

ETSI TS 138 521-4 V16.14.0 (2023-01)



**5G;
NR;**
**User Equipment (UE) conformance specification;
Radio transmission and reception;
Part 4: Performance**
(3GPP TS 38.521-4 version 16.14.0 Release 16)



Reference

RTS/TSGR-0538521-4vge0

Keywords

5G

ETSI

650 Route des Lucioles
F-06921 Sophia Antipolis Cedex - FRANCE

Tel.: +33 4 92 94 42 00 Fax: +33 4 93 65 47 16

Siret N° 348 623 562 00017 - APE 7112B
Association à but non lucratif enregistrée à la
Sous-Préfecture de Grasse (06) N° w061004871

Important notice

The present document can be downloaded from:

<http://www.etsi.org/standards-search>

The present document may be made available in electronic versions and/or in print. The content of any electronic and/or print versions of the present document shall not be modified without the prior written authorization of ETSI. In case of any existing or perceived difference in contents between such versions and/or in print, the prevailing version of an ETSI deliverable is the one made publicly available in PDF format at www.etsi.org/deliver.

Users of the present document should be aware that the document may be subject to revision or change of status.

Information on the current status of this and other ETSI documents is available at

<https://portal.etsi.org/TB/ETSIDeliverableStatus.aspx>

If you find errors in the present document, please send your comment to one of the following services:

<https://standards.etsi.org/People/CommitteeSupportStaff.aspx>

If you find a security vulnerability in the present document, please report it through our
Coordinated Vulnerability Disclosure Program:

<https://www.etsi.org/standards/coordinated-vulnerability-disclosure>

Notice of disclaimer & limitation of liability

The information provided in the present deliverable is directed solely to professionals who have the appropriate degree of experience to understand and interpret its content in accordance with generally accepted engineering or other professional standard and applicable regulations.

No recommendation as to products and services or vendors is made or should be implied.

No representation or warranty is made that this deliverable is technically accurate or sufficient or conforms to any law and/or governmental rule and/or regulation and further, no representation or warranty is made of merchantability or fitness for any particular purpose or against infringement of intellectual property rights.

In no event shall ETSI be held liable for loss of profits or any other incidental or consequential damages.

Any software contained in this deliverable is provided "AS IS" with no warranties, express or implied, including but not limited to, the warranties of merchantability, fitness for a particular purpose and non-infringement of intellectual property rights and ETSI shall not be held liable in any event for any damages whatsoever (including, without limitation, damages for loss of profits, business interruption, loss of information, or any other pecuniary loss) arising out of or related to the use of or inability to use the software.

Copyright Notification

No part may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying and microfilm except as authorized by written permission of ETSI.

The content of the PDF version shall not be modified without the written authorization of ETSI.

The copyright and the foregoing restriction extend to reproduction in all media.

© ETSI 2023.
All rights reserved.

Intellectual Property Rights

Essential patents

IPRs essential or potentially essential to normative deliverables may have been declared to ETSI. The declarations pertaining to these essential IPRs, if any, are publicly available for **ETSI members and non-members**, and can be found in ETSI SR 000 314: "*Intellectual Property Rights (IPRs); Essential, or potentially Essential, IPRs notified to ETSI in respect of ETSI standards*", which is available from the ETSI Secretariat. Latest updates are available on the ETSI Web server (<https://ipr.etsi.org/>).

Pursuant to the ETSI Directives including the ETSI IPR Policy, no investigation regarding the essentiality of IPRs, including IPR searches, has been carried out by ETSI. No guarantee can be given as to the existence of other IPRs not referenced in ETSI SR 000 314 (or the updates on the ETSI Web server) which are, or may be, or may become, essential to the present document.

Trademarks

The present document may include trademarks and/or tradenames which are asserted and/or registered by their owners. ETSI claims no ownership of these except for any which are indicated as being the property of ETSI, and conveys no right to use or reproduce any trademark and/or tradename. Mention of those trademarks in the present document does not constitute an endorsement by ETSI of products, services or organizations associated with those trademarks.

DECT™, **PLUGTESTS™**, **UMTS™** and the ETSI logo are trademarks of ETSI registered for the benefit of its Members. **3GPP™** and **LTE™** are trademarks of ETSI registered for the benefit of its Members and of the 3GPP Organizational Partners. **oneM2M™** logo is a trademark of ETSI registered for the benefit of its Members and of the oneM2M Partners. **GSM®** and the GSM logo are trademarks registered and owned by the GSM Association.

Legal Notice

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

The present document may refer to technical specifications or reports using their 3GPP identities. These shall be interpreted as being references to the corresponding ETSI deliverables.

The cross reference between 3GPP and ETSI identities can be found under <http://webapp.etsi.org/key/queryform.asp>.

Modal verbs terminology

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).

"**must**" and "**must not**" are **NOT** allowed in ETSI deliverables except when used in direct citation.

Contents

Intellectual Property Rights	2
Legal Notice	2
Modal verbs terminology.....	2
Foreword.....	4
1 Scope	5
2 References	5
3 Definition of terms, symbols and abbreviations.....	5
4 General	5
5 to 1 Void.....	5
Annex A to H: Void	5
Annex I (informative): Change history	6
History	18

iTeh STANDARD PREVIEW
(standards.iteh.ai)

[ETSI TS 138 521-4 V16.14.0 \(2023-01\)](https://standards.iteh.ai/catalog/standards/sist/b814540f-6cd9-4d9e-ad11-fd2a38197261/etsi-ts-138-521-4-v16-14-0-2023-01)

<https://standards.iteh.ai/catalog/standards/sist/b814540f-6cd9-4d9e-ad11-fd2a38197261/etsi-ts-138-521-4-v16-14-0-2023-01>

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

FFS.

iTeh STANDARD PREVIEW
(standards.iteh.ai)

[ETSI TS 138 521-4 V16.14.0 \(2023-01\)](https://standards.iteh.ai/catalog/standards/sist/b814540f-6cd9-4d9e-ad11-fd2a38197261/etsi-ts-138-521-4-v16-14-0-2023-01)

<https://standards.iteh.ai/catalog/standards/sist/b814540f-6cd9-4d9e-ad11-fd2a38197261/etsi-ts-138-521-4-v16-14-0-2023-01>

1 Scope

The present document specifies the measurement procedures for the conformance test of the user equipment (UE) that contain performance requirements as part of 5G-NR.

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 [25] (void)

[26] 3GPP TS 38.521-4 Release 17: "NR; User Equipment (UE) conformance specification; Radio transmission and reception; Part 4: Performance requirements"

ETSI TS 138 521-4 V16.14.0 (2023-01)

3 Definition of terms, symbols and abbreviations

Void

4 General

The requirements of the present document are provided in 3GPP TS 38.521-4 Release 17 [26].

5 to 11 Void

Annex A to H: Void

Annex I (informative): Change history

iTeh STANDARD PREVIEW
(standards.iteh.ai)

[ETSI TS 138 521-4 V16.14.0 \(2023-01\)](https://standards.iteh.ai/catalog/standards/sist/b814540f-6cd9-4d9e-ad11-fd2a38197261/etsi-ts-138-521-4-v16-14-0-2023-01)

<https://standards.iteh.ai/catalog/standards/sist/b814540f-6cd9-4d9e-ad11-fd2a38197261/etsi-ts-138-521-4-v16-14-0-2023-01>

Change history							
Date	Meeting	Tdoc	CR	Rev	Cat	Subject/Comment	New version
2018-01		R5-180064				Skeleton for NR Demod spec	0.0.1
2018-04-13		R5-182036				Added the test procedure for FR2 Demod testing in Annex	0.1.0
2018-10-12		R5-185903				Added the demod spec test case section titles to be in line with RAN4 approved skeleton for 38.101-4	0.1.1
2018-11-20	RAN5 #81	R5-188006				new TC for PDSCH FR1 demod	0.2.0
2018-11-20	RAN5 #81	R5-188008				new TC for PDSCH FR2 demod	0.2.0
2018-11-20	RAN5 #81	R5-187573				section 3 of 38.521-4 spec	0.2.0
2018-11-20	RAN5 #81	R5-187845				section 4 of 38.521-4 spec	0.2.0
2018-11-20	RAN5 #81	R5-188009				pCR for new TC addition for FR1 FDD PDSCH Demod	0.2.0
2018-11-20	RAN5 #81	R5-188010				pCR for new TC addition for FR1 FDD PDCCH Demod	0.2.0
2019-01-25	RAN5 5G-NR AH#4	R5-190054				update to 2Rx TDD FR1 PDSCH mapping Type A performance test case	0.3.0
2019-01-25	RAN5 5G-NR AH#4	R5-190926				pCR for new TC addition for FR1 4Rx FDD PDSCH Demodulation performance (2x4)	0.3.0
2019-01-25	RAN5 5G-NR AH#4	R5-190927				pCR for new TC addition for FR1 4Rx FDD PDSCH Demodulation performance (4x4)	0.3.0
2019-01-25	RAN5 5G-NR AH#4	R5-190928				pCR for new TC addition for FR1 4Rx FDD PDSCH Demodulation performance with enhanced receiver type X (4x4)	0.3.0
2019-01-25	RAN5 5G-NR AH#4	R5-190291				Updated to Annex A Measurement Channels for Performance tests	0.3.0
2019-01-25	RAN5 5G-NR AH#4	R5-190292				Updated to Annex B Propagation conditions for Performance tests	0.3.0
2019-01-25	RAN5 5G-NR AH#4	R5-190458				update to 2Rx TDD FR2 PDSCH mapping Type A performance test case	0.3.0
2019-01-25	RAN5 5G-NR AH#4	R5-190461				2Rx TDD FR2 PDCCH performance test case	0.3.0
2019-01-25	RAN5 5G-NR AH#4	R5-190929				LTE link setup details for demod test cases	0.3.0
2019-01-25	RAN5 5G-NR AH#4	R5-190930				Annex for statistical tput calculation for demod test cases	0.3.0
2019-01-25	RAN5 5G-NR AH#4	R5-190931				pCR for TC addition of FR1 TDD 4Rx PDSCH	0.3.0
2019-01-25	RAN5 5G-NR AH#4	R5-190932				pCR for modification of FDD 2Rx FR1 PDSCH Demod	0.3.0
2019-01-25	RAN5 5G-NR AH#4	R5-190933				Annex for DL and UL Signal Setup	0.3.0
2019-01-25	RAN5 5G-NR AH#4	R5-190934				pCR for modification of FDD FR1 PDCCH Demod	0.3.0
2019-01-25	RAN5 5G-NR AH#4	R5-190935				PDSCH and PDCCH Config before measurement	0.3.0
2019-01-25	RAN5 5G-NR AH#4	R5-190986				38.521-4 Common Section updates to clarify leverage across architecture options	0.3.0
2019-01-25	RAN5 5G-NR AH#4	R5-190552				Addition of 2Rx TDD FR1 Single PMI tests for both SA and NSA	0.3.0
2019-01-25	RAN5 5G-NR AH#4	R5-190553				Addition of 2Rx TDD FR1 RI reporting for both SA and NSA	0.3.0
2019-03-01	RAN5 #82	R5-191183				Adding relevant references to 38.521-4	0.4.0
2019-03-01	RAN5 #82	R5-192461				Adding of test case 6.2.2.1.2.1.2, Rx FDD FR1 periodic wideband CQI reporting under fading conditions for both SA and NSA	0.4.0
2019-03-01	RAN5 #82	R5-192672				Introduction of New test case 5.3.2.2.1 2Rx TDD FR1 PDCCH 1 Tx antenna performance for both SA and NSA	0.4.0
2019-03-01	RAN5 #82	R5-192463				Introduction of New test case 5.3.2.2.2 2Rx TDD FR1 PDCCH 2 Tx antenna performance for both SA and NSA	0.4.0
2019-03-01	RAN5 #82	R5-192462				Introduction of New test case 5.3.3.1.1 4Rx FDD FR1 PDCCH 1 Tx antenna performance for both SA and NSA	0.4.0
2019-03-01	RAN5 #82	R5-192464				Introduction of New test case 5.3.3.1.2 4Rx FDD FR1 PDCCH 2 Tx antenna performance for both SA and NSA	0.4.0
2019-03-01	RAN5 #82	R5-192465				Introduction of New test case 5.3.3.2.1 4Rx TDD FR1 PDCCH 1 Tx antenna performance for both SA and NSA	0.4.0
2019-03-01	RAN5 #82	R5-192465				Introduction of New test case 5.3.3.2.2 4Rx TDD FR1 PDCCH 2 Tx antenna performance for both SA and NSA	0.4.0
2019-03-01	RAN5 #82	R5-192474				Introduction of TS 38.521-4 test case 6.3.2.1.1	0.4.0
2019-03-01	RAN5 #82	R5-192475				Introduction of TS 38.521-4 test case 6.3.2.1.2	0.4.0
2019-03-01	RAN5 #82	R5-192467				Introduction of test case 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	0.4.0
2019-03-01	RAN5 #82	R5-192840				Demod spec section 4 update	0.4.0

2019-03-01	RAN5 #82	R5-192673				Update to TDD FR1 2Rx PDSCH Type A test case	0.4.0
2019-03-01	RAN5 #82	R5-192103				addition of 2Rx TDD FR1 periodic CQI reporting test case	0.4.0
2019-03-01	RAN5 #82	R5-192468				pCR for addition of 2Rx TDD FR1 TypeA and CSI-RS overlapped TC	0.4.0
2019-03-01	RAN5 #82	R5-192866				pCR for modification of PDSCH and PDCCH Config before measurement	0.4.0
2019-03-01	RAN5 #82	R5-192470				pCR for modification of FDD FR1 PDCCH Demod	0.4.0
2019-03-01	RAN5 #82	R5-192471				pCR for modification of FDD 2Rx FR1 PDSCH Demod	0.4.0
2019-03-01	RAN5 #82	R5-192472				Update to 2Rx TDD FR1 RI reporting for both SA and NSA	0.4.0
2019-03-01	RAN5 #82	R5-192460				Minimum test time update for FR1 Demod test case	0.4.0
2019-03-01	RAN5 #82	R5-192473				Addition of Annex F for Demod spec	0.4.0
2019-03	RAN#83	RP-190222	-	-	-	Presented to the RAN#83 plenary for 1-step approval	1.0.0
2019-03	RAN#83	-	-	-	-	raised to v15.0.0 with editorial changes only	15.0.0
2019-06	RAN5#83	R5-193544	0030	-	F	Updates to test case 6.2.2.1.2.1, 2Rx FDD FR1 periodic wideband CQI reporting under fading conditions for both SA and NSA	15.1.0
2019-06	RAN5#83	R5-193943	0035	-	F	Adding test case 6.2.2.2.2, 2Rx TDD FR1 periodic subband CQI reporting under fading conditions for both SA and NSA	15.1.0
2019-06	RAN5#83	R5-194159	0048	-	F	Alignment of Annex C with core specification	15.1.0
2019-06	RAN5#83	R5-194466	0056	-	F	Introduction of FR1 CQI test case 6.2.2.2.1	15.1.0
2019-06	RAN5#83	R5-194622	0057	-	F	Corrections TDD UL-DL configurations	15.1.0
2019-06	RAN5#83	R5-194680	0066	-	F	Demod section 5 general update	15.1.0
2019-06	RAN5#83	R5-194689	0073	-	F	Addition of text for FR1 PBCH demodulation test case	15.1.0
2019-06	RAN5#83	R5-194690	0074	-	F	Update to 2Rx TDD FR2 PDSCH Type A test case	15.1.0
2019-06	RAN5#83	R5-194691	0075	-	F	Update to FR2 PDCCH config param	15.1.0
2019-06	RAN5#83	R5-194692	0076	-	F	Addition of text for FR2 PBCH demodulation test case	15.1.0
2019-06	RAN5#83	R5-194693	0077	-	F	Update to section 8 CSI reporting	15.1.0
2019-06	RAN5#83	R5-194979	0063	1	F	Further updates to 2Rx TDD FR1 PDSCH mapping Type A test case	15.1.0
2019-06	RAN5#83	R5-194980	0032	1	F	Introduction of TC 6.4.3.2_1 4Rx TDD FR1 RI reporting for both SA and NSA	15.1.0
2019-06	RAN5#83	R5-194981	0034	1	F	Adding test case 6.2.2.1.2.2, 2Rx FDD FR1 periodic subband CQI reporting under fading conditions for both SA and NSA	15.1.0
2019-06	RAN5#83	R5-194982	0053	1	F	Update to 4Rx FDD FR1 PDSCH mapping Type A performance 4x4 MIMO with baseline Rx	15.1.0
2019-06	RAN5#83	R5-194983	0054	1	F	Update to 4Rx FDD FR1 PDSCH mapping Type A performance 4x4 MIMO with enhanced Rx	15.1.0
2019-06	RAN5#83	R5-194984	0037	1	F	Editorial changes to TS 38.521-4 test case 6.3.2.1.2	15.1.0
2019-06	RAN5#83	R5-194985	0038	1	F	Introduction to TS 38.521-4 test case 6.3.3.1.1	15.1.0
2019-06	RAN5#83	R5-194986	0039	1	F	Introduction to TS 38.521-4 test case 6.3.3.1.2	15.1.0
2019-06	RAN5#83	R5-194987	0040	1	F	Introduction to TS 38.521-4 test case 6.3.3.2.1	15.1.0
2019-06	RAN5#83	R5-194988	0041	1	F	Introduction to TS 38.521-4 test case 6.3.3.2.2	15.1.0
2019-06	RAN5#83	R5-194989	0059	1	F	Modification of 2Rx FDD FR1 PDSCH mapping Type A performance - enhanced Rx	15.1.0
2019-06	RAN5#83	R5-194990	0060	1	F	Modification of 2Rx TDD FR1 PDSCH mapping Type A and CSI-RS overlapped with PDSCH performance - baseline Rx	15.1.0
2019-06	RAN5#83	R5-194991	0061	1	F	Modification of 2Rx FDD FR1 PDCCH 1 Tx	15.1.0
2019-06	RAN5#83	R5-194992	0062	1	F	Modification of 2Rx FDD FR1 PDCCH 2 Tx	15.1.0
2019-06	RAN5#83	R5-194993	0042	1	F	Update to test case 5.3.2.2.1 2Rx TDD FR1 PDCCH 1 Tx antenna performance for both SA and NSA	15.1.0
2019-06	RAN5#83	R5-194994	0043	1	F	Update to test case 5.3.2.2 2Rx TDD FR1 PDCCH 2 Tx antenna performance for both SA and NSA	15.1.0
2019-06	RAN5#83	R5-194995	0044	1	F	Update to test case 5.3.3.1.1 4Rx FDD FR1 PDCCH 1 Tx antenna performance for both SA and NSA	15.1.0
2019-06	RAN5#83	R5-194996	0045	1	F	Update to test case 5.3.3.1.2 4Rx FDD FR1 PDCCH 2 Tx antenna performance for both SA and NSA	15.1.0
2019-06	RAN5#83	R5-194997	0046	1	F	Update to test case 5.3.3.2.1 4Rx TDD FR1 PDCCH 1 Tx antenna performance for both SA and NSA	15.1.0
2019-06	RAN5#83	R5-194998	0047	1	F	Update to test case 5.3.3.2.2 4Rx TDD FR1 PDCCH 2 Tx antenna performance for both SA and NSA	15.1.0
2019-06	RAN5#83	R5-194999	0055	1	F	Update to FR1 demod test case 5.2.2.1.2_1	15.1.0
2019-06	RAN5#83	R5-195000	0078	1	F	Update to RI Reporting Accuracy test	15.1.0
2019-06	RAN5#83	R5-195001	0049	1	F	Updated to Annexes for performance tests	15.1.0
2019-06	RAN5#83	R5-195002	0068	1	F	Demod section 2-4 update	15.1.0
2019-06	RAN5#83	R5-195003	0058	1	F	Modification of 2Rx FDD FR1 PDSCH mapping Type A performance - baseline Rx	15.1.0
2019-06	RAN5#83	R5-195088	0029	1	F	Editorial Aligning CSI common test parameters with core specification	15.1.0
2019-06	RAN5#83	R5-195089	0031	1	F	Updating of E-UTRA test frequency for DEMOD test cases	15.1.0
2019-06	RAN5#83	R5-195098	0079	-	F	Performance implementation of FR2 UL demod OTA tests using single pol Rx TE	15.1.0

2019-06	RAN5#83	R5-195170	0052	1	F	Update to 4Rx FDD FR1 PDSCH mapping Type A performance 2x4 MIMO with baseline Rx	15.1.0
2019-06	RAN5#83	R5-195171	0033	1	F	Introducing MU and TT clauses in annex F for Channel State Information reporting test cases	15.1.0
2019-06	RAN5#83	R5-195172	0069	1	F	Annex update for PDSCH PDCCH minimum test time	15.1.0
2019-06	RAN5#83	R5-195413	0067	1	F	Update to section 9 and 10 of Demod spec	15.1.0
2019-06	RAN5#83	R5-195438	0050	2	F	Introducing 5.2.2.1.4_1 2Rx FDD FR1 PDSCH Mapping Type A and LTE-NR coexistence performance	15.1.0
2019-06	RAN5#83	R5-195439	0051	2	F	Introducing 5.2.3.1.4_1 4Rx FDD FR1 PDSCH Mapping Type A and LTE-NR coexistence performance	15.1.0
2019-06	RAN5#83	R5-195440	0064	1	F	Addition of new test case for 2Rx FDD FR1 periodic CQI reporting under AWGN	15.1.0
2019-06	RAN5#83	R5-195441	0065	1	F	Update to 2Rx TDD FR1 periodic CQI reporting under AWGN	15.1.0
2019-06	RAN5#83	R5-195442	0070	1	F	Addition of SDR test case for single carrier in SA mode	15.1.0
2019-06	RAN5#83	R5-195443	0072	1	F	Addition of FR1 SDR test case for CA in NSA mode	15.1.0
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
2019-09	RAN#85	R5-195558	0080	-	F	Correction to 5.2.2.1.4_1 2Rx FR1 PDSCH LTE-NR coexistence performance	16.1.0
2019-09	RAN#85	R5-196245	0090	-	F	Correction to 2Rx TDD FR1 periodic CQI reporting under AWGN conditions for both SA and NSA	16.1.0
2019-09	RAN#85	R5-196247	0092	-	F	Correction to 5.3.2.2.1 and 5.3.3.2.1 TDD FR1 PDCCH 1Tx performance	16.1.0
2019-09	RAN#85	R5-196495	0097	-	F	Updated to Annex A for performance tests	16.1.0
2019-09	RAN#85	R5-196496	0098	-	F	Updated to Annex B for performance tests	16.1.0
2019-09	RAN#85	R5-196498	0100	-	F	Updated to General clauses for Demod and CSI requirements	16.1.0
2019-09	RAN#85	R5-196857	0119	-	F	Corrections to PDSCH demod TCs	16.1.0
2019-09	RAN#85	R5-197370	0086	1	F	Updates to 6.2.2.1.2.1, 2Rx FDD FR1 periodic wideband CQI reporting under fading conditions for both SA and NSA	16.1.0
2019-09	RAN#85	R5-197371	0087	1	F	Updates to 6.2.2.2.2.1, 2Rx TDD FR1 periodic wideband CQI reporting under fading conditions for both SA and NSA	16.1.0
2019-09	RAN#85	R5-197372	0125	1	F	Modification of 4Rx FDD FR1 PDSCH mapping Type A performance - 2x4 MIMO with baseline receiver for both SA and NSA	16.1.0
2019-09	RAN#85	R5-197373	0084	1	F	Clean up test cases 5.3.3.1.1, 5.3.3.1.2, 5.3.3.2.1 and 5.3.3.2.2 for 4Rx PDCCH	16.1.0
2019-09	RAN#85	R5-197374	0099	1	F	Updated to General clauses for performance tests	16.1.0
2019-09	RAN#85	R5-197375	0123	1	F	Modification of FDD FR1 2Rx TypeA baseline and TypeX Rxvr	16.1.0
2019-09	RAN#85	R5-197376	0083	1	F	Clean up test cases 5.3.2.2.1 and 5.3.2.2.2 for 2Rx PDCCH	16.1.0
2019-09	RAN#85	R5-197377	0093	1	F	Correction to FR1 FDD PDSCH mapping Type A performance test cases	16.1.0
2019-09	RAN#85	R5-197378	0095	1	F	Correction to MU and TT for FR1 demodulation test cases	16.1.0
2019-09	RAN#85	R5-197379	0096	1	F	Update to 4Rx FDD FR1 PDSCH mapping Type A performance	16.1.0
2019-09	RAN#85	R5-197380	0117	1	F	Update of Annex F to add new CSI test cases	16.1.0
2019-09	RAN#85	R5-197512	0101	1	F	Update to SA SDR test case	16.1.0
2019-09	RAN#85	R5-197513	0102	1	F	Update to NSA SDR test case	16.1.0
2019-09	RAN#85	R5-197566	0127	1	F	Modification on 2Rx TDD FR1 Single PMI with 4Tx Type1 - SinglePanel codebook for both SA and NSA	16.1.0
2019-09	RAN#85	R5-197567	0128	1	F	Introduce 2Rx TDD FR1 Single PMI with 8Tx Type1 - SinglePanel codebook for both SA and NSA	16.1.0
2019-09	RAN#85	R5-197572	0126	1	F	Modification of 4Rx FDD FR1 PDSCH mapping Type A performance - 4x4 MIMO with baseline receiver for both SA and NSA	16.1.0
2019-09	RAN#85	R5-197573	0091	1	F	Correction to 2Rx TDD FR1 PDSCH mapping Type A performance	16.1.0
2019-09	RAN#85	R5-197574	0105	1	F	Update to TDD FR1 2Rx TypeA Baseline and Type X receiver Demod test cases	16.1.0
2019-09	RAN#85	R5-197575	0107	1	F	Editorial and updates to TS 38.521-4 test case 6.3.2.1.1	16.1.0
2019-09	RAN#85	R5-197576	0108	1	F	Updates to TS 38.521-4 test case 6.3.2.1.2	16.1.0
2019-09	RAN#85	R5-197577	0109	1	F	Updates to TS 38.521-4 test case 6.3.3.1.1	16.1.0
2019-09	RAN#85	R5-197578	0110	1	F	Update to TS 38.521-4 test case 6.3.3.1.2	16.1.0
2019-09	RAN#85	R5-197579	0111	1	F	Editorial and update to TS 38.521-4 test case 6.3.3.2.1	16.1.0
2019-09	RAN#85	R5-197580	0112	1	F	Editorial and update to TS 38.521-4 test case 6.3.3.2.2	16.1.0
2019-09	RAN#85	R5-197581	0120	1	F	Correction of PRACH-ConfigurationIndex for TC 5.2.2.2.1_1	16.1.0
2019-09	RAN#85	R5-197582	0122	1	F	Update to RI Reporting Accuracy test	16.1.0
2019-09	RAN#85	R5-197615	0088	1	F	Updates to 6.2.2.1.2.2, 2Rx FDD FR1 periodic subband CQI reporting under fading conditions for both SA and NSA	16.1.0
2019-09	RAN#85	R5-197616	0089	1	F	Updates to 6.2.2.2.2.2, 2Rx TDD FR1 periodic subband CQI reporting under fading conditions for both SA and NSA	16.1.0
2019-09	RAN#85	R5-197648	0115	2	F	Update to Annex G to restructure minimum test time tables for Demodulation test cases	16.1.0
2019-09	RAN#85	R5-197649	0116	2	F	Update to Annex G to add minimum test time for CSI test cases	16.1.0