



**5G;
NR;**
iTeh STANDARD PREVIEW
(standard not confirmed)
User Equipment (UE) conformance specification;
Radio transmission and reception;
Part 3: Range 1 and Range 2 Interworking operation with other
radios
(3GPP TS 38.521-3 version 16.8.0 Release 16)



ReferenceRTS/TSGR-0538521-3vg80

Keywords

5G

ETSI

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Important notice

ETSI TS 138 521-3 V16.8.0 (2021-08)
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In the present document "**shall**", "**shall not**", "**should**", "**should not**", "**may**", "**need not**", "**will**", "**will not**", "**can**" and "**cannot**" are to be interpreted as described in clause 3.2 of the [ETSI Drafting Rules](#) (Verbal forms for the expression of provisions).

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Foreword

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

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

Version x.y.z

where:

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

The present document is part 3 of a multi-part Technical Specification (TS) covering the New Radio (NR) User Equipment (UE) conformance specification, which is divided in the following parts:

- TS 38.521-1 [8]: "NR; User Equipment (UE) conformance specification; Radio transmission and reception; Part 1: Range 1 Standalone" (the present document).
- TS 38.521-2 [9]: "NR; User Equipment (UE) conformance specification; Radio transmission and reception; Part 2: Range 2 Standalone".
- 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".
- TS 38.521-4 [22]: "NR; User Equipment (UE) conformance specification; Radio transmission and reception; Part 4: Performance".
- TS 38.522 [14]: "NR; User Equipment (UE) conformance specification; Applicability of RF and RRM test cases".
- TS 38.533 [23]: "NR; User Equipment (UE) conformance specification; Radio resource management (RRM)".

1 Scope

The present document specifies the measurement procedures for the conformance test of the user equipment (UE) that contain RF characteristics for carrier aggregation between Range 1 and Range 2 and additional requirements due to NR non-standalone (NSA) operation mode with E-UTRA.

The requirements are listed in different clauses only if the corresponding parameters deviate. More generally, tests are only applicable to those mobiles that are intended to support the appropriate functionality. To indicate the circumstances in which tests apply, this is noted in the "*definition and applicability*" part of the test.

For example only Release 15 and later UE declared to support 5G-NR shall be tested for this functionality. In the event that for some tests different conditions apply for different releases, this is indicated within the text of the test itself.

2 References

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

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

[1] to [24] (void)

[25] 3GPP TS 38.521-3 Release 17: "NR; User Equipment (UE) conformance specification; Radio transmission and reception; Part 3: Range 1 and Range 2 Interworking operation with other radios"
" <https://standards.iteh.ai/catalog/standards/sist/6f94fa2-9ee7-4247-ac3a-9c60d93bd5ce/etsi-ts-138-521-3-v16-8-0-2021-08>

3 Definitions, symbols and abbreviations

Void

4 General

The requirements of the present document are provided in 3GPP TS 38.521-3 Release 17 [25].

5 to 7 Void

Annex A to N: Void

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<https://standards.iteh.ai/catalog/standards/sist/6f94fla2-9ee7-4247-ac3a-9c60d93bd5ce/etsi-ts-138-521-3-v16-8-0-2021-08>

Annex O (informative): Change history

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Change history							
Date	Meeting	TDoc	CR	R ev	Cat	Subject/Comment	New version
2017-08	RAN5#76	R5-174710	-	-	-	Draft skeleton	0.0.1
2018-01	RAN5#1- 5G-NR Adhoc	R5-180086	-	-	-	TP to add clause 6.2B.3.3 UE A-MPR intra-band EN-DC to 38.521-3	0.1.0
2018-01	RAN5#1- 5G-NR Adhoc	R5-180087	-	-	-	TP to add clause 6.5B.2.1.2 Additional Spectrum emissions mask (contiguous sub-blocks) for intra-band EN-DC to 38.521-3	0.1.0
2018-02	RAN5#78	R5-181509	-	-	-	Updated 38.521-3 for new Annex A Dual uplink interferer information	0.2.0
2018-02	RAN5#78	R5-181690	-	-	-	Updated 38.521-3 for channel bandwidth information	0.2.0
2018-03	RAN5#2- 5G-NR Adhoc	R5-181760	-	-	-	Draft TS 38.521-3 0.3.0	0.3.0
2018-04	RAN5#2- 5G-NR Adhoc	R5-182035	-	-	-	5G-NR Text Proposal to add spurious emissions test case to 38.521-3	0.4.0
2018-04	RAN5#2- 5G-NR Adhoc	R5-182016	-	-	-	TP for new test case: 6.5B.2.1.3, Adjacent channel leakage ratio for intra-band contiguous EN-DC	0.4.0
2018-04	RAN5#2- 5G-NR Adhoc	R5-182017	-	-	-	TP to update clause 6.2B.3.1 UE A-MPR intra-band EN-DC to 38.521-3	0.4.0
2018-04	RAN5#2- 5G-NR Adhoc	R5-182018	-	-	-	TP to update clause 6.5B.2.1.2 Additional spectrum emission mask to 38.521-3	0.4.0
2018-04	RAN5#2- 5G-NR Adhoc	R5-181807	-	-	-	Update to Operating bands of 38.521-3	0.4.0
2018-04	RAN5#2- 5G-NR Adhoc	R5-181808	-	-	-	Update to clause 3 and clause 4 of 38.521-3	0.4.0
2018-04	RAN5#2- 5G-NR Adhoc	R5-181828	-	-	-	Updated 38.521-3 for channel bandwidth information with new structure	0.4.0
2018-07	RAN5#79	R5-183961	-	-	-	5G_FR1_EN_DC_RF_sensitivity_for_DC	0.5.0
2018-07	RAN5#79	R5-183962	-	-	-	Introduction of TC 6.2B.1.3 for EN-DC	0.5.0
2018-07	RAN5#79	R5-183949	-	-	-	Statistical Testing Annex for 38.521-3	0.5.0
2018-07	RAN5#79	R5-182995	-	-	-	Corrections annex for EIRP and TRP metric definition in TS 38.521-3	0.5.0
2018-07	RAN5#79	R5-183707	-	-	-	TP for updating test case 6.2B.2.1, UE Maximum Output Power reduction for Intra-Band Contiguous EN-DC	0.5.0
2018-07	RAN5#79	R5-183708	-	-	-	Updated clause 5.5B Configuration for DC to 38.521-3	0.5.0
2018-07	RAN5#79	R5-183709	-	-	-	TP to add Occupied BW EN-DC test case	0.5.0
2018-07	RAN5#79	R5-183710	-	-	-	TP to add SEM EN-DC test case	0.5.0
2018-07	RAN5#79	R5-183711	-	-	-	TP to add ACLR EN-DC test case	0.5.0
2018-09	RAN5#80	R5-185563	-	-	-	FR2_StoreTxRxBeamPeakCoordinates_38.521-3	1.0.0
2018-09	RAN5#80	R5-185520	-	-	-	Addition of TRx MU and TT in TS 38.521-3 Annex	1.0.0
2018-09	RAN5#80	R5-185503	-	-	-	Add Clause 7.5B.1 into TS 38.521-3	1.0.0
2018-09	RAN5#80	R5-185504	-	-	-	Add Clause 7.5B.2 into TS 38.521-3	1.0.0
2018-09	RAN5#80	R5-185505	-	-	-	Add Clause 7.5B.3 into TS 38.521-3	1.0.0
2018-09	RAN5#80	R5-184579	-	-	-	Updated EN-DC configuration information in clause 5	1.0.0
2018-09	RAN5#80	R5-184580	-	-	-	TIB value add for EN-DC band in 38.521-3	1.0.0
2018-09	RAN5#80	R5-184671	-	-	-	Update of References in clause 2 of 38.521-3 spec	1.0.0
2018-09	RAN5#80	R5-184672	-	-	-	Updates to Operating Bands in clause 5.2	1.0.0
2018-09	RAN5#80	R5-184737	-	-	-	Dual uplink interferer updated to 38.521-3	1.0.0
2018-09	RAN5#80	R5-184737	-	-	-	Dual uplink interferer updated to 38.521-3	1.0.0
2018-09	RAN5#80	R5-185332	-	-	-	Addition of 6.2B.4.1.1 Configured OP for Intra-Band Contiguous EN-DC	1.0.0
2018-09	RAN5#80	R5-185333	-	-	-	Addition of 6.2B.4.1.2 Configured OP for Intra-Band Non-Contiguous EN-DC	1.0.0
2018-09	RAN5#80	R5-185507	-	-	-	Addition of 6.2B.4.1.3 Configured OP for Inter-Band within FR1	1.0.0
2018-09	RAN5#80	R5-185198	-	-	-	Addition of 6.2B.4.1.4 Configured OP for Inter-Band EN-DC including FR2	1.0.0
2018-09	RAN5#80	R5-185199	-	-	-	Addition of 6.2B.4.1.5 Configured OP for Inter-Band EN-DC including both FR1 and FR2	1.0.0
2018-09	RAN5#80	R5-185469	-	-	-	TP for updating test case 6.2B.3.1 UE AMPR for Intra-band contiguous EN-DC	1.0.0
2018-09	RAN5#80	R5-185470	-	-	-	TP for updating test case 6.2B.3.2 UE AMPR for Intra-band non-contiguous EN-DC	1.0.0
2018-09	RAN5#80	R5-185200	-	-	-	TP for updating test case 6.5B.2.1.2 Additional spectrum emission mask for intra-band contiguous EN-DC	1.0.0

2018-09	RAN#5#80	R5-185556	-	-	-	FR2 UE BeamlockInvoke 38.521-3	1.0.0
2018-09	RAN#5#80	R5-185472	-	-	-	Update of TC 6.2B.1.1	1.0.0
2018-09	RAN#5#80	R5-185473	-	-	-	Introduction of TC 6.2B.1.2	1.0.0
2018-09	RAN#5#80	R5-185474	-	-	-	Update of 6.2B.1.3	1.0.0
2018-09	RAN#5#80	R5-185201	-	-	-	Introduction of TC 7.4B.1	1.0.0
2018-09	RAN#5#80	R5-185202	-	-	-	Introduction of 7.4B.2	1.0.0
2018-09	RAN#5#80	R5-185203	-	-	-	Introduction of 7.4B.3	1.0.0
2018-09	RAN#5#80	R5-185479	-	-	-	Update Occupied Bandwidth for interband EN-DC within FR1	1.0.0
2018-09	RAN#5#80	R5-185480	-	-	-	Update SEM interband EN-DC within FR1	1.0.0
2018-09	RAN#5#80	R5-185481	-	-	-	Update ACLR for interband EN-DC within FR1	1.0.0
2018-09	RAN#5#80	R5-185204	-	-	-	5G NR EN_DC with FR1 Text update for RX sensitivity	1.0.0
2018-09	RAN#5#80	R5-185205	-	-	-	5G NR EN_DC with FR1 Text proposal for TX Spurious emission	1.0.0
2018-09	RAN#5#80	R5-185422	-	-	-	Alignment of Annex numbering with core spec	1.0.0
2018-09	RAN#5#80	R5-184897	-	-	-	Updates to Channel Arrangement clause in 38.521-3	1.0.0
2018-09	RAN#5#80	R5-185206	-	-	-	Addition of TC6.3B.1.1 Minimum Output power for intra-band contiguous EN-DC	1.0.0
2018-09	RAN#5#80	R5-185207	-	-	-	Addition of TC6.3B.1.2 Minimum output power for intra-band non-contiguous EN-DC	1.0.0
2018-09	RAN#5#80	R5-185208	-	-	-	Addition of TC6.3B.1.3 Minimum output power for inter-band EN-DC within FR1	1.0.0
2018-09	RAN#5#80	R5-185351	-	-	-	Update across EN-DC RF test cases in TS 38.521-3	1.0.0
2018-09	RAN#81	-	-	-	-	raised to v15.0.0 with editorial changes only	15.0.0
2018-12	RAN#82	R5-186503	0033	-	F	FR2 Spurious Emission test case updates	15.1.0
2018-12	RAN#82	R5-186506	0034	-	F	Update Text on Store Beam Peak Coordinate	15.1.0
2018-12	RAN#82	R5-186507	0035	-	F	38.521-3 Applicability Rules	15.1.0
2018-12	RAN#82	R5-186601	0039	-	F	5G NR_EN_DC with FR1_Text update for Intra-Band Contiguous RX sensitivity	15.1.0
2018-12	RAN#82	R5-186602	0040	-	F	5G NR_Text update for TX spurious emission intra-band contiguous EN-DC	15.1.0
2018-12	RAN#82	R5-186608	0042	-	F	Spurious emission band UE co-existence for Inter-band EN-DC within FR1	15.1.0
2018-12	RAN#82	R5-186672	0044	-	F	Updating test case 6.2B.3.1 Additional Maximum Output Power reduction for Intra-band contiguous EN-DC	15.1.0
2018-12	RAN#82	R5-186673	0045	-	F	Updating test case 6.5B.2.1.2 Additional spectrum emissions mask for intra-band contiguous EN-DC	15.1.0
2018-12	RAN#82	R5-186681	0046	-	F	Updates to EN-DC test case 6.2B.2.1, UE Maximum Output Power reduction for Intra-Band Contiguous EN-DC	15.1.0
2018-12	RAN#82	R5-186684	0047	-	F	Updates to test case 6.2B.2.3, UE Maximum Output Power reduction for Inter-Band EN-DC within FR1	15.1.0
2018-12	RAN#82	R5-186788	0049	-	F	Minor update OBW, SEM and ACLR inter-band FR1 test cases	15.1.0
2018-12	RAN#82	R5-187153	0061	-	F	Updated EN-DC configuration information in clause 5	15.1.0
2018-12	RAN#82	R5-187371	0076	-	F	Addition of TC6.3B.2.1 Transmit OFF Power for intra-band contiguous EN-DC	15.1.0
2018-12	RAN#82	R5-187372	0077	-	F	Addition of TC6.3B.2.3 Transmit OFF Power for inter-band EN-DC within FR1	15.1.0
2018-12	RAN#82	R5-187373	0078	-	F	Addition of TC6.3B.2.2 Transmit OFF Power for intra-band non-contiguous EN-DC	15.1.0
2018-12	RAN#82	R5-187552	0083	-	F	Updates to TS 38.521-3 common sections 1-4 to align with core spec	15.1.0
2018-12	RAN#82	R5-187559	0084	-	F	Updates to TS 38.521-3 clause 5 to align with core spec	15.1.0
2018-12	RAN#82	R5-187562	0085	-	F	Update to TC6.5B.3.2.1 - General Spurious Emissions for intra-band non-contiguous EN-DC	15.1.0
2018-12	RAN#82	R5-187563	0086	-	F	Update to 7.3B.2.2 - REFSENS for Intra-band Non-Contiguous EN-DC	15.1.0
2018-12	RAN#82	R5-187565	0087	-	F	Updates to TS 38.521-3 clause 4 with LTE anchor details	15.1.0
2018-12	RAN#82	R5-187614	0094	-	F	Updates to EN-DC test case 6.2B.2.2, UE Maximum Output Power reduction for Intra-Band Non-Contiguous EN-DC	15.1.0
2018-12	RAN#82	R5-187816	0048	1	F	Adding test case 6.2B.2.4, UE Maximum Output Power reduction for Inter-Band EN-DC including FR2	15.1.0
2018-12	RAN#82	R5-187819	0053	1	F	Update general parameter Connection without release in initial conditions in TS 38.521-3	15.1.0
2018-12	RAN#82	R5-187820	0043	1	F	Updates to test case 6.5B.2.1.3, Adjacent channel leakage ratio for intra-band contiguous EN-DC	15.1.0
2018-12	RAN#82	R5-187821	0052	1	F	Addition OBW intraband non contiguous EN-DC	15.1.0
2018-12	RAN#82	R5-187822	0055	1	F	Introduction of New test case 6.4B.2.2.1 Error Vector Magnitude for intra-band non-contiguous EN-DC	15.1.0
2018-12	RAN#82	R5-187823	0056	1	F	Introduction of New test case 6.4B.2.2.2 Carrier Leakage for intra-band non-contiguous EN-DC	15.1.0
2018-12	RAN#82	R5-187825	0058	1	F	Introduction of New test case 6.4B.2.3.1 Error Vector Magnitude for inter-band EN-DC within FR1	15.1.0
2018-12	RAN#82	R5-187826	0059	1	F	Introduction of New test case 6.4B.2.3.2 Carrier Leakage for inter-band EN-DC within FR1	15.1.0

2018-12	RAN#82	R5-187827	0060	1	F	Introduction of New test case 6.4B.2.3.3 In-band Emissions for inter-band EN-DC within FR1	15.1.0
2018-12	RAN#82	R5-187828	0070	1	F	Introduction of Error Vector Magnitude for intra-band contiguous EN-DC	15.1.0
2018-12	RAN#82	R5-187829	0071	1	F	Introduction of Carrier Leakage for intra-band contiguous EN-DC	15.1.0
2018-12	RAN#82	R5-187831	0088	1	F	FR2 General Spurious Emission test case update	15.1.0
2018-12	RAN#82	R5-187832	0089	1	F	FR2 Reference Sensitivity test case update	15.1.0
2018-12	RAN#82	R5-187833	0092	1	F	Updates to clause 7.3B.3.4 in TS 38.521-3	15.1.0
2018-12	RAN#82	R5-187834	0090	1	F	Updates to sections 1-4 in TS 38.521-3 to align with core spec	15.1.0
2018-12	RAN#82	R5-187835	0091	1	F	Updates to Clause 5 in TS 38.521-3	15.1.0
2018-12	RAN#82	R5-187913	0067	1	F	Addition of notes to clarify test point selection into general clause of TS 38.521-3	15.1.0
2018-12	RAN#82	R5-188012	0057	1	F	Introduction of New test case 6.4B.2.2.3 In-band Emissions for intra-band non-contiguous EN-DC	15.1.0
2018-12	RAN#82	R5-188013	0050	1	F	Addition OBW intra-band contiguous EN-DC	15.1.0
2018-12	RAN#82	R5-188014	0051	1	F	Addition SEM intra-band contiguous EN-DC	15.1.0
2018-12	RAN#82	R5-188015	0064	1	F	Additional Spurious Emissions for Intra-band contiguous EN-DC	15.1.0
2018-12	RAN#82	R5-188016	0065	1	F	Additional Spurious Emissions for Intra-band non-contiguous EN-DC	15.1.0
2018-12	RAN#82	R5-188017	0066	1	F	Additional Spurious emission for inter-band EN-DC	15.1.0
2018-12	RAN#82	R5-188018	0068	1	F	Spurious emission band UE co-existence for intra-band non-contiguous EN-DC	15.1.0
2018-12	RAN#82	R5-188019	0072	1	F	Introduction of In-band Emissions for intra-band contiguous EN-DC	15.1.0
2018-12	RAN#82	R5-188020	0073	1	F	Addition of TC6.3B.3.1 Tx ON/OFF time mask for intra-band contiguous EN-DC	15.1.0
2018-12	RAN#82	R5-188021	0074	1	F	Addition of TC6.3B.3.2 Tx ON/OFF time mask for intra-band non-contiguous EN-DC	15.1.0
2018-12	RAN#82	R5-188022	0075	1	F	Addition of TC6.3B.3.3 Tx ON/OFF time mask for inter-band EN-DC within FR1	15.1.0
2018-12	RAN#82	R5-188023	0080	1	F	Update of test case 6.5B.2.1.2 Additional spectrum emission mask for intra-band contiguous EN-DC for NS_04	15.1.0
2018-12	RAN#82	R5-188024	0081	1	F	Update of test case 6.2B.3.1 UE A-MPR for Intra-band contiguous EN-DC for NS_04	15.1.0
2018-12	RAN#82	R5-188025	0038	1	F	Update Clause 7.5B.3 in TS 38.521-3	15.1.0
2018-12	RAN#82	R5-188026	0041	1	F	5G NR EN-DC with FR1 Text update for Inter-Band RX sensitivity	15.1.0
2018-12	RAN#82	R5-188027	0082	1	F	Update TC 7.4B.3	15.1.0
2018-12	RAN#82	R5-188028	0036	1	F	Updates of MU in TS 38.521-3 Annex F during RAN5#81	15.1.0
2018-12	RAN#82	R5-188029	0037	1	F	Updates of TT in TS 38.521-3 Annex F during RAN5#81	15.1.0
2018-12	RAN#82	R5-188039	0093	1	F	LTE Anchor Link configuration for FR2	15.1.0
2018-12	RAN#82	R5-188219	0062	1	F	Introduction of receiver spurious emission tests for FR1 inter-band EN-DC	15.1.0
2018-12	RAN#82	R5-188220	0063	1	F	Introduction of wideband intermodulation tests for FR1 inter-band EN-DC	15.1.0
2018-12	RAN#82	R5-188221	0054	1	F	LTE TDD configuration for UE Tx test in EN-DC	15.1.0
2018-12	RAN#82	R5-188222	0069	1	F	Core alignment CR to capture TS 38.101-3 updates during RAN4#89	15.1.0
2019-03	RAN#83	R5-191057	0165	-	F	Introduction of TC 7.5B.0	15.2.0
2019-03	RAN#83	R5-191157	0174	-	F	Updated EN-DC configuration information in clause 5	15.2.0
2019-03	RAN#83	R5-191231	0175	-	F	Adding missing reference to 38.521-3	15.2.0
2019-03	RAN#83	R5-191336	0176	-	F	Updates to EN-DC test case 6.2B.2.1, UE Maximum Output Power reduction for Intra-Band Contiguous EN-DC	15.2.0
2019-03	RAN#83	R5-191339	0177	-	F	Updates to EN-DC test case 6.2B.2.2, UE Maximum Output Power reduction for Intra-Band Non-Contiguous EN-DC	15.2.0
2019-03	RAN#83	R5-191340	0178	-	F	Adding test case 6.5A.2.3, Adjacent channel leakage ratio for CA without EN-DC	15.2.0
2019-03	RAN#83	R5-191510	0183	-	F	Shared Risk clarification in TS 38.521-3	15.2.0
2019-03	RAN#83	R5-191637	0193	-	F	Updates of TT in TS 38.521-3 Annex F during RAN5#NR4	15.2.0
2019-03	RAN#83	R5-191845	0200	-	F	Text update for 7.3B.3 deltaRIB,c deltaRIBNC for EN-DC	15.2.0
2019-03	RAN#83	R5-191867	0205	-	F	Addition of 7.3B.2.0 Reference sensitivity Minimum Conformance Requirements for EN-DC	15.2.0
2019-03	RAN#83	R5-192004	0215	-	F	Update of TC 6.2B.1.1	15.2.0
2019-03	RAN#83	R5-192005	0216	-	F	Update of TC 6.2B.1.2	15.2.0
2019-03	RAN#83	R5-192006	0217	-	F	Update of TC 6.2B.1.3	15.2.0
2019-03	RAN#83	R5-192176	0224	-	F	TIB,c updated for CA and EN-DC cases	15.2.0
2019-03	RAN#83	R5-192177	0225	-	F	Updated to Annex M Dual uplink interferer	15.2.0
2019-03	RAN#83	R5-192206	0228	-	F	38.521-3 Common clause updates to clarify leverage across architecture options	15.2.0
2019-03	RAN#83	R5-192207	0229	-	F	Formatting updates and index correction in TS 38.521-3	15.2.0
2019-03	RAN#83	R5-192208	0230	-	F	38.521-1 Common clause updates to clarify leverage across architecture options	15.2.0
2019-03	RAN#83	R5-192209	0231	-	F	38.521-2 Common clause updates to clarify leverage across architecture options	15.2.0