

ETSI TS 138 521-5 V17.1.0 (2024-08)



**5G;
NR;**

**User Equipment (UE) conformance specification;
Radio transmission and reception;**

**Part 5: Satellite access Radio Frequency (RF) and performance
(3GPP TS 38.521-5 version 17.1.0 Release 17)**



Reference

RTS/TSGR-0538521-5vh10

Keywords

5G

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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.

In the present document, modal verbs have the following meanings:

- shall** indicates a mandatory requirement to do something
- shall not** indicates an interdiction (prohibition) to do something

The constructions "shall" and "shall not" are confined to the context of normative provisions, and do not appear in Technical Reports.

The constructions "must" and "must not" are not used as substitutes for "shall" and "shall not". Their use is avoided insofar as possible, and they are not used in a normative context except in a direct citation from an external, referenced, non-3GPP document, or so as to maintain continuity of style when extending or modifying the provisions of such a referenced document.

- should** indicates a recommendation to do something
- should not** indicates a recommendation not to do something
- may** indicates permission to do something
- need not** indicates permission not to do something

The construction "may not" is ambiguous and is not used in normative elements. The unambiguous constructions "might not" or "shall not" are used instead, depending upon the meaning intended.

- can** indicates that something is possible
- cannot** indicates that something is impossible

The constructions "can" and "cannot" are not substitutes for "may" and "need not".

- will** indicates that something is certain or expected to happen as a result of action taken by an agency the behaviour of which is outside the scope of the present document
- will not** indicates that something is certain or expected not to happen as a result of action taken by an agency the behaviour of which is outside the scope of the present document
- might** indicates a likelihood that something will happen as a result of action taken by some agency the behaviour of which is outside the scope of the present document

might not indicates a likelihood that something will not happen as a result of action taken by some agency the behaviour of which is outside the scope of the present document

In addition:

is (or any other verb in the indicative mood) indicates a statement of fact

is not (or any other negative verb in the indicative mood) indicates a statement of fact

The constructions "is" and "is not" do not indicate requirements.

1 Scope

The present document specifies the measurement procedures for the conformance test of the NR User Equipment (UE) supporting satellite access operation that contains RF and Performance requirements.

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 [13] (void)

[14] 3GPP TS 38.521-5 Release 18: "NR; User Equipment (UE) conformance specification; Radio transmission and reception; Part 5: Satellite access Radio Frequency (RF) and performance"

3 Definitions of terms, symbols and abbreviations

Void

4 General

The requirements of the present document are provided in 3GPP TS 38.521-5 Release 18 [14].

5 to 8 Void

Annex A to H: Void

Annex I (informative): Change history

Change history							
Date	Meeting	TDoc	CR	Rev	Cat	Subject/Comment	New version
2022-11	RAN5#97	R5-226639	-	-	-	TP to add clause 1-3 to TS 38.521-5	0.0.0
2022-11	RAN5#97	R5-226640	-	-	-	TP to add clause 4 to TS 38.521-5	0.0.0
2022-11	RAN5#97	R5-226641	-	-	-	TP to add clause 5 to TS 38.521-5	0.0.0
2022-11	RAN5#97	R5-227885	-	-	-	Text proposal for section 6, 6.1 and 6.2.1 in TS 38.521-5	0.0.0
2022-11	RAN5#97	R5-227886	-	-	-	Text proposal for section 6.2.2 in TS 38.521-5	0.0.0
2023-03	RAN5#98	R5-231738	-	-	-	Definition of NTN minimum output power test case 6.3.1	0.0.1
2023-03	RAN5#98	R5-231739	-	-	-	Definition of NTN transmit OFF power test case 6.3.2	0.0.1
2023-03	RAN5#98	R5-231740	-	-	-	Introduction of new test case 7.9 Spurious emissions and addition of main structure of section 7	0.0.1
2023-03	RAN5#98	R5-231741	-	-	-	Introduction of general sections for demodulation performance test cases for NTN capable Ues	0.0.1
2023-03	RAN5#98	R5-231742	-	-	-	Introduction of demodulation performance test cases for NTN capable Ues	0.0.1
2023-03	RAN5#98	R5-230877	-	-	-	Introduction of 6.5.3.1 for TS38.521-5	0.0.1
2023-03	RAN5#98	R5-230878	-	-	-	Introduction of 7.1 7.2 and 7.3 for TS38.521-5	0.0.1
2023-03	RAN5#98	R5-230879	-	-	-	Introduction of 6.5.3.2 for TS38.521-5	0.0.1
2023-03	RAN5#98	R5-231854	-	-	-	Text configurations and requirements for section 6.2.1 and 6.2.2	0.0.1
2023-03	RAN5#98	R5-231367	-	-	-	Introduction of NTN TC 6.3.3 on Tx on-off time mask	0.0.1
2023-03	RAN5#98	R5-231368	-	-	-	Introduction of NTN TC 6.5.2.2 on Spectrum emission mask	0.0.1
2023-03	RAN5#98	R5-231369	-	-	-	Introduction of NTN TC 6.5.2.4 on ACLR	0.0.1
2023-03	RAN5#98	R5-231383	-	-	-	Introduction of NTN TC 7.6.3 on out of band blocking	0.0.1
2023-06	RAN5#99	R5-232346	-	-	-	Definition of NTN maximum input level test case 7.4	0.1.0
2023-06	RAN5#99	R5-233567	-	-	-	Introduction of new test case 7.5 Adjacent channel selectivity	0.1.0
2023-06	RAN5#99	R5-232372	-	-	-	Correction of referenced Annexes for test case 7.9 Spurious emissions	0.1.0
2023-06	RAN5#99	R5-233568	-	-	-	Introduction of new Annexes	0.1.0
2023-06	RAN5#99	R5-233569	-	-	-	Introduction of NTN AMPR tests	0.1.0
2023-06	RAN5#99	R5-232519	-	-	-	Introduction of NTN configured transmission power tests	0.1.0
2023-06	RAN5#99	R5-233570	-	-	-	TP to add 2Rx PDSCH mapping type A test case for NTN UE	0.1.0
2023-06	RAN5#99	R5-233158	-	-	-	Update General SE for NTN	0.1.0
2023-06	RAN5#99	R5-233571	-	-	-	Updates to NTN TC 6.3.3 on Tx on-off time mask	0.1.0
2023-06	RAN5#99	R5-233572	-	-	-	Updates to NTN TC 6.5.2.2 on Spectrum emission mask	0.1.0
2023-06	RAN5#99	R5-233573	-	-	-	Updates to NTN TC 6.5.2.4 on ACLR	0.1.0
2023-09	RAN5#100	R5-235824	-	-	-	MU and TT definition for NR NTN Min power and Off power test cases	1.0.0
2023-09	RAN5#100	R5-235825	-	-	-	MU and TT definition for NR NTN Maximum Input level test case	1.0.0
2023-09	RAN5#100	R5-234627	-	-	-	NTN AMPR test configurations and requirements	1.0.0
2023-09	RAN5#100	R5-234628	-	-	-	Editorial change to move 6.2.4 in 38.521-5	1.0.0
2023-09	RAN5#100	R5-235866	-	-	-	Update Ref sensitivity for NTN	1.0.0
2023-09	RAN5#100	R5-235826	-	-	-	Update TX Intermodulation for NTN	1.0.0
2023-09	RAN5#100	R5-235827	-	-	-	Update TX Spur co-exist for NTN	1.0.0
2023-09	RAN5#100	R5-235456	-	-	-	Clarifications to 38.521-5	1.0.0
2023-09	RAN5#100	R5-235186	-	-	-	Initial conditions update for multiple test cases	1.0.0
2023-09	RAN5#100	R5-235679	-	-	-	Updates to NTN TC 6.3.3 on Tx on-off time mask	1.0.0
2023-09	RAN5#100	R5-235683	-	-	-	Updates to NTN TC 6.5.2.2 on Spectrum emission mask	1.0.0
2023-09	RAN5#100	R5-235681	-	-	-	Updates to NTN TC 6.5.2.4 on ACLR	1.0.0
2023-12	RAN5#101	R5-237874	-	-	-	Addition of test configuration and error correction for 7.5 Adjacent channel selectivity	1.1.0
2023-12	RAN5#101	R5-237834	-	-	-	Introduction of new test cases 7.7 Spurious response	1.1.0
2023-12	RAN5#101	R5-237835	-	-	-	Introduction of new test cases 7.8 Intermodulation characteristics	1.1.0
2023-12	RAN5#101	R5-237836	-	-	-	Addition of test configuration and error correction for 7.9 Spurious emissions	1.1.0
2023-12	RAN5#101	R5-236147	-	-	-	Introduction of Annex B.0	1.1.0
2023-12	RAN5#101	R5-236148	-	-	-	Introduction of Annex D Characteristics of the interfering signal	1.1.0

Change history							
Date	Meeting	TDoc	CR	Rev	Cat	Subject/Comment	New version
2023-12	RAN5#101	R5-236149	-	-	-	Introduction of measurement uncertainties and test tolerances for test cases from 7.5 to 7.9	1.1.0
2023-12	RAN5#101	R5-236150	-	-	-	Introduction of Annex F.4 Uplink power window	1.1.0
2023-12	RAN5#101	R5-236151	-	-	-	Introduction of Annex H Statistical Testing	1.1.0
2023-12	RAN5#101	R5-236291	-	-	-	Further clarification on NR NTN conformance requirement specifications	1.1.0
2023-12	RAN5#101	R5-237690	-	-	-	Adding Additional Spurious Emission TC for NTN	1.1.0
2023-12	RAN5#101	R5-237875	-	-	-	Adding Frequency Error TC for NTN	1.1.0
2023-12	RAN5#101	R5-237864	-	-	-	Core requirements alignment for NR NTN test cases	1.1.0
2023-12	RAN5#101	R5-237876	-	-	-	Update to Refsens test case 7.3.2 for NTN	1.1.0
2023-12	RAN5#101	R5-237877	-	-	-	Update to PDSCH demodulation test cases for NTN	1.1.0
2023-12	RAN#102	RP-233928	-	-	-	presented at RAN#102 for approval	2.0.0
2023-12	RAN#102	-	-	-	-	put under revision control as v17.0.0 with small editorial changes	17.0.0
2024-06	RAN#104	R5-242305	0037	-	F	Removal of technical content in TS 38.521-5 v17.0.0 and substitution with pointer to the next Release	17.1.0

History

Document history		
V17.0.0	January 2024	Publication
V17.1.0	August 2024	Publication