier configuring common RS	D008	Subtest 1-1 execution not necessary if subtest 1-2 is executed.		Subtest 1-2: F022

Clause	TC Title	Release	Applicability		Tested Bands Selection	Additional Information	Branch	Subtest Selection Criteria
			Condition	Comment				
5.2.3.1.5_1	4Rx FDD FR1 PDSCH 0.001% BLER performance - 1x4 MIMO with baseline receiver for both SA and NSA	Rel-16	C076	UEs supporting 5GS FDD FR1 and alternative 64QAM MCS table for PDSCH and CQI table with target BLER of 10^{-5} and 4Rx antenna ports	D008			
5.2.3.1.6_1	4Rx FDD FR1 PDSCH repetitions over multiple slots performance - 2x4 MIMO with baseline receiver for both SA and NSA	Rel-16	C124	UEs supporting 5GS FDD FR1 and aggregationFactorDL > 1 for PDSCH repetition multislots and alternative 64QAM MCS table for PDSCH and 4Rx antenna ports	D008			
5.2.3.1.7_1	4Rx FDD FR1 PDSCH Mapping Type B and UE processing capability 2 performance - 2x4 MIMO with baseline receiver for both SA and NSA	Rel-16	C118	UEs supporting 5GS FDD FR1 and PDSCH processing capability 2 and PDSCH mapping type B and 4Rx antenna ports	D008			
5.2.3.1.8_1	4Rx FDD FR1 PDSCH pre-emption performance - 2x4 MIMO with baseline receiver for both SA and NSA	Rel-16	C169	UEs supporting 5GS FDD FR1 and PDSCH pre-emption indication and 4Rx antenna ports	D008			
5.2.3.1.9_1	4Rx FDD FR1 HST-SFN performance - 2x4 MIMO with baseline receiver for both SA and NSA	Rel-15	C127	UEs supporting 5GS FDD FR1 and enhanced demodulation processing for HST-SFN joint transmission scheme and 4Rx antenna ports	D008			
5.2.3.1.10_1	4Rx FDD FR1 HST-DPS performance - 2x4 MIMO with baseline receiver for both SA and NSA	Rel-15	C017	UEs supporting 5GS FDD FR1 and 4Rx antenna ports	D008			Subtest 1-2: F050
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			

Clause	TC Title	Release	Applicability		Tested Bands Selection	Additional Information	Branch	Subtest Selection Criteria
			Condition	Comment				
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	Test execution not necessary if 5.2.3.1.6_1 is executed.		
5.2.3.1.15_1	4Rx FDD FR1 PDSCH with inter-cell interference - 2x4 MIMO for both SA and NSA	Rel-15, Rel-16	C017d	UEs supporting 5GS FDD FR1 and 4Rx antenna ports and MMSE-IRC receiver	D008			
		Rel-17	C017	UEs supporting 5GS FDD FR1 and 4Rx antenna ports	D008			
5.2.3.1.16_1	4Rx FDD FR1 for PDSCH with intra cell inter user interference performance for baseline MMSE-IRC receiver – 2x4 MIMO for both NSA and SA	Rel-15, Rel-16	C017d	UEs supporting 5GS FDD FR1 and 4Rx antenna ports and MMSE-IRC receiver	D008			
		Rel-17	C017	UEs supporting 5GS FDD FR1 and 4Rx antenna ports	D008			
5.2.3.1.16_2	4Rx FDD FR1 for PDSCH with intra cell inter user interference performance for baseline MMSE-IRC receiver – 4x4 MIMO for both NSA and SA	Rel-15, Rel-16	C017d	UEs supporting 5GS FDD FR1 and 4Rx antenna ports and MMSE-IRC receiver	D008			
		Rel-17	C017	UEs supporting 5GS FDD FR1 and 4Rx antenna ports	D008			
5.2.3.1.16_3	4Rx FDD FR1 for PDSCH with intra cell inter user interference performance for Enhanced Receiver Type 2 – 2x4 MIMO for both NSA and SA	Rel-18	FFS	FFS	D008	NOTE 1		
5.2.3.1.16_4	4Rx FDD FR1 for PDSCH with intra cell inter user interference performance for Enhanced Receiver Type 2 – 4x4 MIMO for both NSA and SA	Rel-18	FFS	FFS	D008	NOTE 1		
5.2.3.1.17_1	4Rx FDD FR1 for PDSCH CRS interference mitigation under NR-LTE coexistence scenario – 2x4 MIMO for both NSA and SA	Rel-17	C355	UEs supporting 5GS FDD FR1 and 4Rx antenna ports and supporting <i>CRS-IM-DSS-15kHzSCS-r17</i>	D008			
5.2.3.1.18_1	4Rx FDD FR1 for PDSCH with inter cell CRS interference scenario – 4x4 MIMO for both NSA and SA	Rel-17	C017	UEs supporting 5GS FDD FR1 and 4Rx antenna ports	D008	Subtest 1-1 execution not necessary if subtest 2-1 is executed.		Subtest 1-1: F026 Subtest 2-1: F025

Clause	TC Title	Release	Applicability		Tested Bands Selection	Additional Information	Branch	Subtest Selection Criteria
			Condition	Comment				
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			
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	Test execution is not necessary if TC 5.2.3.1.19 is executed.		
5.2.3.2.1_1	4Rx TDD FR1 PDSCH mapping Type A performance - 2x4 MIMO with baseline receiver for both SA and NSA	Rel-15	C019	UEs supporting 5GS TDD FR1 and 4Rx antenna ports	D009 D010			Subtest 1-3: F023
5.2.3.2.1_2	4Rx TDD FR1 PDSCH mapping Type A performance - 4x4 MIMO with baseline receiver for both SA and NSA	Rel-15	C019	UEs supporting 5GS TDD FR1 and 4Rx antenna ports	D010			
5.2.3.2.1_4	4Rx TDD FR1 PDSCH mapping Type A performance - 4x4 MIMO with enhanced receiver type 1 for both SA and NSA	Rel-15	C019x	UEs supporting 5GS TDD FR1 and Enhanced Receiver Type 1 and 4Rx antenna ports	D010			
5.2.3.2.1_5	4Rx TDD FR1 PDSCH mapping Type A performance - 2x4 MIMO with baseline receiver for DL1024QAM for both SA and NSA	Rel-17	C203	UEs supporting 5GS TDD FR1 and 4Rx antenna ports and DL 1024QAM	D010			
5.2.3.2.1_6	4Rx TDD FR1 PDSCH mapping Type A performance - 4x4 MIMO with enhanced DMRS for both SA and NSA	Rel-18	C390	UEs supporting 5GS TDD FR1 and 4Rx antenna ports and Rel-18 enhanced DMRS	D010			
5.2.3.2.2_1	4Rx TDD FR1 PDSCH mapping Type A and CSI-RS overlapped with PDSCH performance - 2x4 MIMO with baseline receiver for both SA and NSA	Rel-15	C019	UEs supporting 5GS TDD FR1 and 4Rx antenna ports	D009 D010			
5.2.3.2.3_1	4Rx TDD FR1 PDSCH mapping Type B performance - 2x4 MIMO with baseline receiver for both SA and NSA	Rel-15	C019b	UEs supporting 5GS TDD FR1 and 4Rx antenna ports and PDSCH mapping Type B	D009 D011			
5.2.3.2.4_1	4Rx TDD FR1 PDSCH Mapping Type A and LTE-NR coexistence performance - 4x4 MIMO with baseline receiver for both SA and NSA	Rel-15	C017z	UEs supporting 5GS TDD FR1 and 4Rx antenna ports and receiving PDSCH with resource mapping that excludes the REs determined by the higher layer configuration LTE-carrier configuring common RS	D009	Subtest 1-1 execution not necessary if subtest 1-2 is executed.		Subtest 1-2: F022

Clause	TC Title	Release	Applicability		Tested Bands Selection	Additional Information	Branch	Subtest Selection Criteria
			Condition	Comment				
5.2.3.2.5_1	4Rx TDD FR1 PDSCH 0.001% BLER performance - 1x4 MIMO with baseline receiver for both SA and NSA	Rel-16	C077	UEs supporting 5GS TDD FR1 and alternative 64QAM MCS table for PDSCH and CQI table with target BLER of 10^{-5} and 4Rx antenna ports	D009			
5.2.3.2.6_1	4Rx TDD FR1 PDSCH repetitions over multiple slots performance - 2x4 MIMO with baseline receiver for both SA and NSA	Rel-16	C125	UEs supporting 5GS TDD FR1 and aggregationFactorDL > 1 for PDSCH repetition multislots and alternative 64QAM MCS table for PDSCH and 4Rx antenna ports	D010			
5.2.3.2.7_1	4Rx TDD FR1 PDSCH Mapping Type B and UE processing capability 2 performance - 2x4 MIMO with baseline receiver for both SA and NSA	Rel-16	C119	UEs supporting 5GS TDD FR1 and PDSCH processing capability 2 and PDSCH mapping type B and 4Rx antenna ports	D010			
5.2.3.2.8_1	4Rx TDD FR1 PDSCH pre-emption performance - 2x4 MIMO with baseline receiver for both SA and NSA	Rel-16	C170	UEs supporting 5GS TDD FR1 and PDSCH pre-emption indication and 4Rx antenna ports	D010			
5.2.3.2.9_1	4Rx TDD FR1 HST-SFN performance - 2x4 MIMO with baseline receiver for both SA and NSA	Rel-15	C019y	UEs supporting 5GS TDD FR1 and 4Rx antenna ports and enhanced demodulation processing for HST-SFN joint transmission scheme	D010 D011			
5.2.3.2.10_1	4Rx TDD FR1 HST DPS performance - 2x4 MIMO with baseline receiver for both SA and NSA	Rel-15	C019	UEs supporting 5GS TDD FR1 and 4Rx antenna ports	D010 D011			Subtest 1-2: F050
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			

Clause	TC Title	Release	Applicability		Tested Bands Selection	Additional Information	Branch	Subtest Selection Criteria
			Condition	Comment				
5.2.3.2.14_1	4Rx TDD FR1 PDSCH Single-DCI based Inter-slot TDM scheme performance - 2x4 MIMO for both SA and NSA	Rel-16	C115c	UEs supporting 5GS TDD FR1 and single-DCI based inter-slot TDM and 4Rx antenna ports	D009	Test execution not necessary if 5.2.3.2.6_1 is executed.		
5.2.3.2.15_1	4Rx TDD FR1 PDSCH mapping type A performance on band with shared spectrum access – 2x4 MIMO for both NSA and SA	Rel-16	C205	UEs supporting 5GS FDD FR1 and NR-U	D025			
5.2.3.2.16_1	4Rx TDD FR1 for PDSCH with inter-cell interference performance – 2x4 MIMO for both NSA and SA	Rel-15, Rel-16	C019d	UEs supporting 5GS TDD FR1 and 4Rx antenna ports and MMSE-IRC receiver	D010			
		Rel-17	C019	UEs supporting 5GS TDD FR1 and 4Rx antenna ports	D010			
5.2.3.2.17_1	4Rx TDD FR1 for PDSCH with intra cell inter user interference performance – 2x4 MIMO for both NSA and SA	Rel-15, Rel-16	C019d	UEs supporting 5GS TDD FR1 and 4Rx antenna ports and MMSE-IRC receiver	D010			
		Rel-17	C019	UEs supporting 5GS TDD FR1 and 4Rx antenna ports	D010			
5.2.3.2.17_2	4Rx TDD FR1 for PDSCH with intra cell inter user interference performance – 4x4 MIMO for both NSA and SA	Rel-15, Rel-16	C019d	UEs supporting 5GS TDD FR1 and 4Rx antenna ports and MMSE-IRC receiver	D010			
		Rel-17	C019	UEs supporting 5GS TDD FR1 and 4Rx antenna ports	D010			
5.2.3.2.18_1	4Rx TDD FR1 for PDSCH CRS interference mitigation under NR-LTE coexistence scenario – 4x4 MIMO for both NSA and SA	Rel-17	C356	UEs supporting 5GS TDD FR1 and 4Rx antenna ports and supporting <i>CRS-IM-DSS-15kHzSCS-r17</i>	D009			
5.2.3.2.19_1	4Rx TDD FR1 for PDSCH with inter cell CRS interference scenario – 4x4 MIMO for both NSA and SA	Rel-17	C019	UEs supporting 5GS TDD FR1 and 4Rx antenna ports	D009	Subtest 1-1 execution not necessary if subtest 2-1 is executed. Subtest 1-2 execution not necessary if subtest 2-2 is executed.		Subtestss1-1, 1-2: F028 Subtests 2-1, 2-2: F027
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			

Clause	TC Title	Release	Applicability		Tested Bands Selection	Additional Information	Branch	Subtest Selection Criteria
			Condition	Comment				
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	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	Test execution not necessary if 5.2A.2.1.2 is executed.		
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	Test execution not necessary if 5.2A.2.1.3 is executed.		
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	Test execution not necessary if 5.2A.2.2.2 is executed.		
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 Test execution not necessary if 5.2A.2.2.3 is executed.		
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 and 2Rx antenna ports, but not supporting 4Rx UE capability on any CCs	E016 D029			

Clause	TC Title	Release	Applicability		Tested Bands Selection	Additional Information	Branch	Subtest Selection Criteria
			Condition	Comment				
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 and 2Rx antenna ports, but not supporting 4Rx UE capability on any CCs	E016 D029			
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	Test execution not necessary if 5.2A.3.1.2 is executed.		
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	Test execution not necessary if 5.2A.3.1.3 is executed.		
5.2A.3.1.3	4Rx Normal PDSCH Demodulation Performance for CA (4DL CA)	Rel-15	C017i	UEs supporting 5GS FR1 AND 4DL CA AND supporting 4Rx antenna ports on all CCs	E018			
5.2A.3.2.1	4Rx PDSCH Demodulation Performance for CA with power imbalance (2DL CA)	Rel-15	C017g	UEs supporting 5GS FR1 AND 2DL CA AND supporting 4Rx antenna ports on all CCs	E003a			
5.2A.3.3	4Rx TDD FR1 PDSCH mapping type A performance of SCell on band with shared spectrum access	Rel-16	C205	UEs supporting 5GS TDD FR1 and NR-U	D025	NOTE 1		
5.2A.3.4.1	4RX PDSCH Demodulation Performance for HST-SFN CA	Rel-16	C127a	UEs supporting 5GS FR1 AND enhanced demodulation processing for carrier aggregation for HST-SFN joint transmission AND supporting 4Rx TDD and FDD UE capability on any CCs	E016			
5.2A.3.5.1	4RX PDSCH Demodulation Performance for HST-DPS CA	Rel-15	C154a	UEs supporting 5GS FR1 AND 2DL CA AND number of active TCI AND supporting 4Rx TDD and FDD UE capability on any CCs	E016			
5.2A.3A.1.1	2Rx-4Rx Normal PDSCH Demodulation Performance for CA (2DL CA)	Rel-15	C017g	UEs supporting 5GS FR1 and 2DL CA AND supporting 4Rx UE capability on some of the CCs	E016	Test execution not necessary if 5.2A.3A.1.2 is executed.		

Clause	TC Title	Release	Applicability		Tested Bands Selection	Additional Information	Branch	Subtest Selection Criteria
			Condition	Comment				
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	Test execution not necessary if 5.2A.3A.1.3 is executed.		
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			
5.3.1.2.1	1Rx TDD FR1 PDCCH performance for RedCap	Rel-17	C177c	RedCap UEs supporting 5GS TDD FR1 and 1Rx UE capability	D009			
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 and 2Rx antenna ports, but not supporting FDD bands with 4Rx UE capability	D008 D029			
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 and 2Rx antenna ports, but not supporting FDD bands with 4Rx UE capability	D008 D029			
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 and 2Rx antenna ports, but not supporting FDD bands with 4Rx UE capability	D008 D029			
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			
5.3.2.1.5	2RX FDD Minimum requirements for PDCCH with intra-slot repetition	Rel-17	C015e	UEs supporting 5GS FDD FR1 and 2Rx antenna ports, but not supporting FDD bands with 4Rx UE capability	D008 D029			
5.3.2.1.7	2RX FDD FR1 PDCCH antenna performance for 3 MHz channel bandwidth	Rel-18	C343a	UEs supporting 5GS FDD FR1 and 2Rx antenna ports and bandwidth of less than 5 MHz, but not supporting FDD bands with 4Rx UE capability	D008a D029			

Clause	TC Title	Release	Applicability		Tested Bands Selection	Additional Information	Branch	Subtest Selection Criteria
			Condition	Comment				
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 and 2Rx antenna ports, but not supporting TDD bands with 4Rx UE capability	D010 D029			
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 and 2Rx antenna ports, but not supporting TDD bands with 4Rx UE capability	D010 D029			
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 and 2Rx antenna ports, but not supporting TDD bands with 4Rx UE capability	D010 D029			
5.3.2.2.4	2Rx TDD FR1 PDCCH performance for RedCap	Rel-17	C177d	RedCap UEs supporting 5GS TDD FR1 and 2Rx UE capability	D009			
5.3.2.2.5	2RX TDD Minimum requirements for PDCCH with intra-slot repetition	Rel-17	C016e	UEs supporting 5GS TDD FR1 and 2Rx antenna ports, but not supporting TDD bands with 4Rx UE capability	D009 D010 D029			
5.3.3.1.1	4Rx FDD FR1 PDCCH 1 Tx antenna performance for both SA and NSA	Rel-15	C017	UEs supporting 5GS FDD FR1 and 4Rx antenna ports	D008			
5.3.3.1.2	4Rx FDD FR1 PDCCH 2 Tx antenna performance for both SA and NSA	Rel-15	C017	UEs supporting 5GS FDD FR1 and 4Rx antenna ports	D008			
5.3.3.1.3	4Rx FDD FR1 PDCCH 1 Tx antenna performance for power saving	Rel-16	C090	UEs supporting 5GS FDD FR1 and 4Rx antenna ports and Long DRX Cycle and DRX adaptation	D008			
5.3.3.1.4	4RX FDD Minimum requirements for PDCCH with intra-slot repetition	Rel-17	C017e	UEs supporting 5GS FDD FR1 and 4Rx antenna ports	D008			
5.3.3.1.6	4RX FDD FR1 PDCCH antenna performance for 3 MHz channel bandwidth	Rel-18	C343b	UEs supporting 5GS FDD FR1 and 4Rx antenna ports and bandwidth of less than 5 MHz	D008a			
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			

Clause	TC Title	Release	Applicability		Tested Bands Selection	Additional Information	Branch	Subtest Selection Criteria
			Condition	Comment				
5.3.3.2.4	4RX TDD Minimum requirements for PDCCH with intra-slot repetition	Rel-17	C019e	UEs supporting 5GS TDD FR1 and 4Rx antenna ports	D010			
5.5.1	FR1 Sustained downlink data rate performance for single carrier	Rel-15	C001	UEs supporting 5GS FDD FR1 or TDD FR1 (SA)	D001			
5.5.2	FR1 Sustained downlink data rate performance for single carrier with DL1024QAM	Rel-17	C001r	UEs supporting 5GS FDD FR1 or TDD FR1 (SA) and supporting DL 1024QAM	D001			
5.5.3	FR1 Sustained downlink data rate performance for RedCap	Rel-17	C351a	RedCap UEs supporting 5GS FDD FR1 or TDD FR1	D001			
5.5A.1.1	FR1 SDR performance for CA (2DL CA)	Rel-15	C001e	UEs supporting 5GS FDD FR1 or TDD FR1 (SA) and supporting 2DL CA	E016			
5.5A.1.2	FR1 SDR performance for CA (3DL CA)	Rel-15	C001i	UEs supporting 5GS FDD FR1 or TDD FR1 (SA) and supporting 3DL CA	E017			
5.5A.1.3	FR1 SDR performance for CA (4DL CA)	Rel-15	C001j	UEs supporting 5GS FDD FR1 or TDD FR1 (SA) and supporting 4DL CA	E018			
5.5A.1.4	FR1 SDR performance for CA (5DL CA)	Rel-15	C001k	UEs supporting 5GS FDD FR1 or TDD FR1 (SA) and supporting 5DL CA	E019			
5.6.2.1.1_1	2Rx FDD FR1 PDSCH performance with link adaptation – 2x2 MIMO for both SA and NSA	Rel-17	C373	UEs supporting 5GS FDD FR1 and 2Rx antenna ports, but not supporting FDD bands with 4Rx UE capability	D008			
5.6.2.2.1_1	2Rx TDD FR1 PDSCH performance with link adaptation - 2x2 MIMO for both SA and NSA	Rel-17	C374	UEs supporting 5GS TDD FR1 and 2Rx antenna ports, but not supporting TDD bands with 4Rx UE capability	D010			
5.6.3.1.1_1	4Rx FDD FR1 PDSCH performance with link adaptation - 2x4 MIMO for both SA and NSA	Rel-17	C375	UEs supporting 5GS FDD FR1 and 4Rx antenna ports	D008			
5.6.3.2.1_1	4Rx TDD FR1 PDSCH performance with link adaptation - 2x4 MIMO for both SA and NSA	Rel-17	C376	UEs supporting 5GS TDD FR1 and 4Rx antenna ports	D010			
6	CSI reporting requirements (Conducted requirements)							
6.2.1.1.1.1	1Rx FDD FR1 periodic CQI reporting under AWGN conditions for RedCap	Rel-17	C177a	RedCap UEs supporting 5GS FDD FR1 and 1Rx UE capability	D008			
6.2.1.1.1.2	1Rx FDD FR1 periodic CQI reporting under AWGN conditions for eRedCap	Rel-18	TBD	eRedCap UEs supporting 5GS FDD FR1 and 1Rx UE capability	TBD	NOTE 1		

Clause	TC Title	Release	Applicability		Tested Bands Selection	Additional Information	Branch	Subtest Selection Criteria
			Condition	Comment				
6.2.1.1.2.1	1Rx FDD FR1 periodic wideband CQI reporting under fading conditions for RedCap	Rel-17	C177a	RedCap UEs supporting 5GS FDD FR1 and 1Rx UE capability	D008			
6.2.1.1.2.2	1Rx FDD FR1 periodic wideband CQI reporting under fading conditions for eRedCap	Rel-18	TBD	eRedCap UEs supporting 5GS FDD FR1 and 1Rx UE capability	D008	NOTE 1		
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			
6.2.1.2.1.2	1Rx TDD FR1 periodic CQI reporting under AWGN conditions for eRedCap	Rel-18	TBD	eRedCap UEs supporting 5GS TDD FR1 and 1Rx UE capability	D009	NOTE 1		
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			
6.2.1.2.2.2	1Rx TDD FR1 periodic wideband CQI reporting under fading conditions for eRedCap	Rel-18	C372f	eRedCap UE 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 and 2Rx antenna ports, but not supporting FDD bands with 4Rx UE capability	D008 D029			
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} and 2Rx antenna ports, but not supporting FDD bands with 4Rx UE capability	D008 D029			
6.2.2.1.1.3	2Rx FDD FR1 periodic CQI reporting with Table 4 under AWGN conditions for both SA and NSA	Rel-17	C200	UEs supporting 5GS FDD FR1 and DL1024QAM and 2Rx UE capability, but not supporting FDD bands with 4Rx UE capability	D008 D029			
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			
6.2.2.1.1.5	2Rx FDD FR1 periodic CQI reporting under AWGN conditions for eRedCap for SA	Rel-18	C372d	eRedCap UE supporting 5GS FDD FR1 and 2Rx UE capability	D008			

Clause	TC Title	Release	Applicability		Tested Bands Selection	Additional Information	Branch	Subtest Selection Criteria
			Condition	Comment				
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 and 2Rx antenna ports, but not supporting FDD bands with 4Rx UE capability	D008 D029			
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 and 2Rx antenna ports, but not supporting FDD bands with 4Rx UE capability	D008 D029			
6.2.2.1.2.3	2Rx FDD FR1 Wideband CQI reporting with inter-cell interference for both SA and NSA	Rel-15	C015d	UEs supporting 5GS FDD FR1 and MMSE-IRC receiver and 2Rx antenna ports, but not supporting FDD bands with 4Rx UE capability	D008 D029			
6.2.2.1.2.4	2Rx FDD FR1 periodic wideband CQI reporting under fading conditions for RedCap	Rel-17	C177b	RedCap UEs supporting 5GS FDD FR1 and 2Rx UE capability	D008			
6.2.2.1.2.5	2Rx FDD FR1 periodic wideband CQI reporting under fading conditions for eRedCap	Rel-18	C372c	eRedCap UEs supporting 5GS FDD FR1 and 2Rx UE capability	D008			
6.2.2.2.1.1	2Rx TDD FR1 periodic CQI reporting under AWGN conditions for both SA and NSA	Rel-15	C016	UEs supporting 5GS TDD FR1 and 2Rx antenna ports, but not supporting TDD bands with 4Rx UE capability	D010 D029			
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} and 2Rx antenna ports, but not supporting TDD bands with 4Rx UE capability	D010 D029			
6.2.2.2.1.4	2Rx TDD FR1 periodic CQI reporting with Table 4 under AWGN conditions for both SA and NSA	Rel-17	C201	UEs supporting 5GS TDD FR1 and DL 1024QAM and 2Rx antenna ports, but not supporting TDD bands with 4Rx UE capability.	D010 D029			
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			

Clause	TC Title	Release	Applicability		Tested Bands Selection	Additional Information	Branch	Subtest Selection Criteria
			Condition	Comment				
6.2.2.2.1.6	2Rx TDD FR1 periodic CQI reporting under AWGN conditions for eRedCap	Rel-18	C372h	eRedCap UE without reduced baseband bandwidth 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 and 2Rx antenna ports, but not supporting TDD bands with 4Rx UE capability	D010 D029			
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 and 2Rx antenna ports, but not supporting TDD bands with 4Rx UE capability	D010 D029			
6.2.2.2.2.3	2Rx TDD FR1 Wideband CQI reporting with inter-cell interference for both SA and NSA	Rel-15	C016d	UEs supporting 5GS TDD FR1 and MMSE-IRC receiver and 2Rx antenna ports, but not supporting TDD bands with 4Rx UE capability	D010 D029			
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			
6.2.3.1.1.3	4Rx FDD FR1 periodic CQI reporting with Table 4 under AWGN conditions for both SA and NSA	Rel-17	C202	UEs supporting 5GS FDD FR1 and 4Rx antenna ports and DL1024QAM	D008			
6.2.3.1.2.1	4Rx FDD FR1 periodic wideband CQI reporting under fading conditions for both SA and NSA	Rel-15	C017	UEs supporting 5GS FDD FR1 and 4Rx antenna ports	D008			
6.2.3.1.2.2	4Rx FDD FR1 aperiodic subband CQI reporting under fading conditions for both SA and NSA	Rel-15	C017	UEs supporting 5GS FDD FR1 and 4Rx antenna ports	D008			
6.2.3.1.2.3	4Rx FDD FR1 Wideband CQI reporting with inter-cell interference for both SA and NSA	Rel-15	C017d	UEs supporting 5GS FDD FR1 and 4Rx antenna ports and MMSE-IRC receiver	D008			

Clause	TC Title	Release	Applicability		Tested Bands Selection	Additional Information	Branch	Subtest Selection Criteria
			Condition	Comment				
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			
6.2.3.2.1.4	4Rx TDD FR1 periodic CQI reporting with Table 4 under AWGN conditions for both SA and NSA	Rel-17	C203	UEs supporting 5GS TDD FR1 and 4Rx antenna ports and DL 1024 QAM	D010			
6.2.3.2.2.1	4Rx TDD FR1 periodic wideband CQI reporting under fading conditions for both SA and NSA	Rel-15	C019	UEs supporting 5GS TDD FR1 and 4Rx antenna ports	D010			
6.2.3.2.2.2	4Rx TDD FR1 aperiodic subband CQI reporting under fading conditions for both SA and NSA	Rel-15	C019	UEs supporting 5GS TDD FR1 and 4Rx antenna ports	D010			
6.2.3.2.2.3	4Rx TDD FR1 Wideband CQI reporting with inter-cell interference for both SA and NSA	Rel-15	C019d	UEs supporting 5GS TDD FR1 and 4Rx antenna ports and MMSE-IRC receiver	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.3.1.1_1	2Rx FR1 CQI reporting under AWGN for Scell on band with shared spectrum access for CA (2DLCA)	Rel-16	C204a	UEs supporting 5GS TDD FR1 and NR-U and 2DL CA	D025			
6.2A.3.1.2	CQI reporting accuracy under AWGN conditions for CA (3DL CA)	Rel-15	C033	UEs supporting 5GS FR1 and CA (3DL CA)	E017	Test execution not necessary if 6.2A.3.1.3 is executed.		
6.2A.3.1.3	CQI reporting accuracy under AWGN conditions for CA (4DL CA)	Rel-15	C036	UEs supporting 5GS FR1 and CA (4DL CA)	E018			
6.2A.4.1.1	4Rx FR1 CQI reporting under AWGN for Scell on band with shared spectrum access for CA (2DLCA)	Rel-16	C204b	UEs supporting 5GS TDD FR1 and NR-U and 2DL CA and 4Rx antenna ports	D025			
6.3.1.1.1	1Rx FDD Single PMI with 4TX TypeI-SinglePanel Codebook for RedCap	Rel-17	C177a	RedCap UEs supporting 5GS FDD FR1 and 1Rx UE capability	D008			
6.3.1.1.2	1Rx FDD Single PMI with 4TX TypeI-SinglePanel Codebook for eRedCap	Rel-18	C372b	eRedCap UE supporting 5GS FDD FR1 and 1Rx UE capability	D008			

Clause	TC Title	Release	Applicability		Tested Bands Selection	Additional Information	Branch	Subtest Selection Criteria
			Condition	Comment				
6.3.1.2.1	1Rx TDD Single PMI with 4TX Typel-SinglePanel Codebook for RedCap	Rel-17	C177c	RedCap UEs supporting 5GS TDD FR1 and 1Rx UE capability	D009			
6.3.1.2.2	1Rx TDD Single PMI with 4TX Typel-SinglePanel Codebook for eRedCap	Rel-18	C372f	eRedCap UE supporting 5GS TDD FR1 and 1Rx UE capability	D009			
6.3.2.1.1	2Rx FDD FR1 Single PMI with 4TX Typel-SinglePanel codebook for both SA and NSA	Rel-15	C015	UEs supporting 5GS FDD FR1 and 2Rx antenna ports, but not supporting FDD bands with 4Rx UE capability	D008 D029			
6.3.2.1.1_1	2Rx FDD FR1 Single PMI with 4Tx Typel-SinglePanel codebook for RedCap	Rel-17	C177b	RedCap UEs supporting 5GS FDD FR1 and 2Rx UE capability	D008 D029			
6.3.2.1.2	2Rx FDD FR1 Single PMI with 8TX Typel-SinglePanel codebook for both SA and NSA	Rel-15	C015	UEs supporting 5GS FDD FR1 and 2Rx antenna ports, but not supporting FDD bands with 4Rx UE capability	D008 D029			
6.3.2.1.3	2Rx FDD FR1 Multiple PMI with 16Tx Type I – SinglePanel Codebook for both SA and NSA	Rel-15	C015f	UEs supporting 5GS FDD FR1 and 2Rx antenna ports and 16Tx Type I single panel codebook, but not supporting FDD bands with 4Rx UE capability	D008 D029			
6.3.2.1.4	2Rx FDD FR1 Single PMI with 32Tx Type1 – SinglePanel Codebook for both SA and NSA	Rel-15	C015g	UEs supporting 5GS FDD FR1 and 2Rx antenna ports and 32Tx Type I single panel codebook, but not supporting FDD bands with 4Rx UE capability	D008 D029			
6.3.2.1.5	2Rx FDD FR1 Multiple PMI with 16Tx Typell codebook for both SA and NSA	Rel-15	C015c	UEs supporting 5GS FDD FR1 and supporting Type II codebook with at least 16 ports per CSI-RS resource and 2Rx antenna ports, but not supporting FDD bands with 4Rx UE capability	D008 D029			
6.3.2.1.6	2Rx FDD FR1 Multiple PMI with 16Tx Enhanced Typell 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 and 2Rx antenna ports, but not supporting FDD bands with 4Rx UE capability	D008 D029			

Clause	TC Title	Release	Applicability		Tested Bands Selection	Additional Information	Branch	Subtest Selection Criteria
			Condition	Comment				
6.3.2.1.7	2Rx FDD FR1 Single PMI with 8 ports Typel-SinglePanel Codebook for Single-DCI based transmission scheme for both SA and NSA	Rel-17	C070	UEs supporting 5GS FDD FR1 and single DCI based spatial division multiplexing scheme and 2Rx antenna ports, but not supporting FDD bands with 4Rx UE capability	D008 D029	Note1		
6.3.2.1.9	2Rx FDD FR1 Multiple PMI with 8 ports Enhanced Type II Codebook for CJT for both SA and NSA	Rel-18	C368	UEs supporting 5GS FDD FR1 and eType-II codebook with refinement for multi-TRP CJT and 2Rx antenna ports, but not supporting FDD bands with 4Rx UE capability	D008 D029			
6.3.2.1.10	2Rx FDD FR1 Single PMI with 4Tx Typel-SinglePanel codebook for eRedCap	Rel-18	C372d	eRedCap UE supporting 5GS FDD FR1 and 2Rx UE capability	D008			
6.3.2.2.1	2Rx TDD FR1 Single PMI with 4TX Typel-SinglePanel codebook for both SA and NSA	Rel-15	C016	UEs supporting 5GS TDD FR1 and 2Rx antenna ports, but not supporting TDD bands with 4Rx UE capability	D010 D029			
6.3.2.2.2	2Rx TDD FR1 Single PMI with 8TX Typel-SinglePanel codebook for both SA and NSA	Rel-15	C016	UEs supporting 5GS TDD FR1 and 2Rx antenna ports, but not supporting TDD bands with 4Rx UE capability	D010 D029			
6.3.2.2.3	2Rx TDD FR1 Multiple PMI with 16Tx Type1 - SinglePanel codebook for both SA and NSA	Rel-15	C016f	UEs supporting 5GS TDD FR1 and 2Rx antenna ports and 16Tx Type I single panel codebook, but not supporting TDD bands with 4Rx UE capability	D010 D029			
6.3.2.2.4	2Rx TDD FR1 Single PMI with 32Tx Type1 - SinglePanel codebook for both SA and NSA	Rel-15	C016g	UEs supporting 5GS TDD FR1 and 2Rx antenna ports and 32Tx Type I single panel codebook, but not supporting TDD bands with 4Rx UE capability	D010 D029			
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 2Rx antenna ports, and supporting Type II codebook with at least 16 ports per CSI-RS resource but not supporting TDD bands with 4Rx UE capability	D010 D029			

Clause	TC Title	Release	Applicability		Tested Bands Selection	Additional Information	Branch	Subtest Selection Criteria
			Condition	Comment				
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 and 2Rx antenna ports, but not supporting TDD bands with 4Rx UE capability	D010 D029			
6.3.2.2.7	2Rx TDD Single PMI with 4TX TypeI-SinglePanel Codebook for RedCap	Rel-17	C177b	RedCap UEs supporting 5GS TDD FR1 and 2Rx UE capability	D009			
6.3.2.2.8	2Rx TDD FR1 Single PMI with 8 ports TypeI-SinglePanel Codebook for Single-DCI based transmission scheme for both SA and NSA	Rel-17	C071	UEs supporting 5GS TDD FR1 and single DCI based spatial division multiplexing scheme and 2Rx antenna ports, but not supporting TDD bands with 4Rx UE capability	D010 D029			
6.3.2.2.10	2Rx TDD Single PMI with 4TX TypeI-SinglePanel Codebook for eRedCap	Rel-18	C372h	eRedCap UE supporting 5GS TDD FR1 and 2Rx UE capability	D009			
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	C017k	UEs supporting 5GS FDD FR1 and 4Rx antenna ports and 16Tx Type I single panel codebook	D008 D011			
6.3.3.1.4	4Rx FDD FR1 Single PMI with 32Tx Type1 – SinglePanel Codebook for both SA and NSA	Rel-15	C017l	UEs supporting 5GS FDD FR1 and 4Rx antenna ports and 32Tx Type I single panel codebook	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 with at least 16 ports per CSI-RS resource and 4Rx antenna ports	D008 D011			

Clause	TC Title	Release	Applicability		Tested Bands Selection	Additional Information	Branch	Subtest Selection Criteria
			Condition	Comment				
6.3.3.1.6	4Rx FDD FR1 Multiple PMI with 16Tx Enhanced TypeII codebook for both SA and NSA	Rel-16	C130	UEs supporting 5GS FDD FR1 and Enhanced Type II codebook with at least 16 ports per CSI-RS resource, and 4Rx antenna ports	D008 D011			
6.3.3.1.7	4Rx FDD FR1 Single PMI with 8 ports TypeI-SinglePanel Codebook for Single-DCI based transmission scheme for both SA and NSA	Rel-17	C072	UEs supporting 5GS FDD FR1 and single DCI based spatial division multiplexing scheme and 4Rx antenna ports	D008 D011			
6.3.3.1.9	4Rx FDD FR1 Multiple PMI with 8 ports Enhanced Type II Codebook for CJT for both SA and NSA	Rel-17	C369	UEs supporting 5GS FDD FR1 and eType-II codebook with refinement for multi-TRP CJT and 4Rx antenna ports 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	C019g	UEs supporting 5GS TDD FR1 and 4Rx antenna ports and 16Tx Type I single panel codebook	D010			
6.3.3.2.4	4Rx TDD FR1 Single PMI with 32Tx Type1 - SinglePanel codebook for both SA and NSA	Rel-15	C019h	UEs supporting 5GS TDD FR1 and 4Rx antenna ports and 32Tx Type I single panel codebook	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 with at least 16 ports per CSI-RS resource 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			

Clause	TC Title	Release	Applicability		Tested Bands Selection	Additional Information	Branch	Subtest Selection Criteria
			Condition	Comment				
6.3.3.2.7	4Rx TDD FR1 Single PMI with 8 ports TypeI-SinglePanel Codebook for Single-DCI based transmission scheme for both SA and NSA	Rel-17	C073	UEs supporting 5GS FDD FR1 and single DCI based spatial division multiplexing scheme and 4Rx antenna ports	D010			
6.4.2.1_1	2Rx FDD FR1 RI reporting for both SA and NSA	Rel-15	C015	UEs supporting 5GS FDD FR1 and 2Rx antenna ports, but not supporting FDD bands with 4Rx UE capability	D008 D029			
6.4.2.1.1	2Rx FDD FR1 RI reporting for RedCap	Rel-17	C177b	RedCap UEs supporting 5GS FDD FR1 and 2Rx UE capability	D008			
6.4.2.2_1	2Rx TDD FR1 RI reporting for both SA and NSA	Rel-15	C016	UEs supporting 5GS TDD FR1 and 2Rx antenna ports, but not supporting TDD bands with 4Rx UE capability	D010 D029			
6.4.2.2.1	2Rx TDD FR1 RI reporting for RedCap	Rel-17	C177d	RedCap UEs supporting 5GS TDD FR1 and 2Rx UE capability	D009			
6.4.3.1_1	4Rx FDD FR1 RI reporting for both SA and NSA	Rel-15	C017	UEs supporting 5GS FDD FR1 and 4Rx antenna ports	D008 D011			
6.4.3.2_1	4Rx TDD FR1 RI reporting for both SA and NSA	Rel-15	C019	UEs supporting 5GS TDD FR1 and 4Rx antenna ports	D010 D011			
7	Demodulation performance requirements (Radiated requirements)							
7.2.2.2.1_1	2Rx TDD FR2 PDSCH mapping Type A performance - 2x2 MIMO with baseline receiver for SA and NSA	Rel-15	C061	UEs supporting 5GS TDD FR2	D013 D014 D015		PC1 PC3	
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		PC1 PC3	
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		PC1 PC3	
7.2.2.2.2_1	2Rx TDD FR2 PDSCH repetitions over multiple slots - 2x2 MIMO with baseline receiver for SA and NSA	Rel-16	C171	UEs supporting 5GS TDD FR2 and alternative 64QAM MCS table for PDSCH and aggregationFactorDL > 1 for PDSCH repetition multislots	D014		PC1 PC3	
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		PC1 PC3	

Clause	TC Title	Release	Applicability		Tested Bands Selection	Additional Information	Branch	Subtest Selection Criteria
			Condition	Comment				
7.2.2.2.4_1	2Rx TDD FR2 PDSCH for HST-DPS - 2x2 MIMO with baseline receiver for SA and NSA	Rel-17	C333	2Rx TDD FR2 PDSCH for HST-DPS - 2x2 MIMO with baseline receiver for SA and NSA	D015		PC1 PC3	
7.2.2.2.5_1	TDD FR2 PDSCH using Multi-DCI non-overlapping based transmission scheme performance – MultiRx	Rel-18	C408	UEs supporting 5GS TDD FR2 AND Simultaneous Reception AND MultiDCI non overlapping	D014	Note 1	PC1 PC3	
7.2.2.2.6_1	TDD FR2 PDSCH using Multi-DCI fully overlapping based transmission scheme performance – MultiRx	Rel-18	C409	UEs supporting 5GS TDD FR2 AND Simultaneous Reception AND MultiDCI fully overlapping	D014	Note 1	PC1 PC3	
7.2.2.2.7_1	TDD FR2 PDSCH using Single-DCI based SDM scheme performance – MultiRx	Rel-18	C410	UEs supporting 5GS TDD FR2 AND Simultaneous Reception AND SingleDCI-SDM-scheme	D014	Note 1	PC1 PC3	
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		PC1 PC3	
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		PC1 PC3	
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		PC1 PC3	
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		PC1 PC3	
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		PC1 PC3	
7.5.1	FR2 Sustained downlink data rate performance for single carrier	Rel-15	C061	UEs supporting 5GS TDD FR2	D014		PC1 PC3	
7.5.1.1	FR2 SDR performance for CA (2DL CA)	Rel-15	C061a	UEs supporting 5GS TDD FR2 and CA (2DL CA)	E032		PC1 PC3	
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	PC1 PC3	
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	PC1 PC3	
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	PC1 PC3	
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	PC1 PC3	
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	PC1 PC3	

Clause	TC Title	Release	Applicability		Tested Bands Selection	Additional Information	Branch	Subtest Selection Criteria
			Condition	Comment				
7.5.1.7	FR2 SDR performance for CA (8DL CA)	Rel-15	TBD	UEs supporting 5GS TDD FR2 and CA (8DL CA)	E038		PC1 PC3	
7.5.2	FR2 Sustained downlink data rate performance for RedCap	Rel-17	C197	RedCap UEs supporting 5GS TDD FR2 and 2Rx UE capability	D014		PC1 PC3	
7.6.2.2.1_1	2Rx TDD FR2 PDSCH performance with link adaptation - 2x2 MIMO for both SA and NSA	Rel-17	C377	UEs supporting 5GS TDD FR2	D014		PC1 PC3	
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		PC1 PC3	
8.2.2.2.2.1	2Rx TDD FR2 aperiodic wideband CQI reporting under fading performance for both SA and NSA	Rel-15	C061	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.	PC1 PC3	
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		PC1 PC3	
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.	PC1 PC3	
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.	PC1 PC3	
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		PC1 PC3	
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		PC1 PC3	
8.4.2.2.1	2Rx TDD FR2 RI reporting for both SA and NSA	Rel-15	C061	UEs supporting 5GS TDD FR2	D014		PC1 PC3	
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)	D001			

Clause	TC Title	Release	Applicability		Tested Bands Selection	Additional Information	Branch	Subtest Selection Criteria
			Condition	Comment				
9.4B.1.1A	Sustained downlink data rate performance for EN-DC within FR1 with DL 1024QAM	Rel-17	C411	UEs supporting 5GS FDD FR1 or TDD FR1 (NSA) and supporting DL 1024QAM	D001			
9.4B.1.2	Sustained downlink data rate performance for EN-DC including FR2 NR carrier	Rel-15	C006q	UEs supporting 5GS TDD FR2 and ENDC	D005		PC1 PC3	
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 TS 38.521-4 [4].								
NOTE 2: Void.								
NOTE 3: Void								

Table 4.1.4-1a: Void

Table 4.1.4-1b: Void

Table 4.1.4-1c: Void

4.2 RRM conformance test cases

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

Clause	TC Title	Release	Applicability		Additional Information	Branch	Subtest Selection Criteria
			Condition	Comment			
4.3	RRC_CONNECTED state mobility						
4.3.2	RRC connection mobility control						
4.3.2.2	Random access						
4.3.2.2.1	EN-DC FR1 contention based random access	Rel-15	C021	UEs supporting EN-DC FR1	Test execution not necessary if test 6.3.2.2.1 has been executed.	2Rx 4Rx 8Rx	
4.3.2.2.2	EN-DC FR1 non-contention based random access	Rel-15	C021	UEs supporting EN-DC FR1	Test execution not necessary if test 6.3.2.2.2 has been executed.	2Rx 4Rx 8Rx	Subtest 2: F001
4.3.2.2.3	EN-DC FR1 2-step contention based random access	Rel-16	C157	UEs supporting EN-DC FR1 and 2-step RACH	Test execution not necessary if test 6.3.2.2.3 has been executed.	2Rx 4Rx 8Rx	
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 8Rx	
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 8Rx	Subtest 2: F002
4.4.2	UE timer accuracy						
4.4.3	Timing Advance						
4.4.3.1	EN-DC FR1 timing advance adjustment accuracy	Rel-15	C021	UEs supporting EN-DC FR1	Test execution not necessary if test 6.4.3.1 has been executed.	2Rx 4Rx 8Rx	
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 8Rx	
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 8Rx	

Clause	TC Title	Release	Applicability		Additional Information	Branch	Subtest Selection Criteria
			Condition	Comment			
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 8Rx	
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 8Rx	
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 8Rx	
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 8Rx	
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 8Rx	
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 8Rx	
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 8Rx	
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 8Rx	
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 8Rx	
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 8Rx	
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 8Rx	

Clause	TC Title	Release	Applicability		Additional Information	Branch	Subtest Selection Criteria
			Condition	Comment			
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 8Rx	
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 8Rx	
4.5.2.8	EN-DC FR1 interruptions at NR SRS carrier based switching in asynchronous EN-DC	Rel-16	C067a	UEs supporting EN-DC FR1 and 2DL CA in NR and NR SRS carrier based switching	Note 1	2Rx 4Rx 8Rx	
4.5.2.9	EN-DC FR1 interruptions at E-UTRA SRS carrier based switching	Rel-16	C068a	UEs supporting EN-DC FR1 and 2DL CA in E-UTRA and E-UTRA SRS carrier based switching	Note 1	2Rx 4Rx 8Rx	
4.5.2.10	EN-DC FR1 interruptions due to RRM and RLM/BFD measurements on deactivated NR PSCell	Rel-17	C288	UEs supporting EN-DC FR1 and activation and deactivation on SCG		2Rx 4Rx 8Rx	
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 8Rx	
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 8Rx	
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 8Rx	
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 8Rx	
4.5.3.6	EN-DC FR1 fast SCell Activation of known SCell in non-DRX for 160ms SCell measurement cycle	Rel-17	C267	UEs supporting EN-DC FR1 and 2DL CA in NR and fast SCell activation		2Rx 4Rx 8Rx	
4.5.3.7	EN-DC FR1 fast SCell Activation in non-DRX of known SCell for 640ms SCell measurement cycle	Rel-17	C267	UEs supporting EN-DC FR1 and 2DL CA in NR and fast SCell activation		2Rx 4Rx 8Rx	
4.5.3.11	EN-DC FR1 TRS-based SCell Activation of SSB-less SCell in FR1 collocated inter-band in non-DRX	Rel-18	C387	UEs supporting EN-DC FR1 and 2DL CA in NR and inter-band SSB-less SCell operation		2Rx 4Rx 8Rx	
4.5.3.12	EN-DC FR1 Inter-band SSB-less SCell Activation based on A-TRS	Rel18	C267a	UEs supporting EN-DC FR1 and 2DL CA in NR and fast SCell activation based on A-TRS		2Rx 4Rx 8Rx	
4.5.4	UE UL carrier RRC reconfiguration delay						

Clause	TC Title	Release	Applicability		Additional Information	Branch	Subtest Selection Criteria
			Condition	Comment			
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 8Rx	
4.5.5	Beam failure detection and link recovery procedures						
4.5.5.1	EN-DC FR1 SSB-based beam failure detection and link recovery in non-DRX	Rel-15	C082	UEs supporting EN-DC FR1 and link recovery	Test execution not necessary if test 6.5.5.1 has been executed.	2Rx 4Rx 8Rx	
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 8Rx	
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 8Rx	
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 8Rx	
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 8Rx	
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 8Rx	
4.5.5.7	EN-DC FR1 PSCell TRP specific SSB-based beam failure detection and link recovery in non-DRX	Rel-17	C082b	UEs supporting TRP specific EN-DC FR1 and link recovery		2Rx 4Rx 8Rx	
4.5.5.8	EN-DC FR1 SCell TRP specific CSI-RS-based beam failure detection and SSB-based link recovery in non-DRX	Rel-17	C175a	UEs supporting TRP specific EN-DC FR1 and CSI-RS-based RLM and SSB link recovery		2Rx 4Rx 8Rx	
4.5.6	Active BWP switch delay						
4.5.6.1	DCI-based and timer-based active BWP switch						

Clause	TC Title	Release	Applicability		Additional Information	Branch	Subtest Selection Criteria
			Condition	Comment			
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 8Rx	
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 8Rx	
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 8Rx	
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 8Rx	
4.5.6.4							
4.5.6.5	Simultaneous RRC-based Active BWP Switch on multiple CCs						
4.5.6.5.1	E-UTRAN – NR PSCell FR1 DL active BWP switch in non-DRX in synchronous EN-DC on multiple CCs	Rel-16	C065d	UEs supporting EN-DC FR1, incremental delay for DCI and timer based active BWP switching on multiple CCs simultaneously and 2DL CA	NOTE 1	2Rx 4Rx 8Rx	
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 8Rx	
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 8Rx	
4.5.10	PSCell activation and deactivation delay						
4.5.10.1	EN-DC FR1 PSCell activation and deactivation delay	Rel-17	C288	UEs supporting EN-DC FR1 and activation and deactivation on SCG		2Rx 4Rx 8Rx	

Clause	TC Title	Release	Applicability		Additional Information	Branch	Subtest Selection Criteria
			Condition	Comment			
4.5.11	Conditional PSCell addition and release delay (FR1 EN-DC)						
4.5.11.1	EN-DC FR1 Conditional PSCell Addition Delay	Rel-17	C268	UEs supporting EN-DC FR1 and conditional PSCell addition in EN-DC		2Rx 4Rx 8Rx	
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 8Rx	
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 8Rx	
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 8Rx	
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 8Rx	
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 8Rx	
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 8Rx	
4.6.1.7	EN-DC FR1 event-triggered reporting without gap in DRX for UE configured with highSpeedMeasFlag-r16	Rel-16	C097	UEs supporting EN-DC FR1 and long DRX cycle and measurement enhancements in HST	Test execution not necessary if test 6.6.1.7 has been executed.	2Rx 4Rx 8Rx	
4.6.1.8	EN-DC FR1 event triggered reporting cell without SSB time index detection in DRX for UE configured with highSpeedMeasCA-Scell-r17	Rel-17	C021c	UEs supporting EN-DC FR1 and CA measurement enhancements in HST	Test execution not necessary if test 6.6.1.8 has been executed.	2Rx 4Rx 8Rx	
4.6.2	Inter-frequency measurements						

Clause	TC Title	Release	Applicability		Additional Information	Branch	Subtest Selection Criteria
			Condition	Comment			
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 8Rx	
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 8Rx	
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 8Rx	
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 8Rx	
4.6.2.9	EN-DC FR1-FR1 event triggered reporting without SSB time index detection in DRX for UE configured with highSpeedMeasInterFreq-r17	Rel-17	C021d	UEs supporting EN-DC FR1 and inter-frequency measurement enhancements in HST	Test execution not necessary if test 6.6.2.12 has been executed.	2Rx 4Rx 8Rx	Subtest 2: F016
4.6.4	L1-RSRP for beam reporting						
4.6.4.1	EN-DC FR1 SSB-based L1-RSRP measurement in non-DRX	Rel-15	C021	UEs supporting EN-DC FR1	Test execution not necessary if test 6.6.4.1 has been executed.	2Rx 4Rx 8Rx	
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 8Rx	
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 8Rx	
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 8Rx	
4.6.4.5	EN-DC FR1 SSB-based L1-RSRP measurement in DRX for UE configured with highSpeedMeasFlag-r16	Rel-16	C098	UEs supporting EN-DC FR1, long DRX cycle and intra-NR measurement enhancement in HST	Test execution not necessary if test 6.6.4.5 has been executed.	2Rx 4Rx 8Rx	
4.6.7	L1-SINR for beam reporting						

Clause	TC Title	Release	Applicability		Additional Information	Branch	Subtest Selection Criteria
			Condition	Comment			
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 8Rx	
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 8Rx	
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 8Rx	
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 8Rx	
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 8Rx	
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 8Rx	
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 8Rx	
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 8Rx	
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 8Rx	

Clause	TC Title	Release	Applicability		Additional Information	Branch	Subtest Selection Criteria
			Condition	Comment			
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 8Rx	
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 8Rx	
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 8Rx	
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 8Rx	
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 8Rx	
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 8Rx	
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 8Rx	
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 8Rx	
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 8Rx	
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 8Rx	

Clause	TC Title	Release	Applicability		Additional Information	Branch	Subtest Selection Criteria
			Condition	Comment			
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 8Rx	
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 8Rx	
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 8Rx	
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 8Rx	
4.7.8.1.1	EN-DC Intra-frequency measurement accuracy with FR1 serving cell and FR1 target cell absolute measurement accuracy	Rel-16	C336	UEs supporting EN-DC FR1 and CSI-RS based RSRP and RSRQ		2Rx 4Rx 8Rx	
4.7.8.1.2	EN-DC Intra-frequency measurement accuracy with FR1 serving cell and FR1 target cell relative measurement accuracy	Rel-16	C336	UEs supporting EN-DC FR1 and CSI-RS based RSRP and RSRQ		2Rx 4Rx	
4.7.8.2.1	EN-DC inter-frequency measurement accuracy with FR1 serving cell and FR1 target cell absolute measurement accuracy	Rel-16	C336	UEs supporting EN-DC FR1 and CSI-RS based RSRP and RSRQ		2Rx 4Rx 8Rx	
4.7.8.2.2	EN-DC inter-frequency measurement accuracy with FR1 serving cell and FR1 target cell relative measurement accuracy	Rel-16	C336	UEs supporting EN-DC FR1 and CSI-RS based RSRP and RSRQ		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 8Rx	
NOTE 1: The test case/branch is incomplete for any Band/CA/DC Configuration but has basic test configurations already. NOTE 1 can be removed only when the test case/branch is complete for at least one Band / CA/DC Configuration for at least one feature included in the test case/branch. Detailed completion status can be found in the corresponding test case section in 38.533.							
NOTE 2: Test X refers to the corresponding Sub-Test as defined in TS 38.533 [5].							

Table 4.2-1a: Void

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

Clause	TC Title	Release	Applicability		Additional Information	Branch	Subtest Selection Criteria
			Condition	Comment			
5.3	RRC_CONNECTED state mobility						
5.3.2	RRC connection mobility control						
5.3.2.2	Random access						
5.3.2.2.1	EN-DC FR2 contention based random access	Rel-16	C022	UEs supporting EN-DC FR2		PC1 PC3	
5.3.2.2.2	EN-DC FR2 non-contention based random access	Rel-16	C022	UEs supporting EN-DC FR2		PC1 PC3	Subtest 2: F001
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		PC1(NOTE 1) PC3(NOTE 1)	
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		PC1(NOTE 1) PC3(NOTE 1)	
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		PC1 PC3	Subtest 2: F002
5.4.1.2	NR UE Transmit Timing Test with 2-TA for FR2 UE supporting multiDCI-IntraCellMultiTRP-TwoTA-r18	Rel-18	C388	UEs supporting EN-DC FR2 and 2 TAGs for multi-DCI multi-TRP operation		PC1(NOTE 1) PC3(NOTE 1)	Subtest 2: F002
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		PC1 PC3	
5.5	Signalling characteristics						
5.5.1	Radio link monitoring						
5.5.1.1	EN-DC FR2 radio link monitoring out-of-sync test for PSCell configured with SSB-based RLM RS in non-DRX mode	Rel-15	C022	UEs supporting EN-DC FR2		PC1(NOTE 1) PC3	
5.5.1.2	EN-DC FR2 radio link monitoring in-sync test for PSCell configured with SSB-based RLM RS in non-DRX mode	Rel-15	C022	UEs supporting EN-DC FR2		PC1(NOTE 1) PC3	
5.5.1.3	EN-DC FR2 radio link monitoring out-of-sync test for PSCell configured with SSB-based RLM RS in DRX mode	Rel-15	C022a	UEs supporting EN-DC FR2 and long DRX cycle		PC1(NOTE 1) PC3	
5.5.1.4	EN-DC FR2 radio link monitoring in-sync test for PSCell configured with SSB-based RLM RS in DRX mode	Rel-15	C022a	UEs supporting EN-DC FR2 and long DRX cycle		PC1(NOTE 1) PC3	

Clause	TC Title	Release	Applicability		Additional Information	Branch	Subtest Selection Criteria
			Condition	Comment			
5.5.1.5	EN-DC FR2 radio link monitoring out-of-sync test for PSCell configured with CSI-RS-based RLM RS in non-DRX mode	Rel-15	C161	UEs supporting EN-DC FR2 and CSI-RS based RLM		PC1(NOTE 1) PC3(NOTE 1)	
5.5.1.6	EN-DC FR2 radio link monitoring in-sync test for PSCell configured with CSI-RS-based RLM RS in non-DRX mode	Rel-15	C161	UEs supporting EN-DC FR2 and CSI-RS based RLM		PC1(NOTE 1) PC3(NOTE 1)	
5.5.1.7	EN-DC FR2 radio link monitoring out-of-sync test for PSCell configured with CSI-RS-based RLM RS in DRX mode	Rel-15	C162	UEs supporting EN-DC FR2, CSI-RS-based RLM and long DRX cycle		PC1(NOTE 1) PC3	
5.5.1.8	EN-DC FR2 radio link monitoring in-sync test for PSCell configured with CSI-RS-based RLM RS in DRX mode	Rel-15	C162	UEs supporting EN-DC FR2, CSI-RS-based RLM and long DRX cycle		PC1(NOTE 1) PC3	
5.5.1.9	EN-DC FR2 radio link monitoring UE scheduling restrictions	Rel-15	C022n	UEs supporting EN-DC FR2 and PDCCH monitoring in any symbol of the slot (with or without span gap)		PC1(NOTE 1) PC3	
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		PC1(NOTE 1) PC3	
5.5.2	Interruption						
5.5.2.1	EN-DC FR2 interruptions at transitions between active and non-active during DRX in synchronous EN-DC	Rel-15	C022a	UEs supporting EN-DC FR2 and long DRX cycle		PC1(NOTE 1) PC3	
5.5.2.2	EN-DC FR2 interruptions at transitions between active and non-active during DRX in asynchronous EN-DC	Rel-15	C022a	UEs supporting EN-DC FR2 and long DRX cycle		PC1(NOTE 1) PC3	
5.5.2.3	EN-DC FR2 interruptions during measurements on deactivated NR SCC in synchronous EN-DC	Rel-15	C180	UEs supporting EN-DC FR2 and 2DL CA in NR		PC1(NOTE 1) PC3	
5.5.2.4	EN-DC FR2 interruptions during measurements on deactivated NR SCC in asynchronous EN-DC	Rel-15	C180	UEs supporting EN-DC FR2 and 2DL CA in NR		PC1(NOTE 1) PC3	
5.5.2.5	EN-DC FR2 interruptions during measurements on deactivated E-UTRAN SCC in synchronous EN-DC	FFS	FFS	FFS		PC1(NOTE 1) PC3(NOTE 1)	
5.5.2.6	EN-DC FR2 interruptions during measurements on deactivated E-UTRAN SCC in asynchronous EN-DC	FFS	FFS	FFS		PC1(NOTE 1) PC3(NOTE 1)	

Clause	TC Title	Release	Applicability		Additional Information	Branch	Subtest Selection Criteria
			Condition	Comment			
5.5.2.7	EN-DC FR2 interruptions at E-UTRA SRS carrier based switching	Rel-16	N/A	Not recommended due to LTE – FR2 testability issue		PC1(NOTE 1) PC3(NOTE 1)	
5.5.2.8	EN-DC FR2 interruptions at NR SRS carrier based switching	Rel-16	N/A	Not recommended due to LTE – FR2 testability issue		PC1(NOTE 1) PC3(NOTE 1)	
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		PC1(NOTE 1) PC3	
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		PC1(NOTE 1) PC3	
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		PC1(NOTE 1) PC3	
5.5.3.13	EN-DC FR2 Addition and Release Delay of NR PSCell	Rel-17	C268a	UEs supporting EN-DC FR2 and conditional PSCell addition in EN-DC		PC1(NOTE 1) PC3(NOTE 1)	
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		PC1(NOTE 1) PC3	
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		PC1(NOTE 1) PC3	
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		PC1(NOTE 1) PC3	
5.5.5.4	EN-DC FR2 CSI-RS-based beam failure detection and link recovery in DRX	Rel-15	C162	UEs supporting EN-DC FR2 and long DRX cycle and CSI-RS-based RLM		PC1(NOTE 1) PC3	
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		PC1(NOTE 1) PC3	
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		PC1(NOTE 1) PC3	

Clause	TC Title	Release	Applicability		Additional Information	Branch	Subtest Selection Criteria
			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		PC1(NOTE 1) PC3	
5.5.5.8	EN-DC FR2 CSI-RS-based PSCell TRP specific Beam Failure Detection and Link Recovery in DRX mode	Rel-17	C162a	UEs supporting TRP specific EN-DC FR2 and long DRX cycle and CSI-RS-based RLM		PC1(NOTE 1) PC3	
5.5.5.9	EN-DC FR2 SSB-based beam failure detection and link recovery in DRX mode for UE fulfilling relaxed measurement criterion	Rel-17	C320	UEs supporting EN-DC FR2 and long DRX cycle and BFD relaxation criteria <i>bfd-Relaxation-r17</i>		PC1(NOTE 1) PC3	
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		PC1(NOTE 1) PC3(NOTE 1)	
5.5.6.1.2	EN-DC FR2 DCI-based DL active BWP switch with SCell in non-DRX in synchronous EN-DC	Rel-15	N/A	Not recommended due to LTE – FR2 testability issue		PC1(NOTE 1) PC3(NOTE 1)	
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)		PC1(NOTE 1) PC3	
5.5.7	PSCell addition and release delay						
5.5.7.1	EN-DC FR2 Addition and Release Delay of NR PSCell	Rel-15	C022	UEs supporting EN-DC FR2		PC1(NOTE 1) PC3	
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		PC1(NOTE 1) PC3(NOTE 1)	

Clause	TC Title	Release	Applicability		Additional Information	Branch	Subtest Selection Criteria
			Condition	Comment			
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		PC1(NOTE 1) PC3(NOTE 1)	
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		PC1(NOTE 1) PC3	
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		PC1(NOTE 1) PC3	
5.5.11.3	EN-DC FR2 MAC-CE based active downlink TCI state switch	Rel-17	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		PC1(NOTE 1) PC3	
5.5.12	PSCell activation and deactivation delay						
5.5.12.1	EN-DC FR2 PSCell activation and deactivation delay	Rel-17	C289	UEs supporting EN-DC FR2 and activation and deactivation on SCG		PC1(NOTE 1) PC3	
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		PC1 PC3	
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		PC1 PC3	
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		PC1 PC3	

Clause	TC Title	Release	Applicability		Additional Information	Branch	Subtest Selection Criteria
			Condition	Comment			
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		PC1 PC3	
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		PC1(NOTE 1) PC3	Subtest 2: F014
5.6.2.2	EN-DC FR2-FR2 event-triggered reporting in DRX	Rel-15	C022a	UEs supporting EN-DC FR2 and long DRX cycle		PC1(NOTE 1) PC3	Subtests 3, 4: F015
5.6.2.3	EN-DC FR2-FR2 event-triggered reporting in non-DRX with SSB time index detection	Rel-15	C022	UEs supporting EN-DC FR2		PC1(NOTE 1) PC3	Subtest 2: F014
5.6.2.4	EN-DC FR2-FR2 event-triggered reporting in DRX with SSB time index detection	Rel-15	C022a	UEs supporting EN-DC FR2 and long DRX cycle		PC1(NOTE 1) PC3	Subtests 3, 4: F015
5.6.2.5	EN-DC FR1-FR2 event-triggered reporting in non-DRX	Rel-15	N/A	Not recommended due to FR1 – FR2 testability issue		PC1(NOTE 1) PC3(NOTE 1)	
5.6.2.6	EN-DC FR1-FR2 event-triggered reporting in DRX	Rel-15	N/A	Not recommended due to FR1 – FR2 testability issue		PC1(NOTE 1) PC3(NOTE 1)	
5.6.2.7	EN-DC FR1-FR2 event-triggered reporting in non-DRX with SSB time index detection	Rel-15	N/A	Not recommended due to FR1 – FR2 testability issue		PC1(NOTE 1) PC3(NOTE 1)	
5.6.2.8	EN-DC FR1-FR2 event-triggered reporting in DRX with SSB time index detection	Rel-15	N/A	Not recommended due to FR1 – FR2 testability issue		PC1(NOTE 1) PC3(NOTE 1)	
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		PC1(NOTE 1) PC3	
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		PC1(NOTE 1) PC3	
5.6.3.3	EN-DC FR2 CSI-RS-based L1-RSRP measurement in non-DRX	Rel-15	C022	UEs supporting EN-DC FR2		PC1(NOTE 1) PC3	

Clause	TC Title	Release	Applicability		Additional Information	Branch	Subtest Selection Criteria
			Condition	Comment			
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		PC1(NOTE 1) PC3	
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		PC1(NOTE 1) PC3	
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		PC1(NOTE 1) PC3	
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		PC1(NOTE 1) PC3	
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		PC1(NOTE 1) PC3	
5.6.7	CSI-RS based measurement						
5.6.7.1	EN-DC event triggered reporting test without gap under non-DRX	Rel-16	C350	UEs supporting EN-DC FR2 and CSI-RS based RSRP and RSRQ		PC1(NOTE 1) PC3	
5.6.8.1	EN-DC event triggered reporting tests for NR FR2 cell when DRX is used	Rel-16	C351	UEs supporting EN-DC FR2 and long DRX cycle and CSI-RS based RSRP and RSRQ		PC1(NOTE 1) PC3	
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		PC1 PC3	
5.7.1.2	EN-DC FR2-FR2 SS-RSRP measurement accuracy	Rel-15	C022	UEs supporting EN-DC FR2		PC1(NOTE 1) PC3	
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		PC1(NOTE 1) PC3(NOTE 1)	
5.7.2	SS-RSRQ						
5.7.2.1	EN-DC FR2 SS-RSRQ measurement accuracy	Rel-15	C022	UEs supporting EN-DC FR2		PC1(NOTE 1) PC3	

Clause	TC Title	Release	Applicability		Additional Information	Branch	Subtest Selection Criteria
			Condition	Comment			
5.7.2.2	EN-DC FR2-FR2 SS-RSRQ measurement accuracy	Rel-15	C022	UEs supporting EN-DC FR2		PC1(NOTE 1) PC3	
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		PC1(NOTE 1) PC3	
5.7.3.2	EN-DC FR2-FR2 SS-SINR measurement accuracy	Rel-15	C069	UEs supporting EN-DC FR2 and SS-SINR-meas		PC1(NOTE 1) PC3	
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		PC1(NOTE 1) PC3	
5.7.4.2	EN-DC FR2 CSI-RS based L1-RSRP measurement accuracy	Rel-15	C022	UEs supporting EN-DC FR2		PC1(NOTE 1) PC3	
5.7.5.1	EN-DC FR2 SRS-RSRP measurement accuracy	Rel-16	C022b	UEs supporting EN-DC FR2 and SRS-RSRP measurements		PC1(NOTE 1) PC3	
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		PC1(NOTE 1) PC3	
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		PC1(NOTE 1) PC3	
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		PC1(NOTE 1) PC3	
5.7.7	CSI-RSRP						
5.7.7.1	EN-DC intra-frequency case measurement accuracy with FR2 serving cell and FR2 target cell	Rel-16	C350	UEs supporting EN-DC FR2 and CSI-RS based RSRP and RSRQ		PC1(NOTE 1) PC3	
5.7.7.2	EN-DC inter-frequency case measurement accuracy with FR2 serving cell and FR2 target cell	Rel-16	C350	UEs supporting EN-DC FR2 and CSI-RS based RSRP and RSRQ		PC1(NOTE 1) PC3	

Clause	TC Title	Release	Applicability		Additional Information	Branch	Subtest Selection Criteria
			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.							
NOTE 2: Void.							
NOTE 3: Void.							

Table 4.2-2a: Void

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

Clause	TC Title	Release	Applicability		Additional Information	Branch	Subtest Selection Criteria
			Condition	Comment			
6.1	RRC_IDLE state mobility						
6.1.1	NR cell re-selection						
6.1.1.1	NR SA FR1 cell re-selection	Rel-15	C001	UEs supporting 5GS NR SA FR1		2Rx 4Rx 8Rx	
6.1.1.2	NR SA FR1-FR1 cell re-selection	Rel-15	C001	UEs supporting 5GS NR SA FR1		2Rx 4Rx 8Rx	
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 8Rx	
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 8Rx	
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 8Rx	
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 8Rx	
6.1.1.7	NR SA FR1 cell re-selection for UE configured with highSpeedMeasFlag-r16	Rel-16	C052	UEs supporting 5GS NR SA FR1 and measurement enhancements in HST		2Rx 4Rx 8Rx	
6.1.1.8	NR SA FR1-FR1 Cell reselection for UE configured with highSpeedMeasInterFreq-r17	Rel-17	C052a	UEs supporting 5GS NR SA FR1 and inter-freq measurement enhancements in HST		2Rx 4Rx 8Rx	
6.1.1.9	NR SA FR1 cell reselection to intra-frequency NR case for UE operating on a cell with less than 5MHz BW	Rel-18	C342	UEs supporting 5GS NR SA FR1 and bandwidth of less than 5 MHz		2Rx 4Rx 8Rx	
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 8Rx	
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 8Rx	
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 8Rx	
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 8Rx	

Clause	TC Title	Release	Applicability		Additional Information	Branch	Subtest Selection Criteria
			Condition	Comment			
6.1.2.5	NR SA FR1 – E-UTRA cell re-selection to lower priority E-UTRA for UE configured with highSpeedMeasFlag-r16	Rel-16	C025b	UEs supporting 5GS NR SA FR1 and E-UTRA and E-UTRA inter-RAT measurement enhancements in HST		2Rx 4Rx 8Rx	
6.2	RRC_INACTIVE state mobility						
6.2.1	NR SA FR1 Configured Grant based Small Data Transmissions (CG-SDT)	Rel-17	C001m	UEs supporting 5GS NR SA FR1, CG-SDT and long DRX cycle		2Rx 4Rx 8Rx	
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 8Rx	
6.3.1.2	NR SA FR1 handover with unknown target cell	Rel-15	C001	UEs supporting 5GS NR SA FR1		2Rx 4Rx 8Rx	
6.3.1.3	NR SA FR1-FR1 handover with unknown target cell	Rel-15	C001	UEs supporting 5GS NR SA FR1		2Rx 4Rx 8Rx	
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 8Rx	
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 8Rx	
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 8Rx	
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 8Rx	
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 8Rx	
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 8Rx	
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 8Rx	
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 8Rx	

Clause	TC Title	Release	Applicability		Additional Information	Branch	Subtest Selection Criteria
			Condition	Comment			
			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 8Rx	
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 8Rx	
			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 8Rx	
6.3.1.18	NR SA FR1 Intra-frequency handover for unknown target cell operating with 12 PRB SSB bandwidth	Rel-18	C343	UEs supporting 5GS NR SA FR1 and bandwidth of less than 5 MHz		2Rx 4Rx 8Rx	
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 8Rx	
6.3.2.1.2	NR SA FR1 - FR1 RRC re-establishment	Rel-15	C001	UEs supporting 5GS NR SA FR1		2Rx 4Rx 8Rx	
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 8Rx	
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 8Rx	
6.3.2.2.2	NR SA FR1 non-contention based random access	Rel-15	C001	UEs supporting 5GS NR SA FR1	Test execution not necessary if test 4.3.2.2.2 has been executed.	2Rx 4Rx 8Rx	Subtest 2: F001
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 8Rx	

Clause	TC Title	Release	Applicability		Additional Information	Branch	Subtest Selection Criteria
			Condition	Comment			
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 8Rx	
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 8Rx	
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 8Rx	
6.3.2.4	LTM PDCCH-order Random Access						
6.3.2.4.1	NR SA FR1 PDCCH-order RACH on neighbor cell when RACH BW is within active UL BWP	Rel-18	C364	UEs supporting 5GS NR SA FR1, intra-frequency LTM for MCG with RACH, MAC-CE activated joint LTM TCI states, RACH-less LTM with dynamic grant, intra-frequency L1-RSRP measurement and reporting based on SSB(s) of candidate cell(s), interruptions caused by PDCCH order		2Rx 4Rx 8Rx	Test 2: F043 Test 3: F044
6.3.2.4.2	NR SA FR1-FR1 PDCCH-ordered RACH to an candidate cell for LTM	Rel-18	C366	UEs supporting 5GS NR SA FR1, inter-frequency LTM for MCG with RACH, MAC-CE activated joint LTM TCI states, RACH-less LTM with dynamic grant, inter-frequency L1-RSRP measurement and reporting based on SSB(s) of candidate cell(s), interruptions caused by PDCCH order and Support simultaneous transmission to handle the overlap between UL transmission on serving cell(s) and PRACH on candidate cell(s)		2Rx 4Rx 8Rx	Test 2: F047
6.3.2.4.3	NR SA FR1 PDCCH-order RACH on neighbor cell without L1-RSRP measurement when RACH BW is within active UL BWP	Rel-18	C365	UEs supporting 5GS NR SA FR1, intra-frequency LTM for MCG with RACH, MAC-CE activated joint LTM TCI states, RACH-less LTM with dynamic grant, interruptions caused by PDCCH order		2Rx 4Rx 8Rx	Test 2: F045 Test 3: F046
6.3.3	Conditional handover						

Clause	TC Title	Release	Applicability		Additional Information	Branch	Subtest Selection Criteria
			Condition	Comment			
6.3.3.1	NR SA FR1 conditional handover	Rel-16	C105	UEs supporting 5GS NR SA FR1 and Conditional handover		2Rx 4Rx 8Rx	
6.3.3.2	NR SA FR1-FR1 conditional handover	Rel-16	C105	UEs supporting 5GS NR SA FR1 and Conditional handover		2Rx 4Rx 8Rx	
6.3.3.3	SA FR1 conditional handover including target MCG and target SCG	Rel-18	C395	UEs supporting 5GS NR-DC SA FR1 and Conditional handover		2Rx 4Rx 8Rx	
6.3.3.4	SA FR1 conditional handover including target MCG and candidate SCG	Rel-18	C396	UEs supporting 5GS NR-DC SA FR1 and Conditional handover with Conditional PSCell Change		2Rx 4Rx 8Rx	
6.3.3.6	NR SA FR1 Intra-frequency NES triggering conditional handover	Rel-18	C105a	UEs supporting 5GS NR SA FR1 and NES-based conditional handover		2Rx 4Rx 8Rx	
6.3.3.7	NR SA FR1 Inter-frequency NES-based conditional handover	Rel-18	C105a	UEs supporting 5GS NR SA FR1 and NES-based conditional handover		2Rx 4Rx 8Rx	
6.3.4	LTM PCell Switch						
6.3.4.1	NR SA FR1 RACH-based PCell switch from FR1 to FR1	Rel-18	C362	UEs supporting 5GS NR SA FR1, intra-frequency LTM for MCG with RACH and intra-frequency L1-RSRP measurement and reporting based on SSB(s) of candidate cell(s)		2Rx 4Rx 8Rx	Test 1: F051 Test 2: F032
6.3.4.2	NR SA FR1-FR1 RACH based LTM PCell switch from FR1 to FR1	Rel-18	C363	UEs supporting 5GS NR SA FR1, inter-frequency LTM for MCG with RACH without NR-DC configuration and inter-frequency L1-RSRP measurement and reporting with measurement gaps based on SSB(s) of candidate cell(s)		2Rx 4Rx 8Rx	Test 1: F051 Test 2: F032
6.3.4.3	NR SA FR1 RACH-less PCell switch from FR1 to FR1	Rel-18	C357	UEs supporting 5GS NR SA FR1, intra-frequency LTM for MCG with RACH, RACH-less LTM with dynamic grant, TA indication in cell switch command and intra-frequency L1-RSRP measurement and reporting based on SSB(s) of candidate cell(s)		2Rx 4Rx 8Rx	Test 1: F051 Test 2: F032

Clause	TC Title	Release	Applicability		Additional Information	Branch	Subtest Selection Criteria
			Condition	Comment			
6.3.4.4	NR SA FR1 RACH-less PCell switch from FR1 to FR1 without L1-RSRP measurement	Rel-18	C358	UEs supporting 5GS NR SA FR1, intra-frequency LTM for MCG with RACH, RACH-less LTM with dynamic grant and TA indication in cell switch command		2Rx 4Rx 8Rx	Test 1: F051 Test 2: F032
6.3.5	LTM PSCell Switch						
6.3.5.1	NR SA FR1 RACH-based Intra-frequency LTM PSCell switch	Rel-18	C362a	UEs supporting 5GS NR SA FR1, intra-frequency LTM for SCG with RACH and intra-frequency L1-RSRP measurement and reporting based on SSB(s) of candidate cell(s)	NOTE 1	2Rx 4Rx 8Rx	Test 1A: F051 Test 1B: F031 Test 2A: F032 Test 2B: F033
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 8Rx	Subtest 2: F002
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 8Rx	
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 8Rx	
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 8Rx	
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 8Rx	
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 8Rx	

Clause	TC Title	Release	Applicability		Additional Information	Branch	Subtest Selection Criteria
			Condition	Comment			
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 8Rx	
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 8Rx	
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 8Rx	
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 8Rx	
6.5.1.9	SA FR1 radio link monitoring out-of-sync Test for PCell configured with CSI-RS-based RLM for UE fulfilling relaxed measurement criterion	Rel-17	C037b	UEs supporting 5GS NR SA FR1 and long DRX cycle and CSI-RS-based RLM and RLM relaxation criteria <i>rlm-Relaxation-r17</i>		2Rx 4Rx 8Rx	
6.5.1.13	NR SA FR1 radio Link Monitoring out-of-sync Test for PCell configured with SSB-based RLM RS in DRX mode for UE operating on a cell with less than 5MHz BW	Rel-18	C344	UEs supporting 5GS NR SA FR1 and bandwidth of less than 5 MHz and long DRX cycle		2Rx 4Rx 8Rx	
6.5.1.14	NR SA FR1 radio Link Monitoring out-of-sync Test for PCell configured with SSB-based RLM RS in non-DRX mode for UE operating on a cell with less than 5MHz BW	Rel-18	C343	UEs supporting 5GS NR SA FR1 and bandwidth of less than 5 MHz		2Rx 4Rx 8Rx	
6.5.1.15	NR SA FR1 radio link monitoring In-sync Test for PCell with 3MHz Channel Bandwidth configured with SSB-based RLM RS in non-DRX mode	Rel-18	C343	UEs supporting 5GS NR SA FR1 and bandwidth of less than 5 MHz		2Rx 4Rx 8Rx	
6.5.1.16	NR SA FR1 radio link monitoring In-sync Test for PCell with 3MHz Channel Bandwidth configured with SSB-based RLM RS in DRX mode	Rel-18	C344	UEs supporting 5GS NR SA FR1 and bandwidth of less than 5 MHz and long DRX cycle		2Rx 4Rx 8Rx	
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 8Rx	
6.5.2.2	SA FR1 interruptions at NR SRS carrier based switching	Rel-16	C031d	UEs supporting 5GS NR SA FR1 and CA (2DL CA) and NR SRS carrier based switching	Note 1	2Rx 4Rx 8Rx	
6.5.3	Scell activation and deactivation delay						

Clause	TC Title	Release	Applicability		Additional Information	Branch	Subtest Selection Criteria
			Condition	Comment			
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 8Rx	
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 8Rx	
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 8Rx	
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 8Rx	
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 8Rx	
6.5.3.10	NR SA FR1 fast SCell Activation of known SCell in non-DRX for 160ms SCell measurement cycle	Rel-17	C270	UEs supporting 5GS NR SA FR1 and CA (2DL CA) and fast SCell activation		2Rx 4Rx 8Rx	
6.5.3.11	NR SA FR1 fast SCell Activation of known SCell in non-DRX for 640ms SCell measurement cycle	Rel-17	C270	UEs supporting 5GS NR SA FR1 and CA (2DL CA) and fast SCell activation		2Rx 4Rx 8Rx	
6.5.3.15	NR SA FR1 TRS based SCell Activation of SSB-less SCell in FR1 inter-band CA in non-DRX	Rel-18	C244a	UEs supporting 5GS NR SA FR1 and CA (2DL CA) and direct SCell activation based on TRS	NOTE 1	2Rx 4Rx 8Rx	
6.5.3.16	NR SA FR1 Inter-band SSB-less SCell Activation based on A-TRS	Rel-18	C270a	UEs supporting 5GS NR SA FR1 and CA (2DL CA) and fast SCell activation based on A-TRS		2Rx 4Rx 8Rx	
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 8Rx	
6.5.5	Link recovery procedures						
6.5.5.1	NR SA FR1 SSB-based beam failure detection and link recovery in non-DRX	Rel-15	C084	UEs supporting 5GS NR SA FR1 and link recovery	Test execution not necessary if test 4.5.5.1 has been executed.	2Rx 4Rx 8Rx	
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 8Rx	

Clause	TC Title	Release	Applicability		Additional Information	Branch	Subtest Selection Criteria
			Condition	Comment			
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 8Rx	
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 8Rx	
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 8Rx	
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 8Rx	
6.5.5.7	NR SA FR1 PCell TRP Specific CSI-RS-based Beam Failure Detection and Link Recovery in DRX	Rel-17	C085b	UEs supporting TRP specific 5GS NR SA FR1 and long DRX cycle and CSI-RS-based RLM and link recovery		2Rx 4Rx 8Rx	
6.5.5.8	NR SA FR1 SSB-based beam failure detection and link recovery in non-DRX mode for a UE operating on a cell with 3 MHz BW	Rel-18	C343	UEs supporting 5GS NR SA FR1 and bandwidth of less than 5 MHz	NOTE 1	2Rx 4Rx 8Rx	
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 8Rx	
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 8Rx	
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 8Rx	
6.5.6.3	Simultaneous DCI-based and Timer-based Active BWP Switch on multiple CCs						

Clause	TC Title	Release	Applicability		Additional Information	Branch	Subtest Selection Criteria
			Condition	Comment			
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 8Rx	
6.5.6.4							
6.5.6.5	Simultaneous RRC-based Active BWP Switch on multiple CCs						
6.5.6.5.1	RRC based BWP switch on multiple CCs	Rel-16	C066d	UEs supporting 5GS NR SA FR1, incremental delay for DCI and timer based active BWP switching on multiple CCs and 2DL CA	NOTE 1	2Rx 4Rx 8Rx	
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 8Rx	
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 8Rx	
6.5.7A	NR SA FR1 DL interruptions at switching between two uplink carriers with two transmit antenna connectors						
6.5.7A.1	NR SA FR1 DL interruptions at switching between two uplink carriers in FDD-TDD CA	Rel-17	C051b	UEs supporting 5GS NR SA FR1 and Inter-band CA (2UL CA) and dynamic UL Tx switching		2Rx 4Rx 8Rx	
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 8Rx	
6.5.7B	DL interruptions at switching between one uplink band with one transmit antenna connector and one uplink band with two transmit antenna connectors						
6.5.7B.1	NR SA FR1 DL Interruptions at switching between two uplink bands in FDD-TDD CA	Rel-17	C051d	UEs supporting 5GS NR SA FR1 and Inter-band/intra-band CA (3UL CA) and dynamic UL Tx switching		2Rx 4Rx 8Rx	
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 8Rx	
6.5.7C	DL interruptions at switching between two uplink bands with two transmit antenna connectors						

Clause	TC Title	Release	Applicability		Additional Information	Branch	Subtest Selection Criteria
			Condition	Comment			
6.5.7C.1	NR SA FR1 DL interruptions at switching between two uplink bands with two transmit antenna connectors in FDD-TDD CA	Rel-17	C051f	UEs supporting 5GS NR SA FR1 and Inter-band/intra-band CA (3UL CA) and dynamic UL Tx switching		2Rx 4Rx 8Rx	
6.5.7C.2	NR SA FR1 DL interruptions at switching between two uplink bands with two transmit antenna connectors in TDD-TDD CA	Rel-17	C051g	UEs supporting 5GS NR SA FR1 and Inter-band/intra-band CA (3UL CA) and dynamic UL Tx switching		2Rx 4Rx 8Rx	
6.5.7D	DL interruptions at UE switching across three or four uplink bands						
6.5.7D.1	NR SA FR1 DL interruptions at switching across three uplink bands in TDD-TDD CA for single TAG	Rel-18	C338	UEs supporting 5GS NR SA FR1, inter-band UL CA (three bands), dynamic UL Tx switching across up to 4 bands and simultaneous transmission and reception in TDD-TDD inter-band NR CA		2Rx 4Rx 8Rx	
6.5.7D.2	NR SA FR1 DL interruptions at switching across four uplink bands in FDD-TDD CA for single TAG	Rel-18	C339	UEs supporting 5GS NR SA FR1, inter-band UL CA (four bands), dynamic UL Tx switching across up to 4 bands and simultaneous transmission and reception in FDD-TDD inter-band NR CA		2Rx 4Rx 8Rx	
6.5.7D.3	NR SA FR1 DL interruptions at switching across three uplink bands in FDD-TDD CA for two TAGs	Rel-18	C340	UEs supporting 5GS NR SA FR1, inter-band UL CA (three bands), dynamic UL Tx switching across up to 4 bands, simultaneous transmission and reception in FDD-TDD inter-band NR CA and at least two TAGs		2Rx 4Rx 8Rx	
6.5.7D.4	NR SA FR1 DL interruptions at switching across four uplink bands in TDD-TDD CA for two TAGs	Rel-18	C389	UEs supporting 5GS NR SA FR1, inter-band UL CA (four bands), dynamic UL Tx switching across up to 4 bands and simultaneous transmission and reception in TDD-TDD inter-band NR CA and at least two TAGs		2Rx 4Rx 8Rx	
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 8Rx	
6.5.13	Active TCI state switch delay						

Clause	TC Title	Release	Applicability		Additional Information	Branch	Subtest Selection Criteria
			Condition	Comment			
6.5.13.1	NR SA FR1 MAC-CE based joint TCI state switch for mDCI with two TA when RTD is larger than CP	Rel-18	C397	UEs supporting 5GS NR SA FR1 and unified TCI with joint DL/UL TCI update for multi-DCI based multi-TRP	NOTE 1	2Rx 4Rx 8Rx	
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 8Rx	
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 8Rx	
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 8Rx	
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 8Rx	
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 8Rx	
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 8Rx	
6.6.1.7	NR SA FR1 event-triggered reporting without gap in DRX for UE configured with highSpeedMeasFlag-r16	Rel-16	C052	UEs supporting 5GS NR SA FR1 and measurement enhancements in HST	Test execution not necessary if test 4.6.1.7 has been executed.	2Rx 4Rx 8Rx	
6.6.1.8	NR SA FR1 event triggered reporting without gap in DRX for UE configured with highSpeedMeasCA-Scell-r17	Rel-17	C052b	UEs supporting 5GS NR SA FR1 and CA measurement enhancements in HST	Test execution not necessary if test 4.6.1.8 has been executed.	2Rx 4Rx 8Rx	
6.6.1.9	NR SA FR1 event triggered reporting with MUSIM gap configured	Rel-18	C367	UEs supporting 5GS NR SA FR1 and providing MUSIM assistance information with MUSIM gap preference and related MUSIM gap configuration		2Rx 4Rx 8Rx	

Clause	TC Title	Release	Applicability		Additional Information	Branch	Subtest Selection Criteria
			Condition	Comment			
6.6.1.12	NR SA FR1 event triggered reporting with SSB index detection without measurement gap in non-DRX mode for UE operating with 12 PRB SSB bandwidth	Rel-18	C343	UEs supporting 5GS NR SA FR1 and bandwidth of less than 5 MHz		2Rx 4Rx 8Rx	
6.6.1.13	NR SA FR1 event triggered reporting tests without gap in DRX under Cell DTX	Rel-18	C001w	UEs supporting 5GS NR SA FR1 and long DRX cycle and Cell DTX operation		2Rx 4Rx 8Rx	
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 8Rx	
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 8Rx	
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 8Rx	
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 8Rx	
6.6.2.9	NR SA FR1-FR1 event triggered reporting tests with additional mandatory gap pattern	Rel-16	C001s	UEs supporting 5GS NR SA FR1 and <i>supportedGapPattern-NRonly-r16</i>		2Rx 4Rx 8Rx	
6.6.2.10	NR SA FR1-FR1 event triggered reporting tests for FR1 without gap when DRX is used	Rel-16	C287	UEs supporting 5GS NR SA FR1 and long DRX cycle and inter-frequency SSB based measurements without measurement gaps		2Rx 4Rx 8Rx	
6.6.2.11	NR SA FR1-FR1 event triggered reporting tests for FR1 without gap when DRX is not used	Rel-16	C286	UEs supporting 5GS NR SA FR1 and inter-frequency SSB based measurements without measurement gaps		2Rx 4Rx 8Rx	
6.6.2.12	NR SA FR1-FR1 event triggered reporting tests without SSB time index detection in DRX for UE configured with highSpeedMeasInterFreq-r17	Rel-17	C052c	UEs supporting 5GS NR SA FR1 and inter-freq measurement enhancements in HST	Test execution not necessary if test 4.6.2.9 has been executed.	2Rx 4Rx 8Rx	Subtest 2: F016

Clause	TC Title	Release	Applicability		Additional Information	Branch	Subtest Selection Criteria
			Condition	Comment			
6.6.2.13	NR SA FR1-FR1 event triggered reporting using MUSIM gap with lower and higher priority	Rel-18	C367	UEs supporting 5GS NR SA FR1 and providing MUSIM assistance information with MUSIM gap preference and related MUSIM gap configuration		2Rx 4Rx 8Rx	
6.6.2.14	NR SA FR1-FR1 event triggered reporting using MUSIM gap with shorter MGRP	Rel-18	C367	UEs supporting 5GS NR SA FR1 and providing MUSIM assistance information with MUSIM gap preference and related MUSIM gap configuration		2Rx 4Rx 8Rx	
6.6.2.15	NR SA FR1 event triggered reporting without SSB index detection in DRX mode for UE operating on a cell with less than 5MHz BW	Rel-18	C386	UEs supporting 5GS NR SA FR1 and long DRX cycle and bandwidth of less than 5 MHz		2Rx 4Rx 8Rx	
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 8Rx	
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 8Rx	
6.6.3.3	NR SA FR1 – E-UTRAN event-triggered reporting in DRX for UE configured with highSpeedMeasFlag-r16	Rel-16	C025c	UEs supporting 5GS NR SA FR1 and E-UTRAN, long DRX cycle and E-UTRA inter-RAT measurement enhancements in HST		2Rx 4Rx 8Rx	
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 8Rx	
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 8Rx	
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 8Rx	
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 8Rx	

Clause	TC Title	Release	Applicability		Additional Information	Branch	Subtest Selection Criteria
			Condition	Comment			
6.6.4.5	NR SA FR1 SSB-based L1-RSRP measurement in DRX for UE configured with highSpeedMeasFlag-r16	Rel-16	C001f	UEs supporting 5GS NR SA FR1, long DRX cycle and intra-NR measurement enhancements in HST	Test execution not necessary if test 4.6.4.5 has been executed.	2Rx 4Rx 8Rx	
6.6.4.6	NR SA FR1 Inter-cell SSB based L1-RSRP measurements on PCell in DRX	Rel-17	C278	UEs supporting 5GS NR SA FR1 Inter-cell SSB based L1-RSRP measurements on PCell in DRX		2Rx 4Rx 8Rx	
6.6.5	UTRAN inter-RAT measurement						
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 8Rx	
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 8Rx	
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 8Rx	
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 8Rx	
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		2Rx 4Rx 8Rx	
6.6.9.2	NR SA FR1 Idle mode fast CA/DC eEMR measurement	Rel-18	C031e	UEs supporting 5GS NR SA FR1 and CA (2DL CA) and NR SSB measurements in RRC_IDLE/RRC_INACTIVE and measurement validation and report based on EMR measurement during connection setup/resume for fast CA/DC setup		2Rx 4Rx 8Rx	

Clause	TC Title	Release	Applicability		Additional Information	Branch	Subtest Selection Criteria
			Condition	Comment			
6.6.9.3	NR SA FR1 Idle mode fast CA/DC cell reselection measurement without valid reporting	Rel-18	C031f	UEs supporting 5GS NR SA FR1 and CA (2DL CA) and measurement validation based on reselection measurements during IDLE/INACTIVE state and reporting for fast CA/DC setup		2Rx 4Rx 8Rx	
6.6.9.4	NR SA FR1 Idle mode fast CA/DC cell reselection measurement with valid reporting	Rel-18	C031f	UEs supporting 5GS NR SA FR1 and CA (2DL CA) and measurement validation based on reselection measurements during IDLE/INACTIVE state and reporting for fast CA/DC setup		2Rx 4Rx 8Rx	
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		2Rx 4Rx 8Rx	
6.6.17	SA event triggered reporting tests with Pre-MG						
6.6.17.1	NR SA FR1 event triggered reporting tests with autonomous activation/deactivation Pre-MG	Rel-17	C259	UEs supporting 5GS NR SA FR1, BWP adaptation of at least 2 BWPs, BWP operation without bandwidth restriction, DCI and timer-based active BWP switching delay Type1 or Type2, CSI-RS-based RLM and preconfiguredUE-AutonomousMeasGap-r17		2Rx 4Rx 8Rx	
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 8Rx	
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 8Rx	

Clause	TC Title	Release	Applicability		Additional Information	Branch	Subtest Selection Criteria
			Condition	Comment			
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 8Rx	
6.6.18.3	NR SA FR1 NR - E-UTRAN and NR FR1 concurrent event-triggered reporting in non-DRX in FR1	Rel-17	C265	UEs supporting 5GS NR SA FR1 and E-UTRA and more than 1 per-UE measurement gap configurations and the configurations of E-UTRAN measurement objectives associated with more than 1 concurrent measurement gaps		2Rx 4Rx 8Rx	
6.6.18.4	NR SA FR1 event triggered reporting tests for PRS and SSB measurement in FR1 without SSB time index detection when DRX is not used	Rel-17	C266	UEs supporting 5GS NR SA FR1 and more than 1 per-UE measurement gap configurations and two independent measurement gap configurations for FR1 and FR2 for PRS measurement		2Rx 4Rx 8Rx	
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		2Rx 4Rx 8Rx	Subtest 2: F024
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		2Rx 4Rx 8Rx	Subtest 2: F024
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 8Rx	
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 8Rx	
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 4Rx 8Rx	

Clause	TC Title	Release	Applicability		Additional Information	Branch	Subtest Selection Criteria
			Condition	Comment			
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 4Rx 8Rx	
6.6.22	SA event triggered reporting tests with concurrent gaps including Pre-MG						
6.6.22.1	NR SA FR1 and FR1-FR1 event-triggered reporting with concurrent Type-2 measurement gap and Pre-MG	Rel-18	C404	UEs supporting 5GS NR SA FR1 and concurrent measurement gap patterns with at least one Pre-MG	NOTE 1	2Rx 4Rx 8Rx	
6.6.22.2	NR SA FR1 event-triggered reporting with two concurrent Pre-MGs	Rel-18	C404	UEs supporting 5GS NR SA FR1 and concurrent measurement gap patterns with at least one Pre-MG	NOTE 1	2Rx 4Rx 8Rx	
6.6.23	SA event triggered reporting tests with concurrent gaps including NCSG						
6.6.23.1	NR SA FR1-FR1 event-triggered reporting with concurrent Type-2 measurement gap and NCSG	Rel-18	C405	UEs supporting 5GS NR SA FR1 and concurrent measurement gap patterns with at least one NCSG	NOTE 1	2Rx 4Rx 8Rx	
6.6.23.2	NR SA FR1-FR1 event-triggered reporting with two concurrent NCSGs	Rel-18	C405	UEs supporting 5GS NR SA FR1 and concurrent measurement gap patterns with at least one NCSG	NOTE 1	2Rx 4Rx 8Rx	
6.6.23.3	NR SA FR1 and FR1-FR1 event triggered reporting with concurrent Type-2 measurement gap and NCSG	Rel-18	C406	UEs supporting 5GS NR SA FR1, 2DL CA and concurrent measurement gap patterns with at least one NCSG	NOTE 1	2Rx 4Rx 8Rx	
6.6.24	SA event triggered reporting tests with NeedForGap						
6.6.24.1	NR SA FR1 event-triggered reporting without gap with interruptions	Rel-18	C391	UEs supporting 5GS NR SA FR1, CSI-RS-based RLM and BWP operation without bandwidth restriction, reporting the measurement gap requirements for NR target and reporting the interruption requirement information for SSB based measurement towards NR target without gap		2Rx 4Rx 8Rx	

Clause	TC Title	Release	Applicability		Additional Information	Branch	Subtest Selection Criteria
			Condition	Comment			
6.6.24.2	NR SA FR1-FR1 event-triggered reporting without gap with interruption with SSB index reading	Rel-18	C392	UEs supporting 5GS NR SA FR1, reporting the measurement gap requirements for NR target and reporting the interruption requirement information for SSB based measurement towards NR target without gap		2Rx 4Rx 8Rx	
6.6.24.3	NR SA FR1-FR1 event-triggered reporting without gap with interruption	Rel-18	C392	UEs supporting 5GS NR SA FR1, reporting the measurement gap requirements for NR target and reporting the interruption requirement information for SSB based measurement towards NR target without gap		2Rx 4Rx 8Rx	
6.6.24.4	NR SA FR1-FR1 event-triggered reporting without gap without interruption	Rel-18	C392	UEs supporting 5GS NR SA FR1, reporting the measurement gap requirements for NR target and reporting the interruption requirement information for SSB based measurement towards NR target without gap		2Rx 4Rx 8Rx	
6.6.24.5	NR SA FR1 event-triggered reporting without gap without interruption	Rel-18	C391	UEs supporting 5GS NR SA FR1, CSI-RS-based RLM and BWP operation without bandwidth restriction, reporting the measurement gap requirements for NR target and reporting the interruption requirement information for SSB based measurement towards NR target without gap		2Rx 4Rx 8Rx	
6.6.25	SA NR - E-UTRAN event-triggered without measurement gaps						
6.6.25.1	NR SA FR1 - E-UTRAN event-triggered reporting without gap without interruption	Rel-18	FFS	FFS	NOTE 1	2Rx 4Rx 8Rx	
6.6.25.2	NR SA FR1 - E-UTRAN event-triggered reporting without interruption outside gap	Rel-18	FFS	FFS	NOTE 1	2Rx 4Rx 8Rx	
6.6.25.3	NR SA FR1 - E-UTRAN event-triggered reporting without gap when CRS contained within active DL BWP	Rel-18	FFS	FFS	NOTE 1	2Rx 4Rx 8Rx	
6.6.26	LTM Intra-frequency L1-RSRP measurement						

Clause	TC Title	Release	Applicability		Additional Information	Branch	Subtest Selection Criteria
			Condition	Comment			
6.6.26.1	NR SA FR1 SSB based L1-RSRP measurement	Rel-18	C359	UEs supporting 5GS NR SA FR1, intra-frequency L1- RSRP measurement and reporting based on SSB(s) of candidate cell(s)		2Rx 4Rx 8Rx	Subtest 2: F029
6.6.27	LTM Inter-frequency L1-RSRP measurement with measurement gap						
6.6.27.1	NR SA FR1-FR1 SSB based L1-RSRP measurement with measurement gap	Rel-18	C360	UEs supporting 5GS NR SA FR1, inter-frequency L1- RSRP measurement and reporting based on SSB(s) of candidate cell(s)		2Rx 4Rx 8Rx	
6.6.28	LTM Inter-frequency L1-RSRP measurement without measurement gap						
6.6.28.1	NR SA FR1-FR1 SSB based L1-RSRP measurement without measurement gap	Rel-18	C361	UEs supporting 5GS NR SA FR1, SSB based inter-frequency L1- RSRP measurements on SSBs within active DL BWP without measurement gaps for LTM		2Rx 4Rx 8Rx	Subtest 2: F029
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 8Rx	
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 8Rx	
6.7.1.2	Inter-frequency measurements						
6.7.1.2.1	NR SA FR1-FR1 SS-RSRP absolute measurement accuracy	Rel-15	C001	UEs supporting 5GS NR SA FR1	Test execution not necessary if test 4.7.1.2.1 has been executed.	2Rx 4Rx 8Rx	
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 8Rx	
6.7.2	SS-RSRQ						

Clause	TC Title	Release	Applicability		Additional Information	Branch	Subtest Selection Criteria
			Condition	Comment			
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 8Rx	
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 8Rx	
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 8Rx	
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 8Rx	
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 8Rx	
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 8Rx	
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 8Rx	
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 8Rx	
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 8Rx	
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 8Rx	
6.7.5	E-UTRAN RSRP						

Clause	TC Title	Release	Applicability		Additional Information	Branch	Subtest Selection Criteria
			Condition	Comment			
6.7.5.1	NR SA FR1 – E-UTRAN RSRP absolute measurement accuracy	Rel-15	C001	UEs supporting 5GS NR SA FR1		2Rx 4Rx 8Rx	
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 8Rx	
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 8Rx	
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 8Rx	
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 8Rx	
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 8Rx	
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 8Rx	
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 8Rx	
6.7.17	LTM L1-RSRP measurement						
6.7.17.1.1	NR SA FR1-FR1 L1-RSRP absolute accuracy requirements for neighbour cell	Rel-18	C360	UEs supporting 5GS NR SA FR1, inter-frequency L1- RSRP measurement and reporting based on SSB(s) of candidate cell(s)		2Rx 4Rx 8Rx	

NOTE 1: The test case/branch is incomplete for any Band/CA/DC Configuration but has basic test configurations already. NOTE 1 can be removed only when the test case/branch is complete for at least one Band / CA/DC Configuration for at least one feature included in the test case/branch. Detailed completion status can be found in the corresponding test case section in 38.533.

NOTE 2: Test X refers to the corresponding Sub-Test as defined in TS 38.533 [5].

NOTE 3: Test cases in TS 38.533 [5] clause 6 only apply to FR1 non-RedCap UEs. For FR1 RedCap UEs, Test cases in TS 38.533 [5] clause 16 apply.

Table 4.2-3a: Void

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

Clause	TC Title	Release	Applicability		Additional Information	Branch	Test Selection Criteria
			Condition	Comment			
7.1	RRC_IDLE state mobility						
7.1.1	NR cell re-selection						
7.1.1.1	NR SA FR2 cell re-selection	Rel-15	C006	UEs supporting 5GS NR SA FR2		PC1 PC3	
7.1.1.2	NR SA FR2-FR2 cell re-selection	FFS	FFS	FFS		PC1(NOTE 1) PC3(NOTE 1)	
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		PC1(NOTE 1) PC3	
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		PC1(NOTE 1) PC3	
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		PC1(NOTE 1) PC3	
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		PC1(NOTE 1) PC3	
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		PC1(NOTE 1) PC3(NOTE 1)	
7.1.1.8	NR SA FR2 inter-frequency cell re-selection for power class 6 UE configured with <i>highSpeedMeasFlagFR2-r17</i>	Rel-18	C345	UEs supporting 5GS NR SA FR2 and inter-frequency RRC_IDLE measurements in HST		PC1(NOTE 1) PC3(NOTE 1)	
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		PC1(NOTE 1) PC3(NOTE 1)	
7.3	RRC_CONNECTED state mobility						
7.3.1	Handover						
7.3.1.4	NR SA FR1-FR2 synchronous DAPS handover	Rel-16	N/A	Not recommended due to FR1 – FR2 testability issue		PC1(NOTE 1) PC3(NOTE 1)	
7.3.1.5	NR SA FR1-FR2 asynchronous DAPS handover	Rel-16	N/A	Not recommended due to FR1 – FR2 testability issue		PC1(NOTE 1) PC3(NOTE 1)	
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		PC1(NOTE 1) PC3	
7.3.2.1.2	NR SA FR2 - FR2 RRC re-establishment	Rel-15	C006	UEs supporting 5GS NR SA FR2		PC1(NOTE 1) PC3	
7.3.2.1.3	NR SA FR2 RRC re-establishment without serving cell timing	Rel-15	C006	UEs supporting 5GS NR SA FR2		PC1(NOTE 1) PC3	
7.3.2.2	Random access						
7.3.2.2.1	NR SA FR2 contention based random access	Rel-15	C006	UEs supporting 5GS NR SA FR2		PC1 PC3	
7.3.2.2.2	NR SA FR2 non-contention based random access	Rel-15	C006	UEs supporting 5GS NR SA FR2		PC1 PC3	Subtest 2: F007

Clause	TC Title	Release	Applicability		Additional Information	Branch	Test Selection Criteria
			Condition	Comment			
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		PC1(NOTE 1) PC3(NOTE 1)	
7.3.2.3	RRC connection release with redirection						
7.3.2.3.1	NR SA FR2-FR2 RRC connection release with redirection	FFS	FFS	FFS		PC1(NOTE 1) PC3(NOTE 1)	
7.3.2.4	LTM PDCCH-order Random Access						
7.3.2.4.1	NR SA FR2 PDCCH-order RACH on neighbor cell when RACH BW is within active BWP	Rel-18	C364a	UEs supporting 5GS NR SA FR1, intra-frequency LTM for MCG with RACH, unified TCI with joint DL/UL LTM TCI-state indication for LTM procedure, intra-frequency L1-RSRP measurement and reporting based on SSB(s) of candidate cell(s)002E	NOTE 1	PC1(NOTE 1) PC3(NOTE 1)	Test 2: FFS
7.3.2.4.2	NR SA FR2 PDCCH-order RACH on inter-frequency neighbor cell	Rel-18	C386a	UEs supporting 5GS NR SA FR1, inter-frequency LTM for MCG with RACH, inter-frequency L1-RSRP measurement and reporting based on SSB(s) of candidate cell(s), interruptions caused by PDCCH order and Support simultaneous transmission to handle the overlap between UL transmission on serving cell(s) and PRACH on candidate cell(s)	NOTE 1	PC1(NOTE 1) PC3(NOTE 1)	
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		PC1(NOTE 1) PC3	
7.3.3.2	NR SA FR2-FR2 conditional handover	Rel-16	C106	UEs supporting 5GS NR SA FR2 and conditional handover		PC1(NOTE 1) PC3(NOTE 1)	
7.3.3.3	NR SA FR2 intra-frequency NES triggering conditional handover	Rel-18	C106a	UEs supporting 5GS NR SA FR2 and NES triggered conditional handover		PC1(NOTE 1) PC3	
7.3.3.4	NR SA FR2-FR1 inter-frequency NES triggering conditional handover	Rel-18	N/A	Not recommended due to FR1 – FR2 testability issue	NOTE 1		
7.3.4	LTM PCell Switch						
7.3.4.1	NR SA FR2 RACH based PCell switch from FR2 to FR2	Rel-18	C381	UEs supporting 5GS NR SA FR2, intra-frequency LTM for MCG with RACH, intra-frequency L1-RSRP measurement and reporting based on SSB(s) of candidate cell(s)		PC1(NOTE 1) PC3	Test 1A: F051 Test 1B: F031 Test 2A: F032 Test 2B: F033

Clause	TC Title	Release	Applicability		Additional Information	Branch	Test Selection Criteria
			Condition	Comment			
7.3.4.2	NR SA FR2 RACH-less PCell switch from FR2 to FR2	Rel-18	C382	UEs supporting 5GS NR SA FR2, intra-frequency LTM for MCG with RACH, RACH-less LTM with dynamic grant, TA indication in cell switch command and intra-frequency L1-RSRP measurement and reporting based on SSB(s) of candidate cell(s)		PC1(NOTE 1) PC3	Test 1A: F051 Test 1B: F031 Test 2A: F032 Test 2B: F033
7.3.4.3	NR SA FR2-FR2 RACH-based LTM PCell switch from FR2 to FR2	Rel-18	C383	UEs supporting 5GS NR SA FR2, inter-frequency LTM for MCG with RACH without NR-DC configuration, inter-frequency L1-RSRP measurement and reporting with measurement gaps based on SSB(s) of candidate cell(s)		PC1(NOTE 1) PC3	Test 1A: F051 Test 1B: F031 Test 2A: F032 Test 2B: F033
7.3.5	LTM PSCell Switch						
7.3.5.1	NR SA FR2 RACH-based Intra-frequency LTM PSCell switch	Rel-18	FFS		NOTE 1		
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		PC1 PC3	Subtest 2: F008
7.4.1.3	NR SA FR2 UE Transmit Timing Test with 2-TA for UE supporting <i>multiDCI-IntraCellMultiTRP-TwoTA-r18</i>	Rel-18	C349	UEs supporting 5GS NR SA FR2 and 2 TAGs for multi-DCI multi-TRP operation		PC1(NOTE 1) PC3(NOTE 1)	
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		PC1 PC3	
7.5	Signalling characteristics						
7.5.1	Radio Link Monitoring						
7.5.1.1	Radio Link Monitoring Out-of-sync Test for FR2 PCell configured with SSB-based RLM RS in non-DRX mode	Rel-15	C006	UEs supporting 5GS NR SA FR2		PC1(NOTE 1) PC3	
7.5.1.2	Radio Link Monitoring In-sync Test for FR2 PCell configured with SSB-based RLM RS in non-DRX mode	Rel-15	C006	UEs supporting 5GS NR SA FR2		PC1(NOTE 1) PC3	
7.5.1.3	Radio Link Monitoring Out-of-sync Test for FR2 PCell configured with SSB-based RLM RS in DRX mode	Rel-15	C006a	UEs supporting 5GS NR SA FR2 and long DRX cycle		PC1(NOTE 1) PC3	
7.5.1.4	Radio Link Monitoring In-sync Test for FR2 PCell configured with SSB-based RLM RS in DRX mode	Rel-15	C006a	UEs supporting 5GS NR SA FR2 and long DRX cycle		PC1(NOTE 1) PC3	

Clause	TC Title	Release	Applicability		Additional Information	Branch	Test Selection Criteria
			Condition	Comment			
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		PC1(NOTE 1) PC3(NOTE 1)	
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		PC1(NOTE 1) PC3(NOTE 1)	
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		PC1(NOTE 1) PC3	
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		PC1(NOTE 1) PC3	
7.5.1.9	NR SA FR2 radio link monitoring UE scheduling restrictions	Rel-15	C006n	UEs supporting 5GS NR SA FR2 and PDCCH monitoring in any symbol of the slot (with or without span gap)		PC1(NOTE 1) PC3	
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		PC1(NOTE 1) PC3	
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		PC1(NOTE 1) PC3(NOTE 1)	
7.5.3.2	NR SA FR1-FR2 inter-band SCell activation and deactivation delay	Rel-15	N/A	Not recommended due to FR1 – FR2 testability issue		PC1(NOTE 1) PC3(NOTE 1)	
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		PC1(NOTE 1) PC3	
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		PC1(NOTE 1) PC3	
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		PC1(NOTE 1) PC3	
7.5.3.13	NR SA FR2 SCell Activation for SCell in FR2 intra-band in non-DRX	Rel-17	C271	UEs supporting 5GS NR SA intra-band FR2 and 2DL CA in NR and fast SCell activation		PC1(NOTE 1) PC3	
7.5.3.14	NR SA FR2 SCell Activation for known SCell in FR2 inter-band	Rel-17	C271a	UEs supporting 5GS NR SA inter-band FR2 and 2DL CA in NR and fast SCell activation		PC1(NOTE 1) PC3(NOTE 1)	
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		PC1(NOTE 1) PC3	
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		PC1(NOTE 1) PC3	

Clause	TC Title	Release	Applicability		Additional Information	Branch	Test Selection Criteria
			Condition	Comment			
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		PC1(NOTE 1) PC3	
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		PC1(NOTE 1) PC3	
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		PC1(NOTE 1) PC3	
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		PC1(NOTE 1) PC3	
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		PC1(NOTE 1) PC3	
7.5.5.9	NR SA FR2 SCell TRP specific CSI-RS-based Beam Failure Detection and Link Recovery in DRX	Rel-17	C148a	UEs supporting 5GS NR TRP specific SA FR2 and long DRX cycle and CSI-RS based BFR on Scell		PC1(NOTE 1) PC3	
7.5.5.10	NR SA FR2 PCell TRP specific SSB-based Beam Failure Detection and Link Recovery in non-DRX	Rel-17	C006x	UEs supporting 5GS NR TRP specific SA FR2 SSB based BFR		PC1(NOTE 1) PC3	
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		PC1(NOTE 1) PC3(NOTE 1)	
7.5.6.1.2	NR SA FR1-FR2 DCI-based DL active BWP switch in non-DRX	Rel-15	N/A	Not recommended due to FR1 – FR2 testability issue		PC1(NOTE 1) PC3(NOTE 1)	
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		PC1(NOTE 1) PC3(NOTE 1)	
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		PC1(NOTE 1) PC3(NOTE 1)	
7.5.7	PSCell addition and release delay						
7.5.7.1	NR SA FR2 addition and release delay of known PSCell	Rel-15	N/A	Not recommended due to FR1 – FR2 testability issue		PC1(NOTE 1) PC3(NOTE 1)	
7.5.7.2	NR SA FR2 addition and release delay of unknown PSCell	Rel-15	N/A	Not recommended due to FR1 – FR2 testability issue		PC1(NOTE 1) PC3(NOTE 1)	
7.5.8	Active TCI state switch delay						
7.5.8.1	NR SA FR2 MAC-CE based active TCI state switch						
7.5.8.1.1	NR SA PCell FR2 MAC-CE based active TCI state switch for a known TCI state	Rel-15	C006m	UEs supporting 5GS NR SA FR2, maximum number of active TCI states per BWP greater than 1, and maximum number of simultaneously trackable TRS resource sets per CC greater than 1		PC1(NOTE 1) PC3	
7.5.8.2	NR SA FR2 RRC based active TCI state switch						

Clause	TC Title	Release	Applicability		Additional Information	Branch	Test Selection Criteria
			Condition	Comment			
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		PC1(NOTE 1) PC3	
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		PC1(NOTE 1) PC3(NOTE 1)	
7.5.8.3.2	NR SA FR2 HST active TCI state switch for PC6 UE supporting tci-StateSwitchInd-r18 a known TCI state	Rel-18	C345a	UEs supporting 5GS NR SA FR2 and enhanced one-shot large UL timing adjustment and enhanced TCI state switching delay requirements in HST		PC1(NOTE 1) PC3(NOTE 1)	
7.5.8.4	NR SA FR2 DCI based active TCI state switch with m-DCI for simultaneous reception	Rel-18	C379	UEs supporting 5GS NR SA FR2, maximum number of active TCI states per BWP and maximum number of simultaneously TRS resource sets per CC greater than 1, and group based beam reporting	NOTE 1		
7.5.8.5	NR SA FR2 Single-DCI based active TCI state switch with known target TCI states for simultaneous reception	Rel-18	C380	UEs supporting 5GS NR SA FR2, maximum number of active TCI states per BWP and maximum number of simultaneously TRS resource sets per CC greater than 1, group based beam reporting	NOTE 1		
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		PC1(NOTE 1) PC3	
7.5.12	Conditional PSCell addition and release delay (FR2 SA)						
7.5.12.1	NR SA FR2 Addition and Release Delay of PSCell	Rel-17	C268b	UEs supporting Inter-band NR-DC between FR1 and FR2 and conditional PSCell addition in NR-DC		PC1(NOTE 1) PC3	
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		PC1(NOTE 1) PC3	
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		PC1(NOTE 1) PC3	

Clause	TC Title	Release	Applicability		Additional Information	Branch	Test Selection Criteria
			Condition	Comment			
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		PC1(NOTE 1) PC3	
7.5.13.4	sDCI MAC-CE based joint TCI state switching						
7.5.13.4.1	NR SA FR2 PCell dual downlink and uplink TCI state switch in sDCI for known case	Rel-18	C398	UEs supporting 5GS NR SA FR2, and unified TCI with joint DL/UL TCI update and not supporting separate DL/UL TCI update for single-DCI based intra-cell multi-TRP		PC1(NOTE 1) PC3(NOTE 1)	
7.5.13.5	MAC-CE based dual downlink TCI state switching delay for unified TCI for single-DCI mTRP						
7.5.13.5.1	NR SA FR2 PCell dual downlink TCI state switch in sDCI for known case	Rel-18	C399	UEs supporting 5GS NR SA FR2, and unified TCI with separate DL/UL TCI update for single-DCI based intra-cell multi-TRP		PC1(NOTE 1) PC3(NOTE 1)	
7.5.13.6.1	NR SA FR2 MAC-CE based active uplink TCI state switch for two known TCI states	Rel-18	C348	UEs supporting 5GS NR SA FR2, and unified TCI state operation with separate DL/UL TCI update for intra-cell beam management with multi-TRP		PC1(NOTE 1) PC3(NOTE 1)	
7.5.14	PSCell activation and deactivation delay						
7.5.14.1	NR SA FR2 PSCell RACH-less based Activation and deactivation for FR1+FR2 inter-band with target PSCell in FR2	Rel-17	C284	UEs supporting Inter-band NR-DC between FR1 and FR2 and activation and deactivation on SCG in NR-DC			
7.6	Measurement procedures						
7.6.1	Intra-frequency measurements						
7.6.1.1	NR SA FR2 event-triggered reporting without gap in non-DRX	Rel-15	C006	UEs supporting 5GS NR SA FR2		PC1 PC3	
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		PC1 PC3	
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		PC1 PC3	
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		PC1 PC3	

Clause	TC Title	Release	Applicability		Additional Information	Branch	Test Selection Criteria
			Condition	Comment			
7.6.1.5	NR SA FR2 event-triggered reporting without gap in non-DRX for UE configured with <i>highSpeedMeasFlagFR2-r17</i>	Rel-17	C240	UEs supporting 5GS NR SA FR2 and intra-frequency measurements in HST		PC1(NOTE 1) PC3(NOTE 1)	
7.6.2	Inter-frequency measurements						
7.6.2.1	NR SA FR2-FR2 event-triggered reporting in non-DRX	Rel-15	C006r	UEs supporting 5GS NR SA FR2 and supportedGapPattern with gap pattern 13		PC1(NOTE 1) PC3	
7.6.2.2	NR SA FR2-FR2 event-triggered reporting in DRX	Rel-15	C006s	UEs supporting 5GS NR SA FR2 and supportedGapPattern with gap pattern 13 and long DRX cycle		PC1(NOTE 1) PC3	
7.6.2.3	NR SA FR2-FR2 event-triggered reporting in non-DRX with SSB time index detection	Rel-15	C006r	UEs supporting 5GS NR SA FR2 and supportedGapPattern with gap pattern 13		PC1(NOTE 1) PC3	
7.6.2.4	NR SA FR2-FR2 event-triggered reporting in DRX with SSB time index detection	Rel-15	C006s	UEs supporting 5GS NR SA FR2 and supportedGapPattern with gap pattern 13 and long DRX cycle		PC1(NOTE 1) PC3	
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		PC1(NOTE 1) PC3(NOTE 1)	
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		PC1(NOTE 1) PC3(NOTE 1)	
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		PC1(NOTE 1) PC3(NOTE 1)	
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		PC1(NOTE 1) PC3(NOTE 1)	
7.6.2.10	SA FR2-FR2 event triggered reporting test without gap under non-DRX	Rel-16	C334	UEs supporting 5GS NR SA FR2 and inter-frequency SSB based measurements without measurement gaps		PC1(NOTE 1) PC3	
7.6.2.11	SA FR2-FR2 event triggered reporting test without gap under DRX	Rel-16	C335	UEs supporting 5GS NR SA FR2 and long DRX cycle and inter-frequency SSB based measurements without measurement gaps		PC1(NOTE 1) PC3	
7.6.2.20	NR SA FR2-FR2 event triggered reporting using MUSIM gap with higher priority	Rel-18	C351b	UEs supporting 5GS NR SA FR2 and providing MUSIM assistance information with MUSIM gap preference and related MUSIM gap configuration		PC1 PC3(NOTE 1)	
7.6.2.21	NR SA FR2-FR2 event triggered reporting using MUSIM gap with shorter MGRP	Rel-18	C351b	UEs supporting 5GS NR SA FR2 and providing MUSIM assistance information with MUSIM gap preference and related MUSIM gap configuration		PC1(NOTE 1) PC3	
7.6.3	L1-RSRP for beam reporting						

Clause	TC Title	Release	Applicability		Additional Information	Branch	Test Selection Criteria
			Condition	Comment			
7.6.3.1	NR SA FR2 SSB-based L1-RSRP measurement in non-DRX	Rel-15	C006	UEs supporting 5GS NR SA FR2		PC1(NOTE 1) PC3	
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		PC1(NOTE 1) PC3	
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		PC1(NOTE 1) PC3	
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		PC1(NOTE 1) PC3	
7.6.3.5	NR SA FR2 SSB based L1-RSRP measurement test when DRX is used for power class 6 UE configured with <i>highSpeedMeasFlagFR2-r17</i>	Rel-17	C240	power class 6 UEs supporting 5GS NR SA FR2 configured and HST intra-frequency measurements		PC1(NOTE 1) PC3(NOTE 1)	
7.6.3.6	NR SA FR2 Inter-cell SSB based L1-RSRP measurements on FR2 SCell when DRX is not used	Rel-17	C006p	UEs supporting 5GS NR SA FR2 and Inter-band CA (2UL CA)		PC1(NOTE 1) PC3	
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		PC1(NOTE 1) PC3	
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		PC1(NOTE 1) PC3	
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		PC1(NOTE 1) PC3	
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		PC1(NOTE 1) PC3	
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		PC1(NOTE 1) PC3	
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		PC1(NOTE 1) PC3(NOTE 1)	
7.6.14	SA event triggered reporting tests with Pre-MG						
7.6.14.1	NR SA FR2 event triggered reporting tests with pre-configured measurement gaps and autonomous activation/deactivation	Rel-17	C290	UEs supporting 5GS NR SA FR2, BWP adaptation of at least 2 BWPs, BWP operation without bandwidth restriction, DCI and timer-based active BWP switching delay Type1 or Type2, CSI-RS-based RLM and preconfiguredUE-AutonomousMeasGap-r17		PC1(NOTE 1) PC3(NOTE 1)	

Clause	TC Title	Release	Applicability		Additional Information	Branch	Test Selection Criteria
			Condition	Comment			
7.6.14.2	NR SA FR2 event triggered reporting tests with pre-configured measurement gaps and network-controlled activation/deactivation	Rel-17	C291	UEs supporting 5GS NR SA FR2, BWP adaptation of at least 2 BWPs, BWP operation without bandwidth restriction, DCI and timer-based active BWP switching delay Type1 or Type2, CSI-RS-based RLM and preconfiguredNW-ControlledMeasGap-r17		PC1(NOTE 1) PC3(NOTE 1)	
7.6.15	SA event triggered reporting tests with concurrent gaps						
7.6.15.1	NR SA FR2 event triggered reporting tests with fully non-overlapping concurrent MGs for SSB-based inter-frequency measurements	Rel-17	C292	UEs supporting 5GS NR SA FR2 and more than 1 per-UE measurement gap configurations		PC1(NOTE 1) PC3(NOTE 1)	
7.6.15.2	NR SA FR2 event triggered reporting tests with concurrent measurement gaps without SSB time index detection when DRX is not used (PCell in FR2)	Rel-17	C292	UEs supporting 5GS NR SA FR2 and more than 1 per-UE measurement gap configurations		PC1(NOTE 1) PC3(NOTE 1)	
7.6.15.3	NR SA FR2 event triggered reporting tests with concurrent measurement gaps with partially partial overlapping scenario for SSB-based measurements and PRS-based measurement	Rel-17	C293	UEs supporting 5GS NR SA FR2 and more than 1 per-UE measurement gap configurations and two independent measurement gap configurations for FR1 and FR2 for PRS measurement		PC1(NOTE 1) PC3(NOTE 1)	
7.6.16	SA event triggered reporting tests with NCSG						
7.6.16.1	NR SA FR2 event triggered reporting tests with per-UE NCSG under non-DRX	Rel-17	C294	UEs supporting 5GS NR SA FR2, CSI-RS-based RLM, BWP operation without bandwidth restriction, per-FR NCSG, reporting of NCSG requirement information and NR only NCSG patterns		PC1(NOTE 1) PC3(NOTE 1)	
7.6.16.2	NR SA FR2 event triggered reporting tests on inter-frequency measurement with NCSG when DRX is not used (PCell in FR2)	Rel-17	C295	UEs supporting 5GS NR SA FR2, reporting of NCSG requirement information and NR only NCSG patterns but not supporting ncsg-MeasGapPerFR-r17		For sub-test 1: PC1(NOTE 1) PC3(NOTE 1)	
			C296	UEs supporting 5GS NR SA FR2, per-FR NCSG, reporting of NCSG requirement information and NR only NCSG patterns		For sub-test 2: PC1(NOTE 1) PC3(NOTE 1)	
7.6.16.3	NR SA FR2 event triggered reporting tests on deactivated SCell measurement via NCSG in non-DRX	Rel-17	C297	UEs supporting 5GS NR SA FR2, CA (2DL CA), reporting of NCSG requirement information and NR only NCSG patterns		PC1(NOTE 1) PC3(NOTE 1)	
7.6.17	SA event triggered reporting tests for concurrent measurement gaps with Pre-MG in FR2						

Clause	TC Title	Release	Applicability		Additional Information	Branch	Test Selection Criteria
			Condition	Comment			
7.6.17.1	NR SA FR2 and FR2-FR2 event-triggered reporting with concurrent Type-2 measurement gap and Pre-MG	Rel-18	FFS	FFS	NOTE 1		
7.6.17.2	NR SA FR2-FR2 event-triggered reporting with two concurrent Pre-MGs	Rel-18	FFS	FFS	NOTE 1		
7.6.18	SA event triggered reporting tests with concurrent gaps and NCSG						
7.6.18.1	NR SA FR2 event-triggered reporting with concurrent Type-2 measurement gap and NCSG	Rel-18	FFS	FFS	NOTE 1		
7.9.19	SA event triggered reporting tests with NeedForGap in FR2						
7.6.19.1	NR SA FR2 event-triggered reporting without interruption outside gap	Rel-18	FFS	FFS	NOTE 1		
7.6.19.2	NR SA FR2-FR2 SA event triggered reporting test without gap without interruption	Rel-18	FFS	FFS	NOTE 1		
7.6.19.3	NR SA FR2-event triggered reporting test without gap without interruption under non-DRX	Rel-18	FFS	FFS	NOTE 1		
7.6.20	LTM Intra-frequency L1-RSRP measurement						
7.6.20.1	NR SA FR2 SSB based L1-RSRP measurement	Rel-18	C384	UEs supporting 5GS NR SA FR2, intra-frequency L1- RSRP measurement and reporting based on SSB(s) of candidate cell(s)		PC1(NOTE 1) PC3	Subtest 2: F029
7.6.21	LTM Inter-frequency L1-RSRP measurement with measurement gap						
7.6.21.1	NR SA FR2-FR2 SSB-based L1-RSRP measurement with measurement gap for LTM	Rel-18	C385	UEs supporting 5GS NR SA FR2, inter-frequency L1- RSRP measurement and reporting based on SSB(s) of candidate cell(s)		PC1(NOTE 1) PC3	
7.6.22	LTM Inter-frequency L1-RSRP measurement without measurement gap						
7.6.22.1	NR SA FR2 event triggered reporting tests with per-UE NCSG under non-DRX	Rel-18	C361a	UEs supporting 5GS NR SA FR2, SSB based inter-frequency L1-RSRP measurements on SSBs within active DL BWP without measurement gaps for LTM	NOTE 1		
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		PC1 PC3	
7.7.1.2	NR SA FR2-FR2 SS-RSRP measurement accuracy	Rel-15	C006	UEs supporting 5GS NR SA FR2		PC1(NOTE 1) PC3	
7.7.1.3	Inter-frequency measurements between FR1 and FR2						

Clause	TC Title	Release	Applicability		Additional Information	Branch	Test Selection Criteria
			Condition	Comment			
7.7.1.3.1	NR SA FR1-FR2 SS-RSRP measurement accuracy	Rel-15	N/A	Not recommended due to FR1 – FR2 testability issue		PC1(NOTE 1) PC3(NOTE 1)	
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		PC1(NOTE 1) PC3	
7.7.2.2	NR SA FR2-FR2 SS-RSRQ measurement accuracy	Rel-15	C006	UEs supporting 5GS NR SA FR2		PC1(NOTE 1) PC3	
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		PC1(NOTE 1) PC3	
7.7.3.2	NR SA FR2-FR2 SS-SINR measurement accuracy	Rel-16	C006	UEs supporting 5GS NR SA FR2		PC1(NOTE 1) PC3	
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		PC1(NOTE 1) PC3	
7.7.4.2	NR SA FR2 CSI-RS based L1-RSRP measurement accuracy	Rel-15	C006	UEs supporting 5GS NR SA FR2		PC1(NOTE 1) PC3	
7.7.5							
7.7.5.1	NR SA FR2 SRS-RSRP measurement accuracy	Rel-16	C006I	UEs supporting 5GS NR SA FR2 and SRS-RSRP measurements		PC1(NOTE 1) PC3	
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		PC1(NOTE 1) PC3	
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		PC1(NOTE 1) PC3	
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		PC1(NOTE 1) PC3	
7.7.14	L1-RSRP measurement for group-based beam reporting						
7.7.14.1	NR SA FR2 SSB based L1-RSRP measurement for group-based beam reporting	Rel-18	C378	UEs supporting 5GS NR SA FR2 and perform group based L1-RSRP measurement based on SSB resources.	NOTE 1		
7.7.14.2	NR SA FR2 CSI-RS based L1-RSRP measurement on resource set with repetition off	Rel-18	C378	UEs supporting 5GS NR SA FR2 and perform group based L1-RSRP measurement based on CSI-RS resources.	NOTE 1		

Clause	TC Title	Release	Applicability		Additional Information	Branch	Test Selection Criteria
			Condition	Comment			
7.7.15	LTM L1-RSRP measurement						
7.7.15.1	NR SA FR2-FR2 SSB based L1-RSRP measurement	Rel-18	C385	UEs supporting 5GS NR SA FR2, inter-frequency L1- RSRP measurement and reporting based on SSB(s) of candidate cell(s)		PC1(NOTE 1) PC3	
NOTE 1: The test case/branch is incomplete for any Band/CA/DC Configuration but has basic test configurations already. NOTE 1 can be removed only when the test case/branch is complete for at least one Band / CA/DC Configuration for at least one feature included in the test case/branch. Detailed completion status can be found in the corresponding test case section in 38.533.							
NOTE 2: Void.							
NOTE 3: Void.							
NOTE 4: Test cases in TS 38.533 [5] clause 7 only apply to FR2 non-RedCap UEs. For FR2 RedCap UEs, Test cases in TS 38.533 [5] clause 17 apply.							

Table 4.2-4a: Void

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

Clause	TC Title	Release	Applicability		Additional Information	Branch	Subtest Selection Criteria
			Condition	Comment			
8.2	RRC_IDLE state mobility						
8.2.1	Inter-RAT cell re-selection						
8.2.1.1	E-UTRA - NR FR1 cell re-selection to higher priority NR target cell	Rel-15	C025	UEs supporting 5GS NR SA FR1 and E-UTRA		2Rx 4Rx	
8.2.1.2	E-UTRA - NR FR1 Cell reselection to lower priority NR target Cell in FR1 for UE configured with highSpeedInterRAT-NR-r16	Rel-16	C025d	UEs supporting 5GS NR SA FR1 and E-UTRAN and NR inter-RAT measurement enhancement in HST		2Rx 4Rx	
8.2.2	E-UTRA - NR Inter-RAT Early Measurement Reporting						
8.2.2.1	E-UTRA - NR FR1 Early Measurement Reporting	Rel-16	C025f	UEs supporting 5GS NR SA FR1 and E-UTRA and NR FR1 SSB measurements in RRC_IDLE/RRC_INACTIVE	NOTE 1	2Rx 4Rx	
8.2.2.2	E-UTRA - NR FR2 Early Measurement Reporting	Rel-16	N/A	Not recommended due to E-UTRA/FR1 – FR2 testability issue	NOTE 1	2Rx 4Rx	
8.3	RRC_CONNECTED state mobility						
8.3.1	Inter-RAT cell handover						
8.3.1.1	E-UTRA - NR FR1 handover with known target cell	Rel-15	C025	UEs supporting 5GS NR SA FR1 and E-UTRA		2Rx 4Rx	
8.4	Measurement procedures						
8.4.1	SFTD measurement delay						
8.4.1.1	E-UTRA - NR FR1 SFTD measurement delay in non-DRX	Rel-15	C081	UEs supporting EN-DC and E-UTRA and SFTD measurements between E-UTRA Pcell and NR neighbour cell		2Rx 4Rx	
8.4.1.2	E-UTRA - NR FR1 SFTD measurement delay in DRX	Rel-15	C081a	UEs supporting EN-DC and E-UTRA and long DRX cycle and SFTD measurements between E-UTRA Pcell and NR neighbour cell		2Rx 4Rx	
8.4.2	Inter-RAT measurements						
8.4.2.1	E-UTRA event-triggered reporting of a NR FR1 neighbour cell without SSB time index detection in non-DRX	Rel-15	C086	UEs supporting E-UTRA and NR FR1 measurement		2Rx 4Rx	
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	Subtest Selection Criteria
			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	NOTE 1		
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	NOTE 1		
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	NOTE 1		
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	NOTE 1		
8.4.2.9	E-UTRA event triggered reporting of a NR FR1 neighbour cell with SSB time index detection in DRX for UE configured with highSpeedInterRAT-NR-r16	Rel-16	C025e	UEs supporting 5GS NR SA FR1 and E-UTRAN, long DRX cycle and NR inter-RAT measurement enhancement in HST		2Rx 4Rx	
8.4.3	Inter-RAT measurements without gaps						
8.4.3.1	E-UTRAN - NR SA FR2 event-triggered reporting without gap with interruption	Rel-18	FFS	FFS	NOTE 1		
8.4.3.2	E-UTRAN - NR SA FR1 event-triggered reporting without gap	Rel-18	C407	UEs supporting E-UTRA and performing NR FR1 measurement without measurement gap	NOTE 1	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	

Clause	TC Title	Release	Applicability		Additional Information	Branch	Subtest Selection Criteria
			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.							
NOTE 2: Test cases in TS 38.533 [5] clause 8 only apply to non-RedCap UEs. For RedCap UEs, Test cases in TS 38.533 [5] clause 18 apply.							

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

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

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

Clause	TC Title	Release	Applicability		Additional Information	Branch	Test Selection Criteria
			Condition	Comment			
16.1	RRC_IDLE state mobility for RedCap						
16.1.1	NR cell re-selection for RedCap						
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			
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			
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			
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			
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			
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			
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			
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			
16.1.2	NR - E-UTRA cell re-selection for RedCap						
16.1.2.1	NR SA FR1 - E-UTRA Cell reselection to higher priority E-UTRA for 1RX UE	Rel-17	C181	1Rx RedCap UEs supporting 5GS NR SA FR1 and E-UTRA			
16.1.2.2	NR SA FR1 - E-UTRA Cell reselection to higher priority E-UTRA for 2RX UE	Rel-17	C182	2Rx RedCap UEs supporting 5GS NR SA FR1 and E-UTRA			
16.1.2.3	NR SA FR1 - E-UTRA Cell reselection to lower priority E-UTRA for 1RX UE	Rel-17	C181	1Rx RedCap UEs supporting 5GS NR SA FR1 and E-UTRA			
16.1.2.4	NR SA FR1 - E-UTRA Cell reselection to lower priority E-UTRA for 2RX UE	Rel-17	C182	2Rx RedCap UEs supporting 5GS NR SA FR1 and E-UTRA			
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			
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			
16.2	RRC_INACTIVE state mobility for RedCap						
16.2.1	Configured Grant based Small Data Transmissions for RedCap						
16.2.1.1	NR SA FR1 CG-SDT for 1Rx UE	Rel-17	C300	1Rx RedCap UEs supporting 5GS NR SA FR1, CG-based small data transmission and long DRX cycle			

Clause	TC Title	Release	Applicability		Additional Information	Branch	Test Selection Criteria
			Condition	Comment			
16.2.1.2	NR SA FR1 CG-SDT for 2Rx UE	Rel-17	C301	2Rx RedCap UEs supporting 5GS NR SA FR1, CG-based small data transmission and long DRX cycle			
16.3	RRC_CONNECTED state mobility for RedCap						
16.3.1	Handover for RedCap						
16.3.1.1	NR SA FR1 handover with known target cell for 1 Rx UE	Rel-17	C183	1Rx RedCap UEs supporting 5GS NR SA FR1			
16.3.1.2	NR SA FR1 handover with known target cell for 2 Rx UE	Rel-17	C184	2Rx RedCap UEs supporting 5GS NR SA FR1			
16.3.1.3	NR SA FR1 handover with unknown target cell for 1 Rx UE	Rel-17	C183	1Rx RedCap UEs supporting 5GS NR SA FR1			
16.3.1.4	NR SA FR1 handover unknown target cell for 2 Rx UE	Rel-17	C184	2Rx RedCap UEs supporting 5GS NR SA FR1			
16.3.1.5	NR SA FR1-FR1 handover with unknown target cell for 1 Rx UE	Rel-17	C183	1Rx RedCap UEs supporting 5GS NR SA FR1			
16.3.1.6	NR SA FR1-FR1 handover with unknown target cell for 2 Rx UE	Rel-17	C184	2Rx RedCap UEs supporting 5GS NR SA FR1			
16.3.1.7	NR - E-UTRA handover with known target cell for 1Rx UE	Rel-17	C181	1Rx RedCap UEs supporting 5GS NR SA FR1 and E-UTRA			
16.3.1.8	NR - E-UTRA handover with known target cell for 2Rx UE	Rel-17	C182	2Rx RedCap UEs supporting 5GS NR SA FR1 and E-UTRA			
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			
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			
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 RRC Re-establishment for 1 Rx UE	Rel-17	C183	1Rx RedCap UEs supporting 5GS NR SA FR1			
16.3.2.1.2	NR SA FR1 RRC Re-establishment for 2 Rx UE	Rel-17	C184	2Rx RedCap UEs supporting 5GS NR SA FR1			
16.3.2.1.3	NR SA FR1-FR1 RRC Re-establishment for 1 Rx UE	Rel-17	C183	1Rx RedCap UEs supporting 5GS NR SA FR1			
16.3.2.1.4	NR SA FR1-FR1 RRC Re-establishment for 2 Rx UE	Rel-17	C184	2Rx RedCap UEs supporting 5GS NR SA FR1			
16.3.2.1.5	NR SA FR1 RRC Re-establishment for 1 Rx UE without serving cell timing	Rel-17	C183	1Rx RedCap UEs supporting 5GS NR SA FR1			
16.3.2.1.6	NR SA FR1 RRC Re-establishment for 2 Rx UE without serving cell timing	Rel-17	C184	2Rx RedCap UEs supporting 5GS NR SA FR1			
16.3.2.2	Random access for RedCap						

Clause	TC Title	Release	Applicability		Additional Information	Branch	Test Selection Criteria
			Condition	Comment			
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			
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			
16.3.2.2.3	NR SA FR1 4-step RA type non-contention based random access test in FR1 for NR standalone for 1 Rx UE	Rel-17	C183	1Rx RedCap UEs supporting 5GS NR SA FR1			Subtest 2: F001
16.3.2.2.4	NR SA FR1 4-step RA type non-contention based random access test in FR1 for NR standalone for 2 Rx UE	Rel-17	C184	2Rx RedCap UEs supporting 5GS NR SA FR1			Subtest 2: F001
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			
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			
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			
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			
16.3.2.3	RRC connection release with redirection for RedCap						
16.3.2.3.1	NR SA FR1-FR1 RRC connection release with Redirection for 1 Rx UE	Rel-17	C183	1Rx RedCap UEs supporting 5GS NR SA FR1			
16.3.2.3.2	NR SA FR1-FR1 RRC connection release with Redirection for 2 Rx UE	Rel-17	C184	2Rx RedCap UEs supporting 5GS NR SA FR1			
16.3.2.3.3	NR SA FR1-E-UTRA RRC connection release with Redirection for 1 Rx UE	Rel-17	C181	1Rx RedCap UEs supporting 5GS NR SA FR1 and E-UTRA			
16.3.2.3.4	NR SA FR1-E-UTRA RRC connection release with Redirection for 2 Rx UE	Rel-17	C182	2Rx RedCap UEs supporting 5GS NR SA FR1 and E-UTRA			
16.4	Timing for RedCap						
16.4.1	UE transmit timing for RedCap						
16.4.1.1	NR SA FR1 NR UE Transmit Timing accuracy for 1 Rx UE	Rel-17	C183	1Rx RedCap UEs supporting 5GS NR SA FR1			Subtest 2: F002
16.4.1.2	NR SA FR1 NR UE Transmit Timing accuracy for 2 Rx UE	Rel-17	C184	2Rx RedCap UEs supporting 5GS NR SA FR1			Subtest 2: F002
16.4.2	UE timer accuracy for RedCap						
16.4.3	Timing advance for RedCap						

Clause	TC Title	Release	Applicability		Additional Information	Branch	Test Selection Criteria
			Condition	Comment			
16.4.3.1	NR SA FR1 timing advance adjustment accuracy for 1 Rx UE	Rel-17	C183	1Rx RedCap UEs supporting 5GS NR SA FR1			
16.4.3.2	NR SA FR1 timing advance adjustment accuracy for 2 Rx UE	Rel-17	C184	2Rx RedCap UEs supporting 5GS NR SA FR1			
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			
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			
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			
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			
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			
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			
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			
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			
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			
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			
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			
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			

Clause	TC Title	Release	Applicability		Additional Information	Branch	Test Selection Criteria
			Condition	Comment			
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			
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			
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			
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			
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			
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			
16.5.2.3	NR SA FR1 Beam Failure Detection and Link Recovery Test for FR1 PCell configured with SSB-based BFD and LR 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			
16.5.2.4	NR SA FR1 Beam Failure Detection and Link Recovery Test for FR1 PCell configured with SSB-based BFD and LR 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			
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			
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			
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			

Clause	TC Title	Release	Applicability		Additional Information	Branch	Test Selection Criteria
			Condition	Comment			
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			
16.5.3	Active BWP switch delay for RedCap						
16.5.3.1	DCI-based and timer-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)			
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)			
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)			
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)			
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			
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			
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			
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			
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			
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			
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			

Clause	TC Title	Release	Applicability		Additional Information	Branch	Test Selection Criteria
			Condition	Comment			
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			
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			
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			
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			
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			
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			
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			
16.6.2	Inter-frequency measurements for RedCap						
16.6.2.1	NR SA FR1-FR1 Event triggered reporting tests for FR1 without SSB time index detection when DRX is used for 1 Rx UE	Rel-17	C189	1Rx RedCap UEs supporting 5GS NR SA FR1 and long DRX cycle			
16.6.2.2	NR SA FR1-FR1 Event triggered reporting tests for FR1 without SSB time index detection when DRX is used for 2 Rx UE	Rel-17	C190	2Rx RedCap UEs supporting 5GS NR SA FR1 and long DRX cycle			
16.6.2.3	NR SA FR1-FR1 Event triggered reporting tests for FR1 without SSB time index detection when DRX is not used for 1 Rx UE	Rel-17	C183	1Rx RedCap UEs supporting 5GS NR SA FR1			
16.6.2.4	NR SA FR1-FR1 Event triggered reporting tests for FR1 without SSB time index detection when DRX is not used for 2 Rx UE	Rel-17	C184	2Rx RedCap UEs supporting 5GS NR SA FR1			
16.6.2.5	NR SA FR1-FR1 Event triggered reporting tests for FR1 with SSB time index detection when DRX is not used for 1 Rx UE	Rel-17	C183	1Rx RedCap UEs supporting 5GS NR SA FR1			

Clause	TC Title	Release	Applicability		Additional Information	Branch	Test Selection Criteria
			Condition	Comment			
16.6.2.6	NR SA FR1-FR1 Event triggered reporting tests for FR1 with SSB time index detection when DRX is not used for 2 Rx UE	Rel-17	C184	2Rx RedCap UEs supporting 5GS NR SA FR1			
16.6.2.7	NR SA FR1-FR1 Event triggered reporting tests for FR1 with SSB time index detection when DRX is used for 1 Rx UE	Rel-17	C189	1Rx RedCap UEs supporting 5GS NR SA FR1 and long DRX cycle			
16.6.2.8	NR SA FR1-FR1 Event triggered reporting tests for FR1 with SSB time index detection when DRX is used for 2 Rx UE	Rel-17	C190	2Rx RedCap UEs supporting 5GS NR SA FR1 and long DRX cycle			
16.6.2.9	NR SA FR1-FR1 Event triggered reporting tests with additional mandatory gap pattern for 1 Rx UE	Rel-17	C183a	1Rx RedCap UEs supporting 5GS NR SA FR1 and <i>supportedGapPattern-NRonly-r16</i>			
16.6.2.10	NR SA FR1-FR1 Event triggered reporting tests with additional mandatory gap pattern for 2 Rx UE	Rel-17	C184a	2Rx RedCap UEs supporting 5GS NR SA FR1 and <i>supportedGapPattern-NRonly-r16</i>			
16.6.2.11	NR SA FR1-FR1 Event triggered reporting tests for FR1 when DRX is used for 1 Rx UE	Rel-17	C298	1Rx RedCap UEs supporting 5GS NR SA FR1 and long DRX cycle and inter-frequency SSB based measurements without measurement gaps			
16.6.2.12	NR SA FR1-FR1 Event triggered reporting tests for FR1 when DRX is used for 2 Rx UE	Rel-17	C299	2Rx RedCap UEs supporting 5GS NR SA FR1 and long DRX cycle and inter-frequency SSB based measurements without measurement gaps			
16.6.3	Inter-RAT measurements for RedCap						
16.6.3.1	NR - E-UTRA event-triggered reporting in non-DRX for 1 Rx UE	Rel-17	C181	1Rx RedCap UEs supporting 5GS NR SA FR1 and E-UTRA			
16.6.3.2	NR - E-UTRA event-triggered reporting in non-DRX for 2 Rx UE	Rel-17	C182	2Rx RedCap UEs supporting 5GS NR SA FR1 and E-UTRA			
16.6.3.3	NR - E-UTRA event-triggered reporting in DRX for 1 Rx UE	Rel-17	C318	1Rx RedCap UEs supporting 5GS NR SA FR1 and E-UTRA and long DRX cycle			
16.6.3.4	NR - E-UTRA event-triggered reporting in DRX for 2 Rx UE	Rel-17	C319	2Rx RedCap UEs supporting 5GS NR SA FR1 and E-UTRA and long DRX cycle			
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			
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			

Clause	TC Title	Release	Applicability		Additional Information	Branch	Test Selection Criteria
			Condition	Comment			
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			
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			
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			
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			
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			
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			
16.6.5	NR measurements with autonomous gaps for RedCap						
16.6.5.1	NR SA FR1 CGI identification of NR neighbour cell for 1 Rx UE	Rel-17	C302	1Rx RedCap UEs supporting 5GS NR SA FR1 and NR CGI reading using autonomous gap			
16.6.5.2	NR SA FR1 CGI identification of NR neighbour cell for 2 Rx UE	Rel-17	C303	2Rx RedCap UEs supporting 5GS NR SA FR1 and NR CGI reading using autonomous gap			
16.6.5.3	NR SA FR1 - E-UTRA CGI Identification of E-UTRA cell for 1 Rx UE	Rel-17	C304	1Rx RedCap UEs supporting 5GS NR SA FR1 and EUTRA CGI reading using autonomous gap			
16.6.5.4	NR SA FR1 - E-UTRA CGI Identification of E-UTRA cell for 2 Rx UE	Rel-17	C305	2Rx RedCap UEs supporting 5GS NR SA FR1 and EUTRA CGI reading using autonomous gap			
16.7	Measurement Performance requirements for RedCap						
16.7.1	SS-RSRP						
16.7.1.1	Intra-frequency measurements for RedCap for 1 Rx UE						
16.7.1.1.1	NR SA FR1 SS-RSRP absolute measurement accuracy for 1 Rx UE	Rel-17	C183	1Rx RedCap UEs supporting 5GS NR SA FR1			
16.7.1.1.2	NR SA FR1 SS-RSRP relative measurement accuracy for 1 Rx UE	Rel-17	C183	1Rx RedCap UEs supporting 5GS NR SA FR1			
16.7.1.2	Intra-frequency measurements for RedCap for 2 Rx UE						
16.7.1.2.1	NR SA FR1 SS-RSRP absolute measurement accuracy for 2 Rx UE	Rel-17	C184	2Rx RedCap UEs supporting 5GS NR SA FR1			
16.7.1.2.2	NR SA FR1 SS-RSRP relative measurement accuracy for 2 Rx UE	Rel-17	C184	2Rx RedCap UEs supporting 5GS NR SA FR1			

Clause	TC Title	Release	Applicability		Additional Information	Branch	Test Selection Criteria
			Condition	Comment			
16.7.1.3.1	NR SA FR1-FR1 SS-RSRP absolute measurement accuracy for 1 Rx UE	Rel-17	C183	1Rx RedCap UEs supporting 5GS NR SA FR1			
16.7.1.3.2	NR SA FR1-FR1 SS-RSRP relative measurement accuracy for 1 Rx UE	Rel-17	C183	1Rx RedCap UEs supporting 5GS NR SA FR1			
16.7.1.4.1	NR SA FR1-FR1 SS-RSRP absolute measurement accuracy for 2 Rx UE	Rel-17	C184	2Rx RedCap UEs supporting 5GS NR SA FR1			
16.7.1.4.2	NR SA FR1-FR1 SS-RSRP relative measurement accuracy for 2 Rx UE	Rel-17	C184	2Rx RedCap UEs supporting 5GS NR SA FR1			
16.7.2	SS-RSRQ for RedCap						
16.7.2.1	NR SA FR1 SS-RSRQ absolute measurement accuracy for 1 Rx UE	Rel-17	C183	1Rx RedCap UEs supporting 5GS NR SA FR1			
16.7.2.2	NR SA FR1 SS-RSRQ absolute measurement accuracy for 2 Rx UE	Rel-17	C184	2Rx RedCap UEs supporting 5GS NR SA FR1			
16.7.2.3	Inter-frequency measurement accuracy for 1 Rx UE						
16.7.2.3.1	NR SA FR1-FR1 SS-RSRQ absolute measurement accuracy for 1 Rx UE	Rel-17	C183	1Rx RedCap UEs supporting 5GS NR SA FR1			
16.7.2.3.2	NR SA FR1-FR1 SS-RSRQ relative measurement accuracy for 1 Rx UE	Rel-17	C183	1Rx RedCap UEs supporting 5GS NR SA FR1			
16.7.2.4	Inter-frequency measurement accuracy for 2 Rx UE						
16.7.2.4.1	NR SA FR1-FR1 SS-RSRQ absolute measurement accuracy for 2 Rx UE	Rel-17	C184	2Rx RedCap UEs supporting 5GS NR SA FR1			
16.7.2.4.2	NR SA FR1-FR1 SS-RSRQ relative measurement accuracy for 2 Rx UE	Rel-17	C184	2Rx RedCap UEs supporting 5GS NR SA FR1			
16.7.3	SS-SINR for RedCap						
16.7.3.1	NR SA FR1 SS-SINR absolute measurement accuracy for 1 Rx UE	Rel-17	C306	1Rx RedCap UEs supporting 5GS NR SA FR1 and SS-SINR measurement			
16.7.3.2	NR SA FR1 SS-SINR absolute measurement accuracy for 2 Rx UE	Rel-17	C307	2Rx RedCap UEs supporting 5GS NR SA FR1 and SS-SINR measurement			
16.7.3.3	Inter-frequency measurement accuracy for 1 Rx UE						
16.7.3.3.1	NR SA FR1-FR1 SS-SINR absolute measurement accuracy for 1 Rx UE	Rel-17	C306	1Rx RedCap UEs supporting 5GS NR SA FR1 and SS-SINR measurement			
16.7.3.3.2	NR SA FR1-FR1 SS-SINR relative measurement accuracy for 1 Rx UE	Rel-17	C306	1Rx RedCap UEs supporting 5GS NR SA FR1 and SS-SINR measurement			
16.7.3.4	Inter-frequency measurement accuracy for 2 Rx UE						

Clause	TC Title	Release	Applicability		Additional Information	Branch	Test Selection Criteria
			Condition	Comment			
16.7.3.4.1	NR SA FR1-FR1 SS-SINR absolute measurement accuracy for 2 Rx UE	Rel-17	C307	2Rx RedCap UEs supporting 5GS NR SA FR1 and SS-SINR measurement			
16.7.3.4.2	NR SA FR1-FR1 SS-SINR relative measurement accuracy for 2 Rx UE	Rel-17	C307	2Rx RedCap UEs supporting 5GS NR SA FR1 and SS-SINR measurement			
16.7.4	L1-RSRP measurement for beam reporting for RedCap						
16.7.4.1.1	NR SA FR1 SSB based L1-RSRP absolute measurement accuracy for 1 Rx UE	Rel-17	C183	1Rx RedCap UEs supporting 5GS NR SA FR1			
16.7.4.1.2	NR SA FR1 SSB based L1-RSRP relative measurement accuracy for 1 Rx UE	Rel-17	C183	1Rx RedCap UEs supporting 5GS NR SA FR1			
16.7.4.2.1	NR SA FR1 SSB based L1-RSRP absolute measurement accuracy for 2 Rx UE	Rel-17	C184	2Rx RedCap UEs supporting 5GS NR SA FR1			
16.7.4.2.2	NR SA FR1 SSB based L1-RSRP relative measurement accuracy for 2 Rx UE	Rel-17	C184	2Rx RedCap UEs supporting 5GS NR SA FR1			
16.7.4.3.1	NR SA FR1 CSI-RS based L1-RSRP absolute measurement accuracy for 1 Rx UE	Rel-17	C183	1Rx RedCap UEs supporting 5GS NR SA FR1			
16.7.4.3.2	NR SA FR1 CSI-RS based L1-RSRP relative measurement on accuracy for 1 Rx UE	Rel-17	C183	1Rx RedCap UEs supporting 5GS NR SA FR1			
16.7.4.4.1	NR SA FR1 CSI-RS based L1-RSRP absolute measurement accuracy for 2 Rx UE	Rel-17	C184	2Rx RedCap UEs supporting 5GS NR SA FR1			
16.7.4.4.2	NR SA FR1 CSI-RS based L1-RSRP relative measurement accuracy for 2 Rx UE	Rel-17	C184	2Rx RedCap UEs supporting 5GS NR SA FR1			
16.7.5	E-UTRAN RSRP for RedCap						
16.7.5.1	NR SA FR1 - E-UTRA RSRP absolute measurement accuracy for 1 Rx UE	Rel-17	C183	1Rx RedCap UEs supporting 5GS NR SA FR1			
16.7.5.2	NR SA FR1 - E-UTRA RSRP absolute measurement accuracy 2 Rx UE	Rel-17	C184	2Rx RedCap UEs supporting 5GS NR SA FR1			
16.7.6	E-UTRAN RSRQ for RedCap						
16.7.6.1	NR SA FR1 - E-UTRA RSRQ absolute measurement accuracy 1 Rx UE	Rel-17	C183	1Rx RedCap UEs supporting 5GS NR SA FR1			
16.7.6.2	NR SA FR1 - E-UTRA RSRQ absolute measurement accuracy for 2 Rx UE	Rel-17	C184	2Rx RedCap UEs supporting 5GS NR SA FR1			

NOTE 1: The test case/branch is incomplete for any Band/CA/DC Configuration but has basic test configurations already. NOTE 1 can be removed only when the test case/branch is complete for at least one Band / CA/DC Configuration for at least one feature included in the test case/branch. Detailed completion status can be found in the corresponding test case section in 38.533.

NOTE 2: Test X refers to the corresponding Sub-Test as defined in TS 38.533 [5].

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

Clause	TC Title	Release	Applicability		Additional Information	Branch	Test Selection Criteria
			Condition	Comment			
17.1	RRC_IDLE state mobility for RedCap						
17.1.1	NR cell re-selection for RedCap						
17.1.1.1	NR SA FR2 Cell reselection for 2 Rx UE	Rel-17	C197	RedCap UEs supporting 5GS NR SA FR2			
17.1.1.2	NR SA FR2-FR2 Cell reselection for 2 Rx UE	Rel-17	C197	RedCap UEs supporting 5GS NR SA FR2			
17.1.1.3	NR SA FR2 Cell reselection 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			
17.1.1.4	NR SA FR2-FR2 Cell reselection 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			
17.2	RRC_INACTIVE state mobility for RedCap						
17.2.1	Configured Grant based Small Data Transmissions for RedCap						
17.2.1.1	NR SA FR2 TA validation for CG-SDT for 2 Rx UE	Rel-17	C308	RedCap UEs supporting 5GS NR SA FR2, CG-based small data transmission and long DRX cycle	NOTE 1		
17.3	RRC_CONNECTED state mobility for RedCap						
17.3.1	Handover for RedCap						
17.3.1.1	NR SA FR2 handover with unknown target cell for 2 Rx UE	Rel-17	C197	RedCap UEs supporting 5GS NR SA FR2			
17.3.1.2	NR SA FR2-FR2 handover with unknown target cell for 2 Rx UE	Rel-17	C197	RedCap UEs supporting 5GS NR SA FR2			
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			
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			
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			
17.3.2.2	Random Access for RedCap						
17.3.2.2.1	NR SA FR2 4-step contention based random access for 2 Rx UE	Rel-17	C197	RedCap UEs supporting 5GS NR SA FR2	NOTE 1		
17.3.2.2.2	NR SA FR2 4-step non-contention based random access for 2 Rx UE	Rel-17	C197	RedCap UEs supporting 5GS NR SA FR2	NOTE 1		Subtest 2: F001
17.3.2.2.3	NR SA FR2 2-step contention based random access for 2 Rx UE	Rel-17	C225	RedCap UEs supporting 5GS NR SA FR2 and 2-step RACH	NOTE 1		
17.3.2.2.4	NR SA FR2 2-step non-contention based random access for 2 Rx UE	Rel-17	C225	RedCap UEs supporting 5GS NR SA FR2 and 2-step RACH	NOTE 1		

Clause	TC Title	Release	Applicability		Additional Information	Branch	Test Selection Criteria
			Condition	Comment			
17.3.2.3	SA: RRC Connection Release with Redirection for RedCap						
17.3.2.3.1	NR SA FR2-FR2 RRC connection release with redirection for 2 Rx UE	Rel-17	C197	RedCap UEs supporting 5GS NR SA FR2			
17.4	Timing for RedCap						
17.4.1	UE transmit timing for RedCap						
17.4.1.1	NR SA FR2 NR UE Transmit Timing accuracy for 2 Rx UE	Rel-17	C197	RedCap UEs supporting 5GS NR SA FR2			
17.4.2	UE timer accuracy for RedCap						
17.4.3	Timing advance for RedCap						
17.4.3.1	NR SA FR2 timing advance adjustment accuracy for 2 Rx UE	Rel-17	C197	RedCap UEs supporting 5GS NR SA FR2			
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 for 2 Rx UE	Rel-17	C197	RedCap UEs supporting 5GS NR SA FR2			
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 for 2 Rx UE	Rel-17	C197	RedCap UEs supporting 5GS NR SA FR2			
17.5.1.3	NR SA FR2 Radio Link Monitoring Out-of-sync Test for FR2 PCell configured with SSB-based RLM RS in DRX mode for 2 Rx UE	Rel-17	C198	RedCap UEs supporting 5GS NR SA FR2 and long DRX cycle			
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 for 2 Rx UE	Rel-17	C198	RedCap UEs supporting 5GS NR SA FR2 and long DRX cycle			
17.5.1.5	NR SA FR2 Radio Link Monitoring Out-of-sync Test for FR2 PCell configured with CSI-RS-based RLM in non-DRX mode for 2 Rx UE	Rel-17	C309	RedCap UEs supporting 5GS NR SA FR2 and CSI-RS-based RLM			
17.5.1.6	NR SA FR2 Radio Link Monitoring In-sync Test for FR2 PCell configured with CSI-RS-based RLM in non-DRX mode for 2 Rx UE	Rel-17	C309	RedCap UEs supporting 5GS NR SA FR2 and CSI-RS-based RLM			
17.5.1.7	NR SA FR2 Radio Link Monitoring Out-of-sync Test for FR2 PCell configured with CSI-RS-based RLM in DRX mode for 2 Rx UE	Rel-17	C310	RedCap UEs supporting 5GS NR SA FR2 and CSI-RS-based RLM and long DRX cycle			
17.5.1.8	NR SA FR2 Radio Link Monitoring In-sync Test for FR2 PCell configured with CSI-RS-based RLM in DRX mode for 2 Rx UE	Rel-17	C310	RedCap UEs supporting 5GS NR SA FR2 and CSI-RS-based RLM and long DRX cycle			
17.5.1.9	NR SA FR2 UE Radio Link Monitoring Scheduling Restrictions on FR2 for 2 Rx UE	Rel-17	C197	RedCap UEs supporting 5GS NR SA FR2			
17.5.2	Beam Failure Detection and Link recovery procedures for RedCap						

Clause	TC Title	Release	Applicability		Additional Information	Branch	Test Selection Criteria
			Condition	Comment			
17.5.2.1	NR SA FR2 Beam Failure Detection and Link Recovery Test for FR2 PCell configured with SSB-based BFD and LR in non-DRX mode for 2 Rx UE	Rel-17	C226	RedCap UEs supporting 5GS NR SA FR2 and SSB based link recovery			
17.5.2.2	NR SA FR2 Beam Failure Detection and Link Recovery Test for FR2 PCell configured with SSB-based BFD and LR in DRX mode for 2 Rx UE	Rel-17	C226a	RedCap UEs supporting 5GS NR SA FR2, SSB based link recovery and long DRX cycle			
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 for 2 Rx UE	Rel-17	C227	RedCap UEs supporting 5GS NR SA FR2, CSI-RS based RLM and link recovery			
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 for 2 Rx UE	Rel-17	C228	RedCap UEs supporting 5GS NR SA FR2, long DRX cycle, CSI-RS based RLM and link recovery			
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 for 2 Rx UE	Rel-17	C226	RedCap UEs supporting 5GS NR SA FR2 and SSB based link recovery			
17.5.3	Active BWP switch for RedCap						
17.5.3.1	DCI-based and time-based active BWP switch for RedCap						
17.5.3.1.1	NR SA FR2 DCI-based and Timer-based DL active BWP switch for 2 Rx UE	Rel-17	C315	RedCap UEs supporting 5GS NR SA FR2 and (DCI and timer based active BWP switching delay type1 or type2) and (Support of BWP adaptation upto2 or upto4)			
17.5.3.2	RRC-based active BWP switch for RedCap						
17.5.3.2.1	NR SA FR2 RRC-based DL active BWP switch for 2 Rx UE	Rel-17	C316	RedCap UEs supporting 5GS NR SA FR2 and (Support of BWP adaptation upto2 or upto4)			
17.5.4	Active TCI state switch delay for RedCap						
17.5.4.1	MAC-CE based active TCI state switch for RedCap						
17.5.4.1.1	NR SA FR2 MAC-CE based active TCI state switch for a known TCI state for 2 Rx UE	Rel-17	C311	RedCap UEs supporting 5GS NR SA FR2, maximum number of active TCI states per BWP greater than 1, and maximum number of simultaneously trackable TRS resource sets per CC greater than 1			
17.5.4.2	RRC based active TCI state switch for RedCap						
17.5.4.2.1	NR SA FR2 RRC-CE based active TCI state switch for a known TCI state for 2 Rx UE	Rel-17	C311	RedCap UEs supporting 5GS NR SA FR2, maximum number of active TCI states per BWP greater than 1, and maximum number of simultaneously trackable TRS resource sets per CC greater than 1			
17.5.5	Uplink spatial relation switch delay for RedCap						

Clause	TC Title	Release	Applicability		Additional Information	Branch	Test Selection Criteria
			Condition	Comment			
17.5.5.1	MAC-CE based Spatial Relation switch for RedCap						
17.5.5.1.1	NR SA FR2 MAC-CE based spatial relation switch associated with known DL-RS for 2 Rx UE	Rel-17	C197	RedCap UEs supporting 5GS NR SA FR2			
17.5.5.2	RRC based spatial relation switch for RedCap						
17.5.5.2.1	NR SA FR2 RRC-based spatial relation switch associated with a known DL-RS for 2 Rx UE	Rel-17	C197	RedCap UEs supporting 5GS NR SA FR2			
17.5.6	UE specific CBW change for RedCap						
17.5.6.1	NR SA FR2 UE specific CBW change on PCell for 2 Rx UE	Rel-17	C197	RedCap UEs supporting 5GS NR SA FR2	NOTE 1		
17.6	Measurement procedure for RedCap						
17.6.1	Intra-frequency Measurements for RedCap						
17.6.1.1	NR SA FR2 event triggered reporting without gap in non-DRX for 2 Rx UE	Rel-17	C197	RedCap UEs supporting 5GS NR SA FR2			
17.6.1.2	NR SA FR2 event triggered reporting without gap in DRX for 2 Rx UE	Rel-17	C198	RedCap UEs supporting 5GS NR SA FR2 and long DRX cycle			
17.6.1.3	NR SA FR2 event triggered reporting with gaps in non-DRX for 2 Rx UE	Rel-17	C238	RedCap UEs supporting 5GS NR SA FR2, CSI-RS-based RLM and BWP operation without bandwidth restriction			
17.6.1.4	NR SA FR2 event triggered reporting with gaps in DRX for 2 Rx UE	Rel-17	C229	RedCap UEs supporting 5GS NR SA FR2, long DRX cycle, CSI-RS-based RLM and BWP operation without bandwidth restriction			
17.6.2	Inter-frequency Measurements for RedCap						
17.6.2.1	NR SA FR2-FR2 event triggered reporting in non-DRX for 2 Rx UE	Rel-17	C197	RedCap UEs supporting 5GS NR SA FR2			
17.6.2.2	NR SA FR2-FR2 event triggered reporting in DRX for 2 Rx UE	Rel-17	C198	RedCap UEs supporting 5GS NR SA FR2 and long DRX cycle			
17.6.2.3	NR SA FR2-FR2 event triggered reporting with SSB time index detection in non-DRX for 2 Rx UE	Rel-17	C197	RedCap UEs supporting 5GS NR SA FR2			
17.6.2.4	NR SA FR2-FR2 event triggered reporting with SSB time index detection in DRX for 2 Rx UE	Rel-17	C198	RedCap UEs supporting 5GS NR SA FR2 and long DRX cycle			
17.6.3	L1-RSRP measurement for beam reporting for RedCap						
17.6.3.1	NR SA FR2 SSB based L1-RSRP measurement in non-DRX for 2 Rx UE	Rel-17	C197	RedCap UEs supporting 5GS NR SA FR2			
17.6.3.2	NR SA FR2 SSB based L1-RSRP measurement in DRX for 2 Rx UE	Rel-17	C198	RedCap UEs supporting 5GS NR SA FR2 and long DRX cycle			
17.6.3.3	NR SA FR2 CSI-RS based L1-RSRP measurement in non-DRX for 2 Rx UE	Rel-17	C197	RedCap UEs supporting 5GS NR SA FR2			
17.6.3.4	NR SA FR2 CSI-RS based L1-RSRP measurement in DRX for 2 Rx UE	Rel-17	C198	RedCap UEs supporting 5GS NR SA FR2 and long DRX cycle			

Clause	TC Title	Release	Applicability		Additional Information	Branch	Test Selection Criteria
			Condition	Comment			
17.6.4	NR Measurements with autonomous gaps for RedCap						
17.6.4.1	NR SA FR2-FR2 entificCGI identification of NR neighbour cell for 2 Rx UE	Rel-17	C312	RedCap UEs supporting 5GS NR SA FR2 and NR CGI reading using autonomous gap	NOTE 1		
17.7	Measurement performance requirements for RedCap						
17.7.1	SS-RSRP for RedCap						
17.7.1.1	NR SA FR2 SS-RSRP measurement accuracy for 2 Rx UE	Rel-17	C197	RedCap UEs supporting 5GS NR SA FR2			
17.7.1.2	NR SA FR2-FR2 SS-RSRP measurement accuracy for 2 Rx UE	Rel-17	C197	RedCap UEs supporting 5GS NR SA FR2			
17.7.2	SS-RSRQ for RedCap						
17.7.2.1	NR SA FR2 SS-RSRQ measurement accuracy for 2 Rx UE	Rel-17	C197	RedCap UEs supporting 5GS NR SA FR2			
17.7.2.2	NR SA FR2-FR2 SS-RSRQ measurement accuracy for 2 Rx UE for 2 Rx UE	Rel-17	C197	RedCap UEs supporting 5GS NR SA FR2			
17.7.3	L1-RSRP measurement for beam reporting for RedCap						
17.7.3.1	NR SA FR2 SSB based L1-RSRP measurement accuracy	Rel-17	C197	RedCap UEs supporting 5GS NR SA FR2			
17.7.3.2	NR SA FR2 CSI-RS based L1-RSRP measurement accuracy for 2 Rx UE	Rel-17	C197	RedCap UEs supporting 5GS NR SA FR2			
17.7.4	SS-SINR for RedCap						
17.7.4.1	NR SA FR2 SS-SINR measurement accuracy for 2 Rx UE	Rel-17	C317	RedCap UEs supporting 5GS NR SA FR2 and SS-SINR measurement			
17.7.4.2	NR SA FR2-FR2 SS-SINR measurement accuracy for 2 Rx UE	Rel-17	C317	RedCap UEs supporting 5GS NR SA FR2 and SS-SINR measurement			
NOTE 1: The test case/branch is incomplete for any Band/CA/DC Configuration but has basic test configurations already. NOTE 1 can be removed only when the test case/branch is complete for at least one Band / CA/DC Configuration for at least one feature included in the test case/branch. Detailed completion status can be found in the corresponding test case section in 38.533.							

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

Clause	TC Title	Release	Applicability		Additional Information	Branch	Subtest Selection Criteria
			Condition	Comment			
18.1	RRC_IDLE state mobility for RedCap						
18.1.1	Inter-RAT cell re-selection for RedCap						
18.1.1.1	E-UTRA - NR SA FR1 E-UTRA cell re-selection to higher priority NR target Cell for 2 Rx UE	Rel-17	C182	2Rx RedCap UEs supporting 5GS NR SA FR1 and E-UTRA			
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 handover for 2 Rx UE	Rel-17	C182	2Rx RedCap UEs supporting 5GS NR SA FR1 and E-UTRA			
18.2.2	RRC connection release with redirection for RedCap						
18.2.2.1	E-UTRA - NR SA FR1 RRC connection release with redirection for 2 Rx UE	Rel-17	C182	2Rx RedCap UEs supporting 5GS NR SA FR1 and E-UTRA			
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 without SSB time index detection in non-DRX	Rel-17	C230	2Rx RedCap UEs supporting 5GS NR SA FR1 and E-UTRA but don't support per-FR gap			
18.3.1.2	E-UTRA - NR SA FR1 event triggered reporting without SSB time index detection in DRX	Rel-17	C232	2Rx RedCap UEs supporting 5GS NR SA FR1, E-UTRA and long DRX cycle but don't support per-FR gap			
18.3.1.3	E-UTRA - NR SA FR1 event triggered reporting with SSB time index detection in non-DRX	Rel-17	C230	2Rx RedCap UEs supporting 5GS NR SA FR1 and E-UTRA but don't support per-FR gap			
18.3.1.4	E-UTRA - NR SA FR1 event triggered reporting with SSB time index detection in DRX	Rel-17	C232	2Rx RedCap UEs supporting 5GS NR SA FR1, E-UTRA and long DRX cycle but don't support per-FR gap			
18.3.1.5	E-UTRA - NR SA FR2 event triggered reporting without SSB time index detection in non-DRX	Rel-17	N/A	Not recommended due to E-UTRA – FR2 testability issue	NOTE 1		
18.3.1.6	E-UTRA - NR SA FR2 event triggered reporting without SSB time index detection in DRX	Rel-17	N/A	Not recommended due to E-UTRA – FR2 testability issue	NOTE 1		
18.3.1.7	E-UTRA - NR SA FR2 event triggered reporting with SSB time index detection in non-DRX	Rel-17	N/A	Not recommended due to E-UTRA – FR2 testability issue	NOTE 1		
18.3.1.8	E-UTRA - NR SA FR2 event triggered reporting with SSB time index detection in DRX	Rel-17	N/A	Not recommended due to E-UTRA – FR2 testability issue	NOTE 1		
NOTE 1: The test case/branch is incomplete for any Band/CA/DC Configuration but has basic test configurations already. NOTE 1 can be removed only when the test case/branch is complete for at least one Band / CA/DC Configuration for at least one feature included in the test case/branch. Detailed completion status can be found in the corresponding test case section in 38.533.							

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

Clause	TC Title	Release	Applicability		Additional Information	Branch	Subtest Selection Criteria
			Condition	Comment			
10.1	RRC_CONNECTED state mobility						
10.1.1	RRC connection mobility control						
10.1.1.1	Random Access						
10.1.1.1.1	EN-DC FR1 4-step RA type contention-based random access for NR PSCell with CCA	Rel-16	C207c	UE supporting EN-DC TDD FR1 and NR-U (scenario B) and MIB acquisition on shared spectrum and (RRM, UL) in dynamic channel access or in semi-static channel access	Test execution not necessary if test 11.2.2.2.1 has been executed.	2Rx 4Rx	
10.1.1.1.2	EN-DC FR1 4-step RA type non-contention based random access for NR PSCell with CCA	Rel-16	C207c	UE supporting EN-DC TDD FR1 and NR-U (scenario B) and MIB acquisition on shared spectrum and (RRM, UL) in dynamic channel access or in semi-static channel access	Test execution not necessary if test 11.2.2.2.2 has been executed.	2Rx 4Rx	
10.1.1.1.3	EN-DC FR1 2-step RA type contention-based random access for NR PSCell with CCA	Rel-16	C207c	UE supporting EN-DC TDD FR1 and NR-U (scenario B) and MIB acquisition on shared spectrum and (RRM, UL) in dynamic channel access or in semi-static channel access	Test execution not necessary if test 11.2.2.2.3 has been executed.	2Rx 4Rx	
10.1.1.1.4	EN-DC FR1 2-step RA type non-contention based random access for NR PSCell with CCA	Rel-16	C207c	UE supporting EN-DC TDD FR1 and NR-U (scenario B) and MIB acquisition on shared spectrum and (RRM, UL) in dynamic channel access or in semi-static channel access	Test execution not necessary if test 11.2.2.2.4 has been executed.	2Rx 4Rx	
10.1.2	EN-DC FR1 Handover with PSCell from EN-DC to EN-DC with known target PSCell using CCA	Rel-16	C207c	UE supporting EN-DC TDD FR1 and NR-U (scenario B) and MIB acquisition on shared spectrum and (RRM, UL) in dynamic channel access or in semi-static channel access		2Rx 4Rx	
10.2	Timing						
10.2.1	UE transmit timing						
10.2.1.1	EN-DC FR1 UE Transmit Timing Test with PSCell under DL CCA	Rel-16	C207c	UE supporting EN-DC TDD FR1 and NR-U (scenario B) and MIB acquisition on shared spectrum and (RRM, UL) in dynamic channel access or in semi-static channel access	Test execution not necessary if test 11.3.1.1 has been executed.	2Rx 4Rx	
10.2.2	UE timing advance						

Clause	TC Title	Release	Applicability		Additional Information	Branch	Subtest Selection Criteria
			Condition	Comment			
10.2.2.1	EN-DC FR1 UE Timing Advance Adjustment Accuracy with PSCell under DL CCA	Rel-16	C207c	UE supporting EN-DC TDD FR1 and NR-U (scenario B) and MIB acquisition on shared spectrum and (RRM, UL) in dynamic channel access or in semi-static channel access	Test execution not necessary if test 11.3.2.1 has been executed.	2Rx 4Rx	
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	Test execution not necessary if test 11.4.1.2 has been executed.	2Rx 4Rx	
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	Test execution not necessary if test 11.4.1.3 has been executed.	2Rx 4Rx	
10.3.2	Void						
10.3.3	SCell activation and deactivation delay						
10.3.3.1	EN-DC FR1 SCell Activation and Deactivation of known NR SCell with NR PSCell and NR SCell under CCA, 160 ms SCell measurement cycle	Rel-16	C207h	UE supporting EN-DC TDD FR1 and NR-U (scenario B) and MIB acquisition on shared spectrum and (RRM, UL) in dynamic channel access or in semi-static channel access, and 2DL CA		2Rx 4Rx	
10.3.3.2	EN-DC FR1 SCell Activation and Deactivation of known NR SCell with NR PSCell and NR SCell under CCA, 640 ms SCell measurement cycle	Rel-16	C207h	UE supporting EN-DC TDD FR1 and NR-U (scenario B) and MIB acquisition on shared spectrum and (RRM, UL) in dynamic channel access or in semi-static channel access, and 2DL CA		2Rx 4Rx	
10.3.3.3	EN-DC FR1 SCell Activation and Deactivation of unknown NR SCell with NR PSCell and NR SCell under CCA	Rel-16	C207h	UE supporting EN-DC TDD FR1 and NR-U (scenario B) and MIB acquisition on shared spectrum and (RRM, UL) in dynamic channel access or in semi-static channel access, and 2DL CA		2Rx 4Rx	
10.3.4	Beam failure detection and link recovery procedures						

Clause	TC Title	Release	Applicability		Additional Information	Branch	Subtest Selection Criteria
			Condition	Comment			
10.3.4.1	EN-DC FR1 EN-DC Beam Failure Detection and Link Recovery Test for FR1 PSCell under CCA configured with SSB-based BFD and LR in non-DRX mode	Rel-16	C206b	UE supporting EN-DC TDD FR1 and NR-U (scenario B) and MIB acquisition on shared spectrum and (RRM, UL, RLM and BFR/CBD) in dynamic channel access or in semi-static channel access	Test execution not necessary if test 11.4.4.1 has been executed.	2Rx 4Rx	
10.3.4.2	EN-DC FR1 EN-DC Beam Failure Detection and Link Recovery Test for FR1 PSCell under CCA configured with SSB-based BFD and LR in DRX mode	Rel-16	C206c	UE supporting EN-DC TDD FR1 and NR-U (scenario B) and MIB acquisition on shared spectrum and (RRM, UL, RLM and BFR/CBD) in dynamic channel access or in semi-static channel access and long DRX	Test execution not necessary if test 11.4.4.2 has been executed.	2Rx 4Rx	
10.3.5	Active BWP switching						
10.3.5.1	EN-DC FR1 UL active BWP switch delay with consistent UL LBT failure on PSCell subject to UL CCA in EN-DC	Rel-16	C207g	UE supporting EN-DC TDD FR1 and NR-U (scenario B) and MIB acquisition on shared spectrum and (RRM, UL) in dynamic channel access or in semi-static channel access and (DCI and timer based active BWP switching delay Type1 or Type2) and (Support of BWP adaptation upto2 or upto4) and UL LBT detection and recovery	Test execution not necessary if test 11.4.5.1 has been executed.	2Rx 4Rx	
10.3.5.2	DCI-based and timer-based active BWP switch						
10.3.5.2.1	EN-DC FR1 DCI-based DL active BWP switch in non-DRX in synchronous EN-DC under CCA	Rel-16	C207	UE supporting EN-DC TDD FR1 and NR-U (scenario B) and MIB acquisition on shared spectrum and (RRM, UL) in dynamic channel access or in semi-static channel access and (DCI and timer based active BWP switching delay Type1 or Type2) and (Support of BWP adaptation upto2 or upto4)	Test execution not necessary if test 10.3.5.2.2 has been executed.	2Rx 4Rx	

Clause	TC Title	Release	Applicability		Additional Information	Branch	Subtest Selection Criteria
			Condition	Comment			
10.3.5.2.2	EN-DC FR1 DCI-based DL active BWP switch with SCell in non-DRX in synchronous EN-DC under CCA	Rel-16	C207a	UE supporting EN-DC TDD FR1 and NR-U (scenario B) and MIB acquisition on shared spectrum and (RRM, UL) in dynamic channel access or in semi-static channel access and (DCI and timer based active BWP switching delay Type1 or Type2) and (Support of BWP adaptation upto2 or upto4) and 2DL CA		2Rx 4Rx	
10.3.5.3	RRC-based Active BWP Switch						
10.3.5.3.1	EN-DC FR1 RRC-based DL active BWP switch in non-DRX in synchronous EN-DC under CCA	Rel-16	C207b	UE supporting EN-DC TDD FR1 and NR-U (scenario B) and MIB acquisition on shared spectrum and (RRM, UL) in dynamic channel access or in semi-static channel access and (Support of BWP adaptation upto2 or upto4)	Test execution not necessary if test 11.4.5.3.1 has been executed.	2Rx 4Rx	
10.3.6	PSCell addition and release delay						
10.3.6.1	Addition and Release Delay of known NR PSCell on the carrier under CCA	Rel-16	C207c	UE supporting EN-DC TDD FR1 and NR-U (scenario B) and MIB acquisition on shared spectrum and (RRM, UL) in dynamic channel access or in semi-static channel access		2Rx 4Rx	
10.4	Measurement Procedures						
10.4.1	Intra-Frequency Measurements						
10.4.1.1	EN-DC FR1 Event-triggered reporting tests on PSCC without gaps under non-DRX and CCA	Rel-16	C207d	UE supporting EN-DC TDD FR1 and NR-U (scenario B) and MIB acquisition on shared spectrum and RRM measurements in dynamic channel access or in semi-static channel access	Test execution not necessary if test 11.5.1.1 has been executed.	2Rx 4Rx	
10.4.1.2	Void						
10.4.1.3	Void						
10.4.1.4	EN-DC FR1 Event-triggered reporting tests on PSCC with per-UE gaps under DRX and CCA	Rel-16	C207e	UE supporting EN-DC TDD FR1 and NR-U (scenario B) and MIB acquisition on shared spectrum and RRM measurements in dynamic channel access or in semi-static channel access and long DRX cycle		2Rx 4Rx	
10.4.2	Inter-Frequency Measurements						

Clause	TC Title	Release	Applicability		Additional Information	Branch	Subtest Selection Criteria
			Condition	Comment			
10.4.2.1	Void						
10.4.2.2	Void						
10.4.2.3	EN-DC FR1-FR1 Event-triggered reporting for FR1 cell with CCA without SSB time index detection when DRX is not used	Rel-16	C207d	UE supporting EN-DC TDD FR1 and NR-U (scenario B) and MIB acquisition on shared spectrum and RRM measurements in dynamic channel access or in semi-static channel access	Test execution not necessary if test 11.5.2.3 has been executed.	2Rx 4Rx	
10.4.2.4	EN-DC FR1-FR1 Event triggered reporting for FR1 cell with CCA without SSB time index detection when DRX is used	Rel-16	C207e	UE supporting EN-DC TDD FR1 and NR-U (scenario B) and MIB acquisition on shared spectrum and RRM measurements in dynamic channel access or in semi-static channel access and long DRX cycle	Test execution not necessary if test 11.5.2.4 has been executed.	2Rx 4Rx	
10.4.2.5	EN-DC FR1-FR1 Event-triggered reporting for FR1 cell with CCA with SSB time index detection when DRX is not used	Rel-16	C207d	UE supporting EN-DC TDD FR1 and NR-U (scenario B) and MIB acquisition on shared spectrum and RRM measurements in dynamic channel access or in semi-static channel access	Test execution not necessary if test 11.5.2.5 has been executed.	2Rx 4Rx	
10.4.2.6	EN-DC FR1-FR1 Event triggered reporting for FR1 cell with CCA with SSB time index detection when DRX is used	Rel-16	C207e	UE supporting EN-DC TDD FR1 and NR-U (scenario B) and MIB acquisition on shared spectrum and RRM measurements in dynamic channel access or in semi-static channel access and long DRX cycle	Test execution not necessary if test 11.5.2.6 has been executed.	2Rx 4Rx	
10.4.2.7	EN-DC FR1-FR1 Event-triggered reporting for FR1 cell without SSB time index detection when DRX is not used	Rel-16	C207d	UE supporting EN-DC TDD FR1 and NR-U (scenario B) and MIB acquisition on shared spectrum and RRM measurements in dynamic channel access or in semi-static channel access	Test execution not necessary if test 11.5.2.7 has been executed.	2Rx 4Rx	
10.4.2.8	EN-DC FR1-FR1 Event triggered reporting for FR1 cell without SSB time index detection when DRX is used	Rel-16	C207e	UE supporting EN-DC TDD FR1 and NR-U (scenario B) and MIB acquisition on shared spectrum and RRM measurements in dynamic channel access or in semi-static channel access and long DRX cycle	Test execution not necessary if test 11.5.2.8 has been executed.	2Rx 4Rx	

Clause	TC Title	Release	Applicability		Additional Information	Branch	Subtest Selection Criteria
			Condition	Comment			
10.4.2.9	EN-DC FR1-FR1 Event-triggered reporting for FR1 cell with SSB time index detection when DRX is not used	Rel-16	C207d	UE supporting EN-DC TDD FR1 and NR-U (scenario B) and MIB acquisition on shared spectrum and RRM measurements in dynamic channel access or in semi-static channel access	Test execution not necessary if test 11.5.2.9 has been executed.	2Rx 4Rx	
10.4.2.10	EN-DC FR1-FR1 Event triggered reporting for FR1 cell with SSB time index detection when DRX is used	Rel-16	C207e	UE supporting EN-DC TDD FR1 and NR-U (scenario B) and MIB acquisition on shared spectrum and RRM measurements in dynamic channel access or in semi-static channel access and long DRX cycle	Test execution not necessary if test 11.5.2.10 has been executed.	2Rx 4Rx	
10.4.3	L1-RSRP measurements for beam reporting under CCA						
10.4.3.1	EN-DC FR1 SSB based L1-RSRP measurement on PSCC under CCA when DRX is not used	Rel-16	C207c	UE supporting EN-DC TDD FR1 and NR-U (scenario B) and MIB acquisition on shared spectrum and (RRM, UL) in dynamic channel access or in semi-static channel access	Test execution not necessary if test 11.5.4.1 has been executed.	2Rx 4Rx	
10.4.3.2	EN-DC FR1 SSB based L1-RSRP measurement on PSCC under CCA when DRX is used	Rel-16	C207i	UE supporting EN-DC TDD FR1 and NR-U (scenario B) and MIB acquisition on shared spectrum and (RRM, UL) in dynamic channel access or in semi-static channel access and long DRX	Test execution not necessary if test 11.5.4.2 has been executed.	2Rx 4Rx	
10.4.3.3	EN-DC FR1 SSB based L1-RSRP measurement on SCC under CCA when DRX is not used	Rel-16	C207c	UE supporting EN-DC TDD FR1 and NR-U (scenario B) and MIB acquisition on shared spectrum and (RRM, UL) in dynamic channel access or in semi-static channel access	Test execution not necessary if test 11.5.4.3 has been executed.	2Rx 4Rx	
10.4.3.4	EN-DC FR1 SSB based L1-RSRP measurement on SCC under CCA when DRX is used	Rel-16	C207i	UE supporting EN-DC TDD FR1 and NR-U (scenario B) and MIB acquisition on shared spectrum and (RRM, UL) in dynamic channel access or in semi-static channel access and long DRX	Test execution not necessary if test 11.5.4.4 has been executed.	2Rx 4Rx	
10.4.4	E-UTRAN-NR inter-RAT measurements on NR carrier frequency under CCA						

Clause	TC Title	Release	Applicability		Additional Information	Branch	Subtest Selection Criteria
			Condition	Comment			
10.4.4.1	EN-DC FR1 E-UTRA-NR inter-RAT event triggered reporting tests for FR1 without SSB time index detection when DRX is not used	Rel-16	C207d	UE supporting EN-DC TDD FR1 and NR-U (scenario B) and MIB acquisition on shared spectrum and RRM measurements in dynamic channel access or in semi-static channel access	Test execution not necessary if test 11.5.3.1 has been executed.	2Rx 4Rx	
10.4.4.2	EN-DC FR1 E-UTRA-NR inter-RAT event triggered reporting tests for FR1 without SSB time index detection when DRX is used	Rel-16	C207e	UE supporting EN-DC TDD FR1 and NR-U (scenario B) and MIB acquisition on shared spectrum and RRM measurements in dynamic channel access or in semi-static channel access and long DRX cycle	Test execution not necessary if test 11.5.3.2 has been executed.	2Rx 4Rx	
10.4.4.3	EN-DC FR1 NR Inter-RAT event triggered reporting tests for FR1 with SSB time index detection when DRX is not used	Rel-16	C207d	UE supporting EN-DC TDD FR1 and NR-U (scenario B) and MIB acquisition on shared spectrum and RRM measurements in dynamic channel access or in semi-static channel access		2Rx 4Rx	
10.4.4.4	EN-DC FR1 NR Inter-RAT event triggered reporting tests for FR1 with SSB time index detection when DRX is used	Rel-16	C207e	UE supporting EN-DC TDD FR1 and NR-U (scenario B) and MIB acquisition on shared spectrum and RRM measurements in dynamic channel access or in semi-static channel access and long DRX cycle		2Rx 4Rx	
10.5	Measurement Performance						
10.5.1	SS-RSRP						
10.5.1.1	EN-DC FR1 intra-frequency SS-RSRP measurement accuracy on a CCA serving cell	Rel-16	C207d	UE supporting EN-DC TDD FR1 and NR-U (scenario B) and MIB acquisition on shared spectrum and RRM measurements in dynamic channel access or in semi-static channel access	Test execution not necessary if test 11.6.1.1 has been executed.	2Rx 4Rx	
10.5.1.2	EN-DC FR1-FR1 inter-frequency SS-RSRP measurement accuracy with CCA serving cell and CCA target cell	Rel-16	C207d	UE supporting EN-DC TDD FR1 and NR-U (scenario B) and MIB acquisition on shared spectrum and RRM measurements in dynamic channel access or in semi-static channel access		2Rx 4Rx	
10.5.2	SS-RSRQ						

Clause	TC Title	Release	Applicability		Additional Information	Branch	Subtest Selection Criteria
			Condition	Comment			
10.5.2.1	EN-DC FR1 intra-frequency SS-RSRQ measurement accuracy with serving cell and target cell under CCA	Rel-16	C207d	UE supporting EN-DC TDD FR1 and NR-U (scenario B) and MIB acquisition on shared spectrum and RRM measurements in dynamic channel access or in semi-static channel access	Test execution not necessary if test 11.6.2.1 has been executed.	2Rx 4Rx	
10.5.2.2	EN-DC FR1-FR1 inter-frequency SS-RSRQ measurement accuracy with serving cell and target cell under CCA	Rel-16	C207d	UE supporting EN-DC TDD FR1 and NR-U (scenario B) and MIB acquisition on shared spectrum and RRM measurements in dynamic channel access or in semi-static channel access	Test execution not necessary if test 11.6.2.2 has been executed.	2Rx 4Rx	
10.5.3	SS-SINR						
10.5.3.1	EN-DC FR1 intra-frequency SS-SINR measurement accuracy on PSCC under CCA	Rel-16	C207f	UE supporting EN-DC TDD FR1 and NR-U (scenario B) and MIB acquisition on shared spectrum and RRM measurements in dynamic channel access or in semi-static channel access and SS-SINR measurements on shared spectrum	Test execution not necessary if test 11.6.3.1 has been executed.	2Rx 4Rx	
10.5.3.2	EN-DC FR1-FR1 inter-frequency SS-SINR measurement accuracy on PSCC under CCA	Rel-16	C207f	UE supporting EN-DC TDD FR1 and NR-U (scenario B) and MIB acquisition on shared spectrum and RRM measurements in dynamic channel access or in semi-static channel access and SS-SINR measurements on shared spectrum	Test execution not necessary if test 11.6.3.2 has been executed.	2Rx 4Rx	
10.5.3.3	EN-DC FR1 intra-frequency SS-SINR measurement accuracy on SCC under CCA	Rel-16	C207j	UE supporting EN-DC TDD FR1 and NR-U (scenario B) and MIB acquisition on shared spectrum and RRM measurements in dynamic channel access or in semi-static channel access and SS-SINR measurements on shared spectrum and 2DL CA	Test execution not necessary if test 11.6.3.3 has been executed.	2Rx 4Rx	
10.5.4	L1-RSRP measurement for beam reporting with CCA serving cell						

Clause	TC Title	Release	Applicability		Additional Information	Branch	Subtest Selection Criteria
			Condition	Comment			
10.5.4.1	EN-DC FR1 SSB based L1-RSRP measurement accuracy with CCA	Rel-16	C207d	UE supporting EN-DC TDD FR1 and NR-U (scenario B) and MIB acquisition on shared spectrum and RRM measurements in dynamic channel access or in semi-static channel access	Test execution not necessary if test 11.6.4.1 has been executed.	2Rx 4Rx	
10.5.5	RSSI						
10.5.5.1	EN-DC FR1 RSSI measurement accuracy on PSCC with CCA	Rel-16	C207k	UE supporting EN-DC TDD FR1 and NR-U (scenario B) and MIB acquisition on shared spectrum and RRM measurements in dynamic channel access or in semi-static channel access and RSSI measurements	Test execution not necessary if test 11.6.5.1 has been executed.	2Rx 4Rx	
10.5.5.2	EN-DC FR1 RSSI measurement accuracy on SCC with CCA	Rel-16	C207l	UE supporting EN-DC TDD FR1 and NR-U (scenario B) and MIB acquisition on shared spectrum and RRM measurements in dynamic channel access or in semi-static channel access and RSSI measurements and 2DL CA	Test execution not necessary if test 11.6.5.2 has been executed.	2Rx 4Rx	
10.5.5.3	EN-DC FR1-FR1 RSSI measurement accuracy on a carrier with CCA	Rel-16	C207k	UE supporting EN-DC TDD FR1 and NR-U (scenario B) and MIB acquisition on shared spectrum and RRM measurements in dynamic channel access or in semi-static channel access and RSSI measurements	Test execution not necessary if test 11.6.5.3 has been executed.	2Rx 4Rx	
10.5.6	Channel occupancy						
10.5.6.1	EN-DC FR1 Channel occupancy measurement accuracy on PSCC with CCA	Rel-16	C207k	UE supporting EN-DC TDD FR1 and NR-U (scenario B) and MIB acquisition on shared spectrum and RRM measurements in dynamic channel access or in semi-static channel access and Channel Occupancy measurements	Test execution not necessary if test 11.6.6.1 has been executed.	2Rx 4Rx	

Clause	TC Title	Release	Applicability		Additional Information	Branch	Subtest Selection Criteria
			Condition	Comment			
10.5.6.2	EN-DC FR1 Channel occupancy measurement accuracy on SCC with CCA	Rel-16	C207l	UE supporting EN-DC TDD FR1 and NR-U (scenario B) and MIB acquisition on shared spectrum and RRM measurements in dynamic channel access or in semi-static channel access and Channel Occupancy measurements and 2DL CA	Test execution not necessary if test 11.6.6.2 has been executed.	2Rx 4Rx	
10.5.6.3	EN-DC FR1-FR1 Channel occupancy measurement accuracy on a carrier with CCA	Rel-16	C207k	UE supporting EN-DC TDD FR1 and NR-U (scenario B) and MIB acquisition on shared spectrum and RRM measurements in dynamic channel access or in semi-static channel access and Channel Occupancy measurements	Test execution not necessary if test 11.6.6.3 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.							

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

Clause	TC Title	Release	Applicability		Additional Information	Branch	Subtest Selection Criteria
			Condition	Comment			
11.1	RRC_IDLE state mobility						
11.1.1	Cell re-selection with both source and target NR carrier frequencies under CCA						
11.1.1.1	NR SA FR1 Cell reselection to FR1 intra-frequency NR cells when subject to CCA on the serving and target cell	Rel-16	C321	UE supporting SA TDD FR1 in unlicensed band (scenario C) and (MIB, SIB1) acquisition on shared spectrum and (RRM and UL) in dynamic channel access or in semi-static channel access		2Rx 4Rx	
11.1.1.2	NR SA FR1 Cell reselection to FR1 inter-frequency NR case when subject to CCA on the serving and target cell	Rel-16	C321	UE supporting SA TDD FR1 in unlicensed band (scenario C) and (MIB, SIB1) acquisition on shared spectrum and (RRM and UL) in dynamic channel access or in semi-static channel access		2Rx 4Rx	
11.1.2	Cell re-selection to NR with source NR carrier frequency under CCA						
11.1.2.1	NR SA FR1 Cell re-selection to NR with source NR carrier frequency under CCA	Rel-16	C321	UE supporting SA TDD FR1 in unlicensed band (scenario C) and (MIB, SIB1) acquisition on shared spectrum and (RRM and UL) in dynamic channel access or in semi-static channel access		2Rx 4Rx	
11.1.3	Cell re-selection from NR carrier with target NR carrier frequency under CCA						
11.1.3.1	NR SA FR1 Cell re-selection from NR carrier with target NR carrier frequency under CCA	Rel-16	C321	UE supporting SA TDD FR1 in unlicensed band (scenario C) and (MIB, SIB1) acquisition on shared spectrum and (RRM and UL) in dynamic channel access or in semi-static channel access		2Rx 4Rx	
11.1.4	Inter-RAT cell re-selection to E-UTRAN with source NR carrier frequency under CCA						
11.1.4.1	NR SA FR1 Cell reselection to higher priority E-UTRAN when serving cell is subject to CCA	Rel-16	C321b	UE supporting SA TDD FR1 in unlicensed band (scenario C) and (MIB, SIB1) acquisition on shared spectrum and (RRM and UL) in dynamic channel access or in semi-static channel access and E-UTRA		2Rx 4Rx	

Clause	TC Title	Release	Applicability		Additional Information	Branch	Subtest Selection Criteria
			Condition	Comment			
11.1.4.2	NR SA FR1 Cell reselection to lower priority E-UTRAN when serving cell is subject to CCA	Rel-16	C321b	UE supporting SA TDD FR1 in unlicensed band (scenario C) and (MIB, SIB1) acquisition on shared spectrum and (RRM and UL) in dynamic channel access or in semi-static channel access and E-UTRA		2Rx 4Rx	
11.2	RRC_CONNECTED state mobility						
11.2.1	Handover						
11.2.1.1	NR SA FR1 Intra-frequency handover from FR1 carrier under CCA to FR1 carrier under CCA; known target cell	Rel-16	C321	UE supporting SA TDD FR1 in unlicensed band (scenario C) and (MIB, SIB1) acquisition on shared spectrum and (RRM and UL) in dynamic channel access or in semi-static channel access		2Rx 4Rx	
11.2.1.2	NR SA FR1 Intra-frequency handover from FR1 carrier under CCA to FR1 carrier under CCA; unknown target cell	Rel-16	C321	UE supporting SA TDD FR1 in unlicensed band (scenario C) and (MIB, SIB1) acquisition on shared spectrum and (RRM and UL) in dynamic channel access or in semi-static channel access		2Rx 4Rx	
11.2.1.3	NR SA FR1 Inter-frequency handover from FR1 carrier under CCA to FR1 carrier under CCA; unknown target cell	Rel-16	C321	UE supporting SA TDD FR1 in unlicensed band (scenario C) and (MIB, SIB1) acquisition on shared spectrum and (RRM and UL) in dynamic channel access or in semi-static channel access		2Rx 4Rx	
11.2.1.4	NR SA FR1 Inter-frequency handover from FR1 carrier under CCA to FR1; known target cell	Rel-16	C321	UE supporting SA TDD FR1 in unlicensed band (scenario C) and (MIB, SIB1) acquisition on shared spectrum and (RRM and UL) in dynamic channel access or in semi-static channel access		2Rx 4Rx	
11.2.1.5	NR SA FR1 Inter-frequency handover from FR1 carrier under CCA to FR1; unknown target cell	Rel-16	C321	UE supporting SA TDD FR1 in unlicensed band (scenario C) and (MIB, SIB1) acquisition on shared spectrum and (RRM and UL) in dynamic channel access or in semi-static channel access		2Rx 4Rx	

Clause	TC Title	Release	Applicability		Additional Information	Branch	Subtest Selection Criteria
			Condition	Comment			
11.2.1.6	NR SA FR1 Inter-frequency handover from FR1 to FR1 carrier under CCA; unknown target cell	Rel-16	C321	UE supporting SA TDD FR1 in unlicensed band (scenario C) and (MIB, SIB1) acquisition on shared spectrum and (RRM and UL) in dynamic channel access or in semi-static channel access		2Rx 4Rx	
11.2.1.7	NR SA FR1 carrier under CCA - E-UTRAN handover with known target cell	Rel-16	C321b	UE supporting SA TDD FR1 in unlicensed band (scenario C) and (MIB, SIB1) acquisition on shared spectrum and (RRM and UL) in dynamic channel access or in semi-static channel access and E-UTRA		2Rx 4Rx	
11.2.1.8	NR SA FR1 carrier under CCA - E-UTRAN handover with unknown target cell	Rel-16	C321b	UE supporting SA TDD FR1 in unlicensed band (scenario C) and (MIB, SIB1) acquisition on shared spectrum and (RRM and UL) in dynamic channel access or in semi-static channel access and E-UTRA		2Rx 4Rx	
11.2.1.9	Void						
11.2.2	RRC connection mobility control						
11.2.2.1	RRC re-establishment						
11.2.2.1.1	NR SA FR1 Intra-frequency RRC Re-establishment with CCA in FR1	Rel-16	C321	UE supporting SA TDD FR1 in unlicensed band (scenario C) and (MIB, SIB1) acquisition on shared spectrum and (RRM and UL) in dynamic channel access or in semi-static channel access		2Rx 4Rx	
11.2.2.1.2	NR SA FR1 Inter-frequency RRC Re-establishment with CCA in FR1	Rel-16	C321	UE supporting SA TDD FR1 in unlicensed band (scenario C) and (MIB, SIB1) acquisition on shared spectrum and (RRM and UL) in dynamic channel access or in semi-static channel access		2Rx 4Rx	
11.2.2.1.3	NR SA FR1 Intra-frequency RRC Re-establishment with CCA without serving cell timing	Rel-16	C321	UE supporting SA TDD FR1 in unlicensed band (scenario C) and (MIB, SIB1) acquisition on shared spectrum and (RRM and UL) in dynamic channel access or in semi-static channel access		2Rx 4Rx	

Clause	TC Title	Release	Applicability		Additional Information	Branch	Subtest Selection Criteria
			Condition	Comment			
11.2.2.1.4	NR SA FR1 Inter-frequency RRC Re-establishment from NR FR1 carrier without CCA to NR FR1 carrier under CCA	Rel-16	C321	UE supporting SA TDD FR1 in unlicensed band (scenario C) and (MIB, SIB1) acquisition on shared spectrum and (RRM and UL) in dynamic channel access or in semi-static channel access		2Rx 4Rx	
11.2.2.2	Random Access						
11.2.2.2.1	NR SA FR1 4-step RA type contention-based random access for NR PCell with CCA	Rel-16	C321	UE supporting SA TDD FR1 in unlicensed band (scenario C) and (MIB, SIB1) acquisition on shared spectrum and (RRM and UL) in dynamic channel access or in semi-static channel access	Test execution not necessary if test 10.1.1.1.1 has been executed.	2Rx 4Rx	
11.2.2.2.2	NR SA FR1 4-step RA type non-contention based random access for NR PSCell with CCA	Rel-16	C321	UE supporting SA TDD FR1 in unlicensed band (scenario C) and (MIB, SIB1) acquisition on shared spectrum and (RRM and UL) in dynamic channel access or in semi-static channel access	Test execution not necessary if test 10.1.1.1.2 has been executed.	2Rx 4Rx	
11.2.2.2.3	NR SA FR1 2-step RA type contention-based random access for NR PCell with CCA	Rel-16	C321c	UE supporting SA TDD FR1 in unlicensed band (scenario C) and (MIB, SIB1) acquisition on shared spectrum and (RRM and UL) in dynamic channel access or in semi-static channel access and 2-step RACH	Test execution not necessary if test 10.1.1.1.3 has been executed.	2Rx 4Rx	
11.2.2.2.4	NR SA FR1 2-step RA type non-contention-based random access for NR PCell with CCA	Rel-16	C321c	UE supporting SA TDD FR1 in unlicensed band (scenario C) and (MIB, SIB1) acquisition on shared spectrum and (RRM and UL) in dynamic channel access or in semi-static channel access and 2-step RACH	Test execution not necessary if test 10.1.1.1.4 has been executed.	2Rx 4Rx	
11.2.2.3	RRC connection release with redirection						
11.2.2.3.1	NR SA FR1 Redirection from NR FR1 carrier under CCA to NR FR1 carrier under CCA	Rel-16	C321	UE supporting SA TDD FR1 in unlicensed band (scenario C) and (MIB, SIB1) acquisition on shared spectrum and (RRM and UL) in dynamic channel access or in semi-static channel access		2Rx 4Rx	

Clause	TC Title	Release	Applicability		Additional Information	Branch	Subtest Selection Criteria
			Condition	Comment			
11.2.2.3.2	NR SA FR1 Redirection from NR FR1 carrier without CCA to NR FR1 carrier with CCA	Rel-16	C321	UE supporting SA TDD FR1 in unlicensed band (scenario C) and (MIB, SIB1) acquisition on shared spectrum and (RRM and UL) in dynamic channel access or in semi-static channel access		2Rx 4Rx	
11.3	Timing						
11.3.1	UE transmit timing						
11.3.1.1	NR SA FR1 UE Transmit Timing Test with PCell under DL CCA	Rel-16	C321	UE supporting SA TDD FR1 in unlicensed band (scenario C) and (MIB, SIB1) acquisition on shared spectrum and (RRM and UL) in dynamic channel access or in semi-static channel access	Test execution not necessary if test 10.2.1.1 has been executed.	2Rx 4Rx	
11.3.2	UE timing advance						
11.3.2.1	NR SA FR1 UE Timing Advance Adjustment Accuracy with PCell under DL CCA	Rel-16	C321	UE supporting SA TDD FR1 in unlicensed band (scenario C) and (MIB, SIB1) acquisition on shared spectrum and (RRM and UL) in dynamic channel access or in semi-static channel access	Test execution not necessary if test 10.2.2.1 has been executed.	2Rx 4Rx	
11.4	Signalling characteristics						
11.4.1	Radio link monitoring						
11.4.1.2	EN-DC FR1 Radio link monitoring out-of-sync test for PSCell under CCA configured with SSB-based RLM RS in non-DRX mode	Rel-16	C322	UE supporting SA TDD FR1 in unlicensed band (scenario C) and (MIB, SIB1) acquisition on shared spectrum and (RRM, UL and RLM) in dynamic channel access or in semi-static channel access	Test execution not necessary if test 10.3.1.2 has been executed.	2Rx 4Rx	
11.4.1.3	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	C322	UE supporting SA TDD FR1 in unlicensed band (scenario C) and (MIB, SIB1) acquisition on shared spectrum and (RRM, UL and RLM) in dynamic channel access or in semi-static channel access	Test execution not necessary if test 10.3.1.3 has been executed.	2Rx 4Rx	
11.4.2	Void						
11.4.3	SCell activation and deactivation delay						

Clause	TC Title	Release	Applicability		Additional Information	Branch	Subtest Selection Criteria
			Condition	Comment			
11.4.3.1	NR SA FR1 SCell Activation and Deactivation of known SCell with PCell and SCell under CCA, 160 ms SCell measurement cycle	Rel-16	C321a	UE supporting SA TDD FR1 in unlicensed band (scenario C) and (MIB, SIB1) acquisition on shared spectrum and (RRM and UL) in dynamic channel access or in semi-static channel access, and 2DL CA		2Rx 4Rx	
11.4.3.2	NR SA FR1 SCell Activation and Deactivation of known SCell with PCell and SCell under CCA, 640 ms SCell measurement cycle	Rel-16	C321a	UE supporting SA TDD FR1 in unlicensed band (scenario C) and (MIB, SIB1) acquisition on shared spectrum and (RRM and UL) in dynamic channel access or in semi-static channel access, and 2DL CA		2Rx 4Rx	
11.4.3.3	NR SA FR1 SCell Activation and Deactivation of unknown SCell with PCell and SCell under CCA	Rel-16	C321a	UE supporting SA TDD FR1 in unlicensed band (scenario C) and (MIB, SIB1) acquisition on shared spectrum and (RRM and UL) in dynamic channel access or in semi-static channel access, and 2DL CA		2Rx 4Rx	
11.4.4	Beam failure detection and link recovery procedures						
11.4.4.1	EN-DC FR1 EN-DC Beam Failure Detection and Link Recovery Test for FR1 PSCell under CCA configured with SSB-based BFD and LR in non-DRX mode	Rel-16	C323	UE supporting SA TDD FR1 in unlicensed band (scenario C) and (MIB, SIB1) acquisition on shared spectrum and (RRM, UL, RLM and BFR/CBD) in dynamic channel access or in semi-static channel access	Test execution not necessary if test 10.3.4.1 has been executed.	2Rx 4Rx	
11.4.4.2	EN-DC FR1 EN-DC Beam Failure Detection and Link Recovery Test for FR1 PSCell under CCA configured with SSB-based BFD and LR in DRX mode	Rel-16	C324	UE supporting SA TDD FR1 in unlicensed band (scenario C) and (MIB, SIB1) acquisition on shared spectrum and (RRM, UL, RLM and BFR/CBD) in dynamic channel access or in semi-static channel access and long DRX	Test execution not necessary if test 10.3.4.2 has been executed.	2Rx 4Rx	
11.4.5	Active BWP switching						

Clause	TC Title	Release	Applicability		Additional Information	Branch	Subtest Selection Criteria
			Condition	Comment			
11.4.5.1	NR SA FR1 UL active BWP switch delay with consistent UL LBT failure on PCell subject to UL CCA	Rel-16	C325	UE supporting SA TDD FR1 in unlicensed band (scenario C) and (MIB, SIB1) acquisition on shared spectrum and (RRM and UL) in dynamic channel access or in semi-static channel access and (DCI and timer based active BWP switching delay Type1 or Type2) and (Support of BWP adaptation upto2 or upto4) and UL LBT detection and recovery	Test execution not necessary if test 10.3.5.1 has been executed.	2Rx 4Rx	
11.4.5.2	DCI-based and Timer-based Active BWP Switch						
11.4.5.2.1	NR SA FR1 - NR FR1 DL active BWP switch of PCell under CCA with non-DRX	Rel-16	C326a	UE supporting SA TDD FR1 in unlicensed band (scenario C) and (MIB, SIB1) acquisition on shared spectrum and (RRM and UL) in dynamic channel access or in semi-static channel access and (DCI and timer based active BWP switching delay Type1 or Type2) and (Support of BWP adaptation upto2 or upto4) and 2DL CA	Test execution not necessary if test 10.3.5.2.1 has been executed.	2Rx 4Rx	
11.4.5.2.2	NR SA FR1 DCI-based DL active BWP switch with non-DRX under CCA	Rel-16	C326	UE supporting SA TDD FR1 in unlicensed band (scenario C) and (MIB, SIB1) acquisition on shared spectrum and (RRM and UL) in dynamic channel access or in semi-static channel access and (DCI and timer based active BWP switching delay Type1 or Type2) and (Support of BWP adaptation upto2 or upto4)	Test execution not necessary if test 10.3.5.2.2 has been executed.	2Rx 4Rx	
11.4.5.3	RRC-based Active BWP Switch						
11.4.5.3.1	NR SA FR1 DL active BWP switch of Cell with non-DRX	Rel-16	C327	UE supporting SA TDD FR1 in unlicensed band (scenario C) and (MIB, SIB1) acquisition on shared spectrum and (RRM and UL) in dynamic channel access or in semi-static channel access and (Support of BWP adaptation upto2 or upto4)	Test execution not necessary if test 10.3.5.3.1 has been executed.	2Rx 4Rx	

Clause	TC Title	Release	Applicability		Additional Information	Branch	Subtest Selection Criteria
			Condition	Comment			
11.5	Measurement procedure						
11.5.1	Intra-frequency measurements						
11.5.1.1	NR SA FR1 Event-triggered reporting tests on PCC under CCA without gaps under non-DRX	Rel-16	C321	UE supporting SA TDD FR1 in unlicensed band (scenario C) and (MIB, SIB1) acquisition on shared spectrum and (RRM, UL) in dynamic channel access or in semi-static channel access	Test execution not necessary if test 10.4.1.1 has been executed.	2Rx 4Rx	
11.5.1.2	NR SA FR1 Event-triggered reporting tests on PCC under CCA without gaps under DRX	Rel-16	C206e	UE supporting SA TDD FR1 in unlicensed band (scenario C) and (MIB, SIB1) acquisition on shared spectrum and (RRM, UL) in dynamic channel access or in semi-static channel access and long DRX		2Rx 4Rx	
11.5.1.3	Void						
11.5.1.4	Void						
11.5.1.5	Void						
11.5.1.6	Void						
11.5.1.7	Void						
11.5.1.8	Void						
11.5.1.9	Void						
11.5.1.10	Void						
11.5.1.11	Void						
11.5.1.12	Void						
11.5.2	Inter-frequency measurements						
11.5.2.1	Void						
11.5.2.2	Void						
11.5.2.3	NR SA FR1 Event triggered reporting tests for FR1 with CCA without SSB time index detection when DRX is not used	Rel-16	C321	UE supporting SA TDD FR1 in unlicensed band (scenario C) and (MIB, SIB1) acquisition on shared spectrum and (RRM and UL) in dynamic channel access or in semi-static channel access	Test execution not necessary if test 10.4.2.3 has been executed.	2Rx 4Rx	
11.5.2.4	NR SA FR1 Event triggered reporting tests for FR1 with CCA without SSB time index detection when DRX is used	Rel-16	C321	UE supporting SA TDD FR1 in unlicensed band (scenario C) and (MIB, SIB1) acquisition on shared spectrum and (RRM and UL) in dynamic channel access or in semi-static channel access	Test execution not necessary if test 10.4.2.4 has been executed.	2Rx 4Rx	

Clause	TC Title	Release	Applicability		Additional Information	Branch	Subtest Selection Criteria
			Condition	Comment			
11.5.2.5	NR SA FR1 Event triggered reporting tests for FR1 with CCA with SSB time index detection when DRX is not used	Rel-16	C321	UE supporting SA TDD FR1 in unlicensed band (scenario C) and (MIB, SIB1) acquisition on shared spectrum and (RRM and UL) in dynamic channel access or in semi-static channel access	Test execution not necessary if test 10.4.2.5 has been executed.	2Rx 4Rx	
11.5.2.6	NR SA FR1 Event triggered reporting tests for FR1 with CCA with SSB time index detection when DRX is used	Rel-16	C321	UE supporting SA TDD FR1 in unlicensed band (scenario C) and (MIB, SIB1) acquisition on shared spectrum and (RRM and UL) in dynamic channel access or in semi-static channel access	Test execution not necessary if test 10.4.2.6 has been executed.	2Rx 4Rx	
11.5.2.7	NR SA FR1 Event triggered reporting tests for FR1 without SSB time index detection when DRX is not used	Rel-16	C321	UE supporting SA TDD FR1 in unlicensed band (scenario C) and (MIB, SIB1) acquisition on shared spectrum and (RRM and UL) in dynamic channel access or in semi-static channel access	Test execution not necessary if test 10.4.2.7 has been executed.	2Rx 4Rx	
11.5.2.8	NR SA FR1 Event triggered reporting tests for FR1 without SSB time index detection when DRX is used	Rel-16	C321	UE supporting SA TDD FR1 in unlicensed band (scenario C) and (MIB, SIB1) acquisition on shared spectrum and (RRM and UL) in dynamic channel access or in semi-static channel access	Test execution not necessary if test 10.4.2.8 has been executed.	2Rx 4Rx	
11.5.2.9	NR SA FR1 Event triggered reporting tests for FR1 with SSB time index detection when DRX is not used	Rel-16	C321	UE supporting SA TDD FR1 in unlicensed band (scenario C) and (MIB, SIB1) acquisition on shared spectrum and (RRM and UL) in dynamic channel access or in semi-static channel access	Test execution not necessary if test 10.4.2.9 has been executed.	2Rx 4Rx	
11.5.2.10	NR SA FR1 Event triggered reporting tests for FR1 with SSB time index detection when DRX is used	Rel-16	C321	UE supporting SA TDD FR1 in unlicensed band (scenario C) and (MIB, SIB1) acquisition on shared spectrum and (RRM and UL) in dynamic channel access or in semi-static channel access	Test execution not necessary if test 10.4.2.10 has been executed.	2Rx 4Rx	
11.5.3	Inter-RAT E-UTRAN measurements						

Clause	TC Title	Release	Applicability		Additional Information	Branch	Subtest Selection Criteria
			Condition	Comment			
11.5.3.1	NR SA FR1 - E-UTRAN event-triggered reporting in non-DRX	Rel-16	C321b	UE supporting SA TDD FR1 in unlicensed band (scenario C) and (MIB, SIB1) acquisition on shared spectrum and (RRM and UL) in dynamic channel access or in semi-static channel access and E-UTRA	Test execution not necessary if test 10.4.4.1 has been executed.	2Rx 4Rx	
11.5.3.2	NR SA FR1 - E-UTRAN event-triggered reporting in DRX	Rel-16	C321b	UE supporting SA TDD FR1 in unlicensed band (scenario C) and (MIB, SIB1) acquisition on shared spectrum and (RRM and UL) in dynamic channel access or in semi-static channel access and E-UTRA	Test execution not necessary if test 10.4.4.2 has been executed.	2Rx 4Rx	
11.5.4	L1-RSRP measurements for beam reporting						
11.5.4.1	NR SA FR1 SSB based L1-RSRP measurement when DRX is not used	Rel-16	C321	UE supporting SA TDD FR1 in unlicensed band (scenario C) and (MIB, SIB1) acquisition on shared spectrum and (RRM and UL) in dynamic channel access or in semi-static channel access	Test execution not necessary if test 10.4.3.1 has been executed.	2Rx 4Rx	
11.5.4.2	NR SA FR1 SSB based L1-RSRP measurement when DRX is used	Rel-16	C321	UE supporting SA TDD FR1 in unlicensed band (scenario C) and (MIB, SIB1) acquisition on shared spectrum and (RRM and UL) in dynamic channel access or in semi-static channel access	Test execution not necessary if test 10.4.3.2 has been executed.	2Rx 4Rx	
11.5.4.3	NR SA FR1 SSB based L1-RSRP measurement on SCC under CCA when DRX is not used	Rel-16	C321a	UE supporting SA TDD FR1 in unlicensed band (scenario C) and (MIB, SIB1) acquisition on shared spectrum and (RRM and UL) in dynamic channel access or in semi-static channel access, and 2DL CA	Test execution not necessary if test 10.4.3.3 has been executed.	2Rx 4Rx	
11.5.4.4	NR SA FR1 SSB based L1-RSRP measurement on SCC under CCA when DRX is used	Rel-16	C321a	UE supporting SA TDD FR1 in unlicensed band (scenario C) and (MIB, SIB1) acquisition on shared spectrum and (RRM and UL) in dynamic channel access or in semi-static channel access, and 2DL CA	Test execution not necessary if test 10.4.3.4 has been executed.	2Rx 4Rx	
11.6	Measurement Performance						
11.6.1	SS-RSRP						

Clause	TC Title	Release	Applicability		Additional Information	Branch	Subtest Selection Criteria
			Condition	Comment			
11.6.1.1	NR SA FR1 intra-frequency SS-RSRP measurement accuracy on a carrier frequency with CCA	Rel-16	C321	UE supporting SA TDD FR1 in unlicensed band (scenario C) and (MIB, SIB1) acquisition on shared spectrum and (RRM, UL) in dynamic channel access or in semi-static channel access	Test execution not necessary if test 10.5.1.1 has been executed.	2Rx 4Rx	
11.6.1.2	NR SA FR1 Intra-frequency measurement accuracy on SCC on a carrier frequency with CCA	Rel-16	C321a	UE supporting SA TDD FR1 in unlicensed band (scenario C) and (MIB, SIB1) acquisition on shared spectrum and (RRM and UL) in dynamic channel access or in semi-static channel access, and 2DL CA		2Rx 4Rx	
11.6.2	SS-RSRQ						
11.6.2.1	NR SA FR1 intra-frequency SS-RSRQ measurement accuracy on a carrier frequency with CCA	Rel-16	C321	UE supporting SA TDD FR1 in unlicensed band (scenario C) and (MIB, SIB1) acquisition on shared spectrum and (RRM, UL) in dynamic channel access or in semi-static channel access	Test execution not necessary if test 10.5.2.1 has been executed.	2Rx 4Rx	
11.6.2.2	NR SA FR1 inter-frequency SS-RSRQ measurement accuracy on a carrier frequency with CCA	Rel-16	C321	UE supporting SA TDD FR1 in unlicensed band (scenario C) and (MIB, SIB1) acquisition on shared spectrum and (RRM, UL) in dynamic channel access or in semi-static channel access	Test execution not necessary if test 10.5.2.2 has been executed.	2Rx 4Rx	
11.6.2.3	NR SA FR1 intra-frequency SS-RSRQ measurement accuracy on SCC on a carrier frequency with CCA	Rel-16	C321a	UE supporting SA TDD FR1 in unlicensed band (scenario C) and (MIB, SIB1) acquisition on shared spectrum and (RRM, UL) in dynamic channel access or in semi-static channel access and 2DL CA		2Rx 4Rx	
11.6.2.4	NR SA FR1 Inter-frequency SS-RSRQ measurement accuracy on a carrier frequency with CCA from carrier without CCA	Rel-16	C321	UE supporting SA TDD FR1 in unlicensed band (scenario C) and (MIB, SIB1) acquisition on shared spectrum and (RRM, UL) in dynamic channel access or in semi-static channel access		2Rx 4Rx	
11.6.3	SS-SINR						

Clause	TC Title	Release	Applicability		Additional Information	Branch	Subtest Selection Criteria
			Condition	Comment			
11.6.3.1	NR SA FR1 Intra-frequency SS-SINR measurement accuracy on a carrier frequency with CCA	Rel-16	C206g	UE supporting SA TDD FR1 in unlicensed band (scenario C) and (MIB, SIB1) acquisition on shared spectrum and (RRM, UL) in dynamic channel access or in semi-static channel access and SS-SINR measurements on shared spectrum	Test execution not necessary if test 10.5.3.1 has been executed.	2Rx 4Rx	
11.6.3.2	NR SA FR1 Inter-frequency SS-SINR measurement accuracy on a carrier frequency with CCA	Rel-16	C206g	UE supporting SA TDD FR1 in unlicensed band (scenario C) and (MIB, SIB1) acquisition on shared spectrum and (RRM, UL) in dynamic channel access or in semi-static channel access and SS-SINR measurements on shared spectrum	Test execution not necessary if test 10.5.3.2 has been executed.	2Rx 4Rx	
11.6.3.3	NR SA FR1 Intra-frequency SS-SINR measurement accuracy on a carrier frequency with CCA	Rel-16	C206h	UE supporting SA TDD FR1 in unlicensed band (scenario C) and (MIB, SIB1) acquisition on shared spectrum and (RRM, UL) in dynamic channel access or in semi-static channel access and SS-SINR measurements on shared spectrum and 2DL CA		2Rx 4Rx	
11.6.3.4	NR SA FR1 Inter-frequency SS-SINR measurement accuracy on a carrier frequency with CCA from carrier without CCA		C206g	UE supporting SA TDD FR1 in unlicensed band (scenario C) and (MIB, SIB1) acquisition on shared spectrum and (RRM, UL) in dynamic channel access or in semi-static channel access and SS-SINR measurements on shared spectrum		2Rx 4Rx	
11.6.4	L1-RSRP measurement accuracy for beam reporting with CCA serving cell						
11.6.4.1	NR SA FR1 SSB based L1-RSRP measurement accuracy with CCA	Rel-16	C321	UE supporting SA TDD FR1 in unlicensed band (scenario C) and (MIB, SIB1) acquisition on shared spectrum and (RRM, UL) in dynamic channel access or in semi-static channel access	Test execution not necessary if test 10.5.4.1 has been executed.	2Rx 4Rx	
11.6.5	RSSI						

Clause	TC Title	Release	Applicability		Additional Information	Branch	Subtest Selection Criteria
			Condition	Comment			
11.6.5.1	NR SA FR1 Intra-frequency RSSI measurement accuracy on PCC with CCA	Rel-16	C206f	UE supporting SA TDD FR1 in unlicensed band (scenario C) and (MIB, SIB1) acquisition on shared spectrum and (RRM, UL) in dynamic channel access or in semi-static channel access and RSSI measurements	Test execution not necessary if test 10.5.5.1 has been executed.	2Rx 4Rx	
11.6.5.2	NR SA FR1 Intra-frequency RSSI measurement accuracy on SCC with CCA	Rel-16	C206i	UE supporting SA TDD FR1 in unlicensed band (scenario C) and (MIB, SIB1) acquisition on shared spectrum and (RRM, UL) in dynamic channel access or in semi-static channel access and RSSI measurements and 2DL CA	Test execution not necessary if test 10.5.5.2 has been executed.	2Rx 4Rx	
11.6.5.3	NR SA FR1 Inter-frequency RSSI measurement accuracy on a carrier with CCA	Rel-16	C206f	UE supporting SA TDD FR1 in unlicensed band (scenario C) and (MIB, SIB1) acquisition on shared spectrum and (RRM, UL) in dynamic channel access or in semi-static channel access and RSSI measurements	Test execution not necessary if test 10.5.5.3 has been executed.	2Rx 4Rx	
11.6.6	Channel occupancy						
11.6.6.1	NR SA FR1 Intra-frequency channel occupancy measurement accuracy on PCC with CCA		C206f	UE supporting SA TDD FR1 in unlicensed band (scenario C) and (MIB, SIB1) acquisition on shared spectrum and (RRM, UL) in dynamic channel access or in semi-static channel access and Channel Occupancy measurements	Test execution not necessary if test 10.5.6.1 has been executed.	2Rx 4Rx	
11.6.6.2	NR SA FR1 Intra-frequency channel occupancy measurement accuracy on SCC with CCA		C206i	UE supporting SA TDD FR1 in unlicensed band (scenario C) and (MIB, SIB1) acquisition on shared spectrum and (RRM, UL) in dynamic channel access or in semi-static channel access and Channel Occupancy measurements and 2DL CA	Test execution not necessary if test 10.5.6.2 has been executed.	2Rx 4Rx	

Clause	TC Title	Release	Applicability		Additional Information	Branch	Subtest Selection Criteria
			Condition	Comment			
11.6.6.3	NR SA FR1 Inter-frequency channel occupancy measurement accuracy on a carrier with CCA		C206f	UE supporting SA TDD FR1 in unlicensed band (scenario C) and (MIB, SIB1) acquisition on shared spectrum and (RRM, UL) in dynamic channel access or in semi-static channel access and Channel Occupancy measurements	Test execution not necessary if test 10.5.6.3 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.							

Table 4.2-12: Applicability of E-UTRA – NR-U Inter-RAT FR1 conformance test cases, ref. TS 38.533 [5]

Clause	TC Title	Release	Applicability		Additional Information	Branch	Subtest Selection Criteria
			Condition	Comment			
12.1	RRC_IDLE state mobility						
12.1.1	Inter-RAT cell re-selection to NR on a carrier frequency with CCA						
12.1.1.1	E-UTRA Cell reselection to higher priority NR target Cell in FR1 when target cell is subject to CCA	Rel-16	C321b	UE supporting SA TDD FR1 in unlicensed band (scenario C) and (MIB, SIB1) acquisition on shared spectrum and (RRM and UL) in dynamic channel access or in semi-static channel access and E-UTRAN		2Rx 4Rx	
12.2	RRC_CONNECTED state mobility						
12.2.1	Handover						
12.2.1.1	E-UTRAN - NR with CCA handover with known target cell	Rel-16	C321b	UE supporting SA TDD FR1 in unlicensed band (scenario C) and (MIB, SIB1) acquisition on shared spectrum and (RRM and UL) in dynamic channel access or in semi-static channel access and E-UTRAN		2Rx 4Rx	
12.3	Void						
12.4	Measurement Procedure						
12.4.1	E-UTRAN-NR inter-RAT SFTD measurements						
12.4.1.1	E-UTRA – NR Inter-RAT SFTD Measurement Delay with NR under CCA in non-DRX	Rel-16	C086d	UE supporting E-UTRAN, NR RRM measurements in dynamic channel access or in semi-static channel access and SFTD		2Rx 4Rx	
12.4.2	E-UTRAN-NR inter-RAT measurements on NR carrier frequency under CCA						
12.4.2.1	E-UTRAN-NR FR1 inter-RAT event triggered reporting without SSB time index detection when DRX is not used under CCA	Rel-16	C086b	UE supporting E-UTRAN and NR RRM measurements in dynamic channel access or in semi-static channel access		2Rx 4Rx	
12.4.2.2	E-UTRAN-NR FR1 inter-RAT event triggered reporting without SSB time index detection when DRX is used under CCA	Rel-16	C086c	UE supporting E-UTRAN and NR RRM measurements in dynamic channel access or in semi-static channel access and long DRX cycle		2Rx 4Rx	
12.4.2.3	E-UTRAN-NR FR1 inter-RAT event triggered reporting with SSB time index detection when DRX is not used under CCA	Rel-16	C086b	UE supporting E-UTRAN and NR RRM measurements in dynamic channel access or in semi-static channel access		2Rx 4Rx	
12.4.2.4	E-UTRAN-NR FR1 inter-RAT event triggered reporting with SSB time index detection when DRX is used under CCA	Rel-16	C086c	UE supporting E-UTRAN and NR RRM measurements in dynamic channel access or in semi-static channel access and long DRX cycle		2Rx 4Rx	
12.4.2.5	Void						

Clause	TC Title	Release	Applicability		Additional Information	Branch	Subtest Selection Criteria
			Condition	Comment			
12.4.2.6	Void						
12.5	Measurement Performance						
12.5.1	E-UTRAN-NR SFTD						
12.5.1.1	E-UTRA - NR FR1 SFTD measurement accuracy under CCA	Rel-16	C086d	UE supporting E-UTRAN, NR RRM measurements in dynamic channel access or in semi-static channel access and SFTD		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.

Table 4.2-13: Applicability of NR-U unlicensed SCell FR1 conformance test cases, ref. TS 38.533 [5]

Clause	TC Title	Release	Applicability		Additional Information	Branch	Subtest Selection Criteria
			Condition	Comment			
13.1	Void						
13.2	Signalling Characteristics						
13.2.2	SCell activation and deactivation delay						
13.2.2.1	NR SA FR1 SCell Activation and Deactivation of known SCell under CCA, 160 ms SCell measurement cycle	Rel-16	C321d	UE supporting NR CA with a shared spectrum carrier (scenario A) and MIB acquisition on shared spectrum and 2DL CA		2Rx 4Rx	
13.2.2.2	NR SA FR1 SCell Activation and Deactivation of known SCell under CCA, 640 ms SCell measurement cycle	Rel-16	C321d	UE supporting NR CA with a shared spectrum carrier (scenario A) and MIB acquisition on shared spectrum and 2DL CA		2Rx 4Rx	
13.2.2.3	NR SA FR1 SCell Activation and Deactivation of unknown SCell under CCA	Rel-16	C321d	UE supporting NR CA with a shared spectrum carrier (scenario A) and MIB acquisition on shared spectrum and 2DL CA		2Rx 4Rx	
13.3	Measurement Procedure						
13.3.1	Intra-frequency measurements						
13.3.1.1	NR SA FR1 Event-triggered reporting tests on SCC under CCA without gaps under non-DRX	Rel-16	C321e	UE supporting NR CA with a shared spectrum carrier (scenario A) and MIB acquisition on shared spectrum and RRM measurements in dynamic channel access or in semi-static channel access and 2DL CA		2Rx 4Rx	
13.3.1.2	NR SA FR1 Event-triggered reporting tests on SCC under CCA without gaps under DRX	Rel-16	C321f	UE supporting NR CA with a shared spectrum carrier (scenario A) and MIB acquisition on shared spectrum and RRM measurements in dynamic channel access or in semi-static channel access and 2DL CA and long DRX cycle		2Rx 4Rx	
13.3.1.3	NR SA FR1 Event-triggered reporting tests on SCC under CCA with per-UE gaps under non-DRX	Rel-16	C321i	UE supporting NR CA with a shared spectrum carrier (scenario A) and MIB acquisition on shared spectrum and RRM measurements in dynamic channel access or in semi-static channel access and 2DL CA and Support of BWP adaptation upto2 or upto4		2Rx 4Rx	

Clause	TC Title	Release	Applicability		Additional Information	Branch	Subtest Selection Criteria
			Condition	Comment			
13.3.1.4	NR SA FR1 Event-triggered reporting tests on SCC under CCA with per-UE gaps under DRX	Rel-16	C321j	UE supporting NR CA with a shared spectrum carrier (scenario A) and MIB acquisition on shared spectrum and RRM measurements in dynamic channel access or in semi-static channel access and 2DL CA and long DRX cycle and Support of BWP adaptation upto2 or upto4		2Rx 4Rx	
13.3.2	Inter-frequency measurements						
13.3.2.3	NR SA FR1-FR1 Event triggered reporting tests on a carrier with CCA without SSB time index detection when DRX is not used	Rel-16	C321e	UE supporting NR CA with a shared spectrum carrier (scenario A) and MIB acquisition on shared spectrum and RRM measurements in dynamic channel access or in semi-static channel access and 2DL CA		2Rx 4Rx	
13.3.2.4	NR SA FR1-FR1 Event triggered reporting tests on a carrier with CCA without SSB time index detection when DRX is used	Rel-16	C321f	UE supporting NR CA with a shared spectrum carrier (scenario A) and MIB acquisition on shared spectrum and RRM measurements in dynamic channel access or in semi-static channel access and 2DL CA and long DRX cycle		2Rx 4Rx	
13.3.2.5	NR SA FR1-FR1 Event triggered reporting tests on a carrier with CCA with SSB time index detection when DRX is not used	Rel-16	C321e	UE supporting NR CA with a shared spectrum carrier (scenario A) and MIB acquisition on shared spectrum and RRM measurements in dynamic channel access or in semi-static channel access and 2DL CA		2Rx 4Rx	
13.3.2.6	NR SA FR1-FR1 Event triggered reporting tests on a carrier with CCA with SSB time index detection when DRX is used	Rel-16	C321f	UE supporting NR CA with a shared spectrum carrier (scenario A) and MIB acquisition on shared spectrum and RRM measurements in dynamic channel access or in semi-static channel access and 2DL CA and long DRX cycle		2Rx 4Rx	
13.3.3	L1-RSRP measurement for beam reporting for SCell under CCA						

Clause	TC Title	Release	Applicability		Additional Information	Branch	Subtest Selection Criteria
			Condition	Comment			
13.3.3.1	NR SA FR1 SSB based L1-RSRP measurement for SCell under CCA when DRX is not used	Rel-16	C321e	UE supporting NR CA with a shared spectrum carrier (scenario A) and MIB acquisition on shared spectrum and RRM measurements in dynamic channel access or in semi-static channel access and 2DL CA		2Rx 4Rx	
13.3.3.2	NR SA FR1 SSB based L1-RSRP measurement for SCell under CCA when DRX is used	Rel-16	C321f	UE supporting NR CA with a shared spectrum carrier (scenario A) and MIB acquisition on shared spectrum and RRM measurements in dynamic channel access or in semi-static channel access and 2DL CA and long DRX cycle		2Rx 4Rx	
13.4	Measurement Performance						
13.4.1	SS-RSRP						
13.4.1.1	NR SA FR1 SS-RSRP measurement accuracy on a carrier with CCA	Rel-16	C321e	UE supporting NR CA with a shared spectrum carrier (scenario A) and MIB acquisition on shared spectrum and RRM measurements in dynamic channel access or in semi-static channel access and 2DL CA		2Rx 4Rx	
13.4.2	SS-RSRP						
13.4.2.1	NR SA FR1 SS-RSRQ measurement accuracy on a carrier with CCA	Rel-16	C321e	UE supporting NR CA with a shared spectrum carrier (scenario A) and MIB acquisition on shared spectrum and RRM measurements in dynamic channel access or in semi-static channel access and 2DL CA		2Rx 4Rx	
13.4.3	SS-SINR						
13.4.3.1	NR SA FR1 SS-SINR measurement accuracy on a carrier with CCA	Rel-16	C321g	UE supporting NR CA with a shared spectrum carrier (scenario A) and MIB acquisition on shared spectrum and RRM measurements in dynamic channel access or in semi-static channel access and 2DL CA and SINR measurements in shared spectrum		2Rx 4Rx	

Clause	TC Title	Release	Applicability		Additional Information	Branch	Subtest Selection Criteria
			Condition	Comment			
13.4.4	L1-RSRP measurement for beam reporting with CCA serving cell						
13.4.4.1	NR SA FR1 L1-RSRP measurement accuracy for beam reporting on a carrier with CCA	Rel-16	C321e	UE supporting NR CA with a shared spectrum carrier (scenario A) and MIB acquisition on shared spectrum and RRM measurements in dynamic channel access or in semi-static channel access and 2DL CA		2Rx 4Rx	
13.4.5	RSSI						
13.4.5.1	NR SA FR1 RSSI measurement accuracy on a carrier with CCA	Rel-16	C321h	UE supporting NR CA with a shared spectrum carrier (scenario A) and MIB acquisition on shared spectrum and RRM measurements in dynamic channel access or in semi-static channel access and 2DL CA and RSSI measurements		2Rx 4Rx	
13.4.5.2	NR SA FR1-FR1 RSSI measurement accuracy on a carrier with CCA	Rel-16	C321h	UE supporting NR CA with a shared spectrum carrier (scenario A) and MIB acquisition on shared spectrum and RRM measurements in dynamic channel access or in semi-static channel access and 2DL CA and RSSI measurements		2Rx 4Rx	
13.4.6	Channel Occupancy						
13.4.6.1	NR SA FR1 channel occupancy measurement accuracy on a carrier with CCA	Rel-16	C321h	UE supporting NR CA with a shared spectrum carrier (scenario A) and MIB acquisition on shared spectrum and RRM measurements in dynamic channel access or in semi-static channel access and 2DL CA and Channel Occupancy measurements		2Rx 4Rx	

Clause	TC Title	Release	Applicability		Additional Information	Branch	Subtest Selection Criteria
			Condition	Comment			
13.4.6.2	NR SA FR1-FR1 channel occupancy measurement accuracy on a carrier with CCA	Rel-16	C321h	UE supporting NR CA with a shared spectrum carrier (scenario A) and MIB acquisition on shared spectrum and RRM measurements in dynamic channel access or in semi-static channel access and 2DL CA and Channel Occupancy measurements		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.							

Table 4.2-14: Applicability of NR-NTN SA FR1 conformance test cases, ref. TS 38.533 [5]

Clause	TC Title	Release	Applicability		Additional Information	Branch	Subtest Selection Criteria
			Condition	Comment			
14.1	RRC_IDLE state mobility						
14.1.1	NR SA FR1 Cell Reselection for Satellite Access	Rel-17	C332	UE supporting FDD FR1 satellite access			
14.1.2	NR SA FR1 Cell Reselection for UE configured with the feature for enhanced requirements for Satellite Access	Rel-17	C332l	UE supporting FDD FR1 satellite access and enhanced requirements for measurements in IDLE mode			
14.1.3	NR SA FR1 Time-based Measurement Initiation Cell Reselection for Satellite Access	Rel-17	C332j	UE supporting FDD FR1 satellite access and time-based measurement initiation			
14.1.4	NR SA FR1 Location-based Measurement Initiation Cell Reselection for Satellite Access	Rel-17	C332k	UE supporting FDD FR1 satellite access and location-based measurement initiation	NOTE 1		
14.1.5	NR SA FR1-FR1 Cell Reselection for Satellite Access	Rel-17	C332	UE supporting FDD FR1 satellite access	NOTE 1		
14.1.6	NR SA FR1-FR1 Cell Reselection for UE configured with the feature for enhanced requirements for Satellite Access	Rel-17	C332l	UE supporting FDD FR1 satellite access and enhanced requirements for measurements in IDLE mode			
14.1.7	NR SA FR1-FR1 Time-based Measurement Initiation Cell Reselection for Satellite Access	Rel-17	C332j	UE supporting FDD FR1 satellite access and time-based measurement initiation			
14.1.8	NR SA FR1-FR1 Location-based Measurement Initiation Cell Reselection for Satellite Access	Rel-17	C332k	UE supporting FDD FR1 satellite access and location-based measurement initiation	NOTE 1		
14.1.9	NR SA FR1-FR1 Cell reselection for UE fulfilling low mobility relaxed measurement criterion for Satellite Access	Rel-17	C332m	UE supporting FDD FR1 satellite access and relaxed RRM measurements in IDLE mode			
14.1.10	NR SA FR1-FR1 Cell reselection for UE fulfilling not-at-cell edge relaxed measurement criterion for Satellite Access	Rel-17	C332m	UE supporting FDD FR1 satellite access and relaxed RRM measurements in IDLE mode			
14.1.11	NR SA FR1 inter-RAT Cell reselection with NTN Carrier for Satellite Access	Rel-18	C417	UE supporting FDD FR1 satellite access and E-UTRA TN access	NOTE 1		
14.1.12	NR SA FR1-FR1 Cell re-selection with TN carrier for Satellite Access	Rel-18	C418	UEs supporting 5GS NR SA FR1 satellite access and TN access	NOTE 1		
14.2	RRC_CONNECTED state mobility						
14.2.1	Handover						
14.2.1.1	NR SA FR1 Handover for Satellite Access	Rel-17	C332	UE supporting FDD FR1 satellite access			
14.2.1.2	NR SA FR1-FR1 Handover for Satellite Access	Rel-17	C332	UE supporting FDD FR1 satellite access			

Clause	TC Title	Release	Applicability		Additional Information	Branch	Subtest Selection Criteria
			Condition	Comment			
14.2.1.3	NR SA FR1 Time-based Conditional Handover for NR Satellite Access	Rel-17	C332h	UE supporting FDD FR1 satellite access and time-based conditional handover			
14.2.1.4	SA FR1-FR1 SAN time-based conditional Handover for NR satellite access	Rel-17	C332h	UE supporting FDD FR1 satellite access and time-based conditional handover			
14.2.1.5	SA FR1 SAN distance-based conditional Handover for NR satellite access	Rel-17	N/A	Testability issues for configuring UE moving speed for triggering distance based conditional handover	NOTE 1		
14.2.1.6	SA FR1-FR1 SAN distance-based conditional Handover for NR satellite access	Rel-17	N/A	Testability issues for configuring UE moving speed for triggering distance based conditional handover	NOTE 1		
14.2.1.8	NR SA FR1 RACH-less Handover for Satellite Access	Rel-18	C332q	UE supporting FDD FR1 satellite access and RACH-less handover with (configured grant or dynamic grant)	NOTE 1		
14.2.2	RRC Connection Mobility Control						
14.2.2.1	RRC Re-establishment for SAN						
14.2.2.1.1	NR SA FR1 RRC Re-establishment for Satellite Access	Rel-17	C332	UE supporting FDD FR1 satellite access			
14.2.2.1.2	NR SA FR1-FR1 RRC Re-establishment for Satellite Access	Rel-17	C332	UE supporting FDD FR1 satellite access			
14.2.2.2	Random Access for SAN						
14.2.2.2.1	NR SA FR1 4-step contention based random access for Satellite Access	Rel-17	C332	UE supporting FDD FR1 satellite access			
14.2.2.2.2	NR SA FR1 4-step non-contention based random access for Satellite Access	Rel-17	C332	UE supporting FDD FR1 satellite access			Subtest 2: F001
14.2.2.3	RRC Connection Release with Redirection for SAN						
14.2.2.3.1	NR SA FR1-FR1 RRC connection release with redirection for Satellite Access	Rel-17	C332	UE supporting FDD FR1 satellite access			
14.2.2.4	NR SA FR1 RACH-based Hard Satellite switching with re-synchronization for Satellite Access	Rel-18	C332n	UE supporting FDD FR1 satellite access and hard satellite switching with resynchronization or soft satellite switching with resynchronization			
14.2.2.5	NR SA FR1 RACH-less Soft Satellite switching with re-synchronization for Satellite Access	Rel-18	C332o	UE supporting FDD FR1 satellite access and soft satellite switching with resynchronization			
14.3	Timing for Satellite Access						

Clause	TC Title	Release	Applicability		Additional Information	Branch	Subtest Selection Criteria
			Condition	Comment			
14.3.1	UE transmit timing for Satellite Access						
14.3.1.1	NR SA FR1 UE transmit timing accuracy for Satellite Access	Rel-17	C332	UE supporting FDD FR1 satellite access			Subtest 2: F002
14.3.2	UE transmit timing for Satellite Access						
14.3.2.1	NR SA FR1 timing advance adjustment accuracy for Satellite Access	Rel-17	C332	UE supporting FDD FR1 satellite access			
14.4	Signalling characteristics						
14.4.1	Radio Link Monitoring for SAN						
14.4.1.1	NR SA FR1 Radio Link Monitoring Out-of-sync for PCell configured with SSB-based RLM RS in non-DRX mode for Satellite Access	Rel-17	C332	UE supporting FDD FR1 satellite access			
14.4.1.2	NR SA FR1 Radio Link Monitoring In-sync for PCell configured with SSB-based RLM RS in non-DRX mode for Satellite Access	Rel-17	C332	UE supporting FDD FR1 satellite access			
14.4.1.3	NR SA FR1 Radio Link Monitoring Out-of-sync for PCell configured with SSB-based RLM RS in DRX mode for Satellite Access	Rel-17	C332a	UE supporting FDD FR1 satellite access and long DRX cycle			
14.4.1.4	NR SA FR1 Radio Link Monitoring In-sync for PCell configured with SSB-based RLM RS in DRX mode for Satellite Access	Rel-17	C332a	UE supporting FDD FR1 satellite access and long DRX cycle			
14.4.1.5	NR SA FR1 Radio Link Monitoring Out-of-sync for PCell configured with CSI-RS-based RLM RS in non-DRX mode for Satellite Access	Rel-17	C332b	UE supporting FDD FR1 satellite access and CSI-RS based RLM			
14.4.1.6	NR SA FR1 Radio Link Monitoring In-sync for PCell configured with CSI-RS-based RLM RS in non-DRX mode for Satellite Access	Rel-17	C332b	UE supporting FDD FR1 satellite access and CSI-RS based RLM			
14.4.1.7	NR SA FR1 Radio Link Monitoring Out-of-sync for PCell configured with CSI-RS-based RLM RS in DRX mode for Satellite Access	Rel-17	C332c	UE supporting FDD FR1 satellite access and CSI-RS based RLM and long DRX cycle			
14.4.1.8	NR SA FR1 Radio Link Monitoring In-sync for PCell configured with CSI-RS-based RLM RS in DRX mode for Satellite Access	Rel-17	C332c	UE supporting FDD FR1 satellite access and CSI-RS based RLM and long DRX cycle			
14.4.2	Beam Failure Detection and Link recovery procedures for SAN						
14.4.2.1	NR SA FR1 Beam Failure Detection and Link Recovery Test for PCell configured with SSB-based BFD and LR in non-DRX mode for Satellite Access	Rel-17	C332d	UE supporting FDD FR1 satellite access and beam failure and link recovery			
14.4.2.2	NR SA FR1 Beam Failure Detection and Link Recovery Test for PCell configured with SSB-based BFD and LR in DRX mode for Satellite Access	Rel-17	C332e	UE supporting FDD FR1 satellite access and beam failure and link recovery and long DRX cycle			

Clause	TC Title	Release	Applicability		Additional Information	Branch	Subtest Selection Criteria
			Condition	Comment			
14.4.2.3	NR SA FR1 Beam Failure Detection and Link Recovery Test for PCell configured with CSI-RS-based BFD and LR in non-DRX mode for Satellite Access	Rel-17	C332f	UE supporting FDD FR1 satellite access and CSI-RS based beam failure and link recovery			
14.4.2.4	NR SA FR1 Beam Failure Detection and Link Recovery Test for PCell configured with CSI-RS-based BFD and LR in DRX mode for Satellite Access	Rel-17	C332g	UE supporting FDD FR1 satellite access and CSI-RS based beam failure and link recovery and long CDRX cycle			
14.4.3	Active BWP Switch for SAN						
14.4.3.1.1	NR SA FR1 DCI-based DL active BWP switch with non-DRX for Satellite Access	Rel-17	C332v	UE supporting FDD FR1 satellite access and (DCI and timer based active BWP switching delay type1 or type2) and (Support of BWP adaptation upto2 or upto4)			
14.4.3.2	RRC-based Active BWP Switch						
14.4.3.2.1	NR SA FR1 RRC-based DL active BWP switch with non-DRX for Satellite Access	Rel-17	C332w	UE supporting FDD FR1 satellite access and (Support of BWP adaptation upto2 or upto4)			
14.4.4	UE specific CBW change for SAN						
14.4.4.1	NR SA FR1 UE specific CBW change on PCell in non-DRX for Satellite Access	Rel-17	C332	UE supporting FDD FR1 satellite access			
14.4.5	Pathloss reference signal switching delay for SAN						
14.4.5.1	NR SA FR1 MAC-CE based pathloss reference signal switch delay for Satellite Access	Rel-17	C332	UE supporting FDD FR1 satellite access			
14.5	Measurement procedure						
14.5.1	Intra-frequency Measurements						
14.5.1.1	SA FR1 event triggered reporting tests without gap under non-DRX for NR satellite access	Rel-17	C332	UE supporting FDD FR1 satellite access			
14.5.1.2	SA FR1 Event triggered reporting tests without gap under DRX for NR satellite access	Rel-17	C332a	UE supporting FDD FR1 satellite access and long DRX cycle			
14.5.1.3	SA FR1 event triggered reporting tests without gap under non-DRX with FDD PCell with SSB index reading for NR satellite access	Rel-17	C332	UE supporting FDD FR1 satellite access			
14.5.1.4	SA FR1 event triggered reporting tests with single measurement gap under non-DRX for satellite access for NR satellite access	Rel-17	C332b	UE supporting FDD FR1 satellite access and CSI-RS based RLM			
14.5.1.5	SA FR1 event triggered reporting tests with FNO concurrent gaps under DRX for satellite access for NR satellite access	Rel-17	C332t	UE supporting FDD FR1 satellite access, long DRX cycle, 2 parallel measurement gaps and CSI-RS based RLM			

Clause	TC Title	Release	Applicability		Additional Information	Branch	Subtest Selection Criteria
			Condition	Comment			
14.5.1.6	SA FR1 event triggered reporting tests with PPO concurrent gaps under non-DRX with SSB index reading for satellite access for NR satellite access	Rel-17	C332s	UE supporting FDD FR1 satellite access, 2 parallel measurement gaps and CSI-RS based RLM			
14.5.2	Inter-frequency Measurements						
14.5.2.1	NR SA FR1-FR1 Event-triggered reporting without SSB time index detection when DRX is not used with single gap for satellite access	Rel-17	C332	UE supporting FDD FR1 satellite access			
14.5.2.2	NR SA FR1-FR1 Event-triggered reporting without SSB time index detection when DRX is used with single gap for satellite access	Rel-17	C332a	UE supporting FDD FR1 satellite access and long DRX cycle			
14.5.2.3	NR SA FR1-FR1 Event-triggered reporting with SSB time index detection when DRX is not used with single gap for satellite access	Rel-17	C332	UE supporting FDD FR1 satellite access			
14.5.2.4	NR SA FR1-FR1 Event-triggered reporting without SSB time index detection when DRX is not used with two concurrent fully non-overlapped (FNO) gaps for satellite access	Rel-17	C332u	UE supporting FDD FR1 satellite access and 2 parallel measurement gaps			
14.5.2.5	Void						
14.5.2.6	NR SA FR1-FR1 Event-triggered reporting without SSB time index detection when DRX is not used with two concurrent partial overlapping (PPO) gaps for satellite access	Rel-17	C332u	UE supporting FDD FR1 satellite access and 2 parallel measurement gaps			
14.5.3	L1-RSRP measurement for beam reporting for SAN						
14.5.3.1	NR SA FR1 SSB based L1-RSRP measurement when DRX is not used for Satellite Access	Rel-17	C332	UE supporting FDD FR1 satellite access	NOTE 1		
14.5.3.2	NR SA FR1 SSB based L1-RSRP measurement when DRX is used for Satellite Access	Rel-17	C332a	UE supporting FDD FR1 satellite access and long DRX cycle	NOTE 1		
14.6	Measurement Performance requirements						
14.6.1	SS-RSRP for SAN						
14.6.1.1	NR SA FR1 SS-RSRP measurement accuracy for Satellite Access	Rel-17	C332	UE supporting FDD FR1 satellite access	NOTE 1		
14.6.1.2	NR SA FR1-FR1 SS-RSRP measurement accuracy for Satellite Access	Rel-17	C332	UE supporting FDD FR1 satellite access	NOTE 1		
14.6.2	SS-RSRQ for SAN						
14.6.2.1	NR SA FR1 SS-RSRQ measurement accuracy for Satellite Access	Rel-17	C332	UE supporting FDD FR1 satellite access	NOTE 1		
14.6.2.2	NR SA FR1-FR1 SS-RSRQ measurement accuracy for Satellite Access	Rel-17	C332	UE supporting FDD FR1 satellite access	NOTE 1		

Clause	TC Title	Release	Applicability		Additional Information	Branch	Subtest Selection Criteria
			Condition	Comment			
14.6.3	SS-SINR						
14.6.3.1	NR SA FR1 SS-SINR Measurement Accuracy for Satellite Access	Rel-17	C332p	UE supporting FDD FR1 satellite access and SS-SINR measurements			
14.6.3.2	NR SA FR1-FR1 SS-SINR Measurement Accuracy for Satellite Access	Rel-17	C332p	UE supporting FDD FR1 satellite access and SS-SINR measurements			
14.6.4	L1-RSRP measurement for beam reporting						
14.6.4.1	NR SA FR1 SSB based L1-RSRP Measurement Accuracy for Satellite Access	Rel-17	C332	UE supporting FDD FR1 satellite access			
14.6.4.2	NR SA FR1 CSI-RS based L1-RSRP Measurement Accuracy for Satellite Access	Rel-17	C332	UE supporting FDD FR1 satellite access			
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 4.2-15: Applicability of RRM NR SA FR1 conformance test cases for ATG, ref. TS 38.533 [5]

Clause	TC Title	Release	Applicability		Additional Information	Branch	Subtest Selection Criteria
			Condition	Comment			
19.2	RRC CONNECTED state mobility						
19.2.1	Handover for ATG						
19.2.1.1	Intra-frequency handover from FR1 to FR1; known target cell	Rel-18	C001n	UEs supporting 5GS FR1 ATG			
19.2.1.2	Inter-frequency handover from FR1 to FR1; unknown target cell	Rel-18	C001n	UEs supporting 5GS FR1 ATG			
19.2.2	Conditional handover						
19.2.2.1	Intra-frequency distance-based conditional Handover from FR1 to FR1	Rel-18	C105b	UEs supporting 5GS FR1 ATG and distance-based conditional handover, event D1 measurement trigger	NOTE 1		
19.2.2.2	Inter-frequency distance-based conditional Handover from FR1 to FR1	Rel-18	C105b	UEs supporting 5GS FR1 ATG and distance-based conditional handover, event D1 measurement trigger	NOTE 1		
19.2.3	RRC Connection Mobility Control						
19.2.3.1.1	Intra-frequency RRC Re-establishment in FR1 for ATG	Rel-18	C001n	UEs supporting 5GS FR1 ATG	NOTE 1		
19.2.3.1.2	Inter-frequency RRC Re-establishment in FR1 with unknown target cell without serving cell timing for ATG	Rel-18	C001n	UEs supporting 5GS FR1 ATG	NOTE 1		
19.2.3.2	Random Access for ATG						
19.2.3.2.1	NR SA FR1 4-step RA type contention based random access test for ATG	Rel-18	C001n	UEs supporting 5GS FR1 ATG	NOTE 1		
19.2.3.2.2	NR SA FR1 4-step RA type non-contention based random access test for ATG	Rel-18	C001n	UEs supporting 5GS FR1 ATG	NOTE 1		Subtest 2: F001
19.2.3.2.3	NR SA FR1 2-step RA type contention based random access test for ATG	Rel-18	C159a	UEs supporting 5GS FR1 ATG and 2-step RACH	NOTE 1		
19.2.3.2.4	NR SA FR1 2-step RA type non-contention based random access test for ATG	Rel-18	C159a	UEs supporting 5GS FR1 ATG and 2-step RACH	NOTE 1		
19.3	Timing for ATG						
19.3.1	UE transmit timing						
19.3.1.1	NR SA FR1 UE Transmit Timing Test for ATG	Rel-18	C001n	UEs supporting 5GS FR1 ATG	NOTE 1		
19.3.3	Timing advance for ATG						
19.3.3.1	NR SA FR1 timing advance adjustment accuracy for ATG	Rel-18	C001n	UEs supporting 5GS FR1 ATG	NOTE 1		
19.4	Signalling characteristics for ATG						
19.4.1	Radio link monitoring for ATG						
19.4.1.1	Radio Link Monitoring Out-of-sync Test for FR1 PCell configured with SSB-based RLM RS in non-DRX mode	Rel-18	C001n	UEs supporting 5GS FR1 ATG	NOTE 1		

Clause	TC Title	Release	Applicability		Additional Information	Branch	Subtest Selection Criteria
			Condition	Comment			
19.4.1.2	Radio Link Monitoring In-sync Test for FR1 PCell configured with SSB-based RLM RS in non-DRX mode	Rel-18	C001n	UEs supporting 5GS FR1 ATG	NOTE 1		
19.4.1.3	Radio Link Monitoring Out-of-sync Test for FR1 PCell configured with CSI-RS-based RLM in non-DRX mode	Rel-18	C037c	UEs supporting 5GS NR SA FR1 ATG and CSI-RS-based RLM	NOTE 1		
19.4.1.4	Radio Link Monitoring In-sync Test for FR1 PCell configured with CSI-RS-based RLM in non-DRX mode	Rel-18	C037c	UEs supporting 5GS NR SA FR1 ATG and CSI-RS-based RLM	NOTE 1		
19.4.3	Active BWP switch for ATG						
19.4.3.1	DCI-based and timer-based active BWP switch for ATG						
19.4.3.1.1	NR SA FR1 DCI-based DL active BWP switch in non-DRX for ATG	Rel-18	C066f	UEs supporting 5GS NR SA FR1 ATG and (DCI and timer based active BWP switching delay type1 or type2) and (Support of BWP adaptation upto2 or upto4)	NOTE 1		
19.4.3.2	RRC-based Active BWP Switch for ATG						
19.4.3.2.1	NR SA FR1 RRC-based DL active BWP switch in non-DRX for ATG	Rel-18	C066g	UEs supporting 5GS NR SA FR1 ATG and (Support of BWP adaptation upto2 or upto4)	NOTE 1		
19.4.4	UE specific CBW change for ATG						
19.4.4.1	NR SA FR1 UE specific CBW change on PCell in non-DRX for ATG	Rel-18	C001n	UEs supporting 5GS FR1 ATG	NOTE 1		
19.4.5	Pathloss reference signal switching delay for ATG						
19.4.5.1	NR SA FR1 MAC-CE based pathloss reference signal switch delay for ATG	Rel-18	C001n	UEs supporting 5GS FR1 ATG	NOTE 1		
19.5	Measurement procedure for ATG						
19.5.1	Intra-frequency measurements						
19.5.1.1	SA FR1 event triggered reporting tests without gap without SSB index reading under non-DRX	Rel-18	C001n	UEs supporting 5GS FR1 ATG	NOTE 1		
19.5.1.2	SA FR1 event triggered reporting tests with per-UE gaps under non-DRX	Rel-18	C001n	UEs supporting 5GS FR1 ATG	NOTE 1		
19.5.1.3	SA FR1 event triggered reporting tests without gap under non-DRX with SSB index reading	Rel-18	C001n	UEs supporting 5GS FR1 ATG	NOTE 1		
19.5.1.4	SA FR1 event triggered reporting tests with per-UE gaps under non-DRX with SSB index reading	Rel-18	C001n	UEs supporting 5GS FR1 ATG	NOTE 1		
19.5.2	Intra-frequency measurements						

Clause	TC Title	Release	Applicability		Additional Information	Branch	Subtest Selection Criteria
			Condition	Comment			
19.5.2.1	SA FR1-FR1 event triggered reporting tests without SSB time index detection when DRX is used	Rel-18	FFS	FFS	NOTE 1		
19.5.2.2	SA FR1-FR1 event triggered reporting tests with SSB time index detection when DRX is not used	Rel-18	C001n	UEs supporting 5GS FR1 ATG	NOTE 1		
19.5.2.3	SA FR1-FR1 event triggered reporting tests without gap when DRX is not used	Rel-18	C001n	UEs supporting 5GS FR1 ATG	NOTE 1		
19.5.3	L1-RSRP measurement for beam reporting for ATG						
19.5.3.1	NR SA FR1 SSB based L1-RSRP measurement in non-DRX for ATG	Rel-18	C001n	UEs supporting 5GS FR1 ATG	NOTE 1		
19.5.3.2	NR SA FR1 CSI-RS based L1-RSRP measurement in non-DRX for ATG	Rel-18	C001n	UEs supporting 5GS FR1 ATG	NOTE 1		
19.5.4	L1-SINR measurement for beam reporting for ATG						
19.5.4.1	NR SA FR1 L1-SINR measurement with CSI-RS based CMR and no dedicated IMR configured in non-DRX for ATG	Rel-18	C132a	UEs supporting 5GS FR1 ATG and L1-SINR-measurement based on CSI-RS as CMR without dedicated IMR configured	NOTE 1		
19.5.4.2	NR SA FR1 L1-SINR measurement with SSB based CMR and dedicated IMR in non-DRX for ATG	Rel-18	C133a	UEs supporting 5GS FR1 ATG and L1-SINR-measurement based on SSB as CMR and dedicated CSI-IM as IMR	NOTE 1		
19.5.4.3	NR SA FR1 L1-SINR measurement with CSI-RS based CMR and dedicated IMR in non-DRX for ATG	Rel-18	C134a	UEs supporting 5GS FR1 ATG and L1-SINR-measurement based on CSI-RS as CMR and dedicated CSI-IM as IMR	NOTE 1		
19.5.5	NR measurements with autonomous gaps for ATG						
19.5.5.1	NR SA FR1 CGI identification of NR neighbor cell for ATG	Rel-18	C302a	UEs supporting 5GS FR1 ATG and NR CGI reading using autonomous gap	NOTE 1		
19.6	Measurement Performance requirements for ATG						
19.6.1	SS-RSRP for ATG						
19.6.1.1	Intra-frequency measurements for ATG						
19.6.1.1.1	NR SA FR1 SS-RSRP absolute measurement accuracy for ATG	Rel-18	C001n	UEs supporting 5GS FR1 ATG			
19.6.1.1.2	NR SA FR1 SS-RSRP relative measurement accuracy for ATG	Rel-18	C001n	UEs supporting 5GS FR1 ATG			

Clause	TC Title	Release	Applicability		Additional Information	Branch	Subtest Selection Criteria
			Condition	Comment			
19.6.1.2	Inter-frequency measurements for ATG						
19.6.1.2.1	NR SA FR1-FR1 SS-RSRP absolute measurement accuracy for ATG	Rel-18	C001n	UEs supporting 5GS FR1 ATG			
19.6.1.2.2	NR SA FR1-FR1 SS-RSRP relative measurement accuracy for ATG	Rel-18	C001n	UEs supporting 5GS FR1 ATG			
19.6.2	SS-RSRQ for ATG						
19.6.2.1	NR SA FR1 SS-RSRQ absolute measurement accuracy for ATG	Rel-18	C001n	UEs supporting 5GS FR1 ATG			
19.6.2.2	Inter-frequency measurements for ATG						
19.6.2.2.1	NR SA FR1-FR1 SS-RSRQ absolute measurement accuracy for ATG	Rel-18	C001n	UEs supporting 5GS FR1 ATG			
19.6.2.2.2	NR SA FR1-FR1 SS-RSRQ relative measurement accuracy for ATG	Rel-18	C001n	UEs supporting 5GS FR1 ATG			
19.6.3	SS-SINR for ATG						
19.6.3.1	NR SA FR1 SS-SINR absolute measurement accuracy for ATG	Rel-18	C034a	UEs supporting 5GS FR1 ATG and SS-SINR-meas			
19.6.3.2	Inter-frequency measurements for ATG						
19.6.3.2.1	NR SA FR1-FR1 SS-SINR absolute measurement accuracy for ATG	Rel-18	C034a	UEs supporting 5GS FR1 ATG and SS-SINR-meas			
19.6.3.2.2	NR SA FR1-FR1 SS-SINR relative measurement accuracy for ATG	Rel-18	C034a	UEs supporting 5GS FR1 ATG and SS-SINR-meas			
19.6.4	L1-RSRP measurement for beam reporting for ATG						
19.6.4.1	SSB based L1-RSRP measurements for ATG						
19.6.4.1.1	NR SA FR1 SSB based L1-RSRP absolute measurement accuracy for ATG	Rel-18	C001n	UEs supporting 5GS FR1 ATG			
19.6.4.1.2	NR SA FR1 SSB based L1-RSRP relative measurement accuracy for ATG	Rel-18	C001n	UEs supporting 5GS FR1 ATG			
19.6.4.2	CSI-RS based L1-RSRP measurements for ATG						
19.6.4.2.1	NR SA FR1 CSI-RS based L1-RSRP absolute measurement accuracy for ATG	Rel-18	C001n	UEs supporting 5GS FR1 ATG			
19.6.4.2.2	NR SA FR1 CSI-RS based L1-RSRP relative measurement accuracy for ATG	Rel-18	C001n	UEs supporting 5GS FR1 ATG			
19.6.5	L1-SINR measurement for beam reporting for ATG						
19.6.5.1	L1-SINR measurement with CSI-RS based CMR and no dedicated IMR for ATG						

Clause	TC Title	Release	Applicability		Additional Information	Branch	Subtest Selection Criteria
			Condition	Comment			
19.6.5.1.1	NR SA FR1 L1-SINR absolute measurement accuracy with CSI-RS based CMR and no dedicated IMR for ATG	Rel-18	C132a	UEs supporting 5GS FR1 ATG and L1-SINR-measurement based on CSI-RS as CMR without dedicated IMR configured			
19.6.5.1.2	NR SA FR1 L1-SINR relative measurement accuracy with CSI-RS based CMR and no dedicated IMR for ATG	Rel-18	C132a	UEs supporting 5GS FR1 ATG and L1-SINR-measurement based on CSI-RS as CMR without dedicated IMR configured			
19.6.5.2	NR SA FR1 L1-SINR absolute measurement accuracy with SSB based CMR and dedicated IMR for ATG	Rel-18	C133a	UEs supporting 5GS FR1 ATG and L1-SINR-measurement based on SSB as CMR and dedicated CSI-IM as IMR			
19.6.5.3	L1-SINR measurement with CSI-RS based CMR and dedicated IMR for ATG						
19.6.5.3.1	NR SA FR1 L1-SINR absolute measurement accuracy with CSI-RS based CMR and dedicated IMR for ATG	Rel-18	C134a	UEs supporting 5GS FR1 ATG and L1-SINR-measurement based on CSI-RS as CMR and dedicated CSI-IM as IMR			
19.6.5.3.2	NR SA FR1 L1-SINR relative measurement accuracy with CSI-RS based CMR and dedicated IMR for ATG	Rel-18	C134a	UEs supporting 5GS FR1 ATG and L1-SINR-measurement based on CSI-RS as CMR and dedicated CSI-IM as IMR			
19.6.6	CSI-RSRP for ATG						
19.6.6.1	Intra-frequency measurements for ATG						
19.6.6.1.1	NR SA FR1 CSI-RSRP absolute measurement accuracy for ATG	Rel-18	C393	UEs supporting 5GS FR1 ATG and CSI-RS based RSRP and RSRQ measurements	NOTE 1		
19.6.6.1.2	NR SA FR1 CSI-RSRP relative measurement accuracy for ATG	Rel-18	C393	UEs supporting 5GS FR1 ATG and CSI-RS based RSRP and RSRQ measurements	NOTE 1		
19.6.6.2	Inter-frequency measurements for ATG						
19.6.6.2.1	NR SA FR1-FR1 CSI-RSRP absolute measurement accuracy for ATG	Rel-18	C393	UEs supporting 5GS FR1 ATG and CSI-RS based RSRP and RSRQ measurements	NOTE 1		
19.6.6.2.2	NR SA FR1-FR1 CSI-RSRP relative measurement accuracy for ATG	Rel-18	C393	UEs supporting 5GS FR1 ATG and CSI-RS based RSRP and RSRQ measurements	NOTE 1		
19.6.7	CSI-RSRQ for ATG						
19.6.7.1	NR SA FR1 CSI-RSRQ absolute measurement accuracy for ATG	Rel-18	C393	UEs supporting 5GS FR1 ATG and CSI-RS based RSRP and RSRQ measurements	NOTE 1		

Clause	TC Title	Release	Applicability		Additional Information	Branch	Subtest Selection Criteria
			Condition	Comment			
19.6.7.2	Inter-frequency measurements for ATG						
19.6.7.2.1	NR SA FR1-FR1 CSI-RSRQ absolute measurement accuracy for ATG	Rel-18	C393	UEs supporting 5GS FR1 ATG and CSI-RS based RSRP and RSRQ measurements	NOTE 1		
19.6.7.2.2	NR SA FR1-FR1 CSI-RSRQ relative measurement accuracy for ATG	Rel-18	C393	UEs supporting 5GS FR1 ATG and CSI-RS based RSRP and RSRQ measurements	NOTE 1		
19.6.8	CSI-SINR for ATG						
19.6.8.1	NR SA FR1 CSI-SINR absolute measurement accuracy for ATG	Rel-18	C394	UEs supporting 5GS FR1 ATG and CSI-RS based SINR measurements	NOTE 1		
19.6.8.2	Inter-frequency measurements for ATG						
19.6.8.2.1	NR SA FR1-FR1 CSI-SINR absolute measurement accuracy for ATG	Rel-18	C394	UEs supporting 5GS FR1 ATG and CSI-RS based SINR measurements	NOTE 1		
19.6.8.2.2	NR SA FR1-FR1 CSI-SINR relative measurement accuracy for ATG	Rel-18	C394	UEs supporting 5GS FR1 ATG and CSI-RS based SINR measurements	NOTE 1		
NOTE 1: The test case/branch is incomplete for any Band/CA/DC Configuration but has basic test configurations already. NOTE 1 can be removed only when the test case/branch is complete for at least one Band / CA/DC Configuration for at least one feature included in the test case/branch. Detailed completion status can be found in the corresponding test case section in 38.533.							

4.3 RF conformance test cases for Satellite Access

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

4.3.1 FR1 standalone conformance test cases for Satellite Access

Table 4.3.1-1: Applicability of RF SA FR1 conformance test cases, ref. TS 38.521-5 [12]

Clause	TC Title	Release	Applicability		Tested Bands/CA-Configurations Selection	Branch	Additional Information
			Condition	Comment			
6	Transmitter Characteristics						
6.2.1	UE maximum output power	Rel-17	C001o	UEs supporting 5GS FDD FR1 satellite access	D027	GSO NGSO	
6.2.2	Maximum Power Reduction (MPR)	Rel-17	C001o	UEs supporting 5GS FDD FR1 satellite access	D027	GSO NGSO	
6.2.3	UE additional maximum output power reduction	Rel-17	C001o	UEs supporting 5GS FDD FR1 satellite access	D027	GSO NGSO	
6.2.4	Configured transmitted power	Rel-17	C001o	UEs supporting 5GS FDD FR1 satellite access	D027	GSO NGSO	
6.3.1	Minimum output power	Rel-17	C001o	UEs supporting 5GS FDD FR1 satellite access	D027	GSO NGSO	
6.3.3	Tx ON/OFF Time Mask	Rel-17	C001o	UEs supporting 5GS FDD FR1 satellite access	D027	GSO NGSO	
6.3.4.2	Absolute power tolerance	Rel-17	C001o	UEs supporting 5GS FDD FR1 satellite access	D027	GSO NGSO	
6.3.4.3	Relative power tolerance	Rel-17	C001o	UEs supporting 5GS FDD FR1 satellite access	D027	GSO NGSO	
6.3.4.4	Aggregate power tolerance	Rel-17	C001o	UEs supporting 5GS FDD FR1 satellite access	D027	GSO NGSO	
6.4.1_1	Frequency error with GSO ephemeris	Rel-17	C001p	UEs supporting 5GS FDD FR1 satellite access and only GSO or both GSO and NGSO	D027		
6.4.1_2	Frequency error with NGSO ephemeris	Rel-17	C001q	UEs supporting 5GS FDD FR1 satellite access and only NGSO or both GSO and NGSO	D027		
6.4.2.1	Error Vector Magnitude	Rel-17	C001o	UEs supporting 5GS FDD FR1 satellite access	D027	GSO NGSO	
6.4.2.1a	Error Vector Magnitude including symbols with transient period	Rel-17	C001o	UEs supporting 5GS FDD FR1 satellite access	D027	GSO NGSO	
6.4.2.2	Carrier Leakage	Rel-17	C001o	UEs supporting 5GS FDD FR1 satellite access	D027	GSO NGSO	
6.4.2.3	In-band emissions	Rel-17	C001o	UEs supporting 5GS FDD FR1 satellite access	D027	GSO NGSO	
6.4.2.4	EVM equalizer spectrum flatness	Rel-17	C001o	UEs supporting 5GS FDD FR1 satellite access	D027	GSO NGSO	
6.4.2.5	EVM equalizer spectrum flatness for Pi/2 BPSK	Rel-17	C111a	UEs supporting 5GS FDD FR1 satellite access and pi/2-BPSK modulation scheme and low PAPR DMRS	D027		

Clause	TC Title	Release	Applicability		Tested Bands/CA-Configurations Selection	Branch	Additional Information
			Condition	Comment			
6.5.1	Occupied bandwidth	Rel-17	C001o	UEs supporting 5GS FDD FR1 satellite access	D027	GSO NGSO	
6.5.2.2	Spectrum Emissions Mask	Rel-17	C001o	UEs supporting 5GS FDD FR1 satellite access	D027	GSO NGSO	
6.5.2.4	Adjacent Channel Leakage Ratio	Rel-17	C001o	UEs supporting 5GS FDD FR1 satellite access	D027	GSO NGSO	
6.5.3.1	General Spurious	Rel-17	C001o	UEs supporting 5GS FDD FR1 satellite access	D027	GSO NGSO	
6.5.3.2	Spurious emissions for UE co-existence	Rel-17	C001o	UEs supporting 5GS FDD FR1 satellite access	D027	GSO NGSO	NOTE 1
6.5.3.3	Additional Spurious emissions	Rel-17	C001o	UEs supporting 5GS FDD FR1 satellite access	D027	GSO NGSO	
6.5.4	Transmit intermodulation	Rel-17	C001o	UEs supporting 5GS FDD FR1 satellite access	D027	GSO NGSO	
7	Receiver Characteristics						
7.3.2	Reference sensitivity power level	Rel-17	C001o	UEs supporting 5GS FDD FR1 satellite access	D027	GSO NGSO	
7.3.2_1	Reference sensitivity power level for flexible Tx-Rx frequency separation	Rel-17	C001o	UEs supporting 5GS FDD FR1 satellite access	D027	GSO NGSO	
7.4	Maximum input level	Rel-17	C001o	UEs supporting 5GS FDD FR1 satellite access	D027	GSO NGSO	
7.5	Adjacent channel selectivity	Rel-17	C001o	UEs supporting 5GS FDD FR1 satellite access	D027	GSO NGSO	
7.6.2	In-band blocking	Rel-17	C001o	UEs supporting 5GS FDD FR1 satellite access	D027	GSO NGSO	
7.6.3	Out of Band blocking	Rel-17	C001o	UEs supporting 5GS FDD FR1 satellite access	D027	GSO NGSO	
7.6.4	Narrow band blocking	Rel-17	C001o	UEs supporting 5GS FDD FR1 satellite access	D027	GSO NGSO	
7.7	Spurious response	Rel-17	C001o	UEs supporting 5GS FDD FR1 satellite access	D027	GSO NGSO	
7.8.2	Wide band Intermodulation	Rel-17	C001o	UEs supporting 5GS FDD FR1 satellite access	D027	GSO NGSO	
7.9	Spurious emission	Rel-17	C001o	UEs supporting 5GS FDD FR1 satellite access	D027	GSO NGSO	
Note 1: The test case is incomplete for any band but has basic test configurations already. NOTE 1 can be removed only when the test case is complete for at least one band for at least one feature included in the test case. Detailed completion status can be found in the corresponding test case section in 38.521-5.							

4.3.2 Performance conformance test cases for Satellite Access

Table 4.3.2-1: Applicability of performance test cases, ref. TS 38.521-5 [12]

Clause	TC Title	Release	Applicability		Tested Bands Selection	Additional Information	Subtest Selection Criteria
			Condition	Comment			
8	Conducted performance requirements						
8.2	Demodulation performance requirements						
8.2.1.2.2.1.1_1	2Rx FDD FR1 PDSCH Mapping Type A for Satellite Access	Rel-17	C001o	UEs supporting 5GS FDD FR1 satellite access	D027		Subtest 1-3: F048 Subtest 1-4: F049
Note 1: The test case is incomplete for any band but has basic test configurations already. NOTE 1 can be removed only when the test case is complete for at least one band for at least one feature included in the test case. Detailed completion status can be found in the corresponding test case section in 38.521-5.							

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 4.1.2 of TS 38.522	15.1.0
2018-12	RAN#82	R5-187922	0017	-	F	Removing FR2 test case 7.4 from TS 38.522 due to testability issue	15.1.0
2019-01	RAN#82	R5-187882	0009	1	F	Update Clause 3 of TS 38.522	15.1.1
2019-01	RAN#82	R5-187883	0010	1	F	TP for Clause 4.1.1 of TS 38.522	15.1.1
2019-01	RAN#82	R5-187885	0012	1	F	TP for Clause 4.1.3 of TS 38.522	15.1.1
2019-03	RAN#83	R5-191722	0021	-	F	addition of applicability for BFD and measurement	15.2.0
2019-03	RAN#83	R5-192507	0020	1	F	TP for TS 38.522	15.2.0
2019-03	RAN#83	R5-192508	0022	1	F	Addition of RRM Test Cases Applicability	15.2.0
2019-06	RAN#84	R5-195444	0027	1	F	TP for TS 38.522	15.3.0
2019-06	RAN#84	-	-	-	-	Administrative release upgrade to match the release of 3GPP TS 38.508-1 and TS 38.521-1 which were upgraded at RAN#84 to Rel-16 due to Rel-16 relevant CR(s)	16.0.0
2019-06	RAN#84	-	-	-	-	Addition of missing Table part of R5-195444 and part of a note.	16.0.1
2019-06	RAN#84	-	-	-	-	Formatted big tables to landscape	16.0.2
2019-09	RAN#85	R5-197650	0030	1	-	TP for TS 38.522	16.1.0
2019-09	RAN#85	R5-197650	0030	1	-	Added missing changes of R5-197650	16.1.1
2019-12	RAN#86	R5-199089	0032	2	-	TP for TS 38.522	16.2.0
2020-03	RAN#87	R5-201036	0033	1	F	TP and format updated for TS 38.522	16.3.0
2020-06	RAN#88	R5-202958	0040	1	F	R16 TDD ENDC PC2 TP for TS 38.522	16.4.0
2020-06	RAN#88	R5-203114	0037	2	F	TP updated to applicability table	16.4.0
2020-09	RAN#89	R5-204098	0046	-	F	Correct applicability EN-DC event-triggered inter-frequency tests	16.5.0
2020-09	RAN#89	R5-204099	0047	-	F	Correct applicability NR SA event-triggered inter-frequency tests	16.5.0
2020-09	RAN#89	R5-204939	0043	1	F	TP for TS 38.522	16.5.0
2020-09	RAN#89	R5-204940	0044	1	F	Correction of 38.522	16.5.0
2020-12	RAN#90	R5-206905	0051	1	F	Update to applicability spec for 5G test cases	16.6.0
2021-03	RAN#91	R5-210506	0055	-	F	Correction of applicability definitions for long DRX cycle related test cases	16.7.0
2021-03	RAN#91	R5-210792	0058	-	F	Adding the test applicability of RF test cases for eMIMO	16.7.0
2021-03	RAN#91	R5-211158	0060	-	F	Addition of applicability new test case 6.3.2.1.3 in TS 38.521-4	16.7.0

2021-03	RAN#91	R5-211159	0061	-	F	Addition of applicability new test case 6.3.3.1.3 in TS 38.521-4	16.7.0
2021-03	RAN#91	R5-211610	0067	-	F	Applicability of Error Vector Magnitude for V2X for non-concurrent operation	16.7.0
2021-03	RAN#91	R5-211720	0054	1	F	Correction of applicability definitions for PUSCH HalfPi BPSK related test cases	16.7.0
2021-03	RAN#91	R5-211853	0059	1	F	Update to applicability spec for 5G test cases	16.7.0
2021-03	RAN#91	R5-211913	0057	1	F	Adding test applicability for switching test case	16.7.0
2021-03	RAN#91	R5-211917	0066	1	F	Addition of new RRM test cases to the applicability table in 4.2	16.7.0
2021-03	RAN#91	R5-211918	0068	1	F	Applicability for RRM NR HST test case 6.1.1.7 and 6.6.1.7	16.7.0
2021-03	RAN#91	-	-	-	-	Administrative release upgrade to match the release of TS 38.508-1, TS 38.508-2 and TS 38.521-1 which were upgraded at RAN#91 to Rel-17 due to Rel-17 relevant CRs	17.0.0
2021-06	RAN#92	R5-212078	0069	-	F	Addition of applicability for new test case 6.3.2.1.4 and 6.3.3.1.4 in TS 38.521-4	17.1.0
2021-06	RAN#92	R5-212932	0075	-	F	Addition of test applicability for V2X RF test cases	17.1.0
2021-06	RAN#92	R5-212939	0076	-	F	Adding test applicability for eMIMO demod test cases	17.1.0
2021-06	RAN#92	R5-212948	0077	-	F	Adding test applicability for URLLC demod test cases	17.1.0
2021-06	RAN#92	R5-213095	0078	-	F	Adding test applicability for new test cases introduced in R17	17.1.0
2021-06	RAN#92	R5-214006	0074	1	F	Addition of new V2X test cases to the applicability table in 4.1.1	17.1.0
2021-06	RAN#92	R5-214089	0073	1	F	Update to applicability spec for 5G test cases	17.1.0
2021-06	RAN#92	R5-214096	0071	1	F	Update of Applicability for Inter-band EN-DC Including FR2	17.1.0
2021-09	RAN#93	R5-214480	0081	-	F	38.522 Jumbo CR for R16 CADC configurations	17.2.0
2021-09	RAN#93	R5-214534	0082	-	F	Addition of applicability for FR2 DL 256QAM demodulation test case	17.2.0
2021-09	RAN#93	R5-214571	0083	-	F	Adding test applicability for UE power saving test cases	17.2.0
2021-09	RAN#93	R5-214609	0084	-	F	Correction of condition C30 C37 C37a C41 C41a and introduction of condition C37b and C37c	17.2.0
2021-09	RAN#93	R5-214834	0085	-	F	Applicability for 5G-SRVCC	17.2.0
2021-09	RAN#93	R5-215033	0092	-	F	Addition of applicability for NR HST TCs	17.2.0
2021-09	RAN#93	R5-215045	0093	-	F	Addition of R16 FDD-TDD PC2 inter-band EN-DC baseline implementation capabilities into 38.522	17.2.0
2021-09	RAN#93	R5-215079	0095	-	F	Addition of test applicability for V2X test cases	17.2.0
2021-09	RAN#93	R5-215245	0099	-	F	Addition of test applicability for RRM test case 6.6.4.5	17.2.0
2021-09	RAN#93	R5-215399	0102	-	F	Add 2-Step PRACH test cases to Applicability spec	17.2.0
2021-09	RAN#93	R5-215411	0103	-	F	Correction of RRM HST test cases applicability	17.2.0
2021-09	RAN#93	R5-215931	0090	1	F	Addition of applicability for Mob_Enh TCs	17.2.0
2021-09	RAN#93	R5-215935	0096	1	F	Adding test applicability for eMIMO test cases	17.2.0
2021-09	RAN#93	R5-215960	0098	1	F	Addition of applicability of URLLC demod test cases	17.2.0
2021-09	RAN#93	R5-215981	0086	1	F	FR2 standalone RF conformance test case applicability	17.2.0
2021-09	RAN#93	R5-216077	0097	1	F	Test applicability for FR2 256QAM CQI reporting	17.2.0
2021-09	RAN#93	R5-216097	0101	1	F	Update to applicability spec for 5G test cases	17.2.0
2021-12	RAN#94	R5-216539	0105	-	F	Addition of applicability for HST test case 5.2.3.1.9_1	17.3.0
2021-12	RAN#94	R5-216540	0106	-	F	Addition of applicability for HST test case 5.2.3.1.10_1	17.3.0
2021-12	RAN#94	R5-216784	0109	-	F	Correction to Test Bands Selection Criteria for performance test cases	17.3.0
2021-12	RAN#94	R5-216852	0110	-	F	Correction to applicability of RLM TCs	17.3.0

2021-12	RAN#94	R5-216870	0111	-	F	Correction to applicability of Mob_enh RRM TCs	17.3.0
2021-12	RAN#94	R5-216911	0112	-	F	Correction to applicability of HST TCs	17.3.0
2021-12	RAN#94	R5-217219	0114	-	F	Correct of condition for RRM Test Cases with BWP switch	17.3.0
2021-12	RAN#94	R5-217319	0116	-	F	Addition of applicability for new type II PMI 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

2022-03	RAN#95	R5-221831	0146	1	F	Addition of test applicability for UE Enhancements on MIMO	17.4.0
2022-03	RAN#95	R5-221832	0148	1	F	Addition of test applicability for L1-SINR measurement cases	17.4.0
2022-03	RAN#95	R5-221849	0130	1	F	Updated the Test case conditions and selection criteria for TDD DSS NR bands n38, n48, n90	17.4.0
2022-03	RAN#95	R5-221850	0137	1	F	Addition of FR1 CA CQI test cases applicability	17.4.0
2022-03	RAN#95	R5-221851	0138	1	F	Addition of FR2 CA CQI test cases applicability	17.4.0
2022-03	RAN#95	R5-221852	0151	1	F	Applicability of NR perf enh WI test cases	17.4.0
2022-03	RAN#95	R5-221858	0135	1	F	Correction of HST test case applicability	17.4.0
2022-03	RAN#95	R5-221891	0136	1	F	Correction of FR2 standalone Enhanced Beam correspondence - EIRP RF conformance test case applicability	17.4.0
2022-03	RAN#95	R5-221913	0156	1	F	New EVM test case applicability	17.4.0
2022-06	RAN#96	R5-222190	0159	-	F	Correction of test applicability for 6.4.2.5 of 38.521-1	17.5.0
2022-06	RAN#96	R5-222191	0160	-	F	Separation of 6.2B.1.4D of 38.521-3 into two test cases	17.5.0
2022-06	RAN#96	R5-222562	0162	-	F	Addition of applicability for CADC MOP TC	17.5.0
2022-06	RAN#96	R5-222631	0164	-	F	Addition of test applicability for NR SL Demod TCs	17.5.0
2022-06	RAN#96	R5-222632	0165	-	F	Addition of test applicability for NR SL RRM TCs	17.5.0
2022-06	RAN#96	R5-222736	0169	-	F	Add 7.5F.1 and 7.6F.2	17.5.0
2022-06	RAN#96	R5-222914	0172	-	F	Removing test case 6.5D.1_1 Occupied bandwidth for UL MIMO (Rel-16 onward) from 38.522	17.5.0
2022-06	RAN#96	R5-222992	0176	-	F	Removal of NOTE1 for test case 5.2.2.2.9_1, 5.2.2.2.10_1, 5.2.3.2.9_1	17.5.0
2022-06	RAN#96	R5-222994	0177	-	F	Update of applicability of FR2 performance test	17.5.0
2022-06	RAN#96	R5-223123	0181	-	F	Test case 6.3.2.2.3, 6.3.2.2.4 and 6.3.3.2.3 in 38.522	17.5.0
2022-06	RAN#96	R5-223701	0189	1	F	Correction of FR1 DL Interruptions test cases applicability	17.5.0
2022-06	RAN#96	R5-223706	0178	1	F	Addition of test applicability for eMIMO test cases	17.5.0
2022-06	RAN#96	R5-223720	0163	1	F	Applicability update for NR perf enh WI test cases	17.5.0
2022-06	RAN#96	R5-223725	0166	1	F	Correction to applicability of HST RRM TCs	17.5.0
2022-06	RAN#96	R5-223753	0179	1	F	38.522 applicability updates for Rel.16 FR2 RF enhancements	17.5.0
2022-06	RAN#96	R5-223783	0170	1	F	Jumbo Applicability CR for NR_RF_TxD WI	17.5.0
2022-06	RAN#96	R5-223791	0171	1	F	Addition of test applicability for RedCap test cases	17.5.0
2022-06	RAN#96	R5-223842	0161	1	F	Correction to applicability for 6.2D.1.1 and 6.2D.1.2 of 38.521-2	17.5.0
2022-06	RAN#96	R5-223843	0167	1	F	Correction to test bands selection criteria for UL MIMO capabilities	17.5.0
2022-06	RAN#96	R5-223844	0168	1	F	Correction to applicability of 5G test cases	17.5.0
2022-06	RAN#96	R5-223845	0180	1	F	Correction on test condition for FR2 DL 256QAM test cases	17.5.0
2022-06	RAN#96	R5-223846	0185	1	F	Addition to 3.3 for new abbreviations in TS 38.522	17.5.0
2022-06	RAN#96	R5-223847	0186	1	F	Correction to 4.0 on Tested CA DC configuration selection criteria for E005a, E010 and E010a	17.5.0
2022-06	RAN#96	R5-223848	0187	1	F	Editorial correction to A.4.0 for Tested bands selection criteria	17.5.0
2022-06	RAN#96	R5-223849	0188	1	F	Update of applicability of FR2 RF test cases	17.5.0
2022-09	RAN#97	R5-223968	0190	-	F	Applicability for 5.7.1.3 and 7.7.1.3	17.6.0
2022-09	RAN#97	R5-224381	0199	-	F	Update of clause and description for eMIMO RRM Test Cases according to WP updated	17.6.0
2022-09	RAN#97	R5-224438	0200	-	F	Addition of applicability for CADC MOP TC	17.6.0

2022-09	RAN#97	R5-224504	0201	-	F	Correction to applicability of NR SL Demod TCs	17.6.0
2022-09	RAN#97	R5-224634	0202	-	F	Correction to applicability of C097	17.6.0
2022-09	RAN#97	R5-224839	0205	-	F	Update to test applicability of CA test cases to support PC2	17.6.0
2022-09	RAN#97	R5-224903	0206	-	F	Update applicability for NR-U test cases	17.6.0
2022-09	RAN#97	R5-224968	0207	-	F	Editorial, putting C003a and C003b in correct order	17.6.0
2022-09	RAN#97	R5-224998	0208	-	F	Correction to applicability of 5G test cases	17.6.0
2022-09	RAN#97	R5-225077	0209	-	F	Adding new test condition and applicability for new test case 6.3C.3.2	17.6.0
2022-09	RAN#97	R5-225710	0197	1	F	Addition of test applicability for FR2 EN-DC TX Test Cases 5CC to 8CCs	17.6.0
2022-09	RAN#97	R5-225724	0203	1	F	Addition of test applicability for eMIMO test cases	17.6.0
2022-09	RAN#97	R5-225747	0191	1	F	Applicability for 2-step RACH test cases	17.6.0
2022-09	RAN#97	R5-225752	0196	1	F	Update of inter-band CA PC2 test applicability	17.6.0
2022-09	RAN#97	R5-225755	0210	1	F	Adding applicability for new SUL and UL MIMO test cases	17.6.0
2022-09	RAN#97	R5-225764	0194	1	F	Correction of Applicability of conformance test cases conditions, Tested Bands Selection Criteria and Branch for the TxD test cases in 38.521-1	17.6.0
2022-09	RAN#97	R5-225765	0204	1	F	Addition of test applicability for TxD test cases	17.6.0
2022-09	RAN#97	R5-225814	0192	1	F	Correction of Applicability of conformance test cases conditions and Tested Bands Selection Criteria for the R15 test cases in 38.521-1	17.6.0
2022-09	RAN#97	R5-225882	0211	1	F	Addition of test case for additional spurious for FR2	17.6.0
2022-12	RAN#98	R5-225949	0213		F	Adding applicability statements for UEs supporting 5GS FR1 and NR-DC	17.7.0
2022-12	RAN#98	R5-226112	0214		F	Addition of applicability for RedCap RRM TCs	17.7.0
2022-12	RAN#98	R5-226335	0215		F	Update to R16 NR CADC configuration test cases applicability	17.7.0
2022-12	RAN#98	R5-226702	0223		F	Addition of applicability for RedCap demod test cases	17.7.0
2022-12	RAN#98	R5-226764	0226		F	Correction to title of TC7.8F.2	17.7.0
2022-12	RAN#98	R5-226795	0227		F	Update applicability for performance test case 5.2.3.2.9_1	17.7.0
2022-12	RAN#98	R5-226936	0231		F	Adding applicability for new test cases for SUL with UL MIMO	17.7.0
2022-12	RAN#98	R5-226942	0232		F	Applicability for new Rel-16 FR2 RF requirements enhancements test cases	17.7.0
2022-12	RAN#98	R5-227117	0233		F	Update of test applicability for RedCap test cases	17.7.0
2022-12	RAN#98	R5-227248	0235		F	Completion of test case 7.2.2.2.1_3	17.7.0
2022-12	RAN#98	R5-227383	0237		F	Applicability spec updates related to rel16 FR2 RF enhancements	17.7.0
2022-12	RAN#98	R5-227871	0234	1	F	Addition of CA_DC enhancements test cases applicability	17.7.0
2022-12	RAN#98	R5-227872	0221	1	F	Applicability spec update for DL1024QAM test cases	17.7.0
2022-12	RAN#98	R5-227874	0230	1	F	Update to test applicability of SUL test cases	17.7.0
2022-12	RAN#98	R5-227876	0224	1	F	Add applicability of 6.4F.2.2 and 6.5F.4	17.7.0
2022-12	RAN#98	R5-227877	0236	1	F	Addition of test applicability for NR-U Demod and RRM test cases	17.7.0
2022-12	RAN#98	R5-227878	0218	1	F	Update to R16 NR perf enh test cases applicability	17.7.0
2022-12	RAN#98	R5-227879	0219	1	F	Applicability of NSA CA test cases	17.7.0
2022-12	RAN#98	R5-228030	0217	1	F	Update to R17 NR HST FR1 enh test cases applicability	17.7.0
2022-12	RAN#98	R5-228040	0229	1	F	Updating test applicability for TxD test cases	17.7.0

2022-12	RAN#98	R5-228049	0225	1	F	Correction to applicability of 5G test cases	17.7.0
2023-03	RAN#99	R5-230416	0240	-	F	Update to R17 NR HST FR1 enh test cases applicability	17.8.0
2023-03	RAN#99	R5-230458	0244	-	F	Addition of Applicability for RedCap RRM TCs	17.8.0
2023-03	RAN#99	R5-230526	0245	-	F	Addition of Applicability for RRM enhancement TCs	17.8.0
2023-03	RAN#99	R5-230576	0246	-	F	Editorial correction for Applicability Comment of 6.2G.3 and 6.2G.4 in 4.1.1	17.8.0
2023-03	RAN#99	R5-230667	0249	-	F	Addition of applicabilities for NR-U test cases	17.8.0
2023-03	RAN#99	R5-230679	0251	-	F	Addition of applicability for RedCap demod test cases	17.8.0
2023-03	RAN#99	R5-231091	0258	-	F	Adding applicability for new test cases for SUL with UL MIMO	17.8.0
2023-03	RAN#99	R5-231658	0267	-	F	Correction of test case title of 7.6D.2_1 and 7.8D.2_1 of 38.521-1	17.8.0
2023-03	RAN#99	R5-231806	0241	1	F	Addition of applicability for DC_CA test cases	17.8.0
2023-03	RAN#99	R5-231808	0238	1	F	Update to R16 NR CADC configuration test cases applicability	17.8.0
2023-03	RAN#99	R5-231809	0263	1	F	Update 38.522 for 7.3A.3 Reference sensitivity power level for 4DL CA	17.8.0
2023-03	RAN#99	R5-231810	0265	1	F	Addition of applicability for FR2 RF phase continuity test	17.8.0
2023-03	RAN#99	R5-231812	0242	1	F	Add applicability of new test cases for gap enhancement	17.8.0
2023-03	RAN#99	R5-231814	0260	1	F	Correction of applicability of the RedCap test cases	17.8.0
2023-03	RAN#99	R5-231815	0256	1	F	Adding test applicability for CA test cases	17.8.0
2023-03	RAN#99	R5-231816	0248	1	F	Adding applicability statement for UE UL carrier RRC reconfiguration delay for FR2	17.8.0
2023-03	RAN#99	R5-231817	0266	1	F	Applicability updates to FR2 RF tests	17.8.0
2023-03	RAN#99	R5-231818	0247	1	F	Adding applicability statements for UEs supporting TA Validation for CG-SDT in FR2	17.8.0
2023-03	RAN#99	R5-231819	0254	1	F	Introduction of abbreviation of CCA and clarification on FR1 band selection with CCA	17.8.0
2023-03	RAN#99	R5-231821	0259	1	F	Additional information note correction for RRM test cases	17.8.0
2023-03	RAN#99	R5-231878	0252	1	F	Addition of applicability for 5GS FR1 and FR2 PDC IIoT Test Cases	17.8.0
2023-03	RAN#99	R5-231888	0261	1	F	Correction to applicability of 5G test cases	17.8.0
2023-03	RAN#99	R5-231894	0255	1	F	Update to BWP adaptation applicability conditions	17.8.0
2023-03	RAN#99	R5-231973	0262	2	F	Update test condition for 7.3.2 and 6.2.x	17.8.0
2023-06	RAN#100	R5-232129	0269	-	F	Adding applicability statement for SCell Activation and deactivation for SCell in FR2 inter-band in non-DRX	17.9.0
2023-06	RAN#100	R5-232274	0272	-	F	Adding applicability UE Rx-Tx time difference measurement for propagation delay compensation using TRS in FR2	17.9.0
2023-06	RAN#100	R5-232458	0273	-	F	Correction to applicability of RedCap RRM TCs	17.9.0
2023-06	RAN#100	R5-232578	0275	-	F	Addition of applicability for RedCap demod test cases	17.9.0
2023-06	RAN#100	R5-232580	0276	-	F	Addition of applicability for test case 6.5F.2.4.2	17.9.0
2023-06	RAN#100	R5-232742	0278	-	F	Addition of test applicability for SUL test cases with UL MIMO	17.9.0
2023-06	RAN#100	R5-232756	0279	-	F	Correction to test applicability for UL MIMO test cases	17.9.0
2023-06	RAN#100	R5-232812	0283	-	F	Update to R17 NR HST FR1 enh test cases applicability	17.9.0
2023-06	RAN#100	R5-232834	0284	-	F	Adding applicability for MMSE-IRC test cases	17.9.0
2023-06	RAN#100	R5-232928	0287	-	F	Applicability of FR2 RedCap reselection test cases	17.9.0
2023-06	RAN#100	R5-233032	0289	-	F	Update to test applicability of beam correspondence	17.9.0
2023-06	RAN#100	R5-233253	0298	-	F	Applicability updates to FR2 RF tests	17.9.0

2023-06	RAN#100	R5-233506	0270	1	F	Addition of applicability for 5GS HST FR2 test case	17.9.0
2023-06	RAN#100	R5-233685	0296	1	F	Update to handle the test case applicability with different branches	17.9.0
2023-06	RAN#100	R5-233686	0271	1	F	Completion of applicability for DC_CA test cases	17.9.0
2023-06	RAN#100	R5-233687	0297	1	F	Addition of applicability for FR2 RF phase continuity test	17.9.0
2023-06	RAN#100	R5-233689	0291	1	F	Addition of 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

2023-09	RAN#101	R5-235105	0331	-	F	Addition applicability for Power saving Enh test cases 6.5.1.9 and 5.5.5.9	17.10.0
2023-09	RAN#101	R5-235220	0334	-	F	Update to applicability for FR2 RF phase continuity test	17.10.0
2023-09	RAN#101	R5-235797	0321	1	F	Update to R16 NR CADC configuration test cases applicability	17.10.0
2023-09	RAN#101	R5-235798	0314	1	F	Update to NR-U test applicability	17.10.0
2023-09	RAN#101	R5-235799	0308	1	F	Correction to applicability for RedCap RRM TCs	17.10.0
2023-09	RAN#101	R5-235800	0313	1	F	Update to applicability for power savings tests	17.10.0
2023-09	RAN#101	R5-235801	0305	1	F	Adding applicability statement for NR SA FR1 DL interruptions at switching between two uplink carriers test cases	17.10.0
2023-09	RAN#101	R5-235802	0326	1	F	Addition of test applicability for 2Tx switching	17.10.0
2023-09	RAN#101	R5-235803	0311	1	F	Update to applicability of 5G test cases	17.10.0
2023-09	RAN#101	R5-235804	0333	1	F	Corrections on the note for operator NOT in Table 4.0-2	17.10.0
2023-09	RAN#101	R5-235962	0301	1	F	Correction of Additional Information for 6.5B.3.3.1, 6.5B.3.3.2 and 7.3B.2.3 of 38.521-3	17.10.0
2023-09	RAN#101	R5-234751	0324	-	F	Update of RF UL MIMO test case applicability	18.0.0
2023-12	RAN#102	R5-236503	0340	-	F	Adding applicability for newly introduced NR-U test cases	18.1.0
2023-12	RAN#102	R5-236516	0341	-	F	Adding applicability for newly introduced RedCap test cases	18.1.0
2023-12	RAN#102	R5-236631	0343	-	F	Updating to test applicability of URLLC test cases	18.1.0
2023-12	RAN#102	R5-236875	0349	-	F	Addition of test applicability for MR-DC enhancement test cases	18.1.0
2023-12	RAN#102	R5-236912	0350	-	F	Addition of applicability of FR1 CA with UL MIMO test cases	18.1.0
2023-12	RAN#102	R5-237024	0352	-	F	Applicability of RRM enhancement test cases	18.1.0
2023-12	RAN#102	R5-237217	0361	-	F	Update on 6.5.1.9 applicability	18.1.0
2023-12	RAN#102	R5-237259	0363	-	F	Applicability update for FR2 UL MIMO test cases	18.1.0
2023-12	RAN#102	R5-237301	0365	-	F	Removal of NOTE 1 from applicability of FR1 CA with UL Tx switching test cases	18.1.0
2023-12	RAN#102	R5-237469	0364	2	F	Update to applicability spec for NTN test cases	18.1.0
2023-12	RAN#102	R5-237772	0356	1	F	Addition of test applicability and condition for RRM MR-DC Rel-17 Test Cases	18.1.0
2023-12	RAN#102	R5-237773	0344	1	F	Update to R16 NR CADC configuration test cases applicability	18.1.0
2023-12	RAN#102	R5-237774	0362	1	F	Applicability updates for Phase continuity tests	18.1.0
2023-12	RAN#102	R5-237775	0336	1	F	Addition of applicability of HST FR2 test cases	18.1.0
2023-12	RAN#102	R5-237776	0335	1	F	Update of applicability for MG enhancements TC	18.1.0
2023-12	RAN#102	R5-237777	0342	1	F	Correction to applicability of 5G test cases	18.1.0
2023-12	RAN#102	R5-237778	0351	1	F	Applicability of RedCap test cases	18.1.0
2023-12	RAN#102	R5-237779	0354	1	F	Updating FR1 test case branches for intra-band UL CA testing	18.1.0
2023-12	RAN#102	R5-237780	0357	1	F	Update to FR1 SDT test case applicability	18.1.0
2023-12	RAN#102	R5-237781	0358	1	F	Applicability update for NR-U RRM test cases	18.1.0
2023-12	RAN#102	R5-237782	0360	1	F	Addition of Test Selection Criteria for RRM	18.1.0
2023-12	RAN#102	R5-237913	0347	1	F	Correction to applicability for RedCap RRM TCs	18.1.0
2023-12	RAN#102	R5-237933	0338	1	F	Addition of MMSE-IRC CQI reporting test applicability rule	18.1.0

2024-03	RAN#103	R5-240212	0370	-	F	Editorial Correction to HST TCs on release information	18.2.0
2024-03	RAN#103	R5-240368	0373	-	F	Applicability statement for DL interruptions test cases 6.5.7A.1 and 6.5.7B.1	18.2.0
2024-03	RAN#103	R5-240508	0376	-	F	Addition of applicability for HST FR2 test cases	18.2.0
2024-03	RAN#103	R5-240520	0377	-	F	Removal of NOTE 1 from applicability of FR2 feMIMO test case	18.2.0
2024-03	RAN#103	R5-240771	0378	-	F	Correction to applicability for NR-U test cases	18.2.0
2024-03	RAN#103	R5-240783	0379	-	F	Removal of NOTE 1 from applicability of FR1 and FR2 MRDC test cases	18.2.0
2024-03	RAN#103	R5-240831	0382	-	F	Addition of applicability for RedCap test case 6.2.2.1.2.4	18.2.0
2024-03	RAN#103	R5-240857	0383	-	F	Addition of applicability for NR-U test cases	18.2.0
2024-03	RAN#103	R5-240932	0385	-	F	Correction to applicability of 5G test cases	18.2.0
2024-03	RAN#103	R5-241004	0386	-	F	Adding test applicability for V2X test cases	18.2.0
2024-03	RAN#103	R5-241131	0388	-	F	Adding applicability for newly introduced NR-U test cases	18.2.0
2024-03	RAN#103	R5-241140	0389	-	F	Update to applicability spec for Redcap Demod test case	18.2.0
2024-03	RAN#103	R5-241239	0392	-	F	Correction to applicability notes for FR2 RRM RLM test cases	18.2.0
2024-03	RAN#103	R5-241302	0395	-	F	Applicability update for several RedCap tests	18.2.0
2024-03	RAN#103	R5-241305	0396	-	F	Update to Applicability General Section	18.2.0
2024-03	RAN#103	R5-241348	0398	-	F	Alignment of status of FR2 UL MIMO test cases	18.2.0
2024-03	RAN#103	R5-241379	0401	-	F	Add subtest selection criteria to RedCap Performance test cases	18.2.0
2024-03	RAN#103	R5-241675	0375	2	F	Addition of applicability for FeMIMO test cases	18.2.0
2024-03	RAN#103	R5-241841	0397	1	F	Update to test selection criteria for RRM tests	18.2.0
2024-03	RAN#103	R5-241842	0366	1	F	Addition of TC applicability statements for ATG UE	18.2.0
2024-03	RAN#103	R5-241843	0367	1	F	Update to R16 NR CADC configuration test cases applicability	18.2.0
2024-03	RAN#103	R5-241844	0404	1	F	Applicability updates for Phase continuity tests	18.2.0
2024-03	RAN#103	R5-241845	0371	1	F	Addition of MMSE-IRC CQI reporting test applicability rule	18.2.0
2024-03	RAN#103	R5-241846	0390	1	F	Applicability update for PDSCH interference test cases	18.2.0
2024-03	RAN#103	R5-241848	0406	1	F	Addition of applicability for RedCap Demod and RRM test cases	18.2.0
2024-03	RAN#103	R5-241849	0380	1	F	Addition of event triggered reporting test cases applicability	18.2.0
2024-03	RAN#103	R5-241850	0384	1	F	Update to RRM Power saving enhancement 5.5.5.9 test case applicability	18.2.0
2024-03	RAN#103	R5-241851	0394	1	F	Update to NR-U test applicability	18.2.0
2024-03	RAN#103	R5-241873	0391	1	F	Add information to non-TXD test cases with UE supports TXD	18.2.0
2024-03	RAN#103	R5-241910	0374	1	F	Update of Applicability and Additional Information of RF conformance test cases for Satellite Access	18.2.0
2024-03	RAN#103	R5-241946	0399	1	F	Update of applicability for FR1 4DL CA test cases	18.2.0
2024-03	RAN#103	R5-241962	0393	1	F	Addition of missing applicability to new SS-RSRQ RedCap test cases	18.2.0
2024-03	RAN#103	R5-241988	0387	1	F	Update to test applicability for R17 FR1 enhancement	18.2.0
2024-03	RAN#103	R5-241993	0372	1	F	Update of Additional Information for 6.5.3.1 in 38.521-1 and 6.5B.3.3.2 in 38.521-3	18.2.0

2024-06	RAN#104	R5-242443	0408	-	F	Correction of test applicability rule for CQI reporting test cases with inter-cell interference	18.3.0
2024-06	RAN#104	R5-242494	0409	-	F	Addition of applicability for new NR-U test cases	18.3.0
2024-06	RAN#104	R5-242512	0410	-	F	Update applicability for NR NTN test cases	18.3.0
2024-06	RAN#104	R5-242523	0411	-	F	Correction on applicability for PC1.5 in Rx tests	18.3.0
2024-06	RAN#104	R5-242846	0421	-	F	Correction to Test Bands Selection Condition for Performance test case 5.3.2.2.5	18.3.0
2024-06	RAN#104	R5-242932	0424	-	F	Addition of applicabilities for 3Tx NR CA and EN-DC test cases	18.3.0
2024-06	RAN#104	R5-242984	0425	-	F	Addition of missing applicability to RedCap SS-RSRP test cases	18.3.0
2024-06	RAN#104	R5-243109	0430	-	F	Applicability for FR2 NSA power tolerance CA test cases	18.3.0
2024-06	RAN#104	R5-243129	0431	-	F	Cleaning up test applicability for ULFP Tx	18.3.0
2024-06	RAN#104	R5-243144	0433	-	F	Update to test applicability of V2X test cases	18.3.0
2024-06	RAN#104	R5-243152	0434	-	F	Update to applicability of FeMIMO test cases	18.3.0
2024-06	RAN#104	R5-243292	0436	-	F	Corrections on 4.0 for NTN tested bands selection criteria	18.3.0
2024-06	RAN#104	R5-243394	0437	-	F	Addition of applicability table for NR NTN RRM tests	18.3.0
2024-06	RAN#104	RP-241590	0438	1	F	Update to NR-U test applicability	18.3.0
2024-06	RAN#104	R5-243396	0439	-	F	Applicability correction to gap-based measurement tests for RedCap	18.3.0
2024-06	RAN#104	R5-243397	0440	-	F	Applicability correction to gap-based measurement tests	18.3.0
2024-06	RAN#104	R5-243437	0442	-	F	Applicability spec update for inter-cell CRS interference test case	18.3.0
2024-06	RAN#104	R5-243439	0443	-	F	Applicability spec update to allow skipping 2DLCA and 3DLCA PDSCH Demodulation test cases	18.3.0
2024-06	RAN#104	R5-243440	0444	-	F	Applicability spec update for NR-NTN test cases	18.3.0
2024-06	RAN#104	R5-243715	0413	1	F	Editorial Correction of FR2 feMIMO test case	18.3.0
2024-06	RAN#104	R5-243716	0415	1	F	Additional applicability for Inter-cell SSB based L1-RSRP measurements	18.3.0
2024-06	RAN#104	R5-243717	0416	1	F	Additional applicability for HST FR2 test cases	18.3.0
2024-06	RAN#104	R5-243718	0414	1	F	Applicability correction of RRM enhancements test cases	18.3.0
2024-06	RAN#104	R5-243719	0417	1	F	Addition of test applicability for Rel-16 RRM EN-DC CSI-RSRP measurement accuracy with FR1 serving cell and FR1 target cell	18.3.0
2024-06	RAN#104	R5-243729	0429	1	F	Update of applicability of FR2 CA and MIMO test cases	18.3.0
2024-06	RAN#104	R5-243813	0441	1	F	Applicability updates for Phase continuity tests	18.3.0
2024-06	RAN#104	R5-243910	0419	1	F	Correction condition F011 for 38.533 TC16.4.1.1	18.3.0
2024-06	RAN#104	R5-243914	0422	1	F	Addition of applicability for MCE RRM test cases	18.3.0
2024-06	RAN#104	R5-243923	0412	1	F	Correction to TC titles in applicability table of RRM event triggered reporting TCs with measurement gaps	18.3.0
2024-06	RAN#104	R5-244010	0420	2	F	Correction to applicability of 5G test cases	18.3.0
2024-06	RAN#104	R5-244011	0423	2	F	Correction to applicability for RedCap RRM test cases	18.3.0
2024-09	RAN#105	R5-244142	0445	-	F	Addition of applicability for enhanced DMRS test cases	18.4.0
2024-09	RAN#105	R5-244283	0446	-	F	Update of applicability for FR1 LTM test cases	18.4.0
2024-09	RAN#105	R5-244600	0458	-	F	Correction of FR1 RRM TCs applicability for 8Rx capable UEs	18.4.0

2024-09	RAN#105	R5-244604	0459	-	F	Correction to applicabilities for MCE RRM test cases	18.4.0
2024-09	RAN#105	R5-245018	0467	-	F	Update to applicability for R16 V2X	18.4.0
2024-09	RAN#105	R5-245073	0469	-	F	Update to general information for NR NTN	18.4.0
2024-09	RAN#105	R5-245163	0472	-	F	Addition of applicabilities for 3Tx spurious emissions test cases	18.4.0
2024-09	RAN#105	R5-245302	0476	-	F	Addition of applicability for PDSCH CRS interference mitigation under NR-LTE coexistence test cases 5.2.2.1.18, 5.2.2.2.19, 5.2.3.1.17, 5.2.3.2.18	18.4.0
2024-09	RAN#105	R5-245371	0478	-	F	Update to applicability for NR-NTN RRM test cases	18.4.0
2024-09	RAN#105	R5-245374	0481	-	F	Update to NR-U test applicability	18.4.0
2024-09	RAN#105	R5-245375	0482	-	F	Update to applicability for EN-DC FR2 tests with measurement gap	18.4.0
2024-09	RAN#105	R5-245914	0449	1	F	Update to R16 NR CADC configuration test cases applicability	18.4.0
2024-09	RAN#105	R5-245915	0456	1	F	Addition of test applicability for less than 5 MHz test cases	18.4.0
2024-09	RAN#105	R5-245916	0455	1	F	Addition of test applicability for Rel-18 HST FR2 test cases	18.4.0
2024-09	RAN#105	R5-245917	0464	1	F	Adding test applicability for new FR1 SUL test case 6.3C.3.6 and 6.3C.3.6_1	18.4.0
2024-09	RAN#105	R5-245918	0457	1	F	Addition of applicability for downlink and uplink MIMO evolution test cases	18.4.0
2024-09	RAN#105	R5-245919	0471	1	F	Addition of new eRedCap test cases in 38.522	18.4.0
2024-09	RAN#105	R5-245920	0462	1	F	Correction of SRS Carrier Switching Test Cases Applicability	18.4.0
2024-09	RAN#105	R5-245921	0463	1	F	Addition of test applicability for Test Cases of Rel-16 RRM EN-DC CSI-RS based measurement	18.4.0
2024-09	RAN#105	R5-245951	0465	1	F	Update of applicability of FR2 CA and MIMO test cases	18.4.0
2024-09	RAN#105	R5-245977	0466	1	F	Update to applicability for R17 sidelink enhancement	18.4.0
2024-09	RAN#105	R5-245978	0470	1	F	Correction of applicability for test case 6.2A.4.1.1	18.4.0
2024-09	RAN#105	R5-246000	0468	1	F	Update to applicability of 5G test cases	18.4.0
2024-09	RAN#105	R5-246008	0477	1	F	Addition of test applicability for eRedCap RF test cases	18.4.0
2024-09	RAN#105	R5-246063	0489	1	F	Updates to applicability for some NTN RF tests	18.4.0
2024-12	RAN#106	R5-246322	0492	-	F	Update to applicability of test cases for Satellite Access	18.5.0
2024-12	RAN#106	R5-246506	0493	-	F	Introduction of Applicabilities for V2X receiver test cases	18.5.0
2024-12	RAN#106	R5-246717	0500	-	F	Correction to applicability of FR2 EN-DC and NR SA RRM test cases	18.5.0
2024-12	RAN#106	R5-246778	0502	-	F	Addition of applicability for new NR-U test case 6.2A.3.1.1_1	18.5.0
2024-12	RAN#106	R5-246885	0507	-	F	Correction to applicability of FR1 EN-DC and NR SA RRM test cases	18.5.0
2024-12	RAN#106	R5-246921	0508	-	F	Addition of applicabilities for 3Tx inter-band EN-DC new test cases	18.5.0
2024-12	RAN#106	R5-246930	0509	-	F	Addition of test applicabilities for Cell DTX and NES-based CHO test cases	18.5.0
2024-12	RAN#106	R5-246946	0510	-	F	Addition of test applicabilities for enhanced DMRS and eType II Codebook test cases	18.5.0
2024-12	RAN#106	R5-246975	0512	-	F	Update to applicability statements of less than 5 MHz test cases	18.5.0
2024-12	RAN#106	R5-246982	0513	-	F	Update to applicability for downlink and uplink MIMO evolution test cases	18.5.0

2024-12	RAN#106	R5-247009	0514	-	F	Updating test applicability for Spurious emission UE co-ex testing for band combo	18.5.0
2024-12	RAN#106	R5-247024	0515	-	F	Updating testing applicability branch for 8Rx	18.5.0
2024-12	RAN#106	R5-247147	0518	-	F	Applicability update for DEMOD FR2 test cases for different power class	18.5.0
2024-12	RAN#106	R5-247150	0519	-	F	applicability update for DEMOD NR-NTN tests	18.5.0
2024-12	RAN#106	R5-247213	0520	-	F	Update of test applicability for eRedCap RF test cases	18.5.0
2024-12	RAN#106	R5-247216	0521	-	F	Addition of applicability for new eRedCap test cases	18.5.0
2024-12	RAN#106	R5-247341	0525	-	F	Update of applicability of FR2 SISO and MIMO test cases	18.5.0
2024-12	RAN#106	R5-247441	0529	-	F	Update to applicability for NR V2X test cases	18.5.0
2024-12	RAN#106	R5-247479	0531	-	F	Applicability of NES triggering conditional handover test cases	18.5.0
2024-12	RAN#106	R5-247688	0517	2	F	Update to applicability of 5G test cases	18.5.0
2024-12	RAN#106	R5-247816	0526	1	F	Adding applicability for ATG test cases	18.5.0
2024-12	RAN#106	R5-247817	0535	1	F	Applicability spec update to add PDSCH Phy link adaptation cases	18.5.0
2024-12	RAN#106	R5-247818	0516	1	F	Correcting test applicability for FR1 switching time mask test cases	18.5.0
2024-12	RAN#106	R5-247819	0490	1	F	Update to applicability for some LTM test cases	18.5.0
2024-12	RAN#106	R5-247820	0532	1	F	Applicability of RACH-based LTM PSCell switch test cases	18.5.0
2024-12	RAN#106	R5-247821	0505	1	F	Correction to applicability of RRM test 6.6.2.9	18.5.0
2024-12	RAN#106	R5-247822	0533	1	F	Applicability correction for RRM enh TC 5.5.7.1	18.5.0
2024-12	RAN#106	R5-247823	0504	1	F	Update to NR-U test applicability	18.5.0
2024-12	RAN#106	R5-247824	0506	1	F	Correction to applicability of RRM test 16.6.2.9	18.5.0
2024-12	RAN#106	R5-247825	0530	1	F	Applicability of NRU measurement test cases	18.5.0
2024-12	RAN#106	R5-247826	0522	1	F	Update of applicability for RRM FR2 test cases including PC1	18.5.0
2024-12	RAN#106	R5-247827	0524	1	F	Update of applicability for RRM RedCap SS-RSRP test cases	18.5.0
2024-12	RAN#106	R5-247828	0528	1	F	Update condition for CA HST-SFN test cases	18.5.0
2024-12	RAN#106	R5-247829	0503	1	F	Update to NR-NTN test applicability	18.5.0
2024-12	RAN#106	R5-247838	0494	1	F	Update to R18 ATG TCs applicability	18.5.0
2024-12	RAN#106	R5-247847	0523	1	F	Update of applicability for RRM RedCap test cases	18.5.0
2024-12	RAN#106	R5-247975	0495	1	F	Update to R16 NR CADC configuration test cases applicability	18.5.0
2025-03	RAN#107	R5-250057	0537	-	F	Editorial corrections of FR1 LTM test cases title	18.6.0
2025-03	RAN#107	R5-250275	0543	-	F	Addition of test applicability for measurement gap enhancements test cases	18.6.0
2025-03	RAN#107	R5-250410	0544	-	F	Addition of enhanced receiver type 2 test case applicability	18.6.0
2025-03	RAN#107	R5-250477	0545	-	F	Addition of test applicability for NR SA FR1 SSB based RLM in-sync with 3 MHz channel bandwidth test case	18.6.0
2025-03	RAN#107	R5-250532	0549	-	F	Update to applicability for Less than 5MHz BW test cases	18.6.0
2025-03	RAN#107	R5-250553	0550	-	F	applicability update for link adaptation demod test cases	18.6.0
2025-03	RAN#107	R5-250561	0551	-	F	Applicability update for NR-U test cases	18.6.0
2025-03	RAN#107	R5-250641	0552	-	F	Addition of applicability for new test case 5.3.2.1.7	18.6.0

2025-03	RAN#107	R5-250652	0554	-	F	Updates of NR-U test cases in 38.522	18.6.0
2025-03	RAN#107	R5-250657	0555	-	F	Update to additional information of test cases for NR-U	18.6.0
2025-03	RAN#107	R5-250666	0556	-	F	Include applicability for CQI reporting with Table 4 test cases	18.6.0
2025-03	RAN#107	R5-250708	0558	-	F	Addition of applicability for RedCap demod test cases	18.6.0
2025-03	RAN#107	R5-250752	0559	-	F	Addition of applicabilities for a bunch of 3Tx inter-band EN-DC test cases	18.6.0
2025-03	RAN#107	R5-250774	0560	-	F	Correction to applicability of FR1 and FR2 NR SA RRM test cases	18.6.0
2025-03	RAN#107	R5-250809	0562	-	F	Addition of applicability for 4.5.3.11 SSB-less SCell activation	18.6.0
2025-03	RAN#107	R5-250815	0563	-	F	Addition of applicability of new test case for NR UE Transmit Timing Test	18.6.0
2025-03	RAN#107	R5-250818	0564	-	F	Correction to applicability condition for uplink full power test cases	18.6.0
2025-03	RAN#107	R5-250823	0565	-	F	Addition of applicability for MCE RRM test case	18.6.0
2025-03	RAN#107	R5-250863	0566	-	F	applicability update for HST-DPS test cases	18.6.0
2025-03	RAN#107	R5-250877	0567	-	F	Update of applicability for RRM FR2 PC1 random access test cases	18.6.0
2025-03	RAN#107	R5-251010	0568	-	F	Applicability of MG enhancement test cases	18.6.0
2025-03	RAN#107	R5-251011	0569	-	F	Applicability of rel-18 mobility enhancements test cases	18.6.0
2025-03	RAN#107	R5-251047	0572	-	F	Update and corrections of applicability for RRM NRU SA FR1 test cases	18.6.0
2025-03	RAN#107	R5-251067	0573	-	F	Updates on 4.1.1 for applicability of RF SA FR1 conformance test cases for 4Rx Refsens	18.6.0
2025-03	RAN#107	R5-251188	0576	-	F	Update to NR-NTN test applicability	18.6.0
2025-03	RAN#107	R5-251189	0577	-	F	Update to NR-U test applicability	18.6.0
2025-03	RAN#107	R5-251212	0578	-	F	Applicability for REFSENS power level test for XR Ues	18.6.0
2025-03	RAN#107	R5-251216	0579	-	F	Applicability for 2AoA spherical coverage test	18.6.0
2025-03	RAN#107	R5-251509	0574	1	F	Update to applicability for NR V2X test cases	18.6.0
2025-03	RAN#107	R5-251664	0546	1	F	Addition of test applicability for RRM NES test cases	18.6.0
2025-03	RAN#107	R5-251665	0570	1	F	Applicability of NES Conditional handover test cases	18.6.0
2025-03	RAN#107	R5-251666	0538	1	F	Update to R18 ATG TCs applicability	18.6.0
2025-03	RAN#107	R5-251667	0548	1	F	Update to applicability for FR2 LTM test cases	18.6.0
2025-03	RAN#107	R5-251668	0553	1	F	Addition of eRedCap test case 6.2.1.2.2.2 and additional conditions	18.6.0
2025-03	RAN#107	R5-251669	0547	1	F	Addition of test applicability statements for multiRx test cases	18.6.0
2025-03	RAN#107	R5-251670	0542	1	F	Update to applicability of 5G TCs	18.6.0
2025-03	RAN#107	R5-251679	0575	1	F	Update to applicability for NR V2X test cases	18.6.0
2025-03	RAN#107	R5-251697	0571	1	F	Update of tested bands selection criteria for RedCap UE supporting HD FDD	18.6.0
2025-06	RAN#108	R5-251845	0581	-	F	Correction of test applicability for NR SA FR1 RLM in-sync 3 MHz bandwidth test case	18.7.0
2025-06	RAN#108	R5-251907	0584	-	F	Add applicability for enhanced receiver type 2 cases for FR1 FDD 4Rx	18.7.0
2025-06	RAN#108	R5-251908	0585	-	F	Add applicability for Rel-18 enhanced DMRS for FR1 TDD 4Rx	18.7.0

2025-06	RAN#108	R5-251919	0587	-	F	Update to applicability for NR FR1 needForGap test cases	18.7.0
2025-06	RAN#108	R5-252018	0588	-	F	Update of test applicability for V2X	18.7.0
2025-06	RAN#108	R5-252131	0594	-	F	Test applicability update for FR1 test case 6.2D.3	18.7.0
2025-06	RAN#108	R5-252181	0595	-	F	Addition of test applicability statements for CHO test cases	18.7.0
2025-06	RAN#108	R5-252558	0601	-	F	Addition of applicability for new eRedCap test cases	18.7.0
2025-06	RAN#108	R5-252559	0602	-	F	Update of test case 5.3.2.1.7	18.7.0
2025-06	RAN#108	R5-252560	0603	-	F	Removing note1 from completed RedCap test cases	18.7.0
2025-06	RAN#108	R5-252561	0604	-	F	Correcting condition in NR-U test case 6.2A.4.1.1	18.7.0
2025-06	RAN#108	R5-252657	0605	-	F	Correction to applicability of FR1 and FR2 NR MUSIM RRM test cases	18.7.0
2025-06	RAN#108	R5-252709	0607	-	F	Addition of applicability for MG_enh RRM test cases	18.7.0
2025-06	RAN#108	R5-252778	0608	-	F	Applicability correction of NES triggering conditional handover test case 7.3.3.3	18.7.0
2025-06	RAN#108	R5-252963	0614	-	F	Update to NR-NTN test applicability	18.7.0
2025-06	RAN#108	R5-252989	0615	-	F	Applicability spec update to add FR2 Multi-Rx PDSCH test cases	18.7.0
2025-06	RAN#108	R5-253000	0616	-	F	Applicability for REFSENS power level test for XR UEs	18.7.0
2025-06	RAN#108	R5-253584	0589	1	F	Update to R18 ATG TCs applicability	18.7.0
2025-06	RAN#108	R5-253586	0590	1	F	Update to R16 NR CADC configuration test cases applicability	18.7.0
2025-06	RAN#108	R5-253587	0586	1	F	Removal of NOTE1 for FR2 256QAM CQI reporting test case	18.7.0
2025-06	RAN#108	R5-253588	0599	1	F	Adding test applicability for new 4Tx test cases	18.7.0
2025-06	RAN#108	R5-253590	0598	1	F	Addition of applicabilities for unified TCI mTRP test cases	18.7.0
2025-06	RAN#108	R5-253591	0580	1	F	Update to R18 LTM test applicability	18.7.0
2025-06	RAN#108	R5-253592	0609	1	F	Applicability correction of mobility enhancements test cases	18.7.0
2025-06	RAN#108	R5-253613	0597	1	F	Addition of applicability for new test case for variable Tx-Rx spacing for NR NTN bands	18.7.0
2025-06	RAN#108	R5-253249	0600	2	F	Correction to test applicability of PMI test cases with 16Tx or 32Tx of CSI-RS	18.7.0
2025-06	RAN#108	-	-	-	-	Administrative release upgrade to match the release of 3GPP TS 38.521-1 which was upgraded at RAN#108 to Rel-19 due to Rel-19 relevant CR(s)	19.0.0
2025-09	RAN#109	R5-253731	0617	-	F	Update Test applicability for NR NTN RA TCs	19.1.0
2025-09	RAN#109	R5-253747	0618	-	F	Update to the applicability of NES RRM TC 6.3.3.6 and 6.3.3.7	19.1.0
2025-09	RAN#109	R5-253836	0620	-	F	Addition of Applicability for EVM equalizer spectrum flatness for FR2 CA	19.1.0
2025-09	RAN#109	R5-254245	0631	-	F	Addition of applicability for test case 9.4B.1.1A	19.1.0
2025-09	RAN#109	R5-254247	0632	-	F	Addition of applicability for test case 14.2.2.3.1	19.1.0
2025-09	RAN#109	R5-254379	0634	-	F	Addition of NR NTN power control test cases	19.1.0
2025-09	RAN#109	R5-254392	0635	-	F	Addition of test applicability statement for BFD and LR test case for a UE operating on a PCell with 3 MHz BW	19.1.0
2025-09	RAN#109	R5-254406	0636	-	F	Update of applicability for A-MPR, A-SEM and UTRA ACLR for UL MIMO	19.1.0
2025-09	RAN#109	R5-254464	0637	-	F	Update of applicability condition for RRM test case 6.5.13.1	19.1.0

2025-09	RAN#109	R5-254625	0641	-	F	Addition of applicability of FR1 time mask for switching test cases	19.1.0
2025-09	RAN#109	R5-254642	0642	-	F	Addition of new eRedCap test cases in 38.522	19.1.0
2025-09	RAN#109	R5-254643	0643	-	F	Addition of new test case in 38.522	19.1.0
2025-09	RAN#109	R5-254742	0648	-	F	Correction to applicable release of 16Tx or 32Tx PMI reporting	19.1.0
2025-09	RAN#109	R5-254770	0649	-	F	Updating test applicability for V2X test cases	19.1.0
2025-09	RAN#109	R5-254816	0650	-	F	Update to applicability of the test case for variable Tx-Rx spacing for NR NTN bands	19.1.0
2025-09	RAN#109	R5-254842	0651	-	F	Update to r18 NR-NTN test applicability	19.1.0
2025-09	RAN#109	R5-254845	0654	-	F	Applicability update for NR-U test cases	19.1.0
2025-09	RAN#109	R5-254893	0657	-	F	Applicability updates REFSSENS power level test for XR UEs	19.1.0
2025-09	RAN#109	R5-255099	0647	2	F	Applicability of E-UTRA - NR SA FR1 E-UTRA cell re-selection to higher-priority NR target cell for 2 Rx UE test case	19.1.0
2025-09	RAN#109	R5-255295	0629	1	F	Additional of applicability of RRM TC 14.1.11 and TC 14.1.12 in TS 38.522	19.1.0
2025-09	RAN#109	R5-255305	0626	1	F	Introduction of Applicabilities for eRedCap PMI test cases	19.1.0
2025-09	RAN#109	R5-255317	0639	1	F	Updates of test applicability for LTM FR1 test cases	19.1.0
2025-09	RAN#109	R5-255336	0628	1	F	Adding test applicability for new 4Tx test cases	19.1.0
2025-09	RAN#109	R5-255337	0630	1	F	Addition of applicability for test case 5.3.1.2.1	19.1.0
2025-09	RAN#109	R5-255338	0625	1	F	Update to applicability of 5G TCs	19.1.0
2025-09	RAN#109	R5-255341	0621	1	F	Update to applicability of 5G ATG TCs	19.1.0
2025-09	RAN#109	R5-255356	0638	1	F	Correction to applicabilities related to 2-layer MIMO capabilities	19.1.0
2025-09	RAN#109	R5-255362	0652	1	F	Update to NR-NTN test applicability	19.1.0
2025-09	RAN#109	R5-255395	0656	1	F	Applicability updates for 2AoA spherical coverage test	19.1.0
2025-09	RAN#109	R5-255406	0627	1	F	Confirmation of Applicability for PMI test cases	19.1.0
2025-09	RAN#109	R5-255418	0653	1	F	Update to applicability of gap-based RRM FR2 tests	19.1.0
2025-10	RAN#109	-	-	-	-	editorial corrections: reapply changes of R5-254816, R5-255295, R5-255338 in right place	19.1.1

History

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