**3GPP TSG-RAN WG4 Meeting #95 *R4-200***

**Electronic Meeting, 25 May – 5 June, 2020**

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| *CR-Form-v12.0* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
|  | | | | | | | | |
|  | **37.113** | **CR** | **0109** | **rev** | **<1>** | **Current version:** | **15.8.0** |  |
|  | | | | | | | | |
| *For* [***HELP***](http://www.3gpp.org/3G_Specs/CRs.htm#_blank)*on using this form: comprehensive instructions can be found at* [*http://www.3gpp.org/Change-Requests*](http://www.3gpp.org/Change-Requests)*.* | | | | | | | | |
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| ***Proposed change affects:*** | UICC apps |  | ME |  | Radio Access Network | **X** | Core Network |  |

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| ***Title:*** | Draft CR to 37.113 Introducing Reverberation Chamber | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Source to WG:*** | Ericsson, ZTE | | | | | | | | | |
| ***Source to TSG:*** | R4 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | NR\_newRAT-Core | | | | |  | ***Date:*** | | | 2020-04-20 |
|  |  | | | |  | |  | | |  |
| ***Category:*** | F |  | | | | | ***Release:*** | | | Rel-15 |
|  | *Use one of the following categories:* ***F*** *(correction)* ***A*** *(mirror corresponding to a change in an earlier release)* ***B*** *(addition of feature),* ***C*** *(functional modification of feature)* ***D*** *(editorial modification)*  Detailed explanations of the above categories can be found in 3GPP [TR 21.900](http://www.3gpp.org/ftp/Specs/html-info/21900.htm). | | | | | | | | *Use one of the following releases: Rel-8 (Release 8) Rel-9 (Release 9) Rel-10 (Release 10) Rel-11 (Release 11) Rel-12 (Release 12) Rel-13 (Release 13) Rel-14 (Release 14) Rel-15 (Release 15) Rel-16 (Release 16)* | |
|  |  | | | | | | | | | |
| ***Reason for change:*** | | In this CR, reverberation chamber use is included to TS 37.113. Resubmission of endorsed Draft CR R4-2005565 | | | | | | | | |
|  | |  | | | | | | | | |
| ***Summary of change:*** | | Introducing Reverberation Chamber to TS 37.113. Resubmission of endorsed Draft CR R4-2005565 | | | | | | | | |
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| ***Consequences if not approved:*** | | Possible misalignment with ETSI EMC Standard. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Clauses affected:*** | | 2; 9.2 | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **Y** | **N** |  | | | |  | | |
| ***Other specs*** | |  | **X** | Other core specifications | | | | TS/TR ... CR ... | | |
| ***affected:*** | |  | **X** | Test specifications | | | | TS/TR ... CR ... | | |
| ***(show related CRs)*** | |  | **X** | O&M Specifications | | | | TS/TR ... CR ... | | |
|  | |  | | | | | | | | |
| ***Other comments:*** | |  | | | | | | | | |
|  | |  | | | | | | | | |
| ***This CR's revision history:*** | | Resubmission of endorsed Draft CR R4-2005565 | | | | | | | | |

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# 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] 3GPP TR 21.905: "Vocabulary for 3GPP Specifications".

[2] 3GPP TS 25.104: "Base Station (BS) radio transmission and reception (FDD)".

[3] 3GPP TS 25.105: "Base Station (BS) radio transmission and reception (TDD)".

[4] 3GPP TS 36.104: "Evolved Universal Terrestrial Radio Access (E-UTRA); Base Station (BS) radio transmission and reception ".

[5] 3GPP TS 45.005: "Radio transmission and reception".

[6] 3GPP TS 37.104: "NR, E-UTRA, UTRA and GSM/EDGE; Multi-Standard Radio (MSR) Base Station (BS) radio transmission and reception".

[7] 3GPP TS 25.141: "Base Station (BS) conformance testing (FDD)".

[8] 3GPP TS 25.142: "Base Station (BS) conformance testing (TDD)".

[9] 3GPP TS 36.141: "Evolved Universal Terrestrial Radio Access (E-UTRA); Base Station (BS) conformance testing".

[10] 3GPP TS 51.021: "Base Station System (BSS) equipment specification; Radio aspects".

[11] 3GPP TS 37.141: "NR, E-UTRA, UTRA and GSM/EDGE; Multi-Standard Radio (MSR) Base Station (BS) conformance testing".

[12] IEC 61000-6-1: 2005: "Electromagnetic compatibility (EMC) - Part 6-1: Generic standards –Immunity for residential, commercial and light-industrial environments".

[13] IEC 61000-6-3: 2006/AMD1:2010: "Electromagnetic compatibility (EMC) - Part 6-3: Generic standards – Emission standard for residential, commercial and light-industrial environments".

[14] IEC 60050-161: "International Electrotechnical Vocabulary (IEV) - Part 161: Electromagnetic compatibility".

[15] ITU-R Recommendation SM.329: "Unwanted emissions in the spurious domain".

[16] ITU-R Recommendation SM.1539-1 (2001): "Variation of the boundary between the out-of-band and spurious domains required for the application of Recommendations ITU-R SM.1541 and ITU-R SM.329".

[17] Void

[18] Void

[19] IEC 61000-3-2 (2004): "Electromagnetic compatibility (EMC) - Part 3-2: Limits - Limits for harmonic current emissions (equipment input current ≤ 16 A)".

[20] IEC 61000-3-12 (2005): "Electromagnetic compatibility (EMC) - Part 3-12: Limits - Limits for harmonic current produced by equipment connected to public low-voltage system with input current >16 A and ≤ 75 A".

[21] IEC 61000-3-3 (2002): "Electromagnetic compatibility (EMC) - Part 3-3: Limits - Limitation of voltage fluctuations and flicker in low-voltage supply systems for equipment with rated current ≤ 16 A".

[22] IEC 61000-3-11 (2000): "Electromagnetic compatibility (EMC) - Part 3-11: Limits – Limitation of voltage fluctuations and flicker in low-voltage supply systems for equipment with rated current ≤ 75 A and subject to conditional connections".

[23] IEC 61000-4-3: "Electromagnetic compatibility (EMC) - Part 4-3: Testing and measurement techniques - Radiated, radio-frequency electromagnetic field immunity test".

[24] IEC 61000-4-2: "Electromagnetic compatibility (EMC) - Part 4-2: Testing and measurement techniques - Electrostatic discharge immunity test".

[25] IEC 61000-4-4: "Electromagnetic compatibility (EMC) - Part 4-4: Testing and measurement techniques - Electrical fast transient/burst immunity test".

[26] IEC 61000-4-6: "Electromagnetic compatibility (EMC) - Part 4-6: Testing and measurement techniques - Immunity to contacted disturbances, induced by radio frequency fields".

[27] IEC 61000-4-11: "Electromagnetic compatibility (EMC) - Part 4-11: Testing and measurement techniques - Voltage dips, short interruptions and voltage variations. Immunity tests".

[28] IEC 61000-4-5: "Electromagnetic compatibility (EMC) - Part 4-5: Testing and measurement techniques - Surge immunity test".

[29] 3GPP TS 25.101: "User Equipment (UE) radio transmission and reception (FDD)".

[30] 3GPP TS 25.102: "User Equipment (UE) radio transmission and reception (TDD)".

[31] 3GPP TS 36.101: "Evolved Universal Terrestrial Radio Access (E-UTRA); User Equipment (UE) radio transmission and reception".

[32] 3GPP TS 45.008: "Radio subsystem link control".

[33] 3GPP TS 51.010-1: " Mobile Station (MS) conformance specification; Part 1: Conformance specification".

[34] CISPR 32: "Electromagnetic compatibility of multimedia equipment - Emission requirements".

[35] 3GPP TS 38.104: "NR; Base Station (BS) radio transmission and reception".

[36] 3GPP TS 38.141-1: "NR; Base Station (BS) conformance testing; Part 1: Conducted conformance testing".

[37] 3GPP TS 38.141-2: "NR; Base Station (BS) conformance testing; Part 2: Radiated conformance testing".

[38] 3GPP TS 38.101-4: "NR; User Equipment (UE) radio transmission and reception; Part 4: Performance requirements".

[39] 3GPP TS 37.114: "Active Antenna System (AAS) Base Station (BS), Electromagnetic Compatibility (EMC) ".

[40] IEC 61000-4-21: “Electromagnetic Compatibility (EMC) Part 4-21: Testing And Measurement Techniques Reverberation Chamber Test Methods”.

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## 9.2 RF electromagnetic field (80 MHz - 6000 MHz)

The test shall be performed on a representative configuration of the equipment, the associated ancillary equipment, or representative configuration of the combination of radio and ancillary equipment.

### 9.2.1 Definition

This test assesses the ability of radio equipment and ancillary equipment to operate as intended in the presence of a radio frequency electromagnetic field disturbance at the enclosure.

### 9.2.2 Test method and level

The test method shall be in accordance with IEC 61000‑4‑3 [23]. It is also acceptable the use of reverberation chamber test method according to IEC 61000-4-21 [40], clause 6.1 and Annex D as alternative method.

- for transmitters, receivers and transceivers the following requirements shall apply:

- the test level shall be 3 V/m amplitude modulated to a depth of 80 % by a sinusoidal audio signal of 1 kHz;

- the stepped frequency increments shall be 1 % of the momentary frequency;

- the test shall be performed over the frequency range 80 MHz - 6000 MHz with the exception of the exclusion band for receivers (see subclause 4.4);

- responses in stand-alone receivers or receivers which are part of transceivers occurring at discrete frequencies which are narrow band responses, shall be disregarded, see subclause 4.3;

- the frequencies selected during the test shall be recorded in the test report.

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